

**National Park Service
U.S. Department of the Interior**

**Everglades National Park
Florida**



Acquisition of Florida Power & Light Company Land in the East Everglades Expansion Area Draft Environmental Impact Statement

January 2014

UNITED STATES DEPARTMENT OF THE INTERIOR – NATIONAL PARK SERVICE
ACQUISITION OF FLORIDA POWER & LIGHT COMPANY LAND IN THE EAST EVERGLADES
EXPANSION AREA, EVERGLADES NATIONAL PARK, FLORIDA

DRAFT ENVIRONMENTAL IMPACT STATEMENT

Lead Agency: National Park Service (NPS), U.S. Department of the Interior

This draft environmental impact statement (EIS) describes five alternatives for acquiring land owned by the Florida Power & Light Company (FPL) in the East Everglades Expansion Area (EEEA) within the boundary of Everglades National Park (the park), or sufficient interest in this property, to allow for higher water levels in the area to facilitate restoration efforts within the park. The document also describes the affected environment and evaluates the environmental consequences of implementing these alternatives.

The purpose of the project is NPS acquisition of the existing FPL land within the park, or sufficient interest in the property, to facilitate hydrologic and ecologic restoration of the park and Everglades ecosystem. This action is needed to support the mission of the NPS and the park, because the EEEA, which includes the existing FPL parcel, has been identified as vital to long-term protection of the park for ecosystem restoration purposes. Also, the acquisition of the existing FPL parcel within the EEEA is needed to support the goals of restoring the Northeast Shark River Slough (NESRS) and to fulfill the purposes of the Modified Water Deliveries project and the Comprehensive Everglades Restoration Plan. Acquisition of land within the EEEA is legally authorized. Public Law (PL) 101-229 (December 13, 1989) articulates that the Everglades is both nationally and internationally significant and sets forth specific goals and objectives for acquisition of properties in this area. Acquisition of land within the EEEA through an exchange of lands with FPL is also legally authorized (PL 111-11, 2009).

The no-action alternative in this EIS assumes that the NPS would take no action to acquire FPL property within the EEEA. However, this EIS addresses both the potential impacts from the acquisition of FPL land in the park as well as the indirect impacts that could result from the subsequent construction and operation of transmission lines that could be built either inside or outside the park as a result of the alternatives selected. These transmission line construction scenarios depend in part on the alternative selected for land acquisition, but also on other factors that are beyond the NPS's control. For each of the possible actions NPS could select with respect to acquisition of the FPL corridor within the park (alternatives), there are several possible scenarios regarding where and whether the FPL transmission lines may ultimately be constructed. For the sake of clarity, the NPS decided not to repeat the description and analysis of every one of the possible scenarios if it was already described under another alternative. There are two no action alternatives, one with a "no-build" scenario for analyzing baseline conditions (1a), and one other with a "build" construction scenario (1b). Each other alternative was assigned one scenario for analysis.

Under alternative 1a (no NPS action), the NPS would not take action to acquire FPL property within the park or a flowage easement on it. There would be no change in the status of the FPL lands in the park, and the NPS would retain ownership of lands being considered for exchange. The NPS and U.S. Army Corps of Engineers (USACE) would continue to lack a perpetual flowage easement on FPL's entire property in the EEEA necessary to implement higher water levels resulting from ecosystem restoration projects. This alternative assumes that FPL would not construct transmission lines on its existing land in the park, in the exchange corridor, or in any area outside the park. This alternative could result if other necessary permits are denied by regulatory agencies or if FPL chooses not to build transmission lines.

Under alternative 1b, the NPS would not take action to acquire FPL property within the park or a flowage easement on it. Although it represents the same land acquisition option as alternative 1a, this alternative assumes that FPL would construct transmission lines on its existing land in the park (designated as FPL's "West Secondary Corridor"). It also assumes that the NPS would not be able to flow additional water on this property to achieve its long-term ecosystem restoration objectives because it would not have acquired the right or interest to do so. In late 2013, FPL withdrew the West Secondary Corridor from its application for State of Florida site certification and from its application for a USACE Section 404 wetland fill permit. In light of this development, construction of transmission lines in the West Secondary Corridor is less likely than before; however it is included to provide a full range of alternatives and assessment of impacts."

Under alternative 2, the 320-acre FPL corridor would be acquired directly by purchase or through the exercise of eminent domain authority by the United States. This alternative would result in an increase of 320 acres of NPS-owned land within the authorized boundary of the park and would allow for flowage of water on this property. The construction scenario associated with alternative 2 assumes that FPL would likely acquire a replacement corridor east of the existing park boundary to meet its transmission needs and the transmission lines would be built outside the park.

Under alternative 3, the NPS would acquire fee title to the 320-acre FPL corridor through an exchange for park property, as authorized by the exchange legislation. NPS land conveyed to FPL would consist of 260 acres along 6.5 miles of the eastern boundary of the EEEA, and the boundary of the park would be adjusted upon completion of the exchange to remove the lands conveyed to FPL out of federal ownership. The NPS would also convey a 90-foot-wide perpetual nonnative vegetation management easement to FPL adjacent to the entire length of the exchange corridor. The "fee for fee" land exchange would be subject to terms and conditions that are to be agreed upon between NPS and FPL and incorporated into a binding exchange agreement. FPL would be required to allow the United States the perpetual right, power, and privilege to flood and submerge the property consistent with hydrologic restoration requirements. The construction scenario associated with this alternative assumes that FPL" would build the transmission lines in the exchange corridor and meet the fee for fee terms and conditions that include additional requirements developed by the NPS for environmental protection. The terms and conditions for this alternative allow for other utility related facilities in the corridor.

Under alternative 4, the NPS would acquire fee title to the 320-acre FPL corridor through an exchange for an easement on NPS property. The NPS would grant an easement to FPL on 260 acres of park land along 6.5 miles of the eastern boundary of the EEEA for potential construction of transmission lines, in accordance with the terms and conditions developed for this "easement for fee" exchange. Although the exchange corridor involved in this alternative is the same as alternative 3, under this easement for fee exchange, NPS would retain ownership of the corridor. No adjustments would be made to the boundary of the park, but the NPS would no longer have the unencumbered use of the exchange corridor. The NPS would also convey a 90-foot-wide perpetual easement to FPL adjacent to the entire length of the exchange corridor for nonnative vegetation management. The easement for fee land exchange would be subject to terms and conditions that are to be agreed upon between NPS and FPL and incorporated into a binding exchange agreement. The main difference between the draft terms and conditions for this alternative and those for alternative 3 is that under the easement for fee conditions, FPL could use the easement area only for conservation or the potential construction of electric transmission lines and appurtenant facilities, not other utility-related facilities. Similar to alternative 3, an essential condition for this exchange is that the FPL Utility Easement Area would be subject to a perpetual flowage easement.

Under alternative 5, the NPS would acquire a perpetual flowage easement on FPL's property within the EEEA through purchase, condemnation, or donation by FPL. FPL would retain ownership of its 320-acre corridor in the park during the term of the easement and could seek to site transmission lines there. The flowage allowed under this easement would allow sufficient water flow over this area to support ecosystem restoration projects. There would be no change to the authorized boundary of the park, although NPS would retain the current goal of acquiring this property over the long term. The construction scenario associated with this alternative would be the same as the one for alternative 1b (FPL construction of transmission lines on its existing land in the park), except that NPS would acquire a long-term, perpetual flowage easement.

Alternative 2 is the environmentally preferred alternative. NPS does not have a preferred alternative at this time, but an NPS preferred alternative will be designated in the final EIS.

The potential environmental consequences of the alternatives are addressed for hydrology, water quality, soils, vegetation and wetlands, floodplains, soundscapes, wildlife, special status species (both federally listed and state listed species), visual resources, wilderness, visitor use and experience, adjacent land uses and policies, tribal lands (including Indian trust resources), socioeconomics, and park operations and management.

The draft EIS is available for public and agency review and comment beginning when the U.S. Environmental Protection Agency Notice of Availability is published in the Federal Register. If you wish to comment on the document, you may mail comments to the name and address listed below or you may post them electronically at <http://parkplanning.nps.gov/ever>. Before including your address, telephone number, electronic mail address, or other personal identifying information in your comments, you should be aware that your entire comment (including your personal identifying information) may be made publicly available at any time. While you can ask us in your comments to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. After public review, this document will be revised in response to public comments. A final version of this document will then be released, and a 30-day no-action period will follow. Following the 30-day period, the alternative or actions constituting the approved plan will be documented in a record of decision (ROD) prepared for the signature of the Regional Director of the Southeast Region. For further information regarding this document, please contact Everglades National Park at the address below or at the following number: (305) 242-7700

Everglades National Park
c/o Superintendent
40001 State Road 9336
Homestead, FL 33034-6733



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The National Park Service (NPS) is preparing an environmental impact statement (EIS) to evaluate the options for and impacts of acquiring land owned by the Florida Power & Light Company (FPL) in the East Everglades Expansion Area (EEEA) within the boundary of Everglades National Park (the park), or sufficient interest in this property, to allow for higher water levels in the area to facilitate ecosystem restoration efforts within the park. This includes the exchange of lands authorized in the Omnibus Public Land Management Act of 2009 (Public Law (PL) 111-11) and other reasonable alternatives.

The NPS must acquire the FPL parcel and several other properties, or sufficient interest in these properties, to allow for higher water levels in the area to facilitate ecosystem restoration efforts within the park – one of the primary objectives of the Modified Water Deliveries to the Everglades National Park (MWD) project and other long-term Everglades ecosystem restoration plans. The FPL parcel is a linear north-south corridor of between 330 feet and 370 feet in width and approximately 7.4 miles in length within the park. The parcel was purchased by FPL in the 1960s and early 1970s, prior to the expansion of the park, with the intention of supporting future transmission lines from the Turkey Point power plant, located south of the Biscayne National Park visitor center, to locations north of metropolitan Miami (FPL 2011). The NPS decision to be made at the conclusion of this process is whether to acquire FPL's lands within the park, or sufficient interest in this property, to allow for higher water levels in the area to facilitate ecosystem restoration efforts within the park, by exchange, direct purchase, or other means.

The purpose of the project is NPS acquisition of the existing FPL land within the park, or sufficient interest in the property, to facilitate hydrologic and ecologic restoration of the park and Everglades ecosystem. The need for the project can be summarized as follows:

- This action is needed to support the mission of the NPS and the park. The EEEA, which includes the existing FPL parcel, has been identified as vital to long-term protection of the park for ecosystem restoration purposes.
- The acquisition of the existing FPL parcel within the EEEA is needed to support the goals of restoring the Northeast Shark River Slough (NESRS) and to fulfill the purposes of the MWD project and the Comprehensive Everglades Restoration Plan.
- Acquisition of land within the EEEA is legally authorized. PL 101-229 (December 13, 1989) articulates that the Everglades is both nationally and internationally significant and sets forth specific goals and objectives for acquisition of properties in this area.
- Acquisition of land within the EEEA through an exchange of lands with FPL is also legally authorized by the Omnibus Public Lands Management Act of 2009 (PL 111-11).

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“Objectives” are specific purpose statements that describe what must be achieved to a large degree for the action to be considered a success. All of the alternatives selected for detailed analysis must meet project objectives to a large degree and support the purpose of and need for action. Alternatives proposing the acquisition and/or exchange of FPL land and/or land interests must:

- Ensure consistency with the Everglades National Park Protection and Expansion Act of 1989 (Expansion Act) and the 1991 Land Protection Plan (LPP) for the EEEA. This includes the following:
 - Increasing the level of protection of the outstanding natural values of the park and enhancing and restoring the ecological values, natural hydrologic conditions, and public enjoyment of such areas by adding the area commonly known as the NESRS and the East Everglades to the park (16 USC 410r-5) and
 - Assuring that the park is managed in a way that maintains the natural abundance, diversity, and ecological integrity of native plants and animals, as well as the behavior of native animals, as part of its ecosystem (16 USC 410r-5);
- Ensure consistency with the Congressional intent of the Omnibus Public Land Management Act of 2009 such that the Secretary of the Interior considers the land exchange with specified terms and conditions including appropriate environmental review of the impacts of the exchange;
- Support and facilitate implementation of ecosystem restoration projects including the MWD project, the Tamiami Trail Next Steps Project and the Comprehensive Everglades Restoration Plan; and
- Support the timely acquisition of existing FPL property within the EEEA, or sufficient interest in this property, to allow for higher water levels in the area to facilitate ecosystem restoration efforts within the park.

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The alternatives under consideration must include a “no-action” alternative to ensure that the NPS compares the potential impacts of the proposed action to the likely impacts of maintaining the *status quo*. The no-action alternative in this EIS assumes that the NPS would take no action to acquire FPL property within the EEEA or a flowage easement on it. In contrast, the action alternatives incorporate different approaches that the NPS would take to acquire lands or interest in lands within the FPL corridor. This EIS addresses both the potential impacts from the acquisition of FPL land in the park as well as the indirect impacts that could result from the subsequent construction and operation of transmission lines that could be built either inside or outside the park as a result of the alternative selected. Although the NPS does not have responsibility to choose or authorize where FPL builds transmission lines, it is foreseeable that FPL would build transmission lines, and each of the possible alternatives that NPS considers with respect to acquisition of the FPL corridor within the park has multiple possible outcomes or scenarios about where construction of the FPL transmission lines may ultimately occur. These transmission line construction scenarios depend in part on the alternative selected by the NPS regarding the land acquisition, but also on other factors that are beyond the NPS’s control. NPS consideration of any transmission line construction scenarios in this EIS is not an admission or acknowledgement by the NPS or the U.S. Army Corps of Engineers (USACE) that use of these properties as a transmission corridor is permissible or suitable because FPL has not completed the USACE Clean Water Act (CWA) Section 404 permitting process for its proposed western transmission lines.

Based on the possible alternatives and transmission line construction scenarios, There are six alternatives that are fully described and analyzed in the draft EIS. There is a no-action alternative with a “no-build” scenario for analyzing baseline conditions (1a), as well as an alternative that analyzes no NPS action with a “build” construction scenario (1b). Each other alternative is assigned one scenario for analysis. For the sake of clarity, the NPS decided not to repeat the description and analysis of every one of the possible scenarios if it was already described under another scenario. It was determined that this would simplify the way the information is presented, and therefore improve the readability of the EIS.

In this way, the full range of possible construction scenarios is described. The following summarizes the alternatives analyzed in this EIS:

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Under the no-action alternative, the NPS would not take action to acquire FPL property within the park or a flowage easement on it. There would be no change in the status of the 7.4-mile-long corridor containing 320 acres of FPL lands in the park, and the NPS would retain ownership of lands being considered for exchange. There would be no change to the authorized boundary of the park. The NPS and USACE would continue to lack a perpetual flowage easement on FPL’s entire property in the EEEA necessary to implement higher water levels resulting from ecosystem restoration projects.

This alternative assumes that FPL would not construct transmission lines on its existing land in the park, in the exchange corridor, or in any area outside the park. This alternative could result if other necessary permits are denied by regulatory agencies or if FPL chooses not to build transmission lines. Although this scenario is not likely, it is included to represent a status quo baseline for National Environmental Policy Act (NEPA) purposes. The impacts of constructing transmission lines, as analyzed in other alternatives, is compared to this baseline.

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Under this alternative, the NPS would not take action to acquire FPL property within the park or a flowage easement on it. With respect to the action selected for acquisition, it is thus the same as alternative 1a. However, this alternative assumes that FPL would construct transmission lines on its existing land in the park (FPL’s “West Secondary Corridor”). Although it represents the same management option as alternative 1a, this alternative is included because it is a potential but uncertain outcome if NPS takes no action. This alternative assumes that FPL would be able to secure all federal, state, and local permits necessary to construct transmission lines, associated fill pads, and access roads on its existing property within the park. It also assumes that the NPS would not be able to increase water levels on this property to achieve its long-term restoration objectives because it would not have acquired the right or interest to do so. In late 2013, FPL withdrew the West Secondary Corridor from its application for State of Florida site certification and from its application for a USACE Section 404 wetland fill permit. As a result, FPL is no longer seeking the federal, state and local permits need to construct transmission lines in the West Secondary Corridor. Although this construction scenario is less likely than before, it is included to provide a full range of alternatives and assessment of impacts.

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Under alternative 2, the FPL property (7.4-mile-long FPL corridor containing 320 acres of FPL lands) would be acquired directly by purchase or through the exercise of eminent domain authority by the United States. This alternative would result in an increase of 320 acres of NPS-owned land within the authorized boundary of the park and would allow for flowage of water on this property.

The construction scenario associated with this alternative assumes that FPL would likely acquire a replacement corridor east of the existing park boundary to meet its transmission needs because the option selected by NPS for land acquisition would leave FPL without a transmission corridor through the park. This alternative assumes that FPL would be able to secure all federal, state, and local permits necessary to construct transmission lines, associated fill pads, and access roads on lands FPL would likely acquire somewhere within this area east of the park.

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Under alternative 3, the NPS would acquire fee title to the FPL property (7.4-mile-long corridor containing 320 acres of FPL lands) through an exchange for park property, as authorized by the exchange legislation. NPS land conveyed to FPL would consist of 260 acres along 6.5 miles of the eastern boundary of the EEEA. The values of lands exchanged would be equalized in accordance with the Omnibus Act. The boundary of the park would be adjusted upon completion of the exchange to remove the lands conveyed to FPL out of federal ownership. This alternative would result in a 260-acre decrease in lands within the authorized boundary on the east side of the park, and an increase of 320 acres of federally owned land within the authorized boundary (the former FPL corridor), for a net gain of 60 acres of federally owned park land. The NPS would also convey a 90-foot-wide perpetual nonnative vegetation management easement to FPL adjacent to the entire length of the 6.5-mile exchange corridor. The fee for fee land exchange would be subject to terms and conditions that are to be agreed upon between NPS and FPL and incorporated into a binding exchange agreement. An essential condition for this exchange is that the lands conveyed to FPL would be subject to a perpetual flowage easement. FPL would be required to allow the United States the perpetual right, power and privilege to flood and submerge the property consistent with hydrologic restoration requirements. Also, the terms and conditions for this alternative allow for other utility related facilities in the corridor.

The construction scenario associated with this alternative assumes that FPL would be able to secure all federal, state, and local permits necessary to construct transmission lines, associated fill pads, and access roads on lands FPL acquired by exchange. Construction would need to meet the fee for fee terms and conditions that include additional requirements developed by the NPS for environmental protection.

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Under alternative 4, the NPS would acquire fee title to the FPL property (7.4-mile-long corridor containing 320 acres of FPL lands) through an exchange for an easement on NPS property. The NPS would grant an easement to FPL on 260 acres of park land along 6.5 miles of the eastern boundary of the EEEA for potential construction of transmission lines, in accordance with the terms and conditions developed for this “easement for fee” exchange. Although the exchange corridor involved in this alternative is the same as that under alternative 3, under this easement for fee exchange, NPS would retain ownership of the corridor. No adjustments would be made to the boundary of the park. This alternative would result in an increase of 320 acres of NPS-owned land within the authorized boundary of the park (the former FPL corridor). The NPS would no longer have the unencumbered use of the FPL Utility Easement Area, which would potentially contain transmission lines, but would retain the right to carry out all other management activities as needed in this area. The NPS would also convey a 90-foot-wide perpetual easement to FPL adjacent to the entire length of the 6.5-mile exchange corridor to conduct nonnative vegetation management. The easement for fee land exchange would be subject to terms and conditions that are to be agreed upon between NPS and FPL and incorporated into a binding exchange agreement. The main difference between the draft terms and conditions for this alternative and those for alternative 3 is that under the easement for fee conditions, FPL could use the FPL Utility Easement Area

only for conservation or the potential construction of electric transmission lines and appurtenant facilities, not other utility-related facilities.

Similar to alternative 3, an essential condition for this exchange is that the FPL Utility Easement Area would be subject to a perpetual flowage easement. The United States would retain the perpetual right, power and privilege to flood and submerge the property consistent with hydrologic restoration requirements.

The construction scenario associated with this alternative would be the same as the one for alternative 3, except that NPS would retain ownership of the FPL Utility Easement Area. FPL's long-term use of the area would follow the slightly different easement for fee terms and conditions that include additional requirements developed by the NPS for environmental protection.

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Under this alternative, the NPS would acquire a perpetual flowage easement on FPL's property within the EEEA through purchase, condemnation, or donation by FPL. FPL would retain ownership of its 7.4-mile-long corridor in the park during the term of the easement and could seek to site transmission lines there. The flowage easement would include the entire FPL property from Tamiami Trail to the 8.5-square-mile area, and the flowage allowed under this easement would allow sufficient water flow over this area to support ecosystem restoration projects. There would be no change to the authorized boundary of the park, although NPS would retain the current goal of acquiring this property over the long term.

The construction scenario associated with this alternative would be the same as alternative 1b (FPL construction on its existing land in the park), except that NPS would acquire a long-term, perpetual flowage easement that provides sufficient flowage for completion of Everglades restoration projects. FPL would be able to secure all federal, state, and local permits necessary to construct transmission lines, associated fill pads, and access roads on its existing property within the park. The NPS would be able to increase water levels on this property including over the area that is used for construction of the transmission lines to achieve its long-term ecosystem restoration objectives.

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The NPS, in accordance with the U.S. Department of the Interior (DOI) NEPA regulations (43 CFR part 46) and the Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, defines the environmentally preferable alternative as the alternative "that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources" (43 CFR 46.30). Alternative 2, the direct acquisition alternative, was identified as the environmentally preferable alternative by the NPS. This determination was based on available scientific data compiled for the draft EIS and the comparative analysis of impacts of the various alternatives. An analysis of available data and relative impacts made it clear that alternative 2 best meets the requirements of the environmentally preferable alternative.

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NEPA regulations do not require identifying a preferred alternative in a draft EIS if the agency does not have one. NPS does not have a preferred alternative at this time and wants to obtain public, agency and tribal comments on the alternatives under consideration during the public comment period on the draft EIS to help inform this important decision. Furthermore, much of the technical information associated

with transmission line siting, construction, and impact assessment contained in this draft EIS is derived from documents submitted for the state site certification process. Since this process is nearing conclusion, the NPS would use any new or additional information from the final certification decision and record to also assist us in making a decision about the agency preferred alternative. A preferred alternative would be identified and announced in the final EIS.

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Several issues of concern were identified through both internal and public scoping. Internal scoping identified preliminary alternatives and issues relating to potential effects of the proposed land exchange and the foreseeable indirect effects of construction and operation of the transmission line infrastructure. These issues were discussed with the public at a scoping meeting held on June 22, 2011, and comments were solicited through distribution of a public scoping newsletter and posting on the NPS website. During the public scoping period, the park received 10,120 correspondences containing 39,739 individual comments. The comments received were reflective of a public that is passionate about the future of park resources, their uses, and their management. The most common comment received expressed opposition to installation of any transmission lines in or adjacent to the park, representing 74 percent of all comments. The second most prevalent comment expressed opposition to any land exchange with FPL, representing 25 percent of all comments. Thus, approximately 99 percent of all comments expressed opposition to all transmission line construction or completion of the land exchange for the purposes of constructing a transmission line. Commenters also contributed ideas for new alternatives and raised specific concerns regarding resource protection and visitor enjoyment of the park. As a result of this scoping effort, additional issues and alternatives were identified for further analysis in this EIS.

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Those issues identified during internal and public scoping formed the basis for the 15 impact topics discussed in the draft EIS. The summary of environmental consequences considers the actions being proposed and the cumulative impacts to resources from actions both inside and outside the park. The potential environmental consequences of the actions are addressed for the following topics: hydrology, water quality, soils, vegetation and wetlands, floodplains, soundscapes, wildlife, special status species (both federally listed and state listed species), visual resources, wilderness, visitor use and experience, adjacent land uses and policies, tribal lands (including Indian trust resources), socioeconomics, and park operations and management. Table 3 in chapter 2 summarizes impacts by topic and alternative. The following presents some of the major conclusions of the consequences, focusing on the most severe long-term adverse impacts and beneficial effects. This does not address all topics and impacts; please see the full impact analysis in “Chapter 4: Environmental Consequences,” for a complete representation of the impacts.

Alternative 1a: This alternative is the “no action” baseline alternative. This alternative would result in major long-term adverse impacts due to the inability to increase water levels the EEEA and complete the planned Everglades ecosystem restoration projects, which adversely impacts most natural resource topics, visitor use and experience and wilderness to a major level. It would have a major adverse impact because of the conflict with existing NPS land use policies relating to acquisition of the FPL corridor. This alternative would not involve transmission line construction.

Alternative 1b: This alternative would have the same adverse effects on natural resources as alternative 1a and would add the impacts of transmission line construction and operation. The construction and continued presence of the transmission lines in the FPL corridor within the EEEA would result in long-term major adverse impacts on hydrology, water quality, soils, vegetation and wetlands, floodplains,

special-status species, visual resources, visitor use and experience, wilderness, and adjacent land use/policy. Construction of transmission lines in this location would present high risks to avian species, especially Everglades snail kite and wood stork, due to the proximity of the lines to nesting and foraging locations.

Alternative 2: This acquisition alternative would have long-term benefits to most resources and values, because it would allow for increased water levels in the EEEA and completion of the planned Everglades ecosystem restoration projects. Also, the transmission line would not be built in the park, but in an area outside the park east of its boundary; therefore, impacts on park resources and values would be eliminated or reduced. This area has already been hydrologically segmented by canals and development and generally has a reduced quality of wetland habitat. Impacts would vary based on the location selected for the corridor, but many impacts considered as major adverse in the park would be reduced to moderate or less in this area. For the analysis in this draft EIS, an area of possible relocated corridor was identified and the impacts of transmission line construction and presence were assessed in that area. No major impacts were identified except for possible conflict with adjacent land use or policies, depending on the location of the corridor.

Alternative 3: The “fee for fee” land exchange would have the same long-term benefits as alternative 2 because of the ability to increase water levels and proceed with the planned Everglades ecosystem restoration projects. The construction of the transmission lines in the exchange corridor would have long-term major adverse impacts on soils, vegetation and wetlands, wildlife, special-status species, visual resources, and adjacent land use/policy. Construction would be guided by the terms and conditions developed to provide for resource protection, and these terms and conditions would allow for other utility related used (pipelines, communication facilities).

Alternative 4: The “fee for easement” land exchange alternative would have the same impacts as alternative 3 except that no other utilities could be built in the corridor, which would lessen the risk of impacts to natural resources or other park values such as soundscapes that could occur from future construction. Also, this alternative would retain ownership of the exchange corridor with the NPS and not reduce the acreage of the park, and the park would approve the actions taken by FPL, as guided by the terms and conditions of the exchange.

Alternative 5: The flowage easement would have the same long-term benefits as alternative 2 because the flowage easement would provide for increased water levels and the ability to proceed with the planned Everglades ecosystem restoration projects. Impacts of transmission line construction would be the same as described for alternative 1b.

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ACHP	Advisory Council on Historic Preservation
ARA	Avian Risk Assessment
BMP	Best Management Practice
C&SF	Central and Southern Florida
CEQ	Council on Environmental Quality
CEPP	Central Everglades Planning Project
CERP	Comprehensive Everglades Restoration Plan
CFR	Code of Federal Regulations
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DOI	Department of the Interior
EA	Environmental Assessment
EEEA	East Everglades Expansion Area
EIS	Environmental Impact Statement
EMF	electromagnetic field
EPA	U.S. Environmental Protection Agency
ERTP	Everglades Restoration Transition Plan
ESA	Endangered Species Act
Expansion Act	Everglades National Park Protection and Expansion Act of 1989
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FFWCC	Florida Fish and Wildlife Conservation Commission
FLUCFCS	Florida Land Use, Cover and Forms Classification System
FNAI	Florida Natural Areas Inventory
FONSI	Finding of No Significant Impact
FPL	Florida Power & Light Company
GIS	geographic information system
GMP	general management plan
kV	kilovolt
KOP	key observation point
LPP	Land Protection Plan
MDLPA	Maimi-Dade Limestone Products Association
MW	megawatts
MWD	Modified Water Deliveries
NEPA	National Environmental Policy Act
NESRS	Northeast Shark River Slough
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System

NPS	National Park Service
NRC	Nuclear Regulatory Commission
PEPC	Planning, Environment, and Public Comment
PL	Public Law
ROD	Record of Decision
SCA	Site Certification Application
SFNRC	South Florida Natural Resource Center
SFWMD	South Florida Water Management District
SHPO	State Historic Preservation Office
SRS	Shark River Slough
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WCA	Water Conservation Area



CHAPTER 1

Purpose of and Need for Action

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This “Purpose of and Need for Action” chapter explains what this project intends to accomplish and why the National Park Service (NPS) is taking action at this time. The NPS is preparing an environmental impact statement (EIS) to evaluate the options for and impacts of acquiring land owned by the Florida Power & Light Company (FPL) in the East Everglades Expansion Area (EEEA) within the boundary of Everglades National Park (the park), or sufficient interest in this property, to allow for flooding of the area to facilitate ecosystem restoration efforts within the park. This includes the exchange of lands authorized in the Omnibus Public Land Management Act of 2009 (Public Law (PL) 111-11) and other reasonable alternatives.

The NPS is preparing an EIS to evaluate the options for and impacts of acquiring land owned by the FPL in the EEEA within the boundary of Everglades National Park (the park), or sufficient interest in this property, to allow for flooding of the area to facilitate restoration efforts within the park.

The NPS must acquire the FPL parcel and several other properties, or sufficient interest in these properties, to allow for higher water levels to facilitate ecosystem restoration efforts within the park – one of the primary objectives of the Modified Water Deliveries to the Everglades National Park (MWD) project and other long-term Everglades ecosystem restoration plans. The FPL parcel is a linear north-south corridor of between 330 feet and 370 feet in width and approximately 7.4 miles in length within the park. The parcel was purchased by FPL in the 1960s and early 1970s, prior to the expansion of the park, with the intention of supporting future transmission lines from the Turkey Point Power Plant, located south of the Biscayne National Park visitor center, to locations north of metropolitan Miami (FPL 2011).

The NPS decision to be made at the conclusion of this process is whether to acquire FPL’s lands within the park, or sufficient interest in this property (to allow for raising water levels the area to facilitate ecosystem restoration efforts within the park), by exchange, direct purchase, or other means. This EIS addresses potential impacts to the natural and human environment that may result from the acquisition of FPL land in the park and the indirect impacts that could result from the subsequent construction and operation of transmission lines that could possibly be built either inside or outside the park as a result of the NPS decision that will be made.

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Everglades National Park was authorized by Congress in 1934. A fundamental purpose for the park’s establishment was provided in the enabling legislation (appendix A):

The said area or areas shall be permanently reserved as a wilderness, and no development of the project or plan for the entertainment of visitors shall be undertaken which will interfere with the preservation intact of the unique flora and fauna and the essential primitive natural conditions now prevailing in this area.

Because park lands could be acquired only through public or private donation, land acquisition proceeded slowly over the ensuing years. Through the sustained efforts of many supporters, and critical funding

provided by the state of Florida, the park was eventually established 13 years later. President Harry S. Truman dedicated the park on December 6, 1947.

Everglades National Park was the first national park in the United States set aside solely for its biological resources rather than its scenic or historic values. The park was established as a permanent wilderness, preserving essential primitive conditions, including the natural abundance, diversity, behavior, and ecological integrity of the unique flora and fauna. More than 60 years later, protection of the park's natural resources and of the ecosystem remains a primary focus of park management.

From the original 460,000 acres at the time of the park's establishment in 1947, boundary changes expanded the park to 1.4 million acres by 1958. The Everglades National Park Protection and Expansion Act of 1989 (PL 101-229) (Expansion Act) added the EEEA (109,506 acres) to the park, bringing the Northeast Shark River Slough (NESRS) within the park boundary (figure 1). A copy of the Expansion Act is included in appendix B. The EEEA is located just south of the Tamiami Trail in Miami-Dade County. Because of the park expansion, the approximately 7.4-mile north-south parcel owned by FPL is now contained within the park's boundary. Long-range planning for the EEEA seeks to acquire all lands within the area and to restore more natural hydrologic conditions and revitalize habitat and ecosystem health in the park. The Expansion Act also authorized the MWD project. The purpose of the project is, to the extent practicable, restoration of more natural flows of water into the park, including flood protection provisions for adjacent agricultural and residential areas. The park now encompasses 1,509,000 acres, including the largest legislated wilderness area (1,296,500 acres) east of the Rocky Mountains, the Marjory Stoneman Douglas Wilderness.

The EEEA contains the headwaters of the NESRS and Taylor Slough, which, along with western Shark Slough, are the primary sources of water flow to the park. Historically, water flowed gradually from the Lake Okeechobee basin in a southerly direction through the Everglades into Florida Bay and the Gulf of Mexico, with most of the water moving through the Shark River Slough (SRS). During the rainy season (June through October), water levels rises and fills the slough and often inundates the majority of the surrounding Everglades landscape. During the drier winter months, water recedes toward the center of the slough, allowing the edges to gradually dry. This naturally occurring ebb and flow is crucial to the survival of much of the region's wildlife and maintenance of natural plant communities. When the park was established, only half of the SRS was included within the park boundary, with the eastern portion remaining outside the park in the area known as the East Everglades.

The Expansion Act authorized the NPS and the U.S. Army Corps of Engineers (USACE) to acquire lands within the EEEA to help achieve the goals and objectives set forth in the Expansion Act. The purpose for expanding the park includes the following:

- Increasing the level of protection of the outstanding natural values of the park;
- Enhancing and restoring the ecological values, natural hydrologic conditions, and public enjoyment of such areas by adding the area commonly known as the NESRS and the East Everglades; and
- Ensuring that the park is managed to maintain the natural abundance, diversity, and ecological integrity of native plants and animals, as well as the behavior of native animals, as a part of their ecosystem.

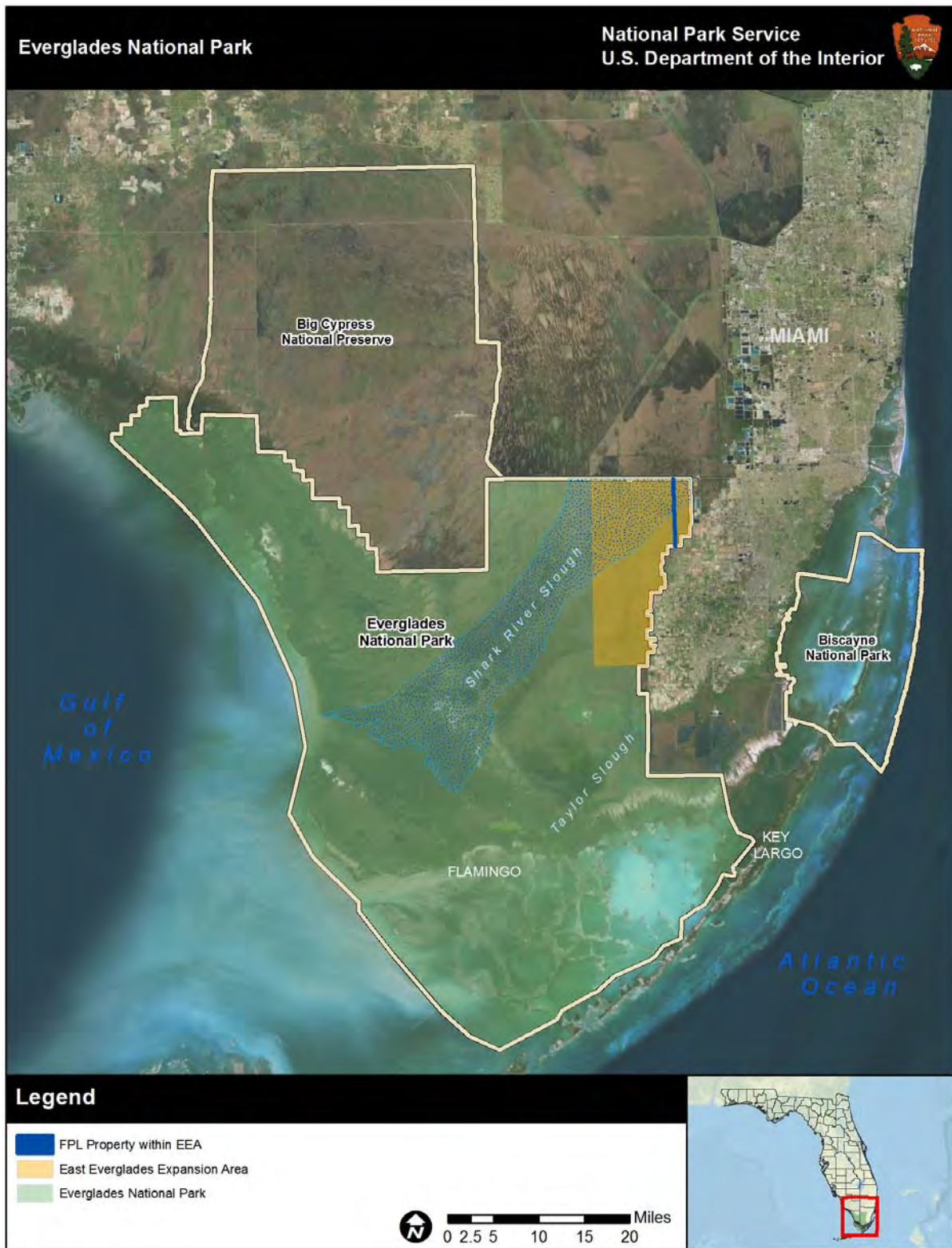


FIGURE 1: EVERGLADES NATIONAL PARK AND VICINITY MAP

The Expansion Act also authorized the MWD project “...to improve water deliveries into the park and shall, to the extent practicable, take steps to restore the natural hydrologic conditions within the park.” This initiative is currently underway. A specific goal of the MWD project is to restore the historic hydrologic conditions within the SRS basin by redistributing flows from West SRS to NESRS. The existing FPL corridor lies within the NESRS – an area considered critical for ecosystem restoration efforts. Both the FPL West Secondary and the FPL West Preferred Corridors are considered critical to ecosystem restoration efforts. The area outside the park is not considered critical to ecosystem restoration efforts.

In 1991, the NPS completed a Land Protection Plan (LPP) and environmental assessment (EA) for the EEEA to ensure the restoration and enhancement of the Everglades ecosystem in the EEEA (NPS 1991). (Note that the EEEA is also referred to as “the Addition,” however, throughout this EIS it is called the EEEA.) The plan and subsequent Finding of No Significant Impact (FONSI) concluded that in order to enhance and to restore the ecology and hydroperiod of the East Everglades and the SRS basin, it would be necessary to acquire fee ownership of all lands contained within the EEEA. Therefore, in the long term, lands not owned by the NPS would not be compatible with this objective. A copy of the LPP is included in appendix B.

To implement the restoration of water flow provisions outlined in the Expansion Act, the USACE issued a 1992 General Design Memorandum which identified hydrologic modifications necessary to achieve more natural flows (USACE 1992). The General Design Memorandum, and a 2008 Limited Reevaluation Report and EA, identified the need to construct a bridge and associated road raising to improve water flows under the Tamiami Trail (U.S. Highway 41) (USACE and NPS 2008). Construction of this 1-mile bridge was completed in March 2013; the road raising is expected to be completed in December 2013. Additionally, the USACE must prepare a water control plan that would guide decisions to allow more natural flows under the bridge to the expansion area. However, additional water flows resulting from implementation of these projects cannot occur until the FPL parcel, which is currently undeveloped, and five other commercial properties within the expansion area are acquired or flowage easements are granted by the property owners. In addition, the USACE must acquire a flowage easement on the Airboat Association of Florida property located immediately adjacent to the park, south of Tamiami Trail. Acquisition of flowage easements are needed because these properties would be affected by higher water levels upon restoration of flows. Such acquisitions are authorized by the United States under the Expansion Act.

In 1996, the NPS began negotiations with FPL for the parcel they own in the EEEA. However, the federal government and FPL were unsuccessful in reaching an agreement on the direct acquisition of FPL’s property by the United States.

Between 2006 and 2008, the NPS, USACE, FPL, and the South Florida Water Management District (SFWMD) identified approximately 260 acres of NPS property at the eastern edge of the park that could be considered a suitable land exchange for the abovementioned FPL parcel. This land was identified because it was believed that the potential future construction and operation of transmission lines at this location would have fewer adverse effects on the natural and human environment than if the same facilities were built and operated on FPL’s land within the park. In addition, it would serve to accomplish the hydrologic restoration objectives described previously. To facilitate construction of the 1-mile bridge, FPL granted four easements to USACE. These easements included a perpetual easement for the bridge and roadway; a perpetual easement for the channel under the bridge; a temporary flowage easement; and a temporary construction easement. The temporary flowage easement expired on August 22, 2013, and the temporary construction easement expired on October 31, 2013 (Goral pers. comm. 2013).

In July 2008, the NPS and FPL executed an agreement to exchange the NPS boundary parcel for FPL's land in the EEEA contingent upon federal legislation ratifying this agreement and authorizing the exchange (contingent agreement) (FPL and NPS 2008). FPL also conditioned negotiations with the USACE for easements on FPL's land needed for the 1-mile bridge project, on obtaining agreements with all other parties necessary to complete the exchange. FPL then completed real estate agreements with these landowners to secure a relocated transmission line corridor. Copies of these agreements and the 1 mile bridge easements discussed above are included in appendix C.

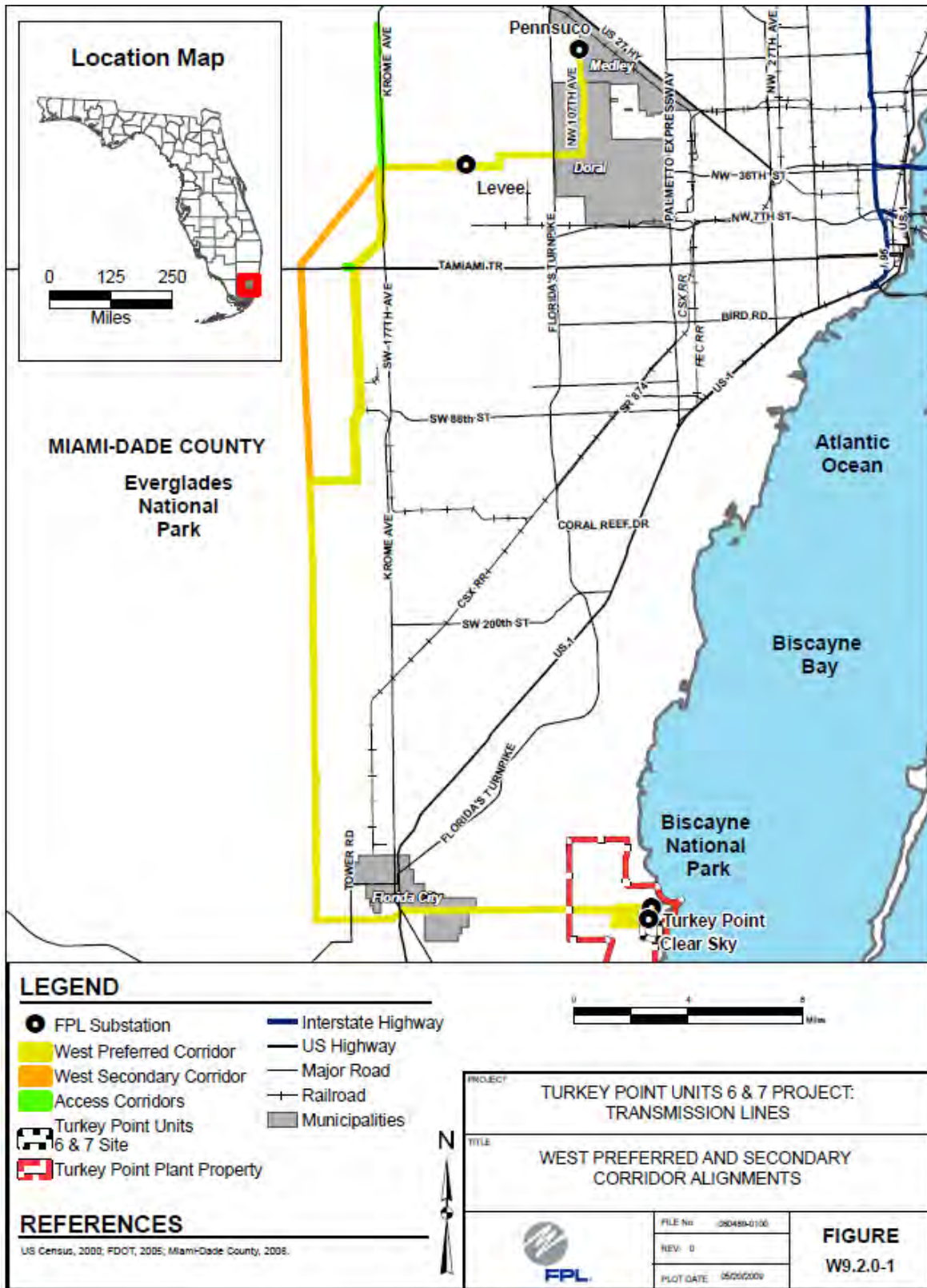
In August 2008, legislation was introduced in Congress to authorize the land exchange. The final text (Section 7107(b) of the Omnibus Public Land Management Act of 2009) identified the 260-acre parcel at the eastern edge of the EEEA as potential land to be exchanged (PL 111-11). The act authorized, but did not mandate, the Secretary of the Interior to exchange lands with FPL. This decision was left to the Secretary of the Interior's discretion subject to conditions necessary for protection of resources, the appraisal and equalization of land values, and analysis of potential environmental impacts under the National Environmental Policy Act (NEPA). Sec. 7107(b) of the Omnibus Act is included in appendix B.

In June, 2009, FPL filed a Site Certification Application (SCA) seeking State of Florida approval to construct two new nuclear generating units (Turkey Point Units 6 and 7) and supporting facilities at the Turkey Point Nuclear Generating Station near Homestead, Florida (Order No. PSC-08-0237-FOF-EI). The filing included transmission facilities to interconnect and integrate the new generation to the transmission grid. These transmission facilities included what was identified as the "FPL West Preferred Corridor," which includes the 260-acre parcel at the eastern edge of the EEEA, as described above, and an alternate corridor, identified as the "FPL West Secondary Corridor," which includes the 7.4-mile-long parcel that FPL owns within the park. The FPL West Preferred and FPL West Secondary Corridors would both contain two 500-kilovolt (kV)

The FPL West Preferred and FPL West Secondary Corridors would both contain two 500-kilovolt (kV) single-circuit transmission lines and one 230-kV single-circuit transmission line.

single-circuit transmission lines and one 230-kV single-circuit transmission line. The 500-kV lines would connect the Clear Sky Substation located at the Turkey Point Power Plant to the existing Levee Substation in northern Miami-Dade County. The 230-kV line would connect the Clear Sky Substation to the existing Pennsuco Substation in northern Miami-Dade County, but would not connect to the Levee substation (see figure 2). For the sake of clarity, these corridors are referred to as the "FPL West Preferred Corridor" and "FPL West Secondary Corridor" throughout this document, although the terms are strictly based on FPL's designation in their siting application and do not reflect a preference by the NPS. As of this writing, no approvals have been granted by the state for any SCA under consideration.

NPS began an EA of the potential land exchange in June 2009. The focus of the EA was the major federal action of exchanging lands with FPL as described in the Omnibus Act; however as part of the NEPA process, the NPS must consider the potential for changes in land use as a result of the land exchange. Therefore, as part of the EA preparation, NPS completed a peer-reviewed study of the potential impacts to endangered wood storks and wading birds from the reasonably foreseeable construction and operation of transmission lines on lands that would be conveyed to FPL by the exchange (NPS 2010e). NPS also conferred with the U.S. Fish and Wildlife Service (USFWS) and other resource agencies related to these potential effects. After careful consideration of public and agency comments and the issues and analyses developed during the EA process, a number of potentially significant environmental impacts associated with reasonably foreseeable construction and operation of transmission lines on the exchange lands were identified. Therefore, in accordance with NEPA regulations, the NPS initiated this EIS in May 2011 to evaluate the potential effects on the environment from acquiring FPL's lands in the park by exchange, direct purchase, and other reasonable alternatives.



Source: FPL 2009a.

FIGURE 2: FPL WEST PREFERRED AND FPL WEST SECONDARY CORRIDORS

The Omnibus Act provides that the potential land exchange be subject to terms and conditions as the Secretary of the Interior may require. This EIS also serves to develop the appropriate terms and conditions for the land exchange alternatives.

As a related but distinct matter, FPL is seeking approval, through the Nuclear Regulatory Commission (NRC), USACE, and the State of Florida, to construct two additional nuclear reactors at its Turkey Point facility (Turkey Point 6 and 7 project), adjacent to Biscayne National Park. The NRC is currently preparing an EIS, in cooperation with the USACE, for a new FPL license and Clean Water Act (CWA) Section 404 permit. The NPS is a cooperating agency in the preparation of the NRC's EIS.

RWTRQUG'QH'CPF 'P GGF 'HQT'CE VKQP "

“Purpose” is an overarching statement of what the project must do to be considered a success.

The purpose of the project is NPS acquisition of the existing FPL land within the park, or sufficient interest in the property, to facilitate hydrologic and ecologic restoration of the park and Everglades ecosystem.

“Need for Action” describes why action is required. It summarizes the most important points of the planning issues and provides the reasons why the project is needed at this time.

- This action is needed to support the mission of the NPS and the park. The EEEA, which includes the existing FPL parcel, has been identified as vital to long-term protection of the park for ecosystem restoration purposes.
- The acquisition of the existing FPL parcel within the EEEA is needed to support the goals of restoring the NESRS and to fulfill the purposes of the MWD project and the Comprehensive Everglades Restoration Plan (CERP).
- Acquisition of land within the EEEA is legally authorized. PL 101-229 (December 13, 1989) articulates that the Everglades is both nationally and internationally significant and sets forth specific goals and objectives for acquisition of properties in this area.
- Acquisition of land within the EEEA through an exchange of lands with FPL is legally authorized by the Omnibus Public Lands Management Act of 2009 (PL 111-11).

QDLGE VKXGU "

“Objectives” are specific purpose statements that describe what must be achieved to a large degree for the action to be considered a success. All of the alternatives selected for detailed analysis must meet project objectives to a large degree and support the purpose of and need for action. Alternatives proposing the acquisition and/or exchange of FPL land and/or land interests must

- Ensure consistency with the Everglades National Park Protection and Expansion Act of 1989 (Expansion Act) and the 1991 LPP for the EEEA. This includes the following:
 - Increasing the level of protection of the outstanding natural values of the park and enhancing and restoring the ecological values, natural hydrologic conditions, and public enjoyment of such areas by adding the area commonly known as the NESRS and the East Everglades to the park (16 USC 410r-5) and

- Assuring that the park is managed in a way that maintains the natural abundance, diversity, and ecological integrity of native plants and animals, as well as the behavior of native animals, as part of its ecosystem (16 USC 410r-5);
- Ensure consistency with the Congressional intent of the Omnibus Public Land Management Act of 2009 such that the Secretary of the Interior consider the land exchange with specified terms and conditions including appropriate environmental review of the impacts of the exchange;
- Support and facilitate implementation of ecosystem restoration projects including the MWD project, the Tamiami Trail Next Steps Project and the CERP; and
- Support the timely acquisition of existing FPL property within the EEEA, or sufficient interest in this property, to allow for higher water levels in the area to facilitate ecosystem restoration efforts within the park.

RWTRQUG'CPF'UK PHECPEG'QH'VJ G'RCTM'

The direction for the alternatives considered in this draft plan is based on the national park's purpose and significance, special mandates, and servicewide laws and policies. The purpose statement describes why Everglades National Park was established as a national park. Significance describes the qualities that make the national park special.

RCTMRWTRQUG''

The purpose statement conveys the reasons that the area was set aside as a national park. Grounded in an analysis of park legislation and legislative history, purpose statements also provide primary criteria against which the appropriateness of plan recommendations, operational decisions, and actions are tested.

The purpose of Everglades National Park is as follows:

- Everglades National Park is a public park for the benefit and enjoyment of the people. It is set apart as a permanent wilderness preserving essential primitive conditions, including the natural abundance, diversity, behavior, and ecological integrity of the unique flora and fauna.

RCTMUK PHECPEG''

Significance statements capture the essence of the national park system unit's importance to the nation's natural and cultural heritage. They describe the unit's distinctiveness and describe why an area is important within regional, national, and global contexts. This helps managers focus their efforts and limited funding on protection and enjoyment of attributes that are directly related to the purpose of the park unit.

Everglades National Park is nationally and internationally significant because it

- Is a unique subtropical wetland that is the hydrologic connection between central Florida's freshwater ecosystem and the marine systems of Florida Bay and the Gulf of Mexico. It is the only place in the United States jointly designated an International Biosphere Reserve, a World Heritage Site, a Wetland of International Importance, and a Specially Protected Area under the Cartagena Convention.

- Comprises the largest subtropical wilderness reserve in North America. The park contains vast ecosystems, including freshwater marshes, tropical hardwood, pine rockland, extensive mangrove estuaries, and seagrasses, which support a diverse mix of tropical and temperate plants and animals.
- Serves as sanctuary for the protection of more than 20 federally listed and 70 state-listed threatened and endangered species, as well as numerous species of special concern. Many of these species face tremendous pressure from natural forces and human influences in the south Florida ecosystem.
- Provides important foraging and breeding habitat for more than 400 species of birds (including homeland to world-renowned wading bird populations), and functions as a primary corridor and refuge for migratory and wintering bird populations.
- Includes archeological and historical resources spanning approximately 6,000 years of human history, revealing adaptation to and exploitation of its unique environment.
- Preserves natural and cultural resources associated with the homeland of American Indian tribes of Florida (including the Miccosukee Tribe of Indians of Florida, the Seminole Tribe of Florida, the Seminole Nation of Oklahoma, and other American Indian groups such as the Independent Traditional Seminole Nation of Florida).
- Preserves the remnants of a nationally significant hydrologic resource that sustains south Florida's human population and serves as a global experiment in ecosystem restoration.
- Provides the public with the opportunity to experience Everglades wilderness for recreation, reflection, and solitude in proximity to a major metropolitan area.

TGNCVQPU R'VQ'NCY U'GZGEWKG'QTF GTU'CPF'RQNEKGU'

CRRNECDNG'HGF GT CN'NCY U'GZGEWKG'QTF GTU'CPF'UVCVG'NCY U'

PcvkpcnRctnlUgtxleg'Qti cple'Cev'qh3; 38—By enacting the NPS Organic Act of 1916, Congress directed the U.S. Department of the Interior (DOI) and the NPS to manage units “to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations” (16 USC 1). The Organic Act and its amendments provide the NPS with direction when making resource decisions that balance resource preservation and visitor recreation.

Vj g'I gpgt cnCwj qt lkgu'Cev'qh3; 92.'cu'co gpf gf 'd{ 'vj g'Tgf y qqf u'Cev'qh3; 9: —The Redwoods Act reasserted the systemwide standard of protection established by Congress in the original Organic Act. The 1978 amendment stated that “The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.”

PcvkpcnGpxkt qpo gpwcnRqle{ 'Cev'qh3; 8; . 'cu'Co gpf gf —NEPA was passed by Congress in 1969 and took effect on January 1, 1970. It requires that every federal agency conduct an in-depth study of potential impacts of “major federal actions having a significant effect on the environment” and alternatives to those actions. NEPA is implemented through Council on Environmental Quality (CEQ) regulations (40 CFR 1500–1508) (CEQ 1981). The NPS has adopted procedures to comply with NEPA and CEQ regulations. These procedures are found in *Director's Order 12: Conservation Planning*,

Environmental Impact Analysis, and Decision-making (NPS 2011a) and its accompanying handbook (NPS 2001).

Engcp'Y cvgt 'Cev—The Federal Water Pollution Control and Prevention Act, commonly known as the CWA, is the primary federal law in the United States governing water pollution. The objectives of the CWA include restoration and maintenance of chemical, physical, and biological integrity of the nation's waters (33 USC 1251(a)).

In 1993, the U.S. Environmental Protection Agency (EPA) and the USACE completed the Technical Summary Document for The Advance Identification of Possible Future Disposal Sites and Areas Generally Unsuitable for Dredge and Fill Material in North East Shark River Slough (NESRS). The EPA and USACE determined that the NESRS west of the L-31N levee is an area unsuitable for dredging or filling and that filling these wetlands even partially would likely fail to comply with the Guidelines to Section 404 of the CWA. The purpose of this advance notification was to warn applicants of the difficulty of obtaining a Section 404 permit to fill these wetlands and to encourage applicants to seek alternative solutions that will not result in wetland losses. This document is available in the public documents section on the project website at <http://parkplanning.nps.gov/projectHome.cfm?projectID=37220>.

Gpf cpi gt gf 'Urgelgu/Cev'qh3; 95'GUC+ 'cu'bo gpf gf — This act requires all federal agencies to consult with the Secretary of the Interior on all projects and proposals with the potential to impact federally endangered or threatened plants and animals. It also requires federal agencies to use their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of endangered and threatened species and to ensure that any agency action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat.

Y hf gt pgwu/Cev'qh3; 86—The Wilderness Act states, “In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness.” Despite the great similarity between the NPS Organic Act and the Wilderness Act, Congress applied the Wilderness Act to NPS to strengthen its protective capabilities. Though the text of the enabling statute describes the park as a wilderness, this does not mean that the entire park is designated wilderness within the meaning of the Wilderness Act. The status of the park under the Wilderness Act is described below.”

Under the Wilderness Act, the park must apply the ‘minimum requirement’ concept to all management activities that affect the wilderness resource. This concept is intended to minimize impacts on wilderness values and resources. Managers may authorize (using a documented process) the generally prohibited activities or uses listed in Section 4(c) of the Wilderness Act if deemed necessary to meet the minimum requirements for the administration of the area as wilderness and where those methods are determined to be the ‘minimum tool’ for the project.

PcvkqpenRetnu/Qo pldwu'O cpei go gpv'Cev'qh3; ; :—The National Parks Omnibus Management Act of 1998 (16 USC 5901 et seq.) is fundamental to NPS park management decisions. This act provides direction for articulating and connecting the ultimate resource management decision to the analysis of impacts, using appropriate technical and scientific information.

PcvkqpenJ kwqt le'Rt gugt xcvkqp'Cev'PJ RC+'qh3; 88.'cu'Co gpf gf —Section 106 of this act requires federal agencies to consider the effects of their undertakings on properties listed or potentially eligible for

listing on the National Register of Historic Places. All actions affecting the park's cultural resources must comply with this legislation.

Gzgewlkg'Qtf gt '33; ; 2'6'Rt qvgevkp'qh'Y gwrpf u—This executive order, enacted in 1977, directs federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

Gzgewlkg'Qtf gt '33; : : '6'Hmqf r rclp'O cpci go gpv—This executive order, issued in 1977, directs federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.

Gzgewlkg'Qtf gt '35334'6'Kpxculkg'Urgelgu—This executive order requires federal agencies to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species may cause.

Qwuxcpf lpi 'Hqtlf c'Y cvgtu—All waters that are a part of the Everglades are defined as Outstanding Florida Waters. Section 403.061 (27), Florida Statutes, grants the Florida Department of Environmental Protection (FDEP) power to establish rules that provide for a special category of water bodies within the state to be referred as “Outstanding Florida Waters” which shall be worthy of special protection because of their natural attributes. FPL would require a permit from FDEP as part of any transmission line construction that may result from the NPS land acquisition or exchange alternative selected (see chapter 5 in this document). In general, the FDEP cannot issue permits for direct pollutant discharges to Outstanding Florida Waters that would lower ambient (existing) water quality or indirect discharges that would significantly degrade the waters. Permits for new dredging and filling must be clearly in the public interest, taking into consideration whether the

- Activity would adversely affect the public health, safety, or welfare or property of others;
- Activity would adversely affect the conservation of fish and wildlife, including endangered or threatened species, or their habitats;
- Activity would adversely affect navigation or water flows or cause harmful erosion or shoaling;
- Activity would adversely affect the fishing or recreational values or marine productivity in the vicinity of the activity;
- Activity would be of a temporary or permanent nature;
- Activity would adversely affect or enhance significant historical and archeological resources under the provisions of Sec. 267.061 Florida Statutes; and/or
- Current condition and relative value of functions being performed by areas affected by the proposed activity (373.414(1)(a), Florida Statutes).

P CVI QP CN'RCTMUGTXEG'O CPCI GO GPV'RQNEKGUCPF'F KTGEVQTØUCPF "
UGETGVCTI 'QHVI G'KVGTKQT'QTF GTU"

PcvlqpcnRctmUgtxleg'O cpci go gpv'Rqnelgu—NPS *Management Policies 2006* establishes servicewide policies for the preservation, management, and use of park resources and facilities. These policies provide guidelines and direction for management of resources within the park. NPS *Management Policies 2006* provides general principles for the maintenance of natural resources in the park by “preserving and

restoring the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant and animal populations and the communities and ecosystems in which they occur” (NPS 2006a).

In addition to determining the environmental consequences of implementing alternatives under study in a NEPA document, NPS *Management Policies 2006* (Section 1.4) requires analysis of potential effects to determine whether the alternatives would impair the park’s resources and values. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of resources and values, including the opportunities that would otherwise be present for the enjoyment of those resources and values. An impact on any resource or value may constitute impairment. An impact would be more likely to constitute impairment if it results in a moderate or major adverse effect on a resource or value whose conservation is

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the area;
- Key to the natural or cultural integrity of the area or to opportunities for enjoyment of the area; or
- Identified as a goal in the area’s general management plan (GMP) or other relevant NPS planning documents.

Impairment may result from NPS activities in managing the area; visitor activities; or activities undertaken by concessioners, contractors, and others operating in the park. Pursuant to the NPS Guidance for Non-Impairment Determinations and the NPS NEPA Process, a non-impairment determination for the selected alternative will be appended to the Record of Decision (ROD).

Section 1.6 of NPS *Management Policies 2006* discusses the importance of cooperative conservation efforts beyond the park boundary to help the NPS fulfill its mandate to preserve the natural and cultural resources of park unimpaired for future generations. Activities proposed for adjacent lands may significantly affect park programs, resources, and values. Conversely, NPS activities may have impacts outside the park boundary. Recognizing that parks are integral parts of larger regional environments, and to support its primary concern of protecting park resources and values, the NPS works cooperatively with others to

- anticipate, avoid, and resolve potential conflicts;
- protect park resources and values;
- provide for visitor enjoyment; and
- address mutual interests in the quality of life of community residents, including matters such as compatible economic development and resource and environmental protection.

The Service does these things because cooperative conservation activities are a vital element in establishing relationships that will benefit the parks and in fostering decisions that are sustainable.

Section 1.6 directs that,

The Service will use all available tools to protect park resources and values from unacceptable impacts...Superintendents will encourage compatible adjacent land uses and seek to avoid and mitigate potential adverse impacts on park resources by actively participating in the planning and regulatory processes of other federal agencies and tribal, state, and local governments having jurisdiction over property affecting, or affected by, the park. If a decision is imminent that will result in unacceptable impacts on park

resources, superintendents must take appropriate action, to the extent possible within the Service's authorities and available resources, to manage or constrain the use to minimize impacts.

NPS *Management Policies 2006* also identifies the need to bring logic, analysis, public involvement, and accountability into the decision-making process (Section 2.1.1). NPS *Management Policies 2006* (Chapter 6) requires the NPS to review roadless and undeveloped areas, including new areas or expanded boundaries within the national park system to determine whether they are suitable for preserving wilderness. The purpose of Chapter 6 of the NPS *Management Policies 2006* is to provide accountability, consistency, and continuity within the NPS wilderness management program, and to otherwise guide servicewide efforts in meeting the letter and spirit of the 1964 Wilderness Act. Chapter 6 of the NPS *Management Policies 2006* addresses all aspects of wilderness management and preservation of designated wilderness in units of the national park system. Chapter 6 of the NPS *Management Policies 2006* requires integrating wilderness considerations into all planning documents to guide the preservation, management, and use of wilderness area in the park and ensuring that wilderness is unimpaired for future use and enjoyment as such. According to Section 6.1, the purpose of wilderness in the national parks includes the preservation of wilderness character and wilderness resources in an unimpaired condition and, in accordance with the Wilderness Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use. The NPS *Management Policies 2006* as it relates to wilderness is discussed in more detail in chapter 4 of this document.

F k gev t a i Q t f g t '63 < Y k f g t p g u i R t g u t x c v k p ' e p f ' O c p c i g o g p v ' e p f ' T g l g t g p e g ' O c p w e n d 63 —

Director's Order 41 interprets the Wilderness Act and consolidates its requirements and all applicable NPS *Management Policies 2006* to set guiding principles for all NPS units to determine wilderness suitability and appropriately manage those lands. Lands identified as being suitable for wilderness designation, wilderness study areas, proposed wilderness, and recommended wilderness must also be managed to preserve their wilderness character and values in the same manner as "designated wilderness" until Congress has acted on the recommendations. Director's Order 41 and Reference Manual 41 provide guidance for applying the minimum requirement concept to protect wilderness, as well as guidance for the overall management, interpretation, and uses of wilderness.

F k gev t a i Q t f g t '34 < E q p u g t x c v k p ' R e p p l p i . ' G p x l t q p o g p w e n d 6 r c e v ' C p c i f u l u ' e p f ' F g e l u k p p ' O c n l p i ' e p f ' J c p f d q q m —

Director's Order 12 (NPS 2011a) and the accompanying handbook (NPS 2001) provide guidance for the NPS to comply with NEPA. Director's Order 12 and the handbook set forth a planning process for incorporating scientific and technical information and establishing a solid administrative record for NPS projects. Director's Order 12 requires that impacts to park resources be analyzed in terms of their context, duration, and intensity.

G p x l t q p o g p w e n d E q o r i k c p e g ' O g o q t c p f w o ' P q 0 G E O ; 9 / 4 —This memorandum provides guidance on implementation of 512 DM Chapter 2, Departmental Responsibility for Indian Trust Resources, and Executive Order No. 13007, Indian Sacred Sites. Chapter 2 requires that for any anticipated impacts to an Indian trust resource from a proposed project or action by a federal agency, the impacts must be addressed explicitly in all planning, decision, and operational documents. Accordingly, the agency must identify and evaluate during the scoping/planning process any anticipated direct or indirect effects on Indian trust resources. If any impact on Indian trust resources is identified, the agency must consult with the affected tribe(s) on a government-to-government basis. Executive Order No. 13007 requires that any executive branch agency with responsibility for federal lands shall, to the extent practicable, permitted by law and not inconsistent with agency functions, (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, and (2) avoid adversely affecting the physical integrity of the sacred sites. In addition, where appropriate, the agencies shall maintain the confidentiality of the sacred sites. The executive order also carries with it the intent that agencies must ensure that any anticipated

effects on Indian sacred sites are identified and evaluated in the scoping/planning process for any proposed federal project and clearly described in the environmental documents for the project. If any impact on Indian sacred sites is identified, the agency must consult with the affected tribe(s) on a government-to-government basis."

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Gxgti nrf gu'P cvkqpenRctniGpcndpi 'Ngi knvqpp.'Rwtr qug.'cpf 'Uli phlecpeg—On May 30, 1934 Congress passed an act authorizing a park of 2,164,480 acres to be acquired through public and private donations (45 Stat. 1443). The park was to be "...wilderness where no development...or plan for the entertainment of visitors shall be undertaken which would interfere with the preservation of the unique flora and fauna and the essential primitive natural conditions now prevailing in the area." It took another 10 years to acquire the lands, but in 1947, the park was established.

Everglades National Park is a public park for the benefit and enjoyment of the people. It is set apart as a permanent wilderness preserving essential primitive conditions, including the natural abundance, diversity, behavior, and ecological integrity of the unique flora and fauna.

Gxgti nrf gu'Y hf gtpgu'Cev'qh3; 9: —In 1978, Congress designated almost 1.3 million acres of wilderness in Everglades National Park under the terms of the Wilderness Act. Originally named "Everglades Wilderness," the name was changed to "Marjory Stoneman Douglas Wilderness" in 1997."

Gxgti nrf gu'P cvkqpenRctniRt qvgevqpp'cpf 'Gzr cpukqp'Cev'qh3; ; : —The following legislative direction is contained within the Expansion Act:

- Congress determined that there are significant adverse effects to the ecosystem from external sources and that the ecosystem should be restored.
- The act directs the Secretary of the Interior to manage the park "in order to maintain the natural abundance, diversity and ecological integrity of the native plants and animals, as well as the behavior of native plants and animals as part of their ecosystem."
- The act directs the Secretary of the Army's water programs to improve water delivery into the park and to restore natural systems in conjunction with the Central and Southern Florida (C&SF) Project. The C&SF project, which was first authorized by Congress in 1948, is a multi-purpose project that provides flood control, water supply for municipal, industrial, and agricultural uses, prevention of saltwater intrusion, water supply for the Everglades, and protection of fish and wildlife resources. The primary system includes about 1,000 miles of levees, 720 miles of canals, and almost 200 water control structures (USACE 2005).
- The act directs the Secretary of the Army to protect natural values in all work performed on the C-111 canal.
- In the EEEA, land acquisition is to be accomplished using 80 percent federal and 20 percent State of Florida funds.
- The act provides for assistance to the State of Florida in land acquisition of the park.
- The act requires the Secretary of the Interior to consult with the USACE on the C&SF project.
- The act authorizes the implementation of the MWD project to restore, to the extent practicable, the natural hydrologic conditions of the Everglades.

- The Secretary of the Interior is authorized to acquire lands and interests in land by donation, purchase with donated or appropriated funds, or exchange.

Ugevkkp'9329'qhv'j g'Qo pldwu'Rwdde'Ncpf u'O cpci go gpv'Cev'qh422;—This act identified a series of parcels at the eastern edge of the EEEA as potential land to be exchanged for the FPL-owned parcel. The act authorized the Secretary of the Interior to exchange NPS land for the FPL property and to convey a perpetual easement on a corridor of land contiguous to the NPS exchange land for the purpose of vegetation management. The land exchange shall be subject to such terms and conditions as the Secretary of the Interior may require.

TGNCVKQPUI R'VQ'QVJ GT'RTQLGEVUCPF 'RNCPU'

The following plans, policies, and actions occurring at or near the park were considered during the development of this EIS. These actions have the potential to contribute to the indirect or cumulative impacts of the potential land acquisition and subsequent development of the transmission corridor and are addressed in “Chapter 4: Environmental Consequences” in this document.

EGPVTGN'CPF'UQWJ GTP'HNQTF C'RTQLGEV'

The C&SF project, which was first authorized by Congress in 1948, is a multi-purpose project that provides flood control, water supply for municipal, industrial, and agricultural uses, prevention of saltwater intrusion, water supply for Everglades National Park, and protection of fish and wildlife resources. The project is operated jointly by the USACE and the local sponsor, the SFWMD. The primary system includes about 1,000 miles of levees, 720 miles of canals, and almost 200 water control structures. These features have divided the former Everglades into areas designated for urban and agricultural development, and areas for fish and wildlife benefits, natural system preservation, and water storage. The natural areas consist of three Water Conservation Areas (WCAs) located north of Tamiami Trail (U.S. Highway 41) and Everglades National Park to the south. The USACE and the SFWMD are continuously evaluating the project, making modifications to the system and the operations of the system in order to meet the purposes of the project.

- **Gxgti nrf gu'Tguqt cvkqp'Vt cpukqp'Rcp' *GTVR+**—The ERTTP is the current operating plan for selected project features which directly impact the WCAs and Everglades National Park, replacing the Interim Operational Plan, which was the operational plan that was in place from approximately 2002 to 2012. The ERTTP defines water management operating criteria for C&SF project features near Everglades National Park and the constructed features of the MWD and C-111 South Dade projects. This plan incorporates more flexible operating criteria than was used in Interim Operational Plan to better manage WCA 3A, focusing on improving conditions for three federally listed threatened and endangered species — the wood stork, the Cape Sable seaside sparrow, and the Everglade snail kite in the park and the WCAs to the north. The ERTTP ROD was signed in October 2012. ERTTP was intended to be a temporary operational plan to bridge the gap between the Interim Operational Plan and a Water Control Plan for the MWD project and the C-111 South Dade project. The USFWS biological opinion for ERTTP expires on January 1, 2016. Either a new biological opinion and/or a revision to the operational plan will be required to continue operations under ERTTP after that date. As a result of completing 1-mile bridge and road removal, the USACE and NPS are implementing up to 3.6 percent increased flows into the EEEA due to the larger conveyance capacity of the opening under the 1-mile bridge, and USACE has determined this does not require a flowage easement from FPL (Goral pers. comm. 2013).

- **Y cvgt 'S wchf 'K r tqxgo gpv'Rt qlgew**—The State of Florida and the EPA have agreed upon new water quality improvement projects for the Everglades. Based on extensive scientific and technical discussions, these projects and strategies will expand water quality improvement projects in an important step forward toward achieving the phosphorus water quality standard established for the Everglades. Under these strategies, the SFWMD is implementing a technical plan to complete six projects that will create more than 6,500 acres of new stormwater treatment areas and 110,000 acre-feet of additional water storage through construction of flow equalization basins. Flow equalization basins are a storage feature used to capture and store peak stormwater flows. They will provide a more steady flow of water to the stormwater treatment areas, helping to maintain desired water levels needed to achieve optimal water quality treatment performance.

The strategies also include additional phosphorus source controls upstream of the stormwater treatment areas – where pollution is reduced at the source – in areas of the eastern Everglades where phosphorus levels in stormwater runoff have been historically higher. In addition, a science plan will ensure continued research and monitoring to improve and optimize the performance of water quality treatment technologies. Design and construction of the treatment and storage projects will be completed in three phases with completion set for 2024.

Gxgti Ncf Gu'T GUVQTCVIQP 'RNCPU'

Regional Everglades restoration plans, most involving water management projects in south Florida to modify and add to C&SF project features, have the potential to alter or improve hydrology and water quality in or near the EEEA and surrounding area. Should all these projects be successfully implemented over the next 30 years, their cumulative impact is expected to improve degraded ecological conditions currently experienced in the park. These projects are described below.

- **O qf Hlhf 'Y cvgt 'F gkxgt lgu'Rt qlgev**—The MWD project was initiated by Congress as part of the Expansion Act, which authorized the park to acquire 109,506 acres including NESRS. The act also directed the USACE to modify the C&SF project to help restore natural hydrology by providing a way for additional water to flow from WCA 3, north of the Tamiami Trail, into the park. Project features should allow for improved quantity, quality, timing, and distribution of water flows into NESRS while mitigating for potential flooding impacts from the project to the 8.5-square-mile area. Construction of the 1-mile Tamiami Trail bridge was completed in March 2013. All other MWD project features have been completed except for raising the remainder of the 10.7-mile highway corridor to allow increased water flow under the Tamiami Trail and into the park; this is expected to be completed in December 2013. In addition, a seepage control feature in the 8.5-square-mile area is expected to be completed in early 2014. An operational plan for the MWD project remains to be developed; however, pilot testing of operational changes is expected to begin in 2014 and a comprehensive water control plan for the MWD project and C-111 South Dade projects is expected to be completed no later than 2018. As a result of completing 1-mile bridge and road removal, the USACE and NPS are implementing up to 3.6 percent increased flows into the EEEA due to the larger conveyance capacity of the opening under the 1-mile bridge, and USACE has determined this does not require a flowage easement from FPL (Goral pers. comm. 2013).

The two components of the MWD project that have not been initiated—the conveyance features to improve flows from WCA 3 to NESRS, and the combined operational plan—will be addressed through the Central Everglades Planning Project (CEPP) described below.

- **Vco lco KvtchlO qf Hlec vqpu<P gzvUgr u'Rt qlgev**—The Tamiami Trail Modifications: Next Steps project was approved in February 2011 and authorized by Congress later that year. The Next Steps project builds on the 1-mile bridge and Tamiami Trail road improvements discussed under the MWD project. The selected alternative for this project includes an additional 5.5 miles of bridging and additional road raising within the 10.7-mile section of Tamiami Trail adjacent to the NESRS. The additional bridging would allow for much greater (i.e., unconstrained) water flows into the park and provide additional hydrological and ecologic restoration of significant park resources. A 2.6-mile western bridge is currently in pre-design. The State of Florida recently committed up to \$90 million to support construction of this bridge, and the President's Fiscal Year 2014 budget proposal includes \$30 million for this bridge; however, Congressional appropriation (or other alternative funding) is needed to fully fund the balance of the project.
- **Ecpn333'E/333+Rt qlgev'O qf Hlec vqpu**—The C-111 project modifications to the C&SF project, referred to as the C-111 project, were authorized by the Water Resources Development Act of 1996 based on the legislative direction contained in the Expansion Act. This project consists primarily of a series of detention basins between Everglades National Park and the southern end of the L-31N canal, pumps to fill the detention basins from the L-31N canal, and modifications to the L-31W and C-111 canals to restore wetlands in the lower C-111 basin. The C-111 project also provided for operational changes in the L-31N and C-111 canals to maintain flood protection for the developed areas to the east

Although the MWD, Next Steps, and C-111 projects will improve ecological conditions in the park, they were never intended to address regional environmental degradation. The CERP was authorized to accomplish restoration of the Greater Everglades ecosystem.

- **Ego r t g j g p u k g ' G x g t i n f g u ' T g u q t c v k p ' R e p**—The CERP, authorized by the Water Resources Development Act of 2000, is a framework to restore, protect, and preserve the water resources of central and south Florida while providing for other water-related needs. CERP is implemented by a partnership of the USACE, SFWMD, and many other federal, state, local, and tribal partners. It provides a framework for restoration of the Everglades while providing for other water-related needs of the region, including water supply and flood protection. The CERP includes more than 60 elements designed to capture, store, and redistribute fresh water previously lost to tide, and to regulate the quality, quantity, timing, and distribution of flows. The USACE is the lead agency for the federal government and the SFWMD is the local sponsor. Implementation of this restoration plan could take more than 30 years to complete and cost at least \$16 billion. A number of CERP projects are intended to provide improvements to flows in and around the park. The projects listed below have the most direct relationship to the park.
- **Y E C ' 5 ' F g e q o r c t w o g p w n k c v k p**—WCA 3 is immediately north of the park, with WCA 3A and 3B separated by the L-67A and L-67C levees and canals. The compartmentalization and constriction of historically broad wetlands, altered hydroperiods, reduction of wildlife, and degradation of water quality are among the environmentally detrimental effects resulting from construction of the C&SF project. This project would reduce barriers to sheet flow such as canals and levees to the extent practicable. The goal is to restore historical sheet flow distributions, depth patterns, hydroperiods, and hydrologic connectivity in the various landscapes within WCA 3 and in the NESRS within the park. The Decomp Physical Model project is a small-scale preliminary pilot project intended to test the Decomp concepts. The Decomp Physical Model is under construction and a 2-year operational test is planned for

2014. Portions of the Decomp project are planned for implementation through CEPP. The remainder of the Decomp project may be implemented after the revised CERP schedule and any project modifications are determined.

- **Gxgt i ncf gu'P cvkqpcnRctnUggr ci g'O cpci go gpv**—The goal of Everglades National Park seepage management is to reduce eastward water seepage from the Everglades system for the benefit of wetland communities within the park. Because of the effects of existing canals, pump stations, and other water control structures providing flood control and water supply, it has long been recognized that controlling fresh water seepage out of natural system areas is necessary to restore ecological function to the park. In addition, increased stages in NESRS as a result of restoration projects would result in increased seepage and the potential for increased flooding in the developed areas to the east. The project would likely include a suite of measures including detention ponds, in-ground seepage barriers, and modifications to adjacent canal water level management to maintain surface and groundwater in the park. Due to costs of the proposed pilot project, the CERP pilot seepage management project has been put on hold, delaying implementation of the CERP Everglades National Park seepage management project. However, a non-CERP pilot project was constructed in 2012 under the auspices of the state-authorized Lake Belt Mitigation Committee. This 2-mile-long, 35-foot-deep seepage barrier along the L-31N canal adjacent to NESRS was built to mitigate for the impacts of rock mining adjacent to the park and the WCAs. Current plans are to build an additional 3 to 5 miles of seepage barrier if the evaluation of this project indicates that it is working as predicted. This would essentially complete a portion of the original CERP seepage management project.
- **E/333'Urt gcf gt 'EcpnRt qlgev**—This project is designed to rehydrate southeastern coastal marshes by restoring more natural overland sheet flow, restoring natural flows to Florida Bay via Taylor Slough, and returning coastal zone salinities in eastern Florida Bay to pre-drainage conditions. The first phase of this project is intended to provide a more natural hydropattern in Taylor Slough by reducing eastward groundwater losses to the C-111 canal system, including features that extend the existing seepage management aspects of the MWD and C-111 projects southward, with additional detention areas and the use of a canal that runs along the park boundary. This project is also intended to minimize damage to Barnes Sound/Manatee Bay and provide flood protection to adjacent agricultural lands. Loss of freshwater from the park into the canal system is frequently observed, and in the wet season, water that would normally flow through Taylor Slough bypasses the park. This project would alleviate the problem of significant diversion of water from Taylor Slough. The project ROD was signed in June 2012. The project is currently in operation, and monitoring is underway to understand the ecological and water management responses.
- **EGTR'O cugt 'Tget gcvkp'Rcp**—The Master Recreation Plan focuses on opportunities to provide recreational features as CERP projects are designed, planned, and implemented. The plan provides guidance for identifying, evaluating, and addressing the impacts of CERP implementation on existing recreational use in the south Florida ecosystem and identifying and evaluating potential new recreation, public use, and public educational opportunities.
- **Egpt cnGxgt i ncf gu'Rcpplpi 'Rt qlgev**—The CEPP was initiated in 2011 for the purpose of expediting the delivery of increased clean water to the Central Everglades and Everglades National Park, including Florida Bay. As of the writing of this document, the draft CEPP Project Implementation Report has been available for public review, and the final Project Implementation Report is expected to be completed in 2014. Pending CEPP authorization and any schedule changes, associated with authorization, CEPP may begin implementation as early as 2019. As currently formulated, CEPP is expected to cost \$1.8 billion, including contingency costs.

- **Y cvgt 'Eqvt qnRcpô** A new operational plan will be needed for operating the completed modifications of the C&SF project described above. The USACE does not have a planned date for completion of the operational plan as it is dependent on other planned restoration projects associated with either the CEPP or the CERP. In addition to the new operational plan, tests of operational changes are planned and are likely to be conducted in coming years.

HRN'VWTMG['RQpV'8'CPF'9'RTQLGEV''

FPL proposes using the property which it would receive through a land exchange as part of a new transmission corridor to service a proposed expansion of electrical generating capacity at its Turkey Point Power Plant. Turkey Point is located 25 miles south of Miami on Biscayne Bay, adjacent to the Biscayne National Park Convoy Point Visitor Center, and 15 miles east of Everglades National Park. The following project components have been considered during the development of this EIS.

- **Vwtng{ 'Rqlpv'Rqy gt 'Rcpv'gzc pukqp**—In June 2009, FPL filed applications with the NRC for a Combined Operating License, with the USACE for a dredge and fill permit, and with the State of Florida (for Site Certification under the Florida Electrical Power Plant Siting Act) for two new nuclear power plants at its Turkey Point site (Units 6 and 7). These new units would produce an estimated 2,200 megawatts (MW) of electricity. The applications include approximately 89 miles of new transmission lines in two corridors required to interconnect the new nuclear units into FPL's transmission system.
- **Y gwtg p'wcpuo kukqp'eqt tlf qt**—FPL's proposed western transmission corridor would be completed from the Clear Sky substation at Turkey Point to the Pennsuco Substation northeast of the park. This is the corridor whose path in the vicinity of the park would be affected by the NPS action taken regarding acquisition of FPL's land. The western corridor includes two options, a 51-mile FPL West Preferred Corridor (including NPS lands being considered for exchange) and a 52-mile FPL West Secondary Corridor on lands currently owned by FPL inside the park. Both corridor options pass through Everglades National Park and eastern WCA 3B. As currently proposed, either western corridor option would include the installation of two 500-kV transmission lines, one 230-kV transmission line and related towers, guy wires, fill pads, and access roads. If FPL lands inside the park are relocated by an exchange, the connecting corridor easements north of Tamiami Trail, held by SFWMD and Florida's Board of Trustees of the Internal Improvement Trust Fund, would also have to be relocated. Relocation would also require easements from the USACE and private landowners across lands in the 8.5-square-mile area east of the park boundary. FPL has completed real estate agreements with these parties to secure a contiguous replacement corridor (FPL West Preferred Corridor). Copies of these agreements and a figure that shows the various land interests are included in appendix C.
- **Gcwtg p'wcpuo kukqp'eqt tlf qt 'wri tcf gu'cpf 'gzc pukqp**—FPL plans to upgrade and expand their eastern power transmission corridor that leads north from the Turkey Point Power Plant and runs through portions of Biscayne National Park, southern suburban areas of Miami, and along U.S. Highway 1 to downtown Miami. This corridor would include one 230-kV transmission line.

FPL must obtain state and federal approvals for the Turkey Point 6 and 7 project. These include the following:

- **Ucvg'qh'Hqt lf c'Ukg'Egt vllcckqp**—The certification process is a legal proceeding overseen by an Administrative Law Judge from Florida's Division of Administrative Hearings. The FDEP administers the processing of FPL's SCA. Final approval for certification will be issued by the Siting Board (Florida Governor and Cabinet) if disputed, or by the FDEP Secretary if not disputed. There are two separate parts of the application: one that addresses the *transmission lines*

and the other related to the *plant and associated facilities*. The SCA schedule anticipates a Siting Board decision on certification in February or March 2014. Certification (licensing) supersedes and encompasses all state and local permits and approvals. Certification does not supersede federal permitting processes. Details about the certification process are available at the FDEP website: <http://www.dep.state.fl.us/siting/apps.htm#ppn1>

- **Rtqr qugf 'Cngt pcvg' Vt cpuo kulkp'Eqt tlf qt u**—The certification process provides opportunity for parties to propose alternate transmission corridors for certification. In December, 2012, the National Parks Conservation Association and the Miami-Dade Limestone Products Association filed proposed alternate western transmission corridors for consideration in the certification process. Miami-Dade Limestone Products Association submitted two corridors and National Parks Conservation Association submitted one corridor. The stated purposes of the corridors are to avoid and minimize impacts of transmission lines on Everglades National Park by relocating the FPL West Preferred Corridor to an area east of the park. The proposed corridors are located in the “area of possible relocated corridor” shown on figure 4 later in this chapter. The FDEP and FPL have accepted the proposed corridors for consideration in the certification process. Maps and descriptions of the proposed corridors are included in appendix D.

On August 30, 2013, FPL entered into an agreement with the Miami-Dade Limestone Products Association (MDLPA) to join in support of a “West Consensus Corridor” as its preferred choice for the construction of transmission lines between the Clear Sky and Pennsuco substations. The West Consensus Corridor is an assemblage of the southern and northern sections of the FPL West Preferred Corridor and the alternate corridor filed in the State of Florida’s site certification proceeding by the MDLPA on December 10, 2012, known as the “MDLPA 2 Corridor.” The agreement was formally introduced in the State of Florida’s site certification hearing. Since the ability of FPL to acquire a new right-of-way within the West Consensus Corridor is uncertain. FPL stated it will continue to seek certification of the original FPL West Preferred Corridor to serve as a backup to the West Consensus Corridor. A copy of the FPL/MDLPA agreement and map of the West Consensus Corridor is included in appendix D.

- **HRN'Y kj f tcy cnlqh'Y gw'Ugeqpf ct { 'Eqt tlf qt**—On October 3, 2013, at the site certification hearing, FPL announced it is withdrawing the FPL West Secondary Corridor from its application for site certification. Citing the agreement with MDLPA, and the intention to pursue certification of the West Consensus Corridor as its preferred western route, FPL stated it no longer seeks certification of the FPL West Secondary Corridor. As a result, FPL is no longer pursuing the state and local government permits needed to construct transmission lines in the FPL West Secondary Corridor.
- **Pweiget 'Tgi wvqt { 'Eqo o kulkp'Ego dlpf 'Qrgtcvpi 'Nlegpug**—The NRC initiated an EIS under NEPA for FPL’s Combined Operating License Application in 2010. The NRC’s EIS is evaluating alternative power plant sites and potential impacts of the entire Turkey Point 6 and 7 project including two new reactors, transmission lines, and related facilities. The USACE and the NPS are cooperating agencies in the EIS process. A substantial schedule delay has occurred while FPL and NRC work to resolve technical issues regarding the alternative power plant sites in FPL’s application. The completion date for the final EIS, previously anticipated in early 2014, is uncertain pending resolution of these issues.

On November 5, 2013, FPL submitted an amendment to its Combined Operating License Application Environmental Report to the NRC. The amendment summarizes the environmental and land use characteristics for the West Consensus Corridor, consistent with the analysis of the FPL West Preferred and FPL West Secondary Corridors presented in the its Combined Operating License Application Environmental Report. FPL also advised the NRC and the USACE that it plans to remove the FPL West Secondary Corridor from consideration as part of its Section 404

permit application. As a result, FPL stated that the FPL West Secondary Corridor need not be considered as part of the NRC's EIS.

- **WUCEG'Engcp'Y cvgt 'CevRgt o k**—The USACE is separately reviewing the FPL CWA Section 404 permit application for the Turkey Point 6 and 7 project. USACE is working with FPL and NRC on the alternative power plant sites issues. USACE has requested that FPL consider alternative western transmission corridors that would avoid adverse impacts to Everglades National Park. As noted previously, FPL notified the USACE on November 5, 2013, that it plans to remove the FPL West Secondary Corridor from consideration as part of its Section 404 permit application. A USACE decision on the Section 404 permit would follow completion of the NRC's final EIS. The EPA has the right to restrict or prohibit wetland fill under Section 404c of the CWA, either in response to a permit application or before a permit application has been submitted. In essence, the EPA has the authority to prevent or restrict the USACE from issuing a Section 404 permit. In the EEEA, some wetlands have already been identified by the EPA as generally unsuitable for fill under Section 404c (USEPA and USACE 1993).

RCTMO CPCI GO GPV'RNCPU'CPF 'RTQLGEVU''

Ncpf 'Rt qvgevklp'Rncp'ht 'vj g'Gcu'Gxgti rcf gu'Cf f klqp—This 1991 plan determined that all lands in the East Everglades Addition are needed for ecosystem restoration, it set priorities for acquisition, and it gave examples of compatible and incompatible land uses. Land acquisition is integral to the restoration of the hydroperiod and sheet flow of the SRS. The plan determined that no private uses of the land will be compatible with this goal over the long term."

The undisturbed, privately owned tracts needed to enhance and restore the ecosystem through restoration of the hydrologic system constituted the top priority for protection. State and other nonfederal public lands comprised the second priority group, and the commercial tracts along U.S. Highway 41 constituted the third priority group. Third-party mineral rights were included in the fourth priority grouping.

Activities that would disturb the ecosystem, interfere with restored hydrologic systems, or prevent public enjoyment of the Addition would be considered incompatible uses. Residential, commercial, or industrial construction or agricultural activities would not be compatible. Major additions to existing developments or agricultural activities, as well as the construction of utility lines and roads, also would not be compatible.

The LPP identified that hunting and off-road vehicle use (e.g., airboats and all-terrain vehicles), except as authorized in the enabling legislation, would not be compatible with the purpose of the addition. A copy of the LLP is included in appendix B.

Ces wklklp'qh'Ncpf u'lp 'vj g'GGGC'wpl gt 'vj g'Gzr cpukp'Cev—Since the 1989 Expansion Act and 1991 LPP were adopted, the NPS Lands Office has pursued a variety of methods in accordance with legislation to acquire lands in the EEEA. Thousands of small, privately owned parcels in the EEEA have been purchased from willing sellers or acquired through the use of eminent domain. As of November, 2013, in addition to the FPL parcel, five properties within the park boundary, all serving commercial uses, remain to be acquired before restoration flows can be implemented in NESRS. The remaining properties within the park include three commercial airboat operations (Coopertown, Gator Park, Everglades Safari Park) and two AM radio properties (Lincoln Financial Media, Salem Communications). The NPS must acquire either fee title or flowage easements on these properties before increased flows can be brought into the park. In addition, the USACE must acquire a flowage easement on the Airboat Association of Florida property adjacent to but outside the park. Figure 3 shows the locations of these properties. Congress has appropriated \$25 million for the acquisition of these properties (excluding the FPL tract); however, the timing of acquisition of these properties is currently uncertain.

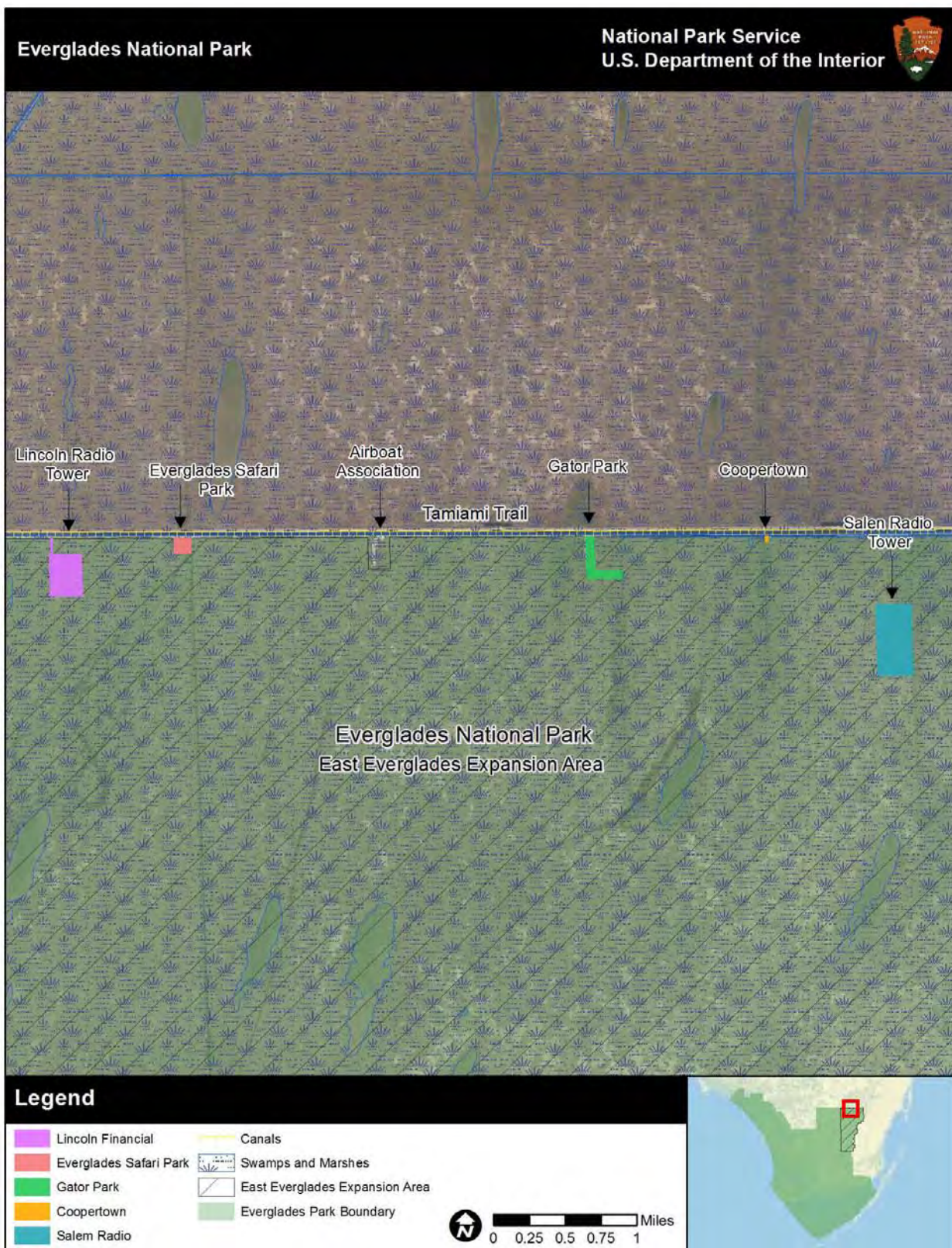


FIGURE 3: LOCATION OF PRIVATELY OWNED PARCELS IN THE EEEA

Gxgti nř gu'P c'vkqpenRetniI O R'TGcu'Gxgti nř gu'Y kf gt pgu'Uwf { 'TGHU—The park is in the process of developing the draft GMP / East Everglades Wilderness Study / EIS, which will include a range of options for resource protection and visitor use in the park over the next 20 years. As part of the GMP process, in order to identify activities desired by park visitors as well as concerns regarding park management, information was collected from the general public and interested parties. The Wilderness Study, which is integrated into the GMP, has found that significant portions of the EEEA are eligible for wilderness designation. The study has found that approximately 102,100 acres are eligible, including the FPL parcel. The draft GMP/EIS public review and comment period concluded in May, 2013. Approval of the final GMP and Record of Decision is anticipated in 2014."

Uqwj 'Hqt kf c'epf 'Ect kldgcp'Retmi'Gzqle'Rep v'O cpci go gpv'Rep'epf 'Gpxk qpo gpwclko rcev' Ucvgo gpv—In 2010, the NPS completed an exotic vegetation management plan, EIS and ROD for the control of nonnative plant species in nine south Florida and Caribbean park units. The plan includes NPS goals and methods for the continued control and reduction of nonnative plant species throughout the Everglades (NPS 2006b). Lands adjacent to the eastern boundary of the park include commercial production of ornamental landscape plants, many of which can become invasive in the subtropical climate found in south Florida. Incompatible land uses in the EEEA prior to its inclusion in the park boundary have also facilitated nonnative plant species growth in the area. As a result, the EEEA and eastern park boundary have been a focus of exotic vegetation management in the park for some years.

Gxgti nř gu'P c'vkqpenRetniHt g'O cpci go gpv'Rep—The park is currently developing a fire management plan and EA that identifies alternatives for implementing NPS and federal wildland fire policies within the park. The EA to accompany the fire management plan will assess the impacts of those alternatives on the natural and human environment. Fire management is an integral part of the park's natural and cultural resource management program and supports the park's management objectives and goals for the future condition of park resources, including the EEEA. Managing the role of fire in park ecosystems is one of the highest natural resource management priorities in the park. Under the fire management plan, park staff implements a variety of fire management techniques, also called treatments, to accomplish land and resource condition objectives and reduce risk to firefighters, public health and safety, and private property. Strategies for implementation would be based on knowledge gained from fire and fuels research, resource monitoring, and decades of experience in the Everglades ecosystem. The draft Fire Management Plan and EA is anticipated to be available for public review and comment in early 2014. Approval of the NEPA decision document and final Fire Management Plan are anticipated in 2014.

Tgugctej . 'łwt xgl u'epf 'b qplkqtłpi 'lp'vj g'GGGC—Park staff and other resource scientists routinely conduct research activities and surveys to monitor park resources within the EEEA. Such activities include the monitoring of hydrologic conditions in the NESRS and special-status species (e.g., wood stork, snail kite, Cape Sable seaside sparrow) use and numbers in the EEEA. This also includes colonial and wading bird surveys and counts.

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As discussed in the “Purpose of and Need for Action” section in this chapter, the focus of this EIS is the acquisition of the FPL corridor located within the park for ecosystem restoration purposes. However, the indirect effects of the proposed action include several different scenarios that involve the potential construction of reasonably foreseeable transmission lines either in corridors inside or outside the park based on various FPL submissions during the site certification process. Because of this, the general project area for analysis includes not only the EEEA but also the area where the transmission lines could be located. That area is

The general project area for analysis includes not only the EEEA but also the area where the transmission lines could be located.

shown on figure 4, and includes the areas in and around the two FPL transmission corridors (the FPL West Preferred Corridor, which includes the proposed exchange corridor, and the FPL West Secondary Corridor; see figure 2) and the area of a possible corridor east of the park. The rationale for the area of possible construction is that if the NPS acquires FPL’s property without providing a replacement corridor within the park, FPL would likely seek to build transmission lines within an area outside of the park to the east. For this reason, an area of possible relocated corridor was identified with the assistance of FPL and other parties as part of a process to identify a potential replacement corridor outside of the park. The project area is the general area where these corridors and area diverge and then rejoin north of the park. That includes lands traversed by the FPL West Preferred and FPL West Secondary Corridors in what is known as the 8.5-square-mile area east of the park, in WCA 3B and the Pennsuco Wetlands north and east of the park, and the area of possible relocated corridor outside and east of the park. The NPS land acquisition action would likely influence which corridor FPL might build future transmission lines in and where the impacts of transmission line construction and operation may result. Although this area covers most of the issues and impact topics discussed below, it should be noted that the areas of analysis were extended beyond this boundary for resources that could be affected outside this boundary, such as birds with extensive foraging areas and local socioeconomics, as noted under descriptions for those resources in chapters 3 and 4 of this document.

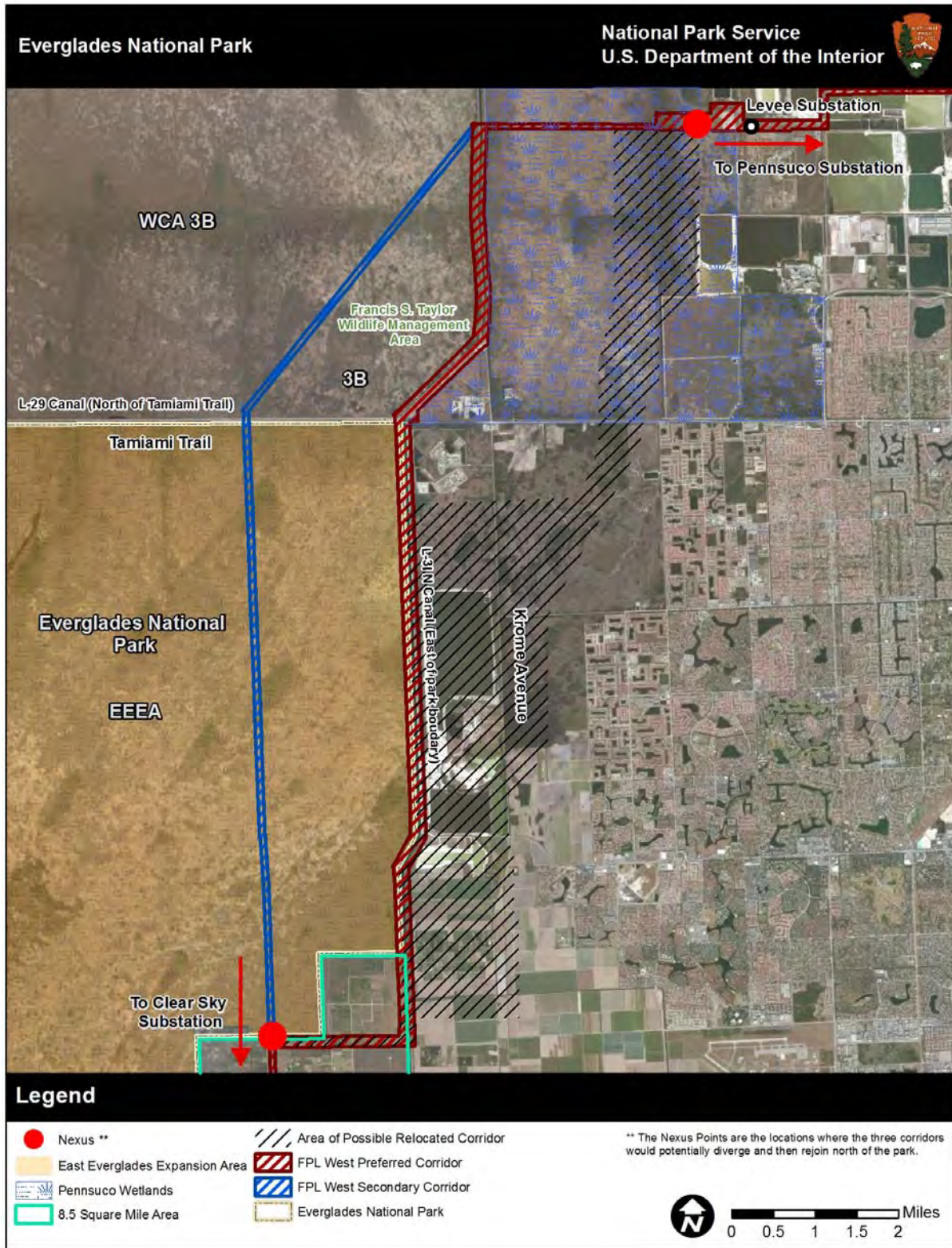


FIGURE 4: GENERAL PROJECT AREA

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KVGTPCN'CPF'CI GPEI 'UEQRPI ''

NEPA regulations require an “early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action” (40 CFR 1501.7). To determine the scope of issues to be analyzed in depth in this EIS, meetings were conducted with park staff, NPS Southeast Regional Office staff, NPS Denver Service Center staff, neighboring land management agencies, and other interested parties. All agencies involved during internal or agency scoping are listed below.

To determine the scope of issues to be analyzed in depth in this EIS, meetings were conducted with park staff, NPS Southeast Regional Office staff, NPS Denver Service Center staff, neighboring land management agencies, and other interested parties.

Hgf gtcnCi gpelgu''

- U.S. Nuclear Regulatory Commission
- U.S. Army Corps of Engineers
- U.S. Bureau of Indian Affairs
- U.S. Fish and Wildlife Service (South Florida Ecological Services Office).
- U.S. Environmental Protection Agency
- Department of Interior, Office of the Assistant Secretary for Fish, Wildlife and Parks, Office of the Solicitor
- National Park Service Washington Office and Southeast Regional Office
- Advisory Council on Historic Preservation

Vtkdcll qxgtpo gpw''

- Miccosukee Tribe of Indians of Florida
- Seminole Tribe of Florida
- Seminole Nation of Oklahoma

Ucwg'Ci gpelgu''

- Florida Department of Environmental Protection
- Florida Fish and Wildlife Conservation Commission
- Florida Department of Transportation
- Florida State Historic Preservation Office
- South Florida Water Management District
- South Florida Regional Planning Council

NqecrCi gpelgu'

- Miami-Dade County Department of Regulatory and Economic Resources
- Miami-Dade County Department of Planning and Zoning

RWDNE'UEQRPI "

On June 7, 2011, Everglades National Park requested public scoping comments on a public scoping newsletter that was distributed by mail and posted on the NPS website. Scoping comments were accepted through July 25, 2011. A public scoping meeting was held on June 22, 2011. During the public scoping period, the park received 10,120 correspondences containing 39,739 individual comments. There were 9,714 form letters received. Public comments submitted during scoping for the EA in 2009 have been carried forward to this project and considered as part of scoping for this EIS.

The comments received were reflective of a public that is passionate about the future of park resources, their uses and management. The most common comment received expressed opposition to installation of any transmission lines in or adjacent to the park, representing 74 percent of all comments. The second most prevalent comment expressed opposition to any land exchange with FPL, representing 25 percent of all comments. Thus, approximately 99 percent of all comments expressed opposition to all transmission line construction or completion of the land exchange for the purposes of constructing a transmission line.

Commenters also contributed ideas for new alternatives and raised specific concerns regarding resource protection and visitor enjoyment of the park. As a result of this scoping effort, additional issues and alternatives were identified for further analysis in this EIS.

The issues identified during internal and public scoping are presented below and in chapter 5 in this document, which contains more details about agency and public scoping activities that were an integral part of the planning process. The final scoping report and public meeting transcript are available on the internet at the project website: (<http://parkplanning.nps.gov/EVER>).

KUWGU'CP F'KO RCE V'VQRKE U'

Impact topics are used to assess the potential environmental consequences of project alternatives. Candidate impact topics were identified based on legislative requirements, executive orders, topics specified in Director's Order 12 (NPS 2011a) and accompanying handbook (NPS 2001), NPS *Management Policies 2006* (NPS 2006a), additional guidance from the NPS, other agencies, public concerns, and resource information specific to the park. Specific impact topics were identified to facilitate a focused discussion allowing issues to be addressed and environmental consequences of project alternatives to be compared. A brief rationale for the selection of each impact topic is presented below. Additionally, the rationale for dismissing specific topics from further consideration is also presented. The following text discusses the issues, which are the basis for the impact topics discussed in chapters 3 and 4 in this document.

KO RCE V'VQRKE U'CP CN[\ GF'RP'VJ G'GPXKTQPO GPVCN'KO RCE V'UVCVGO GP V''

Impact topics analyzed in this EIS will include those resources of concern that could be affected by any one or more project alternatives for acquisition of the existing FPL land within the park. For this EIS, the foreseeable indirect effects of construction and operation of power transmission infrastructure were considered when identifying impact topics. The development of power transmission infrastructure would be reasonably foreseeable because FPL has submitted site certification documents, to state and local

regulatory agencies, requesting approval and permits for two 500-kV lines and one 230-kV power transmission line within the FPL West Preferred Corridor. A certification decision by the Florida Governor and Cabinet, functioning as the Siting Board, is anticipated in February or March 2014. As a result, potential impacts associated with such actions were considered when identifying impact topics. All resources described below are included and described in detail in chapters 3 and 4 in this document.

J { f t qmji {—The proposed project area is within the NESRS, the main historic Everglades ecosystem waterway that conveyed flows from the north into the park. Increasing flows in the NESRS is critical to restoration of the Everglades ecosystem, and the disposition of the FPL parcel or the proposed exchange corridor within the EEEA affects the ability of the park to support the goals of restoring the NESRS. In addition, construction of a transmission corridor and its associated access and spur roads and fill pads could affect overland flows, depth, timing and groundwater movement in and near the project area over both the short and long term.

Y cvgt 'S wcdsvf—As noted under Hydrology, the proposed project area is within the NESRS and the disposition of the FPL parcel or the proposed exchange corridor within the EEEA affects the ability of the park to support the goals of restoring the NESRS. In addition, the construction and installation of transmission line pole pads could affect local water quality over both the short and long term. Construction activities, long-term changes to surface flows and conditions, and expanded exotic vegetation management could affect local water quality in and downstream from the transmission corridor.

Uqlku—Construction activities associated with the installation of a new transmission line would disturb the soil profile and could have potential short- and long-term impacts on soil productivity.

Xgi gvcvkqp'tpf 'Y gvcvpf u—Executive Order 11990, Protection of Wetlands, directs federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Director's Order 77-1 (NPS 2002) addresses wetland protection. Everglades National Park is the only place in the United States jointly designated as an International Biosphere Reserve, a World Heritage Site, and a Wetland of International Importance. These designations are based largely on the unique hydrologic and wetland environment found in the Everglades ecosystem. Currently, Everglades National Park is listed as a World Heritage Site in Danger due to habitat degradation within the park. Construction activities, excavation, placement of fill, expanded exotic vegetation management and potential reintroduction and control of exotic species, and long-term changes in local hydrologic conditions could affect wetlands and vegetation communities in the both the FPL and potential exchange corridors.

Huqgf r rclpu—Executive Order 11988: Floodplain Management instructs federal agencies to avoid, to the extent possible, the short- and long-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct or indirect support of development in floodplains wherever there is a practicable alternative. Director's Order 77-2 (NPS 2003) addresses development in floodplains.

If transmission corridors were constructed in or adjacent to the park, floodplain functions could be affected over the long term. The presence of transmission structures, fill pads, and access roads would interfere with historic overland flows associated with the Everglades floodplain. The presence of the transmission corridor within or adjacent to the park would have the potential to affect natural floodplain functions, such as groundwater recharge, at the specific locations of fill pads and access roads. During construction activities and until vegetation was reestablished on the site, the potential for erosion would temporarily increase.

Uqwpf uecr gu—Soundscapes are the ambient or natural occurring sounds found in a given environment. In much of the EEEA, the undeveloped nature of the area results in a soundscape dominated by natural sounds – breezes, insects, birds, and other wildlife. However, along and in the area south of the Tamiami Trail and along the L-31N canal, nearby vehicle and private and commercial airboat traffic, development, and aircraft overflights introduce manmade sounds to the environment. In the short term, construction activities would disturb the natural soundscapes in areas of the park. In addition, the long-term presence of large-scale transmission lines would introduce a continuous, manmade sound that would be audible above the ambient soundscape in the project area.

Y hf rlg—Construction activities and the long-term presence of large-scale transmission lines have the potential to affect a variety of wildlife species. During construction activities, wildlife would not likely find the construction area suitable habitat due to noise and disturbance. Over the long term, avian species could be affected by guy wires, transmission lines, and structures present in flight paths. Foraging and nesting areas could also be impacted by wetland fill.

Ur gelnucwUrgelgu—Several species listed as protected under the ESA as well as those warranting special protection by the State of Florida have the potential to be affected by the acquisition of the FPL parcel within the EEEA and both the construction and operation of the transmission corridor. For example, the endangered wood stork and Everglade snail kite nest or forage in and near the project area. On December 26, 2012, the USFWS proposed to have the wood stork reclassified from endangered to threatened due to the substantial improvement in the species' overall status. However, because of its large size and flight pattern, the wood stork, in particular, is susceptible to adverse impacts from transmission structures. Additionally, there is concern about the long-term protection of several species of colonial and wading birds that also occur in and near the project area.

Xlgy uj gf 'XkwnTguwt egu—The EEEA is generally undeveloped and the lack of topography and low vegetation provide expansive views of the horizon and skyline. High profile structures and development east of the park currently along Tamiami Trail are clearly visible for distances of several miles or more in the area. Construction of a transmission corridor within or near the park boundary would include long-term presence of 80- to 150-foot transmission structures that would be readily visible on the landscape, affecting the park's viewshed resource.

Y hf gt pgu—The EEEA was studied for wilderness eligibility as part of the GMP process. The Draft GMP/East Everglades Wilderness Study/EIS was released for public comment on February 27, 2013. Areas found eligible for wilderness designation are managed as wilderness under NPS policy. Construction of a transmission line in this area would show the presence of the "hand of man" in the form of large, long-term utility structures and could adversely affect the undeveloped quality of wilderness character. If such structures were constructed in or adjacent to the park, the eligibility of portions of the EEEA to be designated as wilderness could be affected.

Xklsqt 'Wig'cpf 'Gzr gt lgep' T get ge vqp Tguwt egu—The EEEA receives approximately 300,000 visitors annually, including those who enter the park as part of a commercial airboat tour and those visiting the Chekika area. The L-31N canal levee is included as part of the greenway/trail system in Miami-Dade County, and bicyclists and pedestrians often use this area for recreational purposes. High-profile structures are currently clearly visible for distances of several miles or more in the area. The presence of the proposed transmission lines could diminish visitor experiences in the EEEA by interfering with views, natural sounds, and wilderness values, and limiting visitor use, access, and enjoyment in areas of the park."

Cf lcegpvNcpf 'Wigu'cpf 'Rqdegu—The NPS action taken regarding acquisition of the FPL parcel in the park would affect the overall route of the proposed transmission lines from the Turkey Point Power Plant

to areas north of the park. Transmission corridor alignments outside the park could affect adjacent landowners, residents, and businesses, including the Miccosukee Tribe, the USACE, SFWMD, and Miami-Dade County. If the NPS were to acquire the corridor without exchange, FPL would likely relocate the proposed transmission corridor outside the park boundary. In such event, land uses along the selected alignment could also be affected. This topic also addresses land use policies in the park that could be affected by the presence of transmission lines in or adjacent to the park.

Vt klcrlNcpf u'kpenf lpi 'kpf kcp'Vt wu'Tguwt egu—Section 1.11.3 of the NPS *Management Policies 2006* defines trust resources as “those natural resources reserved by or for Indian tribes through treaties, statutes, judicial decisions, and executive orders, which are protected by a fiduciary obligation on the part of the United States” (NPS 2006a). In considering the exchange, the NPS will identify and evaluate the potential effects of the proposed alternatives on tribal trust resources. Requirements for protection of these resources can be found in Section 1.11.3 of the NPS *Management Policies 2006* as well as in the Secretary of the Interior’s Secretarial Order No. 3206, American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, the ESA, and the DOI Environmental Compliance Memorandum No. ECM97-2 (DOI 1997).

There are land areas held in trust for the Miccosukee Tribe that are in the vicinity of the proposed action; therefore, this topic has been included for full analysis.

Uqekgeqpgo leu—In the event that FPL must obtain land outside the park for a new transmission line corridor, nearby rural, suburban and urban communities in south Florida could be affected by the land acquisition and transmission line infrastructure. The main socioeconomic effects of concern include effects on neighboring land values and the effects on FPL ratepayers. Construction of the proposed transmission lines would also support jobs in the local economy on a short-term basis.

RctnlQrgtcvkpu'čpf 'O cpci go gpv—A variety of park operations and management activities in the EEEA could be affected by both the acquisition of the FPL parcel and the construction and operation of a large-scale transmission corridor within or adjacent to the boundary of the park. Resource monitoring and surveys, fire management, and exotic plant control are among the important management activities that take place in and near the project area. The long-term presence of the transmission lines would interfere with aerial survey, exotic plant management access, visitor and resource protection, and fire management response. A vegetation management easement would need to be added to the exchange corridor for FPL management of exotic vegetation adjacent to its transmission line, if the FPL West Preferred Corridor was used for transmission line construction.

KO RCEV'VQRĖUF ĦO ĦUGF 'ĦtQO 'ĦWTVJ GT'CP CNĭ UK''

Impact topics were dismissed from further analysis for the following reasons:

- Resources or values do not occur in the analysis area;
- Resources or values would not be affected by the proposal, or the likelihood of impacts is not reasonably expected; or
- Through the application of mitigation measures, there would be negligible effects (i.e., no measurable effects) from the proposed actions, there is little controversy on the subject or reasons to otherwise include the topic.

A brief rationale for the dismissal of the following impact topics is provided below. If impacts to these resources would occur, they would be no more than negligible, localized, or most likely undetectable.

Clean Air Act—The park has a Class I clean air status. Areas with such a designation are subject to the most stringent regulations with very limited increases in pollution permitted. The high air quality in the Everglades is a valuable park resource, encouraging visitation by providing clean air and high visibility to compliment the unique ecosystem experience. The Clean Air Act of 1963 (42 USC 7401) requires federal land managers to protect air quality and the NPS *Management Policies 2006* direct air quality to be analyzed when planning park projects and activities.

The action to acquire FPL's land would result in no activities that would affect air quality. However, construction activities associated with the development of a power transmission corridor – regardless of the selected alternative – would result in limited air quality impacts from material haul truck vehicular movements and fugitive dust. A construction management plan would be put in place which would mitigate adverse effects from construction vehicles by restricting idling time, among other activities. As a result, construction activities associated with the action alternatives would not measurably contribute to adverse air quality conditions or affect visitors and/or staff. Should transmission lines be constructed in or adjacent to the park, wetland conditions of the project area would limit generation of fugitive dust during construction. If dust were generated during construction, best management practices (BMPs) for dust suppression would be initiated.

Environmental Regulations—The NHPA (16 USC 470 et seq.), NEPA, NPS 1916 Organic Act, the NPS *Management Policies 2006* (NPS 2006a), Director's Order 12 (Conservation Planning, Environmental Impact Analysis and Decision-making), and NPS Director's Order 28 (Cultural Resources Management Guideline) require the consideration of impacts on any cultural resources that might be affected, and, in particular, on cultural resources either listed in or eligible to be listed in the *National Register of Historic Places* (NRHP). The process and documentation for preparing this EIS will be used to comply with Section 106 consultation of the NHPA of 1966.

Consultation with the Florida State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP) began for this EIS process with the submittal of letters to the SHPO and the ACHP describing the land exchange project, dated June 8, 2011. Tribes (Miccosukee Tribe of Indians of Florida, Seminole Tribe of Florida, Seminole Nation of Oklahoma) were also notified by letters that were prepared and sent from June 8–10, 2011. Copies of these letters are contained in appendix E of this EIS. An interagency meeting held on June 26, 2012 to discuss possible routes outside the park included representation from the Miccosukee Tribe. Tribal and agency consultation correspondence is available in appendix E."

Potential impacts of the land exchange and foreseeable construction of transmission lines in the corridors in the park include disturbance of soils and underlying rock material that may affect previously unknown archeological resources. The NPS also considers effects on historic structures, ethnographic resources, cultural landscapes, and museum collections in its assessment of cultural resources. All of these types of cultural resources are included in the discussion below.

Effects on Cultural Resources in the Park—There are no known cultural resources of any kind on NPS lands being considered for exchange (i.e., along the FPL West Preferred Corridor). In July 2009, New South Associates conducted an archeological and historical Phase I survey of the 6.5-mile exchange corridor on behalf of FPL. New South Associates identified no cultural resources within the corridor during the investigation. New South Associates determined that the construction of the transmission lines would have no effect on cultural resources listed, or eligible for listing, on the National Register of Historic Places. The Florida SHPO reviewed New South Associates' report and concurred with these determinations on October 1, 2009. The NPS knows of no ethnographic resources or cultural landscapes in this area, and no museum collections would be affected. In addition, a USACE Section 404 permit with Section 106 consultation and avoidance/mitigation measures would be needed prior to any construction of

transmission lines in this corridor. In its SCA, FPL has indicated that following selection of the final right-of-way to be used within the certified transmission line corridor, they will conduct a survey of sensitive cultural resource areas within the right-of-way in consultation with the Florida Department of State, Division of Historic Resources. Also, if cultural resources are discovered during construction activities on NPS property, FPL will be required to immediately inform the park superintendent (or representative) and work with the Florida SHPO to define appropriate mitigation measures. Any artifacts found on NPS lands are recognized as the property of the NPS.

There are also no known cultural resources of any kind on FPL's property in the expansion area within the FPL West Secondary Corridor, but there has not been a 100 percent inventory in this area to date. A survey of these lands would need to be conducted prior to any construction of transmission lines. In its SCA, FPL has indicated that following selection of the final right-of-way to be used within the certified transmission line corridor, they will conduct a survey of sensitive cultural resource areas within the right-of-way in consultation with the Florida Department of State, Division of Historic Resources. A USACE Section 404 permit with Section 106 consultation and avoidance/mitigation measures would be needed prior to any construction of transmission lines in this corridor.

Effects on Cultural Resources outside the Park—Construction of transmission lines in those sections of the FPL West Preferred or FPL West Secondary Corridors located outside the park could potentially impact cultural resources. The park does not have data on cultural resources in those portions of the corridors; therefore potential impacts from construction of transmission lines in the corridors is unknown/uncertain. However, a USACE Section 404 permit with Section 106 consultation and measures to avoid/mitigate impacts would be needed prior to construction of transmission lines in either corridor outside the park. Also, a Preliminary Cultural Resources Report for the Turkey Point 6 and 7 Associated Linear Facilities is included as Appendix 10.7.2.2 of FPL's SCA. This report provides a preliminary assessment of known cultural resources within and adjacent to the entire length of the FPL West Preferred and FPL West Secondary Corridors for the proposed transmission lines. Following selection of the final right-of-way within the certified transmission line corridor, FPL will conduct a survey of cultural resources within that right-of-way in consultation with Florida Department of State, Division of Historic Resources (Florida SHPO). A July 13, 2009 letter from the SHPO to FPL concurs with FPL's Cultural Resource Assessment Survey Work Plan for the Turkey Point 6 and 7 Associated Linear Facilities outlined in the letter. The work plan outlines the surveys, inadvertent finds plan and consultation that would occur prior to construction of transmission lines.

Construction of transmission lines in a relocated corridor east of the park could potentially impact cultural resources. However, the location of the route FPL would use, and the potential effects on cultural resources, are uncertain at this time. The park does not have complete data on cultural resources in the area of possible relocated corridor, but a survey of cultural resources would be required and a USACE Section 404 permit with Section 106 SHPO consultation and avoidance/mitigation measures would be needed prior to any construction of transmission lines in a relocated corridor. Based on the siting work conducted to identify the area of possible relocated corridor for this route, no historical structures or features were identified, and there are no NPS-recognized cultural landscapes, ethnographic resources, or museum collections associated with lands outside the park.

Conclusion—Based on the information provided above, especially the lack of any such resources in the exchange corridor, the lack of any cultural landscapes and ethnographic resources in this area of the park, the lack of information about cultural resources outside the park in the area of possible relocated corridor, and the provisions in place for archeological/cultural resources survey and review required through the permitting process for any route location, the topic of cultural resources was not carried through for detailed analysis.

Endo cvg'Ej cpi g—Climatologists are unsure about the long-term results of global climate change, but it is evident that the planet is experiencing a warming trend that affects ocean currents, sea levels, polar sea ice, and global weather patterns. Although these changes are likely to affect climate patterns in the parks, it would be speculative to predict localized changes in temperature, precipitation, or other weather changes, in part because there are many variables that are not fully understood and others which are not currently defined. In addition, the action taken by the NPS regarding acquisition of FPL land within the park would neither affect nor be affected by climate change.

Geqmi lecmf 'Et lklecrfCtgeu—The unique and ecologically critical resources of the Everglades will be addressed in other impact topics, including hydrology and water quality, wetlands, and special-status species.

Gpgti { 'Tgs wlt go gpw't'pf 'Eqpugt xcvtqp 'Rqvgpvcn—The NPS reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost-effective technology. Energy efficiency is incorporated into the decision-making process during the design and acquisition of buildings, facilities, and transportation systems that emphasize the use of renewable energy sources. Although FPL's actions would be in response to regional energy usage, no part of the federal action alternatives would include actions that would require increased energy usage.

Gpxkt qpo gpvcrfLwuleg—Presidential Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, as amended, directs all federal agencies to develop an environmental justice strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. CEQ has oversight responsibility of the federal government's compliance with Executive Order 12898 and NEPA. CEQ, in consultation with the EPA and other agencies, has developed guidance to assist federal agencies with NEPA procedures so that environmental justice concerns are effectively identified and addressed.

A description of environmental justice developed by the EPA follows:

...fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. ...The goal of this "fair treatment" is not to shift risks among populations, but to identify potential disproportionately high and adverse effects and to identify alternatives that may mitigate these impacts.

According to guidance from CEQ (1997a) and the EPA (USEPA 1998), agencies should consider the composition of the affected area to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by a proposed action and, if so, whether there may be disproportionately high and adverse environmental effects to those populations. Minority and low-income populations are near the alternative corridors and the area of possible relocated corridor. Low-income populations were determined by identifying 2010 census block groups with populations where more than 20 percent of the population falls below the poverty threshold (U.S. Census Bureau 2010a). Minority populations were determined by identifying the 2010 census blocks where minority populations were 10 percent more than the county minority population of 85 percent. Therefore, a census block was identified as a minority block if more than 95 percent of its population was identified as a minority.

Within Miami-Dade County, there are 38,790 census blocks and 1,594 census block groups. Of the 1,594 block groups in the county, 421 block groups (26 percent) have 20 percent of the population living below the poverty threshold. There are 19 total block groups within 1 mile of the eastern boundary of the area of possible relocated corridor. Of those 19 block groups, only one block group was identified with low-income populations.

Within Miami-Dade County, there are 38,790 census blocks, of which 10,698 (27 percent) have populations with minorities accounting for over 95 percent of their residents. Within 1 mile from the area of possible relocated corridor, there are 429 census blocks, and in 81 blocks (19 percent) more than 95 percent of the population is identified as minority. The remaining census blocks have either no populations or populations with minorities accounting for less than 95 percent of the total populations.

As described in the section on Indian Trust Resources, the Miccosukee Tribe has resources held in trust, including a casino property, in the vicinity of the FPL West Preferred Corridor. To ensure a conservative analysis, the Miccosukee Tribe is considered to be a minority community that could be affected by one or more of the alternatives considered.

No residential areas associated with the Miccosukee Tribe are expected to be impacted by the possible locations of the transmission corridor. The commercial gaming facility and tobacco store are the only establishments that may be indirectly impacted by the land exchange. The potential for the construction of a transmission line in the viewshed of the gaming facility is addressed in the visual impacts analysis. An inquiry with the gaming facility determined that the price for hotel rooms is determined by room size and amenities. It is not dependent on or affected by the view from the room. Therefore it was determined that no economic consequences would arise from the alternatives or their foreseeable indirect impacts.

Environmental justice is dismissed as an impact topic for the following reasons:

- The impacts associated with implementation of the proposed alternatives would not disproportionately adversely affect any minority or low-income population or community since there are many more non-environmental justice populations than environmental justice populations residing within 1 mile of the area of possible relocated corridor.
- Implementation of the proposed alternatives would not result in any identified effects that would be specific to any Indian, minority, or low-income community.
- Any impacts to the socioeconomic environment would not appreciably alter the physical or social structure of the nearby communities.

Ucetgf 'Ukgu—The NPS has considered the requirements of Executive Order No. 13007, dated May 24, 1996, regarding the duties of agencies with respect to sacred sites. For purposes of the Executive Order, “sacred site” means “any specific, discrete, narrowly delineated location on federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.” NPS staff, in consultation with the Miccosukee Tribe of Indians of Florida, Seminole Tribe of Florida, and the Seminole Nation of Oklahoma, identified no lands requiring additional analysis of impacts arising from this Executive Order.

J gcnj 'tɔpf 'Uchlɔɔ—Health and safety including electric and magnetic fields and general health and safety issues are discussed below.

Electromagnetic Fields (EMFs)—EMFs are produced when electricity is passing through an object, (i.e., a transmission line) and results in a field of electrically charged particles. Electric fields are essentially constant and do not change with demand fluctuation on the electric system. Magnetic fields are created by current (measured in Amperes) flowing in a conductor. Magnetic fields are quite variable and change proportionally with demand changes in the electric system. Both of these fields are commonly produced by electrical wires. Electric fields are measured in Volts per meter (V/m); these fields are easily shielded by common materials. Many years of research conclude that electric fields are much less of a health concern. Magnetic fields are typically measured in Gauss (G); these fields are more difficult to shield and pass through most materials (NIEHS 2002).

Since the late 1970s, concerns have been raised about the possible health effects regarding the impact of EMF associated with high-voltage transmission lines on human health. Due to their size and visibility, transmission lines have attracted a large amount of media attention related to health and safety. Numerous studies have been performed by epidemiologists, biologists, and other experts in the field to determine if there is a measurable connection between human health and high-voltage transmission lines. Since 1977 over 130 reviews by expert scientific panels, public health organizations and governmental bodies have examined the scientific evidence on EMF (NIEHS 2002). None of these organizations has found that exposure to power frequency EMF causes or contributes to cancer or any other disease or illness. Their reviews generally conclude that while some epidemiology studies report an association with childhood leukemia, which warrants further research, the scientific studies overall have not demonstrated that EMF causes or contributes to any type of cancer or other disease.

The State of Florida established limits on electric and magnetic field exposure from electric facilities in 1989. The Florida legislature granted the FDEP exclusive jurisdiction to regulate EMF associated with electric facilities and required it to establish rules regulating EMF exposure from those facilities. Future facilities built in the FPL transmission corridors must comply with the Florida EMF regulations specified in Section 62-814 Florida Administrative Code (F.A.C.) (the Florida EMF Rule). The FDEP regularly reviews the EMF science and has not made any changes in the state's EMF standards.

Public use in the vicinity of the FPL transmission lines would likely be incidental and not involve exposure for extended periods, and all Florida EMF regulations would be followed. Because there is no conclusive evidence that EMFs result in adverse health effects and the lines would operate below all standards set by the state of Florida, this topic was not carried forward for further analysis in this EIS.

General Health and Safety—The acquisition of the FPL parcel would have no effects related to health and safety; however, this action would likely result in FPL implementing a power transmission development project as described in chapter 2 in this document. During construction, workers would be exposed to physical hazards from the use of heavy equipment, power saws, falling vegetation, exposure to herbicides, insect stings and animal bites, noise exposure, trips and falls, and heat stress. It is expected that proper training, health and safety planning, daily safety briefings, and observance of safety practices would minimize or eliminate the safety risks associated with construction in the construction zone.

It is also expected that the general public would be protected by appropriate notices, signage, and access limitations. FPL must comply with the standards of the National Electrical Safety Code, as required by the Public Service Commission, in Section 25-6.0345, F.A.C., in the construction of transmission and distribution facilities. The Florida legislature has determined that the standards prescribed by the National Electrical Safety Code constitute “acceptable and adequate requirements for the protection of the safety of the public, and compliance with the minimum requirements of the code shall constitute good engineering practice by the utilities.” When in operation, the prospective subsequent FPL facilities will comply in all respects with the National Electrical Safety Code standards.

FPL standards require that fences and gates within a transmission line be grounded to mitigate shock hazards. FPL would provide this grounding as part of its construction activities.

Fixed-wing aircraft and helicopters are both used to conduct operations within the EEEA such as inventory and monitoring activities, search and rescue missions, and fire management. These flights would frequently occur in the vicinity of any transmission lines constructed in that area; however, the presence of the lines would be known and identified during pre-flight preparation, similar to precautions taken for other above-ground utility lines in the area surrounding the park boundary. Hazards related to this would be minimized through careful planning of flight activities in the vicinity of any transmission lines, and identification of transmission lines as potential flight hazards on aviation charts and with lighting, as necessary in accordance with FAA guidelines.

Therefore, the topic of health and safety was not carried forward for detailed analysis.

P cwt cñqt 'F gr rgwcdng'Tguqwt eg'Tgs wlt go gpw't pf 'Eqpugt xc vñqp'Rqvgp vñcn—The NPS uses sustainable practices to minimize the short- and long-term environmental impacts of development and other activities through resource conservation, recycling, waste minimization, and the use of energy-efficient and ecologically-responsible materials and techniques. This topic was dismissed because project impacts are addressed specifically under hydrology, vegetation and wetlands, wildlife, and special-status species.

Rtlo g'Hcto ñpf—Prime farmland has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Unique agricultural land is land other than prime farmland that is used for production of specific high-value food and fiber crops. Both categories require that the land is available for farming uses. Land within the park is not available for farming and therefore does not meet the definitions. The agricultural lands outside the park in the area of possible relocated corridor are not classified as prime farmland by the Natural Resources Conservation Service (NRCS 2013). One soil unit in the area outside the park is classified as “farmland of unique importance,” and impacts to this soil are addressed in the soils section of the EIS.



CHAPTER 2

Alternatives

EJ CRVGT '4<CNVGTP CVK&GU'

IP VTQF WE VKQP "

Ej cr vgt '4'f guetldgu'yj g'tcpi g'qh'cngtpevk&gu'yj cv'o ggvyj g'P cvkqpcnRctnUgtxleg*P RU'r wtr qug'cpf 'pggf " hqt'yj g'r tqlge0Cu'f guetldgf 'lp'ej cr vgt'3.'yj g'r wtr qug'qh'yj g'hgf gtcn'cev&qp'ku'vq'ces vkt g'Hqtkf c'Rqy gt'cpf " Nki j v'Ego r cp{ '*HRN'r tqr gt v{.'qt'uwHlekgpv'lpvgtgu'lp'yj ku'r tqr gt v{.'y kj kp'yj g'Gcu'Gxgti rcf gu" Gzr cpukqp'Ctgc'*GGC+0Vj ku'cev&qp'd{ 'yj g'P RU'ku'pggf gf 'vq'hcekrkcv'yj g'j { f tqmji ke'cpf 'geqmji ke" tguqtcv&qp'qh'Gxgti rcf gu'P cvkqpcnRctn'cpf 'yj g'Gxgti rcf gu'gequ{ ugo 0Vj ku'ej cr vgt'lpemf gu'c'owo o ct{ " qh'yj g'cngtpevk&gu'f gxgnr o gpv'r tqegu'cpf 'c'f guetkr vkqp'qh'gcej "cngtpevk&g'hqt'ces wuk&qp'qh'yj g" gzknkpi 'HRN'rcpf 'y kj kp'yj g'r ctn0'

Vj ku'ej cr vgt'cnuq'f kuewuugu'cngtpevk&gu'hqt'ces wuk&qp'qh'yj g'HRN'r tqr gt v{ 'yj cv'y gtg'eqpukf gtgf.'dw' grko lpcvgf 'htqo 'hwtj gt'eqpukf gtcv&qp.'cpf 'cf f tguugu'ugrgev&qp'qh'c'r tghgttgf 'cngtpevk&g'cpf " gpxktqpo gpvcn{ 'r tghgtcdng'cngtpevk&g0Hlpcn{.'yj tgg'vcdngu'ctg'lpemf gf 'cv'yj g'gpf 'qh'yj ku'ej cr vgt0Vcdng'3" uwo o ct{k gu'yj g'o clp'hgcwtgu'qt'eqo r qpgru'qh'gcej "cngtpevk&g0Vcdng'4"uwo o ct{k gu'yj g'ghgevk&gpguu'qh' gcej "cngtpevk&g'lp'o ggkpi 'r tqlge'vqdlgev&gu.'y j lej 'ctg'rkvgf 'lp'ej cr vgt'30Vcdng'5"uwo o ct{k gu'yj g" lo r ceu'qh'yj g'cngtpevk&gu'qp'yj g'pcwtcn'cpf 'j wo cp'gpxktqpo gpv.'y j lej 'ctg'f kuewuugf 'lp'f g'ckn'lp" ej cr vgt'60'

CNVGTP CVK&GU'F GXGNQRO GP V'RTQE'GU'

Vj g'P cvkqpcnGpxktqpo gpvcn'Rqrk{ 'Cev*P GRC+'lo r ngo gpv'ki 'tgi wrcv&qp'u'r tqxkf g'i wkf cpeg'qp'yj g" eqpukf gtcv&qp'qh'cngtpevk&gu'lp'cp'gpxktqpo gpvcn'ko r cev'ucvgo gpv*GKU+0Vj gug'tgi wrcv&qp'u'tgs vkt g" hgf gtcn'ci gpekgu'vq'eqpukf gt'yj g'gpxktqpo gpvcn'ghgeu'qh'yj g'r tqr qugf 'cev&qp'cpf 'c'tcpi g'qh'cngtpevk&gu' *62'EHI'372406+0Vj g'tcpi g'qh'cngtpevk&gu'lpemf gu'tgcuqpcdng'cngtpevk&gu'yj cv'o wu'dg'tki qtqwu' 'cpf " qdlgev&gn{ 'gzr nrtgf.'cu'y gni'cu'qy gt'cngtpevk&gu'yj cv'tg'grko lpcvgf 'htqo 'f g'ckngf 'uwf { 0Vq'dg" otgcuqpcdng'o'cp'cngtpevk&g'o wu'o ggvyj g'ucv&g'f 'r wtr qug'qh'cpf 'pggf 'hqt'yj g'r tqlgev'cpf 'o wu'dg" v&ej p'ecm{ 'cpf 'geqpqo kcm{ 'hgcukdng0'

Vj g'cngtpevk&gu'yj gtg'f gxgnr gf 'dcugf 'qp'cp'wpf gtucpf lpi 'qh'yj g" r wtr qug.'pggf.'cpf 'qdlgev&gu'hqt'ces vkt lpi 'HRN'r tqr gt v{.'cu'y gni' cu'kpr w'htqo 'HRN.'yj g'r wdrlk.'cpf 'i qxgtpo gpv'ci gpekgu'qdcv&kgf " f wtkpi 'yj g'ueqr lpi 'r j cug'hqt'yj g'gpxktqpo gpvcn'cuuguo gpv*'GC+' lp'422; 'cpf 'yj ku'GKU'lp'42330P RU'uvch'i'tguqwtg'o cpci gtu'htqo " yj g'r ctm'P cr ngu'Ncpf u'Ces wuk&qp'Qhleg.'Uqwj gcu'T gi kqpcn' Qhleg.'cpf 'Y cuj lpi vqp'Qhleg+'cpf 'WUOF gr ctvo gpv'qh'yj g" k'pvtlqt '*F QK'uvch'i'htqo 'yj g'Uqnekqt&u'qh'hleg'cpf 'Cuukucpv' Ugetgvt { 'hqt'Hkuj 'cpf 'Y kfr klg'cpf 'Rctm+'f ghkpgf 'yj g'tcpi g'qh' cngtpevk&gu'dcugf 'qp'yj g'qdlgev&gu'qh'yj ku'GKU.'eqpi tguukqpcn' rgi kurv&qp.'cpf 'ueqr lpi 'lpr w0'

The alternatives were developed based on an understanding of the purpose, need, and objectives for acquiring FPL property, as well as input from FPL, the public, and government agencies obtained during the scoping phase for the EA in 2009 and this EIS in 2011.

TGNCVQPUJ KR'DGVY GGP 'PRU'

CES WUK&KQP'CNVGTP CVK&GU'CPF 'VTCP UO KUKQP 'NKP G'

EQP UVT WE VKQP 'UEGP CTKQU'

Cu'f guetldgf 'lp'ej cr vgt'3.'yj ku'GKU'cf f tguugu'r qv'gpvcn'ko r ceu'qp'yj g'pcwtcn'cpf 'j wo cp'gpxktqpo gpv'yj cv" o c{ 'tguwn'htqo 'yj g'ces wuk&qp'qh'HRN'rcpf 'lp'yj g'r ctn'cpf 'yj g'lpf k'gevk'o r ceu'yj cv'eqw'f 'tguwn'htqo 'yj g"

uudugs wgpv'eqputwekqp"cpf "qr gtcvkqp"qh'tcpuo kuukqp'rkpgu'yj cv'eqwrf "dg'dwkn'gkij gt'lpukf g'qt"qwuikf g'yj g" r ctnl'cu'c'tguwn'qh'yj g'P RU'cevkkp'cngp0Cnj qwi j "yj g'P RU'f qgu'pqv'j cxg'tgur qpukdkkx\ "vq'ej qqug'qt" cwj qtkl g'yj j gtg'HRN'dwrf u'tcpuo kuukqp'rkpgu.'k'ku'tgcuqpcdn\ "hqtguggcdng'yj cv'HRN'y kn'dwrf " tcpuo kuukqp'rkpgu.'cu'lpf lecvgf "d{ "yj g'qpi qkpi "ucvg'ukg'egt'khec'vkqp'r tqegu0Gcej "qh'yj g'r quukdrng'cevkkpu" P RU'eqwrf "ugrgev'yj kj "tgur gev'vq'ces wkuukqp'qh'yj g'HRN'eqttkf qt "y kj lp'yj g'r ctnl'cngtpcvkxgu+."j cu'ugxgtcnl r quukdrng'qr vkpu'uegpctkqu+yj j gtg'yj g'HRN'tcpuo kuukqp'rkpgu'o c{ "wnko cvgn\ "dg'eqputwevfg O'

Dgrny "ctg'yj g'cngtpcvkxgu"cpf "r quukdrng'tcpuo kuukqp'rkpg" eqputwekqp'uegpctkqu'f kuewuugf 'lp'yj ku'ej cr vgt O'

Although the NPS does not have responsibility to choose or authorize where FPL builds transmission lines, it is reasonably foreseeable that FPL will build transmission lines, as indicated by the ongoing state site certification process.

CNVGTPCVKXGU'

3c<P q'P RU'cevkkp"o'P q'HRN'Eqputwekqp"*P RU'cngu'pq" cevkkp.'HRN'p'gkij gt'dwrf u'tcpuo kuukqp'rkpgu'pqt'r tqxkf gu" hny ci g'gcugo gpv'qp'yj gk'tcpf u"

Hqt'ko r cev'eqo r ctkuqp'r vtr qugu.'yj ku'cngtpcvkxg'ku'yj g" gp'ktpo gpv'ndcugrkpg'vq'yj j lej "cm'qij gtu'ctg'eqo r ctgf O'

3d<P q'P RU'cevkkp"o'HRN'Eqputwekqp'lp'yj g'Rctm'P RU' cngu'pq'cevkkp.'HRN'dwrf u'tcpuo kuukqp'rkpgu'lp'yj g'r ctnl'dw'f qgu'pqv'r tqxkf g'P RU'yj kj "hny ci g" gcugo gpv"

4< P RU'ces wkuukqp"qh'HRN'Ncpf "

5< Hgg'hqt'Hgg'Ncpf "Gzej cpi g"

6< Gcugo gpv'hqt'Hgg'Ncpf "Gzej cpi g"

7< Rgrt gwcrlHny ci g'Gcugo gpv'qp'HRN'Rtqr gtv\ "

VTCPUO KUUKQP'NPG'EQPUTWEVKQP'UEGPCTKQU'

c< P q'eqputwekqp"

d< Eqputwekqp"qp'yj g'gzkukpi 'HRN'eqttkf qt'yj tqwi j "yj g'r ctnl'*HRN'Y guv'Ugeqpf ct{ 'Eqttkf qt+"

e< Eqputwekqp"qp'yj g'gzej cpi g'eqttkf qt'cv'yj g'gf i g'qh'yj g'r ctnl'*HRN'Y guv'Rtghgtgf 'Eqttkf qt+"

f< Eqputwekqp"qp'c'eqttkf qt'qwuikf g'qh'yj g'r ctnl'*vq'yj g'gcuvt"

Vj gug'tcpuo kuukqp'rkpg'eqputwekqp'uegpctkqu'f gr gpf 'lp'r ctv'qp'yj g'cngtpcvkxg'yj cv'ku'ugrgev'f "d{ "yj g" P RU'tgi ctf lpi "yj g'rcpf "ces wkuukqp.'dw'cnuq'qp'hcwqtu'yj cv'ctg'dg{ qpf "yj g'eqptqnl'qh'yj g'P RU'Gxgp" yj qwi j "yj gug'qweqo gu'ctg'pqv'r ctv'qh'yj g'cngtpcvkxg'ugrgev'f "d{ "yj g'P RU.'yj g{ "j cxg'dggp'eqpukf gtgf 'lp" yj ku'GKU'dgecvug'yj g{ "tgr tgupv'yj g'tcpi g'qh'lpf k'gev'ko r ceu'yj cv'eqwrf "wnko cvgn\ 'tguwn'ltqo "yj g'cevkkp" cngp'd{ "yj g'P RU'Uqo g'qh'yj g'cngtpcvkxgu'eqwrf 'tguwn'lp'o wnr rg'uegpctkqu."cpf "uqo g'qh'yj g'uegpctkqu" eqwrf "qeewt'wpf gt'o wnr rg'cngtpcvkxgu'0Hqt'yj g'ucng'qh'entkv\ ."yj g'P RU'f gekf gf "pqv'vq'tgr gcv'yj g" f guetk'vkqp"cpf "cpn\ uku'qh'gxgt{ "qpg'qh'yj g'r quukdrng'uegpctkqu'k'k'ku'ctgcf { "f guetkdgf "wpf gt'cpqj gt" cngtpcvkxg O'

Vj g'uegpctkq'qh'pq'eqputwekqp'ku'cpn\ | gf "wpf gt'cngtpcvkxg'3c."cpf "ugt'xgu'cu'yj g'gp'ktpo gpv'cn' dcugrkpg0Vj g'uegpctkq'qh'eqputwekqp"qp'yj g'gzkukpi 'HRN'eqttkf qt'yj tqwi j "yj g'r ctnl'ku'cpn\ | gf "wpf gt" cngtpcvkxg'3d.'cu'c'r quukdrng'cndgk'wp'rkngn\ +tguwn'qh'P RU'cni'pi "pq'cevkkp0Vj g'uegpctkq'qh'eqputwekqp" qp'yj g'gzej cpi g'eqttkf qt'cv'yj g'gcuvgtp'gf i g'qh'yj g'r ctnl'ku'cpn\ | gf "wpf gt'cngtpcvkxg'5'cpf "6"*cpf "f k'htu' urki j w\ "dgy ggp'yj g'y q'cngtpcvkxgu.'f wv'vq'yj g'f k'htgtpv'vto u'cpf "eqpf k'kpu'wpf gt'yj qug'y q" cngtpcvkxgu+0Cngtpcvkxg'7'cpn\ | gu'c'f k'htgtpv'*cpf "r tqdcdn\ "cnuq'wp'rkngn\ +xgtukqp'qh'yj g'uegpctkq'yj cv'

lpenwf gu'eqputwevkqp"y tqwi j "y g'r ctm'wv'gt"y j lej "HRN'y qv'f"eqputwev'tcpuo kuukqp"rkpgu'y j kng" r tqxkf lpi "P RU'y kj "c"mcy ci g"gcugo gpv0

Cm j qwi j "qy gt"r quukdrng'uegpctkqu'eqwv' t'guwn'wv'gt"uqo g"cnngtpcvkxg"y gug'uegpctkqu'ctg"pqv'f guetkdgf " hwt'y gt"lp"y ku'f qewo gpv0Hqt"gzco r rg. "ópq"eqputwevkqpó"o ki j v'cnuq't'guwn'wv'gt"cnngtpcvkxg"4."5."6."cpf "7" *lp"y j lej "ecug"ko r cew'y qv'f "dg"y g'uco g"cu'f guetkdgf "lp"cnngtpcvkxg"3c-0Uko kctn{ ."eqputwevkqp"qp"c" eqttkf qt"qwu'f g'y g'r ctm'eqwv' t'guwn'wv'gt"cnngtpcvkxg"3."5."6."cpf "7"*lp"y j lej "ecug"ko r cew'y qv'f "dg"y g' uco g"cu'f guetkdgf "lp"cnngtpcvkxg"4-0K'y cu'f gvgto kpgf "y cv'tgo qxkpi "y gug'f w' rlec'v'xg"cpn{ ugu'y qv'f " uko r rkh{ "y g'y c{ "y g'lp'htqto cvkqp"ku'r t'gugpv'f. "cpf "y gtghgtg"ko r tqxg"y g'tgcf cdkkx{ "qh'y g"GRU

P RU'eqputwevkqp"qh'cp{ "t'cpuo kuukqp"rkpg'eqputwevkqp"uegpctkqu"lp"y ku'GRU"ku'pqv'cp"cf o kuukqp"qt" cempqy rgi i go gpv'd{ "y g"PRU"qt"y g"WUOCto { "Eqr u'qh'Gpi kpggtu" *WUCEG+"y cv'wug"qh'y gug'r tqr gt'v'gu" cu'c"t'cpuo kuukqp"eqttkf qt"ku'r gto kuukdrng"qt"u'w'x'cdng'dgecwug"HRN"j cu'pqv'eqo r r'ngv'f "y g"WUCEG'E'ngcp" Y cvgt"CEv" *EY C+"Ugevkqp"626'r gto kxkpi "r tqegui'ht"ku'r tqr qugf "y g'ugtp"t'cpuo kuukqp"rkpgu0Vj g" hqmqy lpi "ugevkpu'f guetkdgf"y g'pq/cvkqp"cpf "cvkqp"cnngtpcvkxg"y qv'f gt"y kj "y gk"cu'qek'v'f " eqputwevkqp"uegpctkqu0Vj g'ko r cew'qh'y g"cnngtpcvkxg"cpf "y gk"t'gur ge'v'xg"eqputwevkqp"uegpctkqu."ctg" f guetkdgf "lp"ej cr vgt"60

CNVGTP CVKXG"3C<P Q"P RU'CEVKQP "ó"p q"HRN'EQPUTWEVKQP "

Wv'f gt"cnngtpcvkxg"3c."y g"PRU'y qv'f "pqv'cng"cvkqp"vq"ces vktg" HRN'r tqr gt'v{ "y kj kp"y g'r ctm'qt" c"mcy ci g"gcugo gpv'qp"ko0Vj gtg" y qv'f "dg"pq"ej cpi g'lp"y g'ucw'u"qh'y g"906/o kng/rpi "eqttkf qt" eqpv'ckp'pi "542"cetgu'qh'HRN'rcpf u'lp"y g'r ctm"cpf "y g"PRU'y qv'f " t'g'ckp"qy pgtuj kr "qh'rcpf u'dgkpi "eqpukf gtgf "hqt"gz'ej cpi g0Hki w'g"7" u'j qy u'y g'm'ecvkqp"qh'y g"HRN"eqttkf qt"y kj kp"y g'd'qwpf ct{ "qh" Gxgti r'f gu'P cvkqp'cn'Retn0Vj g"PRU'cpf "WUCEG"y qv'f "eqpv'kpwg" vq"rcen'ic'r gtr g'w'cn'hmcy ci g"gcugo gpv'qp"HRN'u"gpv'k'g'r tqr gt'v{ "lp" y g"GGGC"p'geguuct{ "vq"ko r ngo gpv'j ki j gt"y cvgt"rgxgm"htqo " gequ{ u'ngo "t'gu'qtcvkqp"r tq'lgew0

Under alternative 1a, the NPS would not take action to acquire FPL property within the park. FPL would not construct transmission lines on its existing land in the park, in the exchange corridor, or in any area outside the park.

Vt cpuo kuukqp"Nlpg'E'qputwevkqp"Uegpctkq"

Hqt"y g'r wtr qugu'qh'cpn{ uku'qh'ko r cew'lp"ej cr vgt"6."y ku'cnngtpcvkxg"cu'wo gu'y cv'HRN'y qv'f "pqv" eqputwev'tcpuo kuukqp"rkpgu"qp"ku'gz'kukpi "rcpf "lp"y g'r ctm"lp"y g"gz'ej cpi g'eqttkf qt."qt"lp"cp{ "ctgc" qwu'f g'y g'r ctm0Vj ku'cnngtpcvkxg"eqwv' t'guwn'kh'y gt"p'geguuct{ "r gto ku'ctg"t'gpkf "d{ "tgi w'v'qt{ "ci g'pekgu" qt"kh'HRN"ej q'qugu'pqv'vq"dv'kf "t'cpuo kuukqp"rkpgu0Vj ku'cnngtpcvkxg"ku'lpenwf gf "vq"t'gr t'gugpv'c"status quo" dcugr'kpg'hqt"P GRC'r wtr qugu0Vj g'ko r cew'qh'eqputwevkpi "t'cpuo kuukqp"rkpgu."cu'cpn{ | gf "lp"qy gt" cnngtpcvkxg"y knd'g"eqo r ctgf "vq"y ku'dcugr'kpg0



FIGURE 5: EVERGLADES NATIONAL PARK SHOWING VARIOUS CORRIDORS AND AREAS ADDRESSED IN ALTERNATIVES 1–5

CNVGTP CVKXG'3D<P Q'P RU'CEVKQP '6'HRN'EQP UVT WEVKQP 'RP 'VJ G' RCTM'

Wpf gt'yj ku'cngtpevkxg'yj g'P RU'y qwf "pqv'cng'cevkqp'q'ces vktg'HRN'r tqr gtv' 'y kj kp'yj g'r ctmqt'c" hqy ci g'gcugo gpv'qp'k0Y kj 'tgr gev'q'yj g'P RU'o cpci go gpv'qr vkqp'uggev'f. 'k'ku'yj wu'yj g'uco g'cu' cngtpevkxg'3c0'

Vtcpuo kukqp'Nlpg'Eqputwevkqp'Uegpctkq'

Vj ku'cngtpevkxg'f khtu'ltqo "cngtpevkxg'3c."y qy gxgt."dgecwug'k' cuuwo gu'yj cv'HRN'y qwf "eqputwev'tcpuo kukqp'rkpgu'qp'ku'gzkukpi " rcpf "kp'yj g'r ctmcpf 'yj gtghgtg.'yj g'lo r cew'y qwf "dg'xgt { 'f khtg'gpv' Cmj qwi j 'k'tgr tgugpu'yj g'uco g'o cpci go gpv'qr vkqp.'yj ku'cngtpevkxg'ku' kpenw'gf "dgecwug'k'ku'c'r qv'p'v'c'n'dw'w'p'eg'v'c'kp'q'w'eqo g'k'P RU'cngu" pq'cevkqp'cpf "cmjy u'ht' 'yj g'cpcn' uku'qh'yj g'lo r cew'qh'uwej " eqputwevkqp.'yj qwf "HRN'dg'cdng'q'ugew'g'cmhgf gtcn'ucv'g."cpf "mecn' r gto ku'pgegu'ct { 'q'eqputwev'yj gug'rkpgu'kp'yj ku'mecvkqp'*kp'yj g'HRN' Y guv'Ugeppf ct { 'Eqttkf qt'ug'g'hki wtg'7+0Dcug'f'qp'HRN'au'yj kj f tcy cn' qh'yj g'Y guv'Ugeppf ct { 'Eqttkf qt'ltqo 'ku'cr r necvkqp'ht'ukg" egt'k'ecvkqp'cpf 'ltqo 'ku'cr r necvkqp'ht'c'Ugevkqp'626'r gto k' 'y ku' uegpctkq'ku'guu'rkngn' 'yj cp'dghgtg'j qy gxgt'k'ku'kpenw'gf 'q'r tqxkf g'c" hwn'itcpi g'qh'cngtpevkxg'cu'cpf "cuuguo gpv'qh'lo r cew'0'

Under alternative 1b, the NPS would not take action to acquire FPL property within the park but FPL would proceed to construct two 500-kV lines and one 230-kV transmission line within the park boundary.

Wpf gt'cngtpevkxg'3d.'HRN'y qwf "r tqegg'q'eqputwev'y q'722/nkqxqn'*mX+'rkpgu'cpf "qpg'452/nX" vcpuo kukqp'rkpg'y kj kp'yj g'r ctmtdqwpf ct { 'kp'yj ku'eqttkf qt."cr r tqzko cvgn' '906'o kgu'np' 0Vj g" ej ctcev'g'k'ku'qh'yj g'tcpuo kukqp'k'lt'c'ut'we'w'g'cpf "eqputwevkqp'o gj qf u'y qwf "dg'cu'f guetkdg'f'kp" HRN'au'Ukg'Egt'k'ecvkqp'Cr r necvkqp'*UEC+'uwo o ct'k' gf 'kp'cr r gp'f'kz'H'cpf "y qwf "kpenw'g'cuuqek'v'f' hgf gtcn'ucv'g."cpf "mecn'r gto k'tgs vktgo gpv'0Vj g'P RU'y qwf "pqv'dg'cdng'q'k'pet'g'cug'y cv'g't'g'x'g'u'qp'yj ku' r tqr gtv' 'q'cej k'x'g'ku'np' /v'gto 't'gu'q'c'vkqp'q'dl'g'v'x'g'u'dgecwug'k'y qwf "pqv'j cxg'ces vktgf 'yj g'tki j v'qt" k'p'gt'gu'v'q'f'q'0C'cngtpevkxg'3d'y cu'f gxgm'r gf "ht'yj g'r vtr qugu'qh'cpcn' | kpi 'yj ku'uegpctkq'0'

CNVGTP CVKXG'4<P RU'CES WKVKQP 'QH'HRN'NCPF "

Wpf gt'cngtpevkxg'4.'yj g'HRN'r tqr gtv' '*906/o kng'np' 'HRN'eqttkf qt" eqp'v'k'p'pi "542'cetgu'qh'HRN'rcpf u'y qwf "dg'ces vktgf 'f'k'ge'v' 'd { " r wtej cug'qt'yj tqwi j 'yj g'gz'g'ek'ug'qh'go k'p'gp'v'f'qo clp'cwj qtk'f' 'd { 'yj g" Wp'kg'f 'Ucv'gu'0Vj ku'cngtpevkxg'y qwf "t'gu'w'lp'cp'k'pet'g'cug'qh'542'cetgu' qh'P RU'qy pgf "rcpf 'y kj kp'yj g'r ctn'0Hki wtg'7'uj qy u'yj g'HRN'eqttkf qt" yj cv'y qwf "dg'ces vktgf 'd { 'yj g'P RU'wpf gt'yj ku'cngtpevkxg'0'

Alternative 2 would result in an increase of 320 acres of NPS-owned land within the authorized boundary of the park. FPL would likely acquire a replacement corridor east of the existing park boundary to meet transmission needs.

Vtcpuo kukqp'Nlpg'Eqputwevkqp'Uegpctkq'

Hqt'yj g'r vtr qugu'qh'cpcn' uku'qh'lo r cew'lp'ej cr vgt'6.'yj g'eqputwevkqp" uegpctkq'cuuqek'v'f' 'y kj 'yj ku'cngtpevkxg'cuuwo gu'yj cv'HRN'y qwf " rkngn' 'ces vktg'c'tgr r'ego gpv'eqttkf qt'gcu'qh'yj g'gzkukpi 'r ctm' d'qwpf ct { 'q'o gg'v'ku'vcpuo kukqp'p'gg'f'u'dgecwug'yj g'P RU'cngtpevkxg" uggev'f' 'y qwf "g'cx'g'HRN'y kj qw'c'vcpuo kukqp'eqttkf qt'yj tqwi j 'yj g'r ctn'0Hki wtg'6'lp'ej cr vgt'3'uj qy u' cp'0ct'g'c'qh'r quukd'g't'g'ne'c'v'f' "eqttkf qt.0'y j k'ej 'tgr tgugpu'cp'et'g'c'qh'j ki j guv'r qv'p'v'c'n'y j gt'g'HRN'y qwf " uggn'v'q'd'v'k'f' "vcpuo kukqp'rkpgu'q'w'uk'f' g'yj g'r ctm'd'cug'f' qp'yj g'o quv't'ge'gp'v'k'p'ht'o cv'kqp'ltqo 'yj g'ucv'g'ukg" egt'k'ecvkqp'r tqegu'0'kp'yj ku'uegpctkq.'HRN'y qwf "dg'cdng'q'ugew'g'cmhgf gtcn'ucv'g."cpf "mecn'r gto ku'

pɛgɛuɔtʃ{ 'q'ɛpɔt wɛv'tɕpuo kɯkɔp'ɪkɔgɯ.'cuɔkɛvɔf'ɪkɪr ɕf u.'ɕpɪ'ceɛguɪ'tɕɕf u'qɔ'ɪɕpɪ u'HɪN'y qɔwɪ'ɪkɪŋɪ }
 ɕɛs wɪk'g'uɔ ɔy j ɔtɔ'g'y kɪ kɔ'v'j kɪ'tɕtɕ'gɕu'qɪ'h'y ɔ'r ɕtɔ0HɪN'y qɔwɪ'r tɕɛɔɔf 'q'ɛpɔt wɛv'y q'722/mX'ɪkɔgɯ'
 ɕpɪ'qɔp'452/mX'tɕpuo kɯkɔp'ɪkɔgɯ'kɔ'p'v'j kɪ'ɛqɪtɪkɪ qɪ0K'kɪ'cuuɔ ɔf 'v'j ɕv'j ɔ'ej ɕtɕɛvɔtɕkɛu'qɪ'h'y ɔ'tɕpuo kɯkɔp'
 kɔɪɕɕɔt wɛwɪ'ɕpɪ'ɛpɔt wɛkɔp'o ɔv'qɪ u'y qɔwɪ'dɔ'cu'f ɔuɛtɪɔf 'kɔ'v'j ɔ'UEC'kɔ'ɕr r ɔpɪ kɪ'HO'

CNVTGTPCVKXG'5<HGG'HOT'HGG'NCPIF'GZEJ CPI G'

Wpf gt "cngtpcvkxg"5. "y j g'P RU'y qwf "ces wkt g'gg'kxg'q' 'y j g'HRN" r tqr gtvl "906/o kg/mpj "eqttkf qt"eqpcklpi "542"cetgu'qh'HRN" rcpf u+"y tqwi j "cp'gzej cpi g'hqt'r ctnlr tqr gtvl ".cu'cwj qtk gf "d{ " y j g'gzej cpi g'rgi kurvqpp0P RU'rcpf "eqpxg{gf "q'HRN'y qwf " eqpukuv'qh'482"cetgu'cnpj "807'o kgu'qh'y j g'gcugtp'dqwpf ct{ "qh" y j g'GGC0Vj g'xcngu'qh'rcpf u'gzej cpi gf "y qwf "dg'gs wck gf "kp" ceeqtf cpeg'y kj "y j g'Qo pldwu'Cev0Vj g'P RU'y qwf "pq'hpj gt " qy p'qt"j cxg'eqpvtqnxgt'y j g'482/cetg'gzej cpi g'eqttkf qt=rcpf u" ewttgpw' "y kj kp'Gxgti ncf gu'P cvkqpcnRetnly qwf "dgego g'HRN" r tqr gtvl "qpeg'y j g'rcpf "gzej cpi g'y cu'eqo r rggv 0Vj ku'cngtpcvkxg" y qwf "tguwn'kp'c'482/cetg'f getgcug'lp'rcpf u'y kj lp'y j g'cwj qtk gf " cpf "cp'kpetgcug'qh'542"cetgu'qh'hgf gtcml "qy pgf "rcpf "y kj lp'y j g'cw eqttkf qt+=hqt"c'pgv'i clp'qh'82"cetgu'qh'hgf gtcml "qy pgf "r ctnlr'rcpf 0' y kf g'r gtr gwnlpqppcvkxg'xgi gcvkqp'o cpci go gpv'gcugo gpv'q'HRN 807/o kg'gzej cpi g'eqttkf qt0Vj ku'gcugo gpv'y qwf "dg'hqt'y j g'r wr q y j kj "r qug'c'hk'g'tkum'q'HRNai'cekkkku. lpenw'kpi "dw'pqv'iko kgf ceeqtf cpeg'y kj "y j g'HRNai'Xgi gcvkqp'O cpci go gpv'Rtqi tco 0Hki eqttkf qt"cpf "y j g'HRN'eqttkf qt'y kj lp'y j g'r ctn0Hki wtg'8'ku'c'rti gt" pppcvkxg'xgi gcvkqp'o cpci go gpv'gcugo gpv'pvgz'v'q'y j g'gzej cpi g' y j g'rcpf "gzej cpi g'y kj "HRN+= "cpf "y j g'qwg'tdqwpf ct'ku'qh'y j g'gpv'k

Alternative 3 would result in a net gain of 60 acres of federally owned park land. FPL would proceed to construct two 500-kV lines and one 230-kV transmission line in the FPL West Preferred Corridor.

F gɛkɯ'qɦ'ɨ g'r tqr quɣf 'ɛpɸ "gzej cpi g'ctg'ɸpɛɸ gf 'ɸ'ɨ g'422: 'P RUIHRN'E qvɸpi gpv'Ci tggɔ gpv'ɸpɛɸ gf "ɸ'cr r gpf lz 'D0Vj kɯ' qewɔ gpv'ɸpɛɸ gu'ɦgi cɦf guetk ɤkvɸ'cpɸ 'f tch'f gɣf u'qɦ'HRN'cpɸ 'P RU'ɛpɸ u'r tqr quɣf "ɦqt "gzej cpi g=ctgkɦr j qqu'qɦ'P RU.'WUCEG.'Uqwj 'Hɦtkf c'Y cvɣt'O cpci go gpv'F kɦtɛv*UHY O F +.'cpɸ "Hɦtkf cɦ'Dqctf 'qɦ'Vtɯwɣgu'qɦ'ɨ g'ɸvɸpɦɸK r tɤxgɔ gpv'Vtɯw/Hɦpɸ 'ɛpɸ u'ɸ'ɨ g'r tqr quɣf "gzej cpi g" eɦtkf qɸ="cpɸ 'c'f tch'ɸpɸpɸɤxg'xgi gɤvɤp'gɤgɔ gpv'0

Vj g'gg'ht'gg'ncpf "gzej cpi g'y qwf "dg'wdlgev'q'vto u'cpf "eqpf kkp'u'y c'vtg'q' "dg'ci tggf "w'qp" dgy ggp "P RU'cpf "HRN"cpf "lpeqr qtcvf "lp'q'c'dkpf kpi "gzej cpi g'ci tggg gp'Vj g'r wtr qug'qh'y g" ci tggg gp'v'y qwf "dg'q'gpustg'yj c'v'cp' "grgevt'c'cpuo kkkp'kp'gu'qt'q'y gt "w'k'w' / tgrcvf "hcekk'gu"uwej "cu" r'kr g'kp'gu'cpf "eqo o w'p'c'v'kp'u'hcekk'gu"v'c'v'o c' "dg'dw'k'qp'yj g'r tqr g'v' "q' "dg'eqpxg' gf "q' "HRN"ctg" f'guk' pgf "eqpustw'cvf "cpf "qr g'cv'gf "q'cxq'k'qt'o k'p'o k' g'k'o r'cew'qp'r c'ntl'guq'wtegu "q'yj g'o czko wo " gz'gp'r tce'v'cdng "lpenf kpi "dw'p'q'v'ko k'gf "q'yj { f tqmij { .y g'w'cpf u "h'qtc'cpf "h'wpc" *lpenf kpi "y tgc'v'pgf " cpf "gp'f cpi g'gf "ur g'elgu"ew'w'c'nt'guq'wtegu "tgg'k'ucpf u "y k'f g'tpgu'ej c'tcevtg "x'k'k'q' "g'zr g'tl'g'pegu "cpf " x'lg'y u'j gf "cpf "x'k'w'c'd'c'gu'y g'leu'OCp"gu'g'p'v'c'nt'eqpf k'kp' "ht'yj k'u'gzej cpi g'k'u'yj c'v'yj g'ncpf u'eqpxg' gf "q' "HRN" y qwf "dg'wdlgev'q'c'r gtr g'w'c'rl'hqy ci g'g'cugo gp'VHRN'y qwf "dg't's w'k'gf "q'cm'yj "y g'W'p'k'gf "U'c'v'u'yj g" r'gtr g'w'c'rl'k'j v'r'q'y gt "cpf "r'k'k'k'g'i g'q' "h'q'q'f "cpf "u'wdo g'ti g'yj g'r tqr g'v' "eqpuk'g'p'v'y k'yj "j { f tqmij k'e" t'guq'c'v'kp' "t's w'k'go gp'u'0



FIGURE 6: PORTION OF EXCHANGE CORRIDOR SHOWING THE CONTIGUOUS VEGETATION MANAGEMENT EASEMENT

Vj g'r tqr qugf "vgt u'cpf "eqpf kkpup"ctg"cp"lpvgi tcnleqo r qpgpv'qh'v'j ku'cngtpevkxg"cpf "ctg"lpvgpf gf "vq" cff tguu'P RU'tgs vktgo gpw'cpf "v'j g'tgs vktgo gpw'qh'v'j g'gzej cpi g'ngi kurevqp0P RU'cpf "F QKurchi" f gxgnr gf "f tch'vgt u'cpf "eqpf kkpup"lp"eqpuwncvqp"y kj "HRN."UHY O F . "cpf "O lco kF cf g'Eqwv' "ucchi" qp"v'j gkt "vgej plectnlgcukdkkx' 0Vj g{ "ctg"pqv'lpvgpf gf "vq"cngt "v'j g'eqpf kkpup"cpf "tgs vktgo gpw'qh'v'j g' "qv'j gt" cr r nlecdng"nqecn"ucvg. "qt"hgf gtcn'cy "qt"tgi wcvkqp0K'ku'pqv'v'j g'lpvgpv'qh'v'j g'P RU'v'j cff tguu'qt"o qf kh' "v'j g" cr r nlecdng"egt vktcvkqp"qt"r gto k'tgs vktgo gpw'qh'v'j nqecn"ucvg. "qt"qv'j gt"hgf gtcn'ci gpekgu0P RU'y qwrf "uggn' vq"dg'eqpukngpv'y kj "mpqy p'tgs vktgo gpw'qh'v'j gt"ci gpekgu0P RU'cpv'ekr cvgu'v'j cv'v'j g'kpcn'vgt u'cpf " eqpf kkpup'y qwrf "dg'pgi qv'cv'gf "y kj "HRN"cngt "v'j g'Tgeqt'f "qh'F gekukqp"*TQF +ku'uki pgf "eqpenmf lpi "v'j g" P GRC"r tqeguu'ht'v'j ku'r tqlgv'0K'v'j g'kpcn'pgi qv'cv'gf "vgt u'cpf "eqpf kkpup"ctg"uki pkklecpv' "f khtgtpv'v'j cp" v'j qug'kpenmf gf "lp"v'j g'TQF . "cff kkp'cni'P GRC"cpn' uku'o c { "dg'tgs vktgf 0Vj g'f tch'vgt u'cpf "eqpf kkpup"ht' " cngtpevkxg"5"ctg'r tqxkf gf "lp"cr r gpf kz'1 0'

Vt cpuo kukqp'Nlpg'Eqpunt wevkqp'Uegpct kq''

Hqt "v'j g'r wtr qugu'qh'cpcn' uku'qh'ko r cew'lp"ej cr vgt "6. "v'j g'eqpunt wevkqp'uegpctkq"cuuqekcv'gf "y kj "v'j ku" cngtpevkxg"cuuwo gu'v'j cv'HRN'y qwrf "dg'cdng"v'q"ugev'g"cm'hgf gtcn"ucvg. "cpf "nqecn' r gto ku'pgeguuct { "vq" eqpunt wev'tcpuo kukqp'ikpgu. "cuuqekcv'gf "hkn' cf u. "cpf "ceegu'v'qcf u'qp'ncpf u'HRN'ces vktgf "d { "gzej cpi g'k'p" v'j g'HRN"Y guv'Rtghgtt gf "Eqttkf qt=ugg'hki wtg'7+0HRN'y qwrf "r tqeggf "vq"eqpunt wev'y q'722/nX'ikpgu'cpf " qpg'452/nX'v'tcpuo kukqp'ikpg'lp"v'j ku'eqttkf qt0Vj g'ej ctcevgt kureu'qh'v'j g'v'tcpuo kukqp'kph'cunt wev'g"cpf " eqpunt wevkqp"o g'v'j qf u'y qwrf "dg'cu'f guetkdgf "lp"v'j g'UEC. "uwo o ctk' gf "lp"cr r gpf kz' "H"cpf "cuuqekcv'gf " hg'f gtcn"ucvg. "cpf "nqecn' r gto k'tgs vktgo gpw. "cpf "cnuq'cu'v'v'k' wcv'gf "lp"v'j g'hgg'ht' hgg'vgt u'cpf "eqpf kkpup" v'j cv'kpenmf g'cff kkp'cni'tgs vktgo gpw'f gxgnr gf "d { "v'j g'P RU'ht' "gpxk'qpo gpv'nr tqgev'kqp"ugg'cr r gpf kz' " I +0Vj g'Uk'p' "Dqctf w' "Hqtkf c"1 qxgtpqt'cpf "Ecdkpgv'eqpukf gtcv'kqp"qh'cngtpevk'eqttkf qtu'lp"v'j g'ukg" egt vktcvkqp"r tqeggf lpi "o c { "f gvgto kpg'y j g'v'j g'g'v'v'k'g'80/o k'g'gzej cpi g'eqttkf qt"y qwrf "dg'pggf gf " hqt'v'tcpuo kukqp'ikpgu'0K'v'j g'Y guv'Eqpugpuw'Eqtktf qt'ku'egt vktgf . "HRN"lpvgpf u'v'q"vug'cdq'w'48"o k'gu'qh' v'j g'gzej cpi g'eqttkf qt'ht'v'tcpuo kukqp'ikpgu'0K'v'j g'P cvkqpcn'Retm'Eqpugt'xcv'kqp"Cuuqekcv'kqp"eqttkf qt'ku' egt vktgf . "pq'ncpf "lp"v'j g'gzej cpi g'eqttkf qt"y qwrf "dg'pggf gf "ht'v'tcpuo kukqp'ikpgu'dgecv'v'j ku'eqttkf qt" cxqkf u'y g'gzej cpi g'eqttkf qt'gpv'k'gn' 0Vj g'eqpunt wevkqp'uegpctkq'ht' "cngtpevkxg"5"cuuwo gu'v'tcpuo kukqp" nkg'eqpunt wevkqp"qp"v'j g'gpv'k'g'80/o k'g'eqttkf qt0Vj g'kpcn'GKU'y kn'itgh'ge'v'v'j g'qweqo g'qh'v'j g'Ucv'g'u'ukg" egt vktcvkqp"f gekukqp0'

CNVGTP CVKXG'6<GCUGO GP V'HQT'HGG'NCPF'GZEJ CPI G''

Wpf gt "cngtpevkxg"6. "v'j g'P RU'y qwrf "ces vktg'hgg'v'k'g'v'q"v'j g'HRN" r tqr gtv' "906/o k'g'ngpi "eqttkf qt'eqpv'k'p' "542"cetgu'qh'HRN" ncpf u'v'j tqwi j "cp"gzej cpi g'ht'cp"gcugo gpv'qp"P RU'r tqr gtv' 0' Vj g'P RU'y qwrf "i tcv'p'cp"gcugo gpv'v'q'HRN"qp"482"cetgu'qh'r ctm' ncpf "v'j gtgchgt'ecngf "HRN"vktk'v' "Gcugo gpv'v'v'k'g'ht' "v'j ku" cngtpevkxg"cnqpi "80"o k'gu'qh'v'j g'gcuvgtp'dqwpf ct { "qh'v'j g'GGCC" hqt'r qvgpv'k'neqpunt wevkqp"qh'v'tcpuo kukqp'ikpgu. "lp"ceeqtf cpeg" y kj "v'j g'vgt u'cpf "eqpf kkpup"f gxgnr gf "ht'v'j ku'ogcugo gpv'ht' " hgg'o"gzej cpi g'0Cn'j qvi j "v'j g'gzej cpi g'eqttkf qt'lp'xq'ngf "lp"v'j ku" cngtpevkxg"ku'v'j g'uco g'cu'v'j cv'wpf gt "cngtpevkxg"5. "wpf gt "v'j ku" gcugo gpv'ht' hgg'gzej cpi g. "P RU'y qwrf "tgc'lp"qy pgtuj k' "qh'v'j g" eqttkf qt'cpf "y qwrf "eqpv'k'p'v'q"j cxg'eqpv'k'q'xgt "v'j g'482/cetg" gzej cpi g'eqttkf qt0Vj ku'cngtpevkxg'y qwrf "tguw'lp"cp'kpetgcug'qh' 542"cetgu'qh'P RU/qy pgf "ncpf "y kj lp"v'j g'cwj qtk' gf "dqwpf ct { "qh'v'j g'r ctm'v'j g'ht'gt "HRN"eqttkf qt+0Vj g' P RU'y qwrf "pq'ngpi gt"j cxg'v'j g'wp'g'pewo dgtgf "vug'qh'v'j g'HRN"vktk'v' "Gcugo gpv'v'v'k'g' "y j k'j "y qwrf " r qvgpv'k'cm' "eqpv'k'p'v'tcpuo kukqp'ikpgu. "dw'y qwrf "tgc'lp"v'j g'tk'j j v'q'ectt { "q'w'cm'q'v'j gt"o cpci go gpv' cev'k'k'kgu'cu'pggf gf "lp"v'j ku'ctgc0Vj g'P RU'y qwrf "cnuq'eqpxg' { "c", 2/hqqv'y k'f g'r gtr gwc'n'gcugo gpv'v'q'HRN" cflcegpv'v'j g'gpv'k'g'ngpi v'j "qh'v'j g'80/o k'g'gzej cpi g'eqttkf qt"v'q'eqpf wev'p'qppcv'k'g'xgi gcv'kqp"

Alternative 4 would result in an increase of 320 acres of NPS-owned land within the authorized boundary of the park. Transmission line construction would be the same as alternative 3, except that NPS would retain ownership of the FPL Utility Easement Area.

o cpci go gpv0Hi wtg'7'f gr lew'y g'r tqr qugf "hpf "gzej cpi g'eqtktf qt."cpf 'y g'eqpki wqwu'pqpvcxg"
xgi gvcqp'o cpci go gpv'gcugo gpv'cu'y gml'cu'y g'HRN'eqtktf qt'y kj kp'y g'r ctn0Hi wtg'8'kr'c'rti gt'uecg"
f gr lew'qp'qh'y g'pqpvcxg'xgi gvcqp'o cpci go gpv'eqtktf qt.'y g'gzej cpi g'eqtktf qt.'cpf 'y g'gp'w'g'HRN"
Y guv'Rtghettgf 'Eqtktf qt0'

Vj g'g'cugo gpv'hqt'hgg'ncpf 'gzej cpi g'y qwf 'dg'uwdlgev'q'vto u'cpf'eqpf kkpqu'yj cv'ctg'q'q'dg'ci tggf'wr qp" dgwy ggp'P RU'cpf'HRN'cpf'lpqtr qtcvgf'lp'q'c'dkpf lpi 'gzej cpi g'ci tggg gpv'Vj g'r wtr qug'qh'yj g" ci tggg gpv'y qwf 'dg'q'gpwtg'yj cv'cp'{'r qy gt'vcpuo kulkp'hkpu'cpf'lphtcutwewtg'qp'yj g'HRN'Wkrk'{" Gcugo gpv'Ctgc'ctg'f guli pgf .eqpwtwvgf .cpf'qr gtcvgf'q'cxqkf .qt'o lpio k g'lo r cew'qp'r ctnltguqwtegu." q'yj g'o czko wo "gz'gpvr tcevecdng .lpnmf lpi 'dw'pqv'hko kgf'q'j } f tqmji { .y gvrpf u.'hqt'cpf'hwpc" *lpnmf lpi 'yj tgcvgpgf'cpf'gpf cpi gtgf'ur geku+ewwt'crltguqwtegu.'tgg'kurpf u.'y kf gtpgu'ej ctcevgt." xkukqt'gzzr gtlpegu.'cpf'xkey uj gf'cpf'xkwncl'gunj g'leu'

Ulo knt "vq"cngtpcvkxg"5."cp"guugpvkn'eqpf kxqp"htq"y ku"gzey cpi g'ku'y cv'y g'HRN"Wkxk\ "Gcugo gpvCtgc" y qwf "dg"uwdlgev"q"e'r gtr gwenhny ci g'gcugo gp0Vj g"Wpkxf "Ucvgu'y qwf "tgckp"y g'r gtr gwenhki j v." r qy gt."cpf "r txxkxi g"vq"hnqf "cpf "uwo gti g'y g'r tqr gtv\ "eqpukngpv'y kj "j { f tqni ke'tguwtcvkqp" tgs wkt go gpw0

Vj g'r tqr qugf 'vgto u'cpf 'eqpf kkpqu'ctg'cp'lpvgi tcnleqo r qpgpv'qh'v'j ku'cngtpev'xg'cpf 'ctg'lp'vgpf gf 'vq' Cj f tguu'P RU'tgs vktgo gpwu'OP RU'cpf 'F QKuch'h'f g'xgmr gf 'f tch'v'gt'o u'cpf 'eqpf kkpqu'lp'eqpuw'nc'v'kp'y kj " HRN.'UHY O F.'cpf 'O kco kF cf g'E'qwpv'f 'u'vch'h'qp'v'j g'kt 'v'gej p'lecn'hgcukld'k'k'f 'O'Vj g'f 'ctg'p'qv'lp'vgpf gf 'vq'cngt' v'j g'eqpf kkpqu'cpf 'tgs vktgo gpwu'qh'cp'f 'q'v'j gt 'cr r'iecdrg'f'qec'n'uc'v'g.'qt'h'gf g'tcn'h'y 'qt't'gi w'c'v'kp'0'K'ku'p'qv' v'j g'lp'vgpv'qh'v'j g'P RU'v'q'cf f tguu'qt'o'o qf k'h'f 'v'j g'cr r'iecdrg'eg't'v'k'ec'v'kp'qt'r'gt'o k't'gs vktgo gpwu'qh'qec'n' uc'v'g.'qt'q'v'j gt'h'gf g'tcn'h'i g'p'leku'0'Vj g'P RU'y q'w'f 'u'eg'n'v'q'dg'eqpu'k'ug'p'v'y kj 'h'p'q'y p't'gs vktgo gpwu'qh'q'v'j gt' ci g'p'leku'0'Vj g'o c'lp'f'k'h'gt'g'peg'd'g'y g'p'v'j g'f'f tch'v'gt'o u'cpf 'eqpf kkpqu'h'qt'v'j ku'cngtpev'xg'cpf 'v'j qug'h'qt' cngtpev'xg'5'ku'v'j c'v'wp'f gt'v'j g'g'c'ugo g'p'v'h'qt'h'gg'eqpf kkpqu.'HRN'eq'w'f 'w'ug'v'j g'HRN'W'k'k'f 'G'c'ugo g'p'v'c't'g'c' q'p'n'f 'h'qt'eqpu'gt'x'c'v'kp'qt'v'j g'r'q'v'g'p'v'k'ie'eqpu'w'ek'v'kp'q'h'g'rg'ev't'le'v't'c'puo'k'uk'q'p'h'p'gu'c'p'f 'cr r'w'v'g'p'c'p'v'h'c'ek'k'kg'u' p'q'v'q'v'j gt'w'k'k'f'f't'g'r'v'g'f'f'c'ek'k'kg'u'0'Vj g'P RU'c'p'v'k'c'r'v'g'u'v'j c'v'v'j g'h'p'cn'v'gt'o u'cpf 'eqpf kkpqu'y q'w'f 'dg' p'gi q'v'c'v'g'f'y kj 'HRN'c'h'gt'v'j g'T QF'ku'uk'i p'g'f 'eq'p'en'f'k'p'i 'v'j g'P GRC'r't'q'eg'u'h'qt'v'j ku'r't'q'lg'ev'0'K'v'j g'h'p'cn' p'gi q'v'c'v'g'f'v'gt'o u'cpf 'eqpf kkpqu'ctg'v'k'i p'h'k'ec'p'v'f'f'k'h'gt'g'p'v'j cp'v'j qug'k'p'en'f'gf'lp'v'j g'T QF.'cf f k'k'p'cn' P GRC'c'p'cn'f'uku'o'o c'f 'dg't'gs vkt'gf'0'Vj g'f'f tch'v'gt'o u'cpf 'eqpf kkpqu'h'qt'cngtpev'xg'6'ctg'r't'q'x'k'f'gf'lp' cr r'g'p'f'k'z'J'0'

Vt c p u o k u k q p ' N k g ' E q p u t w e v k q p ' U e g p c t k q "

Hqt "y j g'r wtr qugu'qh'cpcn{ kuku'qh'lo r cewi'lp'ej cr vgt '6. 'y j g'eqputwekqp'uegpctkq'cuuqekvgf 'y kj 'y ku' cngtpevkxg'y qwrw 'dg'y j g'uco g'cu'y j g'qpg'hqt'cngtpevkxg'5. "gzejr v'y cvP RU'y qwrw 'tgwclp'qy pgtuj kr 'qh'y j g' HRN'Wlwk{ 'Gcugo gpv'Ctgc0Vj ku'cngtpevkxg'cuuwo gu'y cvHRN'y qwrw 'dg'cdrg'v'ugewt'g'cmihgf gtcn'ucvg. " cpf 'mqecn'r gto ku'pgeguact 'v'q'eqputwev'tcpuo kuukqp'hkpgu. 'cuuqekvgf 'hkm'r cf u. 'cpf 'ceegu'tqcf u'qp'rcpf u' HRN'ces wktgf 'd' { 'gzej cpi g'lp'y j g'HRN'Y guv'Rtghettgf 'Eqttkf qt-'ugg'hk wtg'7+0J qy gxgt. 'HRN'au'hpqi /veto " wug'qh'y j g'ctgc'y qwrw 'hqmny 'y j g'urki j w{ 'f'khgtgpv'gcuo gpv'hqt'hgg'vto u'cpf 'eqpf'kklqpu'y cv'lpemf g' cf f'klqpcntgs wktgo gpw'f'gxgrqr gf 'd' { 'y j g'P RU'hqt'gp'xkqpo gpv'cn'r tqvgevkqp'*cr r gpf k'Z '40Vj g'Uukpi " Dqctf au'*Hqtkf c'I qxgtpqat'cpf 'Ecdlpgv'teqpuf gtcvkqp'qh'cngtpevg'eqttkf qtu'lp'y j g'uksg'egt v'khecvkp" r tqeggf lpi 'o c { 'f'vgto kpg'y j g'y j g't'y j g'gpv'ktg'807/o kg'gzej cpi g'eqttkf qt'y qwrw 'dg'pggf gf 'hqt" vtcpuo kuukqp'hkpgu'0Kiy j g'Y guv'Eqpugpuw'Eqttkf qt'ku'egt v'khegf. 'HRN'lpvgpf u'v'wklk'g'cdqw'48'o kgu'qh' y j g'gzej cpi g'eqttkf qt'hqt'vcpuo kuukqp'hkpgu'0Kiy j g'P cvkpcn'Rctm'Eqpugt'xv'kqp'Cuuqek'v'kqp'eqttkf qt'ku' egt v'khegf. 'pq'rcpf 'lp'y j g'gzej cpi g'eqttkf qt'y qwrw 'dg'pggf gf 'hqt'vcpuo kuukqp'hkpgu'cu'k'cxqlf u'y j cv'tqwg" gpv'kgn'0Vj g'eqputwekqp'uegpctkq'hqt'cngtpevkxg'6'cuuwo gu'vcpuo kuukqp'hkpg'eqputwekqp'qp'y j g'gpv'ktg' 807/o kg'eqttkf qt'0Vj g'hkpcn'GKU'y knl'ghrgev'y j g'qwego g'qh'y j g'Ucwa'u'uksg'egt v'khecvkp'f'gekukp0'

CNVGTP CVKXG'7<RGTRGVWCN'HNQY CI G'GCUGO GP V'QP 'HRN' RTQRGT V["

Wpf gt "y ku'cngtpcvkxg. "y g'P RU'y qwf "ces wktg'c'r gtr gwnclhny ci g"
gcugo gpv'qp'HRNai'r tqr gtvl "y kj lp'y g'GGGC"y tqwi j "r wtej cug."
eqpf go pcvkqp."qt'f qpcv'kp'd{ 'HRN'HRN'y qwf "tgv'kp'qy pgtuj kr "qh'ku"
906/o kg/mqi "eqttkf qt'lp'y g'r ctnlf wtkpi "y g'vgo "qh'y g'gcugo gpv'cpf "
eqwf "uggni'q'ukg'tcpuo kukqp'kp'gu'y gtg'Vj g'hny ci g'gcugo gpv'
y qwf "lpenf g'y g'gpv'g'HRN'r tqr gtvl "tqo "Vco lco k'Vtckl'q'y g": 0/
us wctg/o kg'ctgc."cpf "y g'hny ci g'cmqy gf "wpf gt'y ku'gcugo gpv'y qwf "
cmqy "uwlhlekpv'y cvgt "hny "qxtg'y ku'ctgc'q'uw r qtv'gequ'ugo "
tguqtcv'kp'r tqlgew'Vj g'P RU'y qwf "tgv'kp'y g'ewtgpv'i qcl'qh"
ces wtkpi "y ku'r tqr gtvl "qxtg'y g'mqi "vgo 0'

*Under alternative 5, the NPS
would acquire a perpetual
flowage easement on FPL's
property. FPL would proceed to
construct two 500-kV lines and
one 230-kV transmission line
within the park boundary.*

Vt cpuo kukqp'Nlpg'Eqpust wev'kp'Uegpct kq''

Hqt "y g'r wtr qugu'qh'cpcn'f uku'qh'ko r cew'lp'ej cr vgt'6. "y g'eqpust wev'kp'uegpctkq'cuuqekcv'f "y kj "y ku"
cngtpcvkxg'y qwf "dg'y g'uco g'cu'y g'qpg'hqt'cngtpcvkxg'3d'"HRN'eqpust wev'kp'qp'ku'gz kukpi "rcpf "lp'y g"
r ctm: "gzegr v'y cv'P RU'y qwf "ces wktg'c'mqi /vgo . "r gtr gwnclhny ci g'gcugo gpv'y cv'r tqxkf gu'uw'hlkpv'
hny ci g'hqt'eqo r ngv'kp'qh'Gxgti ncf gu'tguqtcv'kp'r tqlgew'HRN'y qwf "dg'cdng'q'ugew'g'cnlhgf gtcn'ucvg."
cpf "necnr'gto ku'pgegu'ct { "q'eqpust wev'tcpuo kukqp'kp'gu."cuuqekcv'f "hmr'cf u."cpf "ceegu'tqcf u'qp'ku"
gz kukpi "r tqr gtvl "y kj lp'y g'r ctnl'lp'y g'HRN'Y guv'Ugeqpf ct { "Eqttkf qt=ugg'hk wgt'7-0J qy gxtg. "y g'P RU'
y qwf "dg'cdng'q'kpetcgug'y cvgt "ngxgn'qp'y ku'r tqr gtvl "lpenf kpi "qxtg'y g'ctgc'y cv'ku'wugf "hqt"
eqpust wev'kp'qh'y g'tcpuo kukqp'kp'gu'q'cej kxg'ku'mqi /vgo "tguqtcv'kp'qdlgev'kgu'0Dcugf "qp'HRNai"
y kj f tcy cni'qh'y g'HRN'Y guv'Ugeqpf ct { "Eqttkf qt'htqo "ku'cr r rlec'v'kp'hqt'ukg'egt'v'hlkcv'kp'cpf "htqo "ku"
cr r rlec'v'kp'hqt'c'Ugev'kp'626'r gto kx' "y ku'uegpctkq'ku'nguu'rkngn' "y cp'dghqtg=j qy gxtg'k'ku'lpenf gf "q"
r tqxkf g'cp'cuuguo gpv'qh'ko r cew'qh'y ku'r qv'p'v'cl'qweqo g0'

EQUV''

Vj g'HRN'r tqr gtvl "necv'f "y kj lp'Gxgti ncf gu'P cv'kpcn'Rctm'ku'r ctv'qh'y g'HRN'Y guv'Ugeqpf ct { "Eqttkf qt"
ewtgpv'f "wpf gt'tgxky "lp'y g'ucv'gu'ukg'egt'v'hlkcv'kp'r tqegu'cpf "y g'WUCEG'f tgf i g'cpf "hmr'gto k"
r tqegu'f guetkdgf "lp'ej cr vgt'30Dgecv'g'y g'ucv'g'cpf "hgf gtcn'r gto kukpi "r tqegu'gu'y kn'pqv'dg'eqo r ngv'f "
wp'kl'4236'qt'rcv'g. "gu'ko cv'kpi "y g'ewtgpv'eqv'qh'ces wtkpi "HRNai'r tqr gtvl "y kj lp'y g'r ctnl'ku'f'hlkew'n'cpf "
wpegtcv'kp'0C'hkpcn'f gvgto kpcv'kp'qh'eqv'y qwf "dg'qdv'kpgf "qpeg'y g'P RU'ugr'geu'cp'ces wtkkqp'cngtpcvkxg"
lp'y g'hkpcn'GKU'cpf "TQF 0E quu'eqwf "xct { "eqpuf gtcn'f. "f gr gpf kpi "qp'y g'ces wtkkqp'cngtpcvkxg"
ugr'gevgf "cpf "j qy "y g'HRN'r tqr gtvl "ku'xcn'v'f 0U'gek'le'q'y g'cev'kp'cngtpcvkxgu. "y g'hqmy kpi "cf f k'kpcn'
eqv'lp'htqo cv'kp'ku'r tqxkf gf <

Cngtpcvkxg'4<P RU'Ces wtkkqp'qh'HRN'Ncpf ''

K'y g'HRN'r tqr gtvl "y gtg'q'dg'f'ktgeu'f "ces wktgf. "y g'xcn'v'g'qh'y g'r tqr gtvl "y qwf "f gr gpf "qp'o cp { "hcevtu'0
Vj gug'lpenf g'ewtgpv'ucrgu'qh'uko kct'r tqr gtvl. "y g'cr r tckugt'u'f gvgto kpcv'kp'qh'y ki j guv'cpf "dgu'wug. "cpf "
y g'ucwu'qh'y g'r tqr gtvl "cu'f gvgto kpgf "lp'y g'ucv'g'cpf "hgf gtcn'r gto kukpi "r tqegu'gu'Vj g'tguwn'eqwf "
tapi g'htqo "y g'xcn'v'g'qh'xccepv'wpf g'xgn'r gf "rcpf "q'y g'xcn'v'g'qh'c'hw'f "gpv'k'f "w'k'f "eqttkf qt'0U'kpeg'y g"
HRN'r tqr gtvl "ku'r ctv'qh'c'rci gt'r ctegr'y j kej "eqpuku'qh'y g'gpv'g'5; /o kg'kp'gct'eqttkf qt'twpp'kpi "htqo "
y g'Vwng { "Rqkp'Vqy gt'Rcpv'qp'y g'uqwj "q'y g'Ngxgg'uw'uw'v'kp'qp'y g'pqt'y. "y g'gu'ko cv'g'hqt'c'f'ktgeu'
r wtej cug'eqwf "dg'dcugf "qp'c'f'ko k'p'w'kp'lp'xcn'v'g'qh'y g'rcti gt'eqttkf qt. "y j kej "eqwf "tguwn'htqo "y g"
ugxgtcpeg'qh'y g'906/o kg'r qv'k'p'y kj lp'y g'GGGC'0Dgecv'g'qh'y gug'wpegtcv'k'p'ku. "k'ku'gu'ko cv'g'f "y cv'y g"
eqv'qh'ces wtkkqp'eqwf "cr r tqcej "qpg'j wpf tgf "o k'k'kp'f qm'ctu'0K'HRN'cpf "P RU'y gtg'wpcdng'q'ci tgg'qp"

lwu'eqo r gpucvkqp'hqt'ces wukukqp.'y gp'P RU'eqwrf 'r wtuwg'lpkukvkqp'qh'c'eqpf go pcvkqp'cevqap0Vj g'xcnwg' qh'j g'HRN'r tqr gtv' 'y qwrf 'y gp'dg'f gvgto kpgf 'lp'hgf gtcnleqwtv'r tqeggf kpi u'chgt 'y g'qr r qtwpkx' hqt'c'v'kcn' qp'y g'kuwag0Kl'y g'f gvgto kpcvkqp'qh'lwu'eqo r gpucvkqp'y gtg'v'g'zeggf 'hwf u'cxckrdng'hqt'ces wukukqp.'cp' cf f kkpncr'r tqr tlcvkqp'y qwrf 'j cxg'v'dg'qdvckpgf 0'

Cngtpevkxg'5<Hgg'hqt 'Hgg'Ncpf 'Gzej cpi g'

Hqt'y g'hgg'hqt'hgg'gzej cpi g.'xcnwg'qh'gcej 'r tqr gtv' 'y qwrf 'dg'gs wcn'qt'gs wcrk' gf 'ceeqt'f kpi 'v'j g' cwj qtk' kpi 'rgi kucvkqp0Ugg'Rwdne'Ncy '*RN'+333/330Gurko cvgf 'xcnwg'y qwrf 'dg'f gvgto kpgf 'y tqwi j " cr r tckucn'y j lej 'y qwrf 'eqpukf gt'y g'hkpcn'eqpf kkpncr'tgs wkt go gpw'eqpvcvkpgf 'lp'cp'ci tgggo gpv'hqt' gzej cpi g0Kp'y g'gxgpv'y cv'y g'hkpcn'r r tckugf 'xcnwg'qh'y g'HRN'ncpf u'g'zeggf u'y g'hkpcn'r r tckugf 'xcnwg'qh' y g'P RU'ncpf u.'y g'xcnwg'o c{ 'dg'gs wcrk' gf 'd{ 'f qpcvkqp.'r c{ o gpv'wukpi 'f qpcvgf 'qt'cr r tqr tlcvgf 'hwf u.'qt' y g'eqpxg{ cpeg'qh'cf f kkpncr' ctegn'qh'ncpf 'v'j HRN0'

Kp'y g'gxgpv'y cv'wej 'hkpcn'r r tckucn'f gvgto kpg'y cv'y g'xcnwg'qh'P RU'ncpf u'g'zeggf u'y g'xcnwg'qh'HRN' ncpf u.'y gtg'y knldg'pq'gs wcrk' cvkqp'r c{ o gpv'ukpeg'uwej 'xcnwg'y knldg'eqpuxwgf 'cu'gs wcn'lp'ceeqt'f cpeg' y kj 'RN'333/330'

Cngtpevkxg'6<Gcugo gpv'hqt 'Hgg'Ncpf 'Gzej cpi g'

Vj g'equv'v'j g'hgf gtcn' qxgtpo gpv'qh'c'hgg'hqt'gcugo gpv'gzej cpi g'y qwrf 'dg'dcugf 'qp'y j gyj gt'y g' cr r tckugf 'xcnwg'qh'y g'HRN'ncpf u'g'zeggf u'y g'cr r tckugf 'xcnwg'qh'y g'gcugo gpv'v'q'dg'eqpxg{ gf 'v'j HRN'qp' P RU'ncpf u0Vj gug'xcnwg'y qwrf 'dg'f gvgto kpgf 'y tqwi j 'cr r tckucn'y j lej 'y qwrf 'eqpukf gt'y g'hkpcn' eqpf kkpncr'tgs wkt go gpw'eqpvcvkpgf 'lp'cp'ci tgggo gpv'hqt'gzej cpi g0'

Cngtpevkxg'7<Rgr gwcniHny ci g'Gcugo gpv'hp'HRN'Rt qr gt v' "

Lwu'eqo r gpucvkqp'hqt'ces wukukqp'qh'c'r gtr gwcniHny ci g'gcugo gpv'qp'HRN'ncr' tqr gtv' 'j cu'pqv'dggp" gurko cvgf 0P RU'cpvckr cvgu'y cv'lwu'eqo r gpucvkqp'hqt'y g'ces wukukqp'qh'c'ny ci g'gcugo gpv'y qwrf 'dg'rguu' equw' 'y cp'hgg'uko r rg'ces wukukqp'*cu'f guetldgf 'wpf gt'cngtpevkxg'4+0HRN'y qwrf 'tgvckp'cp'qy pgtuj kr " kpgtgu'lp'ku'ncpf 0HRN'y qwrf 'tgvckp'y g'tki j v'v'q'uggnlucvg'cpf 'hgf gtcn'r gto ku'hqt'v'cpuo kukqp'hkpgu'qp" ku'r tqr gtv' 0'

CNVGTP CVKXGU'QT'CNVGTP CVKXG'GNGO GP VU'EQP UKF GTGF 'DW' " F KUO KUUGF "

Ego o gpw'tgegkxgf 'Itqo 'y g'r wdrk'f wtkpi 'ueqr kpi 'tgeqo o gpf gf 'y cv'y g'P RU'uggn'v'q'ces wkt g'HRN'ncr' r tqr gtv' 'lp'y g'gzr cpukqp'ctgc'y qwi j "c'f qpcvkqp0Vj g'r ctnlwr gtpvpgf gpv'uwdugs wgvn' 'f kucwugf 'y ku' qr vkp'y kj 'HRN'tgr tgugpvcvkxgu0Vj ku'cngtpevkxg'y cu'f gvgto kpgf 'v'q'dg'kphgcukdng'dgecwug'HRN'ku'pqv' y knlpi 'v'q'f qpcvg'ku'r tqr gtv' 'v'j g'P RU'

EQPUKUVGPE['Y KJ 'UGE VKQP U'323'*D'+CP F '324*3+'QH'VJ G' P CVKQP CN'GP XKT QPO GP VCN'RQNK['CEV'

P GRC'tgs wktgu'cp'cpcn' uku'qh'j qy "gcej 'cngtpevkxg'o ggu'qt'cej kxgu'y g'r wtr qugu'qh'y g'cev'*Ugevkqp" 323*d+0Gcej 'cngtpevkxg'cpcn' | gf 'lp'c'P GRC'f qewo gpv'o wu'dg'cuuguugf 'cu'v'j'j qy 'k'o ggu'v'j g' hmqy kpi 'r wtr qugu'<

30 hwtkn'y g'tgur qpukdkkku'qh'gcej 'i gpgtcvkqp'cu'twugg'qh'y g'gpxktpo gpv'hqt'uweegf kpi " i gpgtcvkqp="

- 40 gpuwtg'hqt'cmiCo gtlecpu'uchg.'j gcnj hwn'r tqf wevkg.'cpf 'cgunj gkecm{ 'cpf 'ewwtcm{ 'r ngculpi " uwtqwpf lpi u="
- 50 cwcip'vj g'y kf guv'tcpi g'qh'dgpghekn'wugu'qh'vj g'gpxktqpo gpv'y kj qwf'gi tcf cvkqp.'tkm'qh'j gcnj "qt" uchgv{.'qt"qj gt'wpf guktcdng'cpf 'wplvpgf gf 'eqpugs wgegu="
- 60 r tguv'xg'ko r qvcpvj kvqtle.'ewwtcn'cpf 'pcwtcn'cur gew'qh'qwt'pcvqpcn'j gkci g'cpf "o clpvcip." y j gtgxt'r quikdrng.'cp'gpxktqpo gpv'y cv'uur r qtu'f kxgtkv{ 'cpf 'xctkv{ 'qh'kpf kxf wcn'ej qleg="
- 70 cej kxg'c'dcncpeg'dgy ggp'r qr wcvkqp'cpf 'tguvte'g'wug'vj cv'y knr gto k'j k j "ucv'p'ctf u'qh'kxkpi " cpf "c'y kf g'uj ctupi "qh'kxg'u'co gpkkgu="cpf "
- 80 gpj cpeg'vj g's wcnk{ 'qh'tgpgy cdng'tguvtegu'cpf 'cr r tqcej 'vj g'o czko wo "cwcipcdng'tge{en'pi "qh' f gr ngvcdng'tguvtegu"*64"WUE'6553+0

Vj g'hqmy lpi "r tqxkf gu"c'eqo r ctevkxg'f guetkr vkp'qh'j qy "vj g'cngtpevkgu."eqpukf gtlpi "dqj "f kge'v'cpf " cuuqekcv'f 'kpf kge'v'ko r ceu."y qwf "qt"y qwf "pq'v'cej kxg'vj gug'r wtr qugu0

Rwt r qug'3<Gxgti ncf gu'P cvkqpcn'Rctn'ku'c'wkv'qh'vj g'pcvqpcn'r ctnlu{ uvgu 0Cu'vj g'twungg'qh'vj g'ncpf . 'vj g' P RU'y qwf 'eqp'v'w'g'v'q'hw'k'ku'q'drki cvkqp'cu'twungg'qh'vj g'ctgc'hqt'hw'wt'g'i gpgtcv'kpu0Cngtpevkgu'3c." 3d.'cpf "7"r gtr gwcn'hmj ci g'gcugo gpv'y qwf "pq'v'uur r qv'vj ku'r wtr qug'y gm'dgecvug'vj gug'cngtpevkgu" y qwf "cmjy 'hqt'vj g'eqp'v'w'g'f'r tguv'peg'qh'vj g'HRN'qy pgf 'eqttkf qt'lp'vj g'GGGC.'y kj "vj g'r quikdrkv{ 'qh' hw'wt'g'wug'd{ 'HRN0Cngtpevkgu'3c'cuuwo gu'hqt'cpcn'v'ecnr wtr qugu'vj cv'HRN'y qwf "pq'v'w'k'f'lp'vj g' eqttkf qt'qt'gnjy j gtg.'dw'vj cv'uegpc'k'q'o c{ 'dg'v'p'kn'gn{.'cpf 'lp'cp{ 'gxgp'v'P RU'v'ncni'qh'eqp'v'q'ncpf " wpegtcv'p'v'f'y qwf "pq'vj gr 'cej kxg'vj ku'r wtr qug0Cngtpevkgu'4'vj tqwi j "6'y qwf "dtlpi 'vj g'HRN'eqttkf qt" wpg'gt'P RU'r tqv'ev'k'p'0J qy gxgt.'cngtpevkgu'5'cpf "6"ncpf "gzej cpi gu'y qwf 'tguwn'lp'P RU'pq'v'qy plpi "qt" j cxkpi "eqo r ngv'eqp'v'q'v'xgt'vj g'eqttkf qt'cv'vj g'gcu'gtp'gf i g'qh'vj g'GGGC.'y j lej "y qwf "urki j v{ 'f ko k'p'kuj " vj g'cej kxgo gpv'qh'vj ku'r wtr qug0Cngtpevkgu'4'y qwf "dgu'v'o ggv'vj ku'r wtr qug.'dgecvug'k'y qwf 'tguwn'lp" tgo qxcr'qh'vj g'HRN'eqttkf qt'ltqo "vj g'r ctn'icpf "vj gtg'y qwf "dg'p'q'eqp'v'w'v'k'p'qp'qt'ko o gf kv'gn{ 'cf lcegpv' v'q'vj g'r ctn0Cm'qh'vj g'cev'k'p'cngtpevkgu'y qwf 'etgc'v'eqp'f'k'k'p'u'vj cv'y qwf "cmjy "vj g'gpj cpego gpv'qh'vj g' P qt'vj gcu'Uj ctn'f'k'xgt'U'qwi j "P GUTU+cpf "Gxgti ncf gu'P cvkqpcn'Rctn'icpf 'lpetgcug'f'r qv'p'v'cn'geq'v'ki lecn' eqppge'v'k'k'f{.'dw'vj g'cp'v'ekr cv'gf "lpetgcug'v'g'p'xktqpo gpv'cn'r tqv'ev'k'p'lp'etgcugu'y kj "P RU'qy pgtuj kr "qh'cm' nc'p'f'u'ewt'g'p'v'k'lp'ku'f'qo clp'cpf "vj g'cdugpeg'qh'cp{ 'eqppge'v'f'v'c'puo ku'k'p'hp'g'ko r ceu'lp'vj g'r ctn0

Rwt r qug'4<Vj g'cngtpevkgu'y qwf "o ggv'vj ku'r wtr qug'uko kct'v'q'vj g'y c{ 'vj g{ 'o ggv'Rwt r qug'3."dcug'f'qp" vj g'f'htg'peg'lp'P RU'qy pgtuj kr "qh'vj g'ncpf 'lp'vj g'r ctn'icpf "vj g'r tguv'peg'qh'vj g'v'c'puo ku'k'p'hp'g'u'0Hqt" cngtpevkgu'3d'cpf "7."vj g'r tguv'peg'qh'c'v'c'puo ku'k'p'hp'g'eqttkf qt'lp'vj g'o kf f ng'qh'vj g'GGGC'cpf "vj g'r ctn' y qwf "pq'v'eqp'v'k'dw'g'v'q'c'r tqf wevkg'qt'cgunj gkecm{ 'r ngculpi "uwtqwpf lpi 0Vj gtg'y qwf "cnq'dg'uqo g" eqpegt'pu'cdq'w'uchgv{ 'ukpeg'vj g'eqttkf qt'y qwf "pq'v'dg'w'p'gt'P RU'eqp'v'q'nc'v'k'p'g'7'y qwf "gpuwt'g'vj cv' uwl'he'k'p'v'hmj ci g'y cu'r tguv'p'v'q'r tqeggf'y kj "Gxgti ncf gu'tguv'q'v'k'p'r tq'lgew."y j lej "eqp'v'k'dw'g'v'q" r tqf wevkg'cpf "cgunj gkecm{ 'r ngculpi "uwtqwpf lpi u."dw'vj g'lp'f'k'ge'v'gh'ge'w'qh'c'v'c'puo ku'k'p'hp'g'y qwf " f g'v'ce'v'ltqo "vj qug'dgpg'k'ku'0Cngtpevkgu'4'vj tqwi j "6'y qwf "cmjy "hqt'vj g'P RU'v'g'puwt'g'uchg.'j gcnj hwn" r tqf wevkg'.'cpf "r ngculpi "gpxktqpo gpv'y kj lp'ku'dq'w'p'ct{ 'd{ 'j cxkpi "vj g'P RU'i clp'eqp'v'q'v'xgt'vj g'HRN" eqttkf qt'0Vj g'o qu'v'dgpg'k'ku't'g'v'gf'v'q'vj ku'r wtr qug'y qwf "ct'ug'ltqo "ces v'k'k'p'p'y kj qw'ep{ 'ncpf " gzej cpi g'*cngtpevkgu'4+0Cnj qwi j "cngtpevkgu'6'cpf "7'y qwf "j cxg'dgpg'k'ku'q'dv'k'p'gf'ltqo "vj g'ces v'k'k'p'p' qh'vj g'HRN'eqttkf qt.'vj g'lp'f'k'ge'v'gh'ge'w'qh'v'c'puo ku'k'p'hp'g'eqp'v'w'v'k'p'lp'qt'cm'pi "vj g'gcu'gtp'dqtf gt'qh" vj g'r ctn'y qwf "f getgcug'vj g'cdk'k'f'v'q'o ggv'vj ku'r wtr qug'0J qy gxgt."o qxkpi "vj g'r qv'p'v'cn'ht'hw'wt'g" v'c'puo ku'k'p'hp'g'eqp'v'w'v'k'p'v'q'vj g'gf i g'qh'vj g'r ctn'ic'v'gt'vj cp'j cxkpi "vj ku'lp'f'k'ge'v'gh'ge'v'lp'vj g'o kf f ng" qh'vj g'r ctn'y qwf "j gr "v'q'gpuwt'g'uchg'cpf "cgunj gkecm{ 'r ngculpi "uwtqwpf lpi u'y kj lp'vj g'o clp'dqf { 'qh" vj g'GGGC'cpf "vj g'r ctn0

Rwt r qug'5<Uko kct'v'q'r wtr qug'4."cngtpevkgu'3d'cpf "7'y qwf "pq'v'q'v'cm{ 'o ggv'vj ku'r wtr qug."ukpeg'cp" lp'f'k'ge'v'gh'ge'v'eqw'f'lp'xq'rk'g'vj g'r tguv'peg'qh'c'v'c'puo ku'k'p'hp'g'lp'vj g'o kf f ng'qh'vj g'GGGC'0K'vj g"

utcpuo kuukqp'ikpg'y gtg'f gxmqr gf. 'y ku'y qwf 'cwc'p'c'y kf g'tcpi g'qh'dgpghelecn'wugu'*cuwo kpi 'y cv'yj g' utcpuo kuukqp'qh'r qy gt 'ku'eqpuk'gtgf 'c'dgpghelecn'icpf 'wug'cu'k'ugt'xgu'ep'ko r qt'vcp'r wtr qug+. 'dw'yj gtg' y qwf 'dg'f gi tcf cvkqp'cpf 'uqo g'tkni'v'j gcmj 'cpf 'uch'v'f. 'cpf 'q'v'j gt 'w'p'f gukt'cdng'eqpugs wgegu'0Vj g' ces wukukqp'cngt'pcv'xg'*cngt'pcv'xg'4+'eqwf 'h'gcf 'v'q'j g'eqput'wevkqp'qh'utcpuo kuukqp'ikpgu'q'wukf g'yj g'r ctm' yj gtgd{ 'g'ko kpcv'kpi 'f gi tcf cvkqp'v'q'r ctm'it'guq'wtegu'icpf 'xcn'wgu. 'cpf 'cmqy kpi 'hqt'c'yj kf g'tcpi g'qh'dgpghelecn' wugu'qh'yj g'gpxk'qpo gpv'hqt'r qy gt'utcpuo kuukqp'kp'cp'ctgc'yj j gtg't'guq'wtegu'ctg'pqv'cu'r tkuk'p'g'qt' w'p'f kuwt'dgf 'cu'lp'yj g'r ctm'0Cm'qh'yj g'cevkqp'cngt'pcv'xg'u'y qwf 't'guwn'lp'uqo g'gpxk'qpo gpcn'f gi tcf cvkqp' '*gd'0'r gto cpgpv'ko r ceu'qp'u'knu. 'y g'w'p'f u. 'cpf 'j' cdk'cw'qh'yj kf r'k'g'cpf 'ur gek'n'uc'wu'ur geku'0' Cngt'pcv'xg'u'3d'cpf '7'y qwf 'cmqy 'hqt'eqp'v'p'w'f 'HRN'r t'gug'peg'lp'yj g'r ctm'icpf 'ecpp'qv'r tqeg'gf 'y kj qwf' gpxk'qpo gpcn'f gi tcf cvkqp'cngt'pcv'xg'3d'y qwf 'pqv'cmqy 'hqt'hm'y ci g'yj cv'ku'gu'g'p'v'cn'hqt'c'w'c'k'p'kpi 'c' y kf g'tcpi g'qh'dgpghelecn'wugu'lp'yj g'GGGC'0Cngt'pcv'xg'u'5'cpf '6'y qwf 'k'p'nm'f g'c'yj kf g'tcpi g'qh'dgpghelecn' wugu'qh'yj g'gpxk'qpo gpv.'dw'y kj 'gpxk'qpo gpcn'f gi tcf cvkqp'f'w'g'v'q'yj g'eqput'wevkqp'qh'yj g'utcpuo kuukqp' ikpgu'0J qy g'xgt. 'yj g'g'cngt'pcv'xg'u'j' cxg'v'gto u'icpf 'eqp'f k'k'qpu'yj cv'iko k'q't' t'g'f w'eg'yj cv'f gi tcf cvkqp'cpf " q'yj gt 'w'p'k'p'w'p'f gf 'eqpugs wgegu'0'

Rwt r qug'6<Cm'qh'yj g'cngt'pcv'xg'u'y qwf 'r tqx'kf g'hqt'r tq'v'g'v'kqp'qh'ew'w'w'c'n'icpf 'j' ku'q't'k'c'ur gew'qh'yj g'ctgc' dgecw'ug'qh'w'w'x'g'f {u'yj cv'y qwf 'dg'o cpf cv'g'f 'qt'yj cv'yj cxg'c'it'gcf { 'dggp'f'p'p'g'0Vj g'g'zej cpi g'eq't'k'f'qt'w'p'f'gt' cngt'pcv'xg'u'5'cpf '6'y cu'dggp'w'w'x'g'f { 'cpf 'h'q'w'p'f 'pqv'v'q'eq'p'v'c'k'p'ew'w'w'c'n'it'guq'wtegu'qh'eq'peg'tp. 'cpf 'y'j gtg' ctg'v'gto u'icpf 'eqp'f k'k'qpu't'g'w'v'kpi 'v'q'yj g'eqput'wevkqp'lp'yj g'g'zej cpi g'eq't'k'f'qt'v'yj cv'y qwf 'iko k'ko r ceu'qp' ew'w'w'c'n'icpf 'p'c'w'w'c'n'it'guq'wtegu'0Vj g'lp'f k'g'ev'g'h'g'ew'v'qh'cngt'pcv'xg'u'5. '6. 'cpf '7'y qwf 'lp'x'q'rk'g'uqo g'g'x'g'n'qh' cf x'g'tug'g'h'g'ew'v'q'p'c'w'w'c'n'ic'ur gew'qh'yj g'r ctm'j' g'tkci g. 'u'w'ej 'cu'w'p'k'p'v'g't'w'v'g'f 'x'k'g'y u'c'et'qu'v'yj g'o ctuj'ncpf " qh'yj g'r ctm'icpf 'y'j g'cd'k'k'v'f 'v'q'g'uecr g'j' k'j j n' 'w'd'c'p'k' gf 'ctg'cu'y kj q'w't'go k'p'f g'tu'qh'yj cv'ncpf u'ecr g. 'cpf 'o c { " r'ko k'v'uo g'lp'f k'k'f w'c'n'ej q'legu't'gi ctf kpi 'x'k'k'q't'w'ug'lp'yj g'ctg'cu'qh'yj g'utcpuo kuukqp'ikpgu'0T gi ctf kpi " k'p'f k'k'f w'c'n'ej q'leg. 'cngt'pcv'xg'3c'y qwf 'cmqy 'hqt'r t'gug't'xc'v'kqp'qh'ew'w'w'c'n'icpf 'p'c'w'w'c'n'ic'ur gew. 'dw'y qwf " p'q'v'p'g'eg'w'c't'k'f { 'cmqy 'hqt'c'x'c't'k'v'f 'qh'lp'f k'k'f w'c'n'ej q'legu'd { 'c'm'r c't'v'k'g'u'lp'x'q'rk'gf 'lp'yj ku'r t'q'lg'ev'dgecw'ug'k'v' o c { 'w'ko cv'g'n'f 'h'gcf 'v'q'yj g'f g'x'g'n'r o gpv'qh'utcpuo kuukqp'ikpgu'yj cv'ctg'cp'lp'f k'g'ev'eq'p'ugs w'gep'g'qh'yj g' cevkqp'c'ngp'd { 'y'j g'P RUOCngt'pcv'xg'u'3d'cpf '7'y qwf 'cmqy 'hqt'o q't'g'ej q'legu. 'dw'o c { 'p'q'v'r t'gug't'x'g'c'm' p'c'w'w'c'n'ic'ur gew'qh'yj g'gpxk'qpo gpv'h'yj g'lp'f k'g'ev'g'h'g'ew'v'qh'utcpuo kuukqp'ikpgu'ctg'cf x'g'tug'0Cngt'pcv'xg'4" *y'j g'ces wukukqp'cngt'pcv'xg'g'y qwf 'd'gu'v'cmqy 'hqt'yj g'r t'gug't'xc'v'kqp'qh'yj g'g'cur gew'qh'yj g'r ctm'j' g'tkci g' dq'yj 'lp'yj g'HRN'eq't'k'f'qt'ctgc'cpf 'lp'yj g'g'p'w'k'g'GGGC. 'dw'y qwf 'iko k'lp'f k'k'f w'c'n'ej q'leg'cd'q'w'yj g'h'q'ec'v'kqp' qh'yj g'utcpuo kuukqp'ikpgu'qp'yj g'r t'k'x'c'v'g'ncpf u'q'w'w'k'f g'yj g'r ctm'0Vj g'ncpf 'g'zej cpi g'cngt'pcv'xg'u'5'cpf '6+" y qwf 'cmqy 'hqt'r t'gug't'xc'v'kqp'qh'yj g'g'cur gew'qh'yj g'r ctm'j' g'tkci g'lp'yj g'HRN'eq't'k'f'qt'ctgc. 'dw'y qwf " cmqy 'hqt'g'gu'r t'gug't'xc'v'kqp'cv'yj g'gf i g'qh'yj g'GGGC. 'y j k'g'cmqy kpi 'hqt'o q't'g'k'p'f k'k'f w'c'n'ej q'leg'lp'yj cv' ctgc'yj kj 't'gi ctf 'v'q'h'w'w'g'f'g'x'g'n'r o gpv.'g'ur gek'm'f 'w'p'f'gt'cngt'pcv'xg'5. 'y j gtg'yj gtg'ctg'o q't'g'ej q'legu' t'gi ctf kpi 'w'ug'qh'yj g'eq't'k'f'qt'hqt'w'k'k'v'f 'r w'r qugu'0'

Rwt r qug'7<Cngt'pcv'xg'3d'y qwf 'pqv'icpf 'k'ug'h'v'c'd'c'm'peg'd'g'y ggp'r q'r w'c'v'kqp'cpf 't'guq'wte'g'w'ug. " dgecw'ug'k'y qwf 'cmqy 'hqt'c'eq'p'v'k'p'kpi 'p'q'p'eq'p'h'q'to kpi 'w'ug'lp'yj g'r ctm'icpf 'y qwf 'pqv'v'c'ng'cevkqp'v'q" t'go gf { 'y'j cv'0Cm'cngt'pcv'xg'u'hqt'ncpf 'g'zej cpi g'*cngt'pcv'xg'u'5'cpf '6+'c'ko 'v'q'w'k'ng'c'd'c'm'peg'd'g'y ggp' r q'r w'c'v'kqp'cpf 't'guq'wte'g'w'ug'd { 'iko k'kpi 'ko r ceu'qp'r ctm'it'guq'wtegu'y j k'g'cmqy kpi 'hqt'c'w'ug'ko r qt'vcp'v'q" yj g'r q'r w'c'v'kqp'qh'u'q'w'j g'tp'H'q't'k'f'c'd { 'o q'x'kpi 'y'j g'eqput'wevkqp'qh'yj g'utcpuo kuukqp'ikpgu'v'q'yj g'r ctm' d'q'w'p'f'ct { 0Cngt'pcv'xg'3c'cpf 'y'j g'ces wukukqp'cngt'pcv'xg'*cngt'pcv'xg'4+y qwf 'r tqx'kf g'r tq'v'g'v'kqp'hqt'yj g' r ctm'dw'eq'w'f 'dg'uck'f 'v'q'j' cxg'iko k'g'f 'd'g'p'g'h'k'u't'gi ctf kpi 'c'd'c'm'peg'd'g'y ggp'r q'r w'c'v'kqp'cpf 't'guq'wte'g'w'ug' lp'yj g'ctgc'qh'r qu'k'd'ng't'g'nc'ec'v'g'f'eq't'k'f'qt'q'w'w'k'f'g'yj g'r ctm'0Cngt'pcv'xg'7'y qwf 'w'k'ng'c'd'c'm'peg'y kj 'ku' cmqy c'peg'hqt'hm'y ci g'p'g'g'f'gf 'hqt'G'x'g'ti n'f gu't'gu'q't'c'v'kqp'r t'q'lg'ew. 'dw'w'k'ni'y qwf 'k'p'nm'f g'o cp { 'lp'f k'g'ev' cf x'g'tug'g'h'g'ew'v'g'nc'v'g'f 'v'q'yj g'eqput'wevkqp'qh'c'utcpuo kuukqp'ikpg'lp'yj g'r ctm'0'

Rwt r qug'8<P q'p'g'qh'yj g'cngt'pcv'xg'u'f'k'g'ew'f 'c'f'f'g'u'gu'yj g't'ge { en'kpi 'qh'f'g'r'g'w'cd'ng't'guq'wtegu.'c'mj q'wi j 'y'j g' lp'f k'g'ev'g'h'g'ew'v'qh'd'w'k'f'kpi 'utcpuo kuukqp'ikpgu'y qwf 't'g's'w'k'g'h'w'gn'yj cv'ctg'f'g'r'g'w'cd'ng. 'y kj 'h'k'w'g'f'k'h'g't'p'eg' co q'pi 'y'j g'cngt'pcv'xg'u'0Cngt'pcv'xg'3c'y qwf 'j' cxg'yj g'h'g'cu'v'ko r cev'qh'cm'yj g'cngt'pcv'xg'u'cpf 'o g'g'v'yj ku' r w'r qug'yj g'd'gu'0Cm'cevkqp'cngt'pcv'xg'u'lp'x'q'rk'kpi 'ces wukukqp'qt'g'zej cpi g'y qwf 't'guwn'lp'gpj c'p'ekpi 'y'j g'

s wcrk\ 'qh'tgpgy cdrg'pcwtcn'tguqwtegu'lp'vj g'r ctm'd\ 'cmqy lpi 'hqt'P RU'o cpci go gpv'cpf 'r tqvgev'qp'qh'vj g' y gvr'p'f u'cpf 'y kf r'k'g'qh'vj g'GGGC.'dw'cngtpevkxg'5'y qwf 't guwn'lp'tgo qxcn'qh'vj g'gcu'gtp'eqttkf qt'htqo " P RU'eqpvtqri'cpf 'cngtpevkxg'6'y qwf 't guwn'lp'vj g'wug'qh'vj g'ncpf 'hqt'htcpuo kuukqp'hp'gu'cpf 'y qwf 'pqv' o gg'vj ku'r wtr qug'cu'y gni'cu'cngtpevkxg'40Cngtpevkxg'7'y qwf 'cmqy 'hqt'htqy ci g'v'q'uw'r qtv'vj g'tguv'qtcv'kqp" r tqlgeu'cpf 'y g'tgpgy cdrg'pcwtcn'tguqwtegu'qh'vj g'Gxgti ncf gu'dw'y qwf 'j cxg'cp'kp'f k'gev'gh'gev'qh' htcpuo kuukqp'hp'g'eqpwtwev'kqp'vj cv'y qwf 'f gvtcev'htqo 'vj ku'dgpghk0'

GPXKTQPO GPVCNNI 'RTGHGTCDNG'CNVGTPCVKXG'

Vj g'P RU'lp'cee'qtf cpeg'y kj 'y g'F gr ctwo gpv'qh'vj g'k'p'vgtkqt'P GRC'Tgi wcr'k'p'u*65'EHT'68+'cpf 'y g' Hqt'v\ 'O quv'Cungf 'S wgu'k'p'u'Eapegtplpi 'EGS au'P cv'k'p'cn'Gpxktqpo gpvcn'Rqri\ 'Cev'Tgi wcr'k'p'u'EGS " 3; : 3+.'f gh'p'gu'vj g'gpxktqpo gpvcn\ 'r tghgtcdng'cngtpevkxg'cu'vj g'cngtpevkxg'öy cv'ecwugu'vj g'gcu'v'f co ci g' vq'vj g'dlqmi kecn'cpf 'r j { ulecn'gpxktqpo gpv'cpf 'dgu'v'r tqv'geu.'r t'gugt'xgu.'cpf 'gpj cpegu'j ku'q'k'ecn'ew'w'w'cn" cpf 'pcwtcn'tguqwtegu'*65'EHT'68ö2+0Cngtpevkxg'4.'y g'f k'ge'v'ces wku'k'qp'cngtpevkxg.'y cu'kf gp'v'k'gf 'cu' yj g'gpxktqpo gpvcn\ 'r tghgtcdng'cngtpevkxg'd\ 'y g'P RU'Vj ku'f g'v'go l'p'cv'k'p'y cu'd'cu'gf 'qp'cx'ck'cdng" uelgp'v'k'le'f cv'e'qo r k'gf 'hqt'vj g'f tch'r n'p'IGU'cpf 'y g'eqo r c'tcv'k'g'c'p'cn\ uku'qh'lo r cew'qh'vj g'xct'k'qwu" cngtpevkxgu'0C'p'c'p'cn\ uku'qh'cx'ck'cdng'f cv'e'cpf 't'g'v'k'x'g'lo r cew'o cf g'k'v'ergt'vj cv'cngtpevkxg'4'dgu'v'o gg'u" yj g'tgs w'k'go gpw'qh'vj g'gpxktqpo gpvcn\ 'r tghgtcdng'cngtpevkxg'0Gxgp'y kj 'y g'tgcu'p'cdn\ 'hqt'guggcdng" eqpwtwev'kqp'qh'htcpuo kuukqp'hp'gu'q'w'k'f g'vj g'r ctm'v'vj g'gcu'v'cuu'q'ek'cv'f 'y kj 'cngtpevkxg'4.'y ku'cngtpevkxg' cmqy u'hqt'vj g'i tgc'v'w'f gi tgg'qh'j { f tqm'i le'cpf 'geq'm'i le'tguv'qtcv'kqp'qh'vj g'r ctm'p'f 'Gxgti ncf gu" gequ\ u'ngo 0Cngtpevkxg'3c'y qwf 'pqv'cmqy 'hqt'ces wku'k'qp'qh'vj g'gz'k'k'p'i 'HRN'r ctegr'y kj lp'vj g'GGGC." cpf 'y g'tghgt'g'y qwf 'pqv'uw'r r qtv'vj g'i qcn'qh'tguv'qtkpi 'y g'P GUTU'cpf 'h'w'k'k'p'i 'y g'r wtr qugu'qh'vj g' O qf k'k'gf 'Y cvgt 'F gr'x'gt'k'gu'*O Y F +r tqlge'v'cpf 'y g'E'qo r t'gi gp'k'x'g'Gxgti ncf gu'T guv'qtcv'kqp'Rncp'*EGTR+0 Cn'q'vj gt'cngtpevkxgu'cngtpevkxgu'3d.'5.'6.'cpf '7+y qwf 't guwn'lp'eqpwtwev'kqp'qh'htcpuo kuukqp'hp'gu" y kj lp'vj g'GGGC'd'q'w'p'f ct\ 'cpf 'y qwf 'f ku'w'r v'vj g'j { f tqm'i le'cpf 'geq'm'i le'tguv'qtcv'kqp'gh'ht'w'y kj lp'cpf " ctq'w'p'f 'y g'r ctm'p'f k't'ec'w'g'cf x'gt'ug'lo r cew'qp'r ctm'p'f guqwtegu'cpf 'xcn'w'gu'0'

PRURTGHGTTGF 'CNVGTPCVKXG'

Vj g'E'q'w'p'ek'i'qp'Gpxktqpo gpvcn'S wcrk\ 'EGS +t'gi wcr'k'p'u'hqt'lo r ngo gpv'k'p'i 'P GRC'tgs w'k'g'y cv'cp'ci gpe\ ' kf gp'v'k'h\ 'ku'r tghgtt'gf 'cngtpevkxg'qt'cngtpevkxgu'lp'c'f tch'GKU'h'q'pg'gz'k'w'u'*3724ö6*g+0Vj g'r tghgtt'gf " cngtpevkxg'ku'vj g'cngtpevkxg'öy j lej 'y g'ci gpe\ 'd'gr'k'x'gu'y qwf 'h'w'k'k'p'i ku'uc'w'w'qt\ 'o kuukqp'cpf " t'gu'r qp'uk'd'k'k'k'gu.'i k'k'p'i "eqp'uk'f g'tcv'k'p'v'q'geq'p'qo le."gpxktqpo gpvcn'v'gej p'lec'n'p'f 'q'vj gt'h'cev'tuö'*S wgu'k'p'u" 6c'qh'vj g'Hqt'v\ 'O quv'Cungf 'S wgu'k'p'u'Eapegtplpi 'EGS au'P cv'k'p'cn'Gpxktqpo gpvcn'Rqri\ 'Cev' Tgi wcr'k'p'u'EGS '3; : 3+0'

Vj g'P RU'j cu'pq'v'ug'ge'v'f "c'r tghgtt'gf 'cngtpevkxg'cv'vj ku'v'ko g0Dgh'q't'g'kf gp'v'k'h\ lpi 'c'r tghgtt'gf 'cngtpevkxg.'" yj g'P RU'y kn'l'ugg'n'r wdr'k'le."ci gpe\ 'cpf 'v'k'd'cn'eqo o gpw'qp'vj g'cngtpevkxgu'w'p'f gt'eqp'uk'f g'tcv'k'p'0' Hw'vj gto qt'g.'o wej 'qh'vj g'v'gej p'lec'n'l'p'ht'qto cv'k'p'cuu'q'ek'cv'f 'y kj 'htcpuo kuukqp'hp'g'uk'k'p'i."eqpwtwev'kqp.'cpf " lo r cev'cu'gu'uo gpv'eqp'cv'k'p'gf 'lp'vj ku'f tch'GKU'ku'f g't'k'x'g'htqo 'f qewo gpw'u'wdo k'w'g'f 'hqt'vj g'uc'v'g'uk'g" egt'v'k'ec'v'k'p'r t'q'egu'0U'p'eg'vj ku'r t'q'egu'ku'p'g'ct'k'p'i "eqp'ew'k'p'p'f 'y kn'd'g'eqo r ng'v'd'gh'q't'g'y g'h'p'cn'GKU'ku" t'gr'g'cu'gf.'y g'P RU'lp'v'p'f u'v'q'w'ug'cp\ 'p'gy 'qt'cf f k'k'q'p'cn'l'p'ht'qto cv'k'p'htqo 'y g'h'p'cn'egt'v'k'ec'v'k'p'f g'ek'uk'qp" cpf 't'ge'q't'f 'v'q'cu'ku'v'lp'kf gp'v'k'h\ lpi 'y g'ci gpe\ 'r tghgtt'gf 'cngtpevkxg'0C'r tghgtt'gf 'cngtpevkxg'y kn'd'g" kf gp'v'k'h'gf 'cpf 'cpp'q'w'p'eg'f 'lp'vj g'h'p'cn'GKU'0'

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TABLE 1: SUMMARY OF THE ALTERNATIVES

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
Action Taken by the NPS					
No action would be taken to acquire the FPL property (the 7.5-mile-long corridor) or a flowage easement on it within the boundary of the park.	No action would be taken to acquire the FPL property (the 7.5-mile-long corridor) within the boundary of the park or a flowage easement on it.	The FPL property within the boundary of the park would be acquired in fee.	The FPL property within the boundary of the park would be acquired in fee in exchange for giving FPL fee title ownership of the exchange corridor, and an adjacent 90-foot wide vegetation management easement.	The FPL property within the boundary of the park would be acquired in fee in exchange for giving FPL an easement for potential construction of transmission lines in the exchange corridor, and an adjacent 90-foot wide vegetation management easement.	The NPS would obtain a perpetual flowage easement over the FPL property within the boundary of the park that would allow for sufficient flow to support ecosystem restoration projects.
Terms and Conditions Linked to the Action					
None.	None.	None.	Terms and conditions would be established to protect park resources and values (see appendix G). These would potentially allow for other utility-related facilities (such as pipelines and communication facilities), in addition to electric transmission lines and appurtenant facilities, because FPL would own the property.	Terms and conditions would be established to protect park resources and values (see appendix H). These would be similar to those under alternative 3, but would differ in that allowable utility-related facilities would be limited to electric transmission lines and appurtenant facilities. NPS would retain approval rights for a number of FPL's stewardship plans for the FPL Utility Easement Area.	Terms would be incorporated in the perpetual flowage easement to ensure adequate flowage for resource protection.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
Gain or Loss of NPS Property within Everglades National Park					
None.	None.	NPS gain of 320 acres in the former FPL corridor location.	NPS gain of 320 acres in the former FPL corridor location, and a loss of 260 acres in the exchange corridor – net NPS gain of 60 acres.	NPS gain of 320 acres in the former FPL corridor location; no loss of property in the exchange corridor, but loss of unencumbered use where transmission lines could be built.	None.
Flowage in the EEEA					
No long-term flowage easement over the FPL property would be executed. Result: no additional flowage would be allowed over the EEEA.	No long-term flowage easement over the FPL property would be executed. Result: no additional flowage would be allowed over the EEEA.	Long-term additional flowage could occur over the EEEA, because the NPS would own the land.	Lands conveyed to FPL would be subject to a perpetual flowage easement as a condition of the exchange. FPL would allow the United States the right to flood and submerge lands conveyed to FPL consistent with hydrologic restoration requirements.	The FPL Utility Easement Area would be subject to a perpetual flowage easement as a condition of the exchange. The United States would retain the right to flood and submerge this area consistent with hydrologic restoration requirements.	Perpetual flowage easement over the FPL property would allow the United States the right to flood and submerge this area consistent with hydrologic restoration requirements.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
Cost					
None.	None.	Uncertain. Cost to acquire could range from the value of vacant, undeveloped land to the value of a fully entitled utility corridor based on final appraisals. Since the FPL property is part of a larger utility corridor, it is estimated that the cost of acquisition could approach one hundred million dollars. If FPL and NPS could not agree on just compensation, a court would determine value.	Uncertain. Values of FPL property and NPS land would be equal or equalized per authorizing legislation (PL 111-11). Value of FPL's property could range from the value of vacant, undeveloped land to the value of a fully entitled utility corridor based on final appraisals. This is likely to be the lowest cost alternative.	Uncertain. The cost to the NPS would be based on whether the appraised value of the FPL lands exceeds the appraised value of the easement to be conveyed to FPL on NPS lands. This alternative is likely to cost more than alternative 3 but less than alternative 2.	Uncertain. Just compensation for acquisition of a perpetual flowage easement on FPL's property has not been estimated. NPS anticipates that just compensation for the acquisition of a flowage easement would be less costly than fee-simple acquisition (as described under alternative 2).

TABLE 2: ANALYSIS OF HOW THE ALTERNATIVES MEET PROJECT OBJECTIVES

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
<p>Objective: Ensure consistency with the Everglades National Park Protection and Expansion Act of 1989 (Expansion Act) and the 1991 Land Protection Plan (LPP) for the EEEA. This includes the following:</p> <ul style="list-style-type: none"> Increasing the level of protection of the outstanding natural values of the park and enhancing and restoring the ecological values, natural hydrologic conditions, and public enjoyment of such areas by adding the area commonly known as the NESRS and the East Everglades to the park (16 USC 410r-5), and Assuring that the park is managed in a way that maintains the natural abundance, diversity, and ecological integrity of native plants and animals, as well as the behavior of native animals, as part of its ecosystem (16 USC 410r-5). 					
Because no acquisition or land exchange would occur, protection of the NESRS and EEEA would not be increased. There would be no perpetual flowage easement, so the ability to complete Everglades restoration projects would be in jeopardy. Although this alternative assumes for analytical purposes that no transmission lines would be built in the park, in the exchange corridor, or in any area outside the park, that scenario appears to be unlikely. Continuation of FPL ownership means that there would be the possibility of a transmission line being built in the corridor, which would have adverse effects on park resources. This alternative does not meet the objective.	Because no acquisition or land exchange would occur, protection of the NESRS and EEEA would not be increased. There would be no perpetual flowage easement, so the ability to complete Everglades restoration projects would be in jeopardy. This alternative assumes that a transmission line would be built in the corridor, which would have adverse effects on park resources. This alternative does not meet the objective.	Acquisition would be consistent with direction provided by the Expansion Act and the 1991 LPP for the East Everglades Addition. It would increase the level of protection of the park's resources and values. This alternative would facilitate Everglades restoration efforts by removing an obstacle that prevents hydrologic restoration in NESRS. Restoration currently planned under the MWD project would result in ecological benefits across 109,000 acres of Everglades National Park. This alternative would also facilitate future restoration efforts including Tamiami Trail Next Steps, Central Everglades Planning Project (CEPP), and CERP, which may result	This alternative reduces potential impacts on NESRS by moving transmission line impacts on an area adjacent to more developed and less pristine areas east of the park. Protection of the NESRS and EEEA would be increased because this alternative provides for NPS ownership of the heart of the NESRS, which allows for flowage and restoration projects to occur. This alternative would facilitate Everglades restoration efforts by removing an obstacle that prevents hydrologic restoration in NESRS. Restoration currently planned under the MWD project would result in ecological benefits across 109,000 acres of Everglades National Park. This alternative would also facilitate future restoration efforts including Tamiami Trail Next Steps, CEPP, and	This alternative would have similar attributes with regard to this objective as alternative 3. With continued park ownership of the exchange corridor, there would be more assurance that that part of the EEEA could be managed in accordance with park goals, and development would be limited to transmission lines (no other utility uses, which are permitted in alternative 3). This alternative partially meets the objective.	Because there would be no acquisition of the FPL corridor within the boundary of the park, there would be no increased protection for the NESRS and EEEA with regard to ownership, but the flowage easement would allow the Everglades restoration projects to be completed. Continuation of FPL ownership with flowage permitted means that there is the possibility of transmission lines being built in the corridor, which would have adverse effects on park resources. Hydrological functions and values would be preserved with the flowage easement; however, if construction were to commence, there would be adverse impacts.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
		<p>in benefits throughout much of the greater Everglades including nearly all of the freshwater wetlands in Everglades National Park, and extending into Florida Bay.</p> <p>This alternative fully meets the objective.</p>	<p>CERP, which may result in benefits throughout much of the greater Everglades including nearly all of the freshwater wetlands in Everglades National Park, and extending into Florida Bay. The land that is exchanged would be removed from park protection and could be used for transmission lines and other utility uses, and these impacts would occur immediately adjacent to the eastern edge of the park, so this alternative does not avoid all adverse impacts on ecological values of the park.</p> <p>Construction and operation of transmission lines, and possibly other utilities in the exchange corridor would have major adverse impacts on park resources and values that would be inconsistent with the Expansion Act and LPP.</p> <p>Wetlands of international importance would be filled for access roads and tower pads that would segment the exchange corridor and adjacent SFWMD wetlands from NESRS and disrupt sheetflow on those lands.</p> <p>Endangered wood storks could experience a population level decline due to habitat loss or degradation</p>		<p>This alternative partially meets the objective.</p>

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
			and the risk of mortality from line collisions or electrocutions. The presence of the transmission lines and other utilities would permanently degrade the scenic viewshed and visitor enjoyment of the EEEA. This alternative partially meets the objective.		
Objective: Ensure consistency with the Congressional intent of the Omnibus Public Land Management Act of 2009 such that the Secretary of the Interior consider the land exchange with specified terms and conditions and after appropriate environmental review of the impacts of the exchange.					
The NPS would consider a land exchange under this or any alternative. Since the Omnibus Act conveys discretion to the Secretary of the Interior in effecting a land exchange, this and all alternatives meet this objective by the letter of the act and by the preparation of this EIS.	See alternative 1.	See alternative 1.	See alternative 1.	See alternative 1.	See alternative 1.
Objective: Support and facilitate implementation of the MWD project, the Tamiami Trail Next Steps Project, and the CERP.					
No long-term flowage easement over the FPL property would be executed. The lack of flowage would not support and facilitate any restoration efforts within the EEEA and Shark River Slough (SRS). This alternative would not meet the objective.	No long-term flowage easement over the FPL property would be executed. The lack of flowage would not support and facilitate any restoration efforts within the EEEA and SRS. This alternative would not meet the objective.	Current FPL land would be acquired through fee purchase, and this acquisition was directed by Congress to meet the objectives of the MWD project to improve the hydrologic conditions of the NESRS. The hydrologic functions of the acquired lands would be restored. The CERP is	The land exchange would support restoration objectives for the EEEA and give the NPS the ability to accommodate enhanced flows associated with restoration projects, thus providing ecosystem benefits to 109,000 acres in the NESRS. A perpetual flowage easement would be a condition of the exchange.	Same as alternative 3.	The perpetual flowage easement would allow hydrologic functions to be restored in the EEEA, but would still allow a transmission line to be constructed within the EEEA. This alternative meets the objective to a large degree.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
		consistent with the MWD project. This alternative fully meets the objective.	FPL would grant the United States the right to allow for higher water levels consistent with restoration requirements. The flowage easement would help to meet the objectives of the MWD project to improve the hydrologic conditions of the NESRS. The removal of 260 acres of wetlands from the park and subsequent development of access roads and transmission lines, would disconnect this area from NESRS and disrupt sheetflow in the exchange corridor and adjacent SFWMD wetlands. These impacts would impede restoration of hydrologic functions in the exchange corridor and adjacent SFWMD wetlands along the eastern edge of NESRS. These impacts would be inconsistent with the objectives of the MWD, Next Steps, and CERP projects. This alternative partially meets the objective.		
Objective: Support the timely acquisition of existing FPL property within the EEEA, or sufficient interest in this property, to allow for flooding of the area to facilitate restoration efforts within the park.					
The existing FPL property within the EEEA or sufficient interest would not be acquired. This alternative would not	The existing FPL property within the EEEA or sufficient interest would not be acquired. This alternative would	The FPL property within the EEEA would be acquired, but it may take additional time to acquire the FPL property without	The FPL property within the EEEA would be acquired, and it is expected that this could be accomplished in a timely manner and faster	Same as alternative 3.	Sufficient interest in the FPL property within the EEEA to allow for flooding of the area to facilitate restoration

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
meet the objective.	not meet the objective.	an exchange as part of the transaction, because this would put FPL in the position of having to find another route outside the park. This alternative may fully meet the objective, depending on the timing for completing all related land acquisitions and prerequisites needed to allow higher water stages in the EEEA.	than alternative 2 because of the exchange benefits to FPL. This alternative fully meets the objective.		efforts within the park would be acquired. This alternative fully meets the objective.

TABLE 3: SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
Hydrology					
There would be no physical change to the land, so there would be no direct physical impacts on hydrology. However, NPS would be unable to increase water levels in the NESRS, preventing restoration on a regional scale and obstructing implementation of regional ecosystem restoration activities that rely on additional flow. Inability to allow additional flow across the corridor would result in long-term major indirect adverse impacts on hydrology. There would be no impacts related to transmission line construction. Alternative 1a would contribute appreciable adverse impacts on the overall cumulative effects on hydrology in this area.	The impacts from the lack of a real estate transaction would be the same as under alternative 1a; flowage restrictions would result in long-term indirect major adverse impacts on hydrology. There would also be long-term major adverse impacts on hydrology from construction of the transmission lines, particularly the disruption of sheetflows through the culverts, and the likelihood that there would be reduced hydroperiods downstream of the culverts. Forcing the flow through culverts could result in scour, and localized long-term negligible to minor adverse impacts. Construction activities for the transmission lines would cause short-term moderate adverse impacts related to small to large-scale interrupted hydrologic processes that would occur during	Overall, there would be no direct impacts on hydrology from NPS acquisition of the FPL corridor. There would be indirect long-term benefits of acquisition and the additional protection to the land that would result from the change in ownership, and the ability of the NPS to allow the enhanced flows across the corridor called for in the ecosystem restoration plans. Under alternative 2, there would be short- and long-term negligible to moderate impacts on hydrology in the wetlands in the area of possible relocated corridor as a result of transmission line construction and temporary blockage of flow across the corridor, and longer-term fragmentation of the hydrologic processes around the new transmission lines. Impacts from	There would be substantial indirect long-term beneficial impacts from the exchange and the ability for the NPS to increase water levels across the acquitted FPL property and implement flow-related ecosystem restoration activities. The transmission lines would be located adjacent to the existing L-31N levee, so impacts on hydrology throughout the NESRS would be less than would occur if the lines were built in the existing FPL corridor further west. The hydroperiod would be maintained, but sheetflow patterns would be disrupted by the transmission line platforms, which cannot be easily mitigated. Water is also flowing toward the canal in many parts of this area, so impacts from this would be minimized in these places, and the corridor is far enough east that impacts would be minimized. The regional ecosystem	The impacts of land exchange and construction, as well as cumulative impacts would be the same as under alternative 3 except no other utilities could be built in the corridor, which would lessen the risk of additional hydrologic impacts. Impacts from the land exchange would be long term and beneficial; impacts from construction of the transmission lines would be long-term moderate adverse, and there would be additional localized long-term negligible to minor adverse impacts at the culverts where water is channelized and scour could occur. There would be short-term minor to moderate adverse construction-related impacts related to small to large-scale interrupted hydrologic processes that would also occur. Alternative 4 would contribute appreciable	There would be substantial indirect long-term beneficial impacts from the easement and the ability for the NPS to increase water levels across the FPL property and implement flow-related ecosystem restoration activities. Construction of the transmission lines would have similar impacts as described under alternative 1b, except that enhanced flows would be accommodated. The placement of the transmission lines would result in long-term minor to major adverse impacts, and localized negligible to minor adverse impacts related to scour around the culverts, and short-term moderate adverse construction-related impacts related to small to large-scale interrupted hydrologic processes that would also occur. Alternative 5 would contribute appreciable

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	<p>construction.</p> <p>Alternative 1b would prevent or obstruct implementation of regional flowage-related projects and would therefore result in major adverse impacts. This alternative would contribute appreciable adverse impacts to the overall cumulative effects on hydrology in this area.</p>	<p>transmission line construction inside the park would be avoided.</p> <p>Alternative 2 would contribute appreciable benefits to the overall cumulative impacts on hydrology; the contribution of adverse effects from the construction of the transmission lines outside the park would be only slightly noticeable overall.</p>	<p>restoration activities that rely on enhanced flow would be possible because the culverts beneath the transmission lines would be sized adequately to handle enhanced flows. There would be additional localized long-term negligible to minor adverse impacts at the culverts where water is channelized and scour could occur. There would be short-term minor to moderate adverse construction-related impacts related to small to large-scale interrupted hydrologic processes.</p> <p>Alternative 3 would contribute both appreciable long-term beneficial impacts, and noticeable long- and short-term adverse impacts on overall cumulative impacts on hydrology in this area.</p>	<p>long-term beneficial impacts and noticeable long- and short-term adverse impacts to the overall cumulative impacts on hydrology in this area.</p>	<p>beneficial impacts to overall cumulative impacts by allowing enhanced flows, but would also contribute appreciable long-term adverse impacts because the culverts under the transmission lines would noticeably disrupt sheetflow and disrupt hydrology in this area.</p>
Water Quality					
There would be no direct impacts on water quality since there would not be any real estate transaction, but the absence of a flowage easement would	Impacts related to the land acquisition action would be the same as under alternative 1a. There would be no direct impacts on water quality	Acquisition of the FPL corridor and the ability to flow additional water across the property would result in indirect long-term beneficial	There would be no direct impacts on water quality under alternative 3, but there would be indirect long-term beneficial impacts on water quality	Impacts on water quality would be the same as discussed under alternative 3 except no other utilities could be built in the corridor,	There would be indirect long-term benefits to water quality from the flowage easement, but there would also be indirect major long-term

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<p>prevent or delay implementation of flow-dependent ecosystem restoration projects, resulting in long-term indirect minor adverse impacts on water quality. There would be no impacts related to transmission line construction.</p> <p>Alternative 1a would contribute slightly noticeable long-term adverse impacts to overall cumulative effects on water quality in the area.</p>	<p>since there would not be any real estate transaction. However, the absence of a flowage easement would prevent or delay implementation of flow-dependent ecosystem restoration projects, resulting in long-term indirect minor adverse impacts on water quality. Construction of the transmission lines without a flowage easement in the FPL corridor would permanently hinder the implementation and success of ecosystem restoration projects, and would therefore result in major adverse impacts. There would also be short-term minor to moderate adverse impacts related to construction activities.</p> <p>Alternative 1b would contribute appreciable long-term adverse impacts, as well as noticeable short-term adverse construction-related impacts to overall cumulative impacts to water quality in the area.</p>	<p>impacts on water quality in EEEA. Impacts from the construction of the transmission lines outside the park would be similar to, but less intense than those described under alternative 1b—indirect, long-term negligible to minor adverse, and short-term negligible to minor adverse for construction activities. Impacts from transmission line construction inside the park would be avoided. Alternative 2 would contribute appreciable benefits to the overall cumulative impacts on water quality within the park; the contribution of adverse effects from the construction of the transmission lines outside the park would be only slightly noticeable.</p>	<p>as the result of being able to accommodate enhanced restoration flows, and placing a large area of connected land into NPS ownership, allowing for management of park resources, including water quality, consistently with park objectives. Additional indirect impacts similar in nature to those discussed under alternatives 1b and 2 would be related to the construction of transmission lines in the FPL West Preferred Corridor and would be both long-term minor adverse impacts, and short-term minor to moderate adverse impacts.</p> <p>Alternative 3 would contribute appreciable benefits to water quality regionally, but would also contribute noticeable short and long-term adverse impacts to cumulative effects on water quality in the study area.</p>	<p>which would lessen the risk of additional water quality impacts. There would be no direct impacts on water quality under alternative 3, but there would be indirect long-term beneficial impacts on water quality as the result of being able to accommodate enhance restoration flows, and placing a large area of connected land into NPS ownership, allowing for management of park resources, including water quality, consistently with park objectives. Additional indirect impacts similar in nature to those discussed under alternatives 1b and 2 would be related to the construction of transmission lines in the FPL West Preferred Corridor and would be both long-term minor adverse impacts, and short-term minor to moderate.</p> <p>Alternative 4 would contribute appreciable benefits to water quality regionally, but would also contribute</p>	<p>adverse impacts and short-term minor to moderate adverse impacts related to the construction of the transmission lines, although increased flows would attenuate some of these adverse impacts downstream of the culverts and transmission lines.</p> <p>Alternative 5 would contribute appreciable beneficial impacts, and noticeable adverse impacts to cumulative effects on water quality in the area where sheetflow is disrupted, and wetlands could be more subject to drying.</p>

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				noticeable short and long-term adverse impacts to cumulative effects on water quality in the study area.	
Soils					
There would be no direct impacts from the FPL retention of property in the EEEA, but there would be long-term major adverse impacts on soils because of the lack of additional flowage and resultant loss of peat soils. There would be no impacts related to transmission line construction. Alternative 1a would contribute appreciable adverse impacts to the overall cumulative effects on soils in this area.	There would be no direct impacts on soils from the FPL retention of property in the EEEA. Indirect impacts on soils would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short- and long-term minor to moderate adverse impacts from construction, long-term major adverse impacts from a permanent loss of 182 acres of soils, and negligible impacts from line maintenance. Alternative 1b would contribute appreciable adverse impacts to the overall cumulative effects on soils in this area.	There would be no direct impacts from the acquisition of FPL property in the EEEA, with indirect benefits from the acquisition itself and the ability to increase water levels over the area, which contributes to the development of soils. There would be indirect long-term moderate adverse impacts on soils from transmission line construction east of the park, which would result in the loss of 164 acres of soils outside the park. The severity of impacts would depend on where the transmission lines were located within the area of possible relocated corridor, and some of the soils in this area have been disturbed, drained, or cleared of vegetation. In general, impacts on soils would be greater along the	There would be no direct impacts from the exchange of FPL property in the EEEA. There would be indirect long-term beneficial impacts from having all the EEEA under NPS ownership, resulting in the ability to go forward with Everglades ecosystem restoration projects and the enhancement of resource conservation and values of the park, including soil resources. However, these gains would be offset to some degree by long-term indirect moderate adverse impacts occurring from the removal of 260 acres of soils from the park and associated park management activities. There would be indirect major adverse impacts on soils from the construction of the transmission lines in the FPL West Preferred	There would be benefits to soils as described under alternative 3, but with easement terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance or removal of soils. There would be no direct impacts on soils from the exchange of FPL property in the EEEA. There would be indirect beneficial impacts from a gain in land and soils in the park and from having a majority of the EEEA under NPS ownership, resulting in the ability to go forward with ecosystem restoration without any potential future obstacles, which would enhance the conservation of the resources and values of the park, including soil resources. Additional beneficial impacts would	Impacts on soils would be similar to those for alternative 1b. There would be no direct impacts on soils from the FPL retention of property in the EEEA, but there would be long-term benefits from having a perpetual flowage easement agreement. Indirect impacts on soils would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short- and long-term minor to moderate adverse impacts from construction and negligible impacts from line maintenance, and long-term major adverse impacts from the permanent loss of 182 acres of soils including 89 acres in the park. Alternative 5 would contribute both appreciable adverse and

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		<p>eastern and northern portions of the area and reduced along the western and southern portions of the area where soils have already been disturbed. There would also be minor adverse impacts on designed unique farmland soils in the southern portion of the route outside the park. Impacts from transmission line construction inside the park would be avoided. Alternative 2 would contribute appreciable beneficial and noticeable adverse impacts to the overall cumulative effects on soils in this area.</p>	<p>Corridor with a resulting permanent loss of 181 acres of soils including 80 acres in the exchange corridor. There would also be long-term minor adverse impacts on unique farmland soils located within this corridor but in an agricultural area south of the park boundary, and short-term minor to moderate adverse construction-related impacts. The unique farmland soils are not in the park, but are part of the corridor being analyzed from nexus to nexus, Alternative 3 would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on soils in this area.</p>	<p>occur under terms and conditions that would reduce the risk of having additional utility facilities developed within the exchange corridor, thereby minimizing the effects of associated disturbance or removal soils. Indirect adverse impacts on soils from the construction of the transmission lines in the FPL West Preferred Corridor would include: long-term major adverse impacts on soils within the footprint of towers and roads resulting in a loss of 181 acres of soils, including 80 acres in the exchange corridor. There would be long-term minor adverse impacts on designated “unique” farmland soils outside the park; and short-term minor to moderate adverse construction-related impacts.</p> <p>Alternative 4 would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on soils in this area.</p>	<p>appreciable beneficial impacts to the overall cumulative effects on soils in this area, although the benefits would not be as extensive as those under the alternatives that result in the acquisition of soils in the park.</p>

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Vegetation and Wetlands					
The retention of ownership of land in the EEEA by FPL without construction on the FPL West Secondary Corridor, in the exchange corridor, or in any area outside the park, would result in continued indirect long-term major adverse impacts on vegetation and wetlands due to continued habitat degradation from altered hydrology. Habitat restoration and exotic species management efforts within the park would be hindered by the lack of a flowage easement, or sufficient interests in these properties, to increase water levels across the FPL West Secondary Corridor, thereby having a negative impact on vegetation and wetlands. There would be no impacts on vegetation and wetlands from transmission line construction since no construction would occur on the FPL West Secondary Corridor, in the exchange corridor, or in any area outside the park. Alternative 1a would contribute appreciable adverse impacts to the	FPL would retain ownership of land in the EEEA. Indirect long-term moderate to major adverse impacts on vegetation and wetlands would occur as described under alternative 1a. Impacts on vegetation and wetlands would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include localized short- and long-term major adverse indirect impacts from construction and operation of the transmission line. These impacts would include a permanent loss of approximately 179.7 acres of wetlands, of which 89.1 acres are within the park boundary. Alternative 1b would contribute appreciable adverse impacts to the overall cumulative effects on wetlands and vegetation in this area.	There would be substantial long-term beneficial impacts on vegetation and wetlands from the acquisition of FPL property in the EEEA. The land acquisition would remove a large area of non-NPS ownership of land in the interior of the park, ensuring that no other development would be proposed in this area and that the various Everglades ecosystem restoration projects could occur without any obstacles relating to the presence of this parcel. Adverse impacts would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park and would include short- and long-term negligible to moderate adverse impacts on vegetation and wetlands, depending on the location of the lines; impacts could be less due to fewer wetland	There would be substantial beneficial impacts on vegetation and wetlands from having a net gain in wetland acreage to the park and having the main body of EEEA wetlands reconnected in NPS ownership, resulting in the ability to go forward with ecosystem restoration without any potential future obstacles from the FPL parcel. Placing the majority of the EEEA under NPS ownership would enhance the conservation of the resources and values of the park, including vegetation and wetlands. Alternative 3 would also result in a loss of 260 acres of wetlands in the exchange corridor. There would be a net gain of 60 acres, but a loss of 260 acres. This is a direct long-term, major adverse impact from the loss of park wetlands/vegetation (260 acres), and negligible to minor adverse impacts from the loss of the ability to maintain	There would be benefits to vegetation and wetlands as described under alternative 3, but with easement terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance or removal of wetlands. There would be no major adverse impacts related to the land exchange because the acreage of vegetation /wetlands would remain the same within the park boundary (this is a difference between alternatives 3 and 4). Short- and long-term major adverse impacts on vegetation and wetlands from transmission line construction would be the same as described under alternative 3, because there are no substantial differences in the terms and conditions under this alternative and no expected differences in how wetlands would be treated under an	Impacts would be similar to alternative 1b, except there would be substantial long-term benefits from having a perpetual flowage easement agreement. Adverse impacts on vegetation and wetlands would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short- and long-term major adverse impacts from the transmission lines. Alternative 5 would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on wetlands and vegetation in this area, although the benefits would not be as extensive as those under the alternatives that result in acquisition of wetlands in the park.

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overall cumulative effects on wetlands and vegetation in this area.		acres in the area of possible relocated corridor compared to the areas crossed by the other routes in the FPL West Secondary and FPL West Preferred Corridors and the relative quality of the wetlands. Impacts from transmission line construction inside the park would be avoided. Alternative 2 would contribute appreciable benefits and somewhat noticeable adverse effects to the overall cumulative effects on wetlands and vegetation in this area.	wetlands/vegetation per NPS standards. There would also be adverse impacts on vegetation and wetlands from the construction of the transmission lines in the FPL West Preferred Corridor, which would include short- and long-term minor major adverse impacts from transmission line construction. Alternative 3 would contribute appreciable benefits and appreciable adverse impacts to overall cumulative impacts on vegetation and wetlands.	easement as opposed to under fee ownership, given the mitigation that FPL included in its SCA and expected conditions in the required resource stewardship plan. The park would have slightly more control over vegetation management in the exchange corridor than under alternative 3. Alternative 4 would contribute appreciable benefits and appreciable adverse impacts to overall cumulative impacts on vegetation and wetlands.	
Floodplains					
There would be no direct impacts on floodplain function and values, but there would be long-term indirect major adverse impacts related to the lack of a flowage easement and the inability to proceed with flow-dependent ecosystem restoration projects that would prevent moving additional water into the park. There would be no construction under this alternative, so there would	The direct and indirect impacts on floodplains related to the land acquisition decision would be the same as under alternative 1a; with no direct impacts on floodplain function and values, but with long-term major adverse impacts related to the lack of a flowage easement and the inability to proceed with flow-dependent	Overall, there would be no direct impacts on floodplains from obtaining the FPL corridor. There would be indirect benefits of acquisition itself from placing ownership of this area solely with the NPS and the ability to continue flow-dependent ecosystem restoration projects. Under alternative 2, there would be long-	There would be no direct impacts on floodplains from the implementation of the land exchange associated with this alternative. There would be long-term indirect beneficial impacts of acquiring the FPL land, which would enhance the conservation of the resources and values of the park, including floodplains and their values and functions, and	Impacts would be the same as described under alternative 3 except no other utilities could be built in the corridor, which would lessen the risk of additional floodplain impacts. There would be no direct impacts on floodplains from the implementation of the land exchange, but there would be long-term indirect beneficial	Impacts on floodplains would be the similar to those discussed under as under alternative 1b, except that the accommodation of advanced flows would improve floodplain function and values. Alternative 5 would contribute appreciable beneficial impacts by allowing enhanced flows and a higher flood stage, and noticeable adverse

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<p>be no construction-related impacts.</p> <p>Alternative 1a would contribute appreciable adverse impacts to the cumulative impacts on floodplains in the area.</p>	<p>ecosystem restoration projects that would prevent moving additional water into the park. There would be additional long-term moderate adverse impacts on floodplain functions and values related to the construction of the transmission lines. Construction of the transmission lines without a flowage easement in the FPL corridor could permanently hinder the implementation and success of these projects.</p> <p>Alternative 1b would contribute appreciable adverse impacts to the overall cumulative effects on floodplains in this area.</p>	<p>term indirect negligible adverse impacts related to transmission line construction and presence in an area that has already been segmented hydrologically and disconnected from the natural floodplain. Impacts from transmission line construction inside the park would be avoided. Alternative 2 would contribute noticeable benefits to the overall cumulative impacts on floodplains; the contribution of adverse effects from the construction of the transmission lines outside the park to cumulative impacts on floodplains would be only slightly noticeable overall.</p>	<p>allow for flow-dependent ecosystem restoration projects to proceed. There would be long-term moderate adverse impacts on floodplain functions and values from construction and presence of transmission lines in the FPL West Preferred Corridor due to increased compartmentalization and the effects of the disrupted sheetflows on floodplain values, such as habitat.</p> <p>Alternative 3 would contribute appreciable long term beneficial, and noticeable adverse impacts to the cumulative impacts on floodplains in the area.</p>	<p>impacts of acquiring the FPL land, which would enhance the conservation of the resources and values of the park, including floodplains and their values and functions, and allow for flow-dependent ecosystem restoration projects to proceed. There would be indirect adverse impacts from construction and presence of transmission lines in the FPL West Preferred Corridor resulting in long-term moderate adverse impacts on floodplains and floodplain function and values.</p> <p>Alternative 4 would contribute appreciable long term beneficial, and noticeable adverse impacts to the cumulative impacts on floodplains in the area.</p>	<p>impacts to cumulative impacts on floodplains in the area.</p>
Soundscapes					
<p>FPL retention of ownership of land in the EEEA would not have any impacts on soundscapes. Alternative 1a would not involve transmission line construction and therefore</p>	<p>There would be no impacts on soundscapes from the FPL retention of property in the EEEA. Indirect impacts in the park resulting from the construction of the</p>	<p>There would be no impacts on soundscapes from the acquisition of FPL property in the EEEA. Indirect impacts resulting from the</p>	<p>There would be no impacts on soundscapes from the fee for fee land exchange of FPL and NPS property within the EEEA. Indirect impacts in the park resulting from</p>	<p>There would be no impacts on soundscapes from the easement for fee land exchange with FPL in the EEEA. Construction of the transmission lines in the</p>	<p>There would be no impacts on soundscapes from the long-term flowage easement on FPL property. Construction of the transmission lines in the</p>

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would have no impacts on soundscapes from transmission line construction or presence.	transmission lines in the FPL West Secondary Corridor would be short term, moderate, and adverse as a result of construction activities and long term, minor, and adverse from corona discharge during wet weather. There would be short-term moderate adverse construction-related impacts in residential areas. Long-term impacts from maintenance activities would be negligible and adverse. Alternative 1b would contribute noticeable adverse effects to cumulative impacts to soundscapes in the park, but little to no long-term cumulative impacts in residential areas.	construction of the transmission lines in the area of possible relocated corridor would be short term, moderate, and adverse as a result of construction activities and long term, negligible to minor, and adverse from corona discharge during wet weather. There would be short-term moderate adverse construction-related impacts in residential areas. Long-term impacts from maintenance activities would be negligible and adverse. The geographic extent of impacts in the park and in residential areas would vary considerably depending on the exact route alignment. Alternative 2 would contribute imperceptible impacts to overall cumulative impacts on soundscapes in the park in the long term, but noticeable adverse impacts in the short term; alternative 2 would not contribute	the construction of the transmission lines in the FPL West Preferred Corridor would be short term, moderate, and adverse as a result of construction activities and long term, minor, and adverse from corona discharge during wet weather. There would be short-term moderate adverse construction-related impacts on residential areas. Long-term impacts from maintenance activities would be negligible and adverse. Alternative 3 would contribute somewhat noticeable impacts to the overall cumulative impacts on soundscapes in the park; alternative 3 would not contribute noticeable long-term adverse cumulative impacts in residential areas.	FPL West Preferred Corridor would have short-term moderate adverse impacts in the park as a result of construction activities and long-term minor adverse impacts from corona discharge during wet weather. Periodic line maintenance would have long-term negligible adverse impacts. No other utilities could be built in the corridor, which would lessen the risk of additional noise-related impacts of construction of these facilities. There would be short-term moderate adverse impacts in residential areas. Maintenance activities would result in long-term negligible adverse impacts in residential areas. Alternative 4 would contribute somewhat noticeable adverse impacts to the overall cumulative impacts on soundscapes in the park; alternative 4 would not contribute noticeable long-term adverse cumulative impacts in	FPL West Secondary Corridor would have indirect, short-term moderate adverse impacts in the park as a result of construction activities and long-term minor adverse impacts from corona discharge during wet weather. Construction would have short-term moderate adverse impacts in residential areas. Maintenance activities would have long-term negligible adverse impacts. Alternative 5 would contribute noticeable adverse effects to cumulative impacts to soundscapes in the park, but little to no long-term cumulative impacts in residential areas.

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		noticeable long-term adverse cumulative impacts in residential areas.		residential areas.	
Wildlife					
There would be no direct impacts on wildlife from the land acquisition action. Long-term, moderate to major, indirect adverse impacts are expected to wildlife due to continued FPL ownership of land within the park and the lack of a flowage easement. FPL ownership of land within the park and the inability to increase water levels across the FPL West Secondary Corridor is expected to hinder habitat restoration efforts. Since construction of transmission lines are not included as part of this alternative, there would be no impacts on wildlife from construction. Alternative 1a would contribute appreciable adverse impacts to the overall cumulative effects on wildlife in this area.	The lack of a flowage easement is expected to have moderate to major adverse impacts on wildlife since the inability to increase water levels across the FPL property is expected to hinder habitat restoration efforts. Short- to long-term minor to moderate adverse impacts would be expected on wildlife (fish and other aquatic species, amphibians and reptiles, birds, and mammals) from construction and operation of transmission lines and associated access roads within the FPL West Secondary Corridor. Short-term impacts would typically be related to construction or maintenance activities and would generally be minor. Long-term moderate adverse impacts would be from permanent habitat loss due to transmission line	There would be benefits of the acquisition of the FPL-owned land within the park boundary due to removal of a large area of non-NPS ownership of land in the interior of the park. This would ensure that no other development would be proposed in this area and that the various Everglades ecosystem restoration projects could occur without any obstacles relating to the presence of this parcel, which would be a benefit to wildlife. Adverse impacts would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park and would range from short to long-term minor to moderate adverse impacts on wildlife. Impacts on species dependent on wetland	There would be long-term benefits to wildlife because the exchange would remove a large area of non-NPS ownership of land in the interior of the park, ensuring that no other development would be proposed in the FPL corridor and that the various Everglades restoration projects could be implemented without any obstacles relating to the presence of this parcel. However, there would be a long-term major adverse effect of removing 260 acres of habitat from the park. Impacts on wildlife from transmission line construction under alternative 3 would be similar to those described for alternative 1a. However, impacts on wildlife would be reduced by moving the construction of the transmission lines from the relatively unimpacted	There would be benefits to wildlife as described under alternative 3, but with terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance or removal of wildlife habitat. Overall impacts on wildlife would be short- to long-term, minor to moderate adverse, and impacts on wildlife species may be reduced, especially for avian and bat species, due to requirements imposed by the terms and conditions of the land exchange. Alternative 4 would contribute noticeable adverse and appreciable beneficial impacts to the overall cumulative effects on wildlife in this area.	Impacts would be similar to those described under alternative 1b, but there would be long-term benefits from having a flowage easement that would allow ecosystem restoration projects that benefit park resources to proceed over time. However, there would be long-term minor to moderate adverse effects from the continued inability to manage the corridor as NPS lands. Short and long-term minor to moderate adverse impacts would result from the construction of the transmission lines in the FPL West Secondary Corridor. Alternative 5 would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on wildlife in this area; the benefits would not be as

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	<p>structure pads and access roads. Avian collisions with transmission lines, guy wires, and structures as well as electrocution would be additional sources of long-term moderate adverse impacts. Certain groups of birds are more susceptible to collision and electrocution due to their behavior or morphology and may be impacted more from the construction and operation of the transmission lines than other groups of birds.</p> <p>Alternative 1b would contribute appreciable adverse impacts to the overall cumulative effects on wildlife in this area.</p>	<p>habitats and impacts on wading birds are expected to be less in the area of possible relocated corridor compared to construction within the park because of the reduced quality of the wetlands compared to those within the park, but species that utilize habitat outside the park would be adversely affected.</p> <p>Alternative 2 contribute appreciable beneficial and noticeable adverse impacts to the overall cumulative effects on wildlife in this area.</p>	<p>contiguous wetlands in the interior of the park (FPL West Secondary Corridor), to the edge of the park (FPL West Preferred Corridor). The FPL West Preferred Corridor is generally less desirable habitat due to its proximity to already disturbed upland and wetland areas outside the park. Impacts on wading bird species are also expected to be less than alternative 1a because of the increased distance from the transmission lines to known nesting colonies. NPS acquisition of the FPL West Secondary Corridor would allow for application of NPS policies and procedures in this area. NPS would no longer control the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange would minimize impacts on wildlife to the maximum extent practicable.</p> <p>Alternative 3 would contribute a noticeable adverse and appreciable beneficial impact on the</p>		<p>extensive as those under the alternatives that result in the acquisition of the FPL corridor in the park.</p>

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			overall cumulative effects on wildlife in this area.		
Special-status Species					
Alternative 1a would result in a wide range of impacts on special-status species, as described for the individual species in the analysis in chapter 4. Impacts on these species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28 in chapter 4 of the draft EIS. In general, the lack of a flowage easement or sufficient rights to increase water levels over the FPL West Secondary Corridor would have effects on many listed species in the area. Due to the potential degradation and loss of foraging habitat from the lack of hydrologic restoration in the EEEA, alternative 1a would have moderate to major impacts on many avian species, especially wood storks and Everglade snail kites. There would be no impacts related to transmission line construction under this alternative. The park would continue to	Impacts on special-status species would be varied as noted in the analysis in chapter 4. The Section 7 determinations for the federally listed species and the impacts on the state-listed species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28. In general, construction and operation of transmission lines in the FPL West Secondary Corridor would have effects on many listed species in the area and have high risks to avian species, especially wood storks and Everglade snail kites, due to proximity of the lines to nesting and foraging locations. Impacts from the lack of a flowage easement or sufficient rights to increase water levels over the FPL West Secondary Corridor would be the same as described for alternative	NPS acquisition of the FPL West Secondary Corridor would provide long-term benefits to special-status species since this would mean no impediments to water restoration projects could occur from future use of this parcel. Impacts on special-status species would be varied as noted in the alternative 2 analysis. The Section 7 determinations for the federally listed species and the impacts on the state-listed species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28 in chapter 4 of the draft EIS. In general, construction and operation of transmission lines in the area of possible relocated corridor east of the park would have effects on many listed species in the area. Alternative 2 would	NPS acquisition of the FPL West Secondary Corridor would provide long-term benefits to special-status species since this would mean no impediments to water restoration projects could occur from future use of this parcel. Alternative 3 would result in a wide range of impacts on special-status species, as described for the individual species in the analysis in chapter 4. The Section 7 determinations for the federally listed species and the impacts on the state-listed species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28 in chapter 4 of the draft EIS. In general, construction and operation of transmission lines in the FPL West Preferred Corridor would have effects on many listed species in the area and has high risks to wood	Impacts associated with alternative 4 would be essentially the same as described for alternative 3 except that no other utilities could be built in the corridor, which would lessen the risk of additional impacts of these facilities on special status species. A wide range of impacts would occur on special-status species, as described for the individual species in the analysis for alternative 3. The Section 7 determinations for the federally listed species and the impacts on the state-listed species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28 in chapter 4 of the draft EIS. In general, construction and operation of transmission lines in the FPL West Preferred Corridor would have effects on many listed species in the area	NPS acquisition of a flowage easement, or sufficient rights to flow additional water over the FPL West Secondary Corridor would provide substantial long-term benefits to special-status species since this would mean no impediments to ecosystem restoration projects could occur from future use of this parcel. A wide range of impacts would occur on special-status species from transmission line construction, as described for the individual species in the analysis for alternative 1b. The Section 7 determinations for the federally listed species and the impacts on the state-listed species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28 in chapter 4 of the draft EIS. In general, construction and operation of

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<p>coordinate with the U.S. Fish and Wildlife Service (USFWS) and state resource agencies, to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable.</p> <p>Alternative 1a would contribute appreciable adverse impacts to the overall cumulative effects on special-status species in this area.</p>	<p>1a. The park would continue to coordinate with the USFWS and state resource agencies, to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable.</p> <p>Alternative 1b would contribute appreciable adverse impacts to the overall cumulative effects on special-status species. The cumulative contribution to adverse effects on avian species would be high under this alternative because of the proximity to nesting and foraging locations.</p>	<p>have lower risks to wood storks and Everglade snail kites than construction on the FPL corridors due to the location of the lines farther away from nesting and foraging locations. Impacts on species that are known to inhabit disturbed or open areas would be expected to be higher due to the land uses in the area of possible relocated corridor. The park would continue to coordinate with USFWS and state resource agencies to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable.</p> <p>Alternative 2 would contribute appreciable beneficial and noticeable adverse impacts to the overall cumulative effects on special-status species in this area. The cumulative contribution to adverse effects on</p>	<p>storks and Everglade snail kites due to proximity of the lines to nesting and foraging locations. The park would continue to coordinate with the USFWS and state resource agencies, to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable.</p> <p>Alternative 3 would contribute noticeable adverse and appreciable beneficial impacts to the overall cumulative effects on special-status species in this area. The cumulative contribution to adverse effects on avian species would be high under this alternative because of the proximity to nesting and foraging locations.</p>	<p>and have high risks to wood storks and Everglade snail kites due to proximity of the lines to nesting and foraging locations. The park would continue to coordinate with USFWS and state resource agencies to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable.</p> <p>Alternative 4 would contribute noticeable adverse and appreciable beneficial impacts to the overall cumulative effects on special-status species in this area. The cumulative contribution to adverse effects on avian species would be high under this alternative because of the proximity to nesting and foraging locations</p>	<p>transmission lines in the FPL West Secondary Corridor would have impacts on many listed species in the area and have high risks to avian species, especially wood storks and Everglade snail kites, due to proximity of the lines to nesting and foraging locations. The park would continue to coordinate with USFWS and state resource agencies to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable.</p> <p>Alternative 5 would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on special-status species in this area. The benefits would not be as extensive as those under the alternatives that result in the acquisition of the FPL corridor in the park.</p>

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		avian species utilizing wetland habitats are generally less under this alternative than under other alternatives.			
Viewshed (Visual Resources)					
There would be no impacts on visual resources from the land acquisition decision and there would be no construction of any transmission lines; therefore visual resources would not be impacted and there would be no impacts (including cumulative impacts).	There would be no direct impacts from the FPL retention of property in the EEEA. Indirect impacts on visual resources would result from the construction of the transmission lines in the FPL West Secondary Corridor and would be short term, minor to moderate, and adverse during construction and long term, ranging from minor to major and adverse from the introduction of a built structure into a wilderness-like setting. The intensity of the adverse impact would vary with the location in the park and be greatest for recreationists such as canoeists near the Tamiami trail and for others as they approach this area and the transmission lines from trails or on the roadway.	There would be no direct impacts on visual resources but indirect impacts on visual resources would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park. Overall, impacts on visual resources under alternative 2 would range from no impact to a moderate adverse impact, depending on where the transmission lines were built in the area of possible relocated corridor. Short-term impacts during construction would be minor to moderate and adverse. Generally, impacts on park visual resources would be greater along the western edge of the area and minimal along the eastern edge of the area of possible	There would be no direct impacts on visual resources from the fee for fee land exchange, but indirect impacts on visual resources would result from the construction of the transmission lines on the eastern edge of the park and would include short-term minor to moderate adverse impacts during construction and minor to major adverse impacts from the introduction of built structures within the current eastern park boundary. The most severe impacts would be where the transmission lines cross the Tamiami Trail and from the L-31N canal. Alternative 3 would contribute long-term minor to major adverse impacts; these impacts would contribute noticeable to appreciable	Impacts on visual resources would be the same as described under alternative 3, with potential for slightly less adverse impacts under this alternative from the restriction to only three transmission lines with no other utility infrastructure within the corridor. There would be no direct impacts from the land exchange. Indirect impacts on visual resources would result from the construction of the transmission lines on the eastern edge of the park and would include short-term minor to moderate adverse impacts during construction and minor to major adverse impacts from the introduction of built structures within the current eastern park boundary. The most severe impacts would be where the transmission	Impacts on visual resources would be the same as described under alternative 1b and include short term, minor to moderate, adverse impacts during construction and long term, adverse impacts ranging from minor to major from the introduction of a built structure into a wilderness-like setting. The intensity of the adverse impact would vary with the location in the park and be greatest for recreationists such as canoeists near the Tamiami Trail and for others as they approach this area and the transmission lines from trails or on the roadway. Alternative 5 would contribute an appreciable adverse impact to overall cumulative impacts on

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	Alternative 1b would have long-term minor to major impacts on visual resources and would be an appreciable adverse impact to overall cumulative impacts on visual resources.	relocated corridor. Impacts on visual resources viewed from residential locations would be greater along portions of the line that occur in the area of possible relocated corridor. In the park, alternative 2 would contribute long-term impacts to negligible adverse impacts. Alternative 2 would contribute imperceptible adverse impacts to overall visual resource cumulative impacts in the park, but outside the park, alternative 2 would contribute a noticeable impact to visual resources cumulative impacts in the area.	impacts to overall cumulative impacts on visual resources.	lines cross the Tamiami Trail and from the L-31N canal. Alternative 4 would contribute noticeable to appreciable impacts to overall cumulative impacts on visual resources.	visual resources.
Wilderness					
There would be no direct impacts on the wilderness character of the EEEA from the FPL retention of property in the EEEA, but there would be indirect long-term major adverse impacts because the FPL corridor would remain under FPL ownership, which	There would be no direct impacts on the wilderness character of the EEEA from the FPL retention of property in the EEEA but there would be indirect long-term major adverse impacts because the FPL corridor would	There would be no direct impacts from the acquisition of FPL property in the EEEA, but there would be indirect benefits from the acquisition itself which gives the NPS the ability to manage the acquired area	There would be no direct impacts on wilderness characteristics from the exchange of NPS and FPL lands in the EEEA. Indirect benefits would occur from the exchange itself, from the exchange itself, resulting in flow restoration that would	Impacts would be essentially the same as described under alternative 3, with benefits occurring from the land exchange itself, except that no other utilities could be built in the corridor, which would lessen the risk of	There would be no direct impacts from the FPL retention of property in the EEEA, and some benefits from having a long-term flowage easement agreement. Long-term indirect moderate adverse impacts would occur as

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precludes the area from being managed as part of a designated wilderness area, would result in the inability to restore natural water conditions to the area, preventing the reestablishment of wilderness character, and allows the introduction of disturbances to wilderness quality. Because there would be no transmission line construction under this alternative, no indirect impacts would occur to wilderness characteristics from construction of transmission lines. Alternative 1a would contribute appreciable adverse impacts to the overall cumulative impacts on wilderness.	remain under FPL ownership, which precludes the area from being managed as part of a designated wilderness area and allows the introduction of disturbances to wilderness quality. Indirect impacts would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short-term moderate adverse impacts during construction and long term major adverse impacts on wilderness characteristics from the presence and operation of the lines. Alternative 1b would contribute appreciable adverse impacts to the overall cumulative impacts on wilderness.	consistent with wilderness goals. Indirect impacts on the wilderness characteristics of the EEEA would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park. Alternative 2 would have short-term negligible to moderate adverse impacts and long-term negligible to moderate adverse impacts, depending on the location of the lines in the area and the proximity to the park. Alternative 2 would contribute appreciable beneficial impacts and imperceptible to noticeable adverse impacts (depending on the proximity of the lines to the park) to overall cumulative effects on wilderness in this area.	benefit wilderness character and the ownership of this area being placed solely with the NPS who could then manage the corridor as wilderness. Indirect short-term moderate adverse impacts on the wilderness character of the EEEA would result from the construction of the lines. The continued presence of the transmission lines in the FPL West Preferred Corridor would result in long-term moderate adverse impacts on the wilderness character of the EEEA, This could affect the wilderness designation of adjacent lands in the park. Alternative 3 would contribute appreciable beneficial impacts and noticeable adverse impacts to the overall cumulative effects on wilderness in this area.	additional impacts of these facilities on wilderness in this area. Indirect adverse impacts would include short- and long-term moderate adverse impacts on the wilderness character of the EEEA. Alternative 4 would contribute appreciable beneficial impacts and noticeable adverse impacts to the overall cumulative effects on wilderness in this area.	a result of the corridor remaining under FPL ownership, which would preclude the area from being managed as wilderness and overshadow any flowage benefits to wilderness character of the area. Indirect adverse impacts would also result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short-term moderate and long-term major adverse impacts on wilderness characteristics. Alternative 5 would contribute appreciable adverse impacts to the overall cumulative effects on wilderness in this area.
Visitor Use and Experience / Recreation Resources					
There would be no land acquisition and no transmission line construction within or	There would be no direct impacts on visitor use and experience or recreation resources	There would be long-term beneficial indirect impacts from the acquisition of FPL	There would be long-term beneficial impacts from the exchange of property in the EEEA. Indirect	There would be beneficial impacts from the fee for easement exchange of property in	There would be long-term beneficial impacts from the acquisition of a flowage easement on

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adjacent to the EEEA. The lack of a flowage easement on the FPL property would prevent the implementation of ecosystem restoration activities that rely on additional flow in the EEEA. The resulting degradation of natural resources would prevent visitors from experiencing a healthy ecosystem and enhanced wildlife viewing opportunities in the EEEA and the Water Conservation Areas (WCAs) north of Tamiami Trail. These impacts would have a long-term indirect major adverse effect on the visitor experience. Alternative 1a would contribute appreciable adverse impacts to overall cumulative impacts on visitor use and experience.	from the FPL retention of property in the EEEA. Impacts on visitor use and experience and recreation resources would result from the inability to flow higher water levels across the FPL property and construction of the transmission lines in the FPL West Secondary Corridor. Effects would include short-term moderate to major adverse impacts during construction and long-term moderate to major adverse impacts from the introduction of built structures into a backcountry setting as well as from noise and visual impacts along the L-29 canal and the lack of a restored ecosystem. Alternative 1b would contribute appreciable adverse impacts to overall cumulative impacts.	property in the EEEA, allowing ecosystem restoration projects to proceed and visitors to experience an improved ecosystem. Indirect impacts on visitor use and experience and recreation resources would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park. This would include short-term minor to moderate adverse impacts during construction and no impact to long-term moderate adverse impacts from the introduction of built structures in an area that is somewhat undeveloped and is highly used by recreational users along the western boundary of the zone of possible relocated corridor. Alternative 2 would contribute appreciable beneficial effects and imperceptible to noticeable adverse impacts to overall	impacts would result from the construction of the transmission lines in the FPL West Preferred Corridor and would include short-term minor to moderate adverse impacts during construction and long-term minor to moderate adverse impacts on visitor use and experience and recreation resources from the introduction of built structures along the L-31N canal (moderate adverse impacts on users and visitors along the L-31N canal; minor adverse impacts on visitors located in the park's interior). Alternative 3 would contribute noticeable adverse impacts to overall cumulative effects on visitor use and experience and recreational resources in this area.	the EEEA. Impacts on visitor use and experience and recreation resources would result from the construction of the transmission lines in the FPL West Preferred Corridor and would include short-term minor to moderate adverse impacts during construction and long-term moderate adverse impacts from the introduction of built structures along the L-31N canal. Also, no other utilities could be built in the corridor, which would lessen the risk of additional impacts of these facilities on visitor use and experience in this area. Alternative 4 would contribute noticeable adverse impacts to overall cumulative effects on visitor use and experience and recreational resources in this area.	the FPL property in the EEEA, allowing ecosystem restoration projects to proceed and visitors to experience an improved ecosystem. Indirect adverse impacts on visitor use and experience and recreation resources would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short-term moderate adverse impacts during construction and long-term minor to moderate adverse impacts from the introduction of built structures into a wilderness-like setting as well as from noise and visual impacts along the L-29 canal. Alternative 5 would contribute noticeable adverse impacts to overall cumulative effects on visitor use and experience and recreational resources in this area.

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		cumulative effects on visitor use and experience and recreational resources in this area.			
Adjacent Land Uses and Policies					
There would be no direct impacts on land uses adjacent to the park and no direct impacts on land use in the park. However, alternative 1a would result in major adverse indirect impacts on land use policy at Everglades National Park through the retention of FPL lands within the park. Alternative 1a would result in major adverse impacts because of the conflict with existing NPS policies relating to acquisition of the FPL corridor. There would be no impacts related to transmission line construction under this alternative. Alternative 1a would contribute appreciable adverse impacts to the overall cumulative effects on surrounding land use and policies.	There would be no direct impacts from the retention of FPL property in the EEEA, however, indirect adverse impacts on land use at Everglades National Park from transmission line construction through the park would be major. Alternative 1b would contribute appreciable adverse impacts on the overall cumulative effects on surrounding land use and policy in this area.	There would be no direct impacts from the exchange of FPL and NPS lands in the EEEA. Indirect beneficial impacts would occur as a result of fulfillment of the park's long standing management direction to acquire private properties in the Expansion Area and the elimination of incompatible uses from the area. Indirect impacts on land use would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park and would include long-term minor to major adverse impacts on uses in that area, depending on the location in the area. Alternative 2 would contribute appreciable benefits and noticeable	Indirect beneficial impacts would accrue to land use from the change in land ownership from FPL to NPS; however, major adverse indirect impacts would also occur from removing 260 acres of land deemed critical to the park per the 1989 Expansion Act. Indirect major adverse impacts on land use would occur as a result of the subsequent construction of transmission lines along the FPL West Preferred Corridor under alternative 3; there are conflicts with County Comprehensive Plan language regarding transmission lines in the East Everglades Area of Critical Environmental Concern and the lines would be immediately adjacent to the park. Alternative 3 would contribute appreciable benefits and appreciable adverse impacts to the	There would be no direct impacts from the easement for fee land exchange. Long-term major adverse impacts would occur as a result of land use incompatibility issues following construction of transmission lines along the FPL West Preferred Corridor, although there would be some additional control by way of easement, as the park must approve any FPL construction in the easement. Alternative 4 would contribute appreciable benefits and appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area	There would be no direct impacts from the retention of FPL property in the EEEA. Indirect impacts would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include long-term major impacts on land use from the introduction of a built structure into a park-like setting and the presence of an incompatible land use within the park and in conflict with the county comprehensive development master plan designation of the area as an area of critical environmental concern. Alternative 5 would contribute appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area.

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		to appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area.	overall cumulative effects on surrounding land use and policy in this area.		
Tribal Lands Including Indian Trust Resources					
There would be no impacts on tribal lands, including Indian Trust resources from the land acquisition action or from transmission line construction under alternative 1a. Because there would be no impacts, there would be no cumulative impacts.	Alternative 1b would result in no impacts from the continuation of FPL land ownership in the EEEA and long-term minor adverse impacts from the construction of transmission lines through the EEEA and WCA 3B management areas. There would be no cumulative impacts on tribal lands because no other projects were identified for this cumulative impact scenario.	There would be no impacts on tribal lands from the acquisition action. There would be long-term minor adverse impacts on tribal lands, including Indian trust resources from the implementation of alternative 2 due to the proximity to tribal lands and the change in viewshed from the casino property. There would be no cumulative impacts because no other projects were identified for this cumulative impact scenario.	There would be no impacts on tribal lands from the acquisition action. There would be long-term moderate adverse impacts on tribal lands, including Indian Trust resources from the implementation of alternative 3 due to the change in viewshed to the west from the Indian Gaming and Resort Facility property and other Indian Trust and tribal lands in that area. There would be no cumulative impacts because no other projects were identified for this cumulative impact scenario.	There would be no impacts on tribal lands from the acquisition action. There would be long-term moderate adverse impacts on tribal lands, including Indian Trust resources from the implementation of alternative 4 due to the change in viewshed to the west from the Indian Gaming and Resort Facility property and other Indian Trust and tribal lands in that area. Also, no other utilities could be built in the corridor, which would lessen the risk of additional impacts of these facilities on views in this area. There would be no cumulative impacts because no other projects were identified for this cumulative impact scenario.	There would be no impacts on tribal lands from the flowage easement. There would be long-term minor adverse impacts on tribal lands, including Indian Trust resources from the implementation of alternative 5 due to the change in viewshed to the west from the Indian Gaming and Resort Facility property. There would be no cumulative impacts because no other projects were identified for this cumulative impact scenario.

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Socioeconomics					
There would be no impacts on socioeconomic resources associated under alternative 1a. Alternative 1a would contribute no adverse or beneficial cumulative impacts on socioeconomic resources.	There would be no impacts on socioeconomic resources associated with land acquisition under alternative 1b. Indirect impacts would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short-term beneficial impacts during construction on jobs and income in the region and short-term negligible impacts on adjacent residents and property values. There are no expected impacts on electricity rates under alternative 1b. Alternative 1b would contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources.	There would be no impacts on socioeconomic resources associated with land acquisition under alternative 3. Indirect impacts would result from the construction of the transmission lines in area of possible relocated corridor to the east of the park and would include short-term beneficial impacts on jobs and income during construction and possible short-term minor adverse impacts on adjacent residents and property values. The future FPL electrical generation and transmission development costs combined with the additional right-of-way costs under this alternative could have a cumulative adverse impact on electrical infrastructure development costs, although the extent of this effect is uncertain at this time. The impact of these costs on electricity rates is also	There would be no impacts from the exchange of FPL and NPS lands in the EEEA. Indirect impacts would result from the construction of the transmission lines within the FPL West Preferred Corridor and, during construction, would include short-term beneficial impacts on jobs and income in the region and short-term minor impacts on adjacent residents and property values. There are no expected impacts on electricity rates under alternative 3. Alternative 3 would contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources.	There would be no impacts from land exchange associated with alternative 4. Indirect impacts would be the same as described for alternative 3, and include short-term beneficial impacts on jobs and income in the region and short-term minor impacts on adjacent residents and property values. There are no expected impacts on electricity rates under alternative 4. Alternative 4 would contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources.	There would be no direct impacts on socioeconomic resources associated with alternative 5. Indirect impacts would result from the construction of the transmission lines within the FPL West Secondary Corridor and, during construction, would include short-term beneficial impacts on jobs and income in the region and short-term and possibly long-term negligible impacts on adjacent residents and property values. There are no expected impacts on electricity rates under alternative 5. Alternative 5 would contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
		uncertain. Alternative 2 would contribute imperceptible to noticeable impacts to overall cumulative impacts on socioeconomic resources.			
Park Operations and Management					
There would no land acquisition and no transmission line construction within or adjacent to the EEEA. There would continue to be long-term minor to moderate adverse impacts on park operations and management from the inability to manage the EEEA as one contiguous parcel. There would be no impacts related to transmission line construction under this alternative. Alternative 1a would contribute noticeable adverse impacts to overall cumulative effects on park operations and management in this area.	There would be long-term minor to moderate adverse impacts from the FPL retention of property in the EEEA and the construction of transmission lines in the FPL West Secondary Corridor and would include short- and long-term minor to moderate adverse impacts both during the construction phase and following the completion of the lines. Alternative 1b would contribute noticeable adverse impacts to overall cumulative effects on park operations and management in this area.	Direct impacts would result from the acquisition of FPL land and would include long-term beneficial impacts from the consolidation of ownership in the EEEA as well as short-term negligible to minor adverse impacts. There would be no impacts from transmission line construction because no lines would be constructed on NPS land. Alternative 2 would contribute appreciable beneficial impacts to cumulative effects on park operations and management in this area.	Impacts would result from the fee for fee land exchange and would include long-term negligible to minor adverse impacts and beneficial impacts. Impacts would result from the construction of the transmission lines in the FPL West Preferred Corridor, and would include short-term minor to moderate adverse impacts during the construction phase and long-term negligible to minor adverse impacts following the completion of the lines. Alternative 3 would contribute noticeable adverse and beneficial impacts to overall cumulative effects on park operations and management in this area.	Impacts would be the same as under alternative 3, with long-term minor adverse impacts and beneficial impacts from the land exchange except that this is an easement agreement that may require more staff involvement to monitor use of park property. Impacts would result from the construction of the transmission lines in the FPL West Preferred Corridor, and would include short-term minor to moderate adverse impacts during the construction phase and long-term negligible to mostly minor adverse impacts following the completion of the lines. Alternative 4 would contribute noticeable	There would be long-term minor adverse impacts from the FPL retention of property in the EEEA. Indirect impacts resulting from the construction of the transmission lines in the FPL West Secondary Corridor would include short- and long-term minor to moderate adverse impacts both during the construction phase and following the completion of the lines. Alternative 5 would contribute noticeable adverse impacts to overall cumulative effects on park operations and management in this area.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
				adverse and beneficial impacts to overall cumulative effects on park operations and management in this area.	

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CHAPTER 3

Affected Environment

EJ CRVGT'5<CHHGE VGF 'GPXKTQPO GPV"

Vj g"ōChhgevǵf "Gpxktqpo gpvō'ej cr vǵt 'f guetkdg'u'gzkukpi "eqpf kkpqu'hqt 'vj quǵ"grgo gpw'qh'vj g'pcwtcn'cpf " ewwtcn'gpxktqpo gpw'vj cv'y qwr 'dg'chhgevǵf "d{ 'vj g'lo r rgo gpvcvkp'qh'vj g'cngtpcvkxgu'eqpuk'gtgf 'lp'vj ku' gpxktqpo gpvcn'lo r cev'ucvgo gpv*GKU+0K6 r cev'hqt'gcej "qh'vj gug'vqr leu'ctg'cpcn| gf 'lp"ōEj cr vǵt "6< Gpxktqpo gpvcn'Eqpugs wǵpeguō"

O cp{ "chhgevǵf "gpxktqpo gpv'vqr leu'ctg'hqewǵf "qp'vj g'r qvǵpvkn'tcpuo kukqp'hkp'g'tqwg'u'i qkpi 'lpvq'qt" ctqwpf 'vj g'r ctni'vj cv'ctg'tgcuqpcdn' 'hqtguggcdrg'qweqo gu'cuuqekcvǵf 'y kj 'vj g'r tqr quǵf "cevkqp0Vj gug" tguqwtegu'ctg'f guetkdgf 'hqt'vj g'r tqlgcv'ctgc*"ugg'hki wtg'6."ej cr vǵt "3+cpf 'i gpgtcm' 'lpenw'g'vj g'ctgcu'lp'cpf " ctqwpf 'vj g'Hnqtkf c'Rqy gt'(" 'Nki j v'Ego r cp{ "HRN+Y guv'Ugeqpf ct{ "cpf "Y guv'Rtghgtgf "Eqttkf qtu'cpf 'vj g' ctgc'qh'r quukdrǵ'tgmecevǵf "eqttkf qt "vq'vj g'gcu'qh'vj g'r ctn0Vj gug'f guetkr vkpu'cf f tguu'vj g'tguqwtegu'vj cv' y qwr 'dg'chhgevǵf "rgcf lpi 'htqo "cpf "vq'vj g'r qkp'u'qh'pgzw'hqt'vj gug'tqwg'u."cu'uj qy p'lp'hki wtg'6."lp'y j cv'ku' tghgtgf "vq'cu'vj g": 07/us wctg'o kǵ'ctgc'gcu'qh'vj g'r ctni'cpf 'lp'vj g'Y cvǵt "Eqpugtxcvkp'ctgc*"Y EC+5D" ctgc'vq'vj g'pqt'vj 0Vj g'chhgevǵf "gpxktqpo gpv'hqt'dktf u'cpf "uqekqgeqpqo leu'j cu'c'o wej "dtqcf gt'ctgc" f guetkdgf "f wǵ"vq'vj g'pgukpi . 'hqtci lpi . 'cpf 'hki j v'r cwgtpu'qh'vj g'ur gekgu'cpf "rti gt'geqpqo le'lo r cev'qh' vj g'ncpf "tcpuht0"

J [FTQNQI ["

Vj g'Gxgti ncf gu'qpeg'eqxgtgf "pgctn' "6.222'us wctg'o kǵu'htqo "Ncng'Qnggej qdgg'vq'Hnqtkf c'Dc{ "cpf 'vj g' I wh'qh'O gzleq0Vj g'gtki kpcn'Gxgti ncf gu'y gtg'c'hny /y c{ 'htqo "Ncng'Qnggej qdgg'uqwj y ctf 0Uj cmqy " y cvǵt "f gtxǵf 'htqo "f tgevtckpy cvǵt'cpf 'htqo "qxgthny u'htqo "Ncng'Qnggej qdgg'o qxǵf "uqwj y ctf "cu" uj gǵv'hny . 'tcv'gt 'vj cp'cu'ej cpgn' gf 'hny "cu'y kj 'tkxgtu'cpf "utgco u*"P RU'4232e+0"

Vj g'pcwtcn'j { f tqm' le'tgi ko "cpf 'vj g'tkf i g'cpf "uqwi j "ncpf uecr g'vj cv'qpeg'ej ctcevgtk' gf "cni'qh'vj g' Gxgti ncf gu'ctg'j ki j n' "f gi tcf gf 'lp'P qt'vj gcu'Uj ctni'Tkxgt "Uqwi j "P GUTU+*P RU'4232e+0Vj ku'ku'rti gn' " vj g'tguw'qh'vj g'r nēgo gpv'qh'ecpcn. 'hgxgu."cpf "qj'gt'j { f tqm' le'cn'gpi kpggtkpi "utwewtgu'lp'ng{ "ctgcu" vj tqwi j qw'vj g'i tgcvt'Gxgti ncf gu'gequ' ugo 0F gxm' o gpv'hqt'w'cdp'wugu."ci tlewnwtg."y cvǵt "uwr n' . 'cpf " hqqf "eqpvtqni'ctg'cni'htegu'vj cv'eqpvkwǵ'vq'lo r cev'P GUTU0K6'cf f kkp. "qr gtcvkp'qh'vj g'j { f tqm' le" lph'cutwewt'vq'o gǵv'gzkukpi "y cvǵt "uwr n' . 'cpf "hqqf "eqpvtqni'f go cpf u'eqpvkwǵu'vq'o ckp'ckp'c'f tktg'v'j cp/ pqto cni'eqpf kkp'lp'P GUTU0J { f tqm' le'hgcwtgu'lp'vj g'r tqlgcv'ctgc"ctg'uj qy p'lp'hki wtg'90"

J KUVQTK'E'J [FTQNQI ["

Vj g'j kuvtke'Gxgti ncf gu'y gtg'r ctv'qh'c'o wej "rti gt'pcwtcn'ncpf uecr g'gtki kpcv'pi "lp'uqwj /egpvtcn'Hnqtkf c' " lp'y j cv'ku'pqy "hpqy p'cu'vj g'W'r gt'Ej clp'qh'Ncngu'pgct "Mkuo o gg."Hnqtkf c0Vj g'ncng'u' ugo "hqtō gf "vj g" j gcf y cvgtu'qh'vj g'Mkuo o gg'Tkxgt."c'322/o kǵ/npi . 'o gcpf gtpi . 'hny "i tcf kǵpv'tkxgt'vj cv'go r wǵf "lpvq" Ncng'Qnggej qdgg0F wtkpi 'j ki j "y cvǵt "gxpwu."vj g'ncng."o wej "rti gt'vj cp'ku'r tguǵpv'f c{ "uwtceg'ctgc'qh" cr r tqzko cvn' "3.2; 2'us wctg'o kǵu."y qwr "ur kn'qxgt "ku'uqwj gtp'tko . 'lpvq'vj g'pqt'vj gtp'r ctv'qh'vj g' Gxgti ncf gu'0Vj ku'ctgc'y cu'f qo kpcvǵf "d{ "xcu'ucy i tēu'r ncpu'0Gxgpwcm' . 'vj g'uqwj y ctf "o qxgo gpv'qh' y cvǵt "vj tqwi j "vj g'ucy i tēu'r ncpu'hqtō gf "vj g'uqwtg'qh'y cvǵt "hqt'vj g'tkf i g'cpf "uqwi j "ncpf uecr g0Vj g' egpvtcn'hgcwtg'qh'vj g'j kuvtke'Gxgti ncf gu'j { f tqm' { "y cu'c'52/o kǵ/y kf g'gzc'pug'qh'tgnc'v'xgn' "uj cmqy " y cvǵt "o qxkpi "f qy pwtgco "vj tqwi j "vj g'hny /i tcf kǵpv'y g'ncpf "ncpf uecr g0Vj g'r cwgt'p'qh'y cvǵt "hny "y cu" tgo ctnēdrǵ'hqt "ku'tgi kpcn'wpkhqtō k' "cetqu'u'wej "c'dtqcf "gzc'pug."cpf "hqt'vj g'cdugpeg'qh'cp{ "egpvtcn' f tckpi g'ej cpgn'qt'qh'cp{ "f gpf tkke" f tckpi g'r cwgt'p0Rkp'g'hv'y qqf u'cpf "r kpg'tqem'ncpf u'hqtō gf "o quv'qh' vj g'gcu'gtp'dqwpf ct{ "qh'vj ku'hny . 'cpf "vj g'y gu'gtp'dqwpf ct{ "y cu'f ghk'gf "d{ "vj g'K6 o qnc'ng'Tkug'cpf "vj g' tgn'v'xgn' "j ki j gt'y g'ncpf u'cpf "w'ncpf u'qh'y j cv'ku'pqy "vj g'Dki "E{ r tguu'P cvkpcn'Rt gu'gtxg0O wej "qh'vj g' hny "f kēj cti gf "uqwj "cpf "y guv'vj tqwi j "Uj ctni'Tkxgt "Uqwi j "UTU+."qpg'qh'vj g'r tkp'k'cn'r cvj y c{ u'hqt"

y cvgt'vq'unqy n{ 'ftclp'uqwj y ctf 'htqo 'Ncng'Qnggej qdgg0Ku'qtki lpcn'eqwtug'y cu'uqwj gcu'htqo 'vj g'ncng." i tcf wcm{ 'ewtxlpi 'uqwj 'cpf 'vj gp'uqwj y guv'vj tqwi j 'y j cv'ctg'pqy 'Y ECU'4'cpf '5+0K'v'gpf u'uqwj y guv' lpukf g'Gxgti ncf gu'P cvkqpcn'Rctn'vj g'r ctm'vj tqwi j 'vj g'o cpi tqxg'guwctkgu'qh'vj g'eqcu'v'lpvq'vj g'I wh'qh' O gzleq0U'qwj 'qh'cpf 'lpenm' lpi 'vj g'P gy 'Tlxgt' *Hqtv'Ncw'gtf cng+ 'vj g'r kpg'hw y qqf u'y gtg'cdugpv'cpf 'vj g' Cwcpvle'Eqcu'cn'Tkf i g'dgeco g'f kueqpvkpwqwu.'hqt o lpi 'c'ugtkgu'qh'kucpf u'ugr ctcvgf 'd{ 'eqcu'cn'kxgtu0' Vj gug'tkxgtu'vj wu'tguwngf 'lp'c'r qtvkqp'qh'vj g'hqy 'dgkpi 'f kiej cti gf 'gcu'v ctf 'lpvq'Dkuec{ pg'Dc{ 'cpf 'vj g' Cwcpvle'Qegcp0Vj g'tgo clpf gt'qh'vj g'hqy 'f kiej cti gf 'uqwj y ctf 'vj tqwi j 'Vc{ nqt'Unqi j 'lpvq'Hqtkf c'Dc{ 0' Dgecwug'qh'uqwj 'Hqtkf c'u'r qtwu'i gmqi { 'f qo kpcvgf 'd{ 'hko guvpg'qxgtckp'd{ 'vj kenh' gcv'f gr quku.'vj g' dqwpf ctkgu'dgy ggp'uwthceg'y cvgt'cpf 'i tqwpf 'y cvgt'hqy 'y gtg'pqv'cny c{ u'f knkpev' *UEV'4225+0'

EWTGPVJ [FTQNQI ["

J { f tqmi { 'lp'P GUTU.'cpf 'lp'vj g'Gxgti ncf gu'i gpgtcm{ . 'j cu'dggp'f tcvkcm{ 'cngt gf 'qxgt'vj g'r cu'vegpwt { 0' Vj g'r ncego gpv'qh'ecpcn' .rgxggu.'cpf 'qy gt'j { f tqmi kcn'gpi kpggtkpi 'utwewtgu'j cu'c'o clqt'qpi qkpi 'ghge'v qp'tgi kqpcn'cpf 'mqcn'j { f tqmi { 0Uwthceg'hqy 'lpvq'P GUTU'htqo 'vj g'pqtvj 'y cu'uwdu'v'kcm{ 'tgf wegf 'd{ " vj g'eqputwexkp'qh'Vco kco K'Vtckl'lp'vj g'rv'g'3; 42u0Ngxggu'cpf 'ecpcn'cwj qtk gf 'cpf 'eqputwexgf 'htqo " vj g'rv'g'3; 62u'vq'vj g'3; 82u'wpf gt'vj g'Egpv'cn'cpf 'Uqwj gtp'Hqtkf c' *E(UH'r tqlgev'j cxg'f kxk gf 'vj g' hqt o gt'Gxgti ncf gu'lpvq'ctgcu'f guki pcvgf 'hqt'vtdcp'cpf 'ci tlewmwcn'f gxgnr o gpv'cpf 'ctgcu'hqt'hkij 'cpf " y kf rkhg'dgpglksu.'pcwtn'lu' ugo 'r tgu'gtxcv'kp.'cpf 'y cvgt'uw'ctci g' *WUCEG'cpf 'P RU'422: +0Vj g'pcwtn' ctgcu'eqpukw'qh'vj tgg'Y ECU'htqo'v'pqtvj 'qh'Vco kco K'Vtckl' *WU0J ki j y c{ '63+'cpf 'Gxgti ncf gu'P cvkqpcn' Rctn0Vj g'Y ECU'ctg'v'cti g'ctgcu'ugv'culf g'hqt'y cvgt'eqpugt'xcv'kp'cpf 'hqt'Gxgti ncf gu'y kf rkhg'0Y cvgt'gpv'gtu' vj g'Y ECU'htqo 'tclphm'htqo 'vj g'ci tlewmwcn'ctgc'v'vj g'pqtvj . 'cpf 'htqo 'r ctw'qh'vj g'gcu'eqcu'v'tgi kqpo' Vj g'rgxggu'uwttqwpf lpi 'vj g'Y ECU'ewqhl'cn'uwthceg'y cvgt'hqy 'lpvq'P GUTU'cpf 'uwknhwepv'kp'v'lo r qwpf " vj g'Gxgti ncf gu'Uwdu'gs wgpv'o qf kkecv'kpu'v'q'vj g'E(UH'r tqlgev'tguwngf 'lp'vj g'cdkkl' 'v'q'o qxg'y cvgt'htqo " vj g'Y ECU'lpvq'P GUTU'

Eqpvg o rqtct{ 'Cngt'cvkpu'v'q'Hqy u'lp'P qt vj gcu'Uj ctni'Tlxgt 'Unqi j "

J { f tqmi le'gpi kpggtkpi 'lp'vj g'Gxgti ncf gu'dgi cp'lp'getpgu'f wtkpi 'vj g'rv'g'3; vj 'cpf 'gctn{ '42vj 'egpwtkgu0' F wtkpi 'vj g'3: ; 2u.'r gqr ng'f tclpgf 'qxgt'72.222'cetgu'qh'y wv'p'f u.'qr gpgf 'vj g'Mku'ko o gg'Tlxgt'hqt" pexki cvkqp.'cpf 'hkn'gf 'vj g'Ecn'quc'j cvej gg'Tlxgt'v'q'Ncng'Qnggej qdgg0D{ '3; 39.'hqt'o clqt'ecpcn' v'cxgtugf 'vj g'Gxgti ncf gu'htqo 'Ncng'Qnggej qdgg'v'q'vj g'Cwcpvle'Qegcp.'uj qtv'ekewk'kpi 'vj g'j knqtkle." pqtvj /q/uqwj 'r cvgt'p'qh'hqy 'cpf 'i tgcw{ 'ceegrtcvkpi 'vj g'tgo qxcn'qh'y cvgt'htqo 'vj g'Gxgti ncf gu' *UEV' 4225+0'

Qpg'qh'vj g'o quv'uki pkl'ecpv'j { f tqmi le'cngt'cvkpu'chge'v'kpi 'P GUTU'y cu'vj g'eqputwexkp'qh'Vco kco K' Vtckl'y j lej 'y cu'eqo r ngv'f 'lp'3; 4: 0Vj g'eqputwexkp'qh'vj ku'tqcf y c{ 'etgcvgf 'cp'lo r gf lo gpv'v'q'pcwtn' y cvgt'hqy u'y kj lp'vj g'Gxgti ncf gu.'unqy lpi 'cpf 'd'qen'kpi 'y cvgt'hqy 'uqwj 'lpvq'vj g'uqwj gtp'Gxgti ncf gu'0' D{ 'lo r gf lpi 'pcwtn'hqy u.'Vco kco K'Vtckl'etgcvgf 'y q'ugr ctcvg'ncpf uecr g'v'r gu.'y j gtg'qpeg'vj gtg'j cf " dggp'c'eqpv'kpwqwu'ncpf uecr g'v'r g0Vj g'eqputwexkp'qh'Vco kco K'Vtckl'ko r qwpf gf 'cpf 'cngt gf 'UTU." ghge'v'kxgn{ 'etgc'v'kpi 'c'dctt'kt'vj tqwi j 'vj g'Gxgti ncf gu'dgy ggp'vj g'pqtvj gtp'Gxgti ncf gu'cpf 'y j cv'y qwf " gxgpwcm{ 'dgeqo g'Gxgti ncf gu'P cvkqpcn'Rctm'hqt'y j lej 'Vco kco K'Vtckl'dgeco g'vj g'pqtvj gtp'dqwpf ct{ " *UEV'4225+0Uj qtw{ 'chgt'vj g'eqo r ngv'kp'qh'Vco kco K'Vtckl'dtkf i gu'y gtg'lpw'cngf 'cmqi 'vj g'tqcf 'v'q'cmqy " y cvgt'v'q'hqy 'dgp'gcy 'vj g'tqcf y c{ 0Eqpetg'v'ewxgtu'tgr ncegf 'vj g'dtkf i gu'lp'P GUTU'lp'3; 74'cpf " eqpukw'wgf 'vj g'qpnl 'r cvj 'd{ 'y j lej 'y cvgt'v'cxg'ngf 'htqo 'vj g'N/4; 'ecpcn'htqo'v'cmqi 'vj g'pqtvj 'ukf g'qh' Vco kco K'Vtckl'lpvq'P GUTU'P RU'4232e+'wp'knl'42350Utwewt'g'U555.'eqo r ngv'f 'lp'vj g'gctn{ '3; : 2u." ewtgpv' 'r tqxkf gu'vj g'cdkkl' 'v'q'o qxg'y cvgt'htqo 'Y EC'5C'lpvq'vj g'N/4; 'ecpcn'htqo 'y j gtg'k'w'ecp'gkij gt" hqy 'lpvq'P GUTU'qt'vj tqwi j 'U556'v'q'vj g'vtdcp'ctgc'v'vj g'gcu'0C'3/o krg'dtkf i g'cmqi 'vj g'Vco kco K'Vtckl' y cu'eqo r ngv'f 'lp'4235.'r tqxkf lpi 'cf f kkp'cnc'eqpxg{ cpeg'ecr cekl' 'lpvq'P GUTU'htqo 'vj g'N/4; 'ecpcn'0'

"

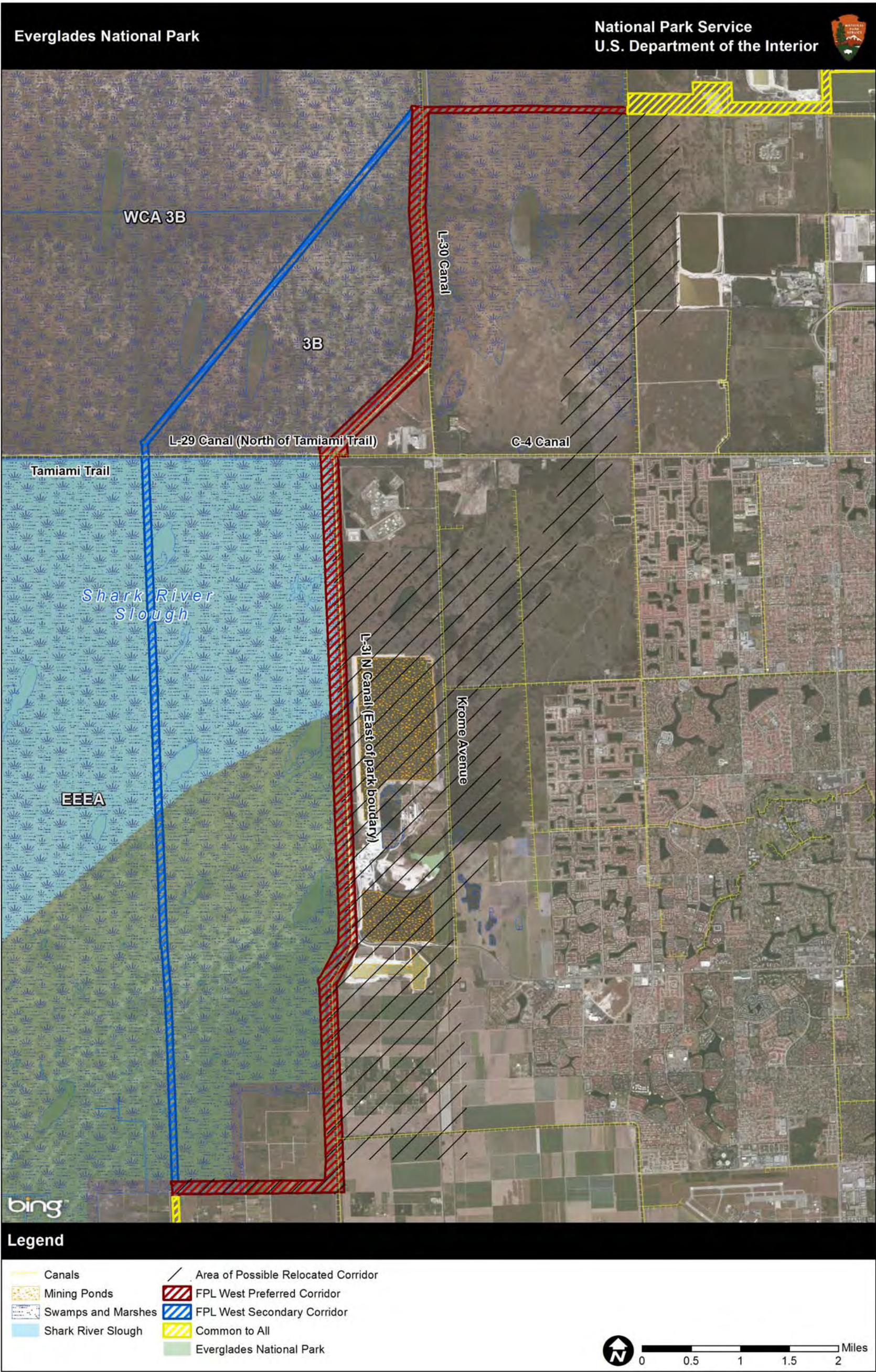


FIGURE 7: HYDROLOGIC FEATURES IN THE PROJECT AREA

Ej cr vt "5<Chgevf "Gpxktqpo gpv"

"

Ej cr vt "5<Chgevf "Gpxktqpo gpv"

: 6"

Gxgti mf gu'P cvkqpcnRctm'Hnqtkf c"

Xctkqwu'igxggu'cpf'i cvgf 'utwewtgu'cwj qtk gf 'wpf gt 'y g'E(UH'r tqlgev'qh'3; 6: .eqo dlpgf 'y kj 'y g'hny / ko r gf lpi 'ghgeu'qh'Vco lco k'Vtcln'pqy 'ko r qug'uwducp'kcl'cngtcv'kpu'wr qp'v'j g'xqno g.'ko lpi . 'cpf' f wtcv'qp'qh'hny u'v'P GUTU'Qp'cp'cppwcl'xgtci g.'ugxgpv' / gki j v' r gtegpv'qh'eqpvo r qtct { 'hny u'ctg'pqy " f k'gevgf "v'j g'y guv'j tqwi j "y g'U34'utwewtgu.'cpf'qpn'44'r gtegpv'ctg'f k'gevgf "y tqwi j "P GUTU*'P RU' 4232e+0'Wpf gt'pcwcl'eqpf k'kpu.'y g'gcuvgtp'j cni'qh'UTU'y qwf 'j cxg'j cf 'cr r tqzko cvgn'87'r gtegpv'qh' cnpwcl'hny u'cpf 'y g'y guvgtp'j cni'57'r gtegpv*'P RU'4232e+0Y kj 'uwej 'cp'ko o gpug'cngtcv'kpu'k'cppwcl' hny u.'j {ftqmi { 'lp'P GUTU'f qgu'pqv'ewtgpw' 'tgugo dng'y j cv'o ki j v'dg'gzzr gevgf 'wpf gt'j k'qtle" eqpf k'kpu'

Eqpvo r qtct { 'Uqwt egu'qh'hny u'lp'P qt vj gcu'Uj ct ni'lkgt 'Uqwi j "

P GUTU'y cu'qxtg/f tclpgf 'hqt'o cp { " { gctu0'hny u'v'j g'N/4; "ecpcn'y gtg'ew'qh'h'dgi k'pklpi 'y kj 'y g' eqo r ngv'qp'qh'h'j g'lp'kcl'kcl'E(UH'r tqlgev'hcw'gu'lp'v'j g'3; 82u'wp'kcl'v'j g'eqo r ngv'qp'qh'h'j g'U/555'y cvgt' eqpvtqni'utwewt'g'qh'h'j g'gctn'3; : 2u0'Vj g'o clqtk' { 'qh'h'j g'uwthceg'y cvgt'pqy 'f gr'kxgtgf 'v'j g'P GUTU'qtki k'pcv'gu' h'qo 'uwthceg'y cvgt'v'wp'qhh'tclp'clm'cpf'i tqwfy cvgt'ugr ci g'h'qo 'y g'Y ECu'etgcvgf 'wpf gt'v'j g'cwj qtk' { " qh'h'j g'E(UH'r tqlgev'0'Vj wu.'y g'j {ftqmi { 'qh'P GUTU'ku'w'ko cvgn'f gr'gp'gpv'qp'hny u'h'qo 'y g'g'Y ECu'0' Y EC'5C'ku'v'j g'r tlo ct { 'uqwt eg'qh'hny u'v'j cni'qh'UTU'y guvgtp'cpf'pqt vj gcu+0Y cvgt'h'qo 'Y EC'5C" hny u'v'j tqwi j 'y g'U/555'y cvgt'eqpvtqni'utwewt'g.'lp'v'j g'N/4; "ecpcn'cpf 'y gp'v'j tqwi j 'y g'eqpet'g'g'ew'k'gtu' cpf 'y g'3/o k'g'dtkf i g'dgpgcvj "Vco lco k'Vtcl'k'lp'v'j g'P GUTU*'P RU'4232e+0'

Cs w'kgt 'Tgej cti g'cpf 'Rwdle'Y cvgt 'Uwr r'f "

Vj g'P GUTU'ku'r ctv'qh'h'j g'tgej cti g'ctgc'hqt'v'j g'Dkuc { pg'Cs w'kgt'y j lej 'ku'v'j g'uq'g'uqwt eg'qh'r qvcdng'y cvgt' lp'O lco k'F cf g' *O / F +cpf 'Dtqy ctf 'Eqw'p'ku'0'Vj g'cs w'kgt 'ku'g'zr qugf 'cv'v'j g'uwthceg'qh'h'j ku'ctgc'qt'ku' eqxgtgf 'd { 'c'v'j lp'rc { gt'qh'r gc'v'cpf 'r rcpv'o cvgt'kcl'0Dgecwug'y g'j gcnj . 'uchgv' . 'cpf 'y g'htctg'qh'r t'gugp'v'cpf " hwwt'g'tgukf gpw'qh'h'j g'O lco k'F cf g'Eqw'p'v'f gr'gp'f 'wr qp'r tqv'g'v'pi 'y g'j {ftqmi { 'cpf'geqmi { 'qh'h'j ku' ctgc.'y g'Eqw'p'v'f f'guki pcv'gf 'k'cp'Ctgc'qh'Etklecl'Gpxk'kqpo gpvcl'Eqpegtp'lp'3; : 30Vj ku'f guki pcv'k'p'ku' f'kuewugf 'hwt'y gt'lp'v'j g'0'cf lcegpv'Ncpf 'Wugu'cpf 'Rqrl'elgu'0'ugev'k'p'0'

J {ftqmi { 'Gcu'cpf 'P qt vj gcu'qh'h'j g'Rct niDqwpf ct { "

N/53P 'igxgg'ugt'xgu'cu'v'j g'gcuvgtp'gf i g'qh'h'j g'r ctm'lp'v'j ku'ctgc'cu'y gni'cu'v'j g'gz'k'v'pi 'j {ftqmi k'g'f i g'v'q" v'j g'uqwi j 0'Vj g'ctgc'v'j g'gcu'v'qh'h'j g'N/53P 'igxgg'y cu'qpeg'r ctv'qh'h'j g'UTU.'dw'v'j g'j {ftqmi { 'j cu'dggp" i tgcw' { 'cngt'gf 'y tqwi j 'f tclpci g'cpf'ej cpi gu'lp'wug'0'Vj g'uqwj gcuvgtp'r qt'v'k'p'qh'h'j ku'ctgc'j cu'dggp'h'k'gf " cpf'eqpxgt'v'gf 'v'j ci tleww'cl'wugu.'cpf'v'j gtg'ku'c'rci g'tqem'o lp'g'ko o gf k'cvgn' 'gcu'v'qh'h'j g'ecpcn'0'Vj g' pqt vj gcuvgtp'r qt'v'k'p'qh'h'j ku'ctgc.'tghgt'gf 'v'j cu'v'j g'Dkf 'F t'k'g'dculp.'u'k'ni'eqpuku'qh'h'cp'ku'q'v'gf . 'f gi tcf gf " y g'v'cpf'ew'qh'h'ltqo 'y g'y g'v'cpf u'v'j g'y gu'v'cpf'pqt vj 'd { 'y g'N/53P 'cpf'Vco lco k'ecpcn.'t'gur gev'k'gn'0' J qy g'xgt.'y g'g'ctgcu'gcu'v'qh'h'j g'r ctm'dqwpf ct { "ctg'u'k'ni' {ftqmi k'ecm' 'eqppgevgf 'v'j P qt vj gcu'Uj ctm' Uqwi j 'd { 'i tqwfy cvgt'hny u'lp'v'j g'Dkuc { pg'cs w'kgt'0'Vj g'pqt vj gtp'r qt'v'k'p'qh'h'j g'ctgc'qh'r quik'ng' tgmecvgf'eqttk'f'qt.'pqt vj 'qh'h'j g'Vco lco k'ecpcn'eqp'v'k'pu'v'j g'Rgppu'eq'y g'v'cpf u.'dw'v'j g'g'v'j g'v'cpf u'j cxg" dggp'rci gn' 'ew'qh'h'ltqo 'y g'tgi k'pcn'y cvgt'ekew'v'k'p'cu'c't'guwn'qh'eqp'ut'v'k'p'qh'ecpcn'cpf'igxggu' *F cf g'Eqw'p'v'f 3; : ; +0J qy g'xgt.'h'k'ng'v'j g'Dkf 'F t'k'g'dculp.'y g'Rgppu'eq'y g'v'cpf u'ctg'j {ftqmi k'ecm' " eqppgevgf 'v'j g'o ctuj 'v'j g'y gu'v'd { 'i tqwfy cvgt'hny u'

Y CVGT'S WCNW["

Y CVGT'S WCNW['Y KJ P'VJ G'RCTMDQWPFCT["

J kvqtkecm{."y g'egpvtcn'cpf "uqwj gtp'Gxgti ncf gu'y gtg'c'r j qur j qtwu'rko kgf."qrki qvtqr j ke'u{ ungo 'lp'y j kej " co dkgpv'rgxgnu'qh'r j qur j qtwu'y gtg'guu'y cp"32'r ctu'r gt "dknkp"*Nqf i g"4227=O eEqto keni'gv'cn03; ; 8+" y kj lp'c'xgt { "uqy /hny lpi "u{ ungo 0Rj qur j qtwu'rko kcvkp"j kvqtkecm{ "cmqy gf "hqt"gzvgo g'eqo r gvskqp" hqt"dkmqi kecm{ "cxckrdrg'r j qur j qtwu0

Vj gtg'j cxg'dggp'c'xctkgv{ "qh'ej cpi gu'v'y cvgt's wcnw{ 'lp'y g'r ctnly cvj cxg'tguwngf "htqo "j { f tqmji ke" ej cpi gu'lp'y g'Gxgti ncf gu'cpf "y g'f gxgnr o gpv'y cvj cu'qeewtgf "lp'uqwj "Hqtkf c'ulpeg'y g'rcv'3; y " egpwt { 0K r qtcvp'y cvgt's wcnw{ 'ej go kecu'cpf "r ctco gvgu'lp'y g'Gxgti ncf gu'lpennf g'pwtkgpvu."uwrcvg." o gtewt { ."r gukef gu."o clqt "kpu'cpf "qvcrf kuqrgf "uqrf u"*VF U+."cpf "f kuqrgf "qti cple"o cvgt "WUCEG" 4227=P RU'4232e=Cknpg'gv'cn04233=Cknpg'gv'cn04225+0P wtlkgpvu."ur gekkecm{ 'r j qur j qtwu."ecp'dg'qh" r ctvewrt "eqpegt'p'y j gp'lp'gzegu'i kxgp'y g'Gxgti ncf gu'pcwtcm{ 'r j qur j qtwu'rko kgf "cpf "qrki qvtqr j ke" ej ctcevg0

Pwtkgpvu'

P GUTU'hegu'c'pwo dgt'qh'y cvgt's wcnw{ 'r tqdrgo u'y cv'ctg'c'tguwn'qh'gzeguikxg'pwtkgpvu'lp'y g'u{ ungo 0' Cnly cvgtu'lp'y g'r ctnly gtg'j kvqtkecm{ 'r j qur j qtwu'rko kgf "cpf."y gtghqtg."r j qur j qtwu'r qmwkqp'ecp'j cxg" c'xgt { "ugtqwu'ghgevw'qp'y g'dkqmi kecn'guqtegu'qh'y g'r ctn0Vqcnr j qur j qtwu'ku'ewtgpv{ "c'xgt { " ugtkqu'eqpegt'p'y tqwi j qw'y g'Gxgti ncf gu.'lpennf lpi "lp'P GUTU'*O kngt."O eRj gtuqp."cpf "J cci "3; ; ; =P RU'4232e+0Vj g'wnko cvg'ghgevw'qh'kpetgcugf "qvcrn j qur j qtwu'rgxgnu'ku'gwtqr j kecvkp'qh'y g'o ctuj "y cv' ecwugu'wdvrg."dw'ko r qtcvp'ej cpi gu'lp'uqkilej go knt { ."cpf "c'pqvlegcdrg'ej cpi g'lp'y g'r rcpv'cpf "cpko cni' eqo o wpkkgu'qxgt'ko g."y kj "ecuecf lpi "geqmi kecn'ghgevu"*I ckugt'gv'cn04227=I ckugt'gv'cn04229+0' Wnko cvgn{."y ku'r tgegu'ecp'rgcf "q'y g'tgf wvklp'qt "hqu'qh'c'y cvgt dcf { au'xcnwg'cu'j cdkcv'cpf lqt "cu'c" tgetgcvkpcr'ctg0Vj g'o clqt "uqwtg'qh'r j qur j qtwu'r qmwkqp'lp'y g'r ctn'ku'twpqhh'htqo "ci tlewntcr'ctgcu" pqt'y "cpf "gcu'qh'y g'r ctm'cpf "htqo "vtdcp'rcpf u"*O kngt."O eRj gtuqp."cpf "J cci "3; ; ; +0P wtlkgpv'rgxgnu'lp" UTU'j cxg'dggp'j qxgtlpi "lwn'cv'y g'pqp/eqo r rkepeg'r qkp'tgrv'xg'q'y g'3; ; 4'Eqpugpv'F getgg'y cv'y cu" y g'tguwn'qh'y g'3; : : "rcy uwk'd{ "y g'hgf gtcni' qxgtpo gpv'eqpegtplpi "y cvgt's wcnw{ 'lp'y g'Gxgti ncf gu'0K" y cv'f getgg."c'r j qur j qtwu'etkgtkqp'y cu'ug'cv'32'r r d0Vj g'Eqpugpv'F getgg'hqt'ur gekke'qvcrn j qur j qtwu' etkgtk'f hhtgu'd{ 'tgi kpu'y kj lp'y g'Gxgti ncf gu'Rtqvgv'kp'Ctgc0Hqt'gzco r rg."hqt"UTU'y g'hqpi /vgto " rko k'hqt'y g'hny /y gli j vgf "o gcp'qvcrn j qur j qtwu'eqpegtv'cvkp"tci gu'htqo ">": "q">35'r r d'*P RU'4227+0

Vj g'WU0Gpxktqpo gpvcr'Rtqvgv'kp'Ci gpe{ "*GRC+"y cvgt's wcnw{ "etkgtk."cpf "Hqtkf cu'y cvgt's wcnw{ " ucpf ctf u'hqt "qvcrn j qur j qtwu'lp'qwu'cpf lpi "y cvgtu."uwej "cu'y g'Gxgti ncf gu."o clp'cvkp'y cv'qvcrn" r j qur j qtwu'ku'geqmi kecm{ "j cto hwn'y j gp'k'tgcej gu'rgxgnu'lp'gzegu'qh'32"*Ui IN+"32'r r d+lp'y ku'ctgc" "O kngt."O eRj gtuqp."cpf "J cci "3; ; ; =HF GR'422; +0C dxxg'y ku'rgxgn'qvcrn j qur j qtwu'ecp'ecwug'cp" ko dcrpeg'lp'rgxgnu'qh'Gxgti ncf gu'hqtc'cpf "hwpc"*P RU'4232e+0Uwfkgu'j cxg'f go qpwtcvf "y cv'y g" dkqmi kecn'eqo o wpk{ "utwewtg'lp'P GUTU'ku'cnngt'gf "gxgp'd{ "xgt { "uo cni"*7"Ui IN."qt'7'r r d'cdxxg'co dkgpv' eqpf kkp'u+r j qur j qtwu'lp'r wu'v'y g'u{ ungo "f wg'v'kpetgcugf "qvcrn j qur j qtwu'hqf lpi "I ckugt'gv'cn04227=I ckugt'gv'cn04229+0Y kj lp'c'ur kngtwij lr gtrk { { vqp'eqo o wpk{ "lp'egpvtcn'UTU."c'r j qur j qtwu'lp'r w'qh'y ku" o ci pkwf g'ecwugf "ej cpi gu'lp'y g'r gtrk { { vqp'cpf "hqe kp'y g'Gxgti ncf gu'chgt "y q'o qp'y u."uqku'chgt "y tgg" { gctu."huj "chgt'hqt""{ gctu."cpf "o cetqr j { vgu'lp'y g'hkij ""{ gct "I ckugt'gv'cn04227=I ckugt'gv'cn04229+0

Vj g'P GUTU'j cu'j cf "kuwgu'y kj "qvcrn j qur j qtwu'r qmwkqp'ulpeg'y g'rcv'3; ; 2u0C'3; ; 863; ; 9'WU0 I gqmi kecn'Uwtxg{ "*WUI U+"y cvgt's wcnw{ "uwtxg{ "eqpf wvvgf "cmqi "Vco kco k'Vtckih'htqo "y g'Dki "E { r tguu" Uy co r "q'y g'Gxgti ncf gu'tgxgcrf "y cv'y gtg'y gtg'g'rgxv'gf "rgxgnu'qh'qvcrn j qur j qtwu'lp'y g'Gcu" Gxgti ncf gu'Gzr cpukqp'Ctgc"*GGGC+"O kngt."O eRj gtuqp."cpf "J cci "3; ; ; +0F luej cti gu'v'y g'r ctnih'htqo " y g'Dkf "F tkxg'dculp'cpf "Rppuueq"Y g'rcpf u'pqt'y "cpf "gcu'qh'Vco kco k'Vtckir r gct "q'dg'eqpvtkdwkpi "

Ej cr vgt "5<Cfhgevgf "Gpxktqpo gpv"

cevxkxkf "P RU4232e+0Vj g'o quv'htgs wgpvnf "f gvgvgf "r gukekf gu'lp "UTU" f gvgvgf "cv'o qpkxktkpi "ukgu'cmqpi " yj g'N/4; "ecpcn'htqo "422: "yj tqwi j "4233+ctg'ctc| kpg."co gt {p."o gtdkw| kp."cpf "uko c| kpg."j gzc| kpgpg." pqt'htw| qp."cpf ."cmqpi "y kj "yj g'kpugevkekf glf gi tcf cvg'ctc| kpg'f gugvj { rlp'y cvgt "uco r ngu" P RU4232e+0Vj " cf f kxkp."kpugevkekf gu'cpf "f gi tcf cvgu'qh'F F G.'F F F."cr j c"gpq quwhtcp."dgv"gpq quwhtcp."cpf "gpq quwhtcp" uwhtcvg'j cxg'dggp'hqwpf "lp'yj g'ugf ko gpv'uco r ngu'cngp'htqo "ugxgtcn'qecv'kpu" P RU4232e+0Vj "Rhgwhgt" 4233+0Vj "yj g'o quv'rtv' yj gug'eqpco kpcpw'ctg'pqv'cv'rgxgnu' yj cv'gzeggf "y cvgt "s wcrkf "yj tguj qrf u0' Ctugple'j cu'dggp'f gvgvgf "lp'ugf ko gpv'cmqpi "yj g'Vco kco k'Vtckif wtkpi "yj g'eqpustwv'kq'qh'yj g'3/o krg" dtkf i g'cv'rgxgnu' yj cv'gzeggf gf "yj g'yj tguj qrf "rgxgnu'htq "O kco kF cf g'Eqwpv "Ecvtq'gv'cn04235+0'

Fkuqrgf "Qti cple'O cwtg"

J ki j "f kkuqrgf "qti cple"o cwtg"eqpegp'v'kpu'r tqxkf g'hqf "htq"dcvgtkc"q'i tqy ."tgf weg'hi j v'r gpgt'v'kq" kp'yj g'y cvgt."cpf "gpj cpeg'v'cpur qtv'cpf "e{erki "qh'j {f tqj qdle"eqo r qwpf u'uwej "cu'r gukekf gu'cpf "v'ceg" ggo gpw'uwej "cu'o gtevt { "Ckngp'gv'cn04233+0Vj "Ckngp'gv'cn04225+0Vj "eqpegp'v'kpu'qh'f kkuqrgf "qti cple" o cwtg"cmqpi "Vco kco k'Vtckn'cpi gf "htqo "60 "vq"48Q "o i "NOF kkuqrgf "qti cple"o cwtg"eqpegp'v'kpu'cv'yj ku' rgxgn'ecp'chgevc'pwo dgt "qh'y cvgt"ej go knt { "r tqegu'gu'lp "P GUTU."kpenf kpi "yj qug' yj cv'chgevc'cpur qtv' cpf "e{erki "qh'r gukekf gu'cpf "o gtevt { ."cxckrdkxkf "qh'pwt'kpvu."cpf "kphwgep' r J "lp'yj g'cs wvke" gpxktqpo gpv' "Ckngp'gv'cn04233+0Vj gtg'ku'c'j ki j "pcwtcn'r tqf wv'kq'qh'pcwtcn'ectdqp'lp'yj g'r gc'v'uknu'cpf " y gvrpf u'qh'yj g'Gxgti ncf gu."cpf "tgrv'kxgnf "j ki j "ectdqp'eqp'v'lp'lp'yj g'uj cmqy "i tqwpf y cvgt "u'ugo u'yj cv' wpf gtrkg' yj g'Gxgti ncf gu" "Ckngp'gv'cn04233+0Vj gtg'ctg'uko knt "y cvgt "s wcrkf "eqpegtpu'lp'yj g'y gvrpf u'lp" yj g'ctgc'qh'cpcn' uku'qwu'kf g'yj g'r ctn0'

Y cvgt "S wcrkf "lp'Y cvgt u'Gcu'v'cpf "P qt yj gcu'qh'yj g'Ret m'

Y cvgt "s wcrkf "lp'Y EC "5C "pqt yj "cpf "pqt yj gcu'qh'yj g'r ctn'ku"o qpkxktgf "d { "yj g'UHY O F."cpf "j cu'uko knt" y cvgt "s wcrkf "kuu'gu'v'q' yj g'r ctn0F cv'ur gekke"v'q' yj g'y cvgtu'gcu'qh'yj g'r ctn'y gtg'pqv'cxckrdg."dw" dgecwug'qh'ewttgpv'qt'r cu'uko kntkf "qh'yj g'y cvgt ddf { "v' r gu'v'q "P GUTU."yj g'uco g'y cvgt "s wcrkf "r ctco gvtu" ctg'qh'lp'v'gtu'lp'yj g'y cvgtu'gcu'qh'yj g'r ctn'cu' yj g' { "ctg'lp'y cvgtu'lp'kf g'yj g'r ctn0J qy gxgt."f w'v'q' yj g" ugi o gpvgf "j { f tqmji { "gcu'qh'yj g'r ctm'cpf "yj g'hcev'yj cv'yj gug'ctgcu'ctgc'cuq "o qtg'r tqzko cvg'v'q' f gxgnr gf " ctgcu'kpenf kpi "tgu'kf gpv'cn'eqo o gtelcn'cpf "ci tlewnwtcn'ctgcu' yj g'y cvgt "s wcrkf "eqpegtpu'ctg'o qtg" r tqpqwpegf."cpf "kpenf g'eqpegtpu'cdq'w'grgxcvgf "r j qur j qtwu."r gukekf gu."uwhtcvg."o gtevt { ."cpf "f kkuqrgf " qti cple"o cwtg0'

Gxgti ncf gu'P cvkqpcn'Ret m'cu'cp'Qwuxcpf kpi "Hqtkf c'Y cvgt"

Vj g'Ucv'g'qh'Hqtkf c'kpenf gf "Gxgti ncf gu'P cvkqpcn'Ret m'cu'cp'Qwuxcpf kpi "Hqtkf c'Y cvgt"wpf gt "Hqtkf c" Cf o kpkv'cv'xg'Eqf g'84/5240220Vj g'Hqtkf c'F gr ctvo gpv'qh'Gpxktqpo gpv'cn'Rtq'v'kq "HF GR"tgs wkt'gu' yj cv'Qwuxcpf kpi "Hqtkf c'Y cvgtu'tgegkxg'ur gekn'eqpukf gtcv'kq'lp'kuu'gu'tgrv'gf "v'q' yj cvgt "s wcrkf "HF GR" 422; +0'

UQKNU'

Vj g'uqkn'o cr "vpku'kf gpv'kxgf "d { "yj g'P cwtcn'Tgu'wtegu'Eqpugt'x'v'kq'Ugt'x'k'g'lp'yj g'ctgc'qh'cpcn' uku'htq" uqku'ctg'f gr levf "qp'hi wtg": 0C "o cr "vpk'eqpuku'qh'qpg'qt "o qtg'uqku'htq"y j k'ej "yj g'wpk'ku'pco gf 0Uqku" yj cv'ctg'cm quv'cn'ng."gzegr v'htq "f k'htg'p'egu'lp'yj g'v'gzwtg'qh'yj g'uwhtceg'nc { gt "qt "wpf gtn' kpi "o cvgtkn" o cng'wr "c'uqkn'ugt'ku0Uqkn'ugt'ku'ecp'dg'htv'j gt "f k'kf gf "lp'v'q'uqkn'r j cugu'qp" yj g'dcuku'qh'unt'g."ucn'pkf { ." y gypguu."cpf "qj gt "hcev'tu' yj cv'kphwgep' yj gk "wug0C "f guetk' v'kq'qh'yj g'uqkn'ugt'ku'hqwpf "y kj kp'yj g'ctgc'qh' cpcn' uku'ku'kpenf gf "lp'v'cdng'60'

"

:: "

Gxgti ncf gu'P cvkqpcn'Ret m'Hqtkf c"

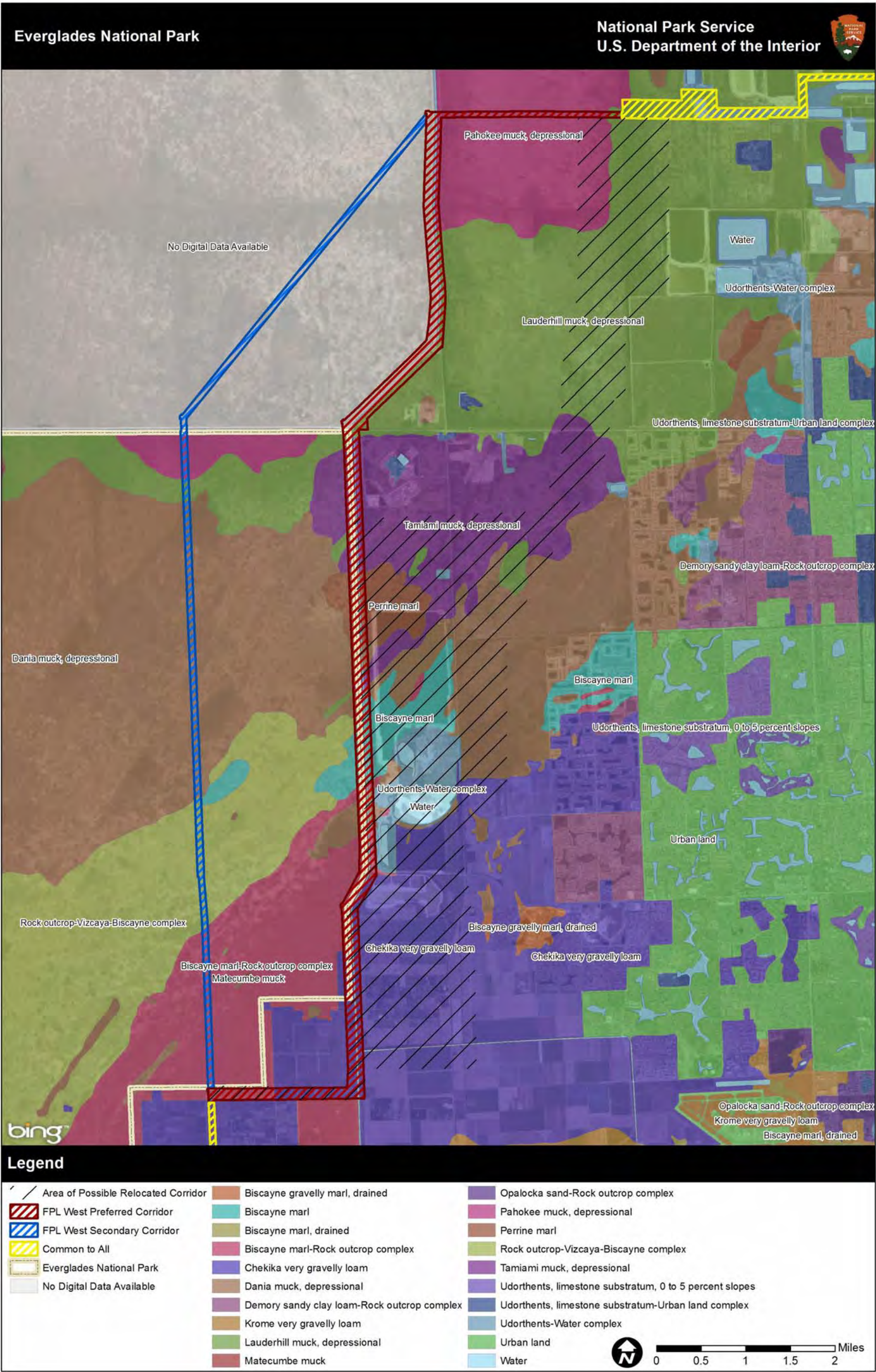


FIGURE 8: SOIL MAP UNITS

"

Ej cr vt "5<Chgevf "Gpxkqpo gpv"

TABLE 4: SOIL SERIES DESCRIPTIONS

Soil Series	General Characteristics
Biscayne	The Biscayne series consists of shallow, poorly and very poorly drained, moderately permeable soils over limestone. They formed in recent calcareous deposits of dominantly silt-sized sediments that precipitated from marine or fresh water. Slopes range from 0 to 1 percent.
Perrine	The Perrine series consists of moderately deep, poorly drained soils in lowlands along the Atlantic Coast of Peninsular Florida. They formed in calcareous silty and loamy sediments of marine or freshwater origin over limestone. Slopes are less than 1 percent.
Chekika	The Chekika series consists of very shallow, somewhat poorly drained soils over limestone bedrock adjacent to the Miami Ridge. They were formed by the scarification of oolitic limestone outcrops and subsequent filling of cavities and solution holes by marly sediments. Slopes range from 0 to 2 percent.
Dania	The Dania series consists of shallow, very poorly drained, soils in fresh water marshes or swamps on the fringes of areas of deeper organic soils. They formed in thin deposits of well decomposed, hydrophytic herbaceous plant remains over sandy marine sediments overlying limestone bedrock. Slopes are less than 2 percent.
Lauderhill	The Lauderhill series consists of moderately deep, very poorly drained soils in fresh water marshes. They formed in well decomposed, hydrophytic, herbaceous plant remains overlying limestone bedrock. Slopes are 0 to 1 percent.
Pahokee	The Pahokee series consists of deep, very poorly drained soils in fresh water marshes. They formed in 36 to 51 inches of well decomposed, hydrophytic, herbaceous plant remains overlying limestone bedrock. Slopes are 0 to 1 percent.
Tamiami	The Absarokee series consists of moderately deep, well drained soils that formed in residuum or in colluvium derived from argillaceous sandstone and semiconsolidated shale, or in alluvium over bedrock. These soils are on sedimentary plains and hills. Slopes are 0 to 50 percent. Severe hazard of erosion on roads and trails.
Vizcaya	The Vizcaya series consists of very shallow and shallow, very poorly drained, slowly permeable soils over limestone. They formed in loamy, marine, or fresh water sediments. These soils are in broad, low freshwater marshes of the Everglades in Southern Peninsular Florida. Slopes are 0 to 2 percent

Source: USDA 2009a.

Y kj lp'vj g'ctgc'qh'cpcn{uku'lpukf g'Gxgti ncf gu'P cvkqpcn'Rctm'vj g'uqku'ctg'o clpn{ 'ej ctcevgtk gf "cu'o wemf *r gcv'00 wemu."o ctnu."cpf "i tcxgm{ 'hco u'ctg'r tguvp'vqwkf g'vj g'r ctm'lp'vj g'ctgc'qh'cpcn{uku'OP q'f ki kcn' uqk'f cv'y cu'cxk'cdrg'hqt'vj g'Gxgti ncf gu'cpf "Hcpeku'UOVc{ nqt "Y kf rkg'ctgc.'y j lej 'ku'qecvgt'lwv'pqt'vj qh'vj g'r ctm'lp'vj g'pqt'vj 'ukf g'qh'Vco kco k'Vtck'0Uqku'lp'vj g'Y ECu'ctg'g'zr gevgt'vq'dg'uko kct'vq'vj qug'lp" P GUTU.'r tko ctkn{ 'eqo r qugf 'qh'o wemu'0Vj g'uqku'r tguvp'lp'vj g'ctgc'qh'cpcn{uku'ctg'f guetkdgf 'lp'o qtg' f gckn'lp'vj g'ugev'kpu'dgrqy 0'

Uqku'lp'vj g'Gcu'Gxgti ncf gu'Gzr cpukp'ctgc'cpf 'Uwt t qwpf lpi 'Y g'vcpf u'

Vj g'uqku'lp'vj g'GGGC'ctg'o clpn{ 'ej ctcevgtk gf "cu'r gcv'qt"o ctn'cnj qwi j "vj gtg'o c{ 'dg'ctgcu'qh'tqem' qwetqr r lpi "P RU'4232e="WUOF gr ctvo gpv'qh'Ci tlewnwtg.'P cwtcnTguwtegu03; ; 8-0Rgc'v'ku'hqto gf "qxgt" f gecf gu'wpf gt'cpcgtqdk'eqpf kkp'p'f w'lp' i npi 'r g'kqf u'qh'lpwpf cvkq. 'lp'y j lej 'vj g'xqmo g'qh'f gec{ lpi " r mpv'o cvgtkn'gzeggf u'vj g'cdk'k' 'qh'o letqdg'u'q'f geqo r qug'k'0Vj g'pqt'vj gcuvgt'Gxgti ncf gu'cpf "UTU'ctg" v'r kkgf "d{ 'Nqzcj cvej gg'r gcv."c'r gcv'v' r g'vj cv'qewt'u'y kj lp'vj g'f ggr gu'v'o ctuj 'ctgcu'vj cv'eqpckp'tgo pcpu" qh'umwi j "xgi gcv'kqp."pco gn{ 'vj cv'qh'y j kg'y cvgt/rkn{ "Nymphaea odorata+"Nqf i g'4227-0Qpeg'g'zr qugf "vq" ckt."o letqdg'r qr wcv'kpu'lpetgcug'cpf "f geqo r quk'kqp'ceegrtcvgu."hgcf lpi "vq'uqkn'quu'0Uvej 'uqkn'quu'cpf " uqkn'uwdukf gpeg'j cu'qewt'gtf 'lp'ucy i tcu'o ctuj 'ctgcu'qh'vj g'Gxgti ncf gu'Ci tlewnwtcn'ctgc'pqt'vj 'qh'vj g' r ctm'cu'c'tguwn'qh'gctn{ 'f tcklpi "cev'xk'kgu'0Ceeqt'f lpi "vq'kpi gdt'kugp'gv'cn'0*4227+.'vj g'lp'kcn'r gcv"

Ceeqtf lpi 'q' y g' UHY O F 'ncpf 'wug' cpf 'ncpf 'eqxgt' f cve *UHY O F '4233c+ 'y j lej 'wugu' y g' Hqtkf c" F gr ctvo gpv' qh' Vtepur qtvcvkqp' Hqtkf c' Ncpf 'Wug. 'Eqxgt. 'cpf 'Hqto u' Ercuuklecvkqp' U' ingso "HNWEHEU+ "HF QV" 3; ; ; + 'xgi gvcvkqp' eqo o wpxkku' lp' y g' P GUTU' ctgc' pqy 'lpenw' g' Htguj y cvgt' o ctuj gu' 'dqy' " ucy i tcuu' cpf 'i tco lqkq' / r tclt' g' o ctuj + 'o k' zgf 'y gvcv' pf 'j' ctf y qqf u. 'cpf 'o k' zgf 'y gvcv' pf 'uj twdu0J wpf tgf u' qh' j' ctf y qqf 'j' co o qemu' qt' 'tgg' kucv' pf u. 'eqo r qugf 'qh' o k' zgf 'y gvcv' pf 'j' ctf y qqf u' cpf lqt' o k' zgf 'y gvcv' pf " uj twdu. 'ctg' hqwpf 'y tqwi j qw' y' ku' ctgc0Vj g' j' co o qemu' t' cpi g' lp' uk' g' Htgo 'c' hgy 'us wctg' { ctf u' q' ugxgtcn' j wpf tgf 'cetgu. 'cpf 'uwr r qtv' c' xctk' g' 'qh' xgi gvcvkqp' ur gekgu' lpenw' lpi 'uqo g' uvcw' / rkungf 'ur gekgu' *P RU" 4228d+0E qo r ctvo gpvcrl' cvkqp' qh' y g' Gxgti ncf gu' j' cu' tgf wegf 'y cvgt' f' grkxgtk' gu. 'cnegt' g' f' kntkdwkqp. 'cpf " cnegt' g' e' { enlecnr' cwgtpu' qh' y' cvgt' f' grkxgtk' gu' j' cxg' tgf wegf 'f' qy putgco 'uj ggv' hny u' cpf 'uwr r tguugf 'y g' pcwctnr' tqeguugu' cpf 'hwpvkpu' y' kj lp' P GUTU' ctgc0Vj g' N/4; 'ecpcn' cpf 'hgxgg' etgcvg' c' f' co o lpi 'ghhgev. " ugxgtgn' t' gutlevkpi 'y cvgt' f' grkxgtk' gu' lp' v' y g' r' ctn0Uci g' t' gutlevkpu' y' kj lp' y g' N/4; 'ecpcn' f' w' g' v' t' qcf dgf " rko kcvkpu' cpf 'qr gtcvkpcn' rko kcvkpu' hwt' y g' t' eqpvt' kdwg' v' t' gf wegf 'y cvgt' f' grkxgtk' gu' 0Vj g' t' gf wevkqp' cpf " ej cpi gu' lp' y' cvgt' f' grkxgt { 'q' y' g' r' ctn' j' cxg' chgevgf 'y gvcv' pf 'r' nrv' eqo o wpxkku' y' kj lp' P GUTU' ctgc0

Cmj qwi j 'y g' gequ' ingso 'j' cu' dggp' c' f' xgtugn' { 'chgevgf 'd' { 'f' gxgnr o gpv' cpf 'rpi / vgt o 'y cvgt' o cpci go gpv' cev' xk' k' gu. 'y g' t' go cklpi 'r' qt' vkpu' qh' y' g' Gxgti ncf gu' gequ' ingso 'ctg' u' kn' eqpuk' g' t' g' v' q' dg' j' ki j / s wcrk' { " y gvcv' pf u' d' { 'dqy' 'y g' P RU' cpf 'y g' WUOCto { 'Eqtr u' qh' Gpi kpgtu' *WUCEG+0Vj g' u' y' gvcv' pf 'eqo o wpxkku' r' tqxkf g' c' xctk' g' 'qh' g' eqm' i' lecn' hwpvkpu' cpf 'xcnw' gu' v' y' g' Gxgti ncf gu' gequ' ingso 0Vj g' r' tko ct { 'hwpvkpu' qh' y' g' y' gvcv' pf u' lp' y' g' r' tqlg' ev' ctgc' lpenw' g' u' wth' ceg' c' pf 'u' wduw' th' ceg' y' cvgt' u' qtci g. 'uwr r qtv' qh' y' g' " dlqi gqej go lecnr' tqeguugu' *pwt' k' p' v' e' { enpi . 'r' gcv' ceet' g' vkqp. 'gve0: 'uwr r qtv' qh' y' g' u' y' cvgt' o ctuj 'r' nrv' eqo o wpxkku. 'cpf 'j' cdk' cv' hqt' p' cv' x' g' h' kuj 'cpf 'y' k' f' r' h' g' 0Y gvcv' pf u' r' tqxkf g' j' cdk' cv' hqt' p' w' o' g' t' q' w' u' y' k' f' r' h' g' " ur gekgu. 'lpenw' lpi 'o' cp { 'ur gekcn' uvcwu' ur gekgu' 0Ugg' y' g' 0Y k' f' r' h' g' 0: c' pf '0Ur gekcn' uvcwu' ur gekgu' 0' ugevkpu' hqt' o' qt' g' l' ph' qto cvkqp' qp' y' g' c' p' ko cnu' y' cv' l' pj cdk' c' pf 'f' gr' gp' f' qp' y' g' y' gvcv' pf 'j' cdk' cv' qh' y' g' r' tqlg' ev' ctgc0

Kp' c' f' f' k' k' qp' v' q' y' k' f' r' h' g' uwr r qtv' y' g' y' gvcv' pf u' qh' y' g' Gxgti ncf gu' cnu' r' tqxkf g' c' p' w' o' d' g' t' qh' x' cnw' c' d' g' " hwpvkpu' uwe' j' 'cu' u' wth' ceg' y' cvgt' h' kn' cvkqp' c' pf 'u' qtci g. 'h' n' q' f' 'c' d' c' v' go gpv. 'g' t' q' u' k' qp' r' t' g' x' gp' vkqp. 'cpf 'p' c' w' ct' n' y' cvgt' s' wcrk' { 't' g' c' v' o gpv0O k' zgf 'y' gvcv' pf 'j' ctf y qqf u. 'uj twdu. 'cpf 'ucy i tcuu' o' ctuj 'r' tqxkf g' y' cvgt' u' qtci g" c' pf 'uwr r qtv' hqt' dlqi gqej go lecnr' tqeguugu. 'cnj qwi j 'y g' y' cvgt' u' qtci g' hwpvkqp' qh' y' g' P GUTU' ctgc' j' cu' dggp' f' gi tcf g' f' d' { 'y g' f' co o lpi 'ghhgev' qh' y' g' Vco kco K' Vtcl' c' pf 'cnegt' g' u' j' ggv' hny 'f' kntkdwkqp' c' pf 'v' ko lpi " Htgo 'y g' p' qt' y' 0P w' t' k' p' w' u' p' k' t' qi gp' c' pf 'r' j' qur j' q' t' w' u' h' ny lpi 'lp' v' y' g' y' gvcv' pf u' ctg' c' v' c' n' p' w' r' d' { 'xgi gvcvkqp' lp' y' g' r' ctn' c' pf 'o' ctuj 'xgi gvcvkqp' u' ny u' u' wth' ceg' y' cvgt' h' ny 'y' cv' e' c' p' ecwug' g' t' q' u' k' qp' y' g' t' g' d' { 'r' tqxkf lpi 'y' cvgt' " s' wcrk' { 'd' g' p' gh' ku' v' f' qy putgco 'ctgcu' 0Cn' g' t' cvkpu' lp' y' g' p' c' w' ct' n' j' { f' t' q' r' g' t' k' f' u' c' pf 'j' { f' t' q' r' cwgtpu' j' cxg' " ej cpi g' f' y' g' o' let' q' v' r' qi t' c' r' j' { 'y' kj lp' y' g' j' k' u' q' t' l' e' t' k' f' i' g' c' pf 'u' n' w' i' j' j' cdk' cv' qh' y' g' P GUTU' ctgc0Uq' k' i' h' u' u. 'cu' f' g' u' e' t' k' d' g' f' 'cdq' x' g' . 'cnu' q' chgevu' o' let' q' v' r' qi t' c' r' j' { 0Vj g' u' g' e' j' cpi gu' ctg' f' k' u' e' w' u' g' f' lp' o' q' t' g' f' g' v' k' i' w' p' f' g' t' y' g' " 0Y cvgt' S' wcrk' { 0: c' pf '0J { f' t' q' m' i' { 0' u' g' ev' k' pu' 0

XGI GVCVKQP' CPF 'Y GVNCPFUW' VJ G' CTGC' QH' CPCN' UW'

P' cv' k' g' Xgi gvcvkqp' lp' y' g' GGGC' c' pf 'Uwt' t' qwpf lpi 'Y gvcv' pf u'

P' cv' k' g' r' nrv' ur gekgu' c' d' w' p' f' c' p' e' g' . 'f' k' g' t' u' k' f' . 'cpf 'eqo o wpxk' { u' w' e' w' t' g' x' ct { 'd' c' u' g' f' 'q' p' eqpf k' k' qp' u' u' w' e' j' 'cu' v' q' r' q' i' t' c' r' j' { . j' { f' t' q' r' g' t' k' f' . 'y' cvgt' f' gr' y' . 'f' t' { f' qy p' eqpf k' k' qp' u. 'cnegt' cvkpu' lp' y' g' p' c' w' ct' n' i' h' g' t' gi ko g. 'cpf " eqo r' r' g' z' 'lp' v' t' c' ur gek' h' e' t' g' r' cvk' qp' u' j' k' r' u' 0Vj g' xgi gvcvkqp' ku' r' t' ko ct' k' f' { 'eqo r' qugf 'qh' y' g' p' cv' k' x' g' Gxgti ncf gu' y' gvcv' pf 'ur gekgu. 'cpf 'y' g' o' cl' q' t' k' f' { 'qh' y' g' ctgc' t' g' r' t' g' u' g' p' w' u' c' t' g' r' cv' k' x' g' n' { 'lp' v' c' ev' Gxgti ncf gu' y' gvcv' pf 'r' nrv' eqo o wpxk' { 0C' r' r' gp' f' k' z' 'K' k' u' u' x' gi gvcvkqp' h' q' w' p' f' y' kj lp' y' g' 'HRN' Y' gu' v' Ugeqpf ct { 'cpf 'HRN' Y' gu' v' R' g' h' g' t' t' g' f' " Eq' t' t' k' f' q' t' u' y' kj lp' y' g' GGGC' qh' y' g' r' ctn0E' c' w' c' k' i' *Typha' ur r' 0: . 'c' y' g' g' f' { 'p' cv' k' x' g' ur gekgu. 'ku' h' q' w' p' f' " ko o' g' f' k' v' g' n' { 'f' qy putgco 'qh' o' cp { 'e' w' x' g' t' w' c' m' pi 'Vco kco K' Vtcl' c' pf 'c' m' pi 'y' g' N/53P 'h' g' x' g' g' 0C' p' ctgc' qh' " o' k' zgf 'y' gvcv' pf 'j' ctf y qqf u. 'lpenw' lpi 'r' q' p' f' 'c' r' r' g' c' pf 'y' k' n' y' *Salix' ur r' 0: . 'y' cv' ku' e' w' t' g' p' v' n' { 'w' u' g' f' 'cu' t' q' u' k' p' i' " c' pf 'p' g' u' k' p' i' 'u' k' g' u' h' q' t' 'r' k' u' g' f' 'd' k' f' 'ur gekgu' c' nu' q' g' z' k' u' u' f' qy putgco . 'qh' y' g' e' w' x' g' t' w' c' m' pi 'Vco kco K' Vtcl' c' pf " c' m' pi 'y' g' N/53P 'h' g' x' g' g' 0

P qppcvkxg'Xgi gvcvkp'lp'vj g'GGGC"

P qppcvkxg'xgi gvcvkp'ku'hqwpf 'y kj lp'vj g'pqtvj gtp'tgi kqp'qh'vj g'GGGC0P qppcvkxg'ur gelgu'uwej "cu" Dtc| klcpr' r gr gt "Schinus terebinthifolius+."cp'lpxcukxg'uj twd'ur gelgu."qeewt'lp'xct { lpi 'f gpuskxg'lp' f kwtdgf . 'f tkg'tuqku'cf lcegpv'vq'tqcf u'cpf "qp'vtgg'kurpf u'y j gtg'kv' tgy u'cv'vj g'dcugu'qh'pcvkxg'v'gguo' O gncrgwec "Melaleuca quinquenervia+."Cwutcrkcp'r lpg "Casuarina equisetifolia+."cpf "qrf "Y qtrf "enlo dlp' " hgt p "Lygodium microphyllum+."cnuq'qeewt'lp'iqy 'f gpuskxg'lp'vj g'hqtguv'f 'y gvcpf u0Gzvgpukxg'v'gcv' gpv'qh' r tlo ctln' 'Cwutcrkcp'r lpg'cpf 'o gncrgwec'y kj lp'vj g'GGGC'f wtkpi 'y g'r cu'f' gecf g'j cu'uki pkhecpv' " tgf wegf 'y g'co qwpv'qh'vj gug'ur gelgu'lp'vj g'ctgc0Kpxcukxg'cs wvle'ur gelgu'lp'penf lpi 'j { f tkm "Hydrilla verticillata+."y cvgt'hweweg "Pistia stratiotes+."qtr gf q' i tcuu "Panicum repens+."cpf "Rgtwklcp" r tlo tqugy kmqy "Ludwigia peruviana+."qeewt'lp'vj g'f ggr gt'y cvgt'cuuqelcv'f 'y kj 'y g'ewxgtv'qr gplpi u'qt" ecpenu'

Y gvcpf u'

Vj g'f qo kpcpv'j cdkcv'lp'vj g'P GUTUIGGGC'ku'c'tkf i g'cpf "unqwi j 'y gvcpf 0Vj g'urki j v'uwj gtn' 'i tcf kcpv' y tqwi j qw'vj g'Gxgti m'f gu'r gto ku'y cvgt "q'o qxg'unqy n' 'htqo 'y g'pqtvj 'q'vj g'uqwj 0Vj g'y gvcpf u'cnp' " y g'gcuvgtp'dqwpf ct { 'qh'vj g'GGGC'ctg'npqy p'v'j' cxg'dggp'cngt'gf 'd { 'y g'j { f tqm' lecn'gh'gew'qh'vj g' cf lcegpv'ecpcn'rgxgg."cpf 'tqenlo klp'pi 'ce'v'x'k'ku'v'q'vj g'gcu'v'cpf 'q'vj gt'j' k'utlecn'lo r ceu'qp'vj g'pewt'cn' hmqy 'lp'vj g'ctgc="j qy gxtg."y gvcpf u'y kj lp'vj g'r ctm'ctg'hwu'f gi tcf gf 'y cp'bo quv'y gvcpf 'ctgcu'q'wuk'f g'vj g' r ctm'f w'g'v'q'vj g'uk' g'qh'vj g'r ctm'cp'f 'y g'tko k'gf 'f g'xg'nr o gpv'y kj lp'vj g'r ctm'0Y gvcpf u'y kj lp'vj g'GGGC" ctg'eqpuk'f gt'gf 'q'v'dg'hwu'f gi tcf gf 'y cp'y gvcpf u'q'wuk'f g'vj g'r ctm'f w'g'v'q'vj g't'eqppg'v'x'k'v' "q'v'q'vj gt" y gvcpf u."mqy "eqxgt'qh'lp'xcukxg'ur gelgu'cpf 'rcem'qh'r j { u'lecn'f kuwtdcpeg"v'q'v'ku'0'

Vj g'o clqtk'v' 'qh'vj g'xgi gvcvkp'eqxgt'lp'vj g'ctgc'qh'cpcn' uku'ku'ercuuk'h'gf "cu'y gvcpf u."lp'penf lpi 'y g'ctgc'qh' r quuk'd'g'gmecv'f 'eqttkf qt'gcu'qh'vj g'r ctm'0Vj g'HNWEHEU'rcpf "wug'rcpf 'eqxgt'f c'w'r tqxkf gf 'y tqwi j " UHY O F "4233c+y gtg'wug'f 'q'f g'v'gto kpg'vj g'xgi gvcvkxg'eqxgt'lp'vj g'ug'eqttkf qtu'v'cdrg'7+0Hki w'g"; " f gr leu'vj g'y gvcpf u'cpf 'xgi gvcvkxg'eqxgt'qh'vj g'u'w'f { 'ctgc'wukpi 'y g'HNWEHEU'ercuuk'h'ecv'k'p'u'0' HNWEHEU'ercuuk'h'ecv'k'p'u'ctg'dcug'f "qp'lp'v'g'r t'gvcvkp'qh'c'g't'k'nr j q'v'j t'c'r j { 'cpf 'i tqwpf /twj lpi 'y cu'pqv' eqpf w'v'gf "y gtgh'gt'g."u'qo g'f k'h'gt'g'p'egu'bo c { 'gz'ku'd'gy ggp'vj g'HNWEHEU'f'c'v'cpf 'y g'ewt'gpv'x'gi gvcvkxg' eqxgt."gur gekm'f 'lp'ctgcu'y j gtg'gz'q'v'le'xgi gvcvkp'j cu'dggp'engt'gf "qt'vj qug'vj cv'y gtg'k'p'eqtt'g'v'f 'ercuuk'h'gf " lp'vj g'f g'xg'nr o gpv'qh'vj g'bo cr'0'

Cu'uj qy p'lp'hi w'g"; . 'y g'f qo kpcpv'xgi gvcvkxg'eqxgt'v' r g'lp'vj g'r ctm'ku'ucy i tcuu'o ctuj "HNWEHEU" 8633+0Vj gtg'ctg'cnuq'ctgcu'qh'p'qp/hqtguv'f 'htguj y cvgt'o ctuj "i tco k'p'q'f 'r tck'lg/o ctuj "HNWEHEU8632=" y gvr' tck'lg "HNWEHEU8652="u'qo g'y gvcpf 'j' ctf y q'q'f 'ctgcu'j co o q'emu'qt'v'gg'kurpf u+qh'o k'z'gf 'uj twdu' *HNWEHEU8394+."cpf 'y g'v'o gncrgwec "83; 3+."cp'gz'q'v'le'ur gelgu'="cpf 'ej c'pp'g'rk' gf "u'v'gco u'qt'y cvgt y c { u' *HNWEHEU7342+."lp'vj g'r ctm'y kj lp'vj g'HRN'eqttkf qtu'0Ctgc'qh'ci t'le'w'w'c'nr'rcpf "h'qt'h'gr'f 'etqr u' *HNWEHEU4362+."ecp'dg'hqwpf 'y kj lp'vj g'HRN'Y guv'Rtghgtt'gf 'Eqttkf qt'u'qwj 'qh'vj g'r ctm'0Ctgc'qh'f' t { " r tck'lg "HNWEHEU5322+."cpf 'uj twd'cpf 'dtwuj r'c'pf "HNWEHEU5422+."ecp'cnuq'hqwpf 'lp'vj g'HRN'Y guv' Rtghgtt'gf 'Eqttkf qt'u'qwj 'y g'r ctm'0Ctgc'qh'uj twd'cpf 'dtwuj r'c'pf 'ctg'hqwpf 'lp'vj g'u'w'f { 'ctgc'q'wuk'f g'vj g' r ctm'd'qwpf ct { 'lp'vj g'HRN'Y guv'U'geqpf ct { 'Eqttkf qt'lp'vj g'ctgc'qh'cpcn' uku'0C'r qt'v'k'p'qh'vj g'HRN'Y guv' Rtghgtt'gf 'Eqttkf qt'u'qwj 'qh'v'co k'co k'v'ck'ku'iq'ecv'f 'q'wuk'f g'qh'vj g'r ctm'v'j ku'lp'penf gu'vj g'N'53P "ecpcn' cpf "u'qo g'rcpf "gcu'qh'vj g'ecpcn'0Xgi gvcvkxg'eqxgt'v' r gu'lp'vj g'r qt'v'k'p'qh'vj g'HRN'Y guv'Rtghgtt'gf 'Eqttkf qt' q'wuk'f g'qh'vj g'r ctm'lp'penf g'ej c'pp'g'rk' gf 'y cvgt y c { u'cpf 'ecpcn'."Dtc| klcpr' r gr gt . 'h'gr'f 'etqr u."w'rc'pf 'uj twd' cpf 'dtwuj r'c'pf . "o k'z'gf 'uj twdu."htguj y cvgt'o ctuj gu'ucy i tcuu+."htguj y cvgt'o ctuj gu'v' i tco k'p'q'f 'r tck'lg/ o ctuj +."o k'z'gf 'y gvcpf 'j' ctf y q'q'f u."y g'v'o gncrgwec."tqen'is w'c'tt'kgu."j gtd'ceg'q'w'u'f t { +r tck'lg0P qt'vj 'qh'vj g' r ctm'd'qwpf ct { . 'y g'HRN'Y guv'U'geqpf ct { 'cpf 'HRN'Y guv'Rtghgtt'gf 'Eqttkf qtu'v'c'x'gtug'v'j g'Gxgti m'f gu'cpf " H'c'p'eku'U'0Vc'f m'f 'Y k'f r'kg'O c'pci go gpv'Ctgc'lp'Y EC'5D+0K'p'vj ku'ctgc."y g'HRN'Y guv'U'geqpf ct { " Eqttkf qt'et'qu'gu'o cl'p'nf 'ucy i tcuu'o ctuj 'qy ctf 'ku'p'gz'wu'r q'kp'v'y kj 'y g'HRN'Y guv'Rtghgtt'gf 'Eqttkf qt'0' P q'vj 'qh'vj g'r ctm'lp'vj g'Gxgti m'f gu'cpf "H'c'p'eku'U'0Vc'f m'f 'Y k'f r'kg'O c'pci go gpv'Ctgc."y g'HRN'Y guv'

Rtghgttgf "Eqttkf qt 'etquugu'c'o kzwtg'qh'o quwn{ 'ucy i tcuu'o ctuj 'cpf 'i tco kqkf 'r tcklg'o ctuj "dghgtg" wtpkpi "gcu/cpf "gzklpi "vj g'Gxgti ncf gu'cpf "Hicpeku"UOVc{ nqt "Y kf rkg'O cpci go gpv'Ctgc0Dgy ggp"vj g" Gxgti ncf gu'cpf "Hicpeku"UOVc{ nqt "Y kf rkg'O cpci go gpv'Ctgc'cpf "vj g'Ngxgg'Uwduvckqp."vj g'HRN"Y guv" Rtghgttgf "Eqttkf qt 'etquugu'o quwn{ 'i tco kqkf 'r tcklg'o ctuj 'cpf "c'hgy "ctgcu'qh'y gv'o gncgwec0'

TABLE 5: LAND COVER TYPES WITHIN THE CORRIDORS IN THE AREA OF ANALYSIS

Vegetative Cover/Land Use Type	FLUCFCS Code for Land Cover	FPL West Secondary Corridor	FPL West Preferred Corridor	Area of Possible Relocated Corridor
Wetlands	6000			
Freshwater marshes – sawgrass	6411	X	X	X
Freshwater marshes – graminoid prairie-marsh	6410	X	X	X
Wet prairie	6430		X	X
Wet melaleuca	6191	X	X	X
Mixed Wetland Hardwoods	6170		X	X
Mixed shrubs	6172	X	X	X
Non-wetlands				
Urban and Built Up	1000			
Commercial and Services	1400			X
Other Heavy Industrial	1560			X
Rock Quarries	1630		X	X
Holding Ponds	1660			X
Military Lands	1730			X
Agriculture	2000			
Improved Pasture	2110		X	X
Field Crops	2150		X	X
Tree Crops	2220		X	X
Tree Nurseries	2410			X
Ornamentals	2430			X
Horse Farms	2510		X	X
Rangeland	3000			
Herbaceous (dry prairie)	3100	X	X	X
Shrub and Brushland	3200		X	X
Mixed Rangeland	3300			X
Upland Hardwood Forests	4000			
Melaleuca	4240			X
Brazilian pepper	4220		X	X
Barren (disturbed land)	7400			X
Roads and Highways	8140			X
Water (channelized streams)	5120	X	X	X

Source: SFWMD 2011a

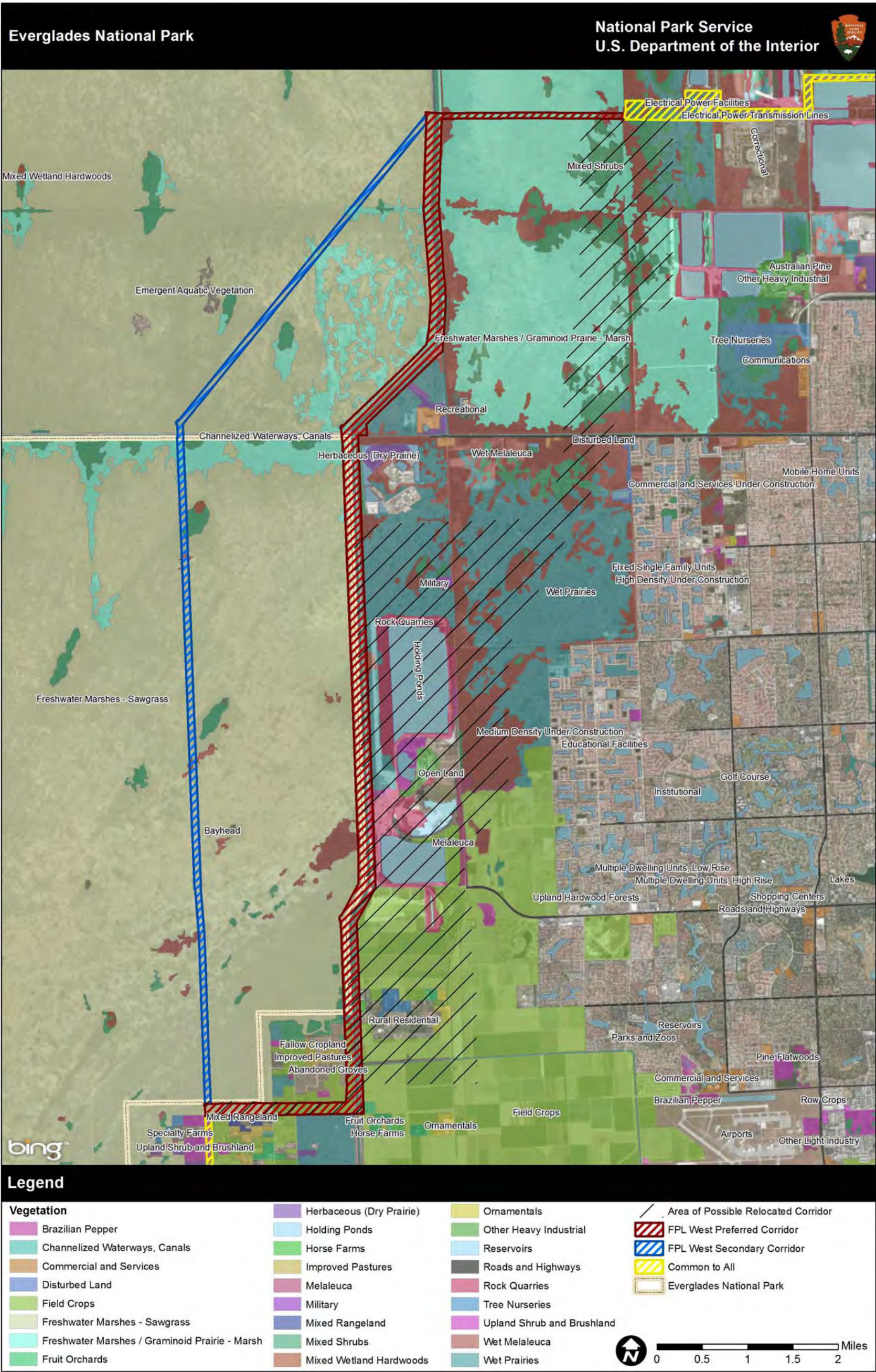


FIGURE 9: WETLANDS AND VEGETATIVE COVER MAP

Ej cr vt "5<Chgevf "Gpxkqpo gpv"

;:"

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Xgi gvcvkp'y kj lp'vj g'Ctgc'qh'Rquidng'Tgmecvgf'Eqt t kf qt "

Vj g'ctgc'qh'r quidng'tgmecvgf'eqt t kf qt'gcu'qh'vj g'r ctnlxtckgu'eqpukf gtdcnf 'lp'xgi gvcvkp'eqxgt'f gr gpf kpi " qp'rcpf'wug'cpf'r tqzko kf 'vq'j ki j y c{ u'cpf'f gxgnr o gpw0Dcugf'qp'vj g'HNWEHEU'rcpf'eqxgt'f cvc'cpf " cgtkcn'r j qvqu'qh'vj g'ctgc'wgg'hki wtg', +. 'vj g'uqwj gtp'gpf'ku'r tko ctkn'ci tlewnwtcn'y kj "o cp{ 'cetgu'lp" ko r tqxgf'r cuwtg'HNWEHEU'4332+. 'hgrf'etqr u'HNWEHEU'4372+. 'tgg'etqr u'HNWEHEU'4442+. 'tgg" pwtugtkgu'HNWEHEU'4632+. 'qtpco gpvcu'HNWEHEU'4652+. 'cpf'j qtug'hto u'HNWEHEU'4732+0T ghgt'vq" vj g'0Cf lcegpv'Ncpf'Wugu'cpf'Rqnekgu'ugevkp'lp'vj ku'ej cr vgt'hqt'c'hwnf guetkr vkp'cpf'o cr r kpi 'qh'rcpf " wugu0Vj g'egpvt'qh'vj g'ctgc'qh'r quidng'tgmecvgf'eqt t kf qt'y guv'qh'Mtqo g'Cxgpwg'eqpvckpu'tqen's wettkgu" HNWEHEU'3852+. 'j qrf kpi 'r qpf u'HNWEHEU'3882+. 'tugtxqku'HNWEHEU'7522+. 'lpf wutken'HNWEHEU' 3782+. 'cpf'eqo o gteknf gxgnr o gpv'HNWEHEU'3622+. 'cpf'o kktct { 'rcpf u'HNWEHEU'3952+0Rcvej gu'qh' wr rcpf'uj twd'cpf'dtwuj rcpf'HNWEHEU'5422+. o kzgf'tcpi grcpf'HNWEHEU'5522+. 'j gtdcegqu'f t { " r tcklg'HNWEHEU'5322+. 'Dtc| kktcp'r gr r gt'HNWEHEU'6442+. 'cpf'o grngwec'HNWEHEU'6462+. 'ctg" gxkf gpv'lp'cpf'pgct'vj gug'f kwtddgf'ctgcu0Vj g'pqt y gcu'ugevkp'qh'vj ku'ctgc'qh'r quidng'tgmecvgf'eqt t kf qt " ku'guu'f gxgnr gf. 'y kj 'y gv'r tcklg'HNWEHEU'8652+. 'o kzgf'y gvcpf'j ctf y qqf u'HNWEHEU'8392+. " o kzgf'uj twdu'HNWEHEU'8394+. 'cpf'y gv'o grngwec'HNWEHEU'83; 3+. 'r txcrgpv'lp'vj g'Dkf'F tkg'dculp0 Vj g'Dkf'F tkg'dculp'y gvcpf u'y gtg'f guetkdgf'lp'c'uwwf { 'f qpg'lp'3; : : "O eO cj qp'3; : : +. 'cpf'tgr qtvgf'lp" 3; : : "F GTO'3; : : +0Cv'j cv'ko g. 'f kwtddcpeg'ltqo 'vj g'wug'qh'cm'gttckp'xgj kengu'lp'vj g'ctgc'y cu'gxkf gpv. " cu'y gm'cu'vj g'eqmpk cvkp'd { 'vj g'gzqle'o grngwec0Dqj 'qh'vj gug'eqpf kkpqu'y gtg'pqvgf'lp'vj ku'ctgc" f wtkpi 'tgegpv'hgrf'xkuku'Ewppkpi j co 'r gtu0eqo o 04234+0Cnpi 'Vco kco k'Vtckn'vj gtg'ctg'uqo g'ctgcu'qh' f kwtddgf'rcpf'HNWEHEU'9622+. 'cpf'eqo o gteknf'cpf'ugt xlegu'HNWEHEU'3622+0'

Vj g'Rgppuueq'y gvcpf u'pqt y 'qh'vj g'Vco kco k'Vtckl'ctg'r tko ctkn'ltguj y cvgt'i tco kpkf'o ctuj "HNWEHEU' 8662+. 'y kj "o kzgf'uj twdu. 'y gv'o grngwec. 'cpf'y gv'r tcklg0Vj ku'y gvcpf'ctgc'ku'r ctv'qh'vj g'Rgppuueq" Tgi kqpcn'O kki cvkp'Ctgc0K'3; : 7. 'vj g'UHY O F "dgi cp'wukpi 'Rgppuueq'cu'c'tgi kqpcn'qh'ukg'o kki cvkp" ctgc. 'cmqy kpi 'r gto k'cr r rncpwa'q'o cng'o kki cvkp'eqpvtkdwkp'u'ht'vj g'ces wukukp. 'gpj cpego gpv. 'cpf " mpi /vgt o 'o cpci go gpv'qh'Rgppuueq'rcpf u'cu'eqo r gpucvkp'ht'r gto kwgf'y gvcpf'lo r cew'UHY O F " pff 00F kwtddgf'rcpf u'HNWEHEU'9622+. 'tqcf u'cpf'j ki j y c{ u'HNWEHEU': 362+. 'cpf. 'ej cppgrk gf " utgco u. 'ecpcn. 'qt'y cvty c { u'HNWEHEU'7342+. 'ctg'hqwpf'vj tqwi j qw'vj g'ctgc'qh'r quidng'tgmecvgf " eqt t kf qt. 'dw'bo c { 'pqv'j cxg'dggp'rdgrgf'cu'wej 'lp'UHY O F 'HNWEHEU'xgi gvcvkp'eqxgt'f cvc0Xgi gvcvkp' eqxgt'v' r gu'f kuewugf'lp'vj g'r ctcj tcr j 'cdqvg'ctg'f kuewugf'lp'o qtg'f gckrlp'cdng'80'

TABLE 6: DESCRIPTIONS OF VEGETATIVE COVER TYPES

Vegetative Cover Type	Description
Tree Crops (FLUCFCS 220)	Orchards and groves generally occur in areas with a specific combination of soil qualities and climatology factors. Water bodies, which moderate the effects of short duration temperature fluctuations, often are in close proximity to this type of agriculture.
Improved Pasture (FLUCFCS 2110)	This category in most cases is composed of land which has been cleared, tilled, reseeded with specific grass types, and periodically improved with brush control and fertilizer application.
Field Crops (FLUCFCS 2150)	Field crops are agronomic crops that, due to spacing or growth habit, do not exhibit a pattern of parallel rows on the photography. Examples in Florida are wheat, oats, hay, other grasses, sugar cane, and watermelons. In the SFWMD the primary field crop types are hay, grasses, and sugar cane.
Tree Nurseries (FLUCFCS 2410)	Areas in this category are not associated with the timber industry; trees primarily are ornamentals.
Ornamentals (FLUCFCS 2430)	This category is defined as plants or shrubs grown for decorative effects/landscaping.
Herbaceous (Dry Prairie) (FLUCFCS 3100)	This category includes upland prairie grasses which occur on non-wetland soils but may be occasionally inundated by water. These grasslands are generally treeless with a variety of vegetation types dominated by grasses, sedges, rushes and other herbs with some saw palmetto (<i>Sabal palmetto</i>) present.

Vegetative Cover Type	Description
Shrub and Brushland (FLUCFCS 3200)	Shrub and Brushland is used for areas that have over 67% shrub cover and less than 33% herbaceous cover. This land cover type usually grades into flatwoods, wet flatwoods, wet prairies (savannahs), marsh, stream swamps or hardwood hammocks along streams and creeks, or upland live oak (<i>Quercus virginiana</i>) or cabbage palm (<i>Sabal palmetto</i>) hammocks. Common species include gallberry (<i>Ilex glabra</i>), wax myrtle (<i>Myrica cerifera</i>), saltbush (<i>Baccharis halimifolia</i>), blueberries (<i>Vaccinium</i> spp.), rusty lyonia (<i>Lyonia ferruginea</i>), fetterbush (<i>L. lucida</i>) and other shrubs and brush, as well as various types of short herbs and grasses.
Mixed Rangeland (FLUCFCS 3330)	When more than one-third intermixture of either grassland or shrub-brushland range species occurs, the area is classified as Mixed Rangeland under FLUCFCS.
Brazilian Pepper (FLUCFCS 4220)	This exotic, pestilent tree species is commonly found on disturbed sites. Communities of these small, shrub-like trees are often established along borrow-pits, levees, dikes and in old disturbed fields.
Melaleuca (FLUCFCS 4240)	This exotic tree species occurs in almost pure stands. It is an aggressive competitor, invading and often taking over a site, forming a dense stand. Melaleuca generally is an indicator of a disturbed site.
Mixed Wetland Hardwoods (FLUCFCS 6170)	This category is for those wetland hardwood communities which are composed of a large variety of hardwood species tolerant of hydric conditions and exhibit an ill-defined mixture of species.
Mixed Shrubs (FLUCFCS 6172)	This class is used for wetland areas that are dominated by woody vegetation less than 20 feet in height. These areas are often associated with areas of transitional hydrology or regenerating swamps and are typically found in shallow depressions and the upper edges of poorly defined drainages (sloughs), rivers, creeks or streams. They also occur in seasonally or temporarily wet situations near man-induced disturbances such as an impoundment, road, railroad, or transmission line/pipeline corridor. This community is comprised of a mixture of various shrubs, most commonly wax myrtle (<i>Myrica cerifera</i>), saltbush (<i>Baccharis halimifolia</i>), buttonbush, and elderberry (<i>Sambucus canadensis</i>) with some aquatic and herbaceous vegetation or primrose willows (<i>Ludwigia</i> spp.) intermixed.
Wet Melaleuca (FLUCFCS 6191)	This class includes Melaleuca found growing in wetland environments such as marshes and wet savannahs. It is also found in low areas and can invade cypress swamps. Melaleuca tolerates most subtropical ecosystems, preferring wet to intermittently wet sites and can survive extended flooding, moderate drought, and some salinity.
Freshwater Marsh / Graminoid Prairie Marsh (FLUCFCS 6410)	Freshwater marshes where one or more of the species predominate, but have less than 66 percent coverage: sawgrass, cattail (<i>Typha domingensis</i> , <i>T. latifolia</i> , or <i>T. angustifolia</i>), arrowhead (<i>Sagittaria</i> sp.), maidencane (<i>Panicum hemitomon</i>), buttonbush (<i>Cephalanthus occidentalis</i>), cordgrass (<i>Spartina bakeri</i>), giant cutgrass (<i>Zizaniopsis miliacea</i>), switchgrass (<i>Panicum virgatum</i>), bulrush (<i>Scirpus americanus</i> , <i>S. validus</i> , or <i>S. robustus</i>), needlerush (<i>Juncus effuses</i>), common reed (<i>Phragmites communis</i> or <i>P. australis</i>), and arrowroot (<i>Thalia dealbata</i> or <i>T. genioclata</i>). On these sites, surface water is present for extended periods during the growing season, but is absent by the end of the growing season in most years. Periods of inundation are intermediate between deep marshes and wet prairies; sites are usually covered with water at least two months of the year and undergo prolonged periods of soil saturation.
Sawgrass Marsh (FLUCFCS 6411)	Freshwater marsh dominated by sawgrass (<i>Cladium jamaicensis</i>). Sawgrass marsh is widespread in Florida and is the predominant species in the Everglades, accounting for 70% of the landscape. Sawgrass grows equally well in water several feet deep and on moist ground several feet above the water table. Sawgrass may exceed 10 feet in height and form an impenetrable mass. Two categories of sawgrass are recognizable: dense and sparse. The dense type occurs on higher ground, and although it appears monotypic, it may include small areas of other tall emergent plants such as cattail (<i>Typha</i> spp.), ferns, and small shrubs. Unlike cattail, sawgrass is seldom found in highly disturbed situations.
Wet Prairie (FLUCFCS 6430)	This classification is composed predominately of grassy vegetation on hydric soils and is usually distinguished from marshes by having less water and shorter herbage. These communities are predominated by one or more of the following species: sawgrass, maidencane, cordgrasses (<i>Spartina bakeri</i> and <i>S. patens</i>), spike rushes (<i>Eleocharis</i> sp.), beak rushes (<i>Rhynchospora</i> sp.), St. Johns wort (<i>Hypericum</i> sp.), spiderlily (<i>Hymenocallis palmeri</i>), swampily (<i>Crinum americanum</i>), yellow-eyed Grass (<i>Xeric ambigua</i>), and whitetop sedge (<i>Dichromena colorata</i>).

Kpxcukg'Rncpw'

O cp { 'r ncpv'ur geku'j cxg'dggp'lpvtqf wegf 'vq'Huqtkf c'itqo "eqwvktgu'ctqwpf 'y g'y qtrf 'd { 'r cuv'cpf 'tgegpv' ugwvgtu'cpf 'xlukqtu0Vj gug'pappcvkxg'ur geku'ur tgc f 'ter kf n . 'lp' r ctv."dgecvug'y g { 'j cxg'pqv'gxqkxgf 'j gtg' cpf 'j cxg'pq'pcwtcn'r tgf cvqtu'qt 'f kugcugu'vq'nggr 'y gk 'i tqy vj 'lp'ej genl*P RU'4235d+0K'ku'guvko cvgf 'y cv' cr r tqzko cvgn '472.222'cetgu'qh'yj g'r ctnictg'kphgugf 'y kj 'gzqvle'ur geku'UHGT VH'422: +0Gzqvle'r ncpv' kphgucvku'lp'yj g'r ctnio c { 'dg'gzcegtdevgf 'd { 'uqkif kuwtdcpeg. 'lpetgcugf 'pwtkgpu.'cpf 'j { f tqmji lecn' o qf kkecvkp0O cp { 'gzqvle'ur geku'ctg'hqwtkuj kpi 'lp'c'xctkgv' 'qh'j cdkcwa'cpf 'ctg'pgi cvkxgn' 'chgevkpi 'y g' Gxgti ncf gu'geqmi { 0

Cu'pqvgf "cdqvg."gzqvle'r ncpv'ctg'hqwpf 'lp'cpf 'cmqi 'y g'eqttkf qtu'y kj lp'yj g'r ctnicpf 'ctg'cdwvcpv'lp' f kuwtdgf 'mcecvku'lp'yj g'ctgc'qh'r quukdng'tgmecvgf 'eqttkf qt'gcu'qh'yj g'r ctn0Rtko ct { 'gzqvle'r ncpv'lp'yj g' ctgc'qh'pcn { uku'lpemf g'o gnrwec'cpf 'Dtc| kkp'r gr r gt. 'y j lej 'ecp'qeewt 'lp'r wtg'ucvfu.'dw'uqo g'ctgcu' qh'pcvkg'j ctf y qqf 'y gwpf 'j cxg'dggp'eqmptk gf 'd { 'c'o kz'qh'gzqvle'ur geku0Ceeqt f kpi 'vq'cxckcdng'ncp' " wug'f cvc.'uqo g'qh'yj g'hqtugvf 'y gwpf u'y kj lp'cpf 'cf lcegpv'vq'yj g'dqwpf ctgu'qh'yj g'HRN'Y guvRtghgtgf " Eqttkf qt'y gtg'kphgugf 'y kj 'kpxcukg'pappcvkxg'xgi gcvkqp.'lpemf kpi 'o gnrwec'cpf 'Dtc| kkp'r gr r gt.'dw' yj g'r ctniuchh'j cu'dggp'tgcvkpi 'y gug'cpf 'qy gt'ur geku'ukpeg'yj g'r wtej cug'qh'yj g'r tqr gtv'0Cr r tqzko cvgn' " 92'r gtegpv'qh'yj g'o gnrwec'j cu'dggp'tgcvgf 'y kj 'r qukxg'tguwu.'dw'uqo g'wvpgcvgf 'ctgcu'tgo clp." o clpn' 'y qug'ctgcu'emuguv'vq'yj g'gcvgt p'dqwpf ct { *P RU'4228d+0'

HNQQF RNCPU'

Huqf r nkp'u'ctg'my /n' kpi 'ctgcu'yj cv'ctg'uwdlgev'vq'r gtkqf le'lpwv'cvkqp'f wg'vq'j gcx { 'r tgekr kcvkp0Vj gug' ctgcu'ctg'i gpgtcn' 'cf lcegpv'vq'ncgu.'tkxgtu.'cpf 'uwtgco u0Vj g'r gtkqf le'hqvf kpi 'cpf 'f t { kpi 'lp'yj gug'ctgcu' etgcvgu'wpls wg'j cdkcv'yj cv'wv r qtu'c'y kf g'xctkgv' 'qh'r ncpv'cpf 'cpko cn'ur geku0Huqf y cvgtu'qh'np'ectt { " pwtkgpv'tlej 'ugf ko gpv'yj cv'eqpvkdwg'vq'c'htvkg'gpxkqpo gpv'ht'xgi gcvkqp0Huqf r nkp'u'ctg'cnuq' dgpghelecn'ht' y kf rkkg'd { 'etgcvkpi 'c'xctkgv' 'qh'j cdkcwa'ht'ht'kj 'cpf 'qy gt'cpko cnu0K'cf f kskqp.'huqf r nkp' " hwpvku'lpemf g'vgo r qtct { 'uqtci g'qh'j ki j 'huqy u.'uqy kpi 'huqy 'xgmekv'. 'rtqxf kpi 'i tqwv y cvgt' tgej cti g.'cpf 'tgv welpi 'f qy pwtgco 'ko r cew'qh'j ki j 'huqy u'wej 'cu'huqf kpi 'cpf 'gtqukqp0T gi wvqv { " huqf r nkp'u'ctg'yj qug'ctgcu'emukhgf 'cu'322/ { gct 'huqf r nkp'u.'y j lej 'j cxg'c'3'r gtegpv'ej cpeg'qh'huqf kpi " lp'c'ukpi ng' { gct. '722/ { gct 'huqf r nkp'u.'y j lej 'j cxg'c'204'r gtegpv'ej cpeg'qh'huqf kpi 'lp'c'ukpi ng' { gct.'cpf " huqf 'l' qpgu'lp'j ki j 'j c| ctf 'ctgcu.'uwej 'cu'eqcucn'ctgcu'qt'ctgcu'r tqpg'vq'ncuj 'huqf kpi 0O quv'qh'yj g'ncpf " cpf 'y gwpf u'lp'yj g'Gxgti ncf gu'P cvkpcn'Rctm'cpf 'lp'yj g'ctgc'qh'r quukdng'tgmecvgf 'eqttkf qt'gcu'qh'yj g' r ctnictg'lp'yj g'322/ { gct 'huqf r nkp'0C'huqf r nkp'o cr 'ku'r tqxf gf 'lp'hki wtg'320'

Qxgt'yj g'ncuv'322' { gctu.'yj g'eqpwtwvku'qh'tqcf u.'ecpcu.'ngxggu.'cpf 'qy gt'utwewtgu'yj tqwi j qw'yj g' Gxgti ncf gu'j cu'chgevgf 'yj g'pcwtcn'huqf r nkp'r tqeguugu'cpf 'yj gtghgtg'cngtgf 'yj g'pcwtcn'huqf 'eqpvqn' cpf 'f { pco 'ku'etkcecn'vq'huqf r nkp'hwpvku'lp'yj g'Gxgti ncf gu'gequ' uvgu 0T gi kpcn'y cvgt 'o cpci go gpv' j cu'f tclpgf 'cpf 'f tkgf 'xcu'utgwvj gu'qh'yj g'huqf r nkp'ly gwpf 'u' uvgu 0Vtcur qt'cvkqp'eqttkf qtu'j ki j y c { " cpf 'tchny c { u'cev'cu'f co u'tcr r kpi 'huqy u'y j kg'ecpcn'cpf 'ngxggu'eqpxg { 'huqy u'ci cku'v'pcwtcn'f tclpci g' r cwtgtpu'cy c { 'itqo 'Huqtkf c'Dc { 'vq'yj g'Cwvple'Qegcp+0Vj gtghgtg.'yj g'gzkvkpi 'eqpf kkp'qh'yj g' huqf r nkp'cpf 'ku'cuuqekvgf 'hwpvku'lp'cpf 'huqf r nkp'xcwgu'lp'cpf 'y kj lp'r tqzko k { 'qh'yj g'r tqdgev'ctgc' ctg'f gi tcf gf 'itqo 'ku'pcwtcn'eqpf kkp0Huqf kpi 'huqy u'pqty 'qh'yj g'r ctnictg'i gpgtcn' 'ewtgpv' 'f co o gf " dgj kpf 'yj g'N/4; 'ngxgg'cpf 'Vco lco k'Vtckly j lej 'ctg'yj gp'f kxgtvgf 'vq'yj g'gcu0'



Source: FEMA 2012.

FIGURE 10: FLOODPLAIN MAP

K'ku'P RU'r qre{ "öq'r tqgev'r tguqtxg."cpf "tguqtxg"y g'pcwtcnltguqtegu'cpf 'hpevkpu'qh'y g'hqqf r nkp="cxqkf"y g'qpi /"cpf "uj qtvvgo "gpxkqpo gpvcn'ghgeu'cuuqekvgf "y kj "y g'qeer cpe{ "cpf "o qf kkecvkp'qh' hqqf r nkp="cpf "cxqkf" f k gev'cpf "kpf k gev'wv r qtv'qh'hqqf r nkp" f g xgr o gpv'cpf "cevkpu'y cv'eqwf " cf xgtugn' "chgev'y g'pcwtcnltguqtegu'cpf "hpevkpu'qh'hqqf r nkp"qt "kpetgcug'hqqf "tkumö" *P RU'4228c-0' Hwtj gt. 'k'ku'y g'Hgf gtenGo gti gpe{ "O cpci go gpv'Ci gpe{ "au'r qre{ "v'cxqkf"cf xgtug"ko r ceu'cuuqekvgf " y kj "y g'qeer cpe{ "cpf "o qf kkecvkp'qh'hqqf r nkp" *66'EHI", +0Cwj qtk{ "hqt'tgi wv'kpi "y ku" o cpci go gpv'ku'r tqxkf gf "wvf gt "Gzgewkxg"Qtf gt"33; : . "y j lej "gucdrkij gf "r tqegf wv'gu'v'g'puwtg'y cv" r qv'pvcn'ghgeu'qh'hqqf r nkp"j c| ctf u'cpf "hqqf r nkp"o cpci go gpv'ctg'eqpukf gtgf "y j gp'v'kpi "cp'cevkp" y cv'o c{ "ecwug'cf xgtug"ko r ceu'qp'hqqf r nkp"0Vj g'P RU'ku'wvf gt "gzgewkxg"qtf gt "cpf "r qre{ "v'gf wv'gt" grko kpcv'f g xgr o gpv'lp'hqqf r nkp"0Dgecwug'y g'o clqtk{ "qh'y g'r tqgev'ctgc"ku'encukkgf "cu" c" hqqf r nkp. 'k'ku'pqr' quukdg"v'eqo r r'v'gn' "cxqkf" hqqf r nkp"lp'y g'r tqgev'ctgc0J qy g xgt. "y g'ko r ceu'qp" hqqf r nkp'hpevkp'cpf "xcnwgu"o c{ "dg'uki p'khecpv' "t'gf wv'gf "f gr gpf kpi "qp'y g'y j gtg'y qug"ko r ceu'qeer0' I gpgtem' "ur gcnkpi . "hqqf r nkp'hpevkp'cpf "xcnwg'kpetgcugu'uki p'khecpv' "y guv'qh'y g'ewt gpv'Gxgti rcf gu" P cvkqpcn'Rctnldqwpf ct{ 0'

HNQQFRNCIP 'Y KJ IP 'VJ G'RCTM'

Y kj lp'y g'r ctm'hqqf r nkp'hpevkp'cpf "xcnwgu"ctg'lp'tgrv'xgn' "i qqf "eqpf kkp0'hqqf r nkp'hpevkpu'cpf " xcnwgu'lp'y g'gzkukpi "HRN'r qtr gtv' "lp'y g'r ctm'ctg'ewtgpv' "uko krc"v'q'y g'hqqf r nkp"lp'y g'r ctm'r qtr gtv' " ctqwpf "k0Eruqg"v'tqcf u'wey "cu'y g'Vco kco k'Vtck'hqqf r nkp'hpevkpu'j cxg'dggp'f kuwtdgf "cpf "y g" f kuwtdcpegu'j cxg'tguwngf "lp'ej cpi gf "j { f tqmji k'hpevkp."xgi gvcvkp."cpf "qy gt "hcevtu'tgrv'gf "v" hqqf r nkp'xcnwgu'

HNQQFRNCIP 'GCUV'QHVJ G'RCTM'

Hqqf r nkp'xcnwgu'j cxg'dggp'eqo r tqo kugf "qxgt"v'ko g'lp'y g'hqqf r nkp'qwu'f g'y g'r ctm'lp'y g'ctgc'qh' r quukdg'tgrv'cgf "eqttkf qt="y g{ "j cxg'dggp"o qtg'gzv'pukxgn' "h'ci o gpv'f "d{ "h'xggu'cpf "wtdcp" f g xgr o gpv'cpf "ctg"o qtg'f kuwtdgf "cpf "gucdrkij gf "y kj "pqpvcxg"qt "kpxcukxg'r rcp'v'ur gekgu."ecwukpi " nry gt "hqqf r nkp'hpevkp'cpf "xcnwgu'lp'y ku'ctgc0'

UQWPFUECRGU'

Rwtuwpv'v'P RU'Management Policies 2006 cpf "F kgev'at'Qtf gt"69<Uqwpf "Rtguqtxcvkp'cpf "P qlug" O cpci go gpv'cp'ko r qtv'p'eqo r qp'gpv'qh'y g'P RU'o kuukp'ku'y g'r tguqtxcvkp'qh'pcwtcnltuqwpf uecr gu' cuuqekvgf "y kj "p'cvkpcn'r ctm'wv'ku" *P RU'4228c-0P cwtcnltuqwpf uecr gu'gzkuv'lp'y g'cdugpeg'qh'j wo cp" ecwugf "uqwpf 0Vj g'pcwtcnltuqwpf uecr g'ku'y g'ci i tgi cvg'qh'cni'y g'pcwtcnltuqwpf u'y cv'qeer "lp'r ctmu." vqi g'y gt "y kj "y g'r j { ulecn'ecr cek{ "hqt"v'cpuo k'kpi "pcwtcnltuqwpf u0P cwtcnltuqwpf u'ctg'k'v'k'p'k'p'k'g'g'go gpw' qh'y g'gpxkqpo gpv'cpf "r ctv'qh'öy g'uegpgt{ "cpf "y g'pcwtcnltuqwpf "j kuqtle'qdlgeu'cpf "y g'y krf "ikhö" r tqgev'gf "d{ "y g'P RU'Qti cple"Cev0Vj g{ "ctg'xkcn'v'y g'xkukqt "g'zr g'k'peg'qh'o cp{ "r ctm'cpf "r tqxkf g" xcnwcdng'kpf k'cv'qtu'qh'y g'j gcnj "qh'xctk'v'u'gequ{ u'vgo u0P qlug'ku'c'eqpegtp'dgecwug'k'ecp'ko r gf g" geqmi k'cn'hpevkp'cpf "f ko k'kij "y g'cdk'k{ "qh'y g'P RU'v'q'ceeqo r rkij "ku'tguqteg'r tqgev'kp'o kuukp0'

Vj g'r tguqtxcvkp'qh'pcwtcnltuqwpf uecr gu'ku'cnuq'cp'ko r qtv'p'v'o cpci go gpv'qdlgevkxg'hqt "y g'Gxgti rcf gu" dgecwug'qh'y g'3; 56'gpcdrkpi "hgi k'v'k'p."y j lej "go r j cuk gf "r tguqtxcvkp'qh'öw'p'k'v'g'hqtc'cpf "h'wpc'cpf " y g'guugp'v'cn'r tko k'k'g'pcwtcnltuqwpf k'k'p'u0'Eapukv'p'y kj "y g'gpcdrkpi "hgi k'v'k'p."y g'f tch'i gpgten' o cpci go gpv'r rcp" *I O R+f guetkdg'u'y g'f guktgf "eqpf kkp'qh'pcwtcnltuqwpf uecr gu'lp'y g'r ctm'cu'hqmiy u<

P cwtcnltuqwpf uecr gu."y j lej "ctg'ko r qtv'p'v'v'o cp{ "xgtv'gdtcv'cpf "kpxgtv'gdtcv'ur gekgu."ctg" r tguqtxgf 0*Hqt"gzco r ng."dcw'cpf "f qm j k'p'u'wug'tghgevgf "uqwpf "y cxgu" *gej qm'ecv'kp'+v'p'cxki cvg" cpf "v'q'hqecv'r tg{ "h'qi u."dkf u."cpf "k'p'ugew'tgn' "qp'pcwtcnltuqwpf u'v'q'h'kpf "o cvgu'qt "cxqkf " r tgf cv'qtu0"Xkukqtu'j cxg'qr r qtw'p'k'gu'lp'o quv'ctgcu'qh'y g'r ctm'v'q'g'zr g'k'peg'pcwtcnltuqwpf u0'

P cwtcnluqwpf u'ctg'pgeguuct { 'hqt'geqni lecnhwpvklpki "cpf'qeewt'y kj lp'cpf'dg{ qpf 'vj g'tcpi g'qh'uqwpf u' vj cvj' wo cpu'ecp'r gteglxg00 cp{ 'o co o cnu.'lpugeu.'cpf'dktf u'f gekr j gt'uqwpf u'vq'hkpf 'f guktcdrg'j cdkcv' cpf'o cvgu.'cxqkf'r tgf cvqtu'cpf'r tqvgev'{ qwpi . "guvcdkuj 'vgttkqtkgu.'cpf'vq'o ggv'qvj gt'uwtxkcn'pggf u0'

Hqt'o cp{ 'xkukqtu.'vj g'cdkxv{ 'vq'j gct'engctn{ 'vj g'f gtecvg'cpf's wkgvt'lpvgo kvgpv'uqwpf u'qh'pcwtg.'vj g' cdkxv{ 'vq'g'zr gtepeg'lpvgtm'f gu'qh'gz vgo g's wkgv'hqt'vj gkt'qy p'ucng.'cpf'vj g'qr r qt wpxv{ 'vq'f q'uq'hqt' gz vgp'f g'f g'gtkf u'qh'vko g'ctg'ko r qt vcpv'tgcuqpu'hqt'xkukpi 'pcvqpcn'r ctmu0'

P RU'r qnleku'ctg'hqewugf "qp'uqwpf uecr g'o cpci go gpv'y kj lp'pcvqpcn'r ctmu'cpf'f q'pqv'cf f tguu'vj g' r t g x g p v k p q h'p q k u g'k p't g u k f g p v k n'c t g c u 0 J q y g x g t.'pwo g t q w u'q v j g t'h g f g t c n'c i g p e k u'j c x g'f g x g n r g f' e t k g t k'c'h q t'e q o o w p k v'p q k u g'z r q u w t g.'l p e n f l p i'v j g'H g f g t c n'J k i j y c{ 'C f o l p k u t c v k p.'H g f g t c n'V t c p u k' C f o l p k u t c v k p.'H g f g t c n'C x k v k p'C f o l p k u t c v k p.'c p f'W U O F g r c t v o g p v'q h'J q w u k p i'c p f'W t d c p" F g x g n r o g p v'c o q p i'q v j g t u 0 O q u v'e q o o w p k v'p q k u g'u v c p f c t f u'c t g'd c u g f'q p'f q u g't g u r q p u g'u w f l g u'q h' j w o c p'c p p q{ c p e g'k p't g u r q p u g'v q'p q k u g'c p f'c n g'k p v'c e e q w p v'v j g'k p e t g c u g f'u g p u k k x k v'q h't g u k f g p v k n'c t g c u' v q'p q k u g'q e e w t t k p i'c v'p k i j v t g r c v k g'v q'f c{ v k o g'p q k u g'0'

UQWPFUECRGUVGTO RPNQNI ["

Vj g'o ci plkwf g'qh'pqlug'ku'f guetkdgf'd{ 'ku'uqwpf'r tguuwtg0Dgecwug'vj g'tcpi g'qh'uqwpf'r tguuwtg'xctkgu" i tgcvn{.'vj g'mi ctkj o le'uecrng'f gekdgn'f D+ku'wugf'vq'tgrcv'uqwpf'r tguuwtg0Uqwpf'r tguuwtg'f guetkdgf'lp" f gekdgn'ctg'qh'gvp'f ghkpgf'lp'vgo u'qh'htgs wpe{/y gli j vgf'uecrng0C'uqwpf'ngxgn'o gcuwtgo gpv'ku'wuwcm{ " g z r t g u u g f'c u'c p'C/y g l i j v g f'c x g t c i g'g p g t i { 'x c n w g'q x g t'c'ur gekhgf'vko g'lpvgtxcn0C/y gli j vpi'r tqxkf gu'c" o g y q f'q h'uwo o l p i' u q w p f'g p g t i { 'c e t q u u'v j g'c w f k d r g'ur g e v t w o' l p'c'y c{ 'v j c v'c r r t q z k o c v g u'j w o c p" l w f i o g p w'q h'w f p g u u.'l p'q v j g t'y q t f u.'j q y'w f'f'g q r r g'y q w f'r g t e g k x g'c'u q w p f'v q'd g 0 U q w p f' r g x g n' g z r t g u u g f' l p'C/y g l i j v g f'f'g e k d g n'c t g'k p f l e c v g f'y k j'v j g'c d d t g x k v k p'0 f D C 0'U g x g t c n'g z c o r r g u'q h' u q w p f" r t g u u w t g' r g x g n' l p'v j g'f D C' u e c r n g'c t g'f k u g f' l p'v c d r g'90'

Dgecwug'uqwpf'ku'f guetkdgf'lp'c'mi ctkj o le'uecrng'f D0'f DC+.'uqwpf'ngxgn'ecppqv'dg'cf f gf'd{ 'qtf l p c t{ " c t k j o g v e 0 l p'f c e v'c p'k p e t g c u g'q h'5'f D't g r t g u g p u'c'f q w d r k p i'q h' u q w p f'g p g t i { .'uq'w y q'v t w e m'v t c x g n k p i" u k f g/d{/ukf g'y qwf'dg'5'f D'w f g t'v j c p'q p g 0 F g e k d g n'c t g'q h'g p't g r v g f'v q'r g t e g k x g f'w f p g u u.'c p f' l p'u q o g" h t g s w p e { 'd c p f u'c'32/f D C'k p e t g c u g'c p't g u w n' l p' u q w p f u'v j c v'g g o'v y l e g'c u'w f'f' H J Y C'4233+0'

Mg{ 'o g t k e u'w u g f'v q's w c p v k h{ 'u q w p f u e c r g u'c t g'f g u e t k d g f'd g r q y 0'

P c w t c n C o d l g p v'U q w p f'N g x g n'f N p c v+<Vj g'uqwpf'ngxgn'qh'cni'pcwtcnluqwpf u'lp'c'i kxgp'ctgc.'gzenf lpi'cni' o g e j c p l e c n'g r e v t l e c n'c p f'q v j g t'j w o c p'c w u g f' u q w p f u.'k u'e q p u k f g t g f'v j g'p c w t c n'c o d l g p v' u q w p f' r g x g n 0'

Nz*Gzeggf cpeg'Rgt egpvkq+<Vj ku'o gtle'tgrtgugpv'vj g'uqwpf'r tguuwtg'ngxgn'f N+.'lp'f Du.'gzeggf gf'x r gtegpv'qh'vj g'vko g'hqt'vj g'ur gekhgf'o gcuwtgo gpv'r gtkqf 0Hqt'lpucpeg.'N;2'ku'vj g'uqwpf'r tguuwtg'ngxgn' gzeggf gf', 2'r gtegpv'qh'vj g'vko g0N2'ku'vj g'uco g'cu'vj g'o gf lcp=vj g'o k f f r g'x c n w g'y j g t g'j c n h'v j g' u q w p f" r g x g n'c t g'c d q x g'c p f'j c n h'd g r q y 0'

TABLE 7: DECIBEL LEVELS OF COMMON SOUND SOURCES

Sound	Noise Level (dBA)	Effect
Shotgun firing, jet takeoff (at 100–200 feet)	130	Painful
Turbo-prop at 200 feet, rock concert	110–140	Threshold of pain begins around 125 dB
Thunderclap (near)	120	Threshold of sensation begins
Stereo (over 100 watts)	110–125	Regular exposure to sound over 100 dB of more than one minute risks permanent hearing loss
Symphony orchestra, chainsaw, jackhammer	110	
Jet flyover (1,000 feet)	103	
Electric furnace, garbage truck, cement mixer	100	No more than 15 minutes of unprotected exposure recommended for sounds between 90–100 dB
Subway, motorcycle (at 25 feet)	88	Very annoying
Lawnmower/nearby thunder	85–90	85 dB is the level at which hearing damage (8 hrs) begins
Recreational vehicles	70–90	
Diesel truck (40 mph at 50 feet)	84	80 dB or higher is annoying, interferes with conversation, constant exposure may cause damage
Dishwasher, washing machine	75–78	70 dB or higher is intrusive, interferes with telephone conversation
Vacuum cleaner	70	
Automobile (45 mph at 100 feet)	60	Comfortable hearing levels are less than 60 dB.
Croaking raven (100 feet), conversation	50–65	
Quiet Office	50–60	
Refrigerator humming	40	Quiet
Daytime natural ambient in Everglades National Park (summer)	36	
Rustling leaves	20	Very quiet
Normal breathing	10	Barely audible
Lowest recorded natural ambient sound level during the winter in Yellowstone National Park backcountry.	0	Approximate threshold of human hearing at 1 kHz

Source: NIDCD n.d.

Gpgt i { 'Gs wlxcrnpvUqwpf 'Ngxgn'N_{gs}+<Dgecwug"gp xtkqpo gpwn'pqlug'hxewwvgu'ltqo "o qo gpv'q" o qo gpv'k'ku'eqo o qp'r tceveg'q"eqpf gpug'cm'qh'y ku'lpqto cvkp'lpq'c'ulpi ng'pwo dgt.'ecmgf 'y g" ogs wlxcrnpv'Uqwpf 'hgxgn'N_{gs}+0N_{gs}'ecp'dg'y qwi j v'qh'cu'y g'uqgf { 'uqwpf 'hgxgn'qt'cxgtci g'uqwpf 'hgxgn' y cv'tgr tguwpv'y g'uco g'uqwpf'gpgti { "cu'y g'xct { lpi 'uqwpf 'hgxgn'qxgt'c'ur gekhgf'vko g'r gtlkf '*v' r lecm' "3" j qwt'qt'46"j qwtu'0Vj g'Y qtrf "J gcnj 'Qti cpl cvkp'*Y J Q"3; ; +tgeqo o gpf u'oY j gtg'y gtg'ctg'pq'engct" tgcuppu'ht'wulpi 'qy gt'o gcuwtgu'k'ku'tgeqo o gpf gf 'y cv'NC_{gs}.V'dg'wugf "q'gxcnwvg'o qtg/qr'guu" eqp'pwwu'gp xtkqpo gpwn'pqlug'o"

F c { 'P k j vUqwpf 'Ngxgn'N_p+<N_p'ku'y g'C/y gli j vgf 'N_{gs}'hqt'c'46/j qwt'r gtlkf 'y kj "cp'cf f gf "32/f D" r gpcmf "lo r rugf "qp'pqlug'y cv'qewtu'f wtkpi 'y g'pki j wko g'j qwtu'dgy ggp'32'r 0 0cpf "9" c 0 000 cp { " uwtxg { u'j cxg'uj qy p'y cv'N_p'ku'y gnteqttgrvgf 'y kj "j wo cp'cppq { cpeg.'cpf 'y gtghqtg'y ku'f guetr vqt'ku" y kf gn' "wugf 'hqt'gp xtkqpo gpwn'pqlug'lo r cev'cuuguo gpv'HVC"4228-0Co gtlecp'P cvkpcn'Ucpf ctf u" k'pukwvg'Ucpf ctf "U340 "Rctv'6'tgeqo o gpf u'wulpi 'N_p'cu'y g'r tghettgf 'f guetr vqt'qh'gp xtkqpo gpwn'pqlug'O Qpg'ko kcvkp'qh'N_p'ku'y cv'r gqr ng'j cxg'f k'hewm' tgrvki "cp'ci i tgi cvg'qh'r gteglxgf 'pqlug'gxgpw'v'cp"

cxgtci g"pqkug"hxgn"gur gekm{ "y j gp"y j g"vko g"lpvgtxcnhtq"cxgtci kpi "gzvgpf u"qxgt"mipi "r gtlkf u0Vj g" Hgf gtcn{kvgtci gpe{ "Eqo o kvgg"qp"P qkug"HEQP "3; ; 4+"pqvgf "y cvetkkluo "qh"Np "cpf "qy gt"Ngs "o gtleu+" qhgp"ugo u"htqo "örcenlqh"wpf gtucpf kpi "qh'y g"dcuku"htq "y g'o gcuwtgo gpv"ecrewnvqap."cpf "cr r kccvqap"qh" yj cv'o gtleö"

UQWPFUECRGU'P'GXGTI NCF GU'P CVKQP CN'RCTMCP'F'CFLCEGPV'WPF GXGNQRGF "NCPF "

Uqwpf uecr gu'o qpkqtkpi "y cu"eqpf wevgf "d{ "P RU'cv'c'ukg'eqpukf gtgf "i gpgtcm{ "tgr tguvpvckg"qh'y g'ctgc" qh'y g'r ctnly kj kp'y g'r tqlgv'ctgc0"Vj g'Uj ctnlXcng{ "Tqcf "o qpkqtkpi "ukg"GXGT224+"ku'mqecvgf " cr r tqzko cvgn{ "5"o kgu'uqwj "qh'y g'Uj ctnlXcng{ "Xlukqt"Egpgt"cpf "3908"o kgu'y guv'qh'Mtqo g"Cxgpwg"lp" yj g"Hqtkf c"Rqy gt"cpf "Nki j vEqo r cp{ "Ncpf u"Gpxktqpo gpvcl'k r cev'Ucvgo gpv'r tqlgv'ctgc0Vj g" GXGT224"ukg"y cu'o qpkqtkgf "lp'y g'uwo o gt"qh'422: "Cwi wuv'37"y tqwi j "Ugr vgo dgt": "+cpf "y kvgt lur tkpi " qh'422; "Hgdwtet{ "45"cpf "Cr tkl'38+0F gvcnrf "vgej plecnlphqto cvkqp"qp'y g'uqwpf uecr gu'o qpkqtkpi " o gyj qf qm{ { "cpf "uwdugs wgpv'f cv"cpn{ uki'ku'r tqxkf gf "lp'y g'P RU'tgr qtv'Baseline Ambient Sound Levels in Everglades National Park"PRU'4234f +0

kp'i gpgtcn{j wo cp/i gpgtcvgf "pqkug"lp'y g'r ctnlku'r tgf qo kpcpn{ "htqo "xgi leng"tchle."ctetchv"qxgthki j w." xlukqt"ctkdqcv"vug"cpf "cf o kpkntcvkxg"cevxklgu'y cvlpxqrxg"o qvtdqcv."ctkdqcv."cpf lqt"ctetchv"vug="y gug" uqwpf u"uwmcm{ "go cpevg"htqo "f gxgnr gf "ctgeu."r qr wnt"dqcvkpi "qt"ctkdqcvkpi "+ctgeu."eco r i tqwpf u."cpf " o clqt"tqcf u"PRU'4232c+0Ctetchv"qxgthki j w"qeewt"y tqwi j qwv'y g'r ctnlcpf "ctkdqcv"vug"ecp"qeewt"lp" o cp{ "ctgeu0P cwtenl"uqwpf u"cv'y g'GXGT224"ukg"lpenmf gf "y kpf "cpf "y kpf "y tqwi j "hqkci g"uqwpf u"cpf " kpugev0

Vedrg": "uwo o ctkt gu'y g'Uj ctnlXcng{ "Tqcf "o qpkqtkpi "ukg"ej ctcevgtku"eu"fwtkpi "y g'f c{ vko g'cpf " plki j vko g."htq"dqy "y g'uwo o gt"cpf "y kvgt"o qpkqtkpi "r gtlkf u0Vj g'uwo o gt"pcwtenl'co dkgpv'fwtkpi "y g" f c{ vko g"ku'550f"DC."eqo r ctgf "vq'6; 0"DC"cv'plki j v0Vj g'y kvgt lur tkpi "pcwtenl'co dkgpv'y cu'cnuq"ki j gt" cv'plki j v'eqo r ctgf "vq"fwtkpi "y g'f c{ 0P ki j vko g'pcwtenl'co dkgpv'hxgnl'lp"dqy "uwo o gt"cpf "ur tkpi "y gtg" j ki j gt"y cp'fwtkpi "y g'f c{ vko g'dgecvug"qh'y g'j ki j "uqwpf "hxgnl'lp"y g'plki j v'cpf "gctn{ "o qtpkpi "j qwtu" tguwnkpi "htqo "kpugev'cpf "co r j kllcp"cevxkl{ 0Vj g'y kvgt"pcwtenl'co dkgpv'y cu'hyt gt"y cp'y g'uwo o gt" pcwtenl'co dkgpv'cv'4: 06"DC"cpf "5906"DC"lp'y g'f c{ vko g'cpf "plki j vko g."tgr gevxgn{ 0Vj g'j ki j gt"pcwtenl' co dkgpv'lp"uwo o gt"y cu'r ctvcm{ "cwtklwdcng"vq"uqto u'y cv'qeewtgf "fwtkpi "o qpkqtkpi "r gtlkf 0J ki j gt" co dkgpv'uqwpf "hxgnl'cv'plki j v'f vg"vq"kpugev'cpf "htqi "uqwpf u"q'pqv'ko r n{ "y cv'y g'pqewtpcn'gpxktqpo gpv" j cu'c'i tgcvgt"ecr cek{ "vq"o cunl'tcpur qtcvkqp"cpf "qy gt"hyt "htgs wgpe{ "pqkug00 quv'kpugev'cpf "htqi "uqwpf u" qeewr { "j ki j "htgs wgpe{ "dcpf u."cpf "uqwpf "gpgti { "kp'y gug'dcpf u"q'pqv'kvgt hgtg'y kj "j wo cp'r gtegr vkp"qh" my "htgs wgpe{ "uqwpf 0

TABLE 8: SHARK VALLEY (EVER002) SOUNDSCAPES METRICS (DBA)

	Daytime (7 a.m. – 7 p.m.)				Nighttime (7 p.m. – 7 a.m.)			
	L _{eq}	L ₅₀	L ₉₀	Natural Ambient	L _{eq}	L ₅₀	L ₉₀	Natural Ambient
Summer	52.2	40.4	30.7	33.2	53.8	51.1	40.2	49.7
Winter/Spring	44.8	36.7	23.8	28.4	46.3	40.1	21.7	37.4

Source: NPS 2012d.

³"Xgi gcvkxg"eqxgt"ftgevn{ "chgeu"j qy "uqwpf u"r tqrci cvg"htqo "c"uqwtg"vq"ct'geglxgt"cpf "y g'xgi gcvkxg"eqxgt"qh'y g" GXGT224"o qpkqtkpi "ukg"go gti gpv'y gvcpf u"ku'y g'uco g'cu'y g'r tgf qo kpcvg"xgi gcvkxg"eqxgt"htq"y g'ctgeu"qh'y g" r ctnly kj kp'y g'r tqlgv'ctgc0

Y kpf 'cpf 'y kpf 'tgrvuf 'uqwpf u'y gtg'v'j g'o qu'f qo kpcpv'pcwtcr'uqwpf 'uqwtgu'cv'v'j ku'hqecv'kqp. 'hmqy gf 'd' ' y cvgt. 'dkf u'cpf 'kpugeu' *P RU'4234f +0Gz kunkpi 'co dkgpv'N_{gs} 'uqwpf 'rgxgn' lpenf kpi 'dqj' 'pcwtcr'cpf 'pqp/ pcwtcr'uqwpf u'y gtg'lp'v'j g'tcpi g'qh'67'v'76'f DC'cv'v'j g'o qpkqtkpi 'ukg0'

Qp/ukg'qdugtxcv'kpu'cpf 'qhh'ukg'tgxky 'qh'tgeqtf gf 'cwf kq'f c'c'eqpenf gf 'v'j cv'j wo cp'uqwpf 'uqwtgu'y gtg' eqo o qp'f wtkpi 'f c' { vko g'j qwtu' *9'c0 0'v'9'r 0 0'lp'v'j g'uwo o gt'ugcuqp. 'cee'qwp'kpi 'hqt'86'r gtegpv'qh'v'j g' uqwpf u'j gctf 'cv'v'j g'GXGT224'ukg' *78'r gtegpv'lp'v'j g'y kpgt +0C'ketch'v'j gpgtcr'cxlc'v'kqp. 'eqo o gtekn'lgv. " qt'o kksct { . 'pq'v'ck'v'qwtu'v'j gtg'cwf kdr'59'r gtegpv'qh'v'j g'f c' { vko g'f wtkpi 'v'j g'uwo o gt=39'r gtegpv'f wtkpi " v'j g'y kpgt0Uqwpf u'htqo 'xkukqtu' *g0 0'o qvt'xgj kergu. 'eqpxgtuc'v'kqp. 'o wule. 'cpf 'y cvgtetch'wug+v'j gtg' cwf kdr'49'r gtegpv'qh'v'j g'f c' { vko g'f wtkpi 'v'j g'uwo o gt=cpf '5; 'r gtegpv'f wtkpi 'v'j g'y kpgt *P RU'4234f +0Vj g' GXGT224'ukg'y cu'er r tqzko cvgn' '42' { ctf u'htqo 'v'j g'Uj ctniXcmg { 'Tqcf 'v'j cv'kpenf gu'o qv'k'gf 'xkukqt' v'qwtu' *Uj ctniXcmg { 'Vtco +cpf 'dle { erg'v'c'hle0J wo cp'uqwtgu'qh'uqwpf 'cv'v'j ku'ukg' lpenf gf 'cktdqcu. " cktetch'v'xgj kerg'uqwpf u. 'cpf 'j wo cp'xqlegu' *P RU'4234f +0'

Vj g'GXGT224'o qpkqtkpi 'tguwu'r tqxkf g'c'upcr uj qv'qh'eqpf k'kpu'y kj lp'v'j g'lpv'gtkqt 'qh'v'j g'r ctn0Qv'j gt' hqecv'kpu'y kj lp'v'j g'r ctni'y qwf 'j cxg'uko kct 'pcwtcr'co dkgpv'rgxgn' *cu'f go qpu'cv'gf 'lp'P RU'4234f +. 'dw' qxgtcm'uqwpf 'rgxgn' lpeqtr qtcv'kpi 'j wo cp/ecwugf 'uqwpf u'y qwf 'dg'f k'htgtpv'0Hqt'gzco r rg. 'ctgcu'qh'v'j g' r ctni'cf lcegpv'v'j 'Vco kco K'Vtck'v'j qwf 'gzr g'kpg'v'j g'v'gt 'v'c'hle'p'qkug0Qv'j gt'wpf g'xgnr gf 'r'p'f 'q'wukf g' v'j g'r ctni'dqwpf ct { 'y qwf 'cnuq'j cxg'pcwtcr'co dkgpv'rgxgn'uko kct 'v'j q'v'j qug'o qpkqtf gf 'lp'v'j g'r ctm'y kj " v'qcn'uqwpf 'rgxgn'xct { kpi 'dcugf 'qp'r tqzko k'v'j 'p'qkug'uqwtgu'uwej 'cu'tqcf y c { u0'

Qxgtcm'v'j g'f c'v'uj qy 'v'j g'r ctni'ku'c'xgt { 's wkgv'r meg'v'j g'o clqtk'v'j 'qh'v'j g'v'ko g. 'y kj 'co dkgpv'uqwpf 'rgxgn' *lpenf kpi 'pcwtcr'cpf 'j wo cp'ecwugf 'uqwpf u'v'rgu'v'j cp'77'f DC'N_{gs} *uko kct 'v'j 's wkgv'qh'hle'g=ugg'v'cdrg'9+0' P cwtcr'uqwpf u'uwj 'cu'y kpf . 'kpugeu. 'co r j kdkpu'ctg'v'j g'f qo kpcv'g'uqwpf u'0J wo cp/ecwugf 'uqwpf u'ctg' cwf kdr'o qu'v'qh'v'j wtkpi 'v'j g'f c' { vko g'0Dgecwug'qh'v'j g'hqy 'co dkgpv'rgxgn'v'j g'j wo cp'ecwugf 'uqwpf u'v'j cv' ctg'r t'gugpv'ecp'dg'f g'v'ge'v'j 'cv'hqy 'rgxgn'qxgt'v'cti g'f kucpegu'htqo 'v'j g'uqwpf 'uqwtgu0'

UQWPFUECRGU'P VCO KCO KTGUF GPVKCN'E QO O WP KVKU'

Uqwpf uecr gu'o qpkqtkpi 'f c'v'ht'v'gukf gpv'kcn'eqo o v'p'k'ku'q'wukf g'v'j g'r ctni'y cu'pqv'cxck'v'cdrg'0Gz kunkpi 'N_rp' " y cu'guko cv'gf 'dcugf 'qp'r qr w'v'kqp'f gpuk'v'0P cwtcr'co dkgpv'uqwpf 'rgxgn'y gtg'pqv'ecr'w'v'gf 'hqt' " t'gukf gpv'kcn'ctgcu'cu'v'j ku'o g'v'le'ku'qpn' 'cr r k'ecdr'v'q'r ctni'y j gtg'v'j g'cdk'v'j 'v'j 'cr r t'gekv'g'pcwtcr'uqwpf u'ku' g'zr g'v'gf 0J wo cp/ecwugf 'uqwpf u'uwj 'cu'cwqo qdk'gu'cpf 'r'cy p'o qy gtu'ctg'cp'cegr v'gf 'r ctv'qh'h'k'kpi 'lp' " uwdvtdcp'ctgcu0'

Vj g'uww { 'ctgc'hqt'v'j g'gzkunkpi 'p'qkug'guko cv'g'y cu'f gh'kpgf 'd { 'ugr'v'kpi 'v'j g'4232'WU0'egpuwu'dmqemu'y kj " v'j g'k'egp'v'k'f 'y kj lp'4'o k'gu'qh'v'j g'g'cu'v'gt'p'dqwpf ct { 'qh'v'j g'ctgc'qh'r quukdr'v'g'v'g'v'gf 'eqttk'f qt'ctgc'qh' r quukdr'v'g'v'g'v'gf 'eqttk'f qt' *ugg'h'ki v'g'33+0Dgecwug'v'j g'hqewu'y cu'qp'ej ctce'v'gt'k' kpi 't'gukf gpv'kcn'ctgcu. " egpuwu'dmqemu'hqecv'gf 'gpv'k'gn' 'y guv'qh'v'j g'g'cu'v'gt'p'dqwpf ct { 'qh'v'j g'ctgc'qh'r quukdr'v'g'v'g'v'gf 'eqttk'f qt'y gtg' g'zenf gf 'htqo 'v'j g'uww { 'ctgc' *y kj 'gzegr v'kqp'qh'uqo g'v'ko k'gf 't'gukf gpv'kcn'ctgcu'v'j cv'v'j gtg' lpenf gf +0Vj g' uww { 'ctgc' lpenf gf 'c' o k'z'qh'hqy /f gpuk'v'j 't'gukf gpv'kcn'ctgcu. " j k'j /f gpuk'v'j 't'gukf gpv'kcn'ctgcu. 'cpf 'v'cti g'ctgcu' qh'v'p'f g'xgnr gf 'r'p'f 0Vj g'uww { 'ctgc' lpenf gf '3.36; 'egpuwu'dmqemu'cpf 'y cu'er r tqzko cvgn' '680'us wctg" o k'gu'lp'uk' g'0Vj g'uww { 'ctgc'j cf 'c'4232'r qr w'v'kqp'qh'; . 5; 60Cu'c't'guwu'v'j g'r qr w'v'kqp'r gt'us wctg'o k'g" y cu'3.; 3: 0Cy c' { 'htqo 'o clqt'v'qcf y c { u.'GRC'j cu'f v'g'v'gt o k'pgf 'N_rp'ecp'dg'guko cv'gf 'dcugf 'qp'v'j g'hmqy kpi " gs w'v'kqp' *WUGRC'3; 96+2'

N_rp' " ? '44'- 32mqi *r gqr rg'r gt'us wctg'o k'g+ "

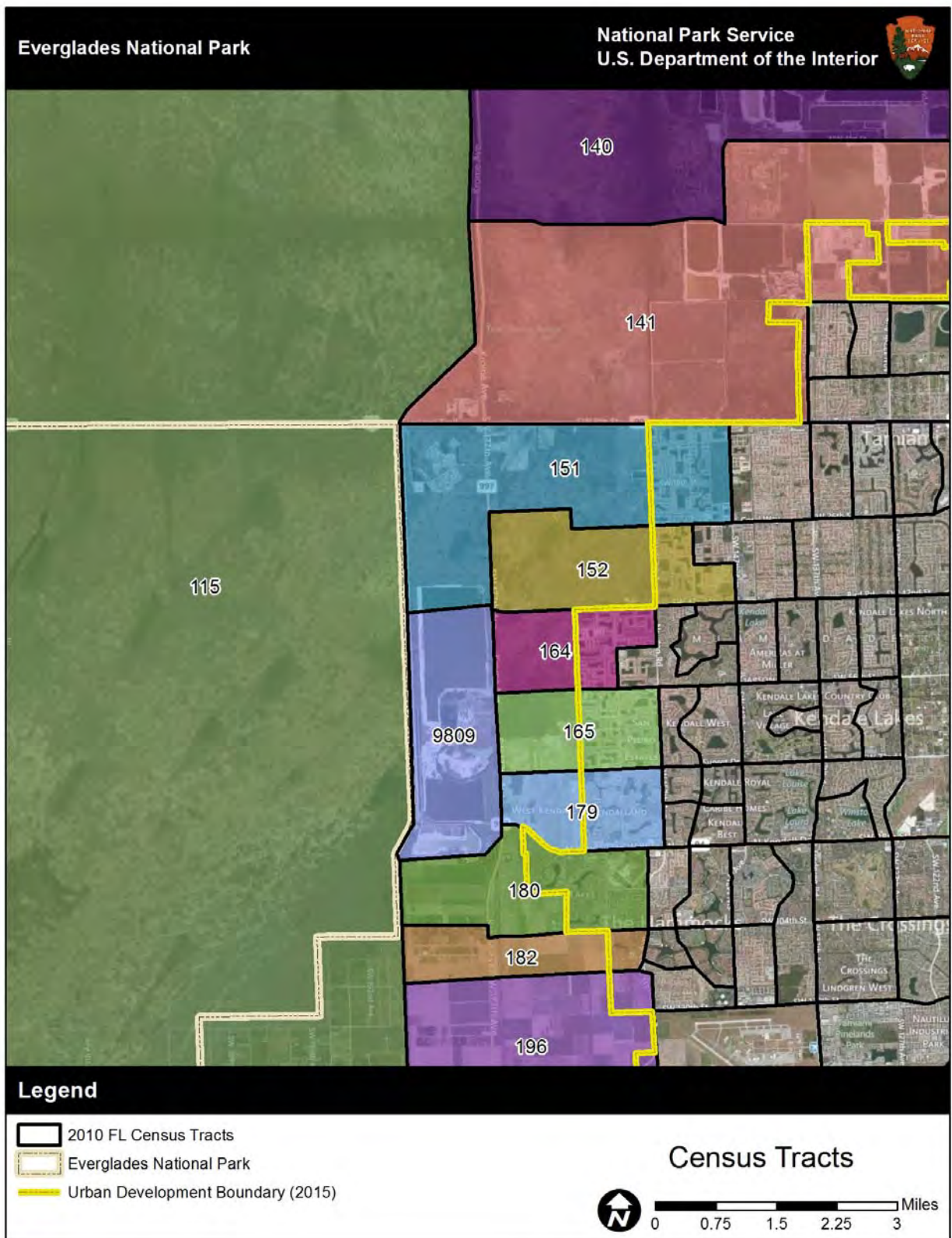


FIGURE 11: STUDY AREA FOR CALCULATION OF EXISTING RESIDENTIAL L_{DN} (2010 U.S. CENSUS BLOCKS)

Vj gtghqtg."y g'gunko cvgf "N_rp "hqt"y g"Vco kco k'tgukf gpvkn'ctgcu'hqecvzf "cy c{ "htqo "o clqt'tqcf y c{ u'y cu" 77'f DC0Vj ku'ku'y kj kp'y g'tcpi g'qh'v{ r lecn'pqkug'rgxgn'hqt "uwdwt dcp'tgukf gpvkn'ctgcu'cpf "dgnqy "y g" 87'f DC "N_rp"pqkug'ko r cev'y tguj qrf "wugf "d{ "ci gpekgu'uwej "cu'y g'Hgf gten'Cxkcvkp"Cf o kpkntcvkp0N_rp" y qwf "dgj" ki j gt "hqt'tgukf gpegu'hqecvzf "emug"vq"o clqt'tqcf u'*gđ 0'87'f DC "cv322'hggv'htqo "c"o clqt" tqcf y c{ +0Y j kg'cewcnN_rp"y qwf "xct{ "y kj kp'f k'hgtgpv'r qv'kp'u'qh'y g'uwwf { "ctgc."y g'gunko cvgf "gzknkpi " N_rp"77'f DC +r tqxkf gu'c'tgcuqpcdrq"cpf "eqpugtxcv'xg"hy +d'cuku'hqt"cuugukpi "r qv'gpvkn'ko r cev'0

Y Kř NKřG"

Vj g'Gxgti rcf gu'gequ{ ugo "eqpuku'qh'c"hy . "hcv'r nkp'y cv'uw r qtu'c"xctkgv{ "qh'f knkpev'cpf "f { pco le" j cdkcw0Vj gug"j cdkcw'gcej "uw r qtv'y gk'qy p'eqo o wpk{ "qh'y kř nkřg. "kpenf kpi "cr r tqzko cvgn{ "572" ur geku'qh'dkf u."o qtg'y cp'62"o co o cnu."qxgt"72'tgr v'kgu."cpf "37"co r j kdkcu"*P RU'4232e+0

Kp'v'qf wev'kp"qh'tgi kpcn'tcpur qtv'v'kp"eqttkf qtu'cpf "y cvgt"o cpci go gpv'u{ ugo u'htci o gpv'f "y kř nkřg" j cdkcv'y tqwi j qw'y g'Gxgti rcf gu'gequ{ ugo 0Vj g'qpeg'xcuv'pcwtcm{ "eqppgevgf "ncpf uecr g'j cu'dggp" hci o gpv'f "kp'q"o qucle'qh'xctkqu'u{ gf "j cdkcv'r cvej gu0Vj g"Vco kco k'VtckN/4; "ecpen'cpf "N/53P" ecpen'cpf "rgxgg."cf lcegpv'vq'y g'r tqlgev'tcgc."ugt'xg'cu'cp'gh'ge'v'xg'dcttktg"vq'y kř nkřg"o qxgo gpv." kpv'gh'gtkpi "y kj "qt'r t'gxgpv'kpi "nkřg'h'p'ev'kp'u'qh'o cp{ "pcv'xg'y kř nkřg"ur geku0Ncti g'r ctegn'u"o c{ "dg" uwkcdrg'hqt"r qr wrcv'kp'u'qh'ugxgtcn'ur geku'qh'uo cm'u{ gf "cpko cnu."dw'xgt{ "hy "tgo clp'kpi "j cdkcv'r cvej gu" ctg'htci g'gpqwi j "vq'r tqxkf g'ur cvkn'p'ggf u'qh'ht/tcpi kpi "ur geku'uwej "cu'y g'Hqtkf c'r cp'y gt"**Felis concolor coryi*+"*cu'f k'ewuugf "kp'y g'đUr gekn'ucw'u"ur geku'ugev'kp+"*WUHY U'422: +0Vj g'j cdkcv'y kj kp" y g'HRN"qy pgf "ncpf u'cpf "cm'pi "y g'N/53P"rgxgg'ctg'ej ctcev'gtk gf "cu'ucy i tcu'cpf "htguj y cvgt"o ctuj 0Vj g" o ctuj ncpf u'ugt'xg'cu'j cdkcv'hqt"o y kř g'tcpi g'qh'y kř nkřg"ur geku0

Vj g'eqpustwev'kp"cpf "eqo r r'gv'kp"qh'Vco kco k'VtckN'3; 4: "j cf "uwducpv'kn'gh'geu'qp'y g'h'p'ev'kp'u'cpf " r tqeguug'kp'y g'o ctuj "r tckl'g"j cdkcv'0J knqtkcem{ ."y g'ctgc'cf lcegpv'vq'y g'Vco kco k'VtckN'cu'tkf i g'cpf " uqwi j "y g'ncpf 0Vj g'cnegt gf "j { f tqni { "j cu'ej cpi gf "y g'ctgc'ko o gf kcvgn{ "cf lcegpv'vq'y g'tqcf "vq"o eqpukv'gpv' "h'q'gf gf "j cdkcv'y cv'pqy "j cu'c"o k'zgf "eqo r quk'kp"qh'p'cv'xg'cpf "pqppcv'xg'xgi g'cv'kp'ur geku0 Hct'y gt'uqwj "qh'y g'Vco kco k'VtckN'f t'gt "eqpf k'kp'u"j cxg'ecwugf "c'uj k'h'htqo "tkf i g'cpf "uqwi j "y g'ncpf u'vq" ucy i tcu'uo ctuj "kp'y g'GGGC0Vj gug'ej cpi gu'lp"j cdkcv'j cxg'cnuq"cnegt gf "cu'qekcv'f "y kř nkřg"ur geku" f k'g'gtuk{ "cpf "eqo r quk'kp0

Cu'f guetkdgf "kp'y g'đXgi g'cv'kp"cpf "Y g'ncpf u'ugev'kp."y g'ctgc'qh'r quukdrq'tgmecv'f "eqttkf qt"gecu'qh'y g" r ctn'xctkgu'eqpukf gtdcn{ "kp'xgi g'cv'kp"eqxgt"*đ0'j cdkcw'f gr gpf kpi "qp'ncpf "wug'cpf "r tqzko k{ "vq" j ki j y c{ u'cpf "f g'xgnr gf "ctgcu0Cu'uj qy p'lp"ctgcn'qh'hki vtg'9."y g'uqwj gtp'gpf "qh'y g'ctgc'ku'r tko ctkn{ " ci tlewnwcn'y kj "o cp{ "ctgcu'r ncpv'f "kp'h'grf "etqr u0Vj g'egp'v'gt "qh'y ku'ctgc'eqpv'kp'u'xctkqu'lpf wntkcn'cpf " eqo o gtekn'f g'xgnr o gpv."gur gekm{ "cm'pi "o clqt'tqcf u0Vj g'pqt'y "gpf "qh'y ku'ctgc'ku'rgu'f g'xgnr gf ." y kj "y g'v'r tckl'g"cpf "gzq'v"y g'ncpf "j ctf y q'qf u'r t'gx'c'gpv'lp'y g'Dkf "F t'lxg'dculp"ctgc'cpf "r tko ctkn{ " htguj y cvgt"i tco k'p'kf "o ctuj "kp'y g'Rgppu'eq'y g'ncpf u'pqt'y "qh'y g'Vco kco k'VtckN'0Vj g'Dkf "F t'lxg'dculp" ctgc."ur gek'h'cem{ ."h'p'ev'kp'u'cu'c"x'ncdrg'uj qtv'j { f tqr g'k'qf "y g'ncpf ."y j lej "ku'r ct'v'w'cn{ "ko r q'v'p'v'vq" y cf kpi "dkf u"*Tlej vgt"3; : : +0F k'wtdcpeg'htqo "y g'wug'qh'cm'v'gttclp'xg' k'ergu'ku'g'xkf gpv'lp'y g'Dkf "F t'lxg" dculp"ctgc"*E wppkpi j co "r gtu'đeqo o 04234+0

O CO O CNU"

Pcv'xg'O co o cnu"

O co o cnu'y kj kp'y g'r tqlgev'tcgc"j cxg'cf cr v'f "vq'ej cpi kpi "y g'ncpf "eqpf k'kp'u."cpf "kp'uqo g'ecugu"o c{ "dg" f knkpi w'uj gf "htqo "q'y gt "P qtv'y "Co gtecp'r qr wrcv'kp'u'd{ "uo cnegt"u{ g'qt"q'y gt"cf cr v'xg'ej ctcev'gtkn'ku0 Hqt"gzco r r'g."y j kg'v'k'rgf "f ggt"**Odocoileus virginianus*+"kp'y g'Gxgti rcf gu'ctg'f knkpe'v'xg'kp'y g'gt"uo cni" u{ g'cpf "cf cr v'v'kp"vq"o ctuj "j cdkcw"*Mwuj ncp"3; ; 2+0Vj g'o ctuj ncpf u'ctg'j cdkcv'hqt"cv'rgcu'32"o co o cni

ur gelgu. 'lpenwf lpi 'uqo g'qh'v'j g'o quv'gpf cpi gtgf 'ncpf 'o co o cni'lp'v'j g'ucv'g. 'v'j g'Hqtkf c'r cpvj gt'cpf 'v'j g' Gxgti ncf gu'o kpm'y j lej 'ku'tctg'cpf 'i gpgtcmf 'hqwpf 'lp'ucy i tcu'j'j cdkcv'dw'tgtgcu'htqo 'o ctuj ncpf " f wtkpi 'v'j g'ftt' 'ugcuqp'*dqvj 'ctg'f'kuewuugf 'lp'v'j g'oUr gelcn'ucwuu'Ur gelguö'ugev'qp+*J wo r j tgf 'cpf '\ kpp" 3; : 4+0'

Qv'j gt'o co o cni'g'zr gevgf 'v'q'qee'w'lp'v'j g'r tq'ge'v'ctgc 'lpenwf g'o keg. 'tqf gpvu. 't'cpukgpv'f ggt 'cpf " o guqectpkxqtgu'uwej 'cu'tceeqppu'*Procyon lotor+.'qwg'v'u'*Lutra canadensis+.'cpf 'dqdecu'*Lynx rufus+0' O ctuj 't'cddku'*Sylvilagus palustris+.'uj q'tv'ckrgf 'uj tgy '*Blarina brevicauda+.'h'gcu'v'uj tgy '*Cryptotis parva+.'cpf 'eqv'qp'tcv'*Sigmodon hispidus+0 c' 'cnuq'qee'w'0Eqv'qp'o keg'*Peromyscus gossypinus+.'cpf " t'leg'tcu'*Oryzomys palustris+0 q'xg'dgy ggp'j co o qemikurpf u. 'lpf k'ecv'kpi 'v'j cv'v'j g' 'y q'w'f 'cnuq'qee'w'lp' v'j g'ht'guj y cvgt'o ctuj gu. 'gxgp'ht'qpn' 'lp't'cpuk0Vj g'tqwpf /vckrgf 'o wuntcv'*Neofiber alleni+.'qt 'Hqtkf c" y cvgt'tcv. 'cnuq'lpj cdku'ht'guj y cvgt'o ctuj gu'y kj lp'v'j g'GGGC0'

Pqppcv'kxg'O co o cni'

C'xct'kg'f 'qh'p'qppcv'kxg'o co o cni'ecp'dg'hqwpf 'lp'v'j g'Gxgti ncf gu'ctgc'qh'uqwj gtp'Hqtkf c'lpenwf lpi 'v'j g' f qo gu'ke'f'qi . 'ecv'cpf 'i qcv.'cu'y gm'cu'ht'cn'j qi u0Qv'j gt'p'qppcv'kxg'ur gelgu'v'j cv'o c' { dg'r t'gugp'v'lp'v'j g'ctgc" lpenwf g'xgt'xg'v'o qp'ng'f' u'*Chlorocebus aethiops+.'j q'wug'o q'wug'*Mus musculus+.'p'w'k'c'*Myocastor coypus+.'U'qwj 'Co g'tlec'p'eqcv'k'*Nasua nasua+.'P qty c' 't'cv'*Rattus norvegicus+.'d'rcem't'cv'*R. rattus+.'cpf " t'gf 'hqz '*Vulpes vulpes+*GUEKU C'422; +0Qee'w'tgpegu'qh'cf f k'k'qpcn'p'gy 'ur gelgu'ctg't'gr q'tvgf 'ht'gs w'gpv'f 0'

Ctgc'qh'Rqukdrg'Tgmj'ecvgf 'Eqt'tkf qt "

P'cv'kxg'o co o cni'g'zr gevgf 'v'q'qee'w'lp'v'j g'ctgc'qh'r qu'kdrg'tgmj'ecvgf 'eqt'tkf qt'gcu'v'qh'v'j g'r ctn'ly q'w'f "dg" uko k'ct'v'q'v'j q'ug'hp'qy p'v'q'qee'w'lp'j cdkcv'v'j kj lp'v'j g'GGGC. 'gzegr v'v'j cv'ur gelgu'y q'w'f 'h'k'ng'f 'dg'rguu" cdwpf cpv.'gzegr v'lp'v'j g'Gxgti ncf gu'cpf 'H'icpeku'U'Vc'f m't'Y k'f r'k'g'Ctgc'cpf 'R'gppu'weq'y g'w'p'f u'p'q't'v'j 'qh' Vco k'co k'V'tcn'f'w'g'q'f' t'gcvgt'f'k'w'w'dcpeg'g'f'0'c'm'v'gt't'cl'p'x'g'j k'eng'u'g'z'q'v'k'ur gelgu. 'ci t'k'ew'w't'cn'c'v'k'k'g'u. " cpf 'r tqz'ko k'f 'v'q'f'g'x'g'nr o gpv'0J qy g'xgt. 'f'qo gu'ke'ecv. 'f'qi u. 'cpf 'i q'cu'w'cpf 'ht'cn'j qi u'o c' { 'dg'o qtg" cdwpf cpv'lp'v'j g'ctgc'qh'v'j g'r qu'kdrg'tgmj'ecvgf 'eqt'tkf qt'f'w'g'v'q'v'j g'r tqz'ko k'f 'v'q't'g'ukf gp'v'cn'ct'gcu'0O co o cni' r t'g'x'k'w'w'f 'q'dug't'x'g'f 'y kj lp'v'j g'y g'w'p'f 'j cdkcv'qh'D'kf 'F' t'k'g'f'd'cu'lp'lp'w'f g'o ctuj 't'cddk: 't'ceeqp. 't'k'xgt" q'wgt. 'dqdecv. 'cpf 'y j k'g/vckrgf 'f ggt '*T'lej vgt'3; : : +0'

Dk'f'U'

P'cv'kxg'Dk'f u'

Qxgt'572'ur gelgu'qh'dk'f u'j' c'xg'dggp'uki j v'g'f 'v'j tq'w'j q'w'v'j g'Gxgti ncf gu'*Nqf i g'4227+0Vj g'tg'ctg'q'xgt'372" ur gelgu'qh'dk'f u'v'j cv'dtggf 'qt'ht'qci g'lp'v'j g'r ctn'f' { gct't'qwpf . 'w'ukpi "dqvj 'ncpf 'cpf 'y cvgt'j cdkcv'*P RU' 4232g+0Vtgg'k'ur'p'f u'r tq'x'k'f'g'j cdkcv'ht'o cp' { 't'g'ukf gp'v'cpf 'o ki t'cv'qt { 'dk'f u'0O ki t'cv'qt { 'dk'f u'ctg'r tq'v'gevgf " w'p'f gt'v'j g'r tq'x'k'k'qpu'qh'v'j g'O ki t'cv'qt { 'Dk'f 'V'tgc'v'f 'Cev'0Vj g'r ctn'ku'ht'ecvgf 'y kj lp'v'j g'C'w'p'v'k'c'ht'f y c'f . 'c" o cl'qt'o ki t'cv'qt { 't'q'w'g'ht'f'dk'f u'v'j cv'dtggf 'lp'v'go r g'tcv'g'P q't'v'j 'Co g'tlec'p'f 'y k'p'v'gt 'lp'v'j g'E'ct'k'dd'gcp'cpf " U'qwj 'Co g'tlec'p'RU'4232g+0Uqo g'qh'v'j g'ug'p'g'q't'qr k'ec'n'o ki t'cp'w'ctg'f'g'uk'p'cv'g'f 'cu'o ki t'cv'qt { 'dk'f u'qh' o c'pci go gp'v'eq'pegtp'lp'v'j g'u'q'w'j 'Hqtkf c'gequ'f'ugo 'd' { 'v'j g'W'U'0H'uj 'cpf 'Y k'f r'k'g'U'gt'x'k'g'*WUHY U+ '*P RU'4232g+cpf 'o q'tg'v'j cp'42'qh'v'j g'ug'ctg'cp'v'k'c'v'g'f 'v'q'qee'w'v'j kj lp'P GUT U*P RU'4232g+0'

Ur gelgu'v'j cv'o c' { 'dg'hqwpf 'y kj lp'v'j g'ht'guj y cvgt'o ctuj 'cpf 'o ctn'r t'ck't'kgu'lp'w'f g't'cr v'qtu'*lp'w'f lpi 'v'j g' h'g'f g'tcm'f 'g'p'f cpi gtgf 'Gxgti ncf gu'up'ck'rh'k'g. 'f'k'uewuugf 'lp'v'j g'oUr gelcn'ucwuu'Ur gelguö'ugev'qp+.'y cf lpi " dk'f u. 'u'qpi 'dk'f u. 'eq't'x'k'f u. 'cpf 'f'w'em'0C'r r tqz'ko cv'ng'f '3: 'ur gelgu'qh'y cf lpi 'dk'f u'eqo o qp'nf 'wug" o ctuj ncpf 'j cdkcv'*Nqf i g'4227+0Vj g't'q'ug'cv'g'ur q'p'd'k'm'*Platalea ajaja+.'y j k'g'k'dku'*Eudocimis albus+." y q'qf 'u'q'tn'*Mycteria americana+.'cpf 'c'h'gy 'ur gelgu'qh'gi t'gw'*Ardea alba. 'Bubulcus ibis+.'cpf 'j g'tqpu" *Ardea herodias. 'Egretta tricolor. 'Nycticorax nycticorax+.'y cf g'lp'v'j g'uj cm'qy 'o ctuj 'j cdkcv'ht'qci lpi 'ht'q"

łpxgtvđtcvgu"cpf "huj 0Uxgtcn'qh'v' g'g'ur gelgu'ctg'eqpukf gtgf "ucv'g'ur gelgu'qh'ur gelcn'eqpegtp"cpf "ctg" cff tguugf "łp'v' g'đUr gelcn'ucwau'Ur gelgu'đ'ugev'kp0Y qqf "uqtmi" f kuewugf "łp'v' g'đUr gelcn'ucwau'Ur gelgu'đ' ugev'kp+cpf "c'xctlgv' "qh'y cf łpi "dkf u'j cxg'tqqngt'kgu'łp'v' g'Gxgti rcf gu'dw'o ki tcvg'v'pqt v' "Hqtłf c'łp'v' g' uwo o gt" *Nqf i g'4227+0'

Vj g'y g'wcpf "j cdkcw'f qy pwtgco "qh'v' g'Vco kco K'Vtckřew'kg'w'ur t'qxf g'v'gg'ecpqr { . "h'chłpi . "pgu'łpi . " tqqu'łpi . "cpf "h'qci łpi "ctgcu'h'q' "dkf "ur gelgu'0Ecpqr { "j cdkcw'eqo r qp'gpw'h'qwpf "cv'v' g'r ctnłctg'gf křng" h'qci g. "łpugev'r qr w'w'kp'p' "v'gg'ec'x'k'kgu. "cpf "y łp'vgt "f t { "ugcuqp+eqxgt0Ułpi dkf u'w'ej "cu'y ctdngtu" *Dendroica"ur r 0"ctg'eqo o qp= y cvgt "dkf u'w'ej "cu'řko r n'kp' *Aramus guarana+ "v' cv'łggf "qp'up'cknu. "y cf g" cv'v' g'y cvgt'w'gf i g=cpf "ugxgtcn'ur gelgu'qh'gi t'gu'cpf "j gt'p'p' "h'qci g'łp'v' ku'gp'x'k'qpo gpv' *Gy gñ3; ; 2+0' Drcen'x'w'w'w'gu" *Coragyps atratus+ "cpf "w'w'ng { "x'w'w'w'gu" *Cathartes aura+ "ctg'h'qwpf "łp'v' g'r ctnł { gct "t'qwpf . " dw'ctg'gur gelcn' "cdw'p'p'v'łp'v' y łp'vgt0'

P qppcv'k'g'Dkř u'

P qppcv'k'g'qt "łpxcuk'g' "dkř "ur gelgu'hp'qy p' "v' "qee'w'łp'v' g'Gxgti rcf gu'ctgc'qh'u'qwj "Hqtłf c'łpen'f g'v' g" eqo o qp'o { pc" *Acridotheres tristis+ "Gi { r v'łcp' i ggug" *Alopochen aegyptiacus+ " { g'ngy /ej gxt'qpgf " r cten'ggv" *Brotogeris chiriri+ "t'qenłf q'xg" *Columba livia+ "O w'ueq'x { "f w'em" *Cairina moschata+ "o qpmł r cten'ggv" *Myiopsitta monachus+ "drcen'j qqf gf "r cten'ggv" *Nandayus nenday+ "j q'wug'ur cttqy " *Passer domesticus+ "r w'r ng'uy co r j gp" *Porphyrio porphyrio+ "Gw'cuk'p'eqm'ctgf "f q'xg" *Streptopelia decaocto+ " Gw'qr gcp'w'ctnłpi " *Sturnus vulgaris+ "cpf "ucetgf "k'ku" *Threskiornis aethiopicus+ " *GUE KUO C "422; +0'

Ctgc'qh'Rqukřng'Tgmecv'g'Eqttłf qt "

Ugxgtcnłdkř "ur gelgu'ctg" g'zr gev'gf "v' "w'k'k' g'j cdkcw'łp'v' g'ctgc'qh'ř quukřng'tgmecv'g' "eqttłf qt "gcu'v'qh'v' g" r ctm' r ct'w'ew'ctnł "v' g'y g'v'r tckłg' "cpf "gz'q'v' "y g'wcpf "j ctf y qqf u'łp'v' g'Dkř "F t'k'xg'dculp'ctgc"cpf " h'guy y cvgt'o ctuj gu'łp'v' g'G'g'p'p'ueq'v' g'wcpf u'p'q'v' "qh'v' g'Vco kco K'Vtckř0Cu' r t'g'x'k'q'w'w' "f guet'k'dgf "łp'v' ku" ugev'kp. "v' g'Dkř "F t'k'xg'dculp'ctgc. "ur gel'k'ecmł . "h'w'p'ev'kp'p'cu'c'x'cn'w'cdng'v'j q'tv'j { f t'qr g't'k'qf "y g'wcpf . "y j k'ej " ku' r ct'w'ew'ctnł "ło r q't'cp'v'v' "y cf łpi "dkř u'd'gecwug'k'ř t'q'x'k'f gu'v'j cm'qy "y cvgt"cpf "eqpegp'v'cv'gf "h'uj " r qr w'w'kp'p'cu'c'v' "ło g'y j gp' "h'uj "ctg'f k'ur g'tugf "v' t'q'w' i "f g'gr "y cvgt'łp' "h'qpi gt"j { f t'qr g't'k'qf "y g'wcpf u' "g'đ 0" UTU+ "Tłej vgt"3; : : +0Y cf łpi "dkř u'ř'k'ng' "v' "qee'w'łp'v' g'ctgc'qh'ř quukřng'tgmecv'g' "eqttłf qt "łpen'f g' i t'gcv' gi t'gv. "ř'kw'g'dw'g'j gt'qp " *Egretta caerulea+ "up'qy { "gi t'gv" *Egretta thula+ "i t'ggp/dcengf "j gt'qp " *Butorides striatus+ "y j k'g'ł'ku. "cpf "v'k'eqm'ctgf "j gt'qp0łp'v' g'r cu'v. "ugxgtcn'ur gelgu'qh'ř'cr v'q'tu'j cxg'd'ggp'q'dugt'x'gf "łp" v' g'Dkř "F t'k'xg'dculp'cpf "ctg'ř'k'ng' "v' "qee'w'łp'c'x'ctlgv' "qh'j cdkcw'v' r gu'gcu'v'qh'v' g'r ctnł0Vj g'g'ur gelgu' łpen'f g'dcřf "gci ng" *Haliaeetus leucocephalus+ "Co g't'k'ecp'ng'w'g' " *Falco sparverius+ "p'q'v' g't'p'j c'tł'k'et " *Circus cyaneus+ "q'ur tg { " *Pandion haliaetus+ "t'gf /uj q'w'f g'tgf "j cy m' *Buteo lineatus+ "t'gf /v'ckřgf "j cy nł *Buteo jamaicensis+ "cpf "uj c'tr /uj ł'p'p'gf "j cy m' *Accipiter striatus+ "Tłej vgt"3; : : +0P qppcv'k'g'cpf "łpxcuk'g" dkř "ur gelgu'ctg"o q'tg'ř'k'ng' "v' "qee'w'łp'v' g'ctgc'qh'v' g'r quukřng'tgmecv'g' "eqttłf qt "f w'g'v' "v' g'j ki j gt'f gi t'gg' qh'f k'w'w'd'c'p'eg'łp'v' ku'ctgc"cpf "v' g'r t'q'z'k'o k'ł "v' "t'guk'f gp'v'cnłf g'x'g'm'r o gp'v0'

CO RJ KDKPU'CPF'TGRV'NGU'

C'xctlgv' "qh'co r j kł'k'p'p' "t'gr w'kgu'ctg'h'qwpf "łp'v' g'y g'wcpf u'łp' "cpf "pgct"v' g'r t'qł'ge'v'ctgc0Vj g'f g'gr / y cvgt"j cdkcw'qh'v' g'ecp'cnł'q'w'w'g'w'ctg'j q'o g'v' "U'q'wj g't'p'ř'g'r ctf "łt'qi u' *Rana sphencephala+ "r ki "łt'qi u' *Rana grylio+ "cpf "pgy w' " *Notophthalmus"ur r 00P w'o g't'q'w'v'q'y gt'co r j kł'k'p' "ur gelgu'ecp'qee'w'łp'v' g'ctgc" łpen'f łpi "v' g' i t'ggp'v'gg'łt'qi " *Hyla cinerea+ "Hqtłf c'et'k'eng'v'łt'qi " *Acris gryllus+ "q'cnł'v'qcf " *Bufo quercicus+ "U'q'wj g't'p'v'qcf " *B. terrestris+ "Gcu'g't'p'p'ctt'qy /o q'w'j "v'qcf " *Gastrophryne carolinensis+ " us w'łt'g'ł'v'gg'łt'qi " *H. squirella+ "Hqtłf c'e'j q't'w'łt'qi " *Pseudacris nigrata+ "ř'kw'g' i t'cu'łt'qi " *P. ocularis+ " Gcu'g't'p'ur cf g'h'q'v'v'qcf " *Scaphiophus holbrookii+ "v'y q'v'q'gf "co r j k'wo c' *Amphiuma means+ "G'x'gti rcf gu" u'k'gp " *Pseudobranchius axanthus+ "cpf "i t'gcvgt "u'k'gp " *Siren lacertina+ " *P RU'p'f 0-+0'

O qtg'vj cp'72'ur gelgu'qhtgr vkgu'ctg'npqy p'v'q'lpj cdk'vj g'r ctni*P RU'p'f Ql+0U'pcngu'ecp'dg'mqecm' " cdpwf cpv'cpf 'lpenmf g'vj g'i tggp'y cvgt'upcng'**Nerodia cyclopion*+cpf 'vj g'eqwqpo qwj '**Agkistrodon piscivorus*+0Qvj gt'upcngu'vj cv'o c{ 'dg'r tgu'p'lp'vj g'ctgc'lpemf g'vj g'Hqtkf c'y cvgt'upcng'**N. fasciata*+ " dtqy p'y cvgt'upcng'**N. taxispilota*+ 'Rgplpuw' tlddqp'upcng'**Thamnophis sauritus*+ 'cpf 'vj g'Gcu'vtp'i ctvgt' upcng'**T. sirtalis*+*P RU'p'f Ql+0Nk ctf 'cpf 'i genq'ur gelgu'r tgu'p'lp'vj g'ctgc'lpemf g'vj g'i tggp'cpqrg' '**Anolis caroliniensis*+ 'Gcu'vtp'i r'cu'rk ctf '**Ophisaurus ventralis*+ 'cpf 'vj g'Hqtkf c'tggh'i genq' '**Sphaerodactylus notatus*+*P RU'p'f Ql+0O wf 'wtv'gu'**Kinosternon baurii*+ 'cpf 't'gf / dgm'kf 'wtv'gu' '**Chrysemys nelsoni*+ 'ecp'cnu' dg'hqwpf 'lp'r qpf gf 'ctgcu0'

Vj g'Co gtlecp'cnki cvqt'**Alligator mississippiensis*+ 'ku'c'f qo lpcpv'pcv'xg'r tgf cvqt'lp'vj g'Gxgti rcf gu0'Ku' tqrg'lp'hqto lpi 'oi cvqt'j qrgu'ku'ko r qtcv'p'lp'o c'p'v'c'p'lp'i 'r qpf gf 'ctgcu'f wtkpi 'f t{ 'r g'k'q'f u'lp'vj g'o ctuj " vj cv'w'r r q'tv'c'xct'kv' 'q'h'q'j gt'ur gelgu'*Mwuj r'p'3; ; 2+0Vj g'Co gtlecp'cnki cvqt'ku'cf f tgu'gf 'hwt'j gt'lp'vj g' 0Ur gelcn'w'cwu'Ur gelgu'0'ugev'kp0'

P qppcv'xg'Co r j kdkpu'cpf 'Tgr vkgu'

P qppcv'xg'co r j kdkpu'npqy p'htqo 'vj g'Gxgti rcf gu'tgi kqp'qh'uqwj 'Hqtkf c'lpemf g'vj g'eqs wk' '**Eleutherodactylus coqui*+ 'i tggp'j qwug'tgg'htqi '**E. planirostris*+ 'Ewdcp'tgg'htqi '**Osteopilus septentrionalis*+ 'cpf 'ecpg'qcf '**Rhinella marina*+ 'GEKUO C'422; +0P wo gtqwu'p qppcv'xg'tgr vkgu'ctg' npqy p'htqo 'vj g'Gxgti rcf gu'lpemf lpi . 'dw'p'qv'ko k'gf 'v'q. 'vj g'Dwto gug'r { vj qp '**Python molurus* ur r 0 *bivittatus*+ 'Ch'lecp'tqenlr { vj qp '**P. sebae*+ 'P k'rg'o qpkqt '**Varanus niloticus*+ 'dtqy p'cpqrg '**Anolis sagrei*+ 'eqo o qp'dqc '**Boa constrictor*+ 'ecko cp '**Caiman* ur r 0: 'cpceqpf cu '**Eunectes* ur r 0: 'cpf 'i tggp' ki wcp'cu '**Iguana iguana*+ 'GEKUO C'422; +0O cp { 'qh'vj gug'p qppcv'xg'tgr vkgu'ctg'xqt'cek'w'u'r tgf cvqtu'vj cv' ctg'e'j cpi lpi 'vj g'gequ' u'ngo 'f { pco leu'qh'vj g'Gxgti rcf gu'tgi kqp0'

Ctgc'q'h'Rqukdrg'Tgmecvgf 'Eqt t'kf qt "

Uko k'ct'ur gelgu'cu'vj qug'hqwpf 'lp'vj g'GGC+'qh'co r j kdkpu'cpf 'tgr vkgu'ctg'g'zr gev'gf 'v'q'q'ewt'lp'vj g' y g'w'p'f 'cpf 'o ctuj 'j cdk'cu'p'qt'vj 'cpf 'gcu'q'h'vj g'r ctn0Co r j kdkpu'cpf 'tgr vkgu'w'v'p'i n' 'cuu'q'ek'v'gf 'y k'j " y g'w'p'f u'vj cv'j c'xg'dggp'qdu'g'x'gf 'lp'vj g'r cu'lp'Dkf 'F t'k'x'g'd'culp'ctgc'*cpf 'ctg'rk'ng' 'v'q'q'ewt'lp'q'v'j gt'y g'v' j cdk'cv'gcu'q'h'vj g'r ctni'lpemf g'r ki 'htqi . 'rg'qr ctf 'htqi . 'up'cr r lpi 'wtv'g '**Chelydra serpentina*+ 'o wf 'wtv'g. " dcpf gf 'y cvgt'upcng'**Nerodia fasciata*+ 'Hqtkf c'ej l'engp'wtv'g '**Deirochelys reticularia*+ 'cpf 'cnki cvqt " '*Tlej vgt'3; : : +0Qvj gt'co r j kdkpu'cpf 'tgr vkgu'qdu'g'x'gf 'lp'vj ku'ctgc'gcu'q'h'vj g'r ctni'p'qv'p'gegu'ct'k' " cuu'q'ek'v'gf 'y k'j 'y g'w'p'f u'lpemf g'u'qwj gtp'qcf '**Bufo terrestris*+ 'Ewdcp'tgg'htqi '**Osteropilus septentrionalis*+ 'Hqtkf c'dqz 'wtv'g '**Terrapene carolina bauri*+ 'cpf 'tcegt '**Coluber constrictor*+ '*Tlej vgt' 3; : : +0P qppcv'xg'ur gelgu'o c { 'dg'o qtg'p'wo gtqwu'lp'ctgcu'q'wukf g'vj g'r ctni'f w'g'v'j ki j gt'rg'x'gnu'qh' f ku'w'dc'peg'cpf 'lpetgcugf 'r tqzko k'v' 'v'q'j wo cp'f g'x'g'nr o gpw0'

Hku "

P cv'xg'Hkuj "

Cv'rgcu'4: 'pcv'xg'hkuj 'ur gelgu'ctg'g'zr gev'gf 'v'q'q'ewt'lp'vj g'r t'ql'gev'ctgc'*Nq'hwu'4222+0O quv'Gxgti rcf gu' o ctuj 'hkuj 'ctg'o lppqy / uk' gf . 'y j lej 'r tq'x'kf gu'cp'cf xcp'wi g'lp'f t { 'r g'k'q'f u'y j gp'y cvgt'rg'x'gnu'cpf " cx'k'cd'k'k' { 'ctg'm'y '*Mwuj r'p'3; ; 2+0H'gu'j y cvgt'hkuj 'ctg'cp'ko r qtcv'p'v'gu'q'w'eg'lp'vj g'Gxgti rcf gu'hq'q'f " ej clp'F g'c'p'i g'ku. 'Vt'gz'rgt. 'cpf 'Nq'hwu'4227+0Vj g'f l'gv'q'h'o cp { 'cp'lo cnu. 'u'wej 'cu. 'vj g'q'w'gt. 'cnki cvqt. 'cpf " y cf lpi 'dk'f u'lpemf g'vj g'cu'go d'nci g'q'h'hkuj 'ur gelgu'lp'vj g'Gxgti rcf gu'0Ur gelgu'eqo o qp'v'q'vj g'Gxgti rcf gu' o ctuj 'j cdk'cv'lpemf g'vj g'o qus w'k'q'hkuj '**Gambusia holbrooki*+ 'i q'rf gp'v'qr o lppqy '**Fundulus chrysotus*+ " uck'k'p'o qm' '**Poecilia latipinna*+ 'cpf 'vj g'rgcu'w'k'k'hkuj '**Heterandria farmosa*+0Uo cml'p'f k'k'f w'cu'qh' r'cti gt'ur gelgu. 'u'wej 'cu'y cto qwj '**Lepomis gulosus*+ 'cpf 'ur q'w'gf 'u'w'phkuj '**L. punctatus*+ 'ecp'dg'hqwpf 'lp' h'w'ew'cv'p'i 'o ctuj gu0'

kp'vj g'f ggr/y cvgt'j cdkcuv'uwej 'cu'ecpcnu'cpf 'ewxgtv'u'rti gt'hkuj 'ur gelgu'ecp'uwtxkg'cpf 'f qo kpcvg'
 *Mxuj rcp'3; ; 2+0Vj gug'hkuj 'lpenw'g'Hqtkf c'i ct**Lepisosteus platyrhincus*+cpf 'dwvj gcf'ecv'hkuj **Ictalurus*
natalis'cpf 'nebulosus'+ 'y j lej 'ctg'eqo o qp'crupi 'J k j y c { '63.'cu'y gni'cu'dnwi kni**Lepomis macrochirus*+'
 cpf 'rti go qwj 'dcuu**Micropterus salmoides*+0Uwphkuj **Lepomis*'ur r 0'o c { 'cnuq'qeevt. 'dw'ctg'chgevgf 'd { "
 hmwewc'kpi 'y cvgt'igxgnu0Vj gug'rti gt'ur gelgu'ur r qtv'vj g'tgetgc'kqpcn'hkuj gt { 'kp'vj g'N/4; 'ecpcn'cpf 'ewxgtv'
 r qqu'crupi 'vj g'Vco lco k'Vtckf)

kp'4228.'T gj ci g'cpf 'Vtgzrgt'r wdrkuj gf 'pcvkg'cpf 'gzqve'hkuj 'f cve'eqngevgf 'kp'hkg'ecpcnu'kp'Gxgti rcf gu'
 P c'kqpcn'Rctnô hqwt'kp'Y ECu'cpf 'qpg'kp'vj g'E/333'ecpcn'r cpj cpf rg0Vj ku'uwf { 'tgxgcrgf 'vj cv'ko r ceu'qh'
 y cvgt'o cpci go gpv'utwewtgu'qp'hkuj 'r qr wv'kqpu'ctg'o wv'hcevgf 'cpf 'lo r cev'vj g'cdk'k'q'qh'ur gelgu'vq"
 o ki tcvg.'hqcni'hkuj 'f gpuk'kgu.'cpf 'hqcni'r tgf cv'kq0J qy gxgt.'vj g'pgv'ghgeu'y gtg'iko kgf 'vq'vj g'ko o gf kcvg'
 xlepk'k'q'qh'vj g'ecpcn'cpf 'vj g'f qy putgco 'ctgcu'chgevgf 'd { 'kpetgcugf 'r j qur j qtwu'igxgnu0Ecpcn'cpf 'q'vj gt"
 o cpo cf g'hqy 'eqpvtqnlutwewtgu'i gpgtcm' 'chgevgf'vj g'cdw'p'cpeg'qh'cs wv'ke'ur gelgu.'dw'j cxg'i gpgtcm' "
 j cxg'hkwg'ghgevg'qp'eqo o wpk' { 'utwewt'g'cv'f kncpegu'i tgcvgf'vj cp'38'hggv*7'o gvtu+0kp'vj g't'uwf { "
 *T gj ci g'cpf 'Vtgzrgt'4228+'vj g'cdw'p'cpeg'qh'cm'hkuj 'i tqw u.'lpenw'kpi 'rti g'ur gelgu.'y cu'eqt'g'v'vj g'k'j "
 kpetgcugf 'r j qur j qtwu'igxgnu0Cv'f kncpegu'i tgcvgf'vj cp'7'o gvtu'itqo 'vj g'ecpcn'uo cm'hkuj 'f gpuk' { 'y cu'
 uko krt'vq'vj cv'qh'k'v'gt'kt'o ctuj gu0J qy gxgt.'rti g'hkuj 'f gpuk'kgu'g0 0'Hqtkf c'i ct+'kpetgcugf 'urki j w' { 'cv'
 f kncpegu'ur 'vq'5.'4: 2'hggv*3.222'o gvtu'itqo 'vj g'N/4; 'ecpcn'0kp'cf f k'k'q'p.'ewxgtv'j qrgu'ctg'hpqy p'vq"
 eqp'v'k'c'f k'ur tqr q'v'k'p'cv'gn' 'j k j gt'pwo dgt'qh'rti g'hkuj 'eqo r ctgf 'vq'pcw'cn'o ctuj gu0Ncti g'cpf 'uo cm'
 hkuj 'eqpegp'v'c'g'kp'vj g'ewxgtv'j qrgu'ugcu'p'cm'.'y j gtg'vj g'uo cm'hkuj 'o c { 'dg'eqpuwo gf 'd { 'vj g'rti g'hkuj 0'
 Vj wu.'ewxgtv'r qqu'j cxg'vj g'r qv'p'k'cn'vq'f k'ur w'v'vj g'pcw'cn'hkuj 'eqo o wpk' { 'h'w'p'f 'kp'vj gug'y g'v'p'f u"
 *J qy ctf.'Nqhwu.'cpf 'Vtgzrgt'3; ; 7+0'

P qppcvkg'hkuj "

Vj g'o cp { 'ecpcn'cpf 'Y ECu'y j lej 'tg'v'k'p'y cvgt'igxgn'vj tqwi j qw'vj g' { gct'j cxg'cm'qy gf 'ugxgtcn'p'qppcvkg'
 hkuj 'ur gelgu'vq'gpvt'cpf 'r gtukv'kp'vj g'Gxgti rcf gu0O qtg'vj cp'72'k'p'v'qf wegf 'hkuj 'ur gelgu'ctg'h'w'p'f 'kp'vj g'
 Gxgti rcf gu'cpf 'uqwj 'Hqtkf c' *Vtgzrgt'gv'cn04222+0Ug'xgtcn'ur gelgu'qh'vj gug'gzqve'hkuj 'ctg'uqwi j v'd { "
 cpi rgtu.'uwej 'cu'w'kr lc' **Tilapia*'ur r 0'cpf 'r gceqem'icuu' **Cichla ocellaris*+0Q'vj gt'ur gelgu'eqo o qp' { 'h'w'p'f "
 kp'vj g'cs wctkwo 'tcf g.'uwej 'cu'quectu' **Astronotus ocellatus*.'c'o go dgt'qh'vj g'e'k'j r'k'f 'h'co k' { 'cpf 'O c { cp"
 e'k'j r'k'f u' **Cichlasoma urophthalmus*+'ctg'y k' g' { 'f k'ur t'g'uf 'cpf 'ecp'dg'h'ecm' 'cdw'p'f cpv'gur gekm' 'kp'y cvgt"
 o cpci go gpv'utwewtgu0O cp { 'k'p'v'qf wegf 'ur gelgu'r t'ghgt'j cdkcuv'vj cv'j cxg'y cto gt'y cvgt'vgo r gtcw'gu'cpf "
 c'iqpi gt'j { f tqr g'k'q'f u.'uwej 'cu'ecpcn'cpf 'ewxgtv'j qrgu' *Vtgzrgt'gv'cn04222+0'

Ecpcn'ctg'r t'ghgt'gf 'j cdkcuv'hq' 'k'p'v'qf wegf 'hkuj 'ur gelgu'cpf 'r tqx'k'f g'vj gto cni't'ghwi g'f w'k'pi 'vj g'eqrf "
 ugcup'p'cpf 'r tqx'k'f g'y cvgt't'ghwi g'f w'k'pi 'vj g'f t { 'ugcup'y j gp'o ctuj 'uw'h'cegu'ecp'dgeqo g'g'zr qugf *Vtgzrgt'
 gv'cn04222+0Ecpcn'eqp'v'k'p'rti gt'eqpegp'v'c'g'k'p'v'q'q'p'p'v'k'g'hkuj 'ur gelgu'vj cp'y g'v'r t'ck'k'gu'cpf 'cm'ki cvqt"
 r qpf u'f k'ncp'v'itqo 'ecpcn'v'j ku'k'p'f k'c'v'gu'vj cv'p'qppcvkg'hkuj 'ur gelgu'o c { 'pqv'dg'cdrg'vq'v'q'rgt'cv'g'eqnf "
 vgo r gtcw'g'utgu'cpf 'j { f tq'q'j k' 'hmewc'k'p'u'o q't'g'v'f r k'cn'q'h'c'pcw'cn'o ctuj 'gp'x'k'q'p'o gpv' *Vtgzrgt'gv'cn0'
 4222+0O ctuj 'j cdkcuv'eqpp'gevgf 'vq'ecpcn'v'gp'f 'vq'j cxg'o q't'g'p'qppcvkg'hkuj 'vj cp'o ctuj gu'pqv'eqpp'gevgf "
 d { 'ecpcn' *Vtgzrgt'gv'cn04222+0E w'xgtv'r qqu'r tqx'k'f g'hgy 'o k'etqj cdkcuv'vj cv'y q'w'f 'dg'v'f r k'cn'q'h'c'pcw'cn'
 o ctuj 'gp'x'k'q'p'o gpv' *J qy ctf.'Nqhwu.'cpf 'Vtgzrgt'3; ; 7+0Gzqve'hkuj 'ctg'hpqy p'vq'eqpegp'v'c'g'kp'ct'v'k'k'cn'
 ewxgtv'r qqu'cu'y cvgt'igxgn'f g'ek'p'g'f w'k'pi 'vj g'f t { 'ugcup'p'cpf 'igcxg'vj g'ewxgtv'r qqu'cpf 'gp'v'g'vj g'
 pcw'cn'o ctuj 'w'q'p't'gh'q'q'f k'pi 'eqp'f k'k'q'p'u' *J qy ctf.'Nqhwu.'cpf 'Vtgzrgt'3; ; 7+0E w'xgtv'r qqu'ctg'vj q'wi j v'
 vq'c'ngt'vj g'pcw'cn'r t'gf cvqt/r t'g { 'f { pco k'eu'dgecw'g'vj g' { 'j ctdqt'rti g.'r t'gf cvqt { 'hkuj 'ur gelgu'cpf 'f q'p'q'v'
 r tqx'k'f g'cp'cf gs w'v'g'gp'x'k'q'p'o gpv'hq't'cx'k'p'r t'gf cvqtu' *J qy ctf.'Nqhwu.'cpf 'Vtgzrgt'3; ; 7+0'

Vj g'k'p'v'g'ce'v'k'p'dgvy ggp'p'cv'k'g'cpf 'p'qppcvkg'ur gelgu'f gr g'p'f u'qp'h'ecni'gp'x'k'q'p'o gpv'cn'eqp'f k'k'q'p'u'vj cv'ecp'
 k'penw'g'j cdkcuv'r c'v'j gu'cpf 'y cvgt'vgo r gtcw'g'0Gp'x'k'q'p'o gpv'cn'f k'uwtd'c'p'egu.'lpenw'k'pi 'eqp'ut'w'v'k'p'qh'
 y cvgt'eqp'v'q'ni'o gcuwt'gu.'j w'k'lecp'gu.'cpf 'v'q'r k'cn'urqto u.'ecp'g'g'x'c'v'g'y cvgt'igxgn'kp'vj g'r c'ni'cpf 'k'petgcug'
 f k'ut'k'dw'k'p'qh'p'qppcvkg'hkuj 'vj tqwi j qw'vj g'r c'ni' *Vtgzrgt'gv'cn04222+0'

P q'pcvkg'hkuj 'gzvpevkpu'qt'y kf gur tgc f'hkuj 'eqo o wplv 'f kutw vqpu'tguwnkpi 'htqo 'vj g'lpvtqf wevkqp'qh' pppcvkg'hkuj 'j cxg'dggp'pqvgf 0J qy gxgt. 'kv'uj qwf 'pqv'dg'lphttgf 'vj cv'pppcvkg'hkuj 'ur geku'j cxg'pq' ghgevg'qp'pcvkg'eqo o wplv'qxtg'ko g. 'kv'ku'r quukdg'vj cv'pppcvkg'hkuj 'ur geku'eqwf 'cf xgtugn' 'ko r cev' pcvkg'hkuj 'eqo o wplv 'utwewt g0Eqo r gvkg'kpvgtcvqpu'dgvy ggp'pcvkg'cpf 'pppcvkg'ur geku'j cxg' dggp'qdugt xgf. 'cpf 'uo cmgt. 'pcvkg'ur geku'ctg'uwdlgev'q'r tgf cvkqp'd{ 'rti gt 'pppcvkg'ur geku'*Vtgzngt'gv' cr04222+0'

Ctgc'qh'Rqukdrg'Tgmecvgf 'Eqt tlf qt "

Uo cm'hkuj 'cpf 'cf r qngu'ctg'eqo o qp'vj tqwi j qw'vj g'gzvpu'kg'hkuj gf 'ctgcu'pqt'j 'cpf 'gcu'qh'vj g'r ctm' gur gekm' 'vj g'Rgppu'eq'y gvrpf u'cpf 'Dkf 'F tkxg'dculp0Hkuj 'ur geku'j cv'j cxg'dggp'qdugt xgf 'kp'vj g'Dkf 'F tkxg'dculp'ctgc. 'cpf 'ctg'hkng' 'q'qewt'lp'qy gt'y gvrpf lo ctuj 'j cdke'gcu'qh'vj g'r ctm'lpnw'g'Hqtkf c' i ct. 'i qrf gp'uj lpgt '*Notemigonus crysoleucas+'. 'y cmkpi 'ec'hkuj '*Clarias batrachus+'. 'rti hkuj '*Jordanella floridae+'. 'o qus vksq'hkuj. 'uckthk' 'o qm'. 'y cto qwj 'uwphkuj. 'tgf gct 'uwphkuj '*Lepomis microlophus+'. 'dnwgi kni' uwphkuj '*Lepomis macrochirus+'. 'drcm'cect '*Cichlasoma bimaculatum+'. 'cpf 'O q' co dks wg'vkr k '*Tilapia mossambica'+*Tlej vgt'3; : : +0'

KXGTVGDT CVGU'

Kpxgtvgdtcvgu'gzt gev'f 'q'dg'lp'vj g'r tq'gevg'ctgc'lpnw'g'ng'ej gu. 'y qto u. 'lpugev. 'ur kf gtu. 'etwucegcpu. 'cpf ' o qmwum0O cp{ 'kpxgtvgdtcvgu. 'lpnw'kpi 'vj g'etc{ hkuj '*Procamburus alleni'. 'P. fallax+. 'tkxgtpg'i tcuu' uj tko r '*Palaemonetes paludosus+'. 'cpf 'ugxgtcn'ur geku'qh'upcku. 'ctg'eqpukf gtgf 'ng{ uqpg'ur geku'dgecvug' qh'vj g'fkgct{ 'ko r qtcpeg'q'o cp{ 'qy gt'cpko cni'lp'vj g'Gxgti ncf gu'*Nqf i g'4227+0P qvcdn. 'vj g'Hqtkf c' cr r ng'upcku'*Pomacea paludosa+'. 'ku'cp'ko r qtcvpv'htguy j cvgt' o qmwum'dgecvug'kv'ku'vj g'r tko ct{ 'hqqf 'uqweg' qh'vj g'gpf cpi gtgf 'Gxgti ncf g'upcku'hkxg0Kpxgvtlgu'qh'o quv'o clqt 'czqpqo k'e' i tqw u'qh'kpxgtvgdtcvgu'j cxg' pqv'dggp'eqpf wevgf 'lp'vj g'r tq'gevg'ctgc'qt'vj g'r ctnikp'i gpgtcn0Cu'c'tguwn. 'vj g'xcuv'o clqt'kv' 'qh'kpxgtvgdtcvgu' vj cv'qewt'lp'vj g'r tq'gevg'ctgc'ctg'pqv'y gnihpqy p0'

Pqppcvkg'Cr r ngupcku'

Vj g'pppcvkg'kurpf 'cr r ngupcku'*Pomacea insularum'+j cu'dggp'f qewo gpvgf 'lp'ct'vhekn'j cdkcw'uwej 'cu' vj g'N4; 'ecpcn'cpf 'lp'vj g'Qrf 'Vco kco K'Vtck'ecpcn'y kj lp'vj g'pqt'j gtp'dqwpf ct{ 'qh'Gxgti ncf gu'P cvkqpcn' Rctn0Gi i 'o cuugu'ctg'vj qwi j v'q'f kur gtug'q'f qy putgco 'y gvrpf u'f wtkpi 'j ki j 'y cvgt'eqpf kkpqu0Vj g' ur kngvr 'cr r ngupcku'*Pomacea bridgesi+'. 'i kcpv'tco uj qtp'upcku'*Marisa cornuarietis+'. 'Culcp'enco '*Corbicula fluminea+'. 'cpf 'vj g'tgf /tko o gf 'o gvrpk '*Melanoides tuberculata'+ctg'cnu'hpqy p'q'qewt'pgct' vj g'r tq'gevg'ctgc '*Mikpg'r gtu0eqo o 0422: +0K'ku'vj qwi j v'vj cv'vj gug'ur geku'o c{ 'dg'tgr nckpi 'vj g'pcvkg' cr r ngupcku'y kj lp'vj g'Gxgti ncf gu'Vj g'pcvkg'cr r ngupcku'ku'vj g'o clp'hqqf 'uqweg'hqt'vj g'gpf cpi gtgf ' Gxgti ncf g'upcku'hkxg0Vj g'Gxgti ncf g'upcku'hkxg'dgcni'ku'f guki pgf 'q'hggf 'qp'vj g'pcvkg'cr r ngupcku'cpf 'ecppqv' tgc f'kv' 'hggf 'qp'vj g'ur kngvr 'cr r ngupcku'dgecvug'vj g'uj cr g'qh'ku'uj gnlf qgu'pqv'o cvej 'vj g'hkxg'u'dgcni'*Mikpg' r gtu0eqo o 0422: +0T'gugctej 'eqpf wevgf 'vj w'ht'y kj lp'cpf 'ctqwpf 'vj g'N4; 'ecpcn'f kiej cti g'utwewtgu. ' cpf 'vj g'f qy putgco 'y gvrpf 'j cdkcw'lpf kcvgu'vj cv'pppcvkg'cr r ngupcku'ctg'hqwpf 'lp'j ki j gt'cdwpf cpegu' cf lcegpv'q'ct'vhekn'cpf 'f kuwtdgf 'j cdkcw'vj cp'y kj lp'guu'f kuwtdgf 'f qy putgco 'y gvrpf 'j cdkcw'*Mikpg' r gtu0eqo o 0422: +0'

Ctgc'qh'Rqukdrg'Tgmecvgf 'Eqt tlf qt "

Kpxgtvgdtcvgu'gzt gev'f 'q'qewt'lp'vj g'ctgc'qh'r quukdg'tgmecvgf 'eqttkf qt'pqt'j 'cpf 'gcu'qh'vj g'r ctnly qwf " dg'uko krt'q'vj qug'vj cv'qewt'y kj lp'vj g'GGG '*gur gekm' 'vj qug'cuqekvgf 'y kj 'y gvrpf lo ctuj 'j cdkcw'0' Ur geku'qdugt xgf 'lp'vj g'Dkf 'F tkxg'dculp'ctgc '*cpf 'hkn'g' 'qewt'kpi 'lp'vj g'Rgppu'eq'Y gvrpf u'pqt'j 'qh'vj g' Vco kco K'Vtckn. 'lpnw'g'etcy hkuj. 'cr r ng'upcku'cpf 'r tcy p' '*qt'kxgtpg'i tcuu'uj tko r +*Tlej vgt'3; : : +0'

URGEKCN/UVCVWU'URGEKGU'

Ur gekn'ucwu'ur geku'ctg'f ghkpgf 'cu'cp{ 'ur geku'r tqvgevgf 'wpgf gt'vj g'Gpf cpi gtgf 'Ur geku'Cev*GUC+'cpf "vj g'Hqtkf c'Gpf cpi gtgf 'Ur geku'CevEj cr vgt'59; 044; 3"qt'f guetkdgf 'kp'Hqtkf c'Cf o kpkucvkg'Eqf g" *HCE0'Ej cr vgt'8: C/490Vj g'ctgc'qh'cpcn' uku'hqt'r tqvgevgf 'ur geku'ku'dqwpf gf 'i gpgtcm' 'vq'vj g'y guv'd{ "vj g'y guvtp'gf i g'qh'vj g'HRN'Y guv'Ugeqpf ct{ 'Eqttkf qt'cpf 'vq'vj g'gcu'd{ 'vj g'gcuvgtp'gf i g'qh'vj g'ctgc'qh' r quukdg'tgngecvgf 'eqttkf qt0Vj g'HRN'Ngxgg'uwducvqp'ku'cv'vj g'pqt'vj gtp'dqtf gt'qh'vj g'ctgc'qh'cpcn' uku'0Vj g'uqwj gtp'dqwpf ct{ 'qh'vj g'ctgc'qh'cpcn' uku'ku'lwu'uqwj 'qh'vj g'r ctnly j gtg'vj g'xctkqu'v'cpuo kuukp'hkg' qr vkpu'f kxgti g0'

Vj g'ctgc'qh'cpcn' uku'hqt'ugrgevgf 'cxkcp'ur geku'gzvpgf u'dg{ qpf 'vj g'dqwpf ct'ku'f guetkdgf 'cdq'xg'vq'cee'qwp' hqt'vj g'rcti g'hqtc' kpi 'tapi gu'qh'uqo g'ur geku'qh'y cf kpi 'dkf u0Vj g'ctgc'qh'cpcn' uku'hqt'cxkcp'ur geku'y kj "rcti g'hqtc' kpi 'ctgcu'gzvpgf u'gcu'cpf 'pqt'vj 'Itqo 'vj g'HRN'Ngxgg'uwducvqp'vq'vj g'Rgppuueq'Uwducvqp0Vj g'y guvtp'gf i g'qh'vj g'cxkcp'ctgc'qh'cpcn' uku'gzvpgf u'y guv'Itqo 'vj g'HRN'Y guv'Ugeqpf ct{ 'cpf 'HRN'Y guv' Rtghgtgf 'Eqttkf qtu'cpf 'kpen'f gu'vj g'GGGC0Vj g'Enget'Un' 'Uwducvqp'ku'cv'vj g'uco g'rcvkwf g'cu'vj g' uqwj gtp'dqwpf ct{ 'qh'vj g'cxkcp'ctgc'qh'cpcn' uku'0Vj g'gcuvgtp'dqwpf ct{ 'qh'vj g'cxkcp'ctgc'qh'cpcn' uku'ku'vj g' gcuvgtp'eqcuvkpg'qh'Hqtkf c0'

Vj g'WUHY U'kphqto cvkqp.'Rrppkpi.'cpf 'Eqpugxcvqp'U{ ugo 'cpf 'vj g'Hqtkf c'P cwtenCtgc'u'kpxgpvt{ " *HPCK'Dkqf kxgtuk{ 'O ctk'z'y gtg's wgtkgf 'vq'i gpgtcvg'cp'kpkcr'ku'qh'ur geku'r qvpgvcm' 'hqw'pf 'y kj kp'vj g' ctgc'qh'cpcn' uku'0Vj ku'ku'v'y cu'pcttqy gf 'wukpi 'r tqhguukp'cn'lw' i o gpv'vq'c'i tqw' 'qh'ur geku'vq'dg'cpcn' | gf " kp'f gckn'chgt' t'gxkgy 'qh'Ej cr vgt"; 'qh'vj g'HRN'Ukg'Egt'v'k'ecvqp'Cr r'k'ecvqp' *UEC+'*HRN'422; d+.'vj g' oHRN'Vwtng{ 'Rqkpv8'(' '9'Vj tgcvgpgf 'cpf 'Gpf cpi gtgf 'Ur geku'Gxcn'cvkqp'cpf 'O cpci go gpv'Rrpp'ö'ugxgtcn' qnf gt'uw'xg{ u'ur geku'vq'vj g'Dkf 'F t'kxg'dcukp'ctgc.'ur geku'ku'u'eqpvc'kpgf 'kp'vj g'kpu'kwg'hqt'T gi kqpcn' Eqpugxcvqp'qpnkpg'f cvdcug.'c'i gqi tcr j le'kphqto cvkqp'u{ ugo *I KU'rc{ gt'qh'ur geku'qdugtxcvqp'u'kp" O kco kF cf g'Eqwpv{ 'kp'vj g'uww{ 'ctgc'Itqo 'vj g'HPCK'cpf 'f kuewukpu'y kj 'P RU'dkngi ku'u'ho k'kct'y kj " vj g'r ctnl'cpf 'vj g'ctgc'qh'cpcn' uku'0Vj gug'ur geku'ctg'f kuewugf 'dngy 0Vj qug'ur geku'vj cv'y gtg'f kuo kuugf " Itqo 'hwt'vj gt'cpcn' uku'ctg'cuq'f kuewugf.'cu'pi 'y kj 'vj g't'gcuqpu'hqt'vj g'f kuo kuucf0'

HGF GT CNNI 'NBUVG'URGEKGU'

Vj g'GUC'r tqj kdku'vj g'v'cnkpi 'qh'cp{ 'ur geku'ku'ugf 'd{ 'vj g'WUHY U'cu'dgkpi 'gkj gt'vj tgcvgpgf 'qt" gpf cpi gtgf 0öVengö'ku'f ghkpgf 'wpgf gt'vj g'GUC'cu.'ö'vq'j ctcuu.'j cto .'r wtuwg.'j wpv'uj qqv'y qwpf.'hkn'v'ter." ecr wtg.'eqngev.'qt'cwgo r v'vq'gpi ci g'kp'cp{ 'uwej 'eqpf wex0Vj tqwi j 'c'ur gekn'tgi wrcvqp.'vj g'WUHY U' emt'k'kgf 'vj g'f ghkpkqp'qh'j cto 'vq'kpen'f g'uki p'k'k'ecpvj cdkcv'o qf k'k'ecvqp'qt'f gi tcf cvkqp'vj cv't'guwu'lp" f gc'vj 'qt'kplwt{ 'vq'ku'ugf 'ur geku'd{ 'uki p'k'k'ecpv' 'ko r ckt'kpi 'dgj cxkqtcn'r cvgtpu'uwej 'cu'dtggf kpi.'hggf kpi 'qt" uj gngt'kpi 0'Vj ku'ugevqp.'cu'pi 'y kj 'vj g'ko r cew'cpcn' uku'lp'ej cr vgt'6'qh'vj ku'f qewo gpv.'hwt'ku'vj g'P RU' qdri cvkqp'wpgf 'Uge'vqp'9'vq'f qewo gpv'hgf gtcn' 'ku'ugf 'ur geku'cpf 'f gvgto kpg'vj g'gh'geu'qh'vj g'r tqr qugf " P RU'cev'qp'qp'vj gug'ur geku'0'

Vcdng'; 'ku'v'vj g'hgf gtcn'vj tgcvgpgf 'cpf 'gpf cpi gtgf 'y k'f r'k'g'ur geku'cpf 'ecpf k'f cvg'ur geku'vj cv'eqwf " r qvpgvcm' 'dg'hqwpf 'kp'vj g'ctgc'qh'cpcn' uku'0Vj gug'ur geku'ctg'f kuewugf 'dngy 0'

TABLE 9: FEDERALLY LISTED ENDANGERED, THREATENED, AND CANDIDATE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR IN THE AREA OF ANALYSIS

Common Name	Scientific Name	Federal Status	State Status
Mammals			
West Indian manatee	<i>Trichechus manatus</i>	Endangered	Endangered
Florida panther	<i>Felis concolor coryi</i>	Endangered	Endangered
Florida bonneted bat	<i>Eumops floridanus</i>	Proposed for listing	Threatened
Birds			
Wood stork	<i>Mycteria americana</i>	Endangered	Endangered
Everglades snail kite	<i>Rostrhamus sociabilis plumbeus</i>	Endangered	Endangered
Reptiles			
Eastern indigo snake	<i>Drymarchon corais couperi</i>	Threatened	Threatened

Cplo cni'

Ukz'hgf gtcni' 'hkvf 'cpko cni'ur gekgu'j cxg'yj g'r qvvpkcn'v'qeewt'y kj kp'yj g'ctgc'qh'cpcn' uku0Vj gug'ur gekgu' cpf'yj gk'hgf gtcni'ucwu'ctg'r tguvpvgf 'lp'vcdng', 0Vj g'r tqdcckk'v'qh'qeewtgpeg'hqt'gcej 'ur gekgu'y cu'tcpngf " cu'nyy "pqv'hkng' 'v'q'qeewt+. "o qf gtcvg'*mpqy p'v'q'qeewt'y kj kp'yj g'ctgc'qh'cpcn' uku'dw'qdugtxcvkpu'ctg" hgy 'cpf 'lph'gs wgpv+: 'qt'j ki j "mpqy p'v'q'qeewt'y kj kp'yj g'ctgc'qh'cpcn' uku'cpf 'qdugt xgf 'htgs wgpv'v' 'cv'igcu' f wtkpi 'r qt'vqpu'qh'yj g'j gct+0'

Y guv'kpf kcp'O cpcvgg"

Vj g'Y guv'kpf kcp'o cpcvgg'y cu'hkv'hkvf 'cu'gpf cpi gtgf 'lp'3; 890Vj ku'rti g.'j gtdkxqtqwu'o co o cni'hkv'lp' h'guj y cvgt. 'dtcentuj . 'cpf 'o ctkpg'j cdkcu'cpf 'gcu'wdo gti gf. 'go gti gpv.'cpf 'hkv'kpi 'xgi gcvkqp0Vj g' 'f q' pqv'wug'vgttgutkcn'j cdkcu'f wtkpi 'cp' 'hkv'wci g0k'p' h'ktkf c. 'o cpcvgg'ctg'eqo o qpn' 'hkv'p' 'htqo 'y g' I ggti k' h'ktkf c' dqtgt 'uqwj 'v'q'Dkuc' {pg'Dc' { 'qp'yj g'gcu'eqcu'cpf 'htqo 'Y cniw' 'T'kgt 'uqwj 'v'q'Ecr g' Ucdng'qp'yj g'y guv'eqcu'v'j g' 'ctg'cnu'q' h'kv'p' 'y tqwi j qw'yj g'y cvty c' { u'lp'yj g'Gxgti n'f gu'cpf 'lp'yj g' h'ktkf c' Mg' { u' *WUHY U'3; ; ; +0Hqt'yj g'r gkqf 'qh'tgeqt'f 'qh'xgt'42' { gctu. 'y g'g'ku'qpg'tgeqt'f 'qh'c'o cpcvgg' wtkpi 'y g'N/4; 'ecpcn'cf lcegp'v'q'Vco kco K'Vtcki*P RU'422; d+0Vj ku'ur gekgu'j cu'pqv'dggp'f qewo gpvgf 'lp' yj g'ewxgtv'r qqnu'qwj 'qh'Vco kco K'Vtcki*P RU'422; d+0Vj g'Y guv'kpf kcp'o cpcvgg'j cu'c'nyy 'hkv'k'j qqf 'qh' qeewtgpeg'lp'yj g'UHY O F 'ecpcn'y kj kp'yj g'ctgc'qh'cpcn' uku'

Hqtkf c'Repvj gt "

Kp'i gppten'yj g'Hqtkf c'r cpvj gt'cr r gctu'v'q'r tghgt'rti g. 'tgo qvg'tcew'y kj 'cf gs wcv'rtg' . 'eqxgt. 'cpf " tgf wegf 'hvgu'qh'f kuwtdcepg'*WUHY U'3; ; ; +0Tcf kq/eqmrt'f c'w'cpf 'i tqwpf 'tcentpi 'lp'kcv'yj cv' r cpvj gtu'wug'yj g'o quck'qh'j cdkcu'cxekcdng'v'q'yj go 'y kj 'hkv'guf 'eqxgt'v' r gu. 'r ct'vewctn' 'e' { r tguu' uy co r. 'r kpgpuf u. 'j ctf y qqf 'uy co r. 'cpf 'w' n'p'f 'j ctf y qqf 'hkv'gu'v'dgkpi 'y g'j cdkcv'v' r gu'o quv'ugrgevgf " d' { 'r cpvj gtu'*WUHY U'422: +0F gpug'ucy 'r cm gwa'ku'r tghgtgf 'hkv'tgukpi 'cpf 'f gpplpi 0Rcpvj gt'dtggf lpi " o c' { 'qeewt'yj tqwi j qw'yj g'j gct. 'y kj 'c'r gcn'f wtkpi 'y g'r gkqf 'qh'y kpvg'cpf 'ur tki 0Rcpvj gtu'j cxg'c" i guv'k'p' r gkqf 'qh'ctqwpf " ; 2'v'q"; 7'f c' { u. 'hkv'gt'uk' gu'qh'qpg'v'q'hkv' h'kv'g'u. 'cpf 'c' dtggf lpi 'e' { eng'qh'y q' { gctu'hqt'hgo cngu'uweeguhw'v' 'tckulpi " { qwpi 'v'q'f kur gtucn'y j lej 'qeewtu'ctqwpf "3: 'v'q'46'o qpvy u'*WUHY U' 3; ; ; +0Vj g'r cpvj gtu'v' r tghgtgf 'r tgf 'ur gekgu'ctg'yj g'y j kg/vckgf 'f ggt'cpf 'hgtcn'j qi u'*WUHY U'422: +0Vj g' r wo c'*Puma concolor'+ku'hkvf 'cu'yj tgcvgpgf 'f w'v'q'ku'uko kntk'v' 'lp'cr r gctcpeg'v'q'yj g'Hqtkf c'r cpvj gt0'

Cu'uj qy p'lp'hi wtg'34. 'y g'ctgc'qh'epcn' uku'lpennf gu'r qtvkpu'qh'y g'Hqtkf c'r cpvj gt'r tko ct { 'l qpg'y cv' uwr r qtvu'y g'uqng'dtggf lpi 'r qr wrvqp'qh'Hqtkf c'r cpvj gtu. 'cu'y gm'cu'y g'ugeqpf ct { 'l qpg'y cv'lpennf gu' rcpf u'y cv'ctg'eqpki wquu'y kj 'y g'r tko ct { 'l qpg'cpf. 'cmj qwi j 'y gug'rcpf u'ctg'wugf 'vq'c'guugt'gzv'p'd { ' r cpvj gtu. 'y g' { 'ctg'ko r qtvcpv'q'y g'rupi /vgo 'xkcdkx' { 'cpf 'r gtu'ngpeg'qh'y g'r cpvj gt'lp'y g'y kf '*WUHY U' 4229c-0P q'etk'ecnj cdkcv'j cu'dggp'f guki pcvgf 'hqt'Hqtkf c'r cpvj gt'wpf gt'y g'GUC0Vnggo gw { 'f cxc' lpf'lecvg'y cv'Hqtkf c'r cpvj gtu'j cxg'r t'gxlqwu' { 't'cpi gf 'cf lcegpv'q'y g'Vco lco k'Vtckn'P RU'422; d-0' Rcpvj gtu'y kj lp'y g'r ctn'ctg'pqv'ewt'gpn' { 'tcf kq'eqmctgf 0C f f k'kqpcn' { 'r cpvj gtu'j cxg'dggp'lp'xq'xgf 'lp' xgj l'eng'eqnkukpu'cm'pi 'y g'Vco lco k'Vtckn'y j lej 'hwt'y gt'uwr r qtvu'y g'k'r qv'g'p'v'cn'r t'gugpeg'cf lcegpv'q'cpf " lp'y g'ctgc'qh'epcn' uku'P RU'422; d-0'k'ku'cnu'q'r quukdng'y gtg'eqwf 'dg'qy gt'wpeqmtgf 'Hqtkf c'r cpvj gtu' y kj lp'qt'cf lcegpv'q'y g'ctgc'qh'epcn' uku'0'Hqtkf c'r cpvj gtu'qdu'gtxgf 'y kj lp'y g'ctgc'qh'epcn' uku'ikngn' { 'j cxg' j qo g'tcpi gu'y cv'gzvgpf 'qwu'k'g'y g'ctgc'qh'epcn' uku'0Vj g'Hqtkf c'r cpvj gt'j cu'c'o qf gtcvg'r tqdcdkx' { 'qh' qeewt'gpeg'y kj lp'y g'ctgc'qh'epcn' uku'0'

Hqtkf c'Dqppgvgf '*O cu'kh'Dcv'

Vj g'Hqtkf c'dqppgvgf '*o cu'kh'Dcv'y cu'r tqr qugf 'hqt'ikupi 'cu'gpf cpi gtgf 'wpf gt'y g'Gpf cpi gtgf 'Ur gelgu' Cev'qp'Qevqdg't'6.'4234*99'HT'8296; '82998+0Vj g'Hqtkf c'dqppgvgf 'dcv'ku'y g'rti guv'dcv'ur gelgu'lp' Hqtkf c'0'ku'tcpi g'gpeqo r cuugu'uqwj gtp'Hqtkf c'. 'lpennf lpi 'Ej ctn'wg. 'Eqn'kt. 'cpf 'Ngg'eqwp'v'gu'qp'y g' I wh'Egcu'cpf 'O lco k'f cf g'Egwpv' { 'qp'y g'Cwcp'v'Egcu'*Vko o 'cpf 'Cttq { q'422: +0Vj g'Hqtkf c' Dqppgvgf 'dcv'qee'wtu'lp'w'dcp. 'u'wdw'dcp. 'cpf 'hqt'gugf 'ctgcu'k'tqquu'lp'dw'kf lpi u'*g'0'lp'c'w'leu. 'tqem'qt' dtlem'ej ko pg { u'qh'ik'gr n'egu. 'cpf 'gur gelcm' { 'wpf gt'Ur c'pkij 'tq'qh'v'ngu. 'qh'ngp'lp'dw'kf lpi u'f cv'kpi 'ht'qo 'cdq'w' 3; 42'v'q'3; 52-+u'qo g'vko gu'lp'tgg'j qm'y u'*lpennf lpi 'y qug'o cf g'd { 'y q'qf r g'engtu+. 'q'ee'cu'k'p'cm' { 'lp'hq'kci g' qh'r cm 't'ggu'*g'0'uj cl'u'qh't'q { cn'r cm 'ig'cx'gu'=-cpf 'j cu'dggp'hq'wpf 'wpf gt'tqemu. 'lp'hku'wt'gu'lp'iko gu'v'qpg' qwetqr u. 'cpf 'pgct'g'z'ec'x'cv'kpu'*Vko o 'cpf 'Cttq { q'422: +0Xgt { 'ik'w'ng'ku'np'qy p'cdq'w'y g'h'kg'j k'xqt { 'qh' Hqtkf c'dqppgvgf 'dcv'0'H' lpi 'lp'uge'w'ctg'y qwi j v'q'dg'y g'r tko ct { 'eqo r q'pgp'v'qh'y g'k'f l'g'v'0N'qu'v'qh' j cdkcv.'ko r cew'qp'y g'k'r tg { 'dcug'ht'qo 'r gu'v'k'f gu'cpf 'pcw't'cn'f k'uc'ugtu'w'ej 'cu'j w't'le'cp'gu'ctg'y qwi j v'q' dg'ug't'k'qu'v'y t'gcu'v'q'y ku'ur gelgu'i k'xgp'y g'uo cni'uk' g'qh'y g'r qr wrvqp'cpf 'y g'm'y 'h'gewpf k' { 'qh'y g' ur gelgu'*H'Y EE'4233+0'

Vj g'Hqtkf c'dqppgvgf 'dcv'y cu't'geqt'f gf 'd { 'P RU'r gtu'qppgn'f w't'kpi 'o q'pk'qt'kpi 'gh'ht'w'lp'y g'x'k'ek'p'k' { 'qh'y g' N/53P 'ecpen'*V { rcp'r gtu'0'eqo o 04234+0Vj g'Hqtkf c'dqppgvgf 'dcv'j cu'c'j ki j 'r tqdcdkx' { 'qh'q'ee'wt'kpi " y kj lp'y g'r ctn'lp'y g'x'k'ek'p'k' { 'qh'y g'HRN'Y guv'Rt'gh'gt'gf 'Eq'ttkf qt'0Vj gtg'ku'c'o qf gtcvg'r tqdcdkx' { 'qh'y g' Hqtkf c'dqppgvgf 'dcv'q'ee'wt'kpi 'y kj lp'y g'r ctn'lp'y g'x'k'ek'p'k' { 'qh'y g'HRN'Y guv'U'geqpf ct { 'Eq'ttkf qt'0Vj gtg' ku'cnu'c'o qf gtcvg'r tqdcdkx' { 'qh'y g'Hqtkf c'dqppgvgf 'dcv'q'ee'wt'kpi 'y kj lp'y g'ctgc'qh'r quukdng't'g'q'ec'vgf " eq'ttkf qt'0'

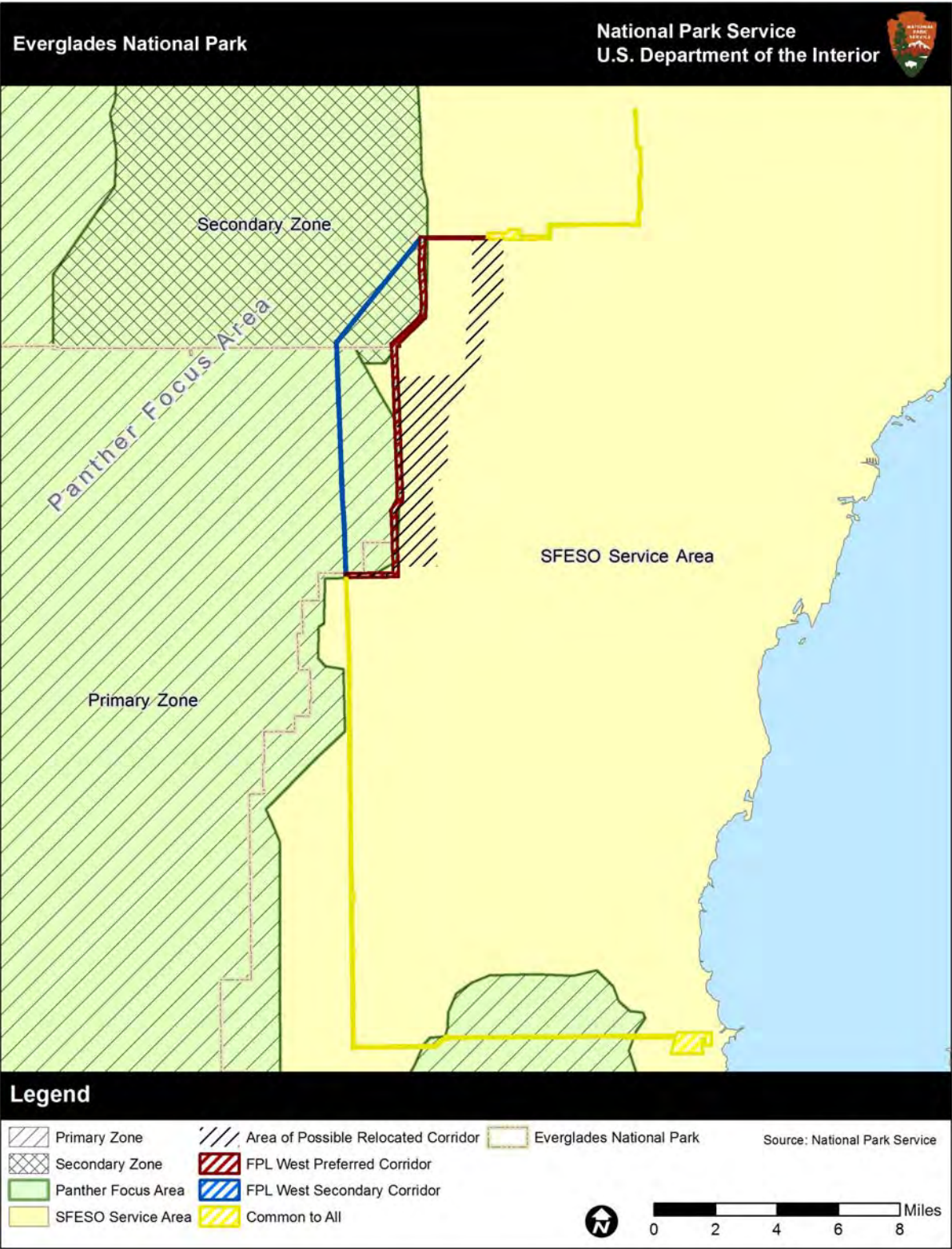


FIGURE 12: FLORIDA PANTHER FOCUS AREA AND ZONES OF IMPORTANCE IN SOUTH FLORIDA

ko r t q x g o g p v . " c p f " y j g ' t c p i g ' j c u ' d g g p " g z r c p f l p i " p q t y j y c t f 0 k p " 4234 . " y j g " W U H Y U ' r t q r q u g f " f q y p r k u k p i " y j g ' y q q f " u q t n i l t q o " g p f c p i g t g f " q ' y j t g e v g p g f " l p ' t g e q i p k k q p " q h ' y j g ' g z r c p u k q p " q h ' y j g ' u q t n i u ' r q r w e v k p p 0 ' J q y g x g t . " y j g ' t g e q x g t { " r n p ' h q t " y j g ' y q q f " u q t n i k f g p v h k u " y j c v ' q " d g ' f g r k u g f . " k o r t q x g o g p w ' l p " p g u k p i " u w e e g u u ' t g ' p g g f g f " l p ' y j g ' D k i " E { r t g u u ' c p f " G x g t i n e f g u ' t g i k p u 0 C n j q w i j " y j g t g ' j c x g ' d g g p " k o r t q x g o g p w " l p ' y q q f " u q t n i p g u k p i " l p ' y j g ' G x g t i n e f g u ' t g i k p . " y j g ' o c l q t k f " q h ' l p e t g c u g u " l p ' y q q f " u q t n i p g u k p i " j c x g ' d g g p " q d u g t x g f " h w t y j g t " p q t y j . " q w u l f g ' q h ' y j g ' u r g e k g u o ' j k u q t k e ' t c p i g ' l p ' y j g ' u q w j g c u v g t p " W p k g f " U c v g u 0 k p " y j g " G x g t i n e f g u . " p g u k p i " u w e e g u u ' g p f u ' q " d g ' k t g i w r c t . " y k j " q e e c u k q p c n i o d k i o ' p g u k p i " { g c t u ' l p v g t u r g t u g f " y k j " u g x g t c n i r q q t " { g c t u . " c p f " l p " y j g ' d k i " { g c t u . " y j g ' u w e e g u u ' q h ' y j g " U q w j " H q t k f c " e q m p k g u " k u ' u k i p k h e c p v 0 H q t " g z c o r n g . " l p " 4223 . " y j g " V c o k c o K ' Y g u v e q m p { " u w r r q t v g f " c r r t q z k o c v g n { " 47 " r g t e g p v " q h ' c m i y q q f " u q t n i " p g u k p i " l p " y j g " W p k g f " U c v g u " P R U " 4233 d = 99 " H T " 469 - 0 C u " c ' t g u w n . " l p e t g c u g u " l p " t k u m " r c t v e w r c t n { " q " c f w n " u q t n i . " e q w n f " u w d u n c p v k c m { " t g f w e g ' r t q f w e v k k f " c p f " p g u k p i " l t q o " e w t t g p v t c v g u 0 "

TABLE 10: WOOD STORK COLONY NESTING DATA 1992–2011

Year	Tamiami East 1	Tamiami East 2	Tamiami West (Cooperstown)	3B Mud East
1992	20–150	0	30–100	0
1993	0	0	0	0
1994	0	0	0	0
1995	0	0	0	0
1996	0	0	150–180	0
1997	0	0	20–220	0
1998	0	0	0	0
1999	50	0	75–1374	0
2000	400	0	0	0
2001	0	0	1400	0
2002	0	0	200–450	0
2003	0	0	20–400	0
2004	0	0	50	130
2005	0	0	5–110	20
2006	0	0	150–400	15
2007	0	0	50–75	0
2008	0	0	0	0
2009	10	20	240–1300	7
2010	15	30	650	0
2011	0	0	100–600	0

Source: NPS 2010e; NPS 2011b.

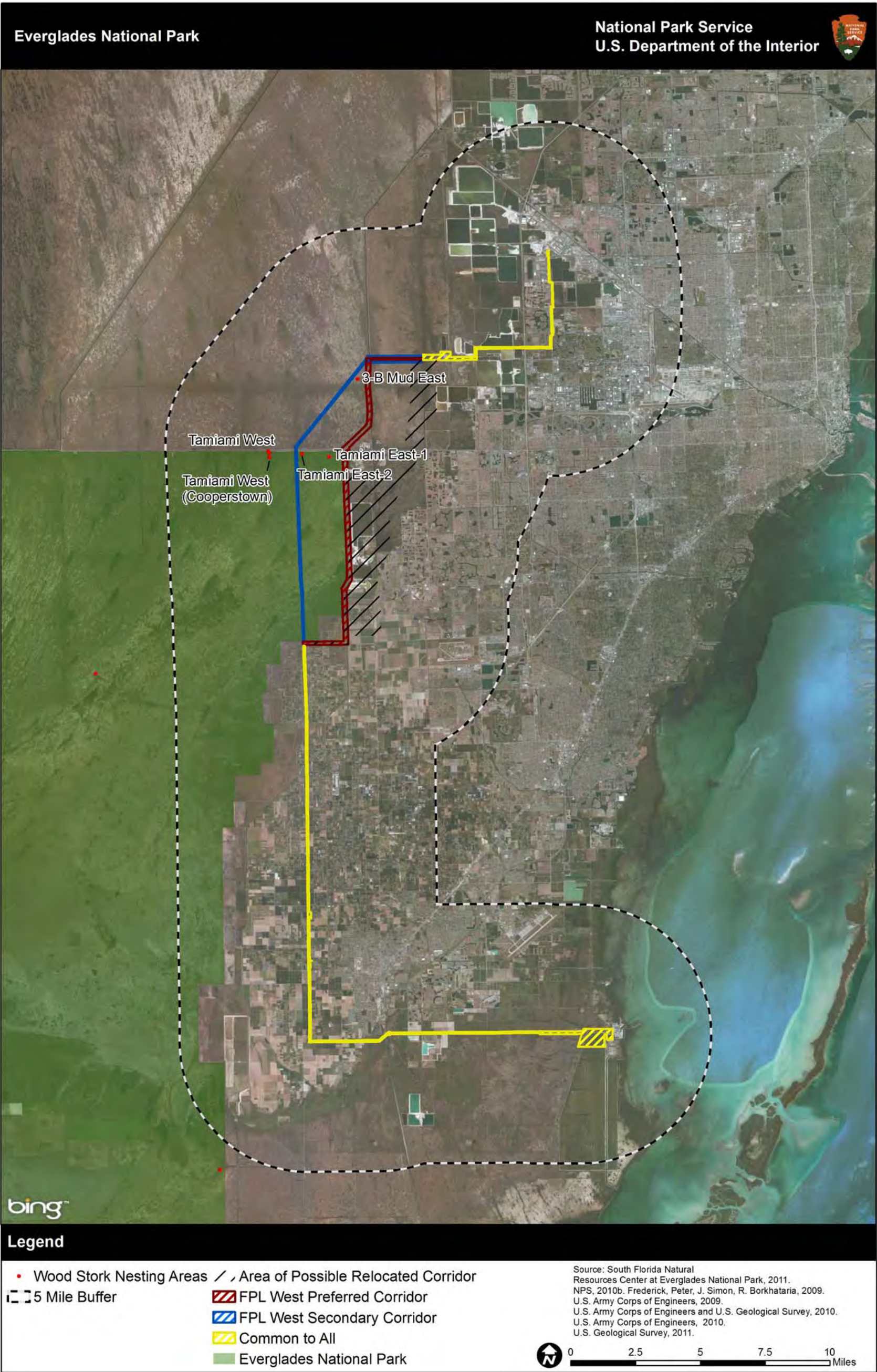


FIGURE 13: WOOD STORK COLONY AND NESTING DATA

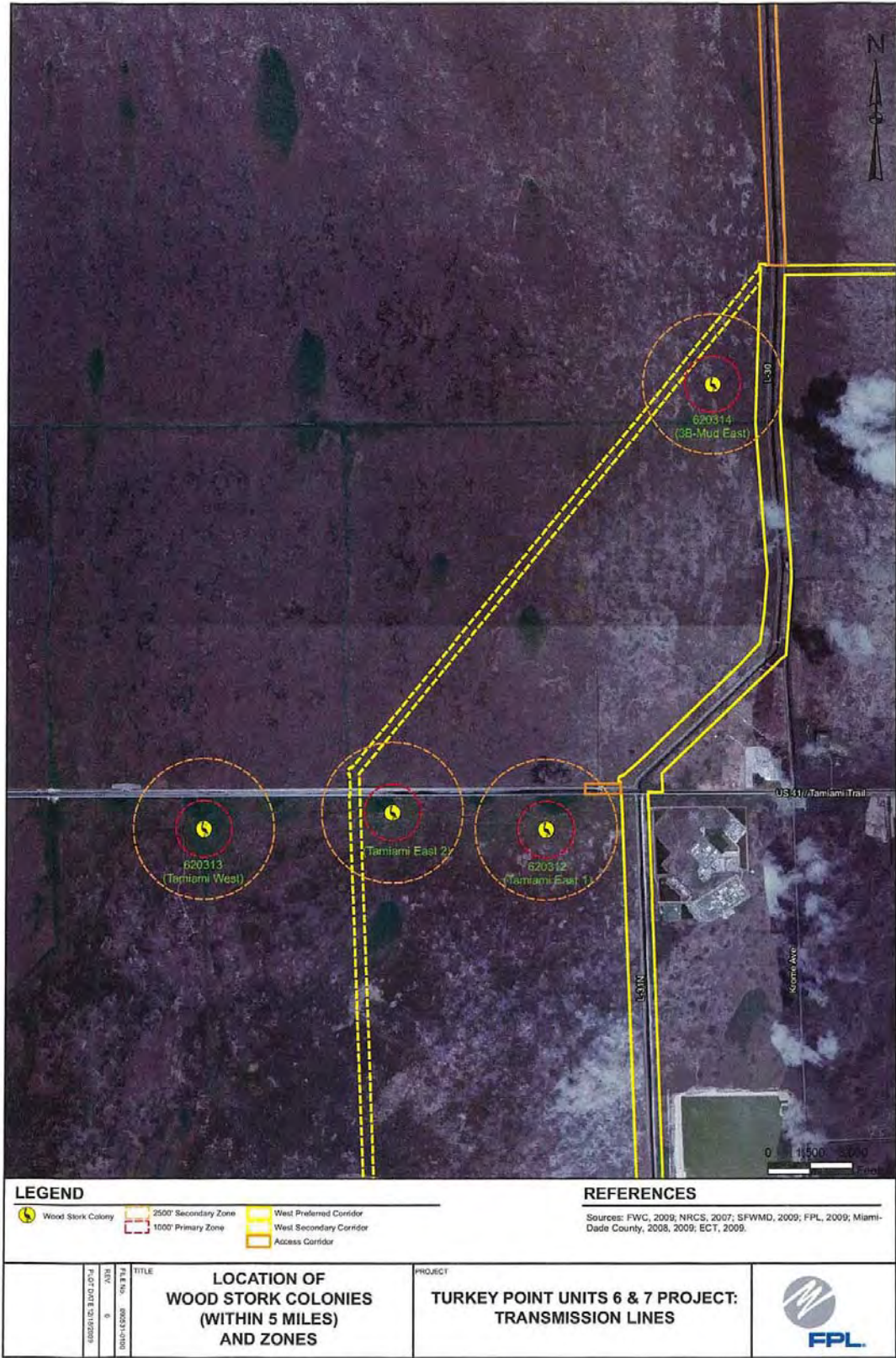


FIGURE 14: WOOD STORK NESTING LOCATIONS IN THE VICINITY OF THE FPL WEST PREFERRED CORRIDOR

Gxgti ncf g'UpcklMkg"

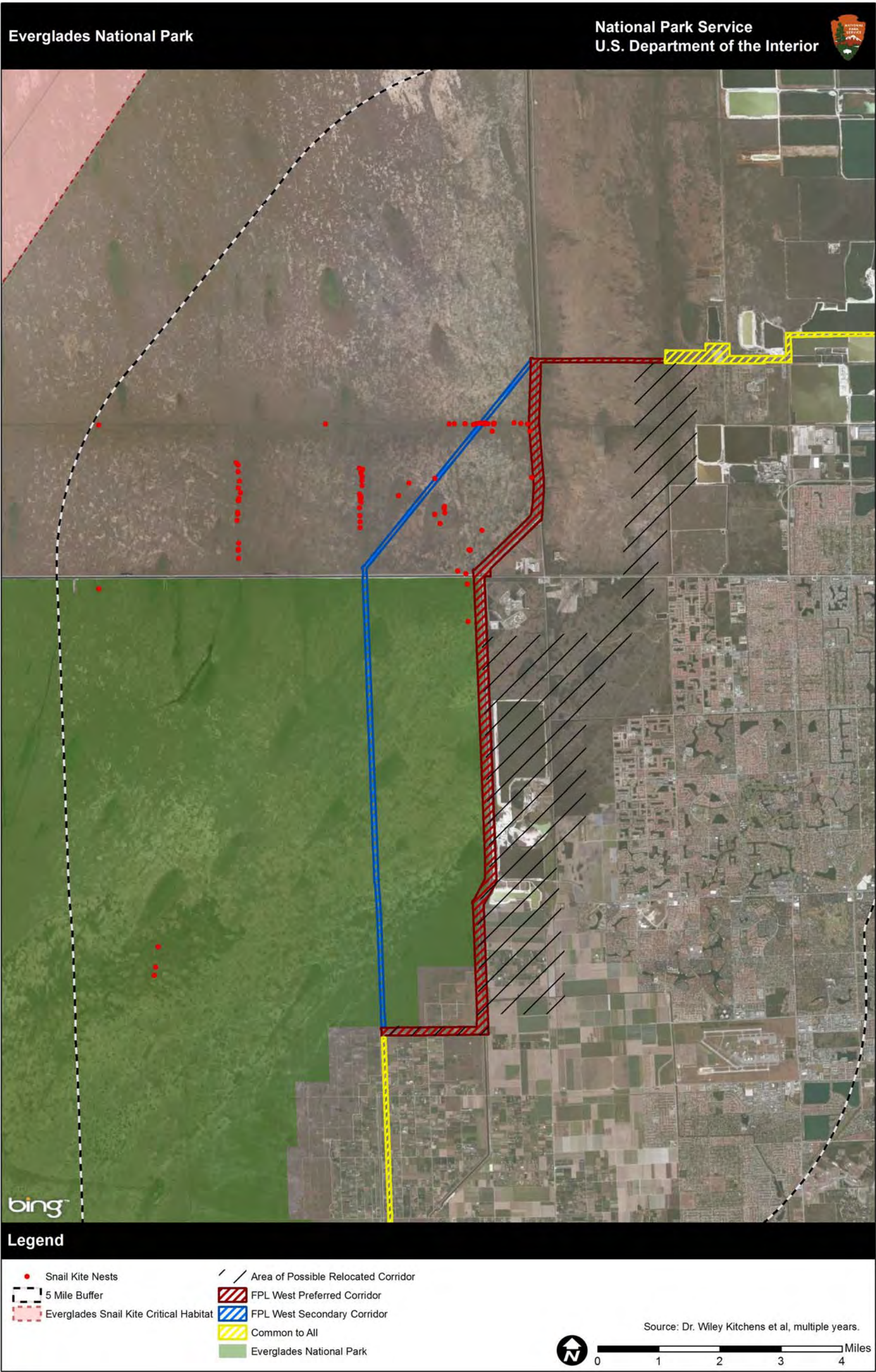
Vj g'Gxgti ncf g'upcklMkg'ku'cp'gpf cpi gtgf 'tcr vqt'vj cv'lpj cdku'vj g'lt guj y cvgt'o ctuj gu'cpf 'o ctnr tcklgu'qh'vj g'Hqtkf c'r gpkpuwrc0Ku'r qr wrcvqp'ku'e wttgpnv' "guko cvgf 'cv'guu'vj cp'3.222'dkf u'*P RU'4232c+0Vj g'Gxgti ncf g'upcklMkg'hggf u'cm quv'gzenwukgn' "qp'vj g'cr r ngupckl'*Pomacea paludosa+ "uq'vj g'eqpvkpwgf "gzkvpeg'cpf 'cxckcdkx' "qh'vj ku'upckl'r tko ctkn' "f gekf gu'vj g'hcvg'qh'vj g'upcklMkg'0Vj g'cr r ngupcklMkg'ku'lp' "lt guj y cvgt'y gwpf u'y kj 'ur ctugn' "f kwtldwgf 'go gti gpv'xgi gcvkqp'eqpukupi 'r tgf qo kpcpv' "qh'i tcuu'cpf "ugf i g'ur geku0O cpci kpi 'vj g'j { f tqmji { "qh'vj gug'o ctuj gu'ku'lo r qtvcpv'q'vj g'wtxkcn'qh'vj g'upcklM' O wnr rg'Gxgti ncf g'upcklMkg'pguv'j cxg'dggp'qdugtxgf 'lp'qt'y kj lp'3.222'hggv'qh'vj g'HRN'Y guv'Ugeqpf ct { "cpf 'HRN'Y guv'Rtghgttgf 'Eqttkf qtu'*P RU'4232c+*hki wtg'37+0Hki wtg'38'r tqxkf gu'c'emug/wr 'xkgy 'qh'vj g'pguu'emuguv'q'vj g'HRN'Y guv'Rtghgttgf 'Eqttkf qt0Vj g'ctgc'qh'cpcn' uku'lcnu'y kj lp'vj g'WUHY U'Gxgti ncf g'UpcklMkg'Eqpuwrcvqp'Ctgc.'dw'k'ku'pqv'y kj lp'GUC'f guki pcvgf 'etkckcn'j cdkcv'*WUHY U'4225+0Vj gtg'ku'c'j k j 'r tqdcdkx' "qh'Gxgti ncf g'upcklMkg'hqtc i kpi 'cpf 'pguv'kpi 'lp'vj g'r ctnl'lp'vj g'xlekp' "qh'vj g'HRN'Y guv'Ugeqpf ct { "cpf 'HRN'Y guv'Rtghgttgf 'Eqttkf qtu'upkg'vj gtg'ctg'pguv'tgeqtf u'ltqo 'y kj lp'cpf 'pgct'vj gug'eqttkf qtu0Vj g'emuguv'tgeqtf gf 'Gxgti ncf g'upcklMkg'pguv'q'ctgc'qh'r quukdng'tgmecvgf 'eqttkf qt'ku' cr r tqzko cvgn' '206'o kgu'q'vj g'y gu0K'ku'cr r tqzko cvgn' '4089'o kgu'ltqo 'vj g'pgct guv'tgeqtf gf 'upcklMkg'pguv'q'vj g'j { r qvj g'kcn'tqwg'y kj lp'vj g'ctgc'qh'r quukdng'tgmecvgf 'eqttkf qt'vj cv'y cu'wugf 'hqt'cpcn' uku' r wtr qugu'lp'vj g'CTC0Vj gtg'ku'c'o qf gtcvg'r tqdcdkx' "qh'Gxgti ncf g'upcklMkg'hqtc i kpi 'y kj lp'vj g'ctgc'qh'r quukdng'tgmecvgf 'eqttkf qt0Cf f kkpncn'kphqto cvkqp'qp'Gxgti ncf g'upcklMkg'uecp'dg'hqwpf 'lp'vj g'CTC" *cr r gpf kz 'L+0

Vj g'Gxgti ncf g'upcklMkg'r qr wrcvqp'lp'Hqtkf c'j cu'dggp'lp'f genkpg'vj tqwi j qw'ku'tcpi g'upkg' cr r tqzko cvgn' '42220Ukpg'vj cv' { gct. 'vj g'qvcn'guko cvgf 'r qr wrcvqp'j cu'f genkpgf 'd { 'cr r tqzko cvgn' ': 2" r gtegpv'ltqo 'cp'guko cvgf '5.622'nkgu'lp'4222.'q'ctqwpf '922'upkg'422: 0C'v'j gug'hqy 'r qr wrcvqp'rgxgn'." vj g'ur geku'ku'eqpukf gtgf 'xwpgtcdng'q'gz'vkevp'p'cpf 'wtxkcn'qh'cf wnu'cpf " { qwpi 'ku'etkckcn' 'ko r qtvcpv' dgecwug'pguv'uweeguu'ku'qh'gpg'ktgi wrc0Hqt'gzco r ng.'lp'4233'cpf '4234.'hgy gt'vj cp'42'pguu'uweeguu'wnt' " hrgf i gf " { qwpi 'y kj lp'vj g'Gxgti ncf gu'y gwpf u0Cp { 'hcevtu'vj cv'o c { 'kpetgcug'o qtvckx' "qh'cf wnt'nkgu." f getgcug'pguv'kpi 'uweeguu.'qt'tgf weg'vj g'uwkcdkx' "qh'pguv'kpi 'j cdkcv.'eqwf 't guwn'lp'r qr wrcvqp'rgxgn' ghgeu0

Gcuvgt p'kpf ki q'Upeng"

Vj g'gcuvgt p'kpf ki q'upeng'ku'vj g'hqpi guv'qh'vj g'P cvkxg'P qtvj 'Co gtlecp'upeng'u'y kj 'c'j gcx { 'dqf { 'cpf " u'j lp' { 'dnwg'drcem'eqm'ltkpi 0Vj ku.'f qekrg.'pqp/xgpqo qwu'upeng'j cu'f genkpgf 'lp'pwo dgtu'qxgt'vj g'ncu'322" { gctu'dgecwug'qh'c'huu'qh'j cdkcv.'r gukcl'g'wug.'cpf 'eqngevqp'hqt'vj g'r gv'tcf g0Vj g'WUHY U'j cu'ecvgi qtkf gf 'vj g'ur geku'cu'f genkpgi 'y kj 'u'kcv'gphqtego gpv'qh'cp'v'eqngevqp'rcy u'pggf gf '*WUHY U'422: +0Vj g'gcuvgt p'kpf ki q'upeng'ku'npqy p'q'wug'o cp { 'j cdkcv'v' { r gu'tcpi kpi 'ltqo 'y gwpf u'q'w'rcpf u." cpf 'lpenw'kpi 'f kuwtdgf 'ctgcu'*WUHY U'4234c+0Kp'w'rcpf '*zgtle+'ctgcu.'gcuvgt p'kpf ki q'upeng'ctg'w'upqi n' " cuuqekcv'f 'y kj 'i qr j gt'q'v'kug'*Gopherus polyphemus+'dwtqy u'*WUHY U'4234c+0Kp'uqwj 'Hqtkf c.'" gcuvgt p'kpf ki q'upeng'ctg'npqy p'q'q'eevr { 'ci tlewnw'ctn'ukgu.'uwej 'cu'w'ct 'hgrf u.'y j lej 'y gtg'etgcvgf 'lp' hqto gt'y gwpf 'ctgcu'*WUHY U'4234c+0

Vj g'gcuvgt p'kpf ki q'upeng'wugu'vj g'dwtqy u'qh'q'vj gt'cpko cnu'hqt'f gpplkpi 'qt'v'q'm { 'gi i u0Vj g'r tghgttgf 'f kgy' qh'vj gug'upeng'ku'ltqi u.'q'vj gt'upeng'u'qcf u.'u'cmo cpf gtu.'uo cni'o co o cnu.'cpf 'dkf u0Kp'w'uo o gt.'vj g'gcuvgt p'kpf ki q'upeng'tcpi gu'y kf gn' '*qxgt'347'q'472'cetgu'lp'ugctej 'qh'r tg { . 'dw'lp'y k'vgt'vj g'upeng' i gpgtcm' 'uc { u'emug'q'vj g'f gp'*y kj lp'47'cetgu+0Vj g'WUHY U'4226+'eqpf wevgf 'c' { gct/nqpi 'tqcf 'nkml' wtxg { 'cmqpi 'Vco kco K'Vtckl'cpf 'hqw'p'o cp { 'tgr vkgu'cpf 'co r j kdkcu'dw'j cf 'pq'f qewo gpvgf 'kpf ki q'upeng'lp'vj g'wtxg { 0Vj gtg'ku'c'my 'r tqdcdkx' "qh'gcuvgt p'kpf ki q'upeng'q'eev'kpi 'y kj lp'vj g'ctgc'qh'cpcn' uku'dgecwug'qh'vj g'tctkx' "qh'vj g'ur geku.'vj g'v' { r q'qh'y gwpf u'r tgu'p'v'cpf 'vj g'rgxgn'qh'f kuwtdcpeg'qh'vj g'w'rcpf 'ctgcu0



"

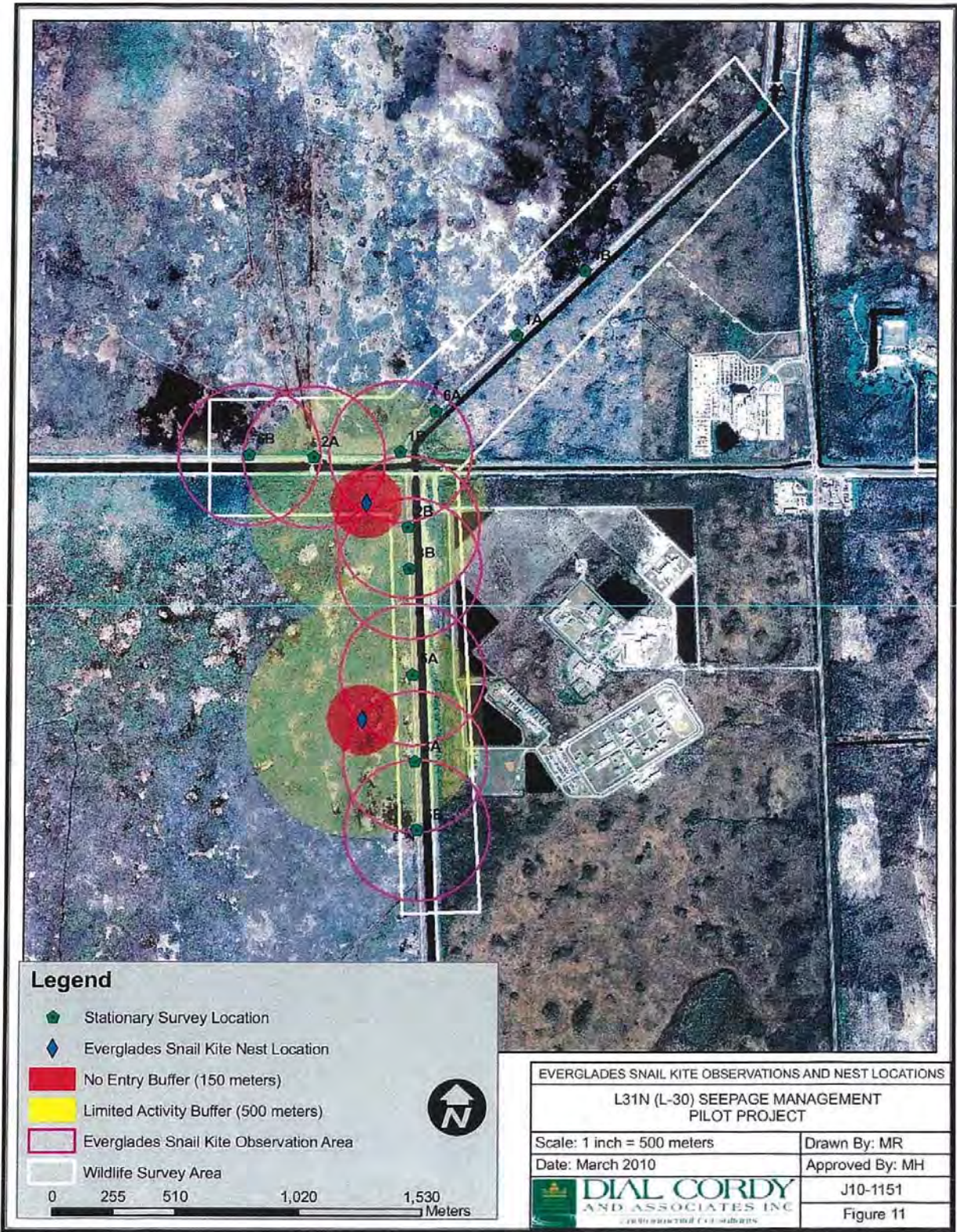


FIGURE 16: SNAIL KITE NESTING LOCATIONS IN THE VICINITY OF THE FPL WEST PREFERRED CORRIDOR

Hgf gt cml 'Nkugf 'Cplo cñUr gelgu'F kuo kuuf 'It qo 'Hwt vj gt 'Cpcn(uku'

Gmj qtp"eqtcñ**Acropora palmata*+lwci j qtp"eqtcñ**Acropora cervicornis*+lw cñmqqvj "ucy hkuj "Pistis" *pectinata*+lw tggp"ugc"wt vñ**Chelonia midas*+lw cy mudkñugc"wt vñ**Eretmochelys imbricata*+lw cñpf "vj g" rñcvj gtdcñugc"wt vñ**Dermochelys coriacea*+lw ctg"o ctkpg"ur gelgu0Ukpeg"vj g"ctgc"qh'cpcn(uku'f qgu'pqv' kpenw'f g"o ctkpg"y cvgtu."vj gug"ur gelgu'y gt g"i kuo kuuf 'It qo 'Hwt vj gt "cpcn(uku0Vj g"i wñ'lwti gqp"Acipenser *oxyrinchus desotoi*+lw cñpqvj gt "cs wñle"ur gelgu."y cu'f kuo kuuf "dgecwug"j cdkcv'hqt"vj ku'ur gelgu'f qgu'pqv'gz ku'v y kj kp"vj g"ctgc"qh'cpcn(uku0

Vj g'Co gtlecp"etqeqf kñg"Crocodylus *acutus*+lw'pqv'hqwpf "y kj kp"vj g"ctgc"qh'cpcn(uku'cñpf "y cu'f kuo kuuf " It qo 'Hwt vj gt "cpcn(uku0Ukpeg"vj g'Co gtlecp"cnki cvqt"Alligator *mississippiensis*+lw'rkugf "cu'v tgcvgpgf "f wg" vq'uko kñtkñ"qh'cr r gctcpeg"vq"vj g'Co gtlecp"etqeqf kñg"cpf "vj g"etqeqf kñg"ku'pqv'hqwpf "y kj kp"vj g"ctgc"qh' cpcn(uku."vj g'Co gtlecp"cnki cvqt"y cu'f kuo kuuf 'It qo 'Hwt vj gt "cpcn(uku0

Dctvco ð'j cktut gñdwwgthñ "Strymon *acis bartrami*+lw cñpf "Hñtkf c"rgchy lpi "dwwgthñ "Anaëa *trogodyta floridalis*+lw y q"ur gelgu"vj cv'ctg"ecpf kf cvgu'hqt"rkñkpi "wpf gt"vj g"GUC."y gt g"i kuo kuuf 'It qo 'Hwt vj gt "cpcn(uku' ukpeg"j cdkcv'hqt"vj gug"ur gelgu'f qgu'pqv'gz ku'v y kj kp"vj g"ctgc"qh'cpcn(uku0Vj g'O kco k'dñwg"dwwgthñ " Cyclargus *thomasi bethunebakeri*+lw cñpf "vj g'Uej cwu'uy cñqy vclñdwwgthñ "Heraclides *aristodemus ponceanus*+lw f q'pqv'qeewt "kp"vj g'uwf { "ctgc"cpf "y gt g"i kuo kuuf 'It qo 'Hwt vj gt "cpcn(uku0Vj g'Ecuukwu'dñwg" dwwgthñ "Leptotes *cassius theonus*+lw cñpf "vj g'egt cwpwu'dñwg"dwwgthñ "Hemiargus *ceraunus antibubastus*+lw y gt g'rkugf "cu'v tgcvgpgf "f wg"vq'uko kñtkñ"qh'cr r gctcpeg"vq"vj g'O kco k'dñwg"dwwgthñ 0Vj gug"ur gelgu'ctg" f kuo kuuf 'It qo 'Hwt vj gt "cpcn(uku'ukpeg"qpn"eqmgevki "cpf "r quuguulpi "vj gug"ur gelgu'ku'r tqj kdkgf "kp"vj gk" rkñkpi ðcng"f wg"vq"qyj gt "rgi cñcevkxkku'ku'pqv'r tqj kdkgf 0

J cdkcv'hqt"vj g'Ecr g'Ucdrg"ugcuf g'ur cttqy "Ammadramus *maritimus mirabilis*+lw qgu'pqv'gz ku'v y kj kp"vj g" ctgc"qh'cpcn(uku=vwj gt ghqgtg."vj g'ur gelgu"y cu'f kuo kuuf 'It qo 'Hwt vj gt "cpcn(uku0

Rñcpw'

Hqwt hgf gt cml "rkugf "qt"ecpf kf cvg"ur gelgu"j cxg"vj g'r qvgpvkñvq"qeewt"y kj kp"vj g"ctgc"qh'cpcn(uku0Vj gug" ur gelgu'cñpf "vj gk"ucwu'wpf gt"vj g"GUC"ctg"r tguvgpgf "kp'vcdrg"330Vj g'r tqdcdkñkñ "qh'qeewtgpeg'hqt"geej " ur gelgu'y cu'tcpgñf "cu'hqy "pqv'rkñgn"vq"qeewt"f wg"vq'rcñm'qh'qt"i kuwtdgf "r tghgttgf "j cdkcv"o qf gtcvg" ðnpqy p"vq"qeewt"y kj kp"vj g"ctgc"qh'cpcn(uku'dw'qdugtxcvku'puc"tg'hgy "cpf "r tghgttgf "j cdkcv'ku'f kuwtdgf + "qt" j ki j "npqy p"vq"qeewt"y kj kp"vj g"ctgc"qh'cpcn(uku'cñpf "r tghgttgf "j cdkcv'ku'r tguvgpv0

TABLE 11: FEDERALLY LISTED ENDANGERED, THREATENED, AND CANDIDATE PLANT SPECIES WITH THE POTENTIAL TO OCCUR IN THE AREA OF ANALYSIS

Common Name	Scientific Name	Federal Status	State Status
Blodgett's silverbush	<i>Argythamia blodgettii</i>	Candidate	Endangered
Garber's spurge	<i>Chamaesyce garberi</i>	Threatened	Endangered
Sand flax	<i>Linum arenicola</i>	Candidate	Endangered
Tiny polygala	<i>Polygala smallii</i>	Endangered	Endangered

Dñqf i gwau'Ukxgt dwuj "

Dñqf i gwau'ukxgt dwuj "ku'c"ecpf kf cvg'hqt"rkñkpi "wpf gt"vj g"GUC"cpf "ku'c"ucvg"gpf cpi gtgf "r rñpv0K'ku" tgr qtvgf "It qo "O qptqg"cpf "O kco kF cf g'Eqwvku'cpf "Gxgti rñf gu'P cvkqpcñRctmñk"eqcucññtqemñdcttgp." f kuwtdgf "w rñpf ."r kpg'tqemñrñpf ."cpf "r kpg"j co o qenñj cdkcu'ñ cñp."Dtcf rñg{ ."cpf "Y qqf o cpugg"4235+0' Vj g'HPCKj cu'qpg'tgr qtv'It qo "4227"qh'Dñqf i gwau'ukxgt dwuj "r rñpw'kp"vj g'xlekpñkñ "qh'vj g"ctgc"qh'cpcn(uku'

kp'r kpgmpf 'cpf 'r kpg'tqemmpf 'j cdkcv'hi wtg'39+'HP CK4234d=J qy gxgt. 'vj ku'hqecvqp'ku'o qtg'vj cp" 3'o kg'htqo 'vj g'ctgc'qh'cpcn'uku0Dmf i gwa'u'ukxgtdwuj 'ku'wprkngn' 'q'qeew'y kj kp'vj g'HRN'Y guv' Ugeqpf ct{ 'cpf 'HRN'Y guv'Rtghgttgf 'Eqttkf qtu'f wg'q'iceniqh'j cdkcv0Dmf i gwa'u'ukxgtdwuj 'j cu'c'o qf gtcvg' rkngrj qqf 'qh'qeewtgpeg'lp'f kuwtdgf 'wr ncpf u'lp'vj g'ctgc'qh'r quukdrng'tgmqecvgf 'eqttkf qt0'

I ctdgtu'Ur wti g'

I ctdgtu'ur wti g'ku'c'hgf gtcn' 'vj tgcvgpgf 'cpf 'c'ucvg'gpf cpi gtgf 'ur geku0I ctdgtu'ur wti g'ku'tgr qtvgf 'htqo " O qptqg'cpf 'O kco kF cf g'Eqwvkgu'cpf 'Gxgti ncf gu'P cvkqpcn'Rctnlp'dgcej 'f wpg.'eqcuxcn'tqenidcttgp." f kuwtdgf 'wr ncpf.'cpf 'r kpg'tqemmpf 'j cdkcv'f cpp.'Dtcf rg{.'cpf 'Y qqf o cpugg'4235+0I ctdgtu'ur wti g'ku' wprkngn' 'q'qeew'y kj kp'vj g'HRN'Y guv'Ugeqpf ct{ 'cpf 'HRN'Y guv'Rtghgttgf 'Eqttkf qtu'f wg'q'iceniqh'j cdkcv0I ctdgtu'ur wti g'j cu'c'iqy 'rkngrj qqf 'qh'qeewtgpeg'lp'f kuwtdgf 'wr ncpf u'lp'vj g'ctgc'qh'r quukdrng' tgmqecvgf 'eqttkf qt0'

Ucpf 'Hcz'

Ucpf 'hcz'ku'c'ecpf kf cvg'ht'rkup' 'wpf gt'vj g'GUC'cpf 'c'ucvg'gpf cpi gtgf 'ur geku0K'ku'tgr qtvgf 'htqo " O qptqg'cpf 'O kco kF cf g'Eqwvkgu'lp'f kuwtdgf 'wr ncpf u' 'o ctir' tcklg.'cpf 'r kpg'tqemmpf u'f cpp.'Dtcf rg{.'cpf 'Y qqf o cpugg'4235+0Ucpf 'hcz'ku'wprkngn' 'q'qeew'y kj kp'vj g'HRN'Y guv'Ugeqpf ct{ 'cpf 'HRN'Y guv' Rtghgttgf 'Eqttkf qtu'f wg'q'iceniqh'j cdkcv0Ucpf 'hcz'j cu'c'iqy 'rkngrj qqf 'qh'qeewtgpeg'lp'f kuwtdgf 'wr ncpf u'lp'vj g'ctgc'qh'r quukdrng'tgmqecvgf 'eqttkf qt0'

Vlp{ 'Rqf i cr'

Vlp{ 'r qn' i cr'ku'dqj 'hgf gtcn' 'cpf 'ucvg'gpf cpi gtgf 0K'ku'tgr qtvgf 'htqo 'Dtqy ctf.'O ctvlp.'O kco kF cf g." cpf 'Rcm 'Dgcej 'Eqwvkgu'lp'f kuwtdgf 'wr ncpf.'r kpg'tqemmpf.'ucpf j km'uetwd.'cpf 'uetwdd{ 'hry qqf u" j cdkcv'f cpp.'Dtcf rg{.'cpf 'Y qqf o cpugg'4235+0Vlp{ 'r qn' i cr'ku'wprkngn' 'q'qeew'y kj kp'vj g'HRN'Y guv' Ugeqpf ct{ 'cpf 'HRN'Y guv'Rtghgttgf 'Eqttkf qtu'f wg'q'iceniqh'j cdkcv0Vlp{ 'r qn' i cr'j cu'c'iqy 'rkngrj qqf 'qh' qeewtgpeg'lp'f kuwtdgf 'wr ncpf u'lp'vj g'ctgc'qh'r quukdrng'tgmqecvgf 'eqttkf qt0'

Hgf gtcn' 'Nkvgf 'Rcpv'Ur gelgu'F ku' ku'g' 'htqo 'Hwt vj gt 'Cpcn' uku'

Hqtkf c'dtkw'g'htp' *Trichomanes punctatum uur 0floridanum+. 'Dgcej 'lcs wgo qpvc' *Jacquemontia reclinata+. 'Ecr g'Ucdrg'vj qtqwi j y qtv' *Chromolaena frustrata+. 'Ectvgtu'o wuctf' *Warea carteri+. " etgpcw'g'rgcf /r rcpv' *Amorpha crenulata+. 'f gnxkf 'ur wti g' *Chamaesyce deltoidea' uur 0deltoidea+. 'j ckt{ " f gnxkf 'ur wti g' *Chamaesyce deltoidea uur 0adhaerens+. 'Gxgti ncf gu'dwn' *Sideroxylon reclinatum uur 0 austrofloridense+. 'Hqtkf c'r kpgmpf 'etcdi tcuu' *Digitaria pauciflora+. 'Hqtkf c'ugo cr j qtg'ecewu' *Consolea corallicola+. 'Hqtkf c'dtlengm'dwuj *Brickellia mosieri+. 'Hqtkf c'r tcklg/emxgt *Dalea carthagenensis xct0 floridana+. 'r kpgmpf 'ucpf o cv' *Chamaesyce deltoidea' uur 0pinetorum+. 'Uo cmu'o kmr gc' *Galactia smallii+. " Ectvgtu'hcz' *Linum carteri' xct0 carteri+. 'cpf 'I wh'lectk' *Licaria triandra+. 'y gtg'f ku' ku'g' 'htqo 'hwt vj gt' cpcn' uku0J cdkcv'ht' 'vj gug'ur geku'f qgu'pqv'qeew'lp'vj g'ctgc'qh'cpcn' uku'cpf lqt'vj g'ctgc'qh'cpcn' uku'ku' qwukf g'vj g'npqy p'tcpi gu'qh'vj gug'ur geku'0Ecr g'Ucdrg'vj qtqwi j y qtv.'Gxgti ncf gu'dwn' . 'Ectvgtu'hcz'. 'cpf " Hqtkf c'r kpgmpf 'etcdi tcuu'ctg'tgr qtvgf 'htqo 'vj g'r ctni'f cpp.'Dtcf rg{.'cpf 'Y qqf o cpugg'4235=J qy gxgt." j cdkcv'ht' 'vj gug'ur geku'ku'pqv'dgrngxgf 'q'qeew'y kj kp'vj g'ctgc'qh'cpcn' uku0'

Vj gtg'ku'qp'g'tgr qtv'qh'Qnggej qdgg'i qwtf' *Cucurbita okeechobeensis' uur 0okeechobeensis+. 'htqo 'c'ecpcn' dcpnlp' 'O kco kF cf g'Eqwv' 0J qy gxgt. 'vj g'ctgc'qh'cpcn' uku'ku'qwukf g'vj g'r tko ct{ 'tcpi g'qh'vj ku'ur geku' cpf 'vj g'r tqdcdk'k' 'qh'gpeqwpvgtkpi 'vj ku'ur geku'lp'vj g'ctgc'qh'cpcn' uku'ku'xgt{ 'iqy =J gtghgtg. 'vj ku'ur geku' y cu'gzemf gf 'htqo 'hwt vj gt'cpcn' uku0Lqj puqpu'ugc' i tcuu' *Halophila johnsonii+. 'ku'c'o ctkg'ur geku'0Upeg' 'vj g'ctgc'qh'cpcn' uku'f qgu'pqv'o ctkg'j cdkcv. 'Lqj puqpu'ugc' i tcuu'y cu'gzemf gf 'htqo 'hwt vj gt'cpcn' uku0'

UVCVG/NKUVGF 'URGEKGU'

Vj gtg'ctg'c'xctkgv\ 'qh'ucvg/rkvgf 'r ncpv'cpf 'cpko cni'ur gelgu'kp'Hqtkf c0Vj g'Hqtkf c'Hkuj 'cpf 'Y kf rkhg'
 Eqpugtxcvkqp'Ego o kuukqp'*HHY EE+'rkuv'85'cpko cni'cu'ucvg'yj tgcvgpgf 'qt'ur gelgu'qh'ur gelgu'eqpegtp'
 *HHY EE'4234d+0Vj g'Hqtkf c'F gr ctvo gpv'qh'Ci tlewwtg'rkuv'643'r ncpv'ur gelgu'cu'ucvg'gpf cpi gtgf 'cpf '
 335'r ncpv'ur gelgu'cu'ucvg'yj tgcvgpgf '*Eqkkg'cpf 'I ctf pgt'4225+0'

Cpko cni'

Grgxgp'ucvg/rkvgf 'cpko cni'ur gelgu'ctg'o quv'hkgn\ 'vq'qeewt'y kj kp'yj g'chgevgf 'ctgc0Vj gug'ur gelgu.'cpf '
 yj gkt'ucvg'ucvuu.'cpf 'dtlghf' guetkr vkpu'qh'gcej 'ur gelgu'ctg'qwrkpgf 'kp'yj g'vcdrg'340'

TABLE 12: STATE-LISTED ANIMAL SPECIES WITH THE POTENTIAL TO OCCUR IN THE AREA OF ANALYSIS

Common Name	Scientific Name	State Status
Mammals		
Everglades mink	<i>Mustela vison evergladensis</i>	Threatened
Birds		
Florida sandhill crane	<i>Grus canadensis pratensis</i>	Threatened
White-crowned pigeon	<i>Patagioenas leucocephala</i>	Threatened
Limpkin	<i>Aramus guarauna</i>	Special Species of Concern
Little blue heron	<i>Egretta caerulea</i>	Special Species of Concern
Snowy egret	<i>Egretta thula</i>	Special Species of Concern
Tricolored heron	<i>Egretta tricolor</i>	Special Species of Concern
White ibis	<i>Eudocimus albus</i>	Special Species of Concern
Roseate spoonbill	<i>Platalea ajaja</i>	Special Species of Concern
Florida burrowing owl	<i>Athene cunicularia floridana</i>	Special Species of Concern
Reptiles		
Gopher tortoise	<i>Gopherus polyphemus</i>	Threatened

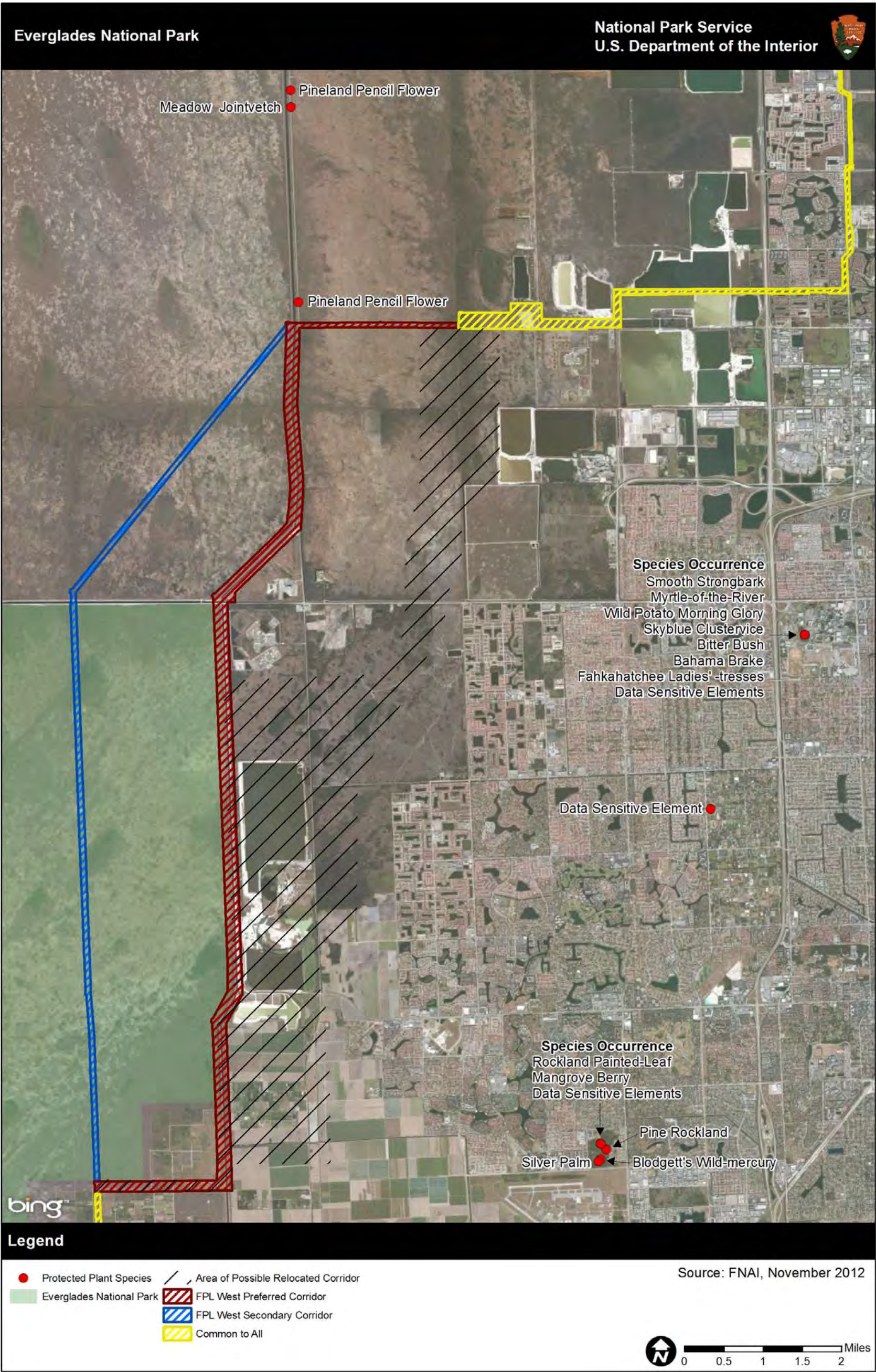


FIGURE 17: FLORIDA NATURAL AREAS INVENTORY REPORTS OF PROTECTED PLANT SPECIES

"

Vj g'Gxgti ncf gu'b lpm'ucvg/rkvgf 'cu'vj tgcvgpgf 'ku'c'uwdur gelgu'qh'vj g'uqwj gcvgtp'o lpn0K'qeewtu'lp' uqwj gtp'Hqtkf c'ftguy y cvgt'o ctuj gu'lp'vj g'Gxgti ncf gu'cpf 'Dki 'E { r tgu'Uy co r *HHY EE'4233d+0Vj g' Gxgti ncf gu'o lpmiku'f khlhwn'q'f g'vev'cpf 'r qr wcvkp'uk' g'cpf 'gzvgp'qh'qeewtgpeg'ctg'r qqtnt' 'npqy p' *HHY EE'4233d+0Ku'rkngkj qqf 'qh'qeewtgpeg'ku'vj gtghqtg'eqpuk'gtgf 'o qf gtcvg'lp'vj g'r ctnlk'vj g'xlelplk' " qh'vj g'HRN'Y guv'Ugeqpf ct { 'cpf 'HRN'Y guv'Rtghgttgf 'Eqttkf qtu0Vj gtg'ku'c'hqy 'rkngkj qqf 'hqt'Gxgti ncf gu' o lpm'v'qeewt'lp'y gvc'pf 'ctgcu'y kj lp'vj g'ctgc'qh'r quukdr'tgmecvgf 'eqttkf qt0'

[illegible]

Vj g'ucvgrkuvf "vj tgcvgpgf "y j kg/etqy pgf "r li gqp'hqci gu'kp'hwk/dgctkpi "tggukp"j ctf y qqf "j co o qemu" kp'uqwj gtp'Hqtkf c0ku'dtggf kpi "tapi g'ku'tgutkvxf "q'Hqtkf c'Dc{ . 'Dkuc{pg'Dc{ . 'cpf "vj g'Hqtkf c'Mg{ u. cmj qwi j "c'hgy "kpf kxf wcu'r tqdcnf "pguv'kprpf "kp'O qptqg"cpf "O kco kF cf g'eqwvku"*HHY EE'4233f +0' P guvkpi "kp'Hqtkf c'qeewtu'cm quv'gzenwukxgn "qp'o cpi tqxg'kurcpf u'y kj "pguvkpi "dkf u'hnf kpi "q'kurcpf u'q" hqci g'qp'hwk/dgctkpi "tggukp"*HHY EE'4233f +0Vj g'y j kg/etqy pgf "r li gqp'ku'eqpukf gtgf "pqv'rkngn "q" qeewt "kp"vj g'r ctmkp "vj g'xlepkp{ "qh'vj g'HRN"Y guv'Ugeqpf ct{ 'Eqttkf qt0Vj g'ur geku'j cu'c'o qf gtcv" rkngnj qqf "qh'qeewt kpi "kp"vj g'xlepkp{ "qh'vj g'HRN"Y guv'Rtghgtgf "Eqttkf qt"cpf "vj g'ctgc"qh'r quukdr" tgmecvxf "eqttkf qt0'

Vj g'ilo r nlp'ku'kugf 'cu'c'ur geku'qh'ur gekn'eqpetgtp0'kp'j g'eqp'v'p'p'v'cn'W00'iko r nlpu'qee'w'qpn' 'kp'j g' uvcg'qh'Hqtkf c.'y j gtg'yj g' 'ctg'tgukf gp'v'dtggf gtu'HHY EE'4233g-0Vj g' 'kpj cdk'h'guy j cvgt'y g'v'p'f u'y cv' uwr r q'tv'cp'co r ng'uwr r n' 'qh'j gk'r'tghgttgf 'r'tg'j . 'y g'cr r ng'upckn'HHY EE'4233g-0Nko r nlpu'ctg' eqpukf'gtgf 'v'j' cxg'c'j ki j 'kngnj q'qf 'qh'qee'w'tgpeg'lp'j g'r'ctm'lp'j g'x'le'kp'v' 'qh'j g'HRN'Y guv'Ugeqpf ct' { ' cpf 'HRN'Y guv'Rtghgttgf 'Eqttkf qtu'0Vj g' 'ctg'eqpukf'gtgf 'v'j' cxg'c' 'o qf gtc'v'kngnj q'qf 'qh'qee'w'tgpeg'lp' y g'v'p'f 'ctgcu'lp'j g'ctgc'qh'r quukdng'tgmecy'f'eqttkf q't0'

Nkwɔŋ'dmɔŋ'j gt qp. 'hkwɔf 'cu'c'ur gɛkɔu'qh'ur gɛkɔn'eqpɛgtɔ'd { 'HHY EE.'ku'c'y cf kpi 'dkf 'hɔwpf 'kɔ'y gɔɔpf u' y tqwi j qw'Hɔtkf c0Vj g { 'ctg'hpqy p'q'pguv'y kj kɔ'y g'5D'O wf. 'Vco kco k'cpf 'I tqwoo cp'Tkf i g'y qqf " uɔtɔn'eqmɔpɔkɔ'P RU'4232c+0Hki wtg'3: 'uj qy u'hkwɔŋ'dmɔŋ'j gtqp'pgukpi 'ctgcu'y kj kɔ'y'52'o kɔu'qh'y g'ctgc'qh' cɔɔn { uku0Vj g'hkwɔŋ'dmɔŋ'j gtqp'ku'eqpukf gtgf 'j ki j n { 'hkwɔŋ' 'q'qeeɔt 'kɔ'y g'r cɔnɔkɔ'kɔ'y g'xkɔkɔ' 'qh'y g'HRN" Y guv'Ugeqpf ct { 'cpf 'HRN'Y guv'Rtghettgf 'Eqttkf qtu0Nkwɔŋ'dmɔŋ'j gtqpu'ctg'eqpukf gtgf 'o qf gtcvɔn { 'hkwɔŋ' 'q' qeeɔt 'kɔ'y gɔɔpf 'j cdkɔu'y kj kɔ'y g'ctgc'qh'r quukɔŋ'tɔnqɛvɔf 'eqttkf qt0O qtg'kɔhɔto cɔkɔp'qp'hkwɔŋ'dmɔŋ' j gtqpu'ku'r tqxkf gf 'kɔ'y g'CTC'tɔr qtv'cɔr r gpf kɔ' L'0'

Upqy { 'gi t g w u' c t g' h k u g f' c u' c' u r g e k g u' q h' u r g e k n' e q p e g t p' d { 'H H Y E E O V j k u' u r g e k g u' k u' y k f g n' f' k u r t k d w g f' k p' H u t k f c' k p' d q y' h t g u j' c p f' u c n' y c v g t' u' u g o u O p q y { 'g i t g w u' c t g' m p q y p' v q' p g u v' y k j k p' y j g' 5 D' O w f. " V e o k e o k' c p f' I t q u o o c p' T k f i g' y q q f' u v q t m i e q m p l e g u' * P R U' 4 2 3 2 c+ O H k i w t g' 3; u j q u y u' p q y { 'g i t g v' p g u k p i' c t g c u' y k j k p' 5 2' o k g u' q h' y j g' c t g c' q h' c p c n' u k u O p q y { 'g i t g w u' c t g' e q p u k' g t g f' j k i j n' h k n g n' v q' q e e w t' k p' y j g' r c t m k p' y j g' x l e k p k' q h' y j g' H R N' Y g u v' U g e q p f c t { 'c p f' H R N' Y g u v' R t g h e t t g f' E q t t k f q t u O p q y { 'g i t g w u' c t g' e q p u k' g t g f' o q f g t c v g n' h k n g n' v q' q e e w t' k p' y g v c p f' j c d k c u v' y k j k p' y j g' c' t g c' q h' r q u i k d r g' t g m e c v g f' e q t t k f q t O' O q t g' k p h t o c v k q p' q p' u p q y { 'g i t g w u' k u' r t q x k f g f' k p' y j g' C T C' t g r q t v' * c r r g p f z' L' o' }

Vj g'vleqmtgf 'j gtqp' hqto gtnf 'ecmgf 'Nqwkulpc'j gtqp+ku'c'ur geku'qh'ur gekleqpegtf 'cu'rkugf 'd' (" HHY EEOK'r tghgtu'guwctlp'g'j cdkcu'dw'ecp'dg'hqwpf 'hqtci kpi 'lp'cm quv'cp' 'y g'vcpf 'u'ugfo 0'vleqmtgf " j gtqpu'ctg'cuq'hpqy p'v'p'guw'y kj lp'y'g'5D'O wf. 'Vco kco k'cpf 'I tqwoo cp'Tkf'i g'y qqf 'uqtmleqmpk'eu' *P RU'4232c-0Hki wtg'42'uj qy u'vleqmtgf 'j gtqp'p'guw'pi 'ctgc'y kj lp'52'o k'gu'qh'y'g'ctgc'qh'cpcnf uku' Vleqmtgf 'j gtqpu'ctg'eqpuk'gtgf 'j ki j n'rkngn'v'q'qeeu'lp'y'g'r ctmilp'y'g'xleklp'qh'y'g'HRN'Y guv'

Ugeqpf ct { "cpf "HRN"Y guvRtghgttgf "Eqttkf qtu0Vtleqmtgf "j gtqpu'ctg'eqpukf gtgf "o qf gtcvgnf "rkngn\ "vq" qeewt'lp'y gvrpf "j cdkcw'y kj lp'y g'ctgc"qh'r quukdrng'tgmecvgf "eqttkf qt0O qtg'lpqhto cvkqp"qp'tleqmtgf " j gtqpu'ku'r tqxkf gf "lp'y g'CTC'tgr qtv*cr r gpf kz "L#0

Vj g'y j **kg'kdku'**ku'qpg'qh'y g'o quv'eqo o qp'y cf lpi "dkf u'lp' "Hqtkf c."dw'ku'rkngf "cu'c'ur gekgu'qh'ur gekn' eqpegtp'd { "HHY EE0Ncti g'hqemu"qh'y ku'dkf "ctg'qhvgp'uggp'hqci lpi "lp'uj cmqy "o ctuj gu'qt'y gvr cuwtgu0' Y j kg'kdku'ctg'cmq'npqy p'vq'pguv'y kj lp'y g'5D'O wf . "Vco kco k'cpf "I tqumo cp'Tkf i g'y qqf "uqtn'leqmpkgu" *P RU4232c+0Hki wtg'43"uj qy u'y j kg'kdku'pguv'pi "ctgc'y kj lp'52'o kgu'qh'y g'ctgc"qh'cpcn\ uku0Y j kg'kdku" ctg'eqpukf gtgf "j ki j n\ "rkngn\ "vq"qeewt'lp'y g'r ctnilp'y g'xlepkv\ "qh'y g'HRN"Y guvUgeqpf ct { "cpf "HRN"Y guv' Rtghgttgf "Eqttkf qtu0Y j kg'kdku'ctg'eqpukf gtgf "o qf gtcvgnf "rkngn\ "vq"qeewt'lp'y gvrpf "j cdkcw'y kj lp'y g" ctgc"qh'r quukdrng'tgmecvgf "eqttkf qt0O qtg'lpqhto cvkqp"qp'y j kg'kdku'ku'r tqxkf gf "lp'y g'CTC'tgr qtv" *cr r gpf kz "L#0

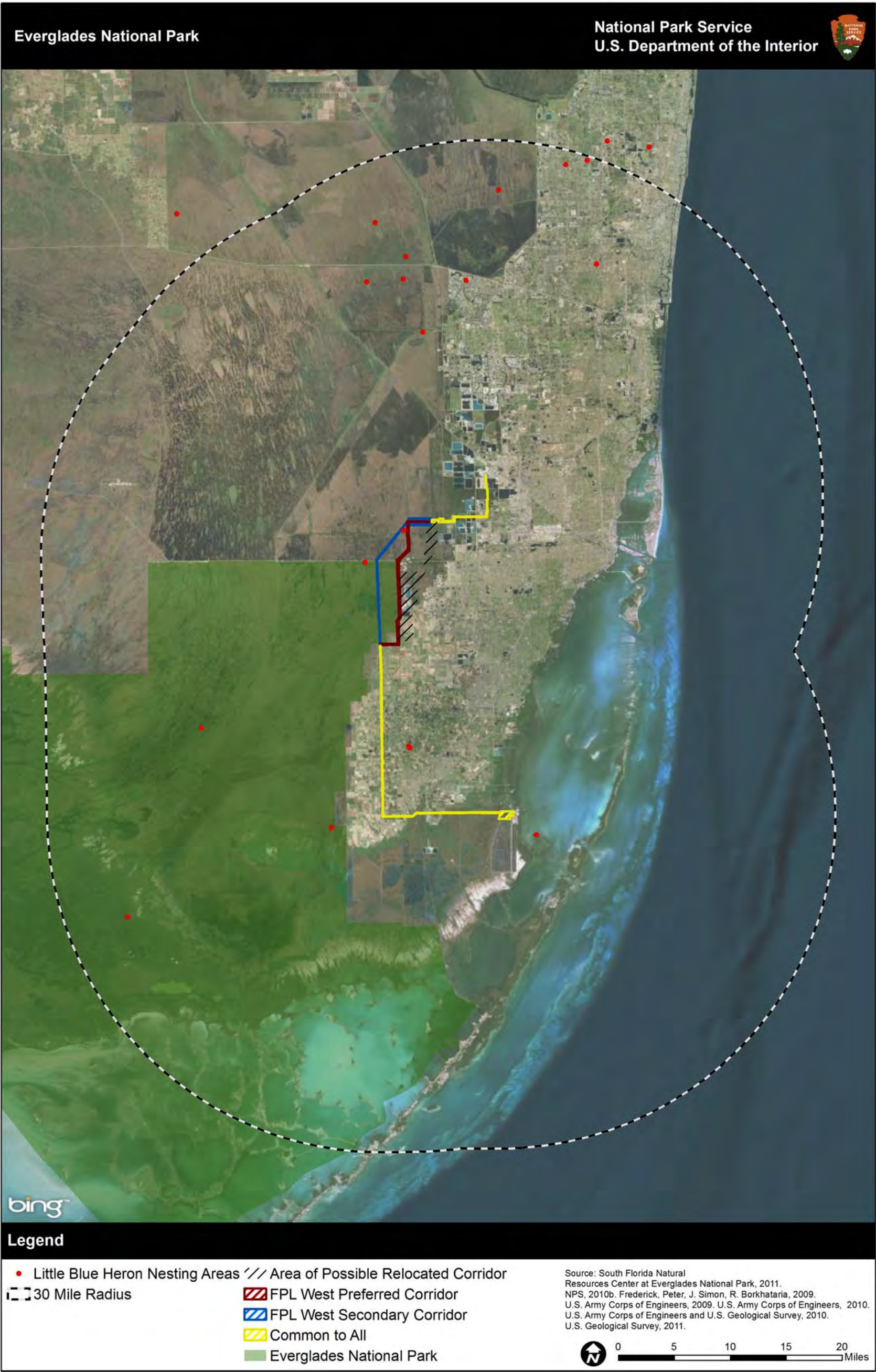
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Vj g'uo cni**Hqtkf c' dwt t qy lpi 'qy nku'**rkngf "cu'c'ur gekgu'qh'ur gekn'eqpegtp'd { "HHY EE0K'rkxgu'lp'dwt t qy u" lp'f t { "ucpf { "uqku'cuuqekvgf "y kj "ecwrg'r cuwtgu."r tckgu."ucpf j kmu."cpf "twf gtcn'ctgcu" *HP CK4223d+0K' j cu'bo qf gtcvg'rkngn\ qqf "qh'qeewt'gpeg'lp'qr gp."f tktg'j cdkcw'cmqi "y g'HRN"Y guvRtghgttgf "Eqttkf qt0Vj g" Hqtkf c'dwt t qy lpi "qy nku'pqv'rkngn\ "vq"qeewt'lp'y g'r ctnilp'y g'xlepkv\ "qh'y g'HRN"Y guvUgeqpf ct { "cpf " HRN"Y guvRtghgttgf "Eqttkf qtu'f wg'vq'y j g'gzv'pukxg'y gvrpf u'lp'y ku'ctgc0Vj gtg'ku'c'o qf gtcvg'rkngn\ qqf "qh" Hqtkf c'dwt t qy lpi "qy n'qeewt'kpi "y kj lp'wr rcpf "ctgcu'y kj lp'y g'ctgc"qh'r quukdrng'tgmecvgf "eqttkf qt0' Hqtkf c'dwt t qy lpi "qy n'ctg'npqy p'vq'qeewt'cv'y g'Mgpf cni Vco kco k'Gzgewkxg'Ckr qtv."y j lej "uqwj "cpf " gcuv'qh'y g'ctgc"qh'r quukdrng'tgmecvgf "eqttkf qt *Vtqr kcrnC wf wdqp"4235+0

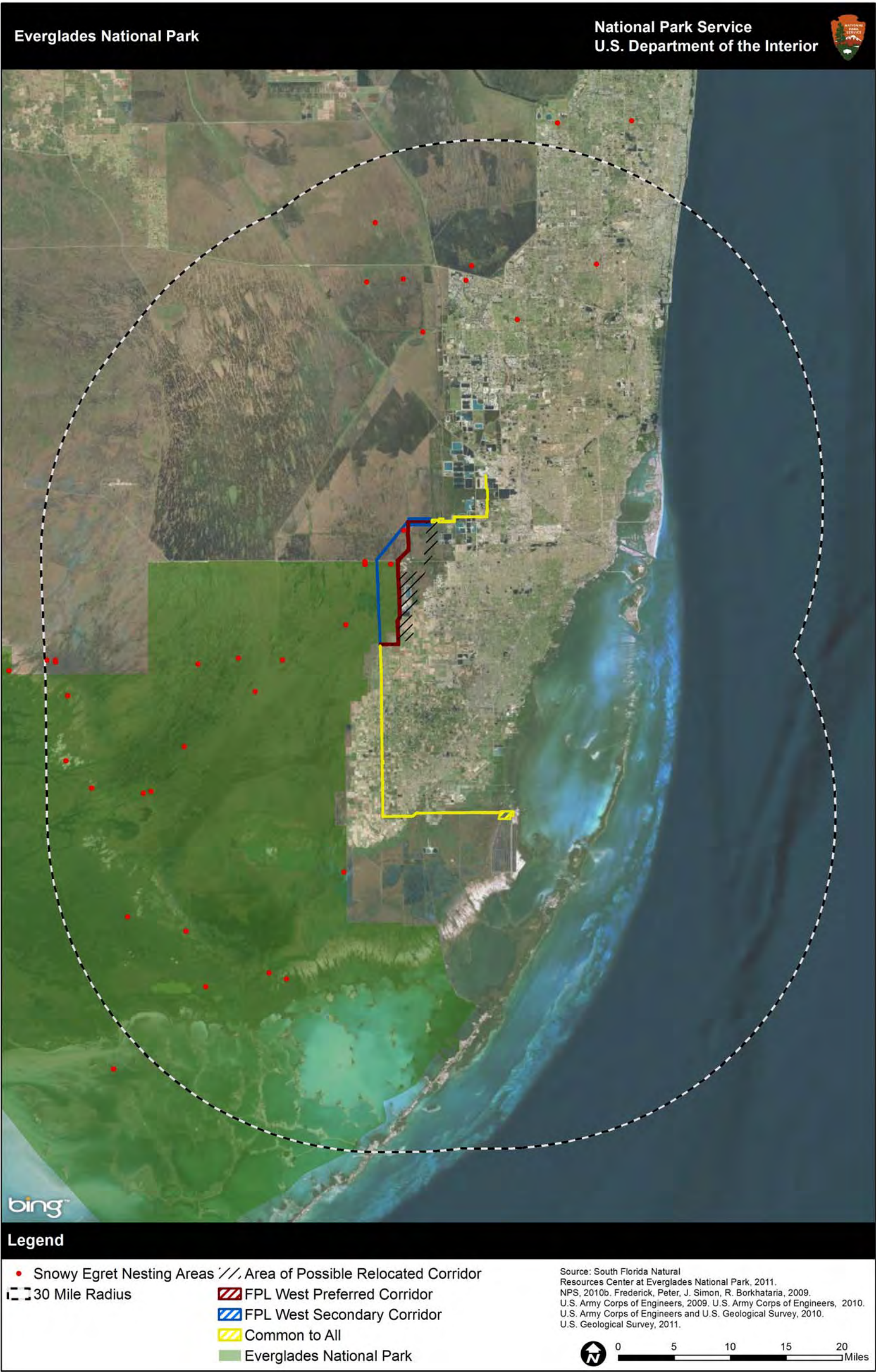
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Ucvg/rkngf "Cpko cni'F kuo kugf "lt qo "Hwt vj gt "Cpcn\ uku'

Vj g'tko /tqem'etqy pgf "upcng" **Tantilla ooliticus*+y cu'f kuo kugf "lt qo "hwt vj gt "cpcn\ uku'dgecvug'y g'ur gekgu" ku'pqv'npqy p'lt qo "y j g'ctgc"qh'cpcn\ uku'cpf "k'ku'cuuqekvgf "y kj "y j g'Dctpceng'ctgc/tqem'itkf i g'qh'Hqtkf c0' J cdkcv'hqt "y j g'Ecr g'Ucdng'ugcukf g'ur cttqy " **Ammadramus maritimus mirabilis*+ku'pqv'r tgu'pvy kj lp'y g" ctgc"qh'cpcn\ uku=y j g'tghgtg."y j g'ur gekgu'y cu'grko kpcvgf "lt qo "hwt vj gt "cpcn\ uku0



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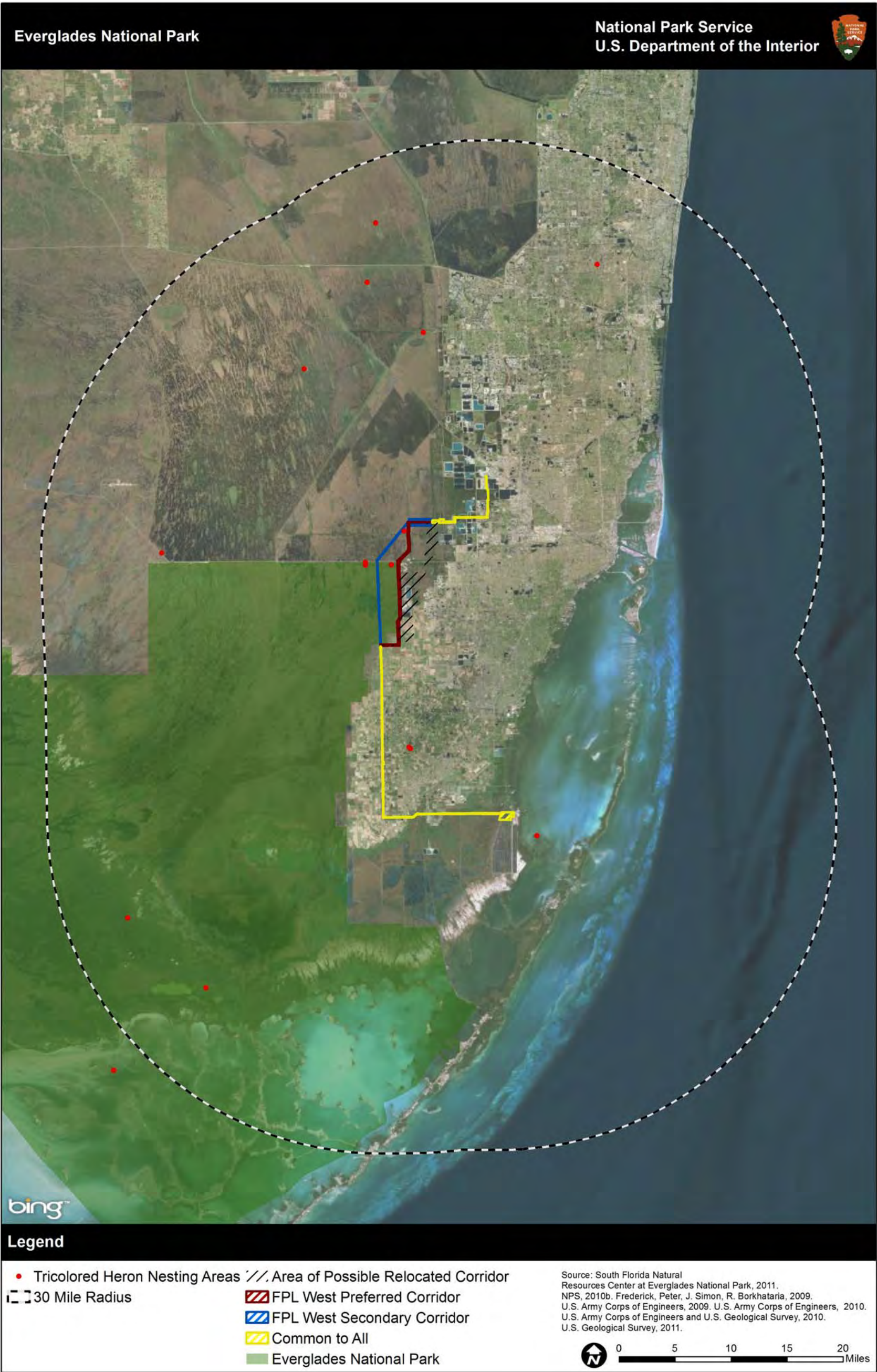
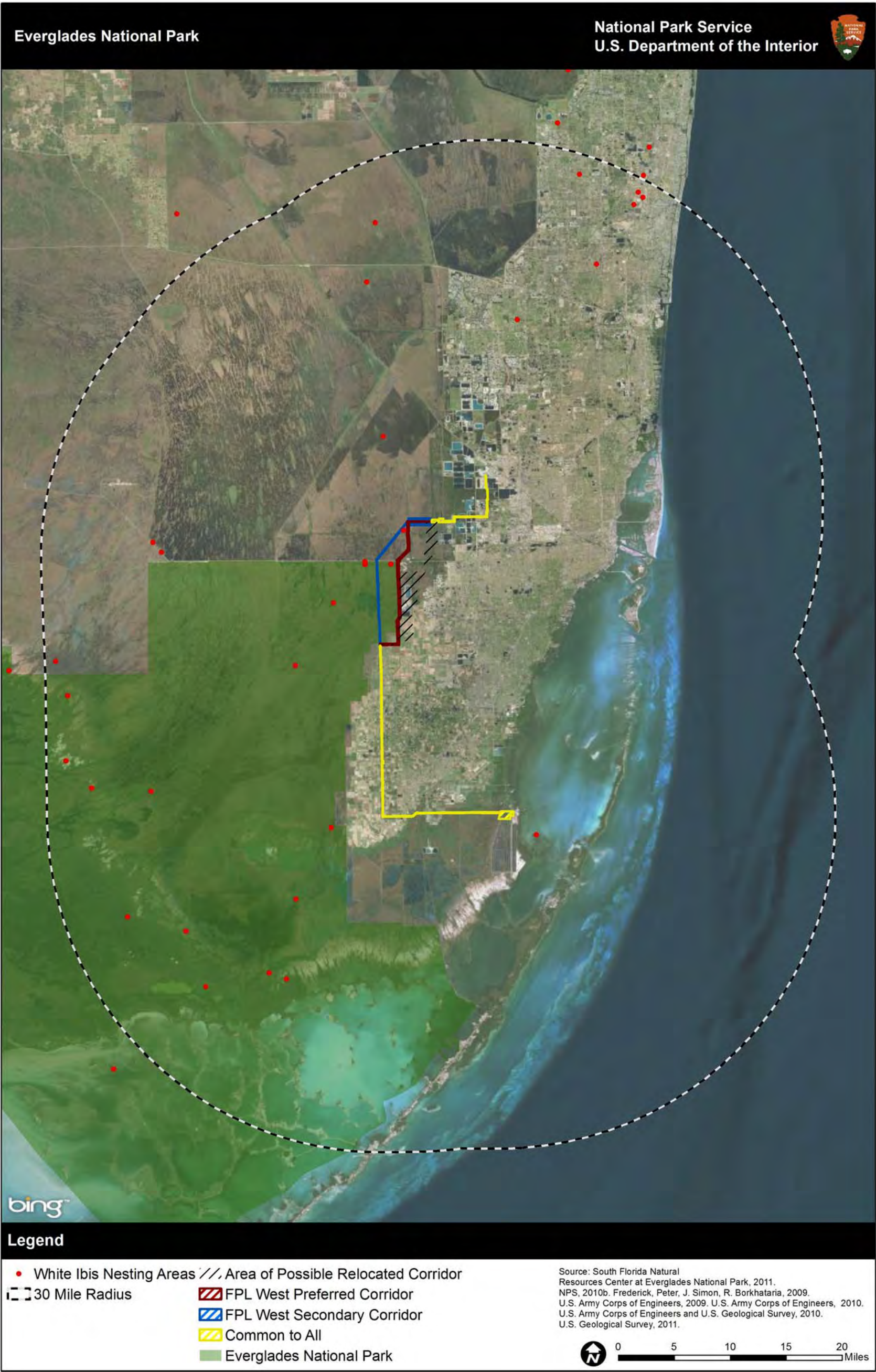
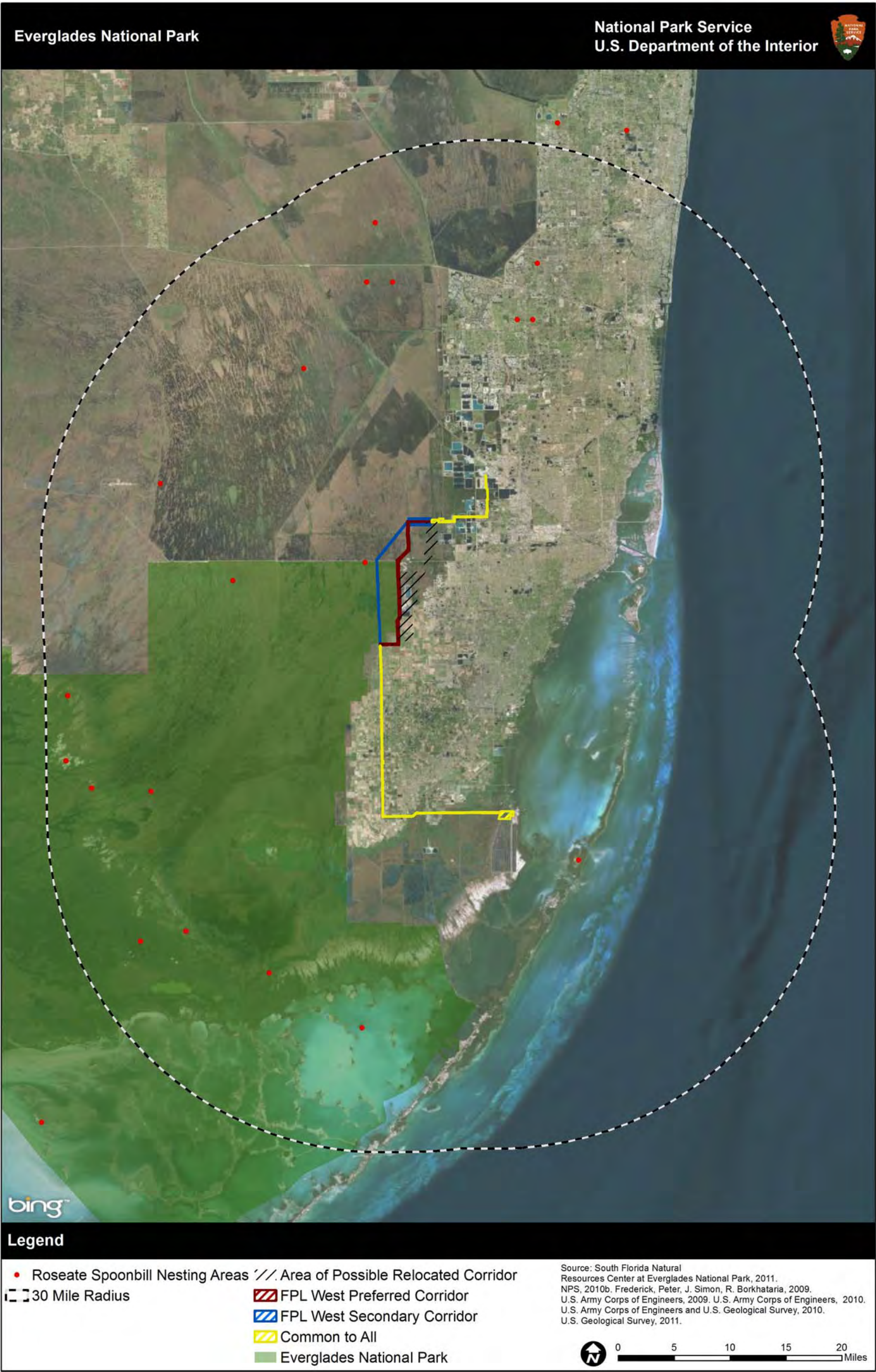


FIGURE 20: TRICOLORED HERON NESTING AREAS

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Ej cr vt "5<Chgevf "Gpxkqpo gpv"

Rcpw'

Vj g'ucv'g/rkugf 'r rcpv'ur geku'o quv'rkng' "q"qeev'y kj kp'y g'ctgc'qh'cpcn' uku'ctg'rkugf 'lp'vcdng'350

TABLE 13: STATE THREATENED AND ENDANGERED PLANT SPECIES WITH THE POTENTIAL TO OCCUR IN THE AREA OF ANALYSIS

Common Name	Scientific Name	State Status
Meadow joint-vetch	<i>Aeschynomene pratensis</i>	Endangered
Southern frog-fruit	<i>Phyla stoechadifolia</i>	Endangered
Bahama ladder brake	<i>Pteris bahamensis</i>	Threatened
Pineland Jacquemontia	<i>Jacquemontia curtissii</i>	Threatened
Florida royal palm	<i>Roystonea elata</i>	Endangered
Eaton's Spikemoss	<i>Selaginella eatonii</i>	Endangered
Rockland-Painted Leaf	<i>Euphorbia pinetorum</i>	Endangered
Pineland allamanda	<i>Angadenia berteroi</i>	Endangered
Everglades (Pinelands) Pencil Flower	<i>Stylosanthes callicola</i>	Endangered
Bahama saschia	<i>Saschia polycephala</i>	Threatened
Pineland noseburn	<i>Tragia saxicola</i>	Threatened
Small's flax	<i>Linum carteri</i> var. <i>smalli</i>	Endangered

O gcf qy 'lqlpv'xgvej ku'c'ucv'g'gpf cpi gtgf 'r rcpv'y cv'ku'tgr qtvgf 'ltqo 'Eqmkt.'O kco kF cf g.'cpf 'o ckrp'f "O qptqg'Eqwpv' .lpemf kpi 'Gxgti rcf gu'P cv'qpcn'Rctm'f cpp.'Dtcf rg{.'cpf 'Y qqf o cpugg'4235+0K'j cu' dggp'tgr qtvgf 'ltqo 'o ctn'r tck'g'cpf 'f qo g'uy co r 'j cdkcw'f cpp.'Dtcf rg{.'cpf 'Y qqf o cpugg'4235+0' O gcf qy 'lqlpv'xgvej 'j cu'dggp'r tglxkwu' 'qdugt'xgf 'y kj kp'y g'HRN'Y guv'Ugeqpf ct{ 'Eqttkf qt '*ugg'cr r gpf kz' K0Vj gtg'ku'c'ku'c'my 'r tqdcck'k' 'qh'qeev'tgpeg'qh'o gcf qy 'lqlpv'xgvej 'lp'y gvr tck'g'ctgcu'qh'y g'HRN' Y guv'Rtghgtt'g'Eqttkf qt'cpf 'y g'ctgc'qh'r quukdr'g'mqecv'g'eqttkf qt'f'wg'v'j' kvqt'kcnf' tckpci g'cpf 'uqki' f kwwd'cpeg'qh'y gug'v' r gu'qh'ctgcu'0

Uqwj gtp'lt qi /lt wk'ku'c'ucv'g'gpf cpi gtgf 'r rcpv'y cv'ku'tgr qtvgf 'ltqo 'Dtqy ctf 'Eqwpv' 'cpf 'O kco kF cf g' Eqwpv' .lpemf kpi 'y g'r ctn'icpf 'y g'Gxgti rcf gu'cpf 'Hcpeku'U'Vc{ rqt'Y kf rktg'O cpci go gpv'ctgc'f cpp." Dtcf rg{.'cpf 'Y qqf o cpugg'4235+0K'j cu'dggp'hqwpf 'lp'f kwwd'g'f 'y gvrp'f u'cpf 'w'rcpf u.'o ctn'r tck'g.'r kpg' tqem'p'f.'cpf 'uy crgu'f cpp.'Dtcf rg{.'cpf 'Y qqf o cpugg'4235+0Uqwj gtp'lt qi /lt wk'ku'eqpuk' gtgf 'j ki j n' " rkng' "q"qeev'lp'y g'r ctn'lp'y g'xlekp'k' 'qh'y g'HRN'Y guv'Ugeqpf ct{ 'cpf 'HRN'Y guv'Rtghgtt'g'Eqttkf qt'0 Vj ku'ctgc'y cu'wtxg'f' g'cpf 'pq'r rcpw'y gtg'qdugt'xgf 0Vj gtg'ku'cnuq'c'my 'r tqdcck'k' 'qh'qeev'tgpeg'lp'y g' ctgc'qh'r quukdr'g'mqecv'g'eqttkf qt'0J qy g'xgt.'u'wtxg'f' u'j cxg'pqv'dggp'eqpf w'v'g'f 'cv'y ku'ukg'0

Dej co c'rcf f gt'dtcng'ku'c'ucv'g'y tgcvg'p'f 'r rcpv'y cv'ku'tgr qtvgf 'ltqo 'Dtqy ctf .Eqmkt.'O qptqg.'Rcm " Dgcej .cpf 'O kco kF cf g'eqwp'v'g'u'f'lpemf kpi 'Gxgti rcf gu'P cv'qpcn'Rctm'f cpp.'Dtcf rg{.'cpf " Y qqf o cpugg'4235+0K'j cu'dggp'hqwpf 'lp'f kwwd'g'f 'w'rcpf u.'o ctn'r tck'g.'r kpg'tqem'p'f .tqem'p'f " j co o qem'cpf 'ukpnj qrg'ctgcu'f cpp.'Dtcf rg{.'cpf 'Y qqf o cpugg'4235+0HP CKj cu'qpg'tgr qt'v'ltqo '4229' qh'Dej co c'rcf f gt'dtcng'f'cnuq'p'p'cu'Dej co c'dtcng'+lp'y g'xlekp'k' 'qh'y g'ctgc'qh'cpcn' uku' 'dw'y g' mqcw'qp'ku'o qtg'y cp'3'o k'g'ltqo 'y g'ctgc'qh'cpcn' uku'f'ki wtg'39+'f'HP CK4234d+0Dej co c'rcf f gt'dtcng' y cu'cnuq'hqwpf 'lp'y g'HRN'Y guv'Rtghgtt'g'Eqttkf qt'y kj kp'Gxgti rcf gu'P cv'qpcn'Rctm'f gcp'cpf 'Ucf rg' r gtu0eqo o 04234=ugg'cr r gpf kz'K0Dej co c'rcf f gt'dtcng'ku'eqpuk' gtgf 'o qf gtcv'g'f'rkng' "q"qeev'lp'y g' HRN'Y guv'Ugeqpf ct{ 'Eqttkf qt'cpf 'y g'ctgc'qh'r quukdr'g'mqecv'g'eqttkf qt'lp'f kwwd'g'f 'w'rcpf u'0

Rlpgrpf 'lces wgo qpvc 'ku'c'ucvg'vj tgcvgpgf 'r npv'vj cv'ku'tgr qtvgf 'htqo 'Eqmkt. 'J gpf t{ . 'O ctvp. 'O qptqg. " cpf 'O kco kF cf g'eqwpvku' *lpenw lpi 'Gxgti ncf gu'P cvkqpcnRctm' *I cpp. 'Dctf rg{ . 'cpf 'Y qqf o cpugg'4235+0' K'j cu'dggp'hqwpf 'lp'f kuwtdgf 'wr npf u. 'o ctnr tcklg. 'o gule' hrcv qqf u. 'cpf 'r kpg'tqemrpf *I cpp. 'Dctf rg{ " cpf 'Y qqf o cpugg'4235+0'Rlpgrpf 'lces wgo qpvc'ku'pqv'f qewo gpvgf 'lp'vj g'ctgc'qh'cpcn' uku. 'dw'vj gtg'ku'c' " nry 'rkngkj qqf 'vj cv'vj g'ur gelgu'eqwf 'qeww'lp'vj g'ctgc'qh'r quukdr' tgmecvgf 'eqttkf qt'qp'f kuwtdgf 'wr npf u" uwej 'cu'ecpcn'rgxggu'Rlpgrpf 'lces wgo qpvc'ku'pqv'rkngn' 'v'q'qeww'lp'vj g'r ctnl'lp'vj g'xlelpx' 'qh'vj g'HRN' Y guv'Ugeqpf ct{ 'cpf 'HRN'Y guv'Rtghgtgf 'Eqttkf qtu'

Vj g'**Hqtkf c'tq{ cnr cm** 'ku'cp'gpf cpi gtgf 'tgg'ur gelgu'npqy p'htqo 'Eqmkt. 'O ctvp. 'O qptqg. 'Rcm 'Dgcej . " cpf 'O kco kF cf g'eqwpvku' *lpenw lpi 'Gxgti ncf gu'P cvkqpcnRctm' *I cpp. 'Dctf rg{ . 'cpf 'Y qqf o cpugg'4235+0' Vj g'Hqtkf c'tq{ cnr cm 'j cu'dggp'hqwpf 'lp'f kuwtdgf 'y gwrpf u. 'hqqf r nclp' hqtguv' tgemrpf 'j co o qem'cpf " utcpf 'uy co r *I cpp. 'Dctf rg{ . 'cpf 'Y qqf o cpugg'4235+0'Vj gtg'ku'c'ny 'rkngkj qqf 'hqt'r npw'vj cv'j cxg" guecr gf 'ewmxcvqp'v'q'qeww'y kj lp'vj g'ctgc'qh'cpcn' uku'

Gcvpau'lr lngo qu'ku'cp'gpf cpi gtgf 'r npv'npqy p'htqo 'O qptqg'cpf 'O kco kF cf g'eqwpvku. 'lpenw lpi " Gxgti ncf gu'P cvkqpcnRctm' *I cpp. 'Dctf rg{ . 'cpf 'Y qqf o cpugg'4235+0'Vj g'ur gelgu'j cu'dggp'hqwpf 'lp'f o ctnr tcklg'cpf 'r kpg'tqemrpf 'j cdkcw' *I cpp. 'Dctf rg{ . 'cpf 'Y qqf o cpugg'4235+0'K'j cu'c'ny 'rkngkj qqf 'qh' qewwtkpi 'qp'ecpcn'o cti lpu'y kj lp'vj g'ctgc'qh'cpcn' uku'

Tqemrpf / r clpvgf 'rgch'*cnq'npqy p'cu'r lpggrpf 'r qlpugwlc' +ku'ucvg'vj tgcvgpgf 'ur gelgu'vj cv'ku'gpf go le'v'q' " O qptqg'cpf 'O kco kF cf g'eqwpvku' *P cwtgUgtxg'4234+0'K'ku'cuuqekvgf 'y kj 'j gtdcegqwu'y gwrpf u. " y qqf npf u. 'cpf 'r kpg'tqemrpf u'qxtg' tko guvpgg' *P cwtgUgtxg'4234+0'Vj gtg'ku'c'3; ; 7'tgeqt' 'qh'Tqemrpf / r clpvgf 'rgch'lp'vj g'xlelpx' 'qh'vj g'ctgc'qh'cpcn' uku. 'dw'w'ku'i tgcvg'vj cp'3'o krg'cy c{ 'htqo 'vj g'ctgc'qh' cpcn' uku'cpf 'vj g'r qr wrcvqp'rkngn' 'pq'npqi gt'gzkuu'f wg'v'q'vj g'gzvgpukxg'tgukf gpvknf gxrqr o gpv'lp'vj g'ctgc' *hki wtg'39+*HP CK4234d+0'Vj gtg'ku'c'ny 'r tqdcdkx' 'vj cv'r lpggrpf / r clpvgf 'rgch'eqwf 'qeww'lp'f kuwtdgf " wr npf u. 'uwej 'cu'ecpcn'o cti lpu'y kj lp'vj g'ctgc'qh'cpcn' uku'

Rlpgrpf 'cmo cpf c'ku'c'ucvg'vj tgcvgpgf 'r npv'tgr qtvgf 'htqo 'O qptqg'cpf 'O kco kF cf g'eqwpvku. " lpenw lpi 'Gxgti ncf gu'P cvkqpcnRctm' *I cpp. 'Dctf rg{ . 'cpf 'Y qqf o cpugg'4235+0'K'j cu'dggp'hqwpf 'lp'f kuwtdgf 'wr npf u. 'o ctnr tcklg. 'cpf 'r kpg'tqemrpf u' *I cpp. 'Dctf rg{ . 'cpf 'Y qqf o cpugg'4235+0'K'j cu'c'j ki j " rkngkj qqf 'qh'qewwtkpi 'lp'vj g'r ctnl'lp'vj g'xlelpx' 'qh'vj g'HRN'Y guv'Ugeqpf ct{ 'cpf 'HRN'Y guv'Rtghgtgf " Eqttkf qtu'cpf 'j cu'dggp'qdugt'xgf 'lp'vj g'HRN'Y guv'Rtghgtgf 'Eqttkf qt'y kj lp'vj g'r ctnl' *ugg'cr r gpf k' 'K0K' j cu'c'o qf gtcvg'rkngkj qqf 'qh'qewwtkpi 'y kj lp'vj g'ctgc'qh'r quukdr' tgmecvgf 'eqttkf qt'

Gxgti ncf gu'qt 'Rlpgrpf u'r gpekilny gt 'ku'c'ucvg'gpf cpi gtgf 'ur gelgu'vj cv'ku'tgr qtvgf 'htqo 'O kco kF cf g' *lpenw lpi 'vj g'r ctm'cpf 'O qptqg'Eqwpvku'lp'f kuwtdgf 'wr npf u. 'o ctnr tcklg'cpf 'r kpg'tqemrpf u' *I cpp. " Dctf rg{ . 'cpf 'Y qqf o cpugg'4235+0'HP CKj cu'v'q'tgr qtu'htqo '4228'qh'Gxgti ncf gu'r gpekilny gt'y kj lp' cr r tqzko cvgn' '4'o kgu'pqt'vj 'qh'y j gtg'vj g'HRN'Y guv'Ugeqpf ct{ 'cpf 'HRN'Y guv'Rtghgtgf 'Eqttkf qtu'lqlp'lp' " vj g'Gxgti ncf gu'cpf 'Hcpeku'U'Ve{ nqt'Y kfr klg'O cpci go gpv'Ctgcu' *hki wtg'39+0'Vj gug'hqecvku'p'ctg" tgr qtvgf 'cu'dglpi 'cnpi 'c'tqcf ukf g'tki j v'q'v'c{ "HP CK4234d+0'Gzco lpcvqp'qh'cgtkcnr j qvqi terj { " lpf kcvgu'vj cv'vj gug'hqecvku'p'y gtg'rkngn' 'cnpi 'c'f k'v'ceegu'tqcf "cnpi 'c'ecpcn'O'Gxgti ncf gu'r gpekilny gt" j cu'c'ny 'rkngkj qqf 'qh'qewwtkpi 'lp'vj g'r ctnl'lp'vj g'xlelpx' 'qh'vj g'HRN'Y guv'Ugeqpf ct{ 'cpf 'HRN'Y guv' Rtghgtgf 'Eqttkf qtu'0'K'j cu'c'o qf gtcvg'rkngkj qqf 'qh'qewwtkpi 'y kj lp'vj g'ctgc'qh'r quukdr' tgmecvgf " eqttkf qt'

Dcj co c'ucuej k'ku'c'ucvg'vj tgcvgpgf 'r npv'vj cv'ku'tgr qtvgf 'htqo 'O qptqg'Eqwpv' 'cpf 'O kco kF cf g' Eqwpv' . 'lpenw lpi 'Gxgti ncf gu'P cvkqpcnRctm' *I cpp. 'Dctf rg{ . 'cpf 'Y qqf o cpugg'4235+0'K'j cu'dggp'hqwpf " lp'f kuwtdgf 'wr npf u' 'cpf 'r kpg'tqemrpf *I cpp. 'Dctf rg{ . 'cpf 'Y qqf o cpugg'4235+0'Vj gtg'ku'c'o qf gtcvg' rkngkj qqf 'vj cv'Dcj co c'ucuej k'eqwf 'qeww'lp'f kuwtdgf 'wr npf u'y kj lp'vj g'ctgc'qh'r quukdr' tgmecvgf " eqttkf qt'

Rlpgpfp 'pqgdwtp'ku'c'ucv'j tgevgpf 'r npv'j cv'ku'tgr qtvf 'ltqo 'O qptqg'Eqwpv' 'cpf 'O kco kF cf g" Eqwpv' . 'lpenf lpi 'Gxgti ncf gu'P cvkpcnRctn'I cpp.'Dtcf rg{ . 'cpf 'Y qqf o cpugg'4235-0K'j cu'dggp'hqwpf " kp'f kuwdgf 'wr npf 'cpf 'r kpg'tqemrpf 'I cpp.'Dtcf rg{ . 'cpf 'Y qqf o cpugg'4235-0Vj gtg'ku'c'o qf gtcv'g" rknrgj qqf 'j cv'r kpgpfp 'pqgdwtp'eqwf 'qeewt'kp'f kuwdgf 'wr npf u'y kj kp'j g'ctgc'qh'r quukng'tgqecv'g" eqttkf qt0'

Uo cmu'hrz''

Uo cmu'hrz'ku'c'ucv'g'gpf cpi gtgf 'r npv'j cv'ku'tgr qtvf 'ltqo 'Eqmkt'Eqwpv' . 'J gpf t{ 'Eqwpv' . 'O qptqg" Eqwpv' . 'cpf 'O kco kF cf g'Eqwpv' . 'lpenf lpi 'Gxgti ncf gu'P cvkpcnRctn'I cpp.'Dtcf rg{ 'cpf 'Y qqf o cpugg" 4235-0K'j cu'dggp'hqwpf 'kp'f kuwdgf 'wr npf . 'f kuwdgf 'y gvrpf . 'o ctr'r tckg' . 'cpf 'r kpg'tqemrpf 'I cpp." Dtcf rg{ 'cpf 'Y qqf o cpugg'4235-0Vj gtg'ku'c'o qf gtcv'g'rknrgj qqf 'j cv'Uo cmu'hrz'eqwf 'qeewt'kp'f kuwdgf 'wr npf u'cpf 'f kuwdgf 'y gvrpf u' . 'uwej 'cu'o cti kpu'qh'ecpcn' . 'y kj kp'j g'ctgc'qh'r quukng'tgqecv'g" eqttkf qt0'

Ucv'g/dwgf 'Rrnpv'Ur gelgu'F ku kugf 'ltqo 'Hwt vj gt 'Cpcn'uku'

Y tki j vu'cpgo kc'*Anemia wrightii+'Rqtvtu'dtqcf /rgcxgf 'ur wti g'*Chamaesyce porteriana+'Ewdcp" upcng/dctm'*Colubrina cubensis'xct0/floridana+'Ej tkuo cudgtt{ '*Crossopetalum ilicifolium+'o qf guv' ur rggpy qtv'*Asplenium verecundum+'rcti g/hqy gtgf 'tqugo ct{ '*Conradina grandiflora+'uj gcvj lpi " i qxgpk'*Govenia floridana+'cpf 'j qm' 'xkpg'htp'*Lomariopsis kunzeana+'y gtg'f ku kugf 'ltqo 'Hwt vj gt" cpcn'uku'dgecv'g'j cdkcv'f qgu'pqv'gzku'hqt'j g'ug'ur gelgu'y kj kp'j g'ctgc'qh'cpcn'uku'cpf kt'j g'ctgc'qh' cpcn'uku'ku'qwu'f g'j g'npqy p'tcpi gu'qh'j g'ug'ur gelgu'0'

Xlgy Uj Gf "XkwnTguwtegu"

Vj g'uwf { 'ctgc'ht'xkwn'tguwtegu'lpenf gu'j g'ctgc'qh'r qv'p'v'cn'xkukdkv' 'ltqo 'xctkqu'ng{ 'qdugt'xcv'qp" r qkpw'*MQRu+'cmpi 'Vco kco k'Vtckn'tgetgc'v'p'cn'ck'dqcv'qr gtcv'qpu' . 'j g'Dw'Uj cpv' . 'Uj ctnl'Xcmg{ . 'cpf " ceegu'tqcf u'cpf 'y cvty c{ u'y kj kp'j g'pqt'j gcugtp'gzv'p'v'qh'Gxgti ncf gu'P cvkpcnRctn'0'0 clqt'tgetgc'v'qp" cpf 'xkukqt'ctgcu'ck'dqcv'p' 'qr gtcv'qpu' . 'Dw'Uj cpv' . 'Uj ctnl'Xcmg{ . 'Ej gmkc'ctgc' . 'cpf 'N'53P'rgxgg'tqcf +' kp'j ku'r qt'v'qp'qh'j g'r ctnly gtg'f gvgto kpgf 'v'q'dg'j g'o quv'xkwn' 'ugpuk'x'g'tguwtegu'kp'j g'uwf { 'ctgc" cpf 'qh'j g'j ki j guv'xkwn'eqpegt'p0MQRu'y gtg'f gvgto kpgf 'kp'eqplwpev'qp'y kj 'j g'Gxgti ncf gu'P cvkpcn' Rctn'lu'ch0'Vj g'r j qvqi tcr j 'tqecv'qpu'ltqo 'j g'kf gpv'k'gf 'MQRu'cpf 'j g'o clqt'tgetgc'v'qp'cpf 'xkukqt'wug" ctgcu'ctg'r t'gugp'v'g'f 'kp'hi wtg'450C'pwo dgt'qh'r j qvqi tcr j u'y gtg'cngp'ltqo 'gcej 'qh'j g'ug'MQRu'cpf 'c" tgr t'gugp'v'x'g'uco r kpi 'j cu'dggp'kpeqtr qtcv'g'f 'kp'v'j ku'ugev'qp'kp'qtf gt'v'f gr lev'j g'gzkukpi 'xkwn' ej ctcevt'qh'j g'uwf { 'ctgc'0'Vj g'ug'r j qvqi tcr j u'cpf 'cee'qo r cp{ lpi 'f guetk'v'qpu'ctg'r tqxkf gf 'dgmj 0'

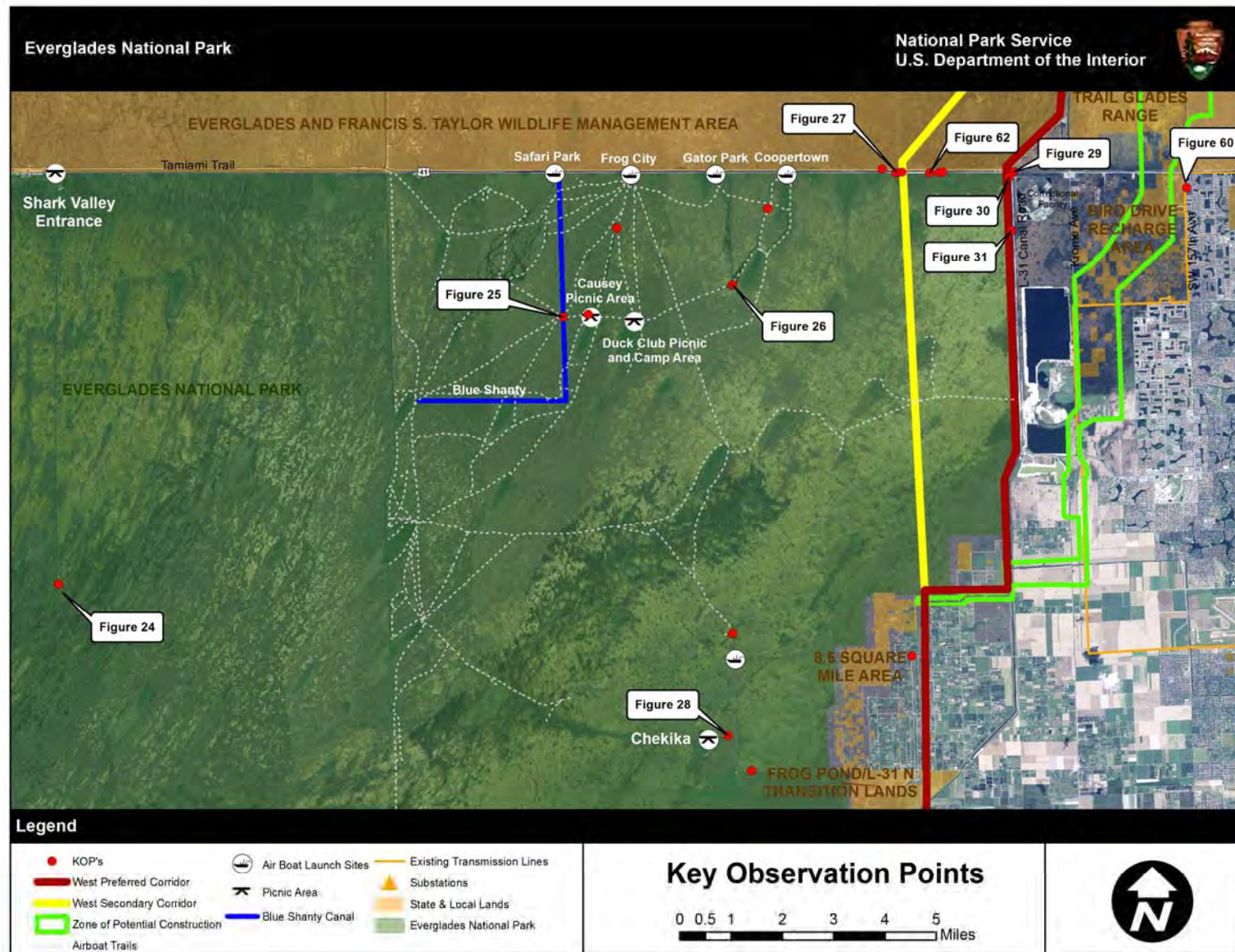


FIGURE 23: STUDY AREA OVERVIEW AND LOCATION OF PHOTOGRAPHS

F GUETRVIQP 'QH'NCPFUECRG'EJ CTCEVGT'

Xluwnlej ctcevgt "gpego r cuugu" yj g'r cwgtpu'qh'ncpf hqto "xqr qi tcr j { +: 'xgi gvcvqp. 'ncpf "wug. 'cpf "cs wvle" tguwtegu "Q0" rncgu. 'utgco u. 'cpf "y gncpf u0Vj g'xluwnlej ctcevgt "ku'lpnwgepgf "dqj "d { "pcwtcnlu{ ugo u. " j wo cp'lpvgtcevkpu. 'cpf "wug'qh'ncpf 0Kp'pcwtcnlu'gwpi u. 'yj g'xluwnlej ctcevgt "cwtkdwgu'ctg'pcwtcn'grgo gpw" uvej "cu'xcuv'qr gp'ctgcu'qt'uegple'lxgtu'cpf "rncgu. 'y j gtgcu'twtcn'qt'r cuqtcnki tlewnwtcnlu'gwpi u'o c { " lpenw g'o cpo cf g'grgo gpw'uvej "cu'hpgegu. 'y cmu. 'dctpu'cpf "qwdvkwf lpi u. 'cpf "qeecukqpcn'tgukf gpegu0Kp" c" o qtg'f gxnqr gf "ugvki. " yj g'xluwnlej ctcevgt "o c { "lpenw g'eqo o gtekn'qt'lpf wutkn'dwvki lpi u. 'tgukf gpvkn' pgi j dqtj qqf u. "o cplewtgf "rcy pu. 'r cxgo gpv. 'cpf "qj gt'wvkv { 'lphtcutwewt g0Vj g'vgtclp'lp' yj g'uww { "ctgc" ku'r tgf qo lpcpwl "hcv'cpf "yj tgg'i gpgtcn'ncpf uecr gu'ej ctcevgtu' y gtg'qdugt xgf "pcwtcn 'tgukf gpvkn' cpf " lpf wutkn'0F gpug'tgukf gpvkn'f gxnqr o gpv'ku'necevgf "gcu'qh'UY "379yj 'Cxgpwg. 'y j kg'i gpgtcn' "qr gp" ncpf. "f qo lpcvgf "d { "lpxcukxg'ur gelgu. 'ku'necevgf "fktgevn' "y guv'qh'UY "379yj 'Cxgpwg0Vj g'ctgc'dgy ggp'UY " 379yj 'Cxgpwg'cpf "yj g'gcuvgtp'dqwpf ct { "qh'Gxgti ncf gu'P cvkqpcn'Rctn'lpenw gu'uecwtgf "lpf wutkn'ncpf " ci tlewnwtcn'f gxnqr o gpv. 'lpenw lpi "o clqt'tqenlo lplpi "qr gtcvqpu. "gur gekm' "dgy ggp'Mtqo g'Cxgpwg" cpf "N/53P" epcn'tqcf 0Cf f kkpccm'. "yj g'O leeuwnngg'Tguvt'ku'necevgf "lww'pqtj "qh'yj g'Vco lco K'Vtck'ncpf " y guv'qh'Mtqo g'Cxgpwg0Vj g'Gxgti ncf gu'P cvkqpcn'Rctn'ku'necevgf "y guv'qh'yj g'N/53P" epcn'tqcf "cpf "ku" wvf gxnqr gf "pcwtcn'ncpf u. 'y kj "c'hy "tgetgcvqpcn'ctgcu'ncpi "yj g'Vco lco K'Vtckn' y kj "yj g'zegr vkp'qh" yj g'ceegu'r qlpw'vq' yj g'ckdqcv'qr gtcvqpu'

Rtqo lpgpv'xgtvlecn'hgcwtgu'qp' yj g'ncpf uecr g'lpenw g'gzknkpi "wvkv { 'hpgu'ncpi ukf g'Vco lco K'Vtckn'tcf kq" vqy gtu'cpf "qj gt'eqo o wplecvkpu'cpvgppcu. 'lpf wutkn'ncpf "eqo o gtekn'hcekn'kgu'ncpi "yj g'N/53P" epcn' tqcf "cpf "tgukf gpvkn'f gxnqr o gpv'ncpi "yj g'gcuvgtp'dqtf gt'qh'yj g'uww { "ctgc0Ncpf "y kj lp' yj g'pcvqpcn'r ctm' cpf "eqo r tkugf "gpvkn' "qh'pcwtcn'xgi gvcvqp" y kj "o ctuj ncpf "hgcwtgu'r tgugt xgf "lp/ukw0Cncpi "yj g" pqtj gtpo quv'gzv'p'qh'Gxgti ncf gu'P cvkqpcn'Rctm'ny "lpvgpukv { "f gxnqr o gpv'qeewtu'ncpi "Vco lco K'Vtckn" y j lej "ku'lpvgtur gtugf "y kj "uo cmlutwewtgu'ncpi "yj g'tqcf ukf g. 'lpenw lpi "tgetgcvqpcn'ck'dqcvki " qr gtcvqpu'cpf "tcf kq'cpf "o letqy cxg'vqy gtu' "cr r tqzko cvgn' "472'hggv'vcm0'

P CVIQP CN'RCTMUGTXEG'NCPFU'

Vj g'o clqt'ctgcu'qh'xluwnleqpegt' y kj lp'P RU'ncpf u'ctg'ltqo "ck'dqcvki "tqwg'u' "lpenw lpi "yj g'Dnwg" Uj cpv { +: "Uj ctm'Xcng { . "yj g'Ej gnknc'ctgc. "cpf "yj g'N/53P" hxxgg'tqcf. "cf lcegpv'vq' yj g'gcu'v'dqwpf ct { "qh'yj g" GGC0Cu'o gpvqpgf "lp' yj g'0Xkukqt'Wug'cpf "Gzr gtlgpeg" IT getgcvkp "Tguwteguö'ugevkp. "Uj ctm'Xcng { "ku' necevgf "qxgt'37'o kgu'y guv'ltqo "yj g'r tqlgev'ctgc'cpf "lpenw gu'c'vcm'qdugtxcvkp" vqy gt0Vj g'vqy gt'hqmu" qw'cetquu' yj g'Gxgti ncf gu'ncpf "r tqxkf gu'gzc cpukxg'xlgy u'qh'yj g'lwttqwpf lpi "ncpf uecr g' "hki wtg'46-0'



FIGURE 24: SHARK VALLEY OBSERVATION TOWER

Vj gtg'ctg'hqwt'r tkxcvg'cktdqcv'vqwt'eqo r cplgu"
 r tqxkf lpi 'pcwtcrkuv/i vki gf 'tgetgcvkqpcn'y cvgt'vqtu"
 y kj lp'yj g'r ctn0Vj g'xkucn'icpf uecr g'ltqo "yj g'cktdqcu"
 vqtu'ku'cp'ko r qtvcv'cuugv'vq' yj g'r ctn0C'ukg'xkukv'qh"
 gcej "cktdqcv'tqwguc'cpf 'r leple'ctgcu'ugt'xgf'cu'cp"
 kpxgpvqt { "qh'gzkukpi 'xkucn'icpf kkpqu0Xlgy u'ltqo "yj g"
 Dmg'Uj cpv { "c'o clqt'cktdqcv'ecpcn: 'uj qy p'qp'hi wtg"
 47. 'y gtg'gzvgo gn { 'iko ksf 'f wg'vq'j ki j 'xgi gvcvkp'lp"
 yj g'ko o gf kcv'htgi tqwpf "cpf'qp'gkj gt'ukf g'qh'yj g"
 ecpcn0C'uko krt 'uegpg'ku'hqwpf "cv'yj g'gpcv'peg'cpf "gzk"
 qh'gcej "qh'yj g'cktdqcv'f qem'cmqi "Vco kco k'Vtck0Qpeg"
 qw'qh'yj g'lpk'cn'gpcv'peg'vq'gcej "qh'yj g'cktdqcv"
 qr gtcvkpu. 'xlgv u'qh'yj g'icpf uecr g'dgi lp'vq'qr gp'wr 'lp"
 cmf kgevkpu'hi wtg'48-0p'yj g'j gctv'qh'yj g'Gxgti ncf gu"
 vcmgt'xgi gvcvkp. 'wucm { "cuqekcvf 'y kj "j co o qem."
 ctg'uecvgtgf 'yj tqwi j qw'yj g'icpf uecr g'cpf "j cxg'yj g"
 cdkk { "vq'dm'cn'xlgv u'ltqo "cp'cktdqcv.'r ctv'ewrtn { "
 ltqo "yj g'Ecvwg { "cpf 'F vcm'Emd'r leple'ctgcu.'y j lej "
 ctg'r qr wrt 'f gu'pcvkpu'ht'eqo o gtekn'icpf 'lpf kxf wcn'cktdqcv'qr gtcvqtu'cpf 'yj g'qecukqpcn'ecpqkuv0



FIGURE 25: VIEW FROM THE BLUE SHANTY

Vj g'Eqr gtvy p'cktdqcv'qr gtcvkp'ku'yj g'emuguv'cdqwb'6'o kgu'ltqo 'N/53P'ecpcn'tqcf '+vq'yj g'r qv'p'cn'
 eqtkf qtu'cuqekcvf 'y kj 'cp { "cn'gt'pcvkxgu0Hki wtg'48'f gr lew'yj g'gcu/h'ekpi 'xlgv 'ltqo "yj g'Eqr gtvy p"
 cktdqcv'tqwg'cpf 'y kj lp'yj g'Gxgti ncf gu'P cvkqpcn'Retn0Hltqo "yj ku'qdu'gt'x'cvk'p'r qkp'v'xlgv gtu'gpcqwp'vgt"
 gzc'puk'x'xlgv u'qh'yj g'icpf uecr g'cpf "cuqekcvf 'ucy i tcu'o ctuj "eqp'p'w'pi "vy ctf 'yj g'j qtk qp0Qpn { "
 xgt { 'f kncpv'xlgv u'qh'icf k'q'cpf 'eqo o wplecvk'p'vqy gtu'cr r tqzko cvgn { '472'lgg'v'cm'cpf 'f gxgnr gf 'icpf u"

ctg'cxckndng'htqo 'y ku'xlgy r qkp'0Qp'c'engct'f c{ 'y gug'utwewtgu'ctg'o qtg'xkukng'cpf 'ctg'hkngn' 'hguu'
xkukng'qp'cp'qxgtecu'qt'emqwf { 'f c{ 0Vj g'ej ctcevgtkukecm' 'hrcv'qr qi tcr j { 'f qgu'pqv'cmqy 'xlgy gtu'vq"
ceeguu'xcpvc i g'r qkp'w'cdqsg'pqt o cdi tqwpf "uwtceg'gngxcv'kpu'cpf . 'cu'c'tguwn'f kucpv'xlgy u'ctg"
qecucukp'cm' "dmengf 'd{ 'xgi gvc'kqp'lp'v'j g'ko o gf k'vg'htgti tqwpf "qt'o k f f rgi tqwpf 0'



FIGURE 26: EXISTING VIEW EASTWARD FROM WATERWAY WITHIN EVERGLADES

Vj g'Vco kco k'Vtckn'ku'cf lcegp'vq. 'dw'pqv'mqecvgf 'y kj lp'v'j g'r ctn'dw'k'ku'mqecvgf 'cm'pi 'y g'pqt'y gtp"
dqt f gt'qh'v'j g'r ctm'r tqxkf lpi 'uqwj gtn' 'xlgy u'qh'v'j g'Gxgti ncf gu'0E wttgpw' . 'y g'Vco kco k'Vtckn'ku'mqecvgf 'cv'
y g'uco g'gngxcv'kqp'cu'v'j g'r ctn'ly kj 'xgi gvc'kqp'lp'v'j g'htgti tqwpf 'dm'enkpi 'o quv'xlgy u'qh'v'j g'r ctn'="
j qy gxgt. 'y g'3/o krg'dtkf i g'y cu'eqo r ngvgf 'cpf 'qr gpgf 'v'q'tchle'lp'O c{ '4235. 'tgr n'ekpi 'cr r tqzko cvng' "3"
o krg'qh'v'j g'Vco kco k'Vtckn'tqcf y c{ 0Vj g'HRN'eqttkf qt'lp'v'j g'r ctn'idkugew'v'j g'3/o krg'dtkf i g'cdqw'415'qh'c"
o krg'cetqu'k'v'cxgn'pi 'y guv'qp'Vco kco k'Vtckn'0Vj g'dtkf i g'qlhgtu'y kf g. 'gzc'puk'xg'xlgy u'lp'v'j g'r ctn'0'
Hki wtg'49'uj qy u'v'j g'xlgy 'htqo 'y g'dtkf i g. 'y j gp'k'y cu'w'pf gt'eqp'utw'ekqp. 'mqn'kpi 'uqwj gcu'0Vj g'xlgy u'
mqn'kpi 'uqwj 'cpf 'uqwj y guv'ctg'ku'uko kct'lp'pcwtg'v'q'v'j qug'lp'hi wtg'490Vj g'qrf 'tqcf dgf 'w'pf gtpgc'v'j 'y g'
3/o krg'dtkf i g'ku'uej gf wrgf 'v'q'dg'tgo qxgf 'd{ 'Cwi wu'4235'cpf 'y g'tguw'h'ekpi 'qh'v'j g'tgo cklpi ", 0'o krgu"
qh'v'j g'Vco kco k'Vtckn'dqt f gtlpi 'y g'Gzc'puk'qp'CTgc'ku'v'q'dg'eqo r ngvgf 'lp'F gego dgt'42350'

Vj g'Ej gnkne'ctgc'qh'Gxgti ncf gu'P cvkqpen'Rctn'ku'mqecvgf 'cr r tqzko cvng' "33'o krgu'uqwj 'qh'Vco kco k'Vtckn'
cpf 'f guetldgf 'hwt'v'j gt'w'pf gt'Xkukqt 'Wug'cpf 'Gzc'gtl'gpeg'TT getgcv'kqp'Tguqtegu'0K'ku'kf gp'w'htgf 'cu'c'MQR"
y kj lp'v'j g'uwwf { 'ctgc'0Ej gnkne'ku'c'rti g'j co o qem'v'j cvlpenw' gu'y gm'guv'cdnkj gf 'xgi gvc'kqp'qh'bo cwtg"
vtgg'uc'p'f'qy gt'j co o qem'xgi gvc'kqp. 'o cni'kpi 'y g'ctgc'xkucm' 'ku'q'ecvgf 'htqo 'y g'uwt'qwpf lpi 'h'cpf uecr g0'
UY '459'Cxgpw'g'cp'ceeguu'tqcf 'lp'v'j g'r ctn'ku'v'cxgn'f 'd{ 'dle{erkuu. 'twppgtu. 'huj gto gp. 'cpf 'y cmgtu'0'
I gpgtcm' { 'qr gp'xkucu. 'lp'cnif k'ge'v'kpu. 'ctg'r quukng'htqo 'y ku'tqcf y c{ 0Ci ckp. 'i kxgp'v'j g'hrcv'qr qi tcr j { "
cpf 'xgi gvc'kqp. 'mqpi 'xkucu'ctg'qh'ngp'dmengf 'd{ 'xgi gvc'kqp'qt'dw'kf lpi 'lp'v'j g'htgti tqwpf 'cpf 'o k f f r g"
i tqwpf 0'Hki wtg'4: 'y cu'v'cngp'htqo 'y g'ceeguu'tqcf 'v'q'Ej gnkne'mqn'kpi 'gcu'0'

RtKCVG'CPF'UVCVG'NCPFU'

Rt kcvg'Ncpf u'

Vj g'o clqtk\ 'qh'r tkxcvg'ncpf u'ctg'mqecvgf 'dgy ggp'N/53P "ecpcntqcf "cpf 'UY "379vj 'Cxgpwg.'vj g'i gpgtcn' mqecvqp'qh'vj g'ctgc'qh'r quukdr'gmqecvgf "eqttkf qt0Rt kxcvg'ncpf u'lp'vj ku'ctgc'ctg'lpvgtur gtugf 'y kj 'ucvg' ncpf u.'y kj 'c'j ki j gt'eqpegpvcvqp'qh'ucvg'ncpf u'emugt 'q'UY "379vj 'Cxgpwg0Cffklqpcn\ .'vj g" Oleequwngg'Tguqtv'cpf 'vj g'Gxgti ncf gu'Eqtgcvqpnci'kpukswg'ctg'mqecvgf "qp'r tkxcvg'ncpf u'cpf "qh'h'qh'vj g" Vco kco K'Vtckl'cpf 'vj g'N/53P "ecpcntqcf 0Vj g'eqttgcvqpnci'kpukswg'kugrh'ku'lqkpw\ "qy pgf 'd{ 'vj g'WUCEG." vj g'Ucvg'qh'Hqtkf c.'cpf "O kco kFcf g'Eqwpv\ ."ceeqtf lpi "q'r ctegnf cvc0'

Ucvg'Ncpf u'

Vj g'HHY EE'cf o kpxgtu'vj g'Hicpeku'UOVc{ nqt'Y kfnkg'O cpci go gpv'ctgc "ncpf 'ku'qy pgf 'd{ 'UHY OF +." y j lej 'ku'mqecvgf "qp'vj g'pqtj 'ukf g'qh'Vco kco K'Vtck0Vj g'Hqtkf c'Ucvg'F gr ctwo gpv'qh'Gpxktqpo gpvcn' Rtqvgcvqp'qy pu'xctkqu'eqpugtxcvqp'ncpf u'dgy ggp'Mtqo g'Cxgpwg'cpf "379vj 'Cxgpwg0Vj gug'ctg" kmwutcvgf 'lp'hki wtg'450Hki wtg'4; "uj qy u'xkgy u'pgct'vj g'pqtj y guvgt'eqtpgt'qh'Vco kco K'Vtckl'cpf 'N/53P " ecpcntqcf 0Htqo "vj ku'qdugtxcvqp'r qlpv'f kucpv'xkgy u'ctg'cxckrdng'hqt "c'pqtj gtp'r qtvqp'qh'vj g'r ctm'cpf " uqwj gtp'r qtvqp'qh'ncpf u'qy pgf 'd{ 'vj g'HHY EE0HHY EE'ncpf u'ctg'mqecvgf "pqtj "qh'Vco kco K'Vtckl'p" Y EC'5C"cpf '5D0P RU'ncpf u'ctg'mqecvgf "uqwj "qh'Vco kco K'Vtck0Vj g'ncpf uecr g'qqr qi tcr j { 'ku'ncv0Vj g" ctgc'ewttgpv\ 'lpenf gu'lpf wutkn'eqo r qpgrp'u' y kj lp'c'rti gt'pcwtn'ncpf uecr g'f wg'q'vj g'gzkukpi "s wett { " qr gtcvqp'uqwj "qh'vj g'j ki j y c{ 0K6 o gf kcvgn\ "xkukdr'lp'vj g'hqti tqwpf "ctg'xctkqu'eqo r qpgrp'u'qh'gzkukpi " wkrk\ 'lphctutwewt g.'lpenf lpi "c'eqo o wplecvqp'u'qy gt. 'vgrgr j qpg'hkpgu'cpf "tcpuo kuukqp'hkpgu0'

Hki wtgu'52"cpf '53'f gr lev'vj g'r wdike'xkgy r qlpv'hqo "vj g'N/53P "ecpcntqcf "cv'vj g'gcuvgtp/o quv'gf i g'qh' Gxgti ncf gu'P cvkqpcn'Rctn0Htqo "vj ku'qdugtxcvqp'r qlpv'emug'xkgy u'qh'Gxgti ncf gu'P cvkqpcn'Rctn'ctg" cxckrdng'q'vj g'y guv'cpf "HHY EE'ncpf u'ecp'dg'uggp'lp'vj g'f kucpeg'pqtj "qh'Vco kco K'Vtck0O cpo cf g" utwewtgu'ctg'tgcf kn\ 'xkukdr'qp'vj g'ncpf uecr g'cpf 'lpenf g'c'eqo o wplecvqp'u'qy gt'cpf 'wkrk\ 'hkpgu'cmqpi " Vco kco K'Vtck0Vj g'qqr qi tcr j { 'ku'ncv'cpf 'vj gtg'ctg'hgy "qy gt'dwkrf lpi u'qp'vj g'ncpf uecr g'0Nqy 'i tqy lpi " vtgg'u'cpf 'uj twdu'lp'vj g'hqti tqwpf "j cxg'vj g'cdkkr\ "q'uj kgrf 'xkgy u'q'uqo g'gzvgr0'

"



FIGURE 27: EXISTING VIEW FROM 1-MILE BRIDGE (TAMIAMI TRAIL) LOOKING SOUTHEAST

"

Ej cr vgt"5<Chgevgf"Gpxktqpo gpv"

"



FIGURE 28: EXISTING VIEW FROM CHEKIKA AREA LOOKING EAST



FIGURE 29: EXISTING VIEW WESTWARD FROM TAMIAMI TRAIL AT WESTERN EDGE OF STATE LANDS



FIGURE 30: EXISTING VIEW NORTHWARD ON L-31N CANAL AVENUE AT EASTERN EDGE OF NPS LAND

"



FIGURE 31: EXISTING VIEW WESTWARD ON L-31N CANAL AVENUE AT EASTERN EDGE OF NPS LAND

"

Ej cr vgt"5<Chgevgf"Gpxktqpo gpv"

"

Y KFGTPGUU'

kp'3; 9: . 'Eqpi tguu'f guki pcvgf 'crrrtqzko cvgn' , 5'r gtegpv'qh'ctgc'y kj kp'y g'r ctm'cv'y g'vko g'cu'y g' ðGxgti rcf gu'Y kf gtpguu'ð'Vj g'ctgc'y cu'tgpcgo gf 'y g'ðO ctiqt { 'Uqpggo cp'F qwi ru'Y kf gtpguu'Ctgcð'kp' 3; ; 9'*RN'327/: 4+'lp'j qpqt'qh'y g'hco qwu'Gxgti rcf gu'cev'xku'0Vj g'y kf gtpguu'eqpv'cpu'3.4; 8.722'cetgu' *746.8: 8'j gevctgu+'qh'y g'r ctm'u'v'cn'3.72; .222'cetgu'*832.893'j gevctgu+'cpf 'ku'y g'rti gu'y kf gtpguu'ctgc' gcuv'qh'y g'Tqen'gu'0Vj gug'rcpf u'ctg'pqy 'uj kgrf gf 'htqo 'f g'xgr o gpv'gpetqcej o gpv'cpf 'ctg'o cpci gf 'vq' r tqv'ev'y g'htq'c'cpf 'h'wpc'qh'y g'Gxgti rcf gu'gequ'ungo 0Vj g'y kf gtpguu'kpen'f gu'o quv'qh'y g'r ctm'u' wpf g'xgr gf 'rcpf u'cpf 'krcpf 'y cvgtu.'cpf 'gzv'pf u'q'w'kp'q'htq'kf c'Dc { 'cu'wdo gti gf 'y kf gtpguu'0

Cv'y g'uco g'vko g'y cv'y kf gtpguu'y cu'qtki kpcmf 'f guki pcvgf 'y kj kp'Gxgti rcf gu'P cvkqpcn'Rctm': 3.; 22'cetgu' *55.366'j gevctgu+'kp'ugxgtc'n'ctegn'y gtg'f guki pcvgf 'ðRq'v'p'cn'Y kf gtpguu.ð'o gcpkpi 'y g' 'y qwf 'dg' eqpxgt'v'f 'vq'y kf gtpguu'k'ht' 'y j gp'p'q'eqphqto kpi 'wugu'gpf 0kp'y g'lpv'gko . 'y gug'rcpf u'ctg'o cpci gf 'vq' r tqv'ev'y g't' 'y kf gtpguu'ej ctcevt'0Gz'k'kpi 'y kf gtpguu'cpf 'r q'v'p'cn'y kf gtpguu'ctgc'u'ctg'o cpci gf 'w'pf gt' 'y g'Y kf gtpguu'Cev'qh'3; 86. 'y g'r ctm'u'3; 9; 'O cvgt 'Rrcp.'P RU Management Policies 2006.'cpf 'y g' Gxgti rcf gu'P cvkqpcn'Rctm'Dcene'q'v'p't { 'O cpci go gpv'Rrcp'*P RU'3; ; 3+0Hki wtg'54'q'w'k'p'gu'y g'r ctm'u' f guki pcvgf 'cpf 'r q'v'p'cn'y kf gtpguu'ctgc'u'0C'y kf gtpguu'g'ri k'k'k'k'f 'cu'guu' gpv'ht' 'y g'GGGC'ku'ewt'g'p'v'f { 'r tq'lg'ev' w'pf gty c { 'cu'r ctv'qh'y g'r ctm'u'I gp'g'tcn'O cpci go gpv'Rrcp'T'Gcu'Gxgti rcf gu'Y kf gtpguu'Uwf { 'r tq'lg'ev' uej gf w'gf 'vq'dg'eqo r r'v'v'f 'kp'42360C'f k'ue'w'k'q'p'q'p'y kf gtpguu'kp'y cv'ur gek'le'q'ec'v'k'p'cu'y g'm'cu'c'h'ki wtg' f kur n { kpi 'r q'v'p'cn'f 'g'ri k'k'g'y kf gtpguu'ctg'r tq'x'kf gf 'ugr ct'cv'gn' 'y kj kp'y g'ðY kf gtpguu'ð'f k'ue'w'k'q'p'0

Vj g'Y kf gtpguu'Cev.'r cu'gf 'qp'Ugr vgo dgt'5.'3; 86.'gu'cd'k'ij gf 'c'p'cv'k'p'cn'y kf gtpguu'r t'g'ug't'x'cv'k'p'u'f u'ngo . " ðcf o k'p'k'ng't'gf 'ht' 'y g'w'ug'cpf 'gplq { o gpv'qh'y g'Co g't'k'ecp'r gqr r'g'kp'uw'ej 'o c'p'p'gt'cu'y k'n'ig'cxg'y go " w'pko r ckt'gf 'ht' 'h'w'wt'g'w'ug'cpf 'gplq { o gpv'cu'y kf gtpguu.'cpf 'u'q'cu'v'q'r tq'x'kf g'ht' 'y g'r tq'v'ev'k'p'qh'y gug' ctgc'u.'y g'r t'g'ug't'x'cv'k'p'qh'y g't' 'y kf gtpguu'ej ctcevt.'cpf 'ht' 'y g'i cvj g'tkpi 'cpf 'f'ku'go k'p'cv'k'p'qh' k'p'ht'o cv'k'p't'gi ctf kpi 'y g't' 'w'ug'cpf 'gplq { o gpv'cu'y kf gtpguu'ð'38'WUE'E'3353+00 cpci go gpv'y k'n'k'p'cn'f g' y g'r tq'v'ev'k'p'qh'y gug'ctgc'u.'y g'r t'g'ug't'x'cv'k'p'qh'y g't' 'y kf gtpguu'ej ctcevt.'cpf 'y g'i cvj g'tkpi 'cpf " f'ku'go k'p'cv'k'p'qh'k'p'ht'o cv'k'p't'gi ctf kpi 'y g't' 'w'ug'cpf 'gplq { o gpv'cu'y kf gtpguu'*P RU'4228c.'uge'080B+0P RU' o cpci go gpv'r q'k'ek'gu'c'r r'nf 'vq'g'ri k'k'g.'uw'f { . 'r tq'r qu'gf . 't'geqo o g'p'f gf . 'cpf 'f guki pcvgf 'y kf gtpguu.' t'gi ctf r'guu'qh'ec'v'gi qt { '*P RU'4228c.'uge'080B+0B+0'

Y KFGTPGUUEJ CTCEVGT''

Y kf gtpguu'ej ctcevt'ku'kf gcm'f 'f guet'k'd'gf 'cu'y g'w'p'ks w'g'eqo d'k'p'cv'k'p'qh'*3+'p'cw't'cn'g'p'x'k'q'p'o gpw'y cv'ctg' t'g'r'v'x'gn' 'ht'gg'ht'qo 'o qf gtp'j wo cp'o c'p'k'r w'v'k'p'p'cpf 'ko r ceu'w'4+'q'r r q't'w'p'k'k'gu'ht' 'r g'tu'q'p'cn'g'z'r g't'k'g'p'egu' kp'g'p'x'k'q'p'o gpw'y cv'ctg't'g'r'v'x'gn' 'ht'gg'ht'qo 'y g'g'p'ewo d't'c'p'egu'cpf 'u'ki pu'qh'o qf gtp'u'q'ek'g'v' = 'cpf " *5+'u'f o d'q'k'e' o g'c'p'k'pi u'qh'j wo k'k'v'f . 't'g'ut'c'k'p'v.'cpf 'lp'v'gt'f g'r g'p'f g'p'eg'kp'j qy 'lp'f k'x'k'f w'cu'cpf 'u'q'ek'g'v' 'x'lg'y " y g't' t'g'r'v'k'p'uj k'r 'vq'p'cw't'g'*N'c'p'f t'gu'g'v'cn'0422: +0Wukpi 'y g'f g'h'k'p'k'k'p'qh'y kf gtpguu'ht'qo 'U'g'ev'k'p'4'*e+'qh' y g'Y kf gtpguu'Cev'qh'3; 86.'h'q'w't's w'c'k'k'gu'qh'y kf gtpguu'o c'ng'ku'kf g'c'rk'f gf 'ej ctcevt't'g'r'g'x'c'p'v.'cu'h'q'm'y u' *N'c'p'f t'gu'g'v'cn'0422: +<

- **W'p'v't'co o g'rg'f ð** Y kf gtpguu'ku'gu'g'p'v'k'cm'f 'w'p'j k'p'f g't'gf 'cpf 'ht'gg'ht'qo 'y g'cev'k'p'u'qh'o qf gtp'j wo cp' eq'p't'q'n'q't'o c'p'k'r w'v'k'p'p'0
- **P'c'w't'cn'ð** Y kf gtpguu'ge'q'm'i k'ec'n'u'f u'ngo u'ctg'u'w'd'u'c'p'v'k'cm'f 'ht'gg'ht'qo 'y g'g'h'g'ew'qh'o qf gtp'j ek'x'k'k'f cv'k'p'0

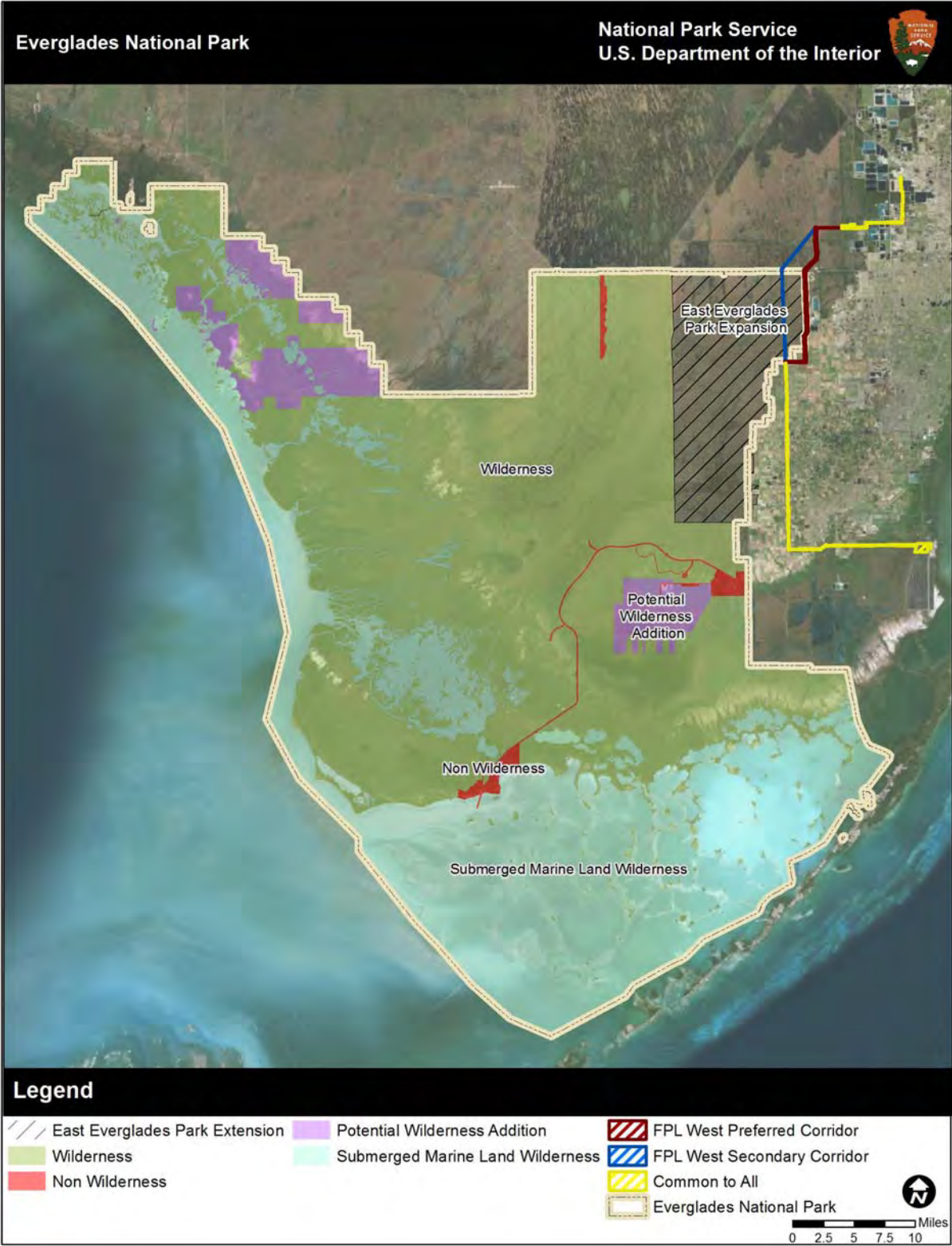


FIGURE 32: DESIGNATED WILDERNESS IN EVERGLADES NATIONAL PARK

- **Wpf gxnqr gf ô** Y kf gtpguu'tgvpku'ku'r tko gxcnlej ctcevg't'cpf 'lphwpeg.'cpf 'ku'guugvkcni' 'y kj qw' r gto cpgpv'ko r tqxgo gpv'qt'o qf gtp'j wo cp'qeevr cvkqp0'
- **Uqkwwf g'qt 'Rt ko kxg't'cpf 'Wpeqphkpgf 'Tget gcvkqpô** Y kf gtpguu'r tqxkf gu'qwuvcpf kpi " qrr qtwpkngu'ht'qurkwwf g'qt'r tko kxg'cpf 'wpeqphkpgf 'tgetgcvkqp"*Ncpf tgu'gv'cn0422: +0

Vj g'ctgc'o c{ "cnuq'eqpvk'p'geqni lecn'i gmqi lecn'qt'qj gt'hcwttgu'qh'uekpvkhe."gf wecvkqpcn'uegple."qt" j kvqtkecn'xcnwg0'

Wpvtco o grgf "

J kvqtkecn{.'y g'rti gt'Gxgti ncf gu'ctgc'j cu'dggp'j gxcni' 'o cplr wrcvf 'y kj 'cp'lpvtecvg'ugtgu'qh'ecpcni." nrgxgu."cpf 'f'clpci g'u{ ugo u'lp'cp'cwgo r v'q'f'clcp'y g'y cvgt{ 'ncpf uecr g0Gzr cpf gf 'f'tgf i kpi 'gh'htu" dgy ggp'3; 27"cpf'3; 32"tcpuhtgo gf 'rti g'tcew'htgo 'y gwpf 'q'ci tlewnwtcn'ncpf 0Cu'y g'Uqwj 'Hqtkf c" tgi kpp'i tgy .f'gxgnr gtu'ew'o qtg'ecpcni."dwk'p'gy 'tqcf u'cpf 'tgo qxgf 'o cpi tqxgu'htgo 'y g'uj qtgnkpgu" cpf 'tgr nregf 'y go 'y kj 'r cm 'tgg0Ecpcni."tqcf u'cpf 'dwk'kpi u'i tcf wcm{ 'f'kur nregf 'pcvkg'j cdkcw0Chgt" y g'f'guk'pcvkp'qh'y g'r ctnlk'3; 69."o wej 'qh'y g'f'tgf i kpi 'lpuk'g'y g'r ctnluqr r gf."dw'y g'Egpcn'ncpf " Uqwj 'Hqtkf c'r tqlgevô 'q'dw'k'cp'grcdqtcvg'u{ ugo 'qh'tqcf u'ecpcni."nrgxgu."cpf 'y cvgt/eqpvtn'utwewtgu" utgvej kpi 'y tqwi j qw'Uqwj 'Hqtkf cō gpwtgf 'eqpvkpwgf 'qwu'kf g'cngtcvkpu'y cv'ukni'ko r cev'y g'r ctni" *P RU422; d+0Vqf c{.'j wo cp'lpvtxgpvkp'ku'tgs wktgf 'q'w'pf q'qt'o kki cvg'o cp{ 'j { f tqni le'ej cpi gu'y cv' j cxg'cngtgf 'y g'pcwtcnj { f tqni le'tgi ko g0J wo cp'lpvtxgpvkp'ku'cnuq'tgs wktgf 'q'eqpvtn'y g'kpxcuk'g" pppcvkg'r ncp'v'cpf 'cpko cn'ur gelgu'y cv'j cxg'cnpg'j qrf 'lp'y g'Gxgti ncf gu0'

Vj g'o cplr wrcvkp'qh'geqni lecn'u{ ugo u'lp'y g'r ctnlk'p'kpi gu'w'qp'y g'wpvtco o grgf 's wrcvku'qh'ku" y kf gtpguu'ctgcu."cpf 'Gxgti ncf gu'P cvkqpcn'Rctm'j cu'o wnr ng'r ncpu'q'tguvgtg'pcwtcn'eqpf kkp'u'q'y g" r ctm'lpnw'kpi 'y g'hmqy kpi <

- **Hktg'o** cpci go gpv'r ncp"
- **Gzqve**'xgi gcvkqp'o cpci go gpv'r ncp"
- **Ego r tgi gpuk'g'Gxgti ncf gu'Tguvgtcvkqp'Rcp'***EGTR+"
- **O qf hkgf** "Y cvgt 'F grk'gtkgu'q'y g'Gxgti ncf gu'P cvkqpcn'Rctm'*O Y F +r tqlgev0'

Cnj qwi j 'y gug'r ncpu'o c{ 'lpetgcug'qt'tgr nreg'qj gt'htgo u'qh'tco o gnikpi . 'k'ku'cnuq'cpvke'cvgf 'y cv'y g" ko r tqxgo gpw'q'pcwtcn'lej ctcevg't'y kn'qwy gli j 'y g'pgi cvkg'ko r ceu'qh'eqpvkpwgf 'tco o gnikpi 'cpf " wnk0 cvgn{ 'ko r tqxg'qxgtcn'y kf gtpguu'ej ctcevg't0'

Vj g'hktg'o cpci go gpv'r ncp'cpf 'gzqve'xgi gcvkqp'o cpci go gpv'r ncp'f'gcn'f'kgevn{ 'y kj 'o cplr wrcvkp'qh'y g" r ctnu'geqni lecn'u{ ugo u'y kj 'y g'clo 'qh'tguvgtkpi 'pcwtcn'eqpf kkp'u0Vj g'EGTR'cpf 'y g'O Y F 'r tqlgev" kpxqmg'y qtnidg{ qpf 'y g'r ctnidqwpf ct{ 'y cv'j cxg'y g'r qvgpvkcn'q'i tgcvn{ 'ko r cev'y g'eqpf kkp'u'y kj lp'y g" r ctn0'

Pcwtn'

Pcwtn'u{ ugo u'gzkukpi 'y kj lp'y g'y kf gtpguu'ctgc'lpnw'g'pcwtcn'htqcn'ncpf 'hcwpcn'r qr wrcvku" uwr r qtvf 'd{ 'j { f tqni le'hny 'cpf 'hktg'tgi ko gu'y cv'o clpvk'p'gs wkrdtkwo 'eqpf kkp'u'y kj lp'y g'r ctn0' O wej 'qh'y g'r ctnu'f'guk'pcvgf 'y kf gtpguu'o clpvkpu'ku'pcwtcn's wrcv{ 0Vj g'lpvgtkqt'qh'y g'r ctm'lp" r ct'lewnwt. 'ht'htgo 'y g'lpnwpeg'qh'tqcf u'qt'f'gxgnr o gpv'ncpi "Vco lco k'Vtckn'qt'y g'O clp'Rctm'Tqcf ." ecp'dg'f'guetkdgf 'cu'pcwtcn0J qy gxgt.'y j krg'y g'lpvgi tkf 'qh'y gug'pcwtcn'u{ ugo u'tgo clpu'lp'cev'ht" kpgtkqt'ctgcu'qh'y g'r ctm'f'kuw'dcpegu'q'y gug'gs wkrdtkwo 'eqpf kkp'u'j cxg'qeevttgf 'cu'c'tguwn'qh" f'gxgnr o gpv'cv'y g'gf i gu'qh'y g'r ctn'wpk'v'cpf 'cv'y g'rti gt'y cvgtuj gf 'hgxgn0Hqt'y g'r wtr qugu'qh"

ci tlewmwtcnlr tqf wevwxk\ . 'hmqf "eqpvtqn"cpf 'y cvgt'uw r n\ . 'y g'rti gt'y cvgtuj gf "gpeqo r cuukpi 'y g'r ctnij cu" dggp "ftco cvkcm\ 'tg/gpi kpggtgf 'htqo 'ku'pcwtcnlucvg0Vj g'eqpwtwevqp'qh'ecpcnu'cpf 'hmqf "eqpvtqn" utwewtgu."cpf 'y g'rti g/uecrg'f tclpci g'qh'y gvcpf u."j cu'cngtgf 'y g'pcwtcnj { f tqmji lecdleqpf kkpqu0Y j kg" y g'g'cngtcvqp'qh'y g'pcwtcnj { f tqmji { "j cxg'o cf g'k'r quukdg'v'uw r qtv'rti g'vtdcp'egpvtu'cpf "j ki j n\ " r tqf wevwxg'ci tlewmwtcnlctgcu."f k gev'ghgeu'j cxg'kpenmf gf "f kutw vqpu'v'qt'grko kpcvqp'qh'qxgtncpf "uj gg'v' hmq u."ej cpi gu'lp'y g'qecvqp'cpf 'vko kpi "qh'hmqy u."cpf 'r gto cpgrp'hmqf kpi 'lp'uo g'ctgcu'cpf 'r gto cpgrp' f tclpci g'qh'qy gtu0lpf k gev'ghgeu'j cxg'kpenmf gf "rpf 'uwdkf gpeg."cdpqtto cnhktg'r cwgtpu."cpf 'y kf gur tgc'f " ej cpi gu'lp'xgi gcvqp'cpf "cpko cnleqo o wpxkgu0Rqt vqpu'qh'y g'r ctnipqy "hmqf "o qtg'f ggr n\ "f vtlpi 'y g" tclp { "ugcuqp'cpf 'ctg'f tktg'f vtlpi 'y g'y kpgt0Cu'c'tguwv'cnj qwi j "pcwtcnlktgu'ctg'v'r kecnlp'uruj "r kpg" cpf 'e' r tgu'eqo o wpxkgu."r gtlkf le'f tqwi j w'gzcegtdevg'f d { "cngtcvqp'v'r ctnij { f tqmji { "o c { "kpetgcug'y g" tkun'qh'hktg0Epcnu'ecp'cnq'ugt'xg'cu'j cdkcw'cpf "o qxgo gpv'eqtktf qtu'hqt'kpxcuk'g'pappcvk'g'r rcpw'g0 0" j { f tknc'cpf 'y cvgt'j { celkvj +cpf "cpko cni'g0 0"elej kf u'cpf "uckhlp'ecvkvj +y cvko r cev'Gxgti ncf gu" gequ'ungo u"*P RU'4235c-0Hqt'lpucpeg."y g'pcwtcnlhwpcnu'ungo "qh'y g'r ctnij cu'dggp'f tco cvkcm\ " chgevgf "d { "y g'Dwto gug'r { y qp'cpf "qy gt'gzq'le'upcngu0C'tgegpv'uwf { "uwi i gungf "y cvuo cni'o co o cni r qr wcvkpu'j cxg'i tgcw\ "f genkpgf "f wg'v'upcng'r tgf cvkqp0

Wpf gxgrqr gf "

O wej "qh'y g'r ctni'f guki pcvgf 'y kf gtpgu'ku'rti gn\ "wpf gxgrqr gf 0Vj g'y kf gtpgu'y cvgtu c { "vtxgtugu" rti g'ur cpu'qh'y g'r ctnij cv'ctg'tgrvkg' "htgg'htqo "f gxgrqr o gpv'cpf 'tgo clp'lp'y gk'pcwtcnlucvg0

Kp'y g'r ctm'y kf gtpgu'ctgcu'o c { "kpenmf g'hcekkgu'uwej "cu'o ctnigf "vcknu."eco r ukgu."vqkrgu."cpf "uki pu0 Uwej "utwewtgu'ctg'cu'eqo r cvkdg'cu'r quukdg'y kj "y gk'utwtqwpf kpi u'cpf "ctg'v'r kecn\ 'tgo qxgf 'y j gp'pq" nqpi gt'pggf gf 0F wg'v'v'j g'j kvqt { "qh'j wo cp'qeev cvkqp'cpf "f gxgrqr o gpv'lp'y g'tgi kqp."y kf gtpgu'ctgcu'lp" y g'r ctni'o c { "kpenmf g'tgo pcpv'utwewtgu'qt'gxkf gpeg'htqo "dghqtg'f guki pcvqp."uwej "cu'ecpcnu."hgxgu."qt" ci tlewmwtcnlctgcu0

Vj gtg'ctg'crr tqzko cvgn\ "472"outwewtgu0"tgrvkg' "uo cni'r kgegu'qh'gs wkr o gpv."uo g'gpenugf "lp'c'o gxcn' dqz'cpf "uo g'ceegu'f "d { "c'uo cni'dqctf y cni'qt'r nvhqto "lp'j ctf /vq/ceegu'qecvqp'u'y kj lp'y g'r ctni' " y kf gtpgu'ctgcu0Vj gtg'ctg'cnuq'o cp { "tgugetej "r nqv'y cv'ctg'o ctnigf "y kj "uvcngu."r quu."vci u."gve0Vj ku" gs wkr o gpv'ku'wugf "hqt'tgugetej "cpf "o qpkktpi "r tko ctk\ "lp'htguj y cvgt'cpf "o ctkpg'gpxktqpo gpw'hqt'c" y kf g'tcpi g'qh'uelgpv'he"cpf "tguqweg'o cpci go gpv'r wtr qugu"g0 0"v'lp'xgunki cvg'y cvgt's wcrk\ "qt'o qpkkat" y tgcvgpgf "cpf "gpf cpi gtgf "ur gelgu."xgi gcvqp."qt'j cdkcw0

Vj g'uwf { "0CktdqcvQTX"Vtckl'kpxgpvt { "hqt'y g'Gcu'Gxgti ncf gu'Cff kkp"Ncpf u0"WPkxgtuk\ "qh'I ggti k" 4228+o crr gf."ercuukhgf."cpf "kpxgpvtkgf "cktdqcv'cpf "qh'htqcf "xgj kerg'vcknu'lp'y g'Gcu'Gxgti ncf gu" Cff kkp'htqo "3; ; ; "cgtkcnl'o ci gt { 0Vj g'uwf { "f qewo gpvgf "gxkf gpeg'qh'uwducpv'kcn'cktdqcv'cevwxk\ "lp'y g" pqt'y gtp'j cni'qh'y g'Cff kkp00K'cnuq'eqo r ctgf "cktdqcv'vcknu'y cv'y gtg'gxkf gpv'lp'y g'3; ; ; "cgtkcnl'j qvqu" y kj "vcknu'gxkf gpv'lp'cgtkcnl'j qvqu'cngp'lp'3; ; 6"cpf "4225."cpf "f gvgto kpgf "y cv'cktdqcv'vcknu'ctg'f genktpi " qxgt'vko g0

Cktdqcv'wug'hqt'cf o kpkv'cvk'g'cpf "tgugetej "r wtr qugu'qeev'u'qp'uo g'qh'y g'cktdqcv'tqwg'u'y kj lp'y g'Gcu' Gxgti ncf gu'cpf "qp'c'ho ksf "pwo dgt'qh'qy gt'tqwg'u'lp'qy gt'ctgcu'qh'y g'r ctni'v'uw r qtv'qr gcvkqpcn" uelgpv'he."cpf "tguqweg'o cpci go gpv'pggf u0Cff kkp'cni'o qvqt'k gf "gs wkr o gpv'wug'lp'y g'GGGC'kpenmf gu" j gtleqr vgtu."cm/vgttclp'xgi kergu"CVXu+."6 6"xgi kergu."cpf "uy co r "dwi i lgu0

Qwuwcpf lpi 'Qr r qt wplkku' hqt 'Uqrlwř g'qt 'Rt lo kłkg. 'Wpeqphkpgf 'Tget gcwkp'

Rt lo kłkg*ppqo qvqtł gf +hqt u"qh'tgetgcwkp"ctg"cmqy gf "lp'y kř gtpguu0Cv'Gxgti rcf gu'P cwłqpcn'Rctm" vj g'g'łpenwř g'j křkpi . "ecpqgkpi . "cpf "h{ cñkpi 00 ctnřf "y cřgt"vcku'ctg'r tqxł gf "hqt"ppqo qvqtł gf "dqcvgtu0 Vj g"; ; /o křg'łpi "y kř gtpguu'y cřgt y c{ "r tqxł gu'gzvřpkxg'qr r qt wplkku' hqt "uqrlwř g'cpf "r tlo kłkg" tgetgcwkp"gxgp"vj qwi j "eqpukvřpvj kj "vj g'r ctnu'uwdo gti gf "o ctkpg'y kř gtpguu'f guki pcwkp. "o qvt "dqcv" wug'ku'cmqy gf 0Cff kłqpcm{ . "vj gtg'ctg"pwo gtqwu'qr r qt wplkku' hqt "dcenęqwpv{ "eco r lpi "cv'kuqřvřf "cpf " r tlo kłkg'łksgu. "r tlo ctkł "lp"vj g'uwj gtp"cpf "y guvgtp"r qt wkpuph'vj g'r ctn0

J wo cp/ecwugf "uqwpf "ecp"dg"cp"wpv cpvřf "łpvwukp"łpv"vj g'uwřwř g'qh'vj g'r ctn0Vj g'g'uwřwř u'ctg"uwcm{ " eqphkpgf "v'f gxgnř gf "ctgcu. "r qr wřt "ckdqcvpi "łp"vj g'Gcu'Gxgti rcf gu+"cpf "dqcvpi "ctgcu. "eco r i tqwpf u. " cpf "cñpi "o clqt "tqcf u0Uqwpf "řxgu'xct{ "ceeqtf lpi "v'vj g'ugcuq. "tgnvpi "v'vj g'pwo dgt "qh'r ctnłkukqtu0 Htqo "Qevdgt"422: "vj tqwi j "Cr tkl422; . "vj gtg'y gtg'o qtg'vj cp"38.722"dcenęqwpv{ "xkukqtu. "eqo dłpgf . "lp" vj g'Hco lpi q"cpf "I wh'Ecu'f kntkw*P RU'4235c-0J wo cp/o cf g'uwřwř u'cnuq"qeev "cu'c'tguwł'qh" j gřeqr vřt "cpf "łzgf /y lpi "qxgřłki j w'wpf gtvcnřp"d{ "r ctnłr gtuppgřłhqt"vj g'r wř qug'qh'ej genkpi "cpf " ugtxłkpi "tguętej "łpucnřwkp. "o qpkqtłpi "y kř řłg. "cpf "eqpf wvpi "łk"o cpci go gpv0Ckđdqcw'ctg"cnuq" wugf "hqt"vj g'g'r wř qugu0P qkug'r tqf wřf "łtqo "vj g'g'cf o łpukcwłg"cpf "tguętej "cv'xkukqtu'ku'pqv'eqphkpgf " v'vj g'o clqt "xkukqt"uwg"ctgcu. "dw'qeev u'łp"vj g'y kř gtpguu'kuğř "chęevpi "qr r qt wplkku' hqt "uqrlwř g" y kj lpi "vj g'pcwłqpcn'r ctn0łk"422; "vj g'r ctnłtęqtf gf "o qtg'vj cp"5.222"j gřeqr vřtu'řpf lpi u'łp"vj g'r ctnu" f guki pcvřf "qt"r qvřpkřły kř gtpguu'ctgcu*P RU'4235c-0P qpřvj gřgu. "qr r qt wplkku' hqt "uqrlwř g'cdqwpf " y kj "pgctł "30"o křkpi "cetgu'qh'y kř gtpguu'łp"vj g'r ctn0

Gcu'Gxgti rcf gu'Y kř gtpguu'Gřł kłkł 'Cuęuo gpv'

Vj g'Y kř gtpguu'Cev'tgi wřwkpup"łp"vj g'Eqf g'qh'Hęf gtclTgi wřwkpup*EHI +*Vkrę"64'Rwdřł"Ncpf u" łpvřkt. "Rctv3; "Y kř gtpguu'Rt guřxcwkp+. "UętgvtclłQtł gt"4; 42. "cpf "P RU'Management Policies"2006" tgs włg'y cvP RU'tgxłęy "tqcf řguu"cpf "wpf gxgnř gf "ctgcu. "łpenwř lpi "pgy "ctgcu"qt "gzr cpf gf "dqwpf ctku. " y kj lpi "vj g'pcwłqpcn'r ctnu{ uęo "v'f gvęto łpg'y j gy gt "vj g{ "ctg'uwkcdř"qt "pqv'uwkcdř" hqt "r tguřxłpi "cu" y kř gtpguu*P RU'4228c-0

Vq'ucwłh{ "vj g'g'tgs włgo gpw. "vj g'r ctnłj cu'r tgr ctgf "cp"Gcu'Gxgti rcf gu'Y kř gtpguu'Gřł kłkł " Cuęuo gpv'łp'eqplwřwkp'y kj "ku'pgy "I gpętcłO cpci go gpv'Rřp"TGcu'Gxgti rcf gu'Y kř gtpguu'Uwř { "T Gpxłqpo gpv'łk r cev'Ucvgo gpv'y j lej "ku'ęwtgpwł "łp"r tgr ctcwkp*P RU'4235c-0Dcuřf "qp"vj g" Y kř gtpguu'Cev'Uęevkp"4*ę+gřł kłkł "etłętk"cpf "P RU'Management Policies 2006. "cr r tqzko cvęł " 324.322"cetgu'łp"vj g'GGGC"j cxg'dggp'hqwpf "gřł kłg'hqt"r qułkđř"f guki pcwkp"cu'y kř gtpguu0Ctgu" f gvęto łpgf "pqv'v'đg"gřł kłg'hqt"y kř gtpguu'f guki pcwkp"łpenwř g'f gxgnř gf "ctgcu"cnpi "vj g'Vco lco k'Vtclł" vj g'Ej gřłk "f gxgnř gf "ctgcu. "cpf "tqcf "eqttłqtu'y kj lpi "vj g'GGGC0Vj g'f tclłI gpętcłO cpci go gpv'Rřp"TGcu'Gxgti rcf gu'Y kř gtpguu'Uwř { "TGpxłqpo gpv'łk r cev'Ucvgo gpv'r tqř qugu"vj cv'ętvčłp'řpf u'y kj lpi " vj g'GGGC"đg'f guki pcvřf "cu'y kř gtpguu0Uj qwř "vj g'łpcłłI gpętcłO cpci go gpv'Rřp"TGcu'Gxgti rcf gu" Y kř gtpguu'Uwř { "TGpxłqpo gpv'łk r cev'Ucvgo gpv'łpenwř g'c'y kř gtpguu'r tqř quclłhqt"vj g'GGGC. "vj cv" r tqř quclły kłđg'hqy ctf gf "v'vj g'Uętgvt { "qh'vj g'łpvřkt"cpf "gxgpwcm{ "v'Eqpi tguu'hqt"r qułkđř" řgi křcwłg'cevkp0Qpn{ "Eqpi tguu'ęp"f guki pcvřf y kř gtpguu*P RU'4232c-0Hł wtg"55"f gř kw'vj g'ctgcu" cuęuęf "łp"vj g'y kř gtpguu'gřł kłkł "cuęuo gpv'cpf "vj g'łpf lpi u'qh'vj g'cuęuo gpv0

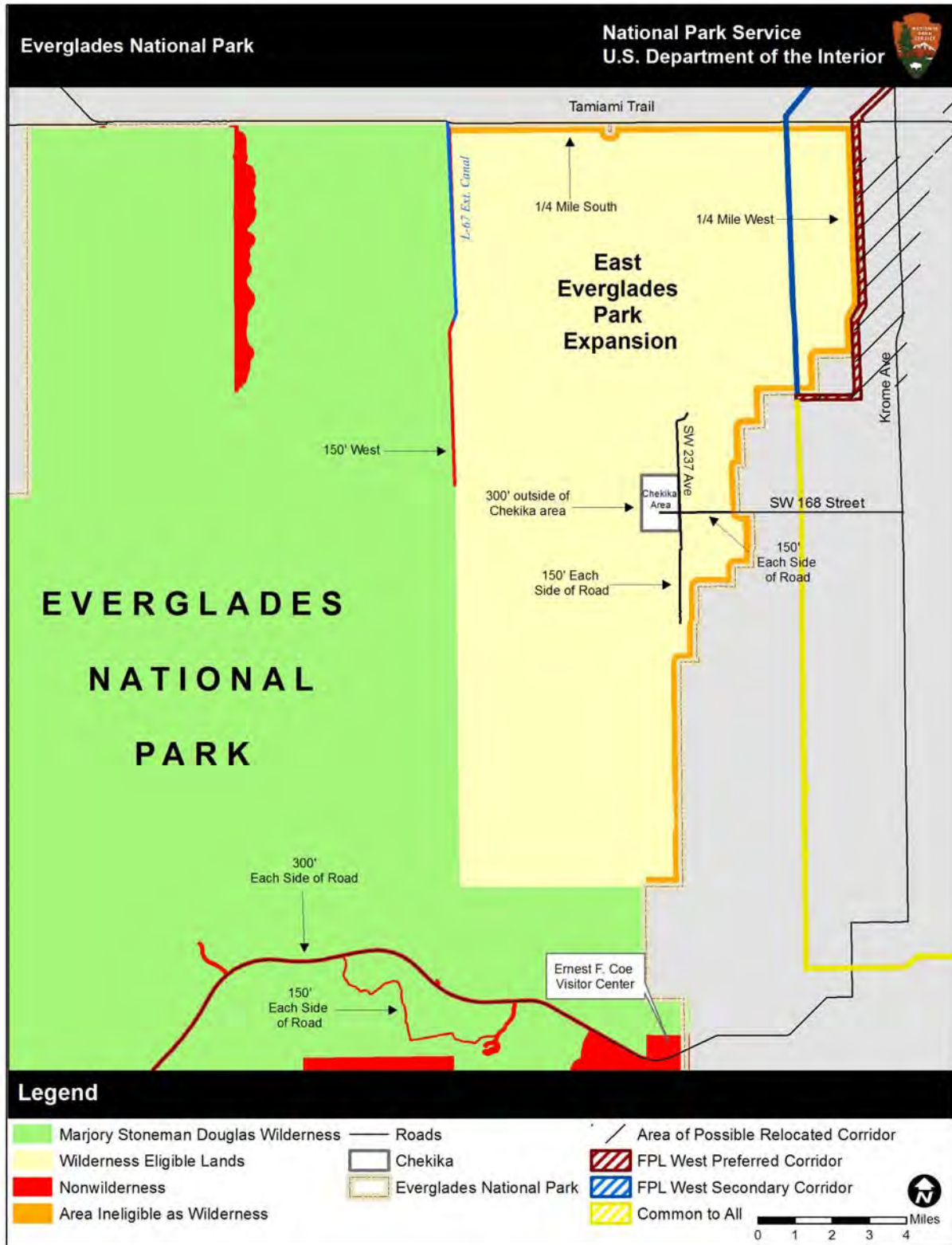


FIGURE 33: WILDERNESS ELIGIBILITY IN THE EEEA

XKUKQT'WUG'CPF 'GZRGTLGPEG' 'T' GETGCVKQP 'TGUQWTEGU'

Xkukcvcqp'v'Gxgti rcf gu'P cvkqpcnRctmij cu'tgo clpgf 'tgrvkg' "eqpucpv'cv'pgetn' '3'o knkqp'xkukqtu'r gt" { gct'ulpeg'3; : . 'y kj '56.753'xkukqtu'lp'4233'P RU'4234c+0T getgcvkqpcn'qr r qtwpkkgu'kpenw'g'dknkpi . " dqcwpi . 'huj lpi . 'j knkpi . 'eco r lpi . 'cpf 'y kfr hkg'xkgy lpi 0'Xkukcvcqp'v'g'Gxgti rcf gu'ku'j ki j n' 'ugcuqpcn' y kj 'c'j ki j 'ugcuqpcn'ltqo 'F gego dgt'v'Cr tkl'y j gp'v'j g'r ctnltgegkxgu'lwu'qxt'j cni'qh'ku'c'ppwcn'xkukcvcqp'0' Vj ku'r gtlqf 'cnuq'eqkpek'gu'y kj 'y g'f t' 'ugcuqpcn' y j gp'kcnkpi 'y cvgt'rgxgu'lguw'lp'cdwpcp'v'v' kfr hkg' xkgy lpi 'qr r qtwpkkgu' .o ki tcvkpi 'cpf 'y kpgtkpi 'dkf u'eqpi tgi cvg'lp'v'j g'r ctm'j wo kf k' 'rgxgu'cpf " vgo r gtcwgtu'f tqr . 'cpf 'y g'g'ctg'hgy gt'o qus wkgu'0'Xkukcvcqp'ku'iqy guv'f v'kpi 'y g'uwo o gt . 'y kj 'y g'rgcu' xkuku'lp'Lvpg . 'Lwn' . 'Cw wuv'cpf 'Ugr vgo dgt'0'Vj ku'eqkpek'gu'y kj 'y g'y g'vugcuqpcn'ej ctcevgt'k' gf 'd' 'f kur gtugf " y kfr hkg' . 'j wo kf k' . 'j ki j 'vgo r gtcwgtu' . 'cpf 'cdwpcp'v'o qus wkgu'

XKUKQT'WUG'P'VJ G'RCTM'

Vj g'Gxgti rcf gu'P cvkqpcnRctmGGGC'j cu'hgy 'hcekkkgu'cpf 'ewttgpw' 'tgegkxgu'ko ksf 'xkukqt'wug . 'y kj 'y g' gzeqr vqp'qh'v' qug'v' cv'xkuk'v'j g'r ctnij tqw'j 'eqo o gtekn'cltdqcv'v'qwtu'cpf 'y qug'v'j cv'wpej 'r t'k'cvg' cltdqcu'ltqo 'y g'Cktdqcv'Cuuekcvkqp'qh'Hqtkf'c'ukg'c'npj "Vco kco k'Vtck'0'Huj lpi 'cnuq'c'ngur'ncg'lp'v'j g' ewxgtu'qp'v'j g'uqwj 'ukf g'qh'Vco kco k'Vtck' y kj lp'v'j g'r ctn'0'Cf f k'kqpcn'xkukqt'wug'qr r qtwpkkgu'qeewt " o quw' 'lp'v'j g'Ej g'knk'ctgc . 'cpf 'qp'cpf 'pgct'v'j g'N/89'gzv'pukqp'cpf 'N/53P 'ecpcn'cpf 'rgxgu'v'j g'g' y kfr hkg'xkgy lpi . 'j knkpi . 'dle'ekpi . 'ecpqkpi . 'cpf 'huj lpi 'ctg'v'j g'r tko ct' 'tgetgcvkqp'cev'xkkgu'

Hqwt'ck' "dqcv'tco r u'wpej "qp'v'j g'uqwj 'ukf g'qh'Vco kco k'Vtck'0'Vj tgg'r wdrk' 'tco r u'lpnw'g'c' 'tco r " ko o gf k'vgn' 'gcu'qh'Eqr gt'v'p' 'Cktdqcv'T'kf gu'ewxgtv'75+ . 'cp'w'p'f g'xgnr gf 'ctgc'gcu'qh'v'j g'N/89" Gz'v'pukqp . 'c'wpej 'ukg'qp'UY '459'v' 'Cxgpw'cdq'w'3'o k'g'p'qt'v'j 'qh'v'j g'Ej g'knk'gp'tcpeg . 'cpf 'c' 'r t'k'cvg' ceegu'ltco r 'qh'gt'f 'cv'v'j g'Cktdqcv'Cuuekcvkqp'qh'Hqtkf'c'ewxgtv'69+ . 'r tqr gt'v' 'y guv'qh'I cvqt'Rctm' ewxgtv'6; +0'Vj gug'eqo o gtekn'qr gtcv'tu'tgegkx'cdq'w'522.222'xkukqtu'gcej " { gct'0'Vj g'eqo o gtekn' cltdqcv'qr gtcv'tu'qh'gt'f 'v'kf gf 'v'wtu'lp'v'j g'Gcu'Gxgti rcf gu'cpf 'r tqxk'g'v'j g'ot'kxg'qh'i t'cuo'g'zr gtlgpeg" hqt'xkukqtu'0'Vj g'Gxgti rcf gu'P cvkqpcnRctmRtq'v'gcvkqp'cpf 'Gzr cpukqp'Cev'qh'3; : . "Gzr cpukqp'Cev'cmjy u' v'j qug'pqpego o gtekn'cltdqcv'qr gtcv'tu'y j q'y g'g'wukpi 'y g'g'zr cpukqp'ctgc'cu'qh'Lcpwct' { 3 . '3; : . ; 'v'j eqp'v'p'w'v'q'qr gtcv'cltdqcu'lp'kf g'v'j g'Gxgti rcf gu'Gzr cpukqp'ctgc'hqt'v'j g'k'lp'k'kf wcn'hkg'ko gu'P RU' 3; : . ; +0'

Ej g'knk'ku'c'uo cm'f'g'xgnr gf 'ctgc'lp'c'hqto gt'ucv'g'r ctnilp'v'j g'P GUTU . 'cr r tqzko cvgn' '8'o k'gu'y guv'qh' Mtqo g'Cxgpw'0'J k'v'gt'k'cm' . 'h'ecn'lt'guk'f'gpw'wug'f'v'j g'ukg'hqt'r'leplenkpi . 'uy ko o lpi . 'y kfr hkg'xkgy lpi . 'cpf " eco r lpi 0'K'ku'pqy 'c'ugcuqpcn'f'c' { 'wug'ctgc'y kj lp'v'j g'r ctm'cpf 'h'w'w'g'f'g'xgnr o gpv'cpf 'wug'y kn'dg' f'gh'p'gf 'd' { 'y g'ewttgp'V' O R'gh'gt'0'Ewttgp'v'xkukqt'co g'p'k'kgu'k'penw'g'r'leplenkpi . 'c'uj q'tv'j knkpi 'v'ckn'cpf " r cxgf 't'qcf u'hqt'dknkpi "P RU'4234d+0'

Cf f k'kqpcn'xkukqt'g'zr gtlgpegu'y kj lp'v'j g'GGGC'k'penw'kpi 'y kfr hkg'xkgy lpi . 'dqcwpi . 'gf wecvkqp'hqewug'qp" v'j g'w'p'k'w'g'p'cw'cn'cpf 'ew'w'cn'j g'k'ci g'qh'v'j g'r ctm'k'penw'kpi 'f'k'xgtug'gequ'v'go u'cpf 'y kfr hkg' . 'j k'v'gt'k'cn' l' cvgt'hqy u' . 'cpf 'j wo cp'j k'v'gt' . "

Cr r tqzko cvgn' '37'o k'gu'y guv'qh'v'j g'r tq'g'ev'ctgc'ku'v'j g'Uj ctni'Xcng' { 'ctgc'o qpg'qh'v'j g'o clqt'f'guk'p'cvkqp' lp'v'j g'r ctn'0'Uj ctni'Xcng' { 'ku'pq'v'v' kj lp'v'j g'GGGC'0'Y kj lp'Uj ctni'Xcng' { 'ku'v'j g'Uj ctni'Xcng' { 'Xkukqt' " Eqp'tcev'Ucvkqp'y j lej 'qh'gtu'c'r ctni'x'kf gq . 'gf wecvkqpcn'f'kur n' { u' . 'cp'w'p'f g'ty cvgt'eco gtc . 'cpf " k'p'ht'o cvkqpcn'dtqej w'gu'0'C'pgy . 'o qf gtp'xkukqt'egp'v'gt'cpf 'eqpegu'k'p'p'hcekk'v' 'ku'ewttgpw'v' 'w'p'f gt" eqp'ut'wev'kqp'cpf 'ku'g'zr gev'f'v'q'qr gp'd' { 42360'Uj ctni'Xcng' { 'cnuq'qh'gtu'c'37/o k'g'v'q'w'p'f /v'kr 'v'co 't'qcf " *pq'qr gp'v'q'v' t'k'cvg'o q'v'qt'k'gf 'x'gi k'engu'v'j cv'gz'v'p'f u'lp'v'j g'o ctuj . 'qpg'qh'v'j g'dgu'qr r qtwpkkgu'hqt" xkgy lpi 'y g'Gxgti rcf gu'g'p'x'k'qpo gpv'cpf 'y g't'gu'q'w'egu'qh'v'j g'UTUOC'v'y q/j qwt'p'cttcv'g'f'v'co 't'kf g . " r tqxk'gf 'd' { 'Uj ctni'Xcng' { 'Vtco "Vqwtu . 'k'p'0'r tqxk'gf gu'cp'q'x'gt'x'kgy 'qh'v'j g'h'guj y cvgt'Gxgti rcf gu'cpf " dle' { ergu'ctg'cx'ck'cd'g'v'q't'gp'v'P RU'4234e+0'Uj ctni'Xcng' { 'ku'c'h'cx'q'k'g'f'guk'p'cvkqp'hqt'h'ecn'cpf 'q'w'qh'

vqy p'dle{erkuu0Cp'qdugtxcvkqp'vqy gt'ku'hqecvgf'ev'vj g'gpf'qh'vj g'vwt'tqcf'cpf'vj gtg'ctg'y q'uj qtv'
y cmkpi 'tcku'hqecvgf'pgct'vj g'o clp'tco 'hqr 0Vj g'Uj ctniXcng{ 'ctgc'qh'gtu'gzeqngpv'qr r qtwpkkgu'hqt'
y kf rkhg'xkgy kpi 'cpf'vj gtg'ctg'tcpi gt/ngf 'dkng'vwtu'cpf'pcwtg'y cmu'vj tqwi j 'vj g'ctgc0'

Vj g'uqwj 'r qtvkqp'qh'vj g'GGGC'ku'r tgf qo kpcpwl'qr gp.'wpg gxnqr gf'y gv'r tckkg'y kj 'hgy 'uki pu'qh'j wo cp"
r tugpeg.'r tqxf kpi 'c'y kf gtpguu/rkng'gzt gtepeg00 cpo cf g'hgcwtgu'vj cv'kpwf g'wr qp'vj g'pcwtcl'
mpf uecr g'ctg'r tugpv'j qy g'xgt.'xkudng'hgcwtgu'y kj kp'vj g'r ctnictg'hqwpf 'r tko ctkn'ev'vj g'r gtr j gt{ 'qh'vj g'
r ctnly kj kp'c's wctvgt'o kng'qh'vj g'pqt vj gtp'cpf'gcuqtp'dqwpf ct{.'cpf'kpenmf g'tcf kq'vqy gtu'cpf'tgrcvgf "
qr gtcvkpu'dwkr kpi u0Gki j v'tcf kq'vqy gtu'cr r tqzko cvgn'472'hggv'cmictg'xkudng'v'xkukqtu'qp'vj g'Vco kco k'
Vtckl'cpf' r qtvkpu'qh'ctkdqcv'vwtu'y kj kp'vj g'r ctni*P RU'4232e+0Vj g'Uj ctniXcng{ 'qdugtxcvkqp'vqy gt'ku'
906'o kgu'uqwj 'qh'vj g'Vco kco k'Vtckl'cpf'ku'cr r tqzko cvgn'92'hggv'cmi*P RU'4234e+0Vj g'qdugtxcvkqp'
vqy gt'ku'xkudng'qpnl'v'xkukqtu'qp'vj g'Uj ctniXcng{ 'tco 'tqcf'cpf'qecukqpcnr cf fngtu'kp'vj ku'tgo qvg'ctgc"
qh'ucy i tcuu0'

P wo gtqwu'utwewtgu'qwu'f g'qh'vj g'r ctnictg'cuq'xkudng'v' r ctnixkukqtu'cpf'kpwf g'wr qp'vj g'pcwtcl'uepgg"
cpf'tgo qvg'xkukqt'gzt gtepeg0Vj gug'kpenmf g'gzkupi 'r qy gt'vcpuo kukqp'rkpgu'tcf kq'vqy gtu'vj g'
Oleequwng'TguqtVJ qvgn'vj g'Mtqo g'F gvgv'kqp'Egpgt'y cvgt'vqy gt.'cpf'utwewtgu'cuqekcvf'y kj 'tqenl'
o kpkpi 'cpf'ego gpv'o cpwcewtg0C'hnmf guetk vkp'qh'vj g'gzkupi 'xkgy uj gf'ku'r tqxf gf'kp'vj g'
oXkgy uj gf u*XkuwcnTguqwtgu-ö'ugevkp'kp'vj ku'ej cr vgt0'

TGETGCVKQPCN'TGUQWTEGUQWUFG'QHVJ G'RCTM'

Vj g'Uqwj 'Hqtkf c'tgi kqp'r tqxf gu'uwducp'kcl'qr r qtwpkkgu'hqt'qwf qqt'tguqwtg/dcugf'tgetgcvkqp0'
Co qpi 'vj g'pwo gtqwu'cev'xkkgu'cxckcdng'ctg'f kxkpi .'upqtngrkpi .'eco r kpi .'j knkpi .'dle{erki . 'dqcvkpi .'cpf "
j wpkpi 0'

Vj g'Htceku'U0Vc{ nqt'Y kf rkhg'O cpci go gpv'ctgc.'y j kej 'kpenmf gu'Y EC'5D.'ku'o cpci gf'd{ 'HHY EE0'
Vj ku'tgc'ku'o cpci gf'hqt'dqy 'equwo r v'xg'*j wpkpi .'Itqi i kpi .'cpf'hkuj kpi '+cpf'pqp/equwo r v'xg'
*y kf rkhg'xkgy kpi .'eco r kpi .'dqcvkpi .'ctkdqcvkpi .'gve0'tgetgcvkqpcn'wug'cpf'gpxktqpo gpvnr wtr qugu0Y EC "
5D'ku'ceegu'f'd{ 'etqukpi 'vj g'N/4; 'ecpcn'cv'gkj gt'vj g'U/555'qt'U/556'y cvgt'eqpvtqnlutwewtgu'cpf "
nwpej kpi 'ev'vj g'dqcv'cpf'ctkdqcv'tco r u*P RU'4232e+0'

Vj g'gf i g'dgy ggp'vj g'N/4; 'ecpcn'cpf'vj g'N/4; 'hgxgg'ku'wugf'hqt'r cuuci g'cnqpi 'vj g'ecpcn'r kcpknkpi .'qt "
nwpej kpi 'dqcu'kp'v'vj g'N/4; 'ecpcn'0C'tqcf'cvqr 'vj g'N/4; 'hgxgg'cmqy u'r cpqtco le'xkgy u'v'vj g'pqt vj 'kp'v' "
Y EC'5D'cpf'uwj 'kp'v'vj g'r ctni*P RU'4232e+0'

Rtlo ct{ 'ceegu'v'v'dqcv'tco r u'qp'vj g'pqt vj 'ukf g'qh'vj g'N/4; 'ecpcn'ku'cv'U/555'cpf'U/5560Tqcf u'cetquu'
vj gug'utwewtgu'rgcf'v'ugxgtcn'dqcv'tco r u'cpf'v'dcpn'khuj kpi 'qp'vj g'pqt vj 'dcpn'qh'vj g'N/4; 'ecpcn'U/556 "
r tqxf gu'ceegu'v'v'dqcv'tco r *Dqcv'Tco r '375+5'o kgu'v'vj g'y gu'vj cv'cmqy u'dqcv'nwpej kpi 'kp'v'vj g'N/
4; 'ecpcn'0C'v'U/556'vj gtg'ku'cuq'cp'ctkdqcv'tco r 'vj cv'r tqxf gu'ceegu'v'v'Y EC'5D0C'r kcpke'ctgc'ku'
cuqekcvf'y kj 'vj g'dqcv'tco r 0Eqpvtqnlutwewtgu'U/555'r tqxf gu'ceegu'cetquu'vj g'N/4; 'ecpcn'v'v'qpg "
ctkdqcv'tco r 'cpf'v'q'v'dqcv'tco r u0Vj gtg'ku'c'dqcv'tco r 'qp'vj g'N/89C'ecpcn'cpf'cpqy gt'qp'vj g'N/89E "
ecpcn'0Dqy 'tco r u'ctg'j g'cxkn'wugf'd{ 'dqcv'khuj gto gp0Vj g'ctkdqcv'tco r u'r tqxf g'ceegu'hqt'f ggt'cpf "
y cvgthqy nj wpvgtu.'cu'y gni'cu'hqt'tgetgcvkqpcn'ctkdqcv'tco0C'r r tqzko cvgn'3207'o kgu'qh'vj g'pqt vj 'dcpn'qh'
vj g'N/4; 'ecpcn'ctg'cxckcdng'hqt'dcpn'khuj kpi *P RU'4232e+0'

Dcpn'khuj kpi 'ku'cuq'r qr wct'ltqo 'vj g'uj qwf gtu'qh'vj g'Vco kco k'Vtckl'cpf'N/89'gzvgpukqp'hgxgg0Cpi ngtu'
h'gs wgp'vj g'320'o kgu'qh'vj g'uwj 'dcpn'qh'vj g'N/4; 'ecpcn'pqt vj 'uj qwf gt'qh'vj g'j k j y c{ +0Vj g'qpn' "
r megu'hqt'dcpn'khuj kpi 'qp'vj g'uwj 'ukf g'qh'vj g'j k j y c{ 'ctg'y j gtg'vj g'ewxgtv'ugv'f k'uej cti g'y cvgt'v'vj g' "
uwj 0HHY EE'r gtuqppgn'eqpf w'v'f 'cpi rgt'eqwpu'cnqpi 'vj g'Vco kco k'Vtckl'ltqo 'F gego dgt'3; ; : 'v'O c{ "

3; ; 0Vj g'o gcp'pwo dgt'qh'cpi ngtu'r gt'o krg'hqt'y ggnf c{u'cpf'y ggnpgf'f c{u.'tgur gev'xgn{.'y cu'2Q 7'cpf "404: 0P kpgv{ /hqwt'r gtegpv'y gtg'dcpn'cpi ngtu'*P RU'4232e+0'

Vj gug'pwo dgtu'tcpur'v'g'lpv'q'cp'guko cvgf 'vgp'cpi ngtu'r gt'y ggnf c{ 'cpf'45'r gt'y ggnpgf'f c{.'v'v'cpi " cr r tqzko cvgn{ '7.222'r gtuqpf/f c{u'qh'hkuj lpi 'r gt'f gct'y kj lp'vj g'320/o krg'cpi ngt'eqwpv'uwwf { 'ctgc0' Rgtuqpcn'qdugt'xcv'kp't'gxgcrgf'47'dcpn'cpi ngtu'cpf'y q'dqcu'y kj 'vy q'cpi ngtu'lp'vj g'cpi ngt'eqwpv'uwwf { " ugi o gpv'cv'cr r tqzko cvgn{ '32-22'c0 0qp'c'Ucwtf c{ 'lp'Ugr vgo dgt'42220Cm quv'cm'ij g'dcpn'cpi ngtu'y gtg' hkuj lpi 'qp'gkj gt'ukf g'qh'ij g'Vco kco k'Vtckn'kij j v'qh'y c{.'y kj 'qpn{ 'c'hgy 'qp'vj g'pqt'ij 'dcpn'qh'ij g'N/4; " ecpcn'*P RU'4232e+0' hkuj lpi 'ku'cnuq'eqo o qp'cm'pi 'ij g'N/53P 'ecpcn'y j lej 'dqt'f gtu'ij g'GGGC'cm'pi 'ku' gcuv'p'dqt'f gt0Cm'hkuj lpi 'qeewtu'cm'pi 'ij g'y guv'dcpn'qh'ij g'ecpcn'0K'ij qwf 'dg'pqv'f 'ij cv'cv'gcu'v'uo g'qh' ij g'hkuj lpi 'ku'wduku'gpeg.'pqv'tgetgc'v'kp'cn'f

Ceeqtf lpi 'v'ij g'O kco kF cf g'Eqwpv'f 'Rctm'c'p'f 'Tgetgc'v'kp'f 'F gr ctwo gpv'ij g'N/53P 'rgxgg'ku'cp'ce'v'xg" dkn'pi 't'qwg'lp'cf f k'kqp'v'q'dgl'pi 'c'hkuj lpi 'cpf'y kf r'k'g'x'kgy lpi 'ctgc0Vj g'Gxgti ncf gu'Vtckn'ku'r ctv'qh'ij g' O kco kF cf g'Eqwpv'f 'Rctm'c'p'f 'Tgetgc'v'kp'f 'F gr ctwo gpv'I tggpy c{ 'P gy qtnij j lej 'kpen'f gu'ij g'N/53P " ecpcn'c'p'f 'rgxgg'cu'r ctv'qh'ij g'k'46/o krg'hqpi 'v'ckn'ij tqwi j 'v'ckn'c'p'f 'v'cdp'ct'gcu'qh'O kco kF cf g'Eqwpv'f " *P RU'4232e+0'

Vq'ij g'pqt'ij 'qh'ij g'GGGC'ku'ij g'Vco kco k'Vtckn'y j lej 'dqt'f gtu'dq'ij 'Gxgti ncf gu'P cv'kqpcn'Rctm'cu'y gni'cu' ij g'Y EC'5C'cpf 'D0Vco kco k'Vtckn'ugtx'gu'cu'c'i cvgy c{ 'pqv'qpn'f 'v'x'kukqt'tgetgc'v'kp'cn'qr r qt'wp'k'kgu' y kj lp'ij gug'cf lcegpv'ct'gcu'dw'cnuq'v'ij g'x'cu'v'tgetgc'v'kp'cn'qr r qt'wp'k'kgu'lp'ij g'Uqwj 'Hqtk'f c'tgi kqp0'

Vj g'Ucv'g'Eqo r tgi gpuk'x'Qwf qqt'Tgetgc'v'kp'Rcp'ku'ij g'dgu'v'q'wte'g'qh'lp'hqto cv'kp'qp'tgetgc'v'kp' f go cpf 'cpf'uw'rr n{ 'cv'ij g'ucv'g'cpf'tgi kqpcn'rgx'gr0K'f lci i tgi cvgu'ij g'ucv'g'lpv'q'7'tgi kpu'dcu'f'qp" i gqi tcr j { 0Vj g'Uqwj gcu'v'Hqtk'f c'tgi kqp'*Tgi kqp'7+ut'gej gu'tqto 'Hqt'v'Rl'gteg'v'Mg{ 'Y guv'c'p'f 'kpen'f gu' 46'ucv'g'r ctm'i*HF GR'4233+0Vj ku'tgi kqp'kpen'f gu'ij g'Gxgti ncf gu'c'p'f 'ij g'Hqtk'f c'Mg{ u.'ctgcu'y kj " uki p'k'lecpv'p'cw'cn'd'g'cw'f 'cpf'tgetgc'v'kp'cn'x'cn'g'0Vj g'tgi kqp'cnuq'gpeqo r cu'gu'Dkuc{ pg'Dc{.'c'p'f 'pgctn' " 522'o krgu'qh'C'v'p'le'Qegcp'Dgcej 0Tgetgc'v'kp'cn'ce'v'x'k'kgu'y kj lp'ij g'gpv'k'g'tgi kqp'kpen'f g'y kf r'k'g' x'kgy lpi 'ecpq'gkpi .dkf lpi 'lp'cf f k'kqp'v'hkuj lpi .j k'kpi .cpf'dkn'pi 'o gpv'k'p'g'f 'cdqxg'0Vj gtg'ctg'p'q" ur gek'le'tgetgc'v'kp'ct'gcu'y kj lp'ij g'ctgc'qh'r quuk'drg't'g'mecv'f 'eqtt'k'qt'dg{ qpf 'ij qug'f guet'k'kg'f 'cdqxg'0'

CFLCEGPV'NCPF'WUGU'CPF'RQNEKGU'

Vj g'ctgc'qh'cpcn'f uku'hqt'cf lcegpv'ncpf 'wugu'cpf'r qrlkgu'kpen'f gu'ij g'GGGC.'cpf'ij g': 0/us wctg/o krg'ctgc" gcu'v'qh'ij g'r ctm'Y EC'5D'cpf'ij g'Rgppu'eq'y g'v'p'f u'pqt'ij 'qh'ij g'r ctm'c'p'f 'gz'v'p'f lpi 'v'ij g'v'cdp' f g'x'gnr o gpv'dqwpf ct{ 'v'ij g'gcu'v'qh'ij g'r ctm'ug'g'0Hki wtg'6-1 gp'g'cn'Rt'qlge'v'ctgc.0'lp'ej cr vgt'3+.y kj "c" hqewu'qp'ij g'v'cpuo kuuk'p'rk'p'g'eqtt'k'qtu'lp'cpf'ctqwpf'ij g'r ctm'lp'ij g'i gp'g'cn'uwwf { 'ctgc.'cpf'ctgcu'y kj lp' cdqww'34'o krg'qp'gkj gt'ukf g'qh'ij g'r tqr qug'f 'eqtt'k'qtu'y j gtg'lp'f k'g'ev'lo r ceu't'g'v'f 'v'ij g'eqp'ut'we'v'kp' qt'r t'gugpeg'qh'ij g'v'cpuo kuuk'p'rk'p'gu'eqwf 'cf x'gtu'gn'f 'ch'g'ev'cf lcegpv'ncpf 'wugu'qt'r qrlkgu'qh'ij g' ncpf qy pgtu0'

O clqt'ncpf 'wug'eqp'ut'c'p'w'lp'ij g'ctgc'qh'cpcn'f uku'kpen'f g'Gxgti ncf gu'P cv'kqpcn'Rctm'v'ckn'ncpf u." eqp'ut'x'cv'kp'ct'gcu.'f g'x'gnr g'f 'tgetgc'v'kp'cn'ct'gcu'c'p'f 't'guk'f gp'v'cn'f g'x'gnr o gpv'0Vj g'O kco kF cv'g'Eqwpv'f " v'cdp'f'g'x'gnr o gpv'dqwpf ct{ 'cnuq't'g'ut'leu'f'g'x'gnr o gpv'lp'ij g'x'k'lp'k'f.'j qy g'x'gt'ij g'r t'qlge'v'ctgc'ku" gpv'k'gn'f 'q'wuk'f g'qh'ij cv'dqwpf ct{ 0Cu'k'm'w'v'c'v'f 'lp'hki wtg'56.'ncpf'qy pgtu'ij kr 'lp'ij g'ctgc'qh'cpcn'f uku'ku'c" o k'z'qh'r t'k'x'cv'g.'i q'x'gtpo gp'v'cn'c'p'f 'v'ckn'c'ij pgtu'ij kr 0O clqt'ncpf 'qy pgtu'kpen'f g'ij g'Wp'k'g'f 'Ucv'gu'qh' Co g'k'ec'*Gxgti ncf gu'P cv'kqpcn'Rctm'ij g'UHY O F.'ij g'Ucv'g'qh'Hqtk'f c.'T'k'p'ngt'O cv'g'k'cu'Eqr q'c'v'kp'p'." Mg'p'f cmi'Rtqr g'v'k'gu'c'p'f 'k'p'x'gu'v' gpv'u.'k'p'c'p'f 'q'ij g'r t'k'x'cv'g'gp'v'k'kgu'0Ncpf u'qy pgf 'd{ 'v'ckn'g'qt'o c'p'ci g'f 'd{ " ij g'Dwt'g'cw'qh'k'p'f lcp'Ch'cku'ct'g'f k'uew'ug'f 'lp'ij g'0v'v'ckn'Ncpf u'k'p'en'f lpi 'k'p'f lcp'Vt'w'v'T'gu'q'wte'gu'0'uge'v'kp' qh'ij ku'ej cr vgt'0Vj g'r t'gugpeg'c'p'f 'n'q'ec'v'kp'u'qh'ij gug'x'ct'k'q'w'ncpf 'wugu'c'p'f 'ncpf'qy pgtu'ij kr 'y kj lp'ij g'ctgc" qh'cpcn'f uku'c'p'f 'uwt'q'wpf lpi 'x'k'lp'k'f 'ctg'r t'q'x'k'f g'f 'lp'hki wtgu'56'c'p'f '570'

Ej cr vgt"5<Chgevgf"Gpxktqpo gpv"

"

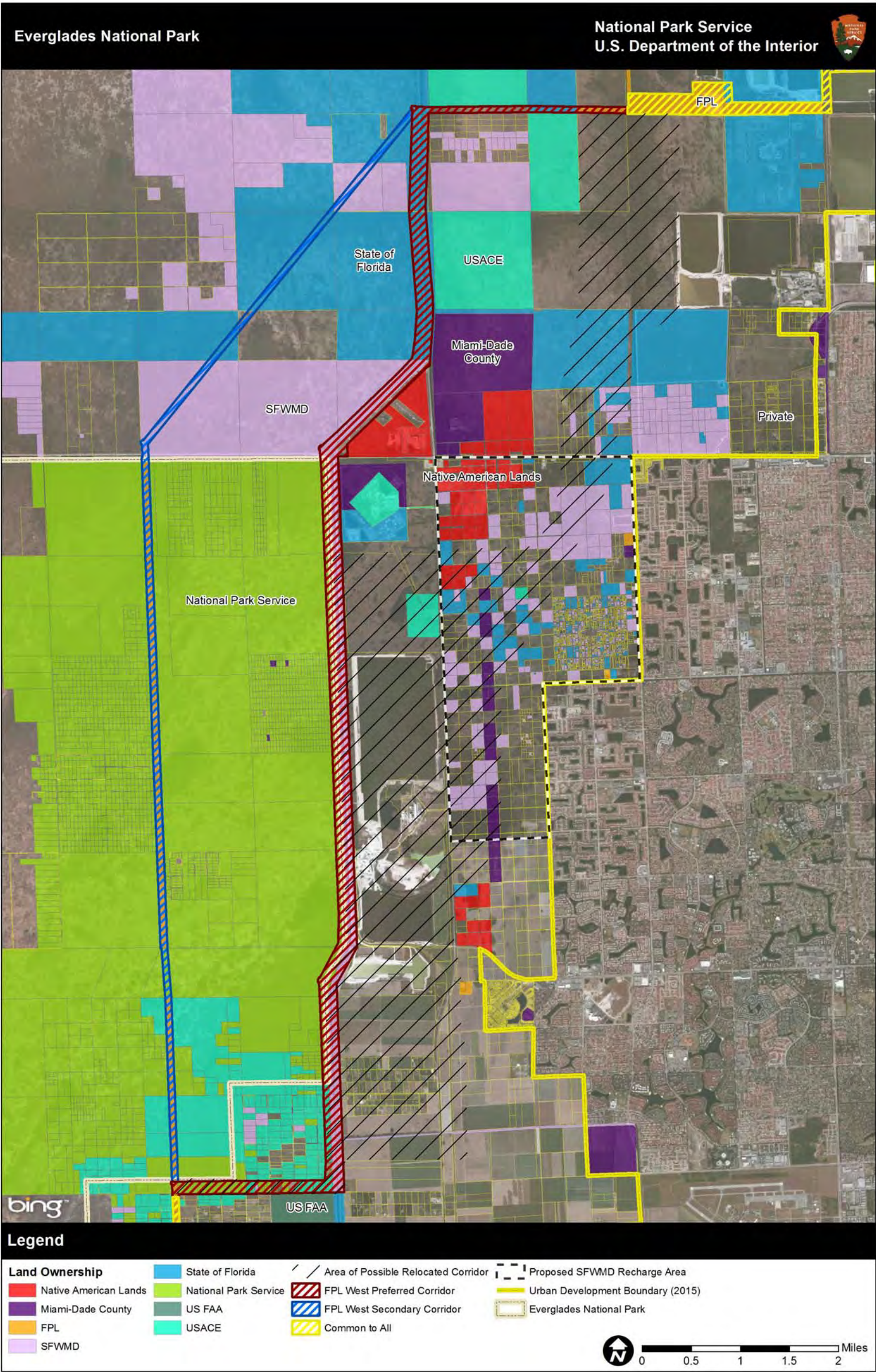


FIGURE 34: LAND OWNERSHIP WITHIN THE AREA OF ANALYSIS AND SURROUNDING VICINITY

"

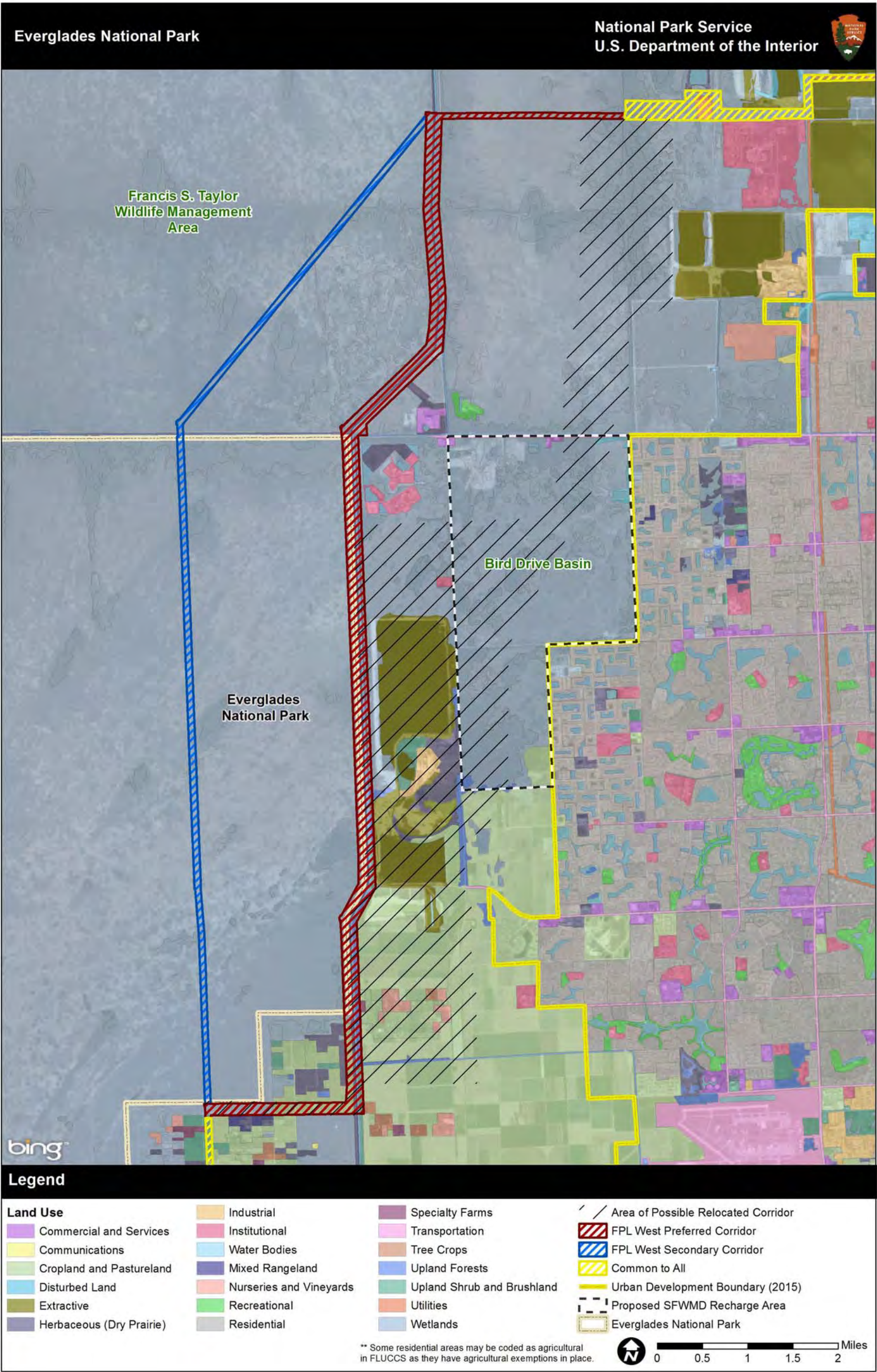


FIGURE 35: LAND USE WITHIN THE AREA OF ANALYSIS AND SURROUNDING VICINITY

"

P CVKQP CN'RCTMUGTXÆG'NCPFU'

Gxgti rcf gu'P cvkqpcn'Rctmly cu'gucdrkuj gf 'lp'qtf gt 'v'eqpugt'xg'yj g'geqmi kecn'cpf "dkqmi kecn'hwpevkp"qh' yj g'Gxgti rcf gu'gequ{ ugo "cpf 'yj g'pcwtcn'rcpf uecr g0K'ku'ugv'culf g'cu'c'r gto cpgpv'y krf gtpguu.'r tgu'xtkpi " guugpv'kcn'r tko kxg'eqpf kxkpu'kpenw'kpi "yj g'pcwtcn'cdwpf cpeg.'f kxgtuk{ . 'dgj cxkqt.'cpf "geqmi kecn' kpvgi tk{ 'qh'yj g'wpls wg'hqtc'cpf 'h'wpc0K'ku'yj g'h'kuv'pcv'kqpcn'r ctmf gf kcvgf 'hqt'ku'dkqmi ke'f kxgtuk{ 0' Hki wtg'58'f kur rc { u'P RU'rcpf u'lp'yj ku'xlelpx{ 0'

**FIGURE 36: EEEA OF EVERGLADES NATIONAL PARK**

Vj g'P RU'*Management Policies 2006* 'tgi ctf kpi 'rcpf 'wug'tghgt 'ur gekh'ecm{ 'v'uchgi wctf kpi 'ci ckpu'cf xgtug' ko r ceu'qp'r ctmf guqwtugu'htqo "cf lcegpv'kpego r cvkdr'rcpf 'wugu0Cu'ucv'gf 'lp'yj g'P RU'*Management Policies 2006*. 'oGzvgtpcn'yj tgcw'o c{ 'qtki kpcv'y kj 'r tqr qugf 'wugu'qwukf g'c'r ctmf yj cv'o c{ 'cf xgtugn{ " ko r cev'r ctmf guqwtugu'qt 'xcwgu0Uw' gtpv'gpf gpw'y kmi'yj g'ghgtg'dg'cy ctg'qh'cpf 'o qpkqt 'rcpf 'wug' r tqr qucu'cpf 'ej cpi gu'v'q'cf lcegpv'rcpf u'cpf 'yj gk'r qvgpv'kcn'ko r ceu'0Vj g{ 'y kmi'cuq'uggn'v'q'gpeqwtci g' eqo r cvkdr'cf lcegpv'rcpf 'wugu'v'q'cxqkf 'qt'v'q'o kki cvg'r qvgpv'kcn'cf xgtug'gh'gevu'o *P RU'4228c+0'

RtKCVG'NCPFU'

RtKcv'rcpf u'y kj kpi'ctgc'qh'cpcn{ uku'kpenw'g'tgukf gpv'kcn'eqo o gtekn'lpf wutknlgz'v'cevkxg'cpf "ci tlewnw'cn' wugu0T gukf gpv'kcn'rcpf 'wugu'ctg'i gpgtcm{ 'h'ecv'gf 'v'v'yj g'gcu'qh'yj g'ctgc'qh'r quukdr'g'gmecv'gf 'eqttkf qt" yj g'gtg'ugxgtcn'tgukf gpv'kcn'pgki j dqtj qqf u'ur cp'cm'pi 'yj g'gcu'v'gtp'gf i g'qh'yj g'ctgc'qh'cpcn{ uku'0J qo gu'y kj kpi' yj g'ctgc'ctg'r tko ctkn{ 'ukpi ng/hco kn{ 'f y gmkpi u'ukwcv'gf 'y kj kpi'c'uw'dw'dcp'eqpv'gz'0K'v'v'ku'r qt'v'kq'qh'yj g' ctgc'qh'cpcn{ uku.'eqo o gtekn'rcpf 'wugu'ctg'h'ecv'gf 'r tko ctkn{ 'cm'pi 'tqcf y c{ u'cpf 'kpenw'g'yj qv'gu.'v'qwt" eqo r cpl'gu.'t'gucw'cpw.'cpf 'xctkqu'v'qj gt'dwukpgu'gu'qr gtcv'kpi 'cm'pi 'Vco kco K'Vtckf0'

Kpf wutknlgz'v'cevkxg'rcpf 'wugu'kpenw'g.'o quv'pqv'cdn{ . 'yj g'lpf wutkn'eqo r ngz'h'ecv'gf 'cv'P qt'yj 'Mgpf cm' Ftkxg'cpf 'Mtqo g'Cxgpgw0Vj ku'eqo r ngz'ku'h'ecv'gf 'v'v'yj g'pqt'yj y guv'qh'yj g'tgukf gpv'kcn'rcpf uecr g'cpf " kpenw'gu'yj g'Eqptcf 'f gmkpi v'qpf f kntkdw'kq'egpv'gt'cpf 'Mtqo g's wctt{ . 'c'ego gpv'kko gu'qpg's wctt{ 'cpf " ego gpv'r rcpv'qy pgf 'd{ 'yj g'EGO GZ'dw'kf kpi 'o cvgtkcn'eqo r cp{ *ugg'hki wtg'59+0Vj g'h'ekrk{ 'h'gu'y kj kpi' yj g'ctgc'qh'cpcn{ uku'ko o gf kcv'gn{ 'cf lcegpv'v'q'yj g'HRN'Y guv'Rtghgtt'gf 'Eqttkf qt0'



FIGURE 37: CEMEX PLANT, KROME QUARRY, AND DISTRIBUTION CENTER

Ci tlewnwtcnlncpf 'wugu'ctg'cnuq'r t gugpv'lp'vj g'ctgc'qh'cpcn{uku'lp'vj g'uqwj gtp'r qt'vqp'qh'vj g'ctgc'qh' r quukdn'tgnqecvgf 'eqttkf qt0Etqr u'ctg'cevkxgn{ 'ewnkxcvgf 'lp'o cp{ 'qh'vj gug'ctgcu'*WUF C'P CUU'4234+0' Hki wtg'5: 'r tqxkf gu'c'tgr t gugpv'vkg'xlgy 'qh'vj g'ci tlewnwtcnlncpf 'wugu'y kj lp'vj g'ctgc'qh'cpcn{uku0Hqt'c" f gvckgf 'f guetkr vqp'qh'ur gekhle'xgi gvcvkg'eqxgt'v{r gu.'tghgt'vq'vj g'oXgi gvcvqp'cpgf 'Y gwrcpf uö'ugevqp'qh' vj ku'ej cr vgt0'



FIGURE 38: AGRICULTURAL LAND LOCATED AT N. KENDALL DRIVE BETWEEN KROME AND SW 167TH AVENUES

UVCVG'I QXGTPO GPV'NCPFU'

Uqwj 'Hqtkf c'Y cvgt 'O cpci go gpv'Fkntlev'

UHY O F 'ku'c'tgi kqpcn' qxgtpo gpv'nci gpe{ 'uwr gtxkugf 'd{ 'y' g'HF GR. 'cpf 'ku'tgur qpukdrg'hqt'y cvgt's wcrk{ ." hqqf "eqpvtqn'y cvgt'uwr r n{ "cpf 'tguvqtcvkqp'qh'y' g'gpxktqpo gpv'lp"38"eqwpvkgu'lp'E(UHOK'ku'y' g'rti guv' y cvgt'o cpci go gpv'f kntlev'lp'y' g'uncvg."o cpci lpi 'y cvgt'pggf u'hqt'9"o knkqp'tgukf gpw'qh'Uqwj 'Hqtkf c" *UHY O F "4234c-0Vj g'Rgppuweq'y gvrpf u'ctg'cp'ctgc'qh'y gvrpf u'pqt'y "qh'y' g'Vco lco K'Vtckilp'y' g" Rgppuweq'Tgi kqpcn'O kki cvkqp'Ctgc0'lp"3; ; 7.'y' g'UHY O F 'dgi cp'wulpi 'Rgppuweq'cu'c'tgi kqpcn'qh'uksg" o kki cvkqp'ctgc."cmqy lpi 'r gto k'cr r decpu'vq"o cng"o kki cvkqp"eqpvtkdwlkpu'hqt'y' g'ces wukskqp." gpj cpego gpv'cpf 'hpi /vgt o 'o cpci go gpv'qh'Rgppuweq'rcpf u'cu'eqo r gpucvkqp'hqt'r gto kwgf 'y gvrpf " lo r ceu0Cu'f guetkdgf 'lp'y' g"õXgi gcvkqp'cpf 'Y gvrpf u'ugevkqp. 'r qt vkpu'qh'y' g'ctgc'qh'r quikdrg'tgmecvgf " eqttkf qt'pgct'y' g'Rgppuweq'y gvrpf u'ctg'ej ctcevgtk gf 'd{ 'f gxgnr gf 'rcpf 'wugu'uwej "cu'tqcf y c{ u'cpf " ej cppgrk gf 'y cvgt y c{ u0Hki wtg"5; 'f kur rc{ u'y' g'Rgppuweq'y gvrpf u'ctgc0'

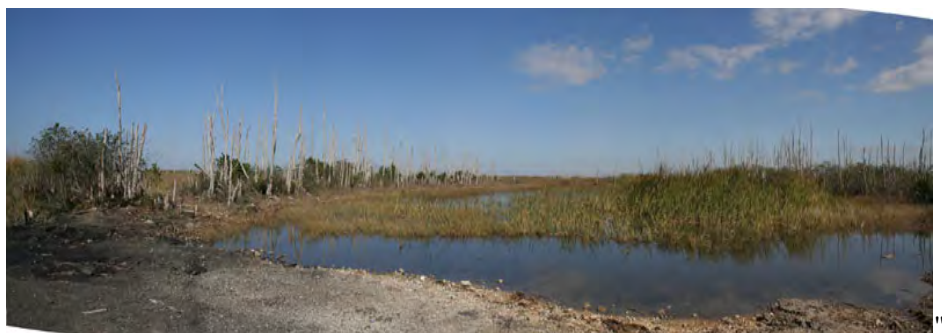


FIGURE 39: PENNSUCO WETLANDS

Dktf 'Ftlxg'Dculp''

Dktf 'Ftlxg'dculp'ku'iqecvgf 'y kj lp'yj g'ctgc'qh'cpcnf uku.'dgwy ggp'Mtqo g'Cxgpwg'cpf 'UY '379vj 'Cxgpwg." cpf "dqwpf gf 'i gpgtcmf 'd{ "Vco kco k'Vtcklqp'yj g'pqt yj 'cpf 'UY '94pf 'Utggv'q'yj g'uqwj 'ugg'hki wtg'57+0' Y j kg'iqecvgf 'qwuuf g'qh'yj g'wt dcp'f gxmtr o gpv'dqwpf ct{ ."c'r cvej y qtnlqh'icpf "qy pgtuj kr 'ku'gxkf gpv'lp" yj ku'ctgc0Ncpf 'r ctegn'kpenwf g'yj qug'wpf gt 'vtkdcn'uncvg.'eqwv'f . 'cpf 'r tlxcvg'qy pgtuj kr 0Vj g'ctgc'y cu" qtki kpcmf 'kf gpv'kqf 'lp'yj g'EGTR'cu'c'ukg'f guki pcvgf 'hqt'yj g'Dktf 'Ftlxg'Dculp'Tgej cti g'Ctgc.'dw'yj g" r tqlgev'j cu'ukpeg'dggp'f tqr r gf 'ltqo 'yj g'EGTR'r npu0Vj g'r wtr qug'qh'yj g'tgej cti g'ctgc'y qwr 'j cxg'dggp" vq'tgej cti g'i tqwpf y cvgt 'cpf 'tgf weg'uggr ci g'ltqo 'Gxgti ncf gu'P cvkpcn'Retnldw'htg'ctgeu'd{ 'lpetgcukpi " y cvgt'cdng'grxcv'kpu'gcu'qh'Mtqo g'Cxgpwg0Vj g'r tqlgev'y qwr 'j cxg'cuq'r tqxkf gf 'hqt'hmqf 'cwgpcv'kqp" cpf 'y cvgt'uw r n'f grkxgt'ku'vq'yj g'uqwj 'Fcf g'eqpxg{ cpeg'u{ ugo 'cpf 'yj g'P GUTU*UHY O F '4234d+0Cv' r tgu'p'v'UHY O F 'ku'cu'gu'kpi "cngt'pcv'kg'ukgu0Ewt gpv'icpf "wugu'cv'yj g'ukg'wpf gt 'vtkdcn'uncvg.'eqwv'f . 'cpf " r tlxcvg'qy pgtuj kr 'ctg'cp'v'kr cvgf 'vq'r gtuku'wpf gt 'yj g'k'ewt gpv'uncwu'hqt 'yj g'hqt guggcdng'hww'g'Ncy tgepg" r gtu0eqo o 04235+0Hki wtg'62'r tqxkf gu'c'tgr tgu'p'v'kg'x'kgy 'qh'yj g'Dktf 'Ftlxg'dculp'ctgc0



FIGURE 40: BIRD DRIVE BASIN

Hqtkf c'Hkuj 'cpf 'Y kf rkhg'Eqpugt xc'v'kp'Eqo o kukqp''

Vj g'HHY EE'o cpci gu'Hqtkf c'Y kf rkhg'O cpci go gpv'Ctgc'u{ ugo 'lp'qtf gt 'q'uwv'k'p'yj g'y kf guv'r quukdng" tcpi g'qh'pcv'kg'y kf rkhg'lp'yj g'k'pcwtcn'j cdkc'w'0Vj ku'u{ ugo 'kpenwf gu'o qtg'yj cp'70 'o krikqp'cetgu'qh'icpf " guvcdnkj gf 'cu'Y kf rkhg'O cpci go gpv'Ctgeu'qt 'Y kf rkhg'cpf 'Gpxktqpo gpv'icpf'0Qp'yj g'o clqtk'f 'qh'yj gug" icpf u'cdq'w'60'o krikqp'cetgu+ 'HHY EE'ku'c'eqqr gte'v'pi "o cpci gt'y qtnkpi 'y kj 'qy gt'i qxgtpo gpv'icpf' " r tlxcvg'icpf qy pgtu'v'eqpugt'xg'y kf rkhg'cpf 'r tqxkf g'r wdrk'wug'qr r qtwp'k'gu0Qp'yj g'tgo cl'kpi 'icpf u." ecmgf '0Ngc'f 'Ctgeu'0'cdq'w'30'o krikqp'cetgu+ 'HHY EE'ku'yj g'icpf qy pgt'qt 'Sngcf \$'o cpci kpi 'ci gpe{ " tgr qpukdng'hqt'icpf 'ugy ctf u'j kr 'cpf 'r tqxkf kpi 's wcrk'f 'y kf rkhg'eqpugt'xc'v'kp'cpf 'tgetgc'v'kp'qr r qtwp'k'gu" kpenwf kpi 'j wp'v'pi . 'hkuj kpi . 'y kf rkhg'x'kgy kpi . 'j krikpi . 'dkrikpi . 'j qtugdcen'ikf kpi . 'r cf f rikpi . 'uegple'f t'k'kpi . " cpf "eco r kpi 0

Gxgti ncf gu'cpf 'Ht cpeku'UOVc{ nqt 'Y kf rthg'O cpci go gpv'Ctgc''

Kp'vj g'Gxgti ncf gu'cpf 'Ht cpeku'UOVc{ nqt 'Y kf rthg'O cpci go gpv'Ctgc.'vj g'HHY EE'ku'vj g'rgcf "ci gpe{ "hqt" o cpci kpi "vj ku'ctgc.'cpf "vj g'r tqr gtvgu.'y j lej "ctg'qy pgf "d{ "UHY O F."tgr tguvp'c'r ctv'qh'y j cv'tgo ckpu'qh" vj g'rti guv'itguj y cvgt'o ctuj "gequ{ uvgu "kp'vj g'WUOQpeg'y cvgt"eqxgtgf "hqt"cv'rgcu'r ctv'qh'gcej "{ gct/vj ku" gequ{ uvgu "gpego r cuugu'pgctn{ "cm'qh'uqwj "Hqtkf c'htgo "vj g'ewuctf "cr r rg'cpf "e{ r tguu'uy co r u'dqtf gtpi " Ncng'Qnggej qdgg'vj tqwi j "hrcv'gzr cpugu'qh'i tc{/i tggp'ucy i tcuu'xgkpgf "y kj "uqwi j u'cpf "tgg'ku'cpf u'vq" vj g'o cpi tqxg'hqtguu'cmipi "Hqtkf c'Dc{ 0Vqf c{ "vj g'893.: 53/cetg'Gxgti ncf gu'cpf 'Ht cpeku'UOVc{ nqt " Y kf rthg'O cpci go gpv'Ctgc'ku'vj g'pqtj gtp'cpf "egp'tcn'eqt'g'qh'vj g'Gxgti ncf gu.'ugr ctcv'kpi "Gxgti ncf gu" P cvkqpcn'Rctm'cpf "Dki "E{ r tguu'P cvkqpcn'Rtgu'xg'htgo "gz'vgpuk'xg'ci tleww'cn'hg'nf u'vq'vj g'pqtj "cpf " tgu'f gp'v'cn'f gxgnr o gpv'vq'vj g'gcu'0Cm'j qwi j "ctd'qcu'cpf "tcengf "xgi kengu'ctg'pgeguuct{ "vq'tgej "vj g" kp'v'ktq."vj g'gz'vgpuk'xg'pgwy qtm'qh'igxggu'cpf "ecpcu'eqp'ut'w'v'f "hqt'htqf "eqp'v'q'nf'cpf "y cvgt'uw' r n{ "ch'qtf " co r rg'qr r qtw'p'k'kgu'ht'ht'kpi . 'ht'qi i kpi . 'j k'kpi . 'd'k'kpi . 'cpf "y kf rthg'x'kgy kpi "HHY EE"4234c-0"

Vj g'Gxgti ncf gu'cpf 'Ht cpeku'UOVc{ nqt 'Y kf rthg'O cpci go gpv'Ctgc'ku'mecv'f "pqtj "qh'vj g'r ctn'qp'vj g'pqtj " uk'f g'qh'vj g'Vco kco k'Vtck'ug'g'hi wt'g'57+0Vj ku'ctgc'ku'cm'q'npqy p'cu'Y EC'5**Y EC'5D+.'cpf "ku" eqqr gtcv'xgn{ "o cpci gf "d{ "HHY EE'cpf "UHY O F'0Hki wt'g'63'r tqxkf gu'cp'cgt'k'cn'x'kgy "qh'Y EC'5C'cpf "5D0"

**FIGURE 41: AERIAL VIEW OF THE WCA 3A AND 3B**

Vj g'eqpegr wcn'o cpci go gpv'r ncp'ht'vj ku'o cpci go gpv'ctgc'kf gp'v'k'gu'ugxgt'cn't'gu'wte'g'o cpci go gpv' r tqdrgo u'y kj kp'vj g'Gxgti ncf gu'Eqo r rgz'cpf "r tgu'p'v'ugxgt'cn't'v'gi kgu'vq'cf f tgu'v'j gug'eqpegt'pu'0Vj g" r tqdrgo u'kf gp'v'k'gf "kp'vj g'o cpci go gpv'r ncp't'g'v'kpi "ur gek'k'ecm{ "vq'ncpf "wug'k'pen'f g'j wo cp'f ku'w'dcpeg" eqp'v'k'w'kpi "vq'j cdkcv'eqpf k'k'qpu'vj cv'tg'p'q'v'qr v'o cn'ht'v'kf rthg'ur gelgu'o cp/o cf g'hcw'gu'vj cv'j cxg" rko k'gf "vj g'ur cv'k'cn'gz'v'p'v'q'h'r tguet'kd'gf "ht'gu'cpf "y kf ht'gu'cpf "vj wu'r tqo q'v'f "h'w'gn'ht'cf kpi "cpf." eqp'ugs w'gp'v'f . 'r gc'v'ht'gu'vj cv'j cxg't'gf w'v'f "y kf rthg'j cdkcv'rko k'gf "o cpci go gpv'eqp'v'q'nf'vj g'r ctv'qh" HHY EE'qxgt'vj g'rti gt'gequ{ uvgu "qh'y j lej "Gxgti ncf gu'Eqo r rgz'ku'c'r ctv'cpf "rti g'k'p'w'u'q'h'p'k'q'qi gp" cpf "r j qur j qtw'ht'go "uw't'q'w'p'f kpi "ctgcu'vj cv'j cxg'f gi tcf gf "y cvgt's w'cn'v{ "kp'vj g'Gxgti ncf gu'Eqo r rgz'0' Ceeqo r cp{ kpi "ut'v'v'gi kgu'f gxgnr gf "kp't'gur qp'ug'v'q'vj gug'r tqdrgo u'k'pen'f g'kf gp'v'k'f kpi "j k'v'q'k'le'x'gi g'v'x'g" eqo o w'p'k'f "v'f r gu'k'p'q'f gt "vq't'gu'q'g'j cdkcu'v'q'vj g'r tqr gt'r ncp'v'eqo o w'p'k'f "eqo r qu'k'k'p'v'eq'p'v'w'g'vq" o ck'p'v'k'p'cpf "gu'v'cd'k'ij "t'c'r r q't'v'y kj "ncpf qy p'gtu'cf lcegpv'v'q'vj g'Gxgti ncf gu'Eqo r rgz'v' tqxkf g'v'ej p'k'ec'n' cu'k'v'c'peg'cpf "cf x'leg'kp'q'f gt "vq'g'pu'w'g'vj g'y g'ht'ctg'qh'gequ{ uvgu "eqo r qp'g'p'v'v'o ck'p'v'k'p'y q't'k'pi " t'g'r'v'k'p'uj k'u'y kj "m'ec'n't'gr t'g'ug'p'v'v'x'gu'q'h'i q'x'g't'po gp'v'cn'cpf "t'gi w'v'v'q't{ "ci g'p'k'gu'4234c-0'UHY O F."ht'w"

Ej cr vgt '5<Cfhgevgf 'Gpxktqpo gpv'

Hqtkf c'eqwpvku 'F gr ctwo gpv'qh'Gpxktqpo gpcn'Rtqygevkuq. 'Hqtkf c'F kxkukq'qh'Hqtkf { . 'WUCEG. 'P RU. 'WUHY U.'cpf 'y g'O leequwngg'cpf 'Ugo kprg'kpf kcp 'Vtdgu=cpf 'r tqxkf g'gej plectn'cuukvpep'cpf 'uwr r qtv' vq 'WUCEG. 'UHY O F. 'cpf 'qvj gt'kpxqrxgf 'ci gpeku'q'ko r tqxg'y g's wcrk' 'qh'y cvgt'gpvgtkpi 'y g'Gxgti rcf gu' Ego r rgz '*HHY EE '4225+0'

O KEEQUWMGG'NCPFU'

Vj g'ctgc'qh'cpcn' uku'kpenw gu'cr r tqzko cvgn' '3.322'cet gu'qh'ncpf u'qeewr kgf 'qt'wugf 'd{ 'y g'O leequwngg' Vtdg' 'hki wtg'56+0'Vj gug'ncpf u'ctg'eqo r tkugf 'r tko ctkn' 'qh'j gtdcegqu'y gncpf u'cpf 'ctg'o cpci gf 'hqt' o wnr rg'wugu'P qvcdn' . 'y g'O leequwngg'Vtdg'qr gtcygu'c't guqtv'cpf 'eculq'pgct'y g'pqt y y guvgt'eqtpgt'qh' Mtqo g'Cxgpwg'cpf 'UY ': y 'Utggy'*Vco kco k'Vtckn'*ugg'hki wtg'64+0'Ncpf u'qeewr kgf 'qt'wugf 'd{ 'y g' O leequwngg'Vtdg'ctg'f kuewugf 'kp'o qtg'f gckilp'y g'o'Vtdcn'Ncpf u'kpenw kpi 'kpf kcp'Vtwn'T guqwteguö" ugevkuq'qh'y ku'ej cr vgt0'

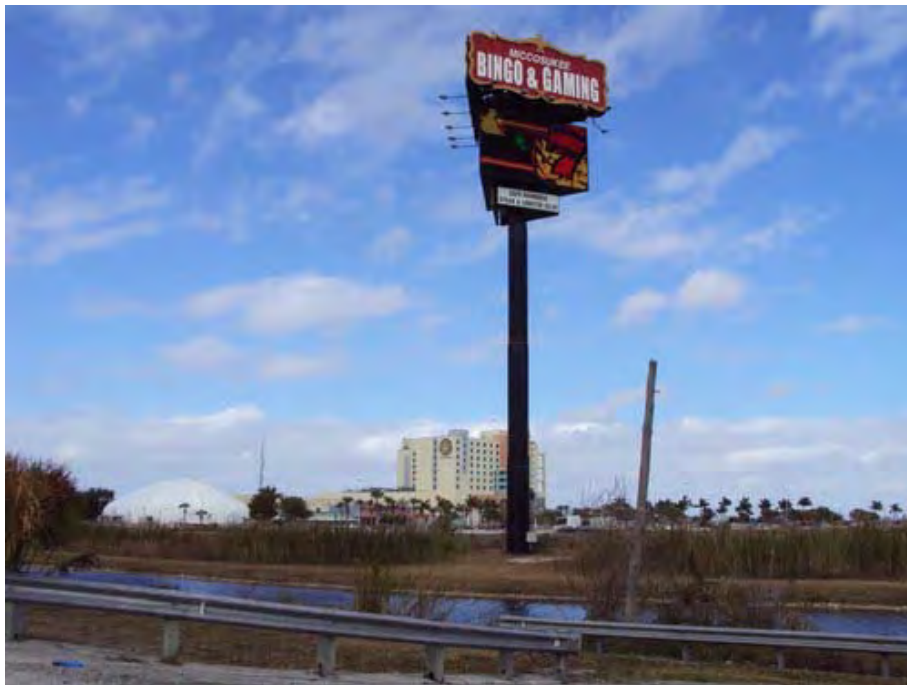


FIGURE 42: MICCOSUKEE RESORT AND CASINO

NQECN'I QXGTPO GPV'NCPFUCPF 'NCPF'WUG'RNCPU'

Ugxgtcn'tgetgcvkqpcn'cpf 'kpuwwkqpcn'ncpf 'wugu'qr gtcvgf 'd{ 'mecn'i qxgtpo gpv'gpvku'ctg'mecvgf 'y kj kp' yj g'ctgc'qh'cpcn' uku'00 quv'pvcn' . 'c'eqo r rgz'j qwukpi 'y g'O kco k'Rtluqp'T'Gxgti rcf gu'Eqtgcvkqpcn' kpuwwg'ku'mecvgf 'cv'yj g'uqwj y guv'eqtpgt'qh'Vco kco k'Vtckn'cpf 'UY '399'Cxgpwg'T'Mtqo g'Cxgpwg'0'Ncpf u' o cpci gf 'd{ 'O kco k'F cf g'Eqwpv' 'ctg'cnuq'hqwpf 'y tqvi j qw'yj g'ctgc'qh'cpcn' uku' . 'r tgf qo kpcpv' 'y kj kp'yj g' tgu'f gpv'cn'eqo o wpu'ku'q' 'y g'gcu'0'Vj gug'kpenw g'ugxgtcn'eqo o wpu'ku' 'r ctmu'cpf 'tgetgcvkqpcn'hckrkku' uwej 'cu'cpf 'Uwp'Ncng'Rctn'i'mecvgf 'cv'UY '389'yj 'Cxgpwg'cpf 'UY '9: y 'Utggy'v'cpf 'y g'Vtckn'I rcf gu'I wp' Tcpi g'mecvgf 'pqt yj 'qh'Vco kco k'Vtckn'cr r tqzko cvgn' 'c's wctvgt'o kg'gcu'qh'Mtqo g'Cxgpwg+0'

O kco kFcf g'Eqwpv' 'Eqo r tgj gpukg'F gxgnr o gpv'O cuvt 'Rncp'

Vj g'i gpgtcn'ncpf 'wug'qdlgevkxgu'cpf 'r qreku'qh'O kco k'F cf g'Eqwpv' . 'cu'y gni'cu'y j gtg'cpf 'j qy 'k'lpv'p'f u' f gxgnr o gpv'qt'eqpu'gxcvkuq'qh'ncpf 'cpf 'pcwcn'tguqwtgu'f wtkpi 'y g'pgzv'v'p'v'q'w' gpv' '{ gctu.'ctg'

cf ftguugf "kp"ku'Ego r tgi gpukxg'F gxgnr o gpv'O cuvgf "Rncp0Vj g'r ncp'r tqxkf gu'hqt "öuwxclpcdng"
f gxgnr o gpv'ö'y j lej "cmqy u'hqt"ncpf "ecr cekf "q"o ggvr tqlgevgf "pggf u. 'r tgugetxcvkp"qh'y gncpf u"cpf "
ci tlewwtclntcgu'cpf 'r tqvevkp"qh'f tlpncdng'y cvgt'y gnhlgf u0C"o clqt'tgxkgy "cpf "w f cvg"qh'y g'r ncp'ku"
f qpg'gxgt{"ugxgp"}{gctu0

Vj g'r ncp"guwdrkuj gu'c'i tqy yj 'r qrke{"y cv'gpeqwtci gu'f gxgnr o gpv'q"qeeu<

- Cv'c'tcvg'eqo o gpwctvg'y kj 'r tqlgevgf 'r qr wcvkpp"cpf "geqpqo le'i tqy yj 0
- Kp"e'eqpki wqu'r cwgt'p'egvgtgf "ctqwpf "c'pgwy qtnlqh'j ki j /kpgpukf "wtdep'egpvtu'y gni'eqppgevgf "
d{"o wmk'o qf cnl'pwtc/wtdep'tcpur qtvcvkp'hcekklkgu0
- Kp"qecvkpu'y j lej "qr vko k g"ghlekge{"kp'r wdrke'ugt xleg'f grkxgt{"cpf "eqpugtxcvkp"qh'xcnwdng"
pcwtclnt'guwtegu0

Vj g'Ncpf "Wug'r qtvcvkp"qh'y g'r ncp'kpenf gu'c"o cr "hqt"423764247.'y j lej "uj qy u'tgeqo o gpf gf "ncpf "wugu"
d{"o clqt'ecvgi qtkgu."gcej "qh'y j lej "ku'kpvgtr tgvf "qecm{"y tqwi j "l qplpi "f guki pcvkpu0Vj g'r ncp"cmq"
guwdrkuj gu'cp"Wtdep'F gxgnr o gpv'Dqwpf ct{"y j lej "ku'uj qy p"kp'hki wtgu'56'cpf '57.'cu'y gni'cu'hki wtg'650'
Wtdep'f gxgnr o gpv'y kj kp'y g'dqwpf ct{"y kni' gpgtcm{"dg'cr r tqxgf "y tqwi j "y g'{"gct"4237.'r tqxkf gf "y cv'
ngxgn'qh'ugt xleg'wcpf ctf u'hqt'pgeguet{"r wdrke'hcekklkgu'ctg'o gv'O kco kF cf g"4235c+0Hki wtg'65'cmq"
f gr leu'yj g'hwwt'g'ncpf "wug'f guki pcvkpu'eqpvcpgf "y kj "y g'Eqwpv{öu'Ego r tgi gpukxg'F gxgnr o gpv'O cuvgf "
Rncp0

P qt yj y guv'Y gnhlgf 'Rt qvevkp' Ct gc' bpf 'yj g'Y guv'Y gnhlgf 'Kpvt lo 'Rt qvevkp' Ct gc''

Vj g'O kco kF cf g'Eqwpv{ "Y guv'cpf "P qt yj y guv'y gnhlgf "r tqvevkp"ctgcu.'y j lej "ctg'knwctvgf "kp'hki wtg'
65.'tgr tguvpv'y q'eqo r qpgpu'qh'c'rti gt'pgwy qtnleqo r tkugf "qh'ltguj y cvgt'y gni'qecvgf "y tqwi j qww"
O kco kF cf g'Eqwpv{ +y cv'eqngev'cpf "f grkxgt'i tqwpf y cvgt'q"y g'eqwpv{öu'f tlpnki "y cvgt'r ncpv0

Gcu'Gxgti rnf gu'Ctgc'qh'EtklecnGpxlt qpo gpvniEpegt p''

Cu'f guetkdgf "kp'O kco kF cf g'Eqwpv{ 'tgi wcvkpu'Ugevkp"55D/35.'Ctgc'qh'EtklecnGpxltqpo gpvni'
Eqpegt'ctg'y qug'j cxkpi "öuki plkecpv'gpxltqpo gpvni'cpf "pcwtclnt'guwteg'xcnwg0Vj g'gzv'p'qh'y g'Gcu'
Gxgti rnf gu'Ctgc'qh'EtklecnGpxltqpo gpvniEqpegt'ku'f gr levgf "kp'hki wtg'650T gcuqpu'hqt "f guki pcvkpi "y g"
Gcu'Gxgti rnf gu'Ctgc'qh'EtklecnGpxltqpo gpvniEqpegt'kpenf g'ku'cdkkl{"q'r tqxkf g'hqt'tgej cti g'qh"
Dkuec{pg'Cs wktgt=uwthceg'y cvgt'uwr r n{"q'Gxgti rnf gu'P cvkpcnRctm=hqqf "uqtci g'ecr cekf =y cvgt's wcrk{"
o clpvgpcpeg=cpf "xgi gcvkpp.'y kfr kkg.'cpf "qy gt'pcwtclnt'hcwtegu0

O kco kF cf g'Eqwpv{ "qtf kpcpeg'pwo dgt": 3/3.'E3."3/37/: 3'uvcgu'y cv'öVj g'tgi wcvkpp'qh'ncpf "wug'kp"c"
eqqtf kpcvgf "o cpgt'y kj kp'y g'ctgc'qh'etkklcn'gpxltqpo gpvniEqpegt'cu'f guetkdgf "kp"Ugevkp"55D/35+ "
y kni'o kpo k g'y g'f cpi gtu'q"j wo cp'j genj . 'uchgv' "cpf "y gnhctg'cpf "q"y g'hpevkplpi "qh'y g'Dkuec{pg"
Cs wktgt.'ku'tgrvgf "uwthceg'y cvgtu'cpf "gequ{ ugo u."d{<

- c0' Rtqxf kpi 'r tqvevkp"ci clpu'cngtcvkpu'qh'y g'pcwtclnt'f tclpci g'u{ ugo u="
- d0' Rtqxf kpi 'r tqvevkp"ci clpu'eqxgtci g'qh'pcwtclnt' cvgt'tgv'p'kpp"cpf "tgej cti g'ctgcu'y kj "
gzeguukg'lo r gto gcdng'uwthcegu="
- e0' Rtqxf kpi 'r tqvevkp"ci clpu'uwdupv'kni'cngtcvkpp'qh'y g'hqto "cpf "hpevkpp'qh'y g'pcwtclnt'
gequ{ ugo ="
- f0' Rtqxf kpi 'r tqvevkp"ci clpu'f gygtkqtcvkpp'qh'y cvgt's wcrk{"dqy "uwthceg'cpf "i tqwpf ="

g0' Rtqxfkfi 'rtqvevqpf'ht'vj g'eqvkwvqpf'qh'umy . 'pewtcrqvgtrpf 'hmj 'qh'uwthceg'y cvgtu'lpvq"
Gxgti rcf gu'P cvkqpcnRctm'cpf 'vj g'dkqk'cpf 'guwctkpg'eqo o wplkgu'f gr gpf gpv'qp'uwaj 'hmj u="

h0' Rtqxfkfi 'rtqvevqpf'ht'vj g'dkqni lecn'hmgtkpi 'ecr cdkkkgu'qh'vj g'y gvrpf "ctgcu="cpf "

i 0' Rtqxfkfi 'etkgtk'ht'vj g'o gjv qf 'qh'grxcvqpf'qh'utwewtgu'cdqvg'vj g'rgxgn'qh'ugcuqpcn'qpg"
j wptgfg / { gct'cpf "uqto "uwi g'hmjgf "rgxgn0"

O kco kFcf g'Eqwpv' 'lpvqpf u'ht'rcpf "wugu'y kj kp'vj g'Gcu'Gxgti rcf gu'Ctgc'qh'Etklecn'Gpxktqpo gpwn'
Eqpegt'p'v'dg'o cpci gf 'lp'y c{ u'vj cv'r txxgpv'ko rcew'htqo "f gxxgnr o gpv'0Rtqr gtv' 'qy pgtu'lp'vj g'ctgc'ctg"
cmjy gf "wug'qh'vj gk'r tqr gtv' . 'o cnkpi 'r wdike'ces wukvqpf'wppgeguuct { 0J qy gxxgt. 'vj g'wug'qh'vcpuhgtcdrg"
f gxxgnr o gpv'tki j w'ecp'dg'gxcwvqpf'cpf . 'h'hmjwfp 'v'dg'cr r tqr tkcv. 'cr r rkgf "v'cn'r qt'vqpu'qh'vj g'ctgc'cu"
cp'cn'gtpcv'kg'geqpqo le'wug'u'vj cv'qy pgtu'o c{ 'dgpghk'htqo "qy pgtuj k' "cpf "rgcxg'vj gk'rcpf 'lp'ku'pewtcr'
uvcg*O kco kFcf g'4235d+0'

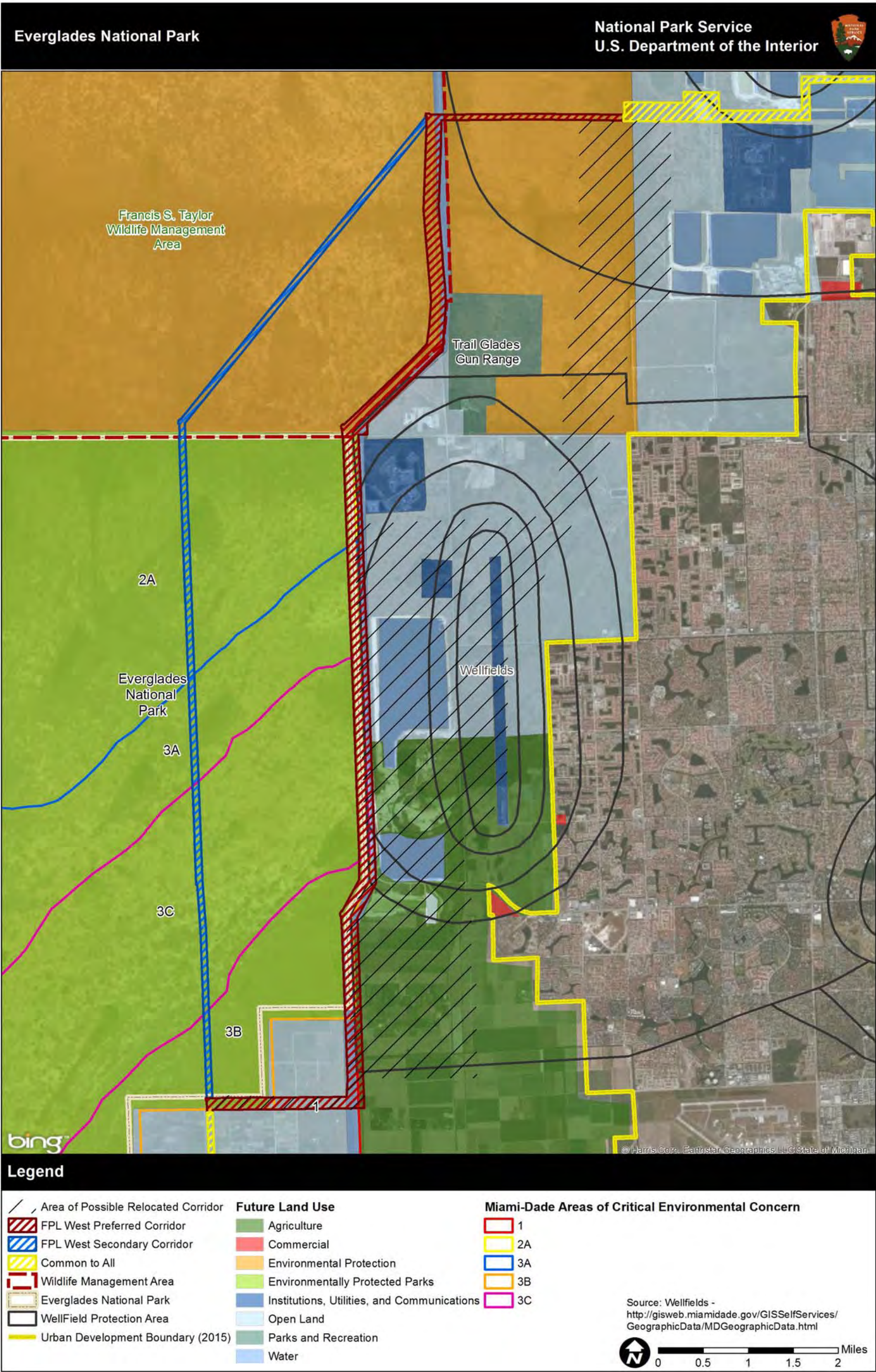
VTDCN'NCPFUKPENWFPI 'KFKCP'VTWUV'TGUQWTEGU'

Vj gtg'ctg'y q'rcpf "ctgcu'j grf 'lp'twuv'ht'vj g'O leequwngg'Vtkdg*ij g'Vtkdg+ij cv'ctg'lp'vj g'xlekp'k' 'qh'vj g'
r tqr qugf "cevkqpf0Hki wtg'56'ij qy u'neqvqpu'cu'f guetkdgf "dgrjy 0K'cf f k'kqpf'v'vj g'y q'Kpf kcp'Vtwuv'
r ctegn. 'vj gtg'ku'cp'cf f k'kqpcn'hgg'rcpf 'r ctegn'cu'y gm'cu'rcpf 'r gto kwgf "v'vj g'O leequwngg'lp'vj g'xlekp'k' 'qh'
vj g'r tq'gevtcgc0Vtwuv'rcpf 'ku'rcpf 'y j gtg'vj g'hgf gtcn'f qxgtpo gpv'j qnf u'vj g'rgi cn'v'kg. 'dw'vj g'dgpghk'lecn'
kp'gtgu'tgo c'pu'y kj 'vj g'vtdg0Hgt'hgg'rcpf . 'vj g'vtdg'ces wktgu'vj g'rgi cn'v'kg0Hkpcn'f . 'vj g'r gto kwgf "rcpf 'ku'
qy pgf "d{ 'vj g'P RU'dw'w'p'gt'c'hmjpi / vgt o "wug'r gto k'v'vj g'O leequwngg'Vtkdg0'

Vj g'htuv'ctgc'ku'eqo r tkugf "qh'vj tgg'r ctegn'qh'twuv'rcpf "qwu'f g'vj g'Gxgti rcf gu'P cvkqpcnRctm'y j kej "ctg"
j grf 'lp'twuv'd{ 'vj g'Wpkgf "Ucvgu'ht'vj g'dgpghk'qh'vj g'Vtkdg'cpf "ctg'wugf 'ht'ugr'h'f gvgto kpcvqpf'cpf "
eqo o gtekn'f gxxgnr o gpv'r wtr qugu'0Qpg'r ctegn'ku'P qtv' 'qh'WLU063*Vco kco K'Vtckn'cpf 'Gcu'qh'Mtqo g'
Cxxgpw'0K'ku'vj g'Nco dkn'Rtqr gtv' 'cpf 'k'eqpuku'qh'cr r tqzko cvgn' "447"cetgu'0Vj ku'r tqr gtv' 'ku'pqv'
ewtgpv' 'wugf 0Cpqj gt'r ctegn'ku'vj g'UGO C'Rtqr gtv' 'neqv'f 'gcu'qh'Mtqo g'Cxxgpw'cpf 'Uqwj 'qh'WLU'
630K'eqpuku'qh'cr r tqzko cvgn' "524"cetgu'cpf "j cu'dggp'i tcf gf "v'cee'qo o qf cv'g'qxxgthm'y 'r ctnkpi 'htqo "
vj g'O leequwngg'Kpf kcp'Tguqtv'cpf 'I co kpi 'Hckk'k' . 'cu'f guetkdgf "dgrjy 0Vj g'vj kf "qh'vj gug'r ctegn'ku'vj g'
Eqtcn'Y c{ 'Rtqr gtv' 'neqv'f 'gcu'qh'Mtqo g'Cxxgpw'cpf 'Uqwj 'qh'WLU063IVco kco K'Vtckn'cpf 'Uqwj 'qh'vj g'
UGO C'Rtqr gtv' +0K'eqpuku'qh'cr r tqzko cvgn' "72"cetgu'cpf 'ku'pqv'ewtgpv' 'lp'wug0'

Vj g'ugeqpf "ctgc'ku'eqo r tkugf "qh'vj tgg'r ctegn'cu'j grf 'lp'twuv'd{ 'vj g'Wpkgf "Ucvgu'ht'vj g'dgpghk'qh'vj g'
Vtkdg'neqv'f "cv'vj g'lpvgtugevqpf'qh'Mtqo g'Cxxgpw'cpf "Vco kco K'Vtckn'0Vj g'htuv'Mtqo g'Cxxgpw'
tgugt'xcvqpf'ctgc'ku'eqo r tkugf "qh'47"cetgu'neqv'f "cv'vj g'pqt'j y guv'eqtpgt'qh'vj g'lpvgtugevqpf'cpf 'k'ku'vj g'
ukg'qh'vj g'O leequwngg'Kpf kcp'Tguqtv'cpf 'I co kpi 'Hckk'k' 0C'ugeqpf 'r ctegn'ku'dgj kpf 'cpf 'cf lcegpv'v'vj g'
47"cetgu'Tguqtv'cpf 'I co kpi 'Hckk'k' 0Vj ku'rcpf "j grf 'lp'twuv'ht'vj g'dgpghk'qh'vj g'O leequwngg'Vtkdg'cpf "
eqpuku'qh'cr r tqzko cvgn' "3: 2083"cetgu'0K'gzvqpf u'cn'vj g'y c{ 'v'vj g'ecpcn'neqv'f "dgj kpf 'vj g'47"cetg"
Ecukpq'r tqr gtv' "dw'gzen'f gu'c'6"cetg'gzk'kpi 'tcf kq legn'vqy gt'ukg0Vj g'vj kf "Mtqo g'Cxxgpw'tgugt'xcvqpf"
ctgc'ku'c'20 4/cetg'mv'neqv'f "qp'vj g'uqwj y guv'eqtpgt'qh'vj g'lpvgtugevqpf'cpf 'ku'vj g'ukg'qh'vj g'O leequwngg'
Vqdcee'q'Uj qr 0Hgt'r wtr qugu'qh'vj g'ej cr vgt "6"cpn'f uku. 'vj gug'vj tgg'r ctegn'ctg'cpn'f | gf "cu'qpg. 'tghgtt'gf "v"
cu'vj g'Tguqtv'cpf 'I co kpi 'Hckk'k' 0'

Vj g'hgg'r tqr gtv' 'ku'qy pgf "d{ 'vj g'O leequwngg'cpf 'ku'neqv'f "cmjpi 'vj g'gcuvgtp'gf i g'qh'Mtqo g'Cxxgpw'cpf "
pqt'j 'qh'UY " : : 'Utg'gv'P 'Mgpf cm'F tkxg+0Vj g'r ctegn'ku'cr r tqzko cvgn' "322"cetgu'0Vj g'ewtgpv'wug'ku"
wmpqy p. 'j qy gxxgt'j y gp'x'ky kpi 'cp'cgtkn'r j qvqi tcr j . 'vj g'rcpf "wug'cr r gctu'v'q'o cvej 'vj g'ci tlewwtcrn'
wugu'qh'vj g'cf lcegpv'r tqr gt'vku0'



FGO QI TCRJ KE'EJ CTCEVGTHVKEU'

Rqr wævqp 'Vt gpf u'

O kco kF cf g'Eqwpv\ 'j cu'c'r qr wævqp'qh'4.6; 8.657'r gqr ng. 'cpf 'c'r qr wævqp'f gpuk\ 'qh'3.487'r gqr ng'r gt " us wctg'o kg"*WUUEgpuw'4232c+0K'ku'y g'o quv'r qr wævqp'eqwpv\ 'lp'Hqtkf c.'cpf 'vj g'gk j vj 'o quv'r qr wævqp' eqwpv\ 'lp'Wpkgf 'Ucvgu.'eqo r tkulpi 'j crh'qh'y g'vqcn'Uqwj 'Hqtkf c'o gvtqr qkscp'ctgc'r qr wævqp." kpenf lpi 'O kco kF cf g.'Dtqy ctf.'cpf 'Rcm 'Dgcej 'eqwpvku"*WHDGDT'422: -0'

O kco kF cf g'Eqwpv\ 'j cu'gzzr gtlgpegf 'r qr wævqp'i tqy vj . 'gur gekcm\ 'lp'y g'3; 82u'cpf '3; 92u.'y kj " r qr wævqp'f qwdrkpi 'Itqo '3; 82'v'3; ; 20Uqwj gcuvgtp'Hqtkf cæ'f gpugn\ 'r qr wævqp'wtdcp'ctgcu'cpf " i tqy lpi 'r qr wævqp'j cxg'hwgrgf 'vj g'y guvy ctf 'f gxgrqr o gpv'qh'ci tlewwtcr'cpf 'wpko r tqxgf 'rcpf u.'enugt " vq'y guvgtp'wtdcp'dqwpf ct\ 'cpf 'vj g'Vco kco K'Vtckitgi kqp0Rqr wævqp'u'ht 'vj g'eqo o wpkvku'cpf " uwdf kxkukpu'cf lcegpv'v'vj g'y guvgtp'wtdcp'dqwpf ct\ 'ctg'uwo o ctk\ gf 'lp'vcdng'360'

TABLE 14: POPULATION CHANGE 2000–2007 FOR MIAMI-DADE COUNTY

County and Census Designated Place	2000	2010	Percentage Change
Miami-Dade County	2,253,362	2,496,435	10.8
The Hammocks	47,379	NA	—
Kendall West	38,034	NA	—
Kendall Lakes	56,901	NA	—
Tamiami	54,788	NA	—
Doral	20,438	NA	—

Source: U.S. Census Bureau 2000, 2010a.

Tceg'tpf 'Gvj plek\ "

Hqtkf c'cpf 'O kco kF cf g'Eqwpv\ 'eqo r tkug'cr r tqzko cvgn\ '7: 'cpf '37'r gtegpv'pqp/J kur cple'y j kg" r qr wævqp'u.'tgur gevkggn\ 0Vj gtg'j cu'dggp'cp'kpetgcug'lp'y g'r tqz qv'qp'qh'lpf kxkf wcn'qh'J kur cple'qtki lp" lp'tgegpv\ gctu'lp'O kco kF cf g'Eqwpv\ =lp'4232.'vj g'J kur cple'r qr wævqp'eqo r tkugf '87'r gtegpv'qh'y g" r qr wævqp'lp'y g'eqwpv\ 0Vcdng'37'r tqxkf gu'y g'tceg'cpf 'gvj plek\ 'hqt'Hqtkf c'cpf 'O kco kF cf g'lp'42320'

TABLE 15: RACE AND ETHNICITY, 2010

Race or Ethnicity	Florida (in percent)	Miami-Dade County (in percent)
Non-Hispanic	77.5	35.0
White	57.9	15.4
Black	15.2	17.1
Other Race	2.9	1.7
Two or More Races	1.5	0.8
Hispanic (all races)	22.5	65.0

Source: U.S. Census Bureau 2010a.

GEQPQO Æ'EJ CTCEVGTUVÆU'**Ncdqt 'Hqteg'çpf 'Wpgo r m{ o gpv'**

kp"4232.'O kco kF cf g'Eqwpv{ 'go r m{ o gpv'tgr tguqpvf "360'r gtegpv'qh'yj g'vqcnHqtkf c'go r m{ o gpv*WUO'Dwtgcw'qh'Geppqo le'Cpcn{ uku"4234+0Vj g'wpgo r m{ o gpv'tcv'lp'O kco kF cf g'Eqwpv{ 'lp"4232'y cu"330" r gtegpv'yj gtgcuv'g'wpgo r m{ o gpv'tcv'lp'Hqtkf c'y cu"320'r gtegpv'çpf 'y g'WUO'wpgo r m{ o gpv'tcv' y cu"70 'r gtegpv0kp'Hgdtwt{ '4234.'y g'wpgo r m{ o gpv'tcv'y cu"320'r gtegpv'yj kg'yj g'ucvga" wpgo r m{ o gpv'tcv'lp'Hgdtwt{ '4234'y cu"; 06'r gtegpv*WH'DGDT"4234+0'

Go r m{ o gpv'çpf 'Kpego g'

kp"4232.'y g'r gt'ecr kc'r gtuqpcn'lpego g'lp'O kco kF cf g'Eqwpv{ 'y cu"858.742.'urki j v{ 'rgu'yj cp'yj g'ucvga" r gt'ecr kc'lpego g'qh'85: .432*WH'DGDT"4234+0kp'O kco kF cf g'Eqwpv{ . 'vqcn'hwv'ko g'çpf 'r ctv'ko g'lqdu' lp"4232'y gtg"3.638.449.'y j kg'go r m{ o gpv'lp'Hqtkf c'y cu': .; 55.336*WUO'Dwtgcw'qh'Geppqo le'Cpcn{ uku" 4234+0kp"4232.'lp'O kco kF cf g'Eqwpv{ . 'y g'qvj gt'ugtxlegu'ugevt'y cu'yj g'hti guv'uqwtg'qh'go r m{ o gpv." ceeqwpv'pi 'hqt"480'r gtegpv'qh'lqdu.'urki j v{ 'j ki j gt'yj cp'lp'Hqtkf c'0Vj g'gf wecvkp'çpf 'j gcnj 'ectg'ugevt" ceeqwpv'gf 'hqt"350 'çpf "350'r gtegpv'lp'O kco kF cf g'Eqwpv{ 'çpf 'Hqtkf c.'tgr gevkgv{ *WU'Dwtgcw'qh' Geppqo le'Cpcn{ uku"4234+0Vj g'eqput wecvkp'ugevt'ceeqwpv'gf 'hqt"604'r gtegpv'qh'yj g'lqdu'lp'yj g'eqwpv{ 'çpf " 704'r gtegpv'qh'yj g'lqdu'lp'yj g'ucvga0Vcdrg"38'uwo o ct k gu'go r m{ o gpv'd{ 'lpf wv{ 'ugevtu'hqt'O kco kF cf g' Eqwpv{ 'çpf 'Hqtkf c'0

TABLE 16: SUMMARY OF EMPLOYMENT BY INDUSTRY, 2007, MIAMI-DADE COUNTY AND FLORIDA

Industry Sector	Miami-Dade County	Florida
Goods-Producing		
Natural Resources and Mining	0.7%	1.7%
Construction	4.2%	5.2%
Manufacturing	2.9%	3.5%
Subtotal	7.8%	10.3%
Services-Producing		
Transportation	5.6%	3.0%
Information, Finance, Insurance, and Real Estate	12.3%	13.2%
Wholesale and Retail Trade	15.6%	14.6%
Education and Healthcare	13.9%	13.1%
Accommodations and Food Services	7.2%	8.0%
Other Services*	26.5%	25.5%
Subtotal	81.2%	77.5%
Government	11.1%	12.3%
Total	100.0%	100.0%

*Includes professional and technical services, management of companies, administrative and waste services, arts, entertainment and recreation, and other services.

Source: U.S. Bureau of Economic Analysis 2012

J qwulpi "

Y kj lp'O lco kF cf g'Eqwpv\ .t gukf gpvkn'ctgcu'ctg'hqwpf 'lp'ekkgu."vy pu."uo cmgt'eqo o vpkkgu."cpf 'lp'yj g" vpkpeqtr qtcvgf "r qt vqpu'qh'yj g'eqwpv\ 0Vq'kf gpvkh\ 'yj g'r tqr gtv\ "xcnwgulp'enqug'r tqzko kv\ "vq'yj g'cnngtpcvkxg" tqwgu."yj g'pwo dgt'qh'yj qwulpi "wpku."qeewr cpe\ "tcvg."cpf "o gf lcp"j qwulpi "xcnwgulhqt"4232'y gtg"gzco kpgf " hqt"34'egpuwu'tcevu'yj cv'lpvgtugev'qt'ctg'f kgevn\ "cf lcegpv'vq'yj g'cnngtpcvkxg'tqwgu0Y kj lp'yj g'34'egpuwu" vcevu."yj gtg'ctg'qxgt"39.222"j qwulpi "wpku."y kj "o gf lcp"j qwulpi "xcnwgulcpilpi "ltqo "&486.222"vq" &656.2220Hki wtg'66"uwo o ctik gu'yj g'qecvqpu'qh'yj g'egpuwu'tcevu'yj kj lp'yj g'r tqlgev'ctgc0Vcdng"39" r tguwpv'yj g'j qwulpi "ej ctcevgtkuleu'

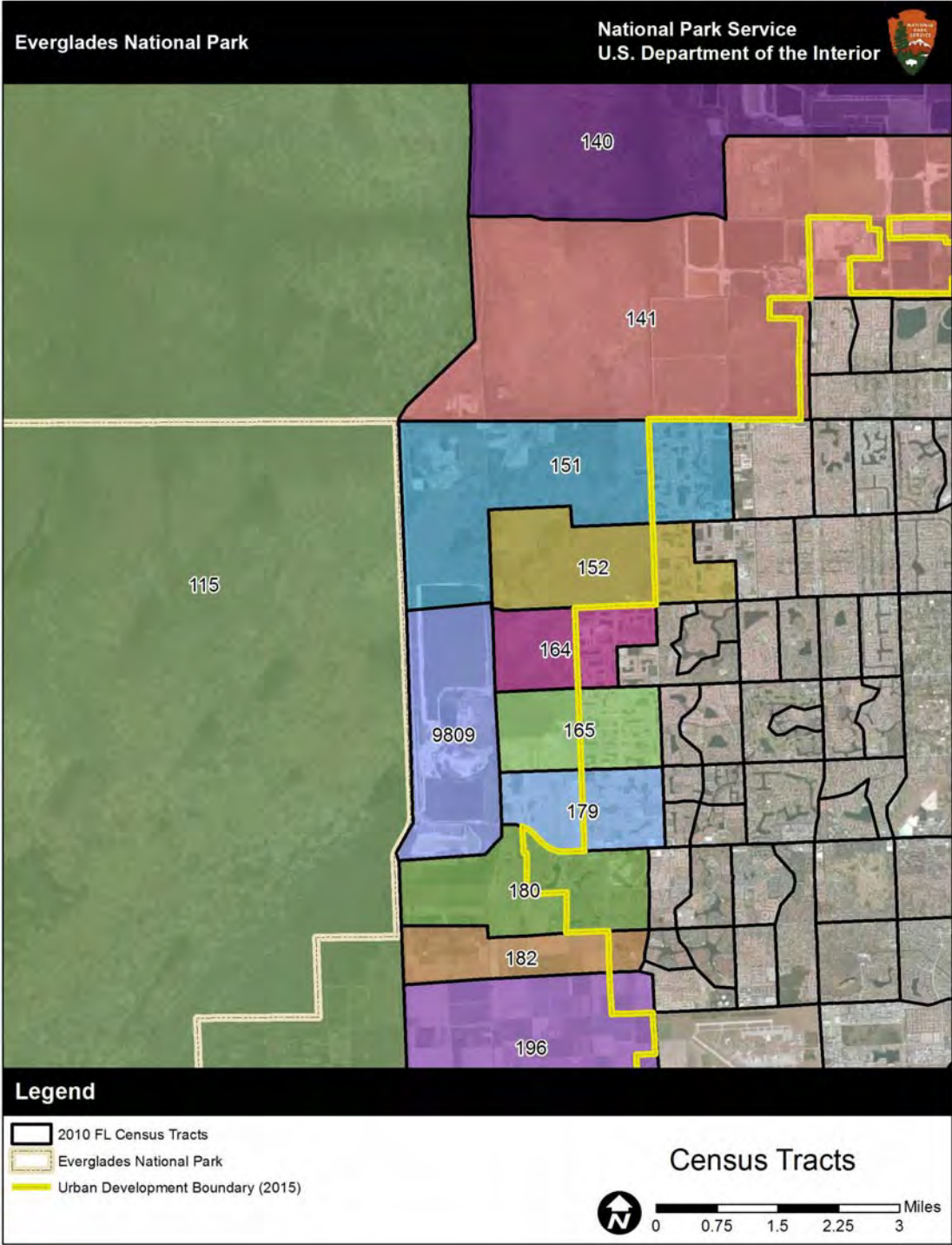
TABLE 17: HOUSING UNITS AND VALUES, 2010

Geography	Housing Units	Percent Occupied	Median Housing Value (2010\$)
Florida	8,863,057	80.7	205,600
Miami-Dade County	980,580	84.4	269,600
Census Tract 115	1,865	84.5	434,400
Census Tract 140	12	100.0	NA
Census Tract 141	0	—	—
Census Tract 151	2,599	91.2	357,500
Census Tract 152	2,014	94.9	349,100
Census Tract 164	1,611	96.0	381,500
Census Tract 165	2,092	87.5	358,800
Census Tract 179	2,622	89.2	329,200
Census Tract 180	2,205	95.6	343,800
Census Tract 182	845	85.9	263,800
Census Tract 196	1,572	85.2	357,200
Census Tract 9809	0	—	—

Source: U. S. Census Bureau 2010b.

RctnlXkukqt 'Ur gpf lpi 'c'pf 'Eqpvtldwkpqu'vq'yj g'Tgi kqpcnGeppqo { "

Gxgti ncf gu'P cvkqpcn'Rctm'cwtcevu'qxgt"3"o knkqp'xkukqtu'c"{ gct'ur gpf lpi "cp'guvko cvgf "&3580"o knkqp" cppwcm\ "Uv\ pgu"4233+0Vj g'xkukqt'ur gpf lpi "uwr r qtu'cp'guvko cvgf "3.; 78'lqdu'y kj "cppwcnlpeqo g'qh' &940"o knkqp'lp'yj g'tgi kqpcn'geppqo { "Uv\ pgu"4233+0Cnj qvi j "yj g'lqdu'uwr r qtv\ 'd\ "rctnlxkukqt" ur gpf lpi "tgr tguwpv'qpn\ 'cdqww'208"r gtegpv'qh'vqcn'tgi kqpcn'go r nq\ o gpv."yj g'xkukqt'ur gpf lpi "cpf "lqdu" uwr r qtv\ 'ctg'lo r qtvcpv'vq"o cp\ "dwukpuguu'qecvgf "pgct'yj g'r ctm'uwej "cu'eqpeguukqp"qr gtcvqpu'cpf " huj lpi "qwhkvgtu"PRU"4235c-0"



Note: This map does not depict the entire census tract area for census tracts 115, 196, and 140. As a result, there are housing units within these census tracts listed in table 17 that lie to the north, west and south of the portions of the census tracts shown on this map.

FIGURE 44: CENSUS TRACTS THAT INTERSECT OR ARE IN PROXIMITY TO THE ALTERNATIVE ROUTES

Ej cr vgt "5<Cfhgevgf "Gpxktqpo gpv"

HRN'Tcvgu'c{pf "Tcvg r c{ gt u'

HRN'ku'yj g'rti guv'grgevtle'wkrk\ 'lp'Hqtkf c'cpf "qpg'qh'yj g'rti guv'tcvg/tgi wrcvgf 'wkrkkgu'lp'yj g'Wpklgf " Ucvgu0HRN'ugt xgu'608"o krikp'ewuqo gtu'lp'Hqtkf c'"*HRN'4234d+0Vj g'v\ r lccn'HRN'dkni'ku'yj g'nyy guv'qww'qh' 77"wkrikkgu'lp'Hqtkf c'cpf "cdqww'46'r gtegpv'dgmjy "yj g'pcvkqpcn'cxgtci g'"*HRN'4234e+0

Ecr kcn'gzr gpf kwtgu'hqt'ko r tqxgo gpw'vq'grgevtle/wkrk\ 'lphctutwewtg'ctg'kpxguo gpw'o cf g'vq'ugt xg" ewuqo gtu0Vj g'gzr gpf kwtgu'ctg'r cuugf "qp'vq'yj g'ewuqo gtu'ugt xgf 'lp'yj g'hqto 'qh'lpetgcugf 'tcvgu0' J qy gxgt.'cu'c'tgi wrcvgf 'wkrk\ .'yj g'r tqr qpgpv'ecp'lpetgcug'tcvgu'qpnl "qp'cr r tqxcn'd{ 'uvcg'wkrk\ " eqo o kulkpu0Uvej 'tcvg'lpetgcug'tgs wguu'ctg'uwdlgevgf 'vq'tki qtqwu'cpcn\ uku'd{ 'tgi wrcvtu'cpf "qy gtu.'cpf " vq'r wdike'r tqeguu0

RCTMQRGT CVKQPUCPF 'O CPC I GO GP V"

Rctn'lo cpci go gpv'cpf "qr gtcvkpu'tghgtu'vq'r ctn'luclh'ghhqtu'vq'o clpvc'p'cpf "cf o lplugt'r ctn'ltguqwtegu." cpf "vq'r tqxkf g'cp'kf gcn'xkukqt'gzr gtlgpeg0Gxgti rcf gu'P cvkqpcn'Rctn'luclh'r tqxkf gu'yj g'hwn'ueqr g'qh' hwpv'kpu'cpf "cevkxkkgu'pggf gf "vq'ceeqo r rkuj "o cpci go gpv'qdlgevxgu0Vj g\ 'r gthqto 'f wkgu'yj cv'lpemf g" xkukqt'cpf "tguqwtg'r tqvgevkp.'tguqwtg'o cpci go gpv.'cpf "lpvgr tgv'vkp'cpf "gf wecvkqp0Vj g" uwr gtlpvgpf gpv'o cpci gu'cn'r ctn'luclh'cpf "lpemf gu'o cpci gtu'tgur qpukdg'hqt'eqpegu'kpu.'r rcpplpi ."cpf " eqo r rlcpeg.'cpf "ewnw'cn'ltguqwtegu'r tqi tco u'"P RU'4228c+0

Rtlpek'cn'r ctn'lr gtcvkpu'cpf "o cpci go gpv'qh'tgrxcp'eg'y kj lp'GGGC"cpf "yj g'ueqr g'qh'yj ku'r tqlgevt'ctg" qxgtuggp'd{ 'yj g'Hkt g'O cpci go gpv.'Uqwj 'Hqtkf c'P cwtcn'Tguqwtegu'Egpvgt'"*UHP TE+. 'Ewnw'cn' Tguqwtegu.'cpf "Xkukqt'cpf "Tguqwtg'Rtqvgevkp'f kxkukpu0Gzqve'r rcpv'o cpci go gpv'ku'cp'ko r qtwcpv'r ctv' qh'o cpci go gpv'cpf "qr gtcvkpu'lp'GGGC.'cpf "ku'c'uwdf kxkukp'qh'yj g'UHP TE0

Hkt'G'CPF 'CXKVKQP 'O CPC I GO GP V"

Vj g'o clp'tgur qpukdkrk\ 'qh'yj g'Hkt g'cpf "Cxkcvkqp'O cpci go gpv'ku'vq'ko r ngo gpv'r tguetldgf "dwtpu'cpf " o cpci g'y krf hktgu'yj tqwi j qww'Gxgti rcf gu'P cvkqpcn'Rctn0Vj g'o clp'r wtr qug'qh'yj gug'r tguetldgf "dwtpu'ku'vq" tgf weg'yj g'tkum'cpf "yj tgc'v'qh'wpy cpvgf "y krf hkt g'vq'r tqvgevt'hktg.'r tqr gtv\ .'eqo o wplk\ 'cpf "Rctn'ltguqwtegu" cpf "o clpvc'p'hkt g'cf cr vgf "gequ\ uvgu u0Hkt g'o cpci go gpv'luclh'cnuq'tgur qpf "vq'cr r tqzko cvgn\ "qpg'y krf hkt g" r gt'o qpjy ."dw'yj gtg'ctg'rti g'hwev'wv'kpu'lp'yj g'htgs wpe{ 'qh'hkt g'gxgpw'cv'yj g'r ctn'lf wq'vq'yj g'j ki j " r qvgpv'cn'hqt'hktgu'lp'cp{ 'i kxgp'"{ gct.'cp'cxgtci g'qh'522'f c{ u'qlhgt'uwxcdng'eqpf kxkpu'hqt'y krf hktgu'vq'uvcv0' Vj tqwi j qw'yj g'r ctm'c'vqcn'qh'32'vq'42'r tguetldgf "dwtpu'ctg'eqpf wevgf "gcej " { gct0Gcej "dwt p'i pggtcm\ " rnuw'qpg'vq'yj tgg'f c{ u0Rtguetldgf "dwtpu'ctg'gzv'tgo gn\ 'rddqt/lpvgpukxg.'tgs wtkpi "dgwy ggp'32'cpf "52'luclh" cm'qh'yj j qo "ctg'hwn'vko g'r tqhgu'kqpcn'hkt g'luclh'yj kj "qeecukqpcn'lpvgtci gpe{ 'r ctv'ekr cvkqp'htqo "yj g" WUHY U'cpf "yj g'WU0Hqtgu'Ugtxleg+0Vj g'vqcn'luclh'uk' g'ku'54'lpf kxkf wcnu.'cm'qh'yj j qo "ctg'r gto cp'gpv." hwn'vko g'go r m{ ggu'"hqt'ctg'uwdlgevt'vq'hwn'qwi j +0Vj ku'ku'uw'hlekp'v'vq'o gg'v'yj g'ewt'gpv'pggf u'qh'yj g'Hkt g" O cpci go gpv'f kxkukp'"*Cpf gtuqp'r gtu0eqo o 04234+0

Cr r tqzko cvgn\ 'vy q'vq'hqt'r tguetldgf "dwtpu'ctg'eqpf wevgf "lp'GGGC"gej " { gct0Cxkcvkqp'ku'cp'ko r qtwcpv' r ctv'qh'hkt g'o cpci go gpv'cevkxkkgu0Hkt g'o cpci go gpv'luclh'wugu'c'tgtqhkxgf "etqr /f wuxgt'ck'r rcp'g'vq'f qwug" hktgu.'cu'y gmi'cu'c'eqpvtcevgf "j gneqr vgt'vq'ki plkg'r tguetldgf "dwtpu0Cketch'ctg'cnuq'uqo g'vko gu'wugf "vq" vcpur qtv'hktghki j vgtu'vq'uvcv'gi le'hqecv'kpu0Ewttgpv\ .'yj g'o quv'uki plh'ecp'v'qduw'wv'kpu'vq'cxkcvkqp'lp" GGGC'ctg'rti g'tgg'u'"*Cpf gtuqp'r gtu0eqo o 04234+0

KpVGTRTGVCVKQP'CPF 'XKUKQT'UGTXEGU'F KXUKQP "

Kpvgtr tgv'vkp'cpf "Xkukqt'Ugtxlegu'luclh'ctg'cevkxg'lp'yj g'GGGC'htqo 'F gego dgt'3'6'Cr tki'52.'y j gp'yj g" Ej gnikne'F c{ "Wug'Ctgc'ku'qr gp0Uk'xqnpvggtu'qr gtcvg'lp'yj ku'xlekp\ "qp'c'f ckn\ "dcuku'f wtkpi "yj ku'r gtlqf 0

Cf f kklqpcn'uchh'ctg'mqecvgf 'cv'yj g'Uj ctnlXcmg{ 'Xkukqt'Egpgvt.'y j lej 'ku'qr gp'{ gct'tqwpf 0Qxgtcm'yj tgg' Xkukqt'cpf 'Tguqweg'Rtqvgvqp'uchh'cpf 'ukz'uchh'itqo 'yj g'Hktg'O cpci go gpv'f kklukqp'ctg'mqecvgf 'cv'yj g' GGGC0F wq'q' dwf i gv'cpf 'uchh'kpi 'ewu.'r ctnlo cpci gtu'ctg'eqpukf gtlpi 'yj g'r quukdkrk' 'yj cv'yj g'ugcuqpcn' qr gplpi 'qh'yj g'Ej gnlk'ctgc'y krlpqv'qeeu'hqt 'Y kpgt'4236'*J gtlkpi '4235+0'

UQWJ 'HNQTF C'P CVWTCN'TGUQWTEGU EGPVGT''

Vj g'UHP TE 'ku'qpg'qh'yj g'r ctnu'r tlpek'cnf kklukpu'UHP TE 'qxgtuggu'gpxktqpo gpv'ncpf 'geqmi lecn' cuuguu gpw'y kj lp'yj g'r ctm'cpf 'rtqxf gu'uekp'whe'kphqto cvkp'q' yj g'r ctnicpf 'q' yj g'WUOF gr ctvo gpv'qh' yj g'kpgtkqt '*F QK0Vj g'f kklukqp'ku'cnu'gur qpukdrg'hqt'r gto kklpi 'uekp'whe'tgugctej 'eqpf wevgf 'd{ 'pqp/ PRU'kpu'kwkpu'y kj lp'yj g'r ctm'cpf 'rtqxf gu'hwf'kpi 'hqt'i tqw'u'uggnkpi 'q'eqpf wev'uwej 'tgugctej 0' UHP TE'j cf '84'hw'wko g'r gto cpgpv'uchh'cpf 'yj tgg'r ctv'wko g'uchh'lp'4234'*O kej gnlr gtu'eqo o 04234+0'

Vj g'UHP TE'y cu'f kkl gf 'kpv'kxg'o clqt'dtcepej gu'lp'4234<

- Cf o kklukvqp.'y j lej 'qxgtuggu'cf o kklukvkg'f wkgu'y kj lp'UHP TE=
- Rtqlgev'O cpci go gpv.'y j lej 'qxgtuggu'kpgtcevqpuy kj 'yj g'WUCEG'cpf 'ecttkgu'qwr'tqlgew'y kj lp' yj g'WUCEG'htco gy qtm=
- Y cvgt'S wcrk'.'y j lej 'cpcn' | gu'y cvgt's wcrk' 'f cv'cpf 'f gvgto kpgu'y j gyj gt'yj g'r ctnu'y cvgt' tguqwegu'o ggv'y cvgt's wcrk' 'ucpf ctf u=
- Rj { ulecn'Tguqwegu.'y j lej 'eqpf weu'j { f tqmi le'o qpkqtkpi 'cpf 'kpgtcew'y kj 'yj g'gpi kpggtu'cv' WUCEG'cpf 'yj g'UHY OF.'cu'y gml'cu'qy gt'eqwpv'.'ucvg.'cpf 'hgf gtcn'ci gpeku=cpf "
- Dkqmi lecn'Tguqwegu.'y j lej 'qxgtuggu'dkqmi lecn'o qpkqtkpi . 'gzqve'ur geku'o cpci go gpv.'cpf " geqmi lecn'o qf gtlpi 'cevkxkgu'0'

UHP TE'qr gtcvkpu'o cng'wug'qh'cketch' r ctvewrtn' 'lp'yj g'GGGC'y j gtg'cxkcvqp'eqpukwgu'yj g'gculguv' cpf 'o quv'gh'ekpgv'y c{ 'q'v'ctpur qtv'lpf kkl wcn'v'q'qy gty lug'kpcceguukdrg'ctgcu'*O kej gnlr gtu'eqo o 0 4234+0'

GZQVKE'RNCPV'O CPCI GO GPV''

Vj g'Gzqve'Rncpv'O cpci go gpv'r tqi tco 'ku'c'r ctv'qh'yj g'UHP TE0Gzqve'r ncpv'o cpci go gpv'ku'qxgtuggp'd{ " wy q'r gto cpgpv'go r nq{ ggu0Vj ku'wdf kklukqp'tgegkxgu'qpn' 'c'xgt{ 'uo cm'co qwpv'qh'kpgtpcn'PRU'hwf'kpi . " gpqwi j 'hqt'c'o qf guv'qr gtcvkpcn'dwf i g0Vj g'o clqtk' 'qh'hwf'kpi 'ewtgpw' 'eqo gu'htqo 'gzvgtpcn'luqwegu.' nti gn' 'htqo 'ucvg'cpf 'eqwpv' 'i qxgtpo gpw0Vj g'cxckcdk'k' 'qh'hwf'kpi 'ku'yj gthqt'g'j ki j n' 'xctkcdrg'htqo " { gct'q' } { gct'cpf 'htqo 'ugcuq'v'q'ugcuq'p' .cpf 'gzvgtpcn'eqpvtcevqtu'tcvj gt'yj cp'PRU'uchh'ectt{ 'qw'yj g' o clqtk' 'qh'yj g'r j { ulecn'qr gtcvkpu'qh'gzqve'r ncpv'o cpci go gpv'0Vj g'Gzqve'Rncpv'O cpci go gpv' uwdf kklukqp'qh'UHP TE'au'o clp'tgur qpukdkk'kgu'ctg'q'ugewt'hwf'kpi . 'cwj qt'eqpvtcevu.'j kg'eqpvtcevqtu.' qxgtugg'eqpvtcevgf 'y qtnlqp'gzqve'r ncpv.'cpf 'eqpf wev'gzqve'r ncpv'o qpkqtkpi 'cevkxkgu'*Vc{ nqt'r gtu'0' eqo o 04234c+0'

O quv'gzqve'r ncpv'eqpvtqnl'ku'cee qo r nuj gf 'xlc'j gtdlekf g'crr'necvqp.'o cpwcn'tgo qxcn'cpf 'crr'necvqp'qh' r tguetkdgf 'hktg0Vj ku'wdf kklukqp'y qtnu'enqugn' 'y kj 'yj g'Hktg'O cpci go gpv'f kklukqp'y j gp'hktg'ku'wugf 'c' vqqln'p'o cpci kpi 'gzqve'r ncpv'r qr wcvkpu'*Vc{ nqt'r gtu'eqo o 04234c+0'

Gzqve'r ncpw'qh'r tko ct{ 'geqmi lecn'eqpegt'p'lp'Gxgti ncf gu'P cvkqpcn'Rctnl'cv'yj g'wko g'qh'yj ku'y tklpi " kpenf g'o gnrwec.'Cwutcrkcp'r kpg'*Casuarina equisetfolia+. 'Dtc| kklcp'r gr r gt.'cpf 'Qrf 'Y qtrf 'erko dlpi " hgt'p'*Lygodium microphyllum+0Vj g'cxckcdk'k' 'qh'hwf'kpi 'hqt'o cpci go gpv'cevkxkgu'hgewkpi 'qp'yj gug' ur geku'ku'pqv'gs wcn'z'yj g'o clqtk' 'qh'hwf'kpi 'uqwegu'ctg'hqt'o gnrwec/tgrv'g' 'y qtm'y kj 'c'uo cm'co qwpv'

hqt "Cwutcrkcp"r kpg. "cpf "pq"hwf lpi "hqt"y qtnlpxqrlpi "qy gt "gzqle"r rcpv"ur geku0Hqt "y g"luecnl" { gctu" 4232."4233."cpf "4234."cni'qh'y g"uadf kxkukqpau'y qtnlhewugf "qp"o gnrgrwec"dgecwug"y ku'y cu'y g"qpn"r rcpv" hqt"y j lej "hwf lpi "y cu"cxckrdng0k"y g"luecnl" { gctu"422; "cpf "422: "o gnrgrwec/tgrvgf "y qtnleqpukxwgf " y g"dwmlq'h'y g"uadf kxkukqpau"ghqt u0Gxgp"y qwi j "Cwutcrkcp"r kpg."Dtel krcp"r gr r gt."cpf "Lygodium"ur r 0' ctg"cnq"ugtqwu"geqmi lecn'y tgcw."hwf lpi "hqt"o cpci go gpv'cev'kxkkgu'hqewulpi "qp"y go "ku'ugf qo " cxckrdng"*Vc{ nqt"r gtu0eqo o 04234c+0

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EWNWT CN'T GUQWTEGU'

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r gt'o qpj 'lp'GGGC'*Hqkv'r gtu0eqo o 04234+0'

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4234+0'

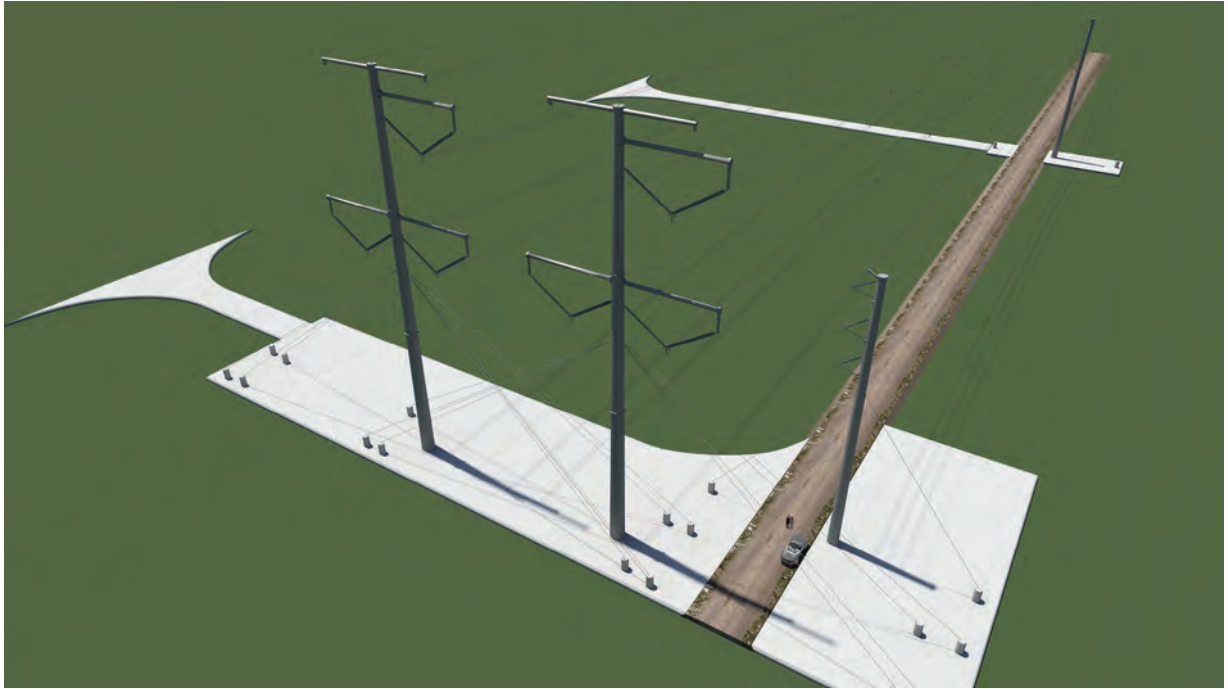
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hktgcto u'ht'v'cti gv'uj qqvpi 0Xkukqt'cpf 'Tguqweg'Rtqvgevkp'qhhegtu'hkf 'gxkf gpeg'qh'hktgcto 'wug'
cr r tqzko cvn' 'qpeg'r gt'o qpj 0Hktgcto 'wug'ku'pqv'cmqy gf 'y kj lp'Gxgti n'f gu'P cvkp'cn'Rctn0'Kgo u'qh'
r j { ulecn'gxkf gpeg.'uwej 'cu'tgcknt'gegr w.'ngh'cv'yj g'uepg'qh'c'etko g'ecp'uo gko gu'ngcf 'q'uueguu'w'
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o c' { 'wug'cktdqcu.'ctg'qpi qkpi '*Hqkv'r gtu0eqo o 04234+0'

"

Ej cr vgt"5<Chgevgf"Gpxktqpo gpv"

"



CHAPTER 4

Environmental Consequences

Each action alternative is compared to a baseline to assess the context, duration, and intensity of the impacts, as well as to other alternatives to present the reader with a relative assessment of impacts. For purposes of the impact analysis, the baseline is alternative 1a, no NPS action, which includes neither acquisition of FPL lands nor acquisition of a perpetual flowage easement, and no transmission line construction (see chapter 2 for more detailed descriptions of this and all alternatives). Under each alternative, impacts of the land acquisition action are described first, followed by an assessment of the indirect impacts of the associated transmission line construction for that alternative.

In the absence of quantitative data, best professional judgment was used to determine impacts. In general, impacts were determined using existing literature; federal and state standards; consultation with subject-matter experts, including park staff, representatives from other agencies, and project consultants; and public scoping comments.

DCUE'F GHP KWQP UÔ V[RG'CPF 'F WTCVKQP 'QH'KÖ RCEVU'

The following definitions are used for all impact topics unless otherwise noted:

- **Dgpgllekn** A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
- **Cf xgtug:** A change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.
- **F kt gev.** Impacts that would occur as a result of the proposed action at the same time and place of implementation (40 CFR 1508.8).
- **Kpf kt gev** Impacts that would occur as a result of the proposed action but later in time or farther in distance from the action (40 CFR 1508.8). All of the impacts related to transmission line construction are considered to be indirect impacts.
- **Eqpvgzv.** Context is the affected environment within which an impact would occur, such as localized, parkwide, regional (southern Florida or other regional context that is particular to the topic), global, affected interests, society as whole, or any combination of these. Context is variable and depends on the circumstances involved with each impact topic.
- **F wt cvkqp:** The duration of the impact varies according to the impact topic evaluated. However, for the purposes of this analysis, the following assumptions are used for all impact topics except soundscapes, which has its own definitions provided in that section.
 - **Uj qt v/gto 'lo rcevr** Those impacts occurring in the immediate future or during implementation of either the land acquisition or exchange, or the pending transmission line construction, generally expected to range from a few months up to a few years. For natural systems (vegetation, wildlife, wetlands), recovery from short-term impacts would generally take less than one year.
 - **Nqpi /vgtö 'lo rcevr** Those impacts occurring after implementation of the alternative has occurred and construction is complete; for natural systems (vegetation, wildlife, wetlands), recovery from long-term impacts would take more than one year. Similarly, any impacts that occur after transmission line construction is complete would be long term.

KF Kt GEV'VTCPUO KUKQP 'NKP G'KÖ RCEVU'

Although the NPS does not have responsibility to choose or authorize if or where FPL builds transmission lines, it is foreseeable that FPL will attempt to obtain permits to construct transmission lines, and if

permits are approved, will construct the lines. Therefore, the indirect effects of these lines are discussed in this document.

The following assumptions were factored into the impact analysis of the transmission line construction associated with alternatives 1b, 2, 3, 4, and 5, although it is recognized that many of these factors will not be finalized until design is completed.

- Number of transmission lines with right-of-way: three as proposed (two 500-kilovolt (kV) lines, one 230-kV line)
- Width of right-of-way: 330 feet, with a 90-foot vegetation management easement for exotic species control (located along the west side of the FPL West Preferred Corridor)
- Approximate length of transmission line corridors within the project areas: from where the three corridor options in and around the park diverge south of the park, to where they converge in the Pennsuco wetlands area:
 - FPL West Preferred Corridor: 15.7 miles (about 6.5 miles in the park)
 - FPL West Secondary Corridor: 14.7 miles (about 7.4 miles in the park)
 - Route in area of possible relocated corridor: approximately 15 miles; this will depend on the route selected
- Distance between structures: Based on information provided in the FPL SCA (FPL 2009a), the analysis assumes a span of 1,000 feet for the 500-kV line and a span of 500 feet for the 230-kV line, but it is recognized that this will vary with length of line between angles and the need to avoid or span some areas.
- Access road location and extent: This would depend on the route and the availability of access to the site (e.g., levee roads, other roads east of the park). For purposes of analysis, it is assumed that any road built would have an 18-foot-wide roadbed and would be up to 42 feet wide (in wetlands) and about 22 feet wide in uplands, including the slide slopes. For purposes of the analysis, it is assumed that the access road would run the entire length of any corridor. It is possible that the levee road could be used for access, or a road could be built in another location near the levee, depending on final design. Since that design is not known at this time, a “worst case” scenario of a new road constructed within the 330-foot corridor is used for analysis. Culverts would be included under access roads in wetlands to maintain channel flow and/or overland flow to the extent possible.
- Pads: pads would be required at all structure locations, but the area that would need to be filled is not exactly known for each route. For estimating area of disturbance, including side slopes, it is assumed that larger pads (where there are both 500-kV and 230-kV structures) would be 1 acre in wetlands and 0.35 acre in uplands. Smaller pads (where there are 230-kV structures only) are assumed for estimating purposes to cover about 0.63 acre in wetlands and 0.05 acre in uplands (see appendix F for additional details). Pad sizes would likely be smaller in alternative 1b, in which additional flowage would not occur, but sizes are not known at this time, and these pad sizes were used for all estimates. All pads would be constructed of clean fill brought to the site. The final grade of access roads and structure pads is typically set to be 12 inches above the expected high water elevation. In the case of transmission line construction scenarios that include the perpetual flowage easement, this would mean 12 inches above a water level of 9.7 National Geodetic Vertical Datum (NGVD), or 10.7 NGVD.

Appendix F provides details about transmission line construction, operation, and management as well as a summary of mitigation as proposed by FPL in its application to the state for certification of its western

corridors (SCA application). For alternatives 3 and 4, the terms and conditions for the exchanges also affect transmission line impacts and are assumed to be implemented in the analysis. These terms and conditions are found in appendices G and H.

CTGC'QH'CP'CN[UKU'I GQI TCRJ IE'CTGC'GXCNWCVGF'HQT'KO'RCEVU'

The area of analysis (or study area) for all topics is described under each topic and is based on the resources affected by the NPS land acquisition action and the geographic extent that one would expect to experience the impacts of the actions included in the alternatives. For most topics, the area of analysis is the project area shown in “Figure 5: Everglades National Park Showing Various Corridors and Areas Addressed in Alternatives 1–5” in chapter 2.

KO'RCEV'KVGP'UK['F'GH'KVQP'U'

Because definitions of impact intensity (negligible, minor, moderate, and major) vary by impact topic, intensity definitions are provided separately for each impact topic analyzed. The impact intensity definitions define relative level of intensity for adverse effects. Beneficial impacts are described without the use of intensity definitions.

EWO'WNCV'KG'KO'RCEVU'CP'CN[UKU'

Cumulative impacts are defined in 40 CFR 1508.7 as those impacts that result from

...the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

As stated in the CEQ Handbook (CEQ 1997b), “Considering Cumulative Effects,” cumulative impacts need to be analyzed in terms of the specific resource, ecosystem, and human community being affected and should focus on effects that are truly meaningful. Cumulative impacts are considered for all alternatives, including the no-action alternative, and are presented at the end of each impact topic discussion analysis.

Cumulative impacts were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Those actions include past, present, and reasonable foreseeable projects and plans that would result in implementing actions that would contribute to the cumulative effects of the alternative on various resources or values. Most of the projects considered for cumulative analysis are described in the section “Relationship to Other Projects and Plans” in chapter 1. These are briefly summarized in table 18, along with some specific non-park actions that could have a cumulative effect on certain resources being analyzed.

The area of analysis for cumulative impacts is the same as that described under each topic for the assessment of impacts of the alternatives. The analysis for most topics is focused on the area of the potential land exchange and the potential transmission line routes in or around the park, which would be determined by the NPS proposed action. For avian resources, cumulative effects are considered to occur in adjacent wetlands and areas used by birds for foraging outside of the park, extending to the coast. Socioeconomic impacts are considered at the county level.

In defining the contribution of each alternative to cumulative impacts, the following terminology is used:

Imperceptible: The incremental effect contributed by the alternative to the overall cumulative impact is such a small increment that it is impossible or extremely difficult to discern.

Noticeable: The incremental effect contributed by the alternative, while evident and observable, is still relatively small in proportion to the overall cumulative impact.

Appreciable: The incremental effect contributed by the alternative constitutes a large portion of the overall cumulative impact.

TABLE 18: PROJECTS WITH CUMULATIVE EFFECTS ON RESOURCES ANALYZED IN THIS ENVIRONMENTAL IMPACT STATEMENT

Project	Brief Description (see “Relationship to Other Projects and Plans” in Chapter 1 for details)	Past (P), Present (PR), and/or Reasonably Foreseeable Future (F) Action?
Central and Southern Florida (C&SF) project (system of levees, canals, and water control structures; U.S. Army Corps of Engineers (USACE) and South Florida Water Management District (SFWMD) are continuing to make modifications to the system and the operations)		
Everglades Restoration Transition Plan (ERTP)	Current operating plan for projects that directly affect the Water Conservation Areas (WCAs) and the park; focus is on improving habitat for wood stork, Cape Sable seaside sparrow, and Everglade snail kite.	PR, F
Water Quality Improvement Projects	Projects aimed at achieving phosphorus water quality standard established for the Everglades; includes stormwater treatment areas and water storage basins; completion planned for 2024.	PR, F
Everglades restoration plans (water management projects that would restore or enhance flows in the East Everglades Expansion Area (EEEA); these would occur over a 20–30 year period as the projects are funded and implemented and as lands in the park are acquired)		
Modified Water Deliveries to the Everglades National Park (MWD) Project	Modification of the C&SF project to help restore natural hydrology by providing a way for additional water to flow from WCA 3, north of the Tamiami Trail, into the park.	P, PR, F
Tamiami Trail Next Steps Project	Builds on the Tamiami Trail road improvements under the MWD project; bridging and additional road raising allows for more water flow into the park.	PR, F
Canal 111 (C-111) Project Modifications	These modifications to the C&SF project consist of a series of detention basins between the park and the southern end of the L 31 N canal and other modifications to canals for flood protection.	PR, P, F
Comprehensive Everglades Restoration Plan (CERP) and associated projects	A number of CERP projects are intended to improve flows in and around Everglades National Park, including the decompartmentalization of WCA 3, Everglades National Park seepage management, the C-111 spreader canal project, the CERP Master Recreation Plan, the Central Everglades Planning Project (CEPP), and the Water Control Plan.	P, PR, F

Project	Brief Description (see “Relationship to Other Projects and Plans” in Chapter 1 for details)	Past (P), Present (PR), and/or Reasonably Foreseeable Future (F) Action?
FPL electrical generation and transmission projects (for topics where the area of analysis is more extended)		
Turkey Point Power Plant expansion	Development of two new nuclear units at the existing Turkey point site on Biscayne Bay.	F
Eastern power transmission corridor upgrades and expansion	230-kV transmission line from the Turkey Point Power Plant north to Miami.	F
Western transmission corridor; corridor segments leading to and from Everglades National Park	Transmission line corridor from the Turkey Point Power Plant north to the Pennsuco substation; part of this is in the project area for the EIS because the NPS proposed action may influence the path it takes in or around the park.	F
Park management plans and projects		
Acquisition of lands in the EEEA under the Everglades National Park Protection and Expansion Act of 1989 (Expansion Act)	Includes acquisition of privately owned parcels in the expansion areas; many have been acquired; remaining ones include the FPL parcel that is the subject of this EIS, three airboat operations, and two AM radio properties.	P, PR, F
Land Protection Plan (LPP) for the East Everglades Addition	1991 plan that determined that all lands in EEEA are needed for restoration and sets priorities for acquisition of lands in the EEEA. This plan identifies compatible and incompatible land uses.	P, PR, F
Everglades General Management Plan / East Everglades Wilderness Study	The general management plan (GMP) sets the direction for the area, including desired future conditions and objectives that promote protection of park resources. The Wilderness Study had found that 102,100 acres are eligible for wilderness, including the FPL parcel.	F
Everglades Fire Management	The park conducts prescribed burns and responds to wildland fires in the area; the plan is currently being updated.	P, PR, F
Exotic Vegetation Management	The park implements its plan for controlling exotic plant species in the park; the plan includes control of exotic vegetation in the project area.	P, PR, F
Research, surveys, and monitoring in the EEEA	Conduct of research and surveys to monitor park resources – hydrology, special-status species; can include use of helicopters and airboats.	P, PR, F

Project	Brief Description (see "Relationship to Other Projects and Plans" in Chapter 1 for details)	Past (P), Present (PR), and/or Reasonably Foreseeable Future (F) Action?
Non-park actions that can affect resources in the area of analysis		
Airboat tour operations	Four commercial airboat tour operations conduct airboat tours in the EEEA and bring approximately 300,000 visitors into the park annually. The continuation of airboat tours is a source of noise in the EEEA that can affect wilderness values, visitor use and experience, wildlife, soils, and hydrology.	P, PR, F
Land development: urban development, road construction and expansion (e.g., Krome Avenue expansion)	General land disturbance including vegetation removal, paving, and building or road construction east of the park that can be expected in the future (current conditions are part of the affected environment). This disturbance can affect most resources and socioeconomics. Additionally, car collisions can affect wildlife.	P, PR, F
Mining	Continued mining operations east of the park can affect natural resources, land use, and socioeconomics.	P, PR, F

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NPS *Management Policies 2006*, Section 4.6.1, "Protection of Surface Waters and Groundwaters" states, "The Service will perpetuate surface waters and groundwaters as integral components of park aquatic and terrestrial ecosystems" (NPS 2006a). NPS *Management Policies 2006* also specifically addresses the management of watershed and stream processes in Section 4.6.6. The policy states:

The Service will manage watersheds as complete hydrologic systems and minimize human-caused disturbance to the natural upland processes that deliver water, sediment, and woody debris to streams.

The Service will manage streams to protect stream processes that create habitat features such as floodplains, riparian systems, woody debris accumulations, terraces, gravel bars, riffles, and pools. Stream processes include flooding, stream migration, and associated erosion and deposition.

The Service will protect watershed and stream features primarily by avoiding impacts on watershed and riparian vegetation and by allowing natural fluvial processes to proceed unimpeded.

CUUWO RVIQPU.'O GVI QFQNQI [.'CPF'KORCEV'KVGPUW['FGHFKVQPU'

The potential impact on hydrology is based on impacts to potential flows in the Northeast Shark River Slough (NESRS), which includes the entire area of analysis for this topic. The level of impact on potential flows in NESRS is related to the effects of the land acquisition and to the extent and location of any disrupting features such as access roads and structure foundations.

The following definitions were used to determine the magnitude of adverse impacts on hydrology:

- **Pgi nldng:** An action would have no measurable or detectable effect on hydrology."
- **Okpqt:** An action would have small, but measurable, localized effects on hydrology. Once the disturbance is removed, the area would recover without assistance."
- **Oqf gtevg:** An action would have clearly detectable effects on hydrology over a large area or substantial effects over a small area. Resulting changes could potentially affect hydrologic connectivity, organisms, or natural ecological processes over a large area or would affect hydrologic connectivity, organisms, or natural ecological processes over a small area. If the disturbance is removed, the affected area would likely return to a normal state with minimal intervention."
- **Oclqt:** An action would have substantial, regional effects on hydrology. Resulting changes would affect hydrologic connectivity, organisms, or natural ecological processes. Key ecological processes and community structure would be altered. The system would not return to a normal state without substantial intervention, and success is not guaranteed."

CPCN[UKCTGC"

The area of analysis for hydrology includes the areas potentially developed for transmission lines, plus downstream areas where soils could be affected by changes in water quality in the EEEA and the project area surrounding the park. This includes the general area occupied by the transmission corridors in the 8.5-square-mile area east of the park, WCA 3B and the Pennsuko wetlands north of the park, and extending to the urban development boundary to the east of the park (see "Figure 4: General Project Area," in chapter 1).

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***GPXKQPO GPVCN'DCUGNPG+"**

Ko rcew'qh'ij g'Ncpf 'Ces wukqp'Cevkqp"

Under alternative 1a, there would be no legal changes to the property's status or ownership, and FPL would not grant NPS a flowage easement. There would be no physical change to the land; therefore there would be no direct impacts on hydrology. However, the NPS would be unable to increase water levels in the NESRS, and would be unable to implement regional ecosystem restoration activities that rely on additional flow. Inability to allow increased water levels across the FPL property would result in preventing, reducing, or substantially delaying restoration efforts that rely on enhanced flows on a regional scale over the course of several decades, an indirect, but long-term major adverse impact on hydrology.

Ko rcew'qh'Vtcpuo kulkqp'Nkpg'Eqput wevkkp"

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts on hydrology.

Ewo wvkg'Ko rcew'6'Cngt'pckg'3c"

Several past, present, and reasonably foreseeable projects are related to restoration of the hydrology and enhanced flows in the Everglades over a 20- to 30-year period. These include the C&SF project and Everglades Restoration Plans described in table 18. Funding and implementing associated projects and

acquisition of lands in the EEEA under the Expansion Act would result in large-scale beneficial impacts on hydrology in the NESRS and throughout the Everglades by increasing the hydroperiod and the flood stage in large parts of the Everglades in the park. However, alternative 1a would prevent or obstruct implementation of these flowage-related projects and would therefore result in major adverse impacts. Other actions in the area of analysis have also adversely affected regional hydrology, including the construction of mining lakes and paving of land for development east of the park, which disrupts natural flows and adds to impermeable surfaces and runoff. The impacts of not having flowage under alternative 1a would contribute appreciable adverse impacts on the overall cumulative effects on hydrology in this area.

Eqpenwukp'6'Cngt pc vkg'3c''

Under alternative 1a, there would be no physical change to the land, so there would be no direct physical impacts on hydrology. However, NPS would be unable to increase water levels in the NESRS, preventing restoration on a regional scale and obstructing implementation of regional ecosystem restoration activities that rely on additional flow. Inability to allow additional flow across the corridor would result in long-term major indirect adverse impacts on hydrology. Alternative 1a would contribute appreciable adverse impacts on the overall cumulative effects on hydrology in this area.

KO RCEVUQH'CNVGTP CVKKG'3D/ <P Q'P RU'CEVQP '6'HRN'EQPUVTWEVQP 'RP'VJ G'RCTM''

KO rcew'qhv'j g'Ncpf 'Ces wukwkp'Cevkp''

Under alternative 1b, impacts of the land acquisition action would be the same as described for alternative 1a. The FPL retention of ownership of land in the EEEA would result in no direct impacts on hydrology; however, flowage restrictions would result in long-term indirect major adverse impacts on hydrology.

KO rcew'qhv'Vtcpuo kukqp'Nkpg'Eqput wevqp''

Indirect impacts related to the construction of transmission lines in the FPL corridor would result from the construction of the transmission lines in the park, as described earlier in this chapter and appendix F. Under this alternative, transmission lines in the FPL West Secondary Corridor would be constructed directly through the flow path of the NESRS, and the FPL would not provide an easement to the NPS to accommodate the enhanced flows necessary for successful implementation of many of the ecosystem restoration projects in the Everglades. Construction of the transmission lines through this corridor would result in 7.4 miles of transmission lines in the park and 14.7 miles in the project area, including construction in the WCA 3B and Pennsuco wetlands north of the park. Culverts would be included under the access roads through this corridor to maintain existing surface water flows. FPL prefers the use of smaller diameter culverts to limit the depth of fill to be installed, but would use larger diameter culverts in some locations. The culverts would be designed and sized to equalize the amount of water volume created from a small rainfall event, and maintain the existing hydroperiod, and would be based on appropriate hydrological studies (see the “Mitigation Measures” section in appendix F).

Construction of the transmission lines, particularly without accommodation of enhanced flows, would result in long-term major adverse impacts. Existing hydroperiods would be maintained, but sheetflows would be disrupted as water is forced through the culverts and flows redirected. The transmission line corridor would be designed to maintain the existing hydroperiod during small rain events. However, the access road and associated support structures would result in a 7.4-mile-long hydrological barrier through the park's portion of the NESRS and would contribute to compartmentalization of a system that is undergoing restoration activities to remove compartmentalization and reestablish sheet flow into and through the NESRS. Sheetflow would resume at some point downstream, but it would be noticeably

disrupted by the culverts, and it is likely there would be reduced hydroperiods downstream of the culverts (Sonenshein pers. comm. 2013).

Scour could also occur in the vicinity of the culverts, creating localized long-term negligible to minor adverse impacts along the transmission lines. There would also be short-term moderate adverse impacts related to the small to large-scale interruption of hydrologic processes that would also occur during construction, as areas are blocked off to place culverts and construct the access road and pads for the transmission line towers. Flows could be blocked or diverted along potentially long segments of the transmission lines. Bulldozers, excavators, and other construction equipment would be expected to enter the corridor to place fill materials to create the structure pads and access roads. This would cause localized and possibly regional obstructions and alterations of flow due to the presence of equipment and fill materials, depending on the method of construction.

Construction would occur in phases along the length of the lines, and although FPL has committed not to block flow along the entire length of the transmission line corridor, it is possible that flow could be blocked for several miles at a time. Typically, crews would selectively clear vegetation along the length of a right-of-way, or substantial portion of it, install silt fencing and curtains along the portion of the corridor that has just been cleared, lay the geotextile fabric, build the road and construct the transmission towers, and string the transmission lines. Hydrologic processes would be interrupted along the length of the corridor being worked on at any given time. Because the hydrology may be altered for miles, and the change in flow would be regionally noticeable with possible regional consequences, there would be short-term moderate adverse impacts on hydrology.

Ewo wæɪkɔ'kɔ rcew'ɔ'ɕnɔt pɕɪkɔ'ɔd''

The cumulative projects with impacts on hydrology from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Construction of the transmission lines without a flowage easement in the FPL corridor would permanently prevent the implementation and success of these projects. Alternative 1b would result in major adverse impacts because of the lack of flowage, and would contribute appreciable adverse impacts on the overall cumulative effects on hydrology in this area.

Eqpenwɪkɔ'ɔ'ɕnɔt pɕɪkɔ'ɔd''

Under alternative 1b, the impacts from the lack of a real estate transaction would be the same as under alternative 1a; flowage restrictions would result in long-term indirect major adverse impacts on hydrology. There would also be long-term major adverse impacts on hydrology from construction of the transmission lines, particularly the disruption of sheetflows through the culverts, and the likelihood that there would be reduced hydroperiods downstream of the culverts. Forcing the flow through culverts could result in scour, and localized long-term negligible to minor adverse impacts. Construction activities for the transmission lines would cause short-term moderate adverse impacts related to small to large-scale interrupted hydrologic processes that would occur during construction.

Alternative 1b would prevent or obstruct implementation of regional flowage-related projects and would therefore result in major adverse impacts. This alternative would contribute appreciable adverse impacts on the overall cumulative effects on hydrology in this area.

KO RCEVUQH'CNVGTPCVKG'4<P RU'CES WUKVQP'QHHRN'NCPF "

KO rcew'qhv'g'Ncpf 'Ces wukvqp'Cevkqp"

Under alternative 2, no direct impacts would be expected from the acquisition of FPL land in the EEEA. There would be substantial long-term indirect benefits from placing ownership of this area solely with the NPS and the ability to accommodate enhanced flows, manage the area consistently with lands around it, and proceed with Everglades ecosystem restoration projects without obstacles from the FPL parcel.

KO rcew'qhv'Vtcpuo kulkqp'Nlpg'Eqpwt wevkqp"

Under alternative 2, impacts on hydrology within the park would be avoided, but construction of the transmission lines in the area of the possible relocated corridor would result in disturbances to hydrology in this area. Impacts on hydrology would not be as great as impacts of alternative 1b for several reasons. The wetlands through which the lines would cross in this area are segmented and have altered hydrologic conditions. This area is also not impacted by the regional ecosystem restoration projects that rely on enhanced flows. Culverts beneath the transmission line road and tower pads would allow flows beneath the lines at existing levels, but the culverts would disrupt the small amount of sheetflow that does exist in this area, and would further segment the hydrologic conditions. The existing hydroperiod would be maintained. There would be some potential for scour where water is directed through the culverts, with negligible to minor adverse impacts. Construction-related impacts would therefore be long-term negligible to moderate adverse.

The construction activities would block flows across the construction corridor in stages and would interrupt hydrologic processes and divert flow on a small to large scale, similar to those described under alternative 1b, but the results of the impacts would not be as noticeable. Impacts would not occur within the park because the wetlands in the area of the possible relocated corridor have been segmented hydrologically from the park, and there is no noticeable sheetflow that serves the remainder of the Everglades. These impacts would therefore be short-term minor to moderate adverse.

Ewo wvkg'KO rcew'

The cumulative projects with impacts on hydrology from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 2 would allow enhanced flows to proceed, and would allow for large-scale benefits over 20 to 30 years. The alternative would also result in long and short-term minor to moderate adverse impacts from the construction of the transmission lines in the area of possible relocated corridor east of the park. Alternative 2 would contribute appreciable benefits to the overall cumulative impacts on hydrology; the contribution of adverse effects from the construction of the transmission lines outside the park would be only slightly noticeable overall.

Eqpenwukqp"

Overall, there would be no direct impacts on hydrology from NPS acquisition of the FPL corridor. There would be indirect long-term benefits of acquisition and the additional protection to the land that would result from the change in ownership, and the ability of the NPS to allow the enhanced flows across the corridor called for in the ecosystem restoration plans. Under alternative 2, there would be short- and long-term negligible to moderate adverse impacts on hydrology in the wetlands in the area of possible relocated corridor as a result of transmission line construction and temporary blockage of flow across the corridor, and longer-term fragmentation of the hydrologic processes around the new transmission lines. Alternative 2 would contribute appreciable benefits to the overall cumulative impacts on hydrology; the

contribution of adverse effects from the construction of the transmission lines outside the park would be only slightly noticeable overall.

KO RCEVUQH CNVGTP CVKKG'5<HGG'HQT'HGG'NCPF'GZEJ CPI G"

KO rcew'qh'tj g'Ncpf 'Ces wukq'Ce'kq"

Under alternative 3, there would be no direct impacts on hydrology from the exchange of FPL and NPS lands in the EEEA. However, the exchange would allow the NPS to manage the existing FPL property for enhanced restoration flows. The exchange would ensure no development could be proposed in the current FPL corridor and the various flow dependent Everglades restoration projects could continue without any obstacles due to the presence of this parcel. The exchange would enhance conservation of the resources and values of the park, including hydrologic resources. Alternative 3 would have a substantial indirect long-term beneficial impact.

KO rcew'qh'Vtcpuo kulkq'Nlpg'Eqput we'kq"

Construction of new transmission lines adjacent to the L-31N canal and levee would have impacts similar in nature to those described under alternative 1b. The location of the lines adjacent to the levee would have reduced impacts on hydrology compared to construction of transmission lines further to the west, yet more noticeable impacts than if the lines were constructed in the area of possible relocated corridor east of the park. Culverts beneath the transmission line access roads would result in no change in hydroperiod in the area between the transmission lines and the L-31N levee, but sheetflow patterns would be disrupted by the transmission line platforms, which cannot be easily mitigated. Water flows toward the canal in many parts of this area, and would continue to do so until and possibly after the seepage barrier projects are completed. Impacts of this water flow would be minimized in these places, and the corridor is far enough east that impacts west of the transmission lines would be minimized. The regional ecosystem restoration activities that rely on enhanced flow would be minimally impacted because the regional flow pattern would be from the north to the south-southwest and thus would not need to pass through the transmission corridor.

Alternative 3 includes certain terms and conditions for the use of the FPL West Preferred Corridor (appendix G). Under these terms and conditions for the exchange, FPL would commit to describing methods and results of hydrologic analysis to avoid and minimize impacts on sheetflow at the park to the maximum extent practicable.

As a conditional requirement for the land exchange under this alternative, a perpetual flowage easement would be placed on the FPL fee property, ensuring that the hydroperiod would be maintained, and that impacts on sheetflow would be minimized. Hydrology in the FPL fee corridor could be managed consistently with restoration requirements. The transmission corridor would be designed and constructed to sustain water levels no greater than 10.7 NGVD29 for significant periods. FPL would be required to ensure that the design and construction of the transmission lines would be compatible with ecosystem restoration goals and activities allowing for protection of resources and values of Everglades National Park. However, the use of culverts would still disrupt sheetflows as water is forced around the structure pads and through culverts beneath the road, and it is possible that the hydrology in the channel between the levee and the transmission lines would be somewhat more isolated and restricted in its flow than water on the west side of the transmission lines. There would be adverse impacts associated with the construction of the access road (and/or finger pads if the levee road is used). Impacts would be less intense if the levee road is used and finger pads could be constructed because there would be fewer obstructions to hydrology.

The impacts from placement of the transmission lines in this area as described above would be long-term moderate and adverse. The potential for scour around the culverts where water is channelized would result in localized long-term negligible to minor adverse impacts.

Construction of the transmission lines would result in the same short-term minor to moderate adverse construction-related impacts related to small to large-scale interrupted hydrologic processes discussed in the analysis for alternative 1b, although they would be less noticeable because of the location next to the levee.

Ewo wɛvɛg'kɔ rcew'

The cumulative projects with impacts on hydrology from other past, present and reasonably foreseeable future projects would be the same as those discussed under alternative 1a, and would be mainly beneficial. Construction of the transmission line in the proposed exchange corridor on the eastern edge of the park, would allow enhanced flows and implementation of flowage-related ecosystem restoration projects that would benefit hydrology overall. Alternative 3 would contribute long-term minor to moderate adverse impacts on hydrology on the far eastern edge of the park, as well as short-term minor to moderate adverse construction-related impacts. These impacts would contribute both appreciable long-term beneficial impacts, and noticeable long- and short-term adverse impacts on hydrology in this area.

Eqpenwɛkp''

Under alternative 3, there would be substantial indirect long-term beneficial impacts from the exchange and the ability for the NPS to increase water levels across the acquired FPL property and implement flow-related ecosystem restoration activities. The transmission lines would be located adjacent to the existing L-31N levee, so impacts on hydrology throughout the NESRS would be less than would occur if the lines were built in the existing FPL corridor further west. The hydroperiod would be maintained, but sheetflow patterns would be disrupted by the transmission line platforms, which cannot be easily mitigated. Water is also flowing toward the canal in many parts of this area, so impacts from this would be minimized in these places, and the corridor is far enough east that impacts would be minimized. The regional ecosystem restoration activities that rely on enhanced flow would be possible because the culverts beneath the transmission lines would be sized adequately to handle enhanced flows. There would be additional localized long-term negligible to minor adverse impacts at the culverts where water is channelized and scour could occur. There would be short-term minor to moderate adverse construction-related impacts related to small to large-scale interrupted hydrologic processes.

Alternative 3 would contribute both appreciable long-term beneficial impacts, and noticeable long- and short-term adverse impacts on overall cumulative impacts on hydrology in this area.

kɔ rcevuqh'cnvgtpcvkɛg'6<gcugo gpv'hqt'hgg'ncpf'gzej cpi g''

kɔ rcew'qhvj g'ncpf 'Ces wɛvɛg'cewɛkp''

Impacts on hydrology from the land exchange under alternative 4 would be the same as impacts described for alternative 3, but with additional beneficial impacts on hydrology resulting from terms and conditions that would reduce the risk of having additional utility facilities developed within the exchange corridor and minimize the effects of associated disturbance on hydrology. These terms and conditions for alternative 4 are in appendix H. The exchange would ensure no development could be proposed in the current FPL corridor and the various flow dependent Everglades restoration projects could continue without any obstacles due to the presence of this parcel. The exchange would enhance conservation of the

resources and values of the park, including hydrologic resources. Alternative 4 would have a substantial indirect long-term beneficial impact.

Kō rcew'q̄h'Vtcpuo kulkp'Nlpg'Eqpwt wevkp''

The terms and conditions related to hydrology for either the fee for fee exchange (appendix G) or the fee for easement exchange (appendix H) are the essentially the same. As a result impacts on hydrology under alternative 4 would be the same as impacts on hydrology under alternative 3. The transmission lines would be located adjacent to the existing L-31N levee, so impacts on hydrology throughout the NESRS would be less than would occur if the lines were built in the existing FPL corridor further west, but greater than if lines are constructed in the area of possible relocated corridor. The hydroperiod would be maintained, but sheetflow patterns would be disrupted by the transmission line platforms, which cannot be easily mitigated.

The impacts on hydrology from construction under this alternative would be the same as under alternative 3. Alternative 4 would contribute long-term minor to moderate adverse impacts on hydrology on the far eastern edge of the park, as well as short-term minor to moderate adverse construction-related impacts.

Ewo wevk'Kō rcew'

Cumulative impacts under alternative 4 would be the same as under alternative 3. Alternative 4 would contribute long-term beneficial impacts and long-term minor to moderate adverse impacts on hydrology on the far eastern edge of the park, as well as short-term minor to moderate adverse construction-related impacts. Alternative 4 would contribute both appreciable long-term beneficial impacts and noticeable long- and short-term adverse impacts on hydrology in this area.

Eqpewukp''

The impacts of land exchange and construction, as well as cumulative impacts would be the same as under alternative 3 except that no other utilities could be built in the corridor, which would lessen the risk of additional hydrologic impacts. Impacts from the land exchange would be long term and beneficial; impacts from construction of the transmission lines would be long-term moderate adverse, and there would be additional localized long-term negligible to minor adverse impacts at the culverts where water is channelized and scour could occur. There would be short-term minor to moderate adverse construction-related impacts related to small to large-scale interrupted hydrologic processes would also occur. Alternative 4 would contribute appreciable long-term beneficial impacts and noticeable long- and short-term adverse impacts on the overall cumulative impacts on hydrology in this area.

Kō RCEVUQH'CNVGTP CVK'G'7<RGTRGVWCN'HNQY CI G'GCUGO GP V'QP'HRN'RTQRGTV[''

Kō rcew'q̄h'vj g'Ncpf 'Ces wukp'Ceukp''

Under alternative 5, the long-term flowage easement through the current FPL property would give the NPS the ability to manage the area to accommodate enhanced flows associated with ecosystem restoration activities. The ability to flow more water across the property would allow implementation of flow-related restoration projects, which would result in substantial indirect long-term beneficial impacts.

Kō rcew'qhi'Vtcpuo kulkp'Nkpg'Eqpunt wevkp''

Direct and indirect construction-related impacts on hydrology under this alternative would be similar to those described under alternative 1b, although enhanced flows would be accommodated across the corridor. Flows would be adequate for ecosystem restoration activities, but would be directed through culverts. The hydroperiod would be maintained, but even with FPL requirements to minimize disturbance to sheetflow, the flow would be interrupted by the culverts along the length of the transmission lines, and flows would be directed more in an east to west direction than a northeast to southwest direction, resulting in regional impacts that are hard to mitigate. The result would be long-term minor to major adverse impacts from the sheetflow interruption, with impact intensity varying according to the downstream distance from the culverts, and localized long-term negligible to minor adverse impacts at the culverts where water is channelized and scour could occur as previously described under alternative 1b. There would be short-term moderate adverse indirect impacts on hydrology resulting from blockage of flow across the FPL West Secondary Corridor during the construction process.

Ewo wcvkg'Kō rcew'

The cumulative projects with impacts on hydrology from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Implementation of alternative 5 would provide both long-term beneficial and long-term major adverse impacts, because the flow-related ecosystem restoration projects could proceed, but sheetflow patterns would be disrupted regionally by the transmission lines. Alternative 5 would therefore contribute appreciable beneficial impacts by allowing enhanced flows, and appreciable adverse impacts by the disruption of sheetflows to the overall cumulative effects on hydrology in this area.

Eqpenukqp''

Under alternative 5, there would be substantial indirect long-term beneficial impacts from the easement and the ability for the NPS to increase water levels across the FPL property and implement flow-related ecosystem restoration activities. Construction of the transmission lines would have similar impacts as described under alternative 1b, except that enhanced flows would be accommodated. The placement of the transmission lines would result in long-term minor to major adverse impacts, and localized negligible to minor adverse impacts related to scour around the culverts, and short-term moderate adverse construction-related impacts related to small to large-scale interrupted hydrologic processes that would also occur.

The alternative would contribute appreciable beneficial impacts to overall cumulative impacts by allowing enhanced flows, but would also contribute appreciable long-term adverse impacts because the culverts under the transmission lines would noticeably disrupt sheetflow and impact hydrology in this area.

Y CVGT'S WCNKVL "

I WFFPI 'TGI WNCVIQPU'CPF'RQNEKGU'

NPS *Management Policies 2006* specifically addresses water quality in Section 4.6.3. The policy states:

The pollution of surface waters and groundwater by both point and nonpoint sources can impair the natural functioning of aquatic and terrestrial ecosystems and diminish the utility of park waters for visitor use and enjoyment. The Service will determine the quality of park surface and groundwater resources and avoid, whenever possible, the

pollution of park waters by human activities occurring within and outside the parks. The Service will

- Work with appropriate governmental bodies to obtain the highest possible standards available under the Clean Water Act for the protection for park waters;
- Take all necessary actions to maintain or restore the quality of surface waters and groundwater within the parks consistent with the Clean Water Act and all other applicable federal, state, and local laws and regulations; and
- Enter into agreements with other agencies and governing bodies, as appropriate, to secure their cooperation in maintaining or restoring the quality of park water resources.

CUUWO RVKQPU.'O GVI QF QNQI [. 'CPF 'K RCEV'K VGP UN['F GHK VIKPU''

Potential impacts on water quality are based on impacts on the chemical, physical, or biological constituents of the water column. The analysis of possible impacts on water quality was based on a review of existing literature and maps, information provided by the NPS and other agencies, experience related to transmission line construction-related effects, and professional judgment.

The following definitions were used to determine the magnitude of adverse impacts on water quality:

- **P gi ni kng:** Water quality would not be affected, or changes would be at low levels of detection. Any detected effects to water quality would be slight and localized.
- **O lpgt:** Changes in water quality would be measurable, although the changes would be small and localized.
- **O qf gt cvg:** Changes in water quality would be measurable and regional.
- **O clqt:** Changes in water quality would be readily measurable, and would have observable consequences on a regional scale.

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The area of analysis for water quality includes the NESRS in the EEEA, the 8.5-square-mile area east of the park, WCA 3B and the Pennsuko wetlands north of the park, and extending to the urban development boundary to the east of the park (see “Figure 4: General Project Area,” in chapter 1).

K RCEVUQH'CNVGP CVKG'3C<P Q'P RU'CEVQP '6'P Q'HRN'E QPUVTWE VIKP'' *GP XKTQPO GP VCN'DCUGNPG+''

K rcew'qhtvj g'Ncpf 'Ces wkkkqp'Cevkqp''

Under alternative 1a, there would be no legal changes to the property’s status or ownership and FPL would not grant NPS a flowage easement. Therefore, there would be no physical change to the land, and no direct impacts on water quality. However, because there would not be any flowage easements, the NPS could not flow additional water across the FPL property. Flow-dependent ecosystem restoration activities would be prevented or delayed. Anticipated improvements to water quality as the result of the restoration could not occur, and would result in indirect long-term minor adverse impacts.

Kō rcew'qhl'Vtcpuo kulqp'Nlpg'Eqput wevqp''

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts on water quality.

Ewo wcvkg'Kō rcew'ō'Cngt pcvkg'3c''

Several past, present, and reasonably foreseeable projects related to restoration of the hydrology and enhanced flows in the Everglades over a 20- to 30-year period (the C&SF project and Everglades Restoration Plans described in table 18). Funding and implementing these associated projects, as well as acquisition of property throughout the park, would result in large-scale beneficial impacts by increasing the hydroperiod and the flood stage in large parts of the Everglades in the park. These hydrologic changes would also result in beneficial impacts to water quality by decreasing dry periods, although there is concern that there could be more phosphorus carried through the system with the restoration projects. Construction of the Stormwater Treatment Areas outside the park would proceed regardless, and would provide substantial water quality benefits. Other projects outside the park, including mining, road construction, and suburban/urban development, have cumulative impacts on water quality by increasing impervious surfaces that increase runoff, and providing sources of contamination (sediments, mining discharge, pesticides, oils), which affect water quality in receiving waters.

Alternative 1a would prevent or obstruct implementation of the flow-related projects and would therefore result in minor adverse impacts. Alternative 1a would contribute slightly noticeable long-term adverse impacts on overall cumulative effects on water quality in the area.

Eqpenwukp'ō'Cngt pcvkg'3c''

Under alternative 1a, there would be no direct impacts on water quality since there would not be any real estate transaction, but the absence of a flowage easement would prevent or delay implementation of flow-dependent ecosystem restoration projects, resulting in long-term indirect minor adverse impacts on water quality. There would be no impacts related to transmission line construction. Alternative 1a would contribute slightly noticeable long-term adverse impacts on overall cumulative effects on water quality in the area.

Kō RCEVUQH'CNVGTP CVKG'3D<P Q'P RUCEVQP'ō'HRN'EQPUTWEVQP'IP'VJ G'RCTM''

Kō rcew'qhl'tj g'Ncpf 'Ces wukqp'Cevqp''

Under alternative 1b, there would be no direct impacts. Indirect impacts related to continued ownership of land in the EEEA by FPL and the lack of any flowage easements would be the same as alternative 1a. Flow-dependent ecosystem restoration activities would be prevented or delayed. Anticipated improvements to water quality as the result of the restoration could not occur, and would result in indirect long-term minor adverse impacts on water quality.

Kō rcew'qhl'Vtcpuo kulqp'Nlpg'Eqput wevqp''

Indirect impacts would result from the construction of transmission lines in the park, as described in earlier in this chapter and appendix F. FPL would obtain all necessary permits for constructing transmission lines through the existing FPL West Secondary Corridor directly through the flow path of the NESRS. FPL would place fill in wetlands to construct the access roads and structure pads placed every 500 feet along the transmission line corridor, about 7.4 miles of which is in the park. The fill would be clean and free of pollutants per state requirements, although the crushed limestone typically used as fill

in the region normally has higher levels of phosphorus and suspended solids that would affect surface runoff, even with the use of best management practices (BMPs) (Castro pers. comm. 2013). Potential impacts on water quality would be in the form of sediment discharge to the surrounding waterways, which would increase total suspended solids, turbidity, and nutrients, including nitrogen and phosphorus (the limiting nutrient in the Everglades system), which sorb to the sediment particles in the water column near the construction sites during the short term.

Other indirect impacts on water quality would result from the disturbance of sheetflows as water is pushed through the culverts. Particularly without enhanced flows, it would be reasonable to expect that there would be areas downstream of the corridor that could have more frequent episodes of drying and rewetting as a result of disturbed sheetflows. Increased period of drying and rewetting could increase concentrations of phosphorus, and could also increase methylation of mercury. Given the length of the transmission lines, there would be long-term major adverse impacts.

Turbidity screens and erosion control devices would be used to minimize construction impacts on wetlands and water bodies and ensure that state water quality standards for turbidity are met. In addition, FPL would place geotextile fabric beneath the fill to prevent fill material used to construct the access roads and structure pads from being released into the surrounding waters and wetlands. FPL would obtain stormwater permits for construction of the transmission lines. All stormwater discharges would be addressed through compliance with Rule 62-621.300 (4) (Generic Permit for Stormwater from Large and Small Construction Activities), and would require sediment and erosion control devices listed above, and possibly other actions to protect water quality. However, due to the location of the transmission line in the park, the effects of even small changes in water quality would be noticeable, and there would be short-term minor to moderate adverse impacts from sediment discharge into the aquatic environment during construction.

The installation of the transmission line support towers requires the use of an auger truck (appendix F) that will auger a hole approximately 18 to 25 feet deep, which could encroach into underlying groundwater layers and may require dewatering. This water may be discharged into the surrounding waterways if it is sufficiently free of sediments. The auger holes and discharge would be relatively small and localized, but the water would have different water chemistry characteristics than the surrounding water, and would not be free of sediment resulting in localized minor to moderate adverse impacts on water quality. Use of appropriate BMPs would be necessary.

FPL would develop a plan that would include a section on how pollutants or hazardous materials will be managed to minimize impacts and requires a contingency/containment plan. In the case of accidental spills from construction equipment, construction crews would be equipped with spill containment and absorption materials, so there would be short-term negligible to minor adverse localized impacts on water quality associated with accidental spills (FPL 2009a). Similarly, maintenance workers would be equipped with spill containment equipment when using herbicides during maintenance of the transmission line corridor. Such activities would result in indirect short-term minor to moderate adverse construction-related impacts.

Ewo wæɪkʁ'kɔ̃ r cew'ɔ̃'Cnɔ̃t pɔ̃kʁ'ʒd''

The cumulative projects with impacts on water quality from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Construction of the transmission lines without a flowage easement in the FPL corridor would permanently hinder the implementation and success of these projects, and would therefore result in major adverse impacts on water quality, and short-term minor to moderate adverse impacts on water quality. Alternative 1b would

contribute appreciable long-term adverse impacts and noticeable short-term minor to moderate adverse construction-related impacts to overall cumulative impacts on water quality in the area.

Eqpenwukp'6'Cngt pcvk'3d''

Impacts related to the land acquisition action would be the same as under alternative 1a. There would be no direct impacts on water quality since there would not be any real estate transaction. However, the absence of a flowage easement would prevent or delay implementation of flow-dependent ecosystem restoration projects, resulting in long-term indirect minor adverse impacts on water quality. Construction of the transmission lines without a flowage easement in the FPL corridor would permanently hinder the implementation and success of ecosystem restoration projects, and would therefore result in major adverse impacts. There would also be short-term minor to moderate adverse impacts related to construction activities. Alternative 1b would contribute appreciable long-term adverse impacts, as well as noticeable short-term adverse construction-related impacts to overall cumulative impacts on water quality in the area.

KO RCEVUQH'CNVGT PCVK'4<P RU'CES WUKWQP'QHHRN'NCPF''

KO rcew'qhl'ij g'Ncpf 'Ces wukwqp'Cevkqp''

Under alternative 2, the NPS would own and therefore be able to manage the FPL corridor to accommodate enhanced flows associated with ecosystem restoration activities. The NPS could allow enhanced sheetflows across the FPL corridor and implement regional restoration activities that rely on enhanced flows. This would decrease the frequency and duration of dry periods in the EEEA, which would decrease the potential for increased production of methyl mercury and higher concentrations of phosphorus, resulting in indirect long-term benefits to water quality.

KO rcew'qhl'Vtcpuo kukqp'Nkpg'Eqput wevkqp''

The types of indirect adverse impacts from construction of transmission lines outside the park in the area of possible relocated corridor would be the same as under alternative 1b, but because the waters outside the park are less pristine than waters in the park, the intensity of those impacts would be less pronounced. Flows would continue as they are, and it is not expected that there would be any noticeable changes to the frequency of drying and rewetting periods, so there would not be noticeable associated changes in phosphorus concentrations or methyl mercury production. Impacts would be indirect, long-term negligible to minor adverse. Construction-related activities would have short-term negligible to minor adverse impacts. The wetlands in the area of the area of possible relocated corridor are hydrologically compartmentalized from the EEEA, and impacts on water quality in the area of possible relocated corridor would not affect water quality in the EEEA or NESRS, therefore impacts on water quality in the park would be avoided.

Ewo wcvkg'KO rcew'

The cumulative impacts on water quality from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 2 would allow enhanced flowage and implementation of ecosystem restoration projects that rely on enhanced flows to proceed, and would allow for regional benefits to water quality over 20 to 30 years, but would also result in long-term negligible to minor adverse impacts, and short-term negligible to minor adverse impacts on water quality outside the park. Alternative 2 would contribute appreciable benefits to the overall cumulative impacts on water quality within the park; the contribution of adverse effects from the construction of the transmission lines outside the park would be only slightly noticeable.

Eqpenwukqp''

Under alternative 2, acquisition of the FPL corridor and the ability to flow additional water across the property would result in indirect long-term beneficial impacts on water quality in EEEA. Impacts from the construction of the transmission lines outside the park would be similar to, but less intense than those described under alternative 1b—indirect, long-term negligible to minor adverse, and short-term negligible to minor adverse for construction activities. Impacts from transmission line construction inside the park would be avoided, and alternative 2 would contribute appreciable benefits to the overall cumulative impacts on water quality within the park; the contribution of adverse effects from the construction of the transmission lines outside the park would be only slightly noticeable.

KO RCEVUQH'CNVGTP CVK&G'5<HGG'HQT'HGG'NCPF'GZEJ CPI G''

KO rcew'qhl'vj g'Ncpf 'Ces wukwqp'Cevkqp''

Under alternative 3, the fee for fee land exchange would allow the NPS to accommodate enhanced flows across the current FPL corridor and the exchange corridor, and proceed with flow-dependent ecosystem restoration projects, resulting in indirect long-term beneficial impacts on water quality from the property exchange, as discussed for alternative 2.

KO rcew'qhl'Vtcpuo kukqp'Nlpg'Eqpum wevkqp''

Under this alternative, FPL would construct the transmission lines in the exchange corridor adjacent to the L-31N canal. Impacts on water quality related to the construction of the transmission lines would be similar to the impacts described in the analysis for alternatives 1a and 2, although the intensity of the impacts would be less than those expected under alternative 1b and more than under alternative 2, due to the location of the transmission line corridor. Water currently flows toward the canal in this area, and would continue to do so until the seepage barriers are put in place, and would carry pollutants toward the edge of the park and away from more sensitive areas. There would be possible impacts on water quality from sediment discharge into the surrounding waterways, which would increase total suspended solids, turbidity, and nutrients, particularly phosphorus (which sorb to the sediment particles, in the water column near the construction sites during construction), or from accidental spills from equipment or vehicles. The more confined water in the channel between the levee and a parallel access road might be more stagnant, with less flow, and that could adversely affect water quality by encouraging localized eutrophication, although FPL has committed to maintaining the hydroperiod and preserving sheetflow through the FPL transmission line corridor, resulting in long-term minor adverse impacts.

There might be additional water quality impacts in the area between the transmission lines and the levee, because it would be more compartmentalized hydrologically. Increased mercury methylation would not be a large concern in this area; it already has many areas that are dry and rewet regularly, and the changes in frequency of drying and rewetting would not be very noticeable (Castro pers. comm. 2013).

In addition, monitoring has shown there is an elevated level of metals and other pollutants in the soils near the canal (Castro et al. 2013). Should the soils be disturbed during construction and reach the water column, concentrations of these pollutants could increase in the adjacent waterways. Use of appropriate BMPs, such as turbidity curtains and coffer dams, to ensure runoff from the disturbed soils would not reach the adjacent waterways during construction would be important and necessary. Construction methodologies call for use of geotextile and other approaches that would minimize or negate long-term impacts related to contaminants in this area.

As with alternatives 1b and 2, FPL would use BMPs, such as turbidity screens and erosion control practices, during construction to ensure that water quality standards are met, and construction crews would have spill containment and absorption materials to manage spills. Short-term construction-related impacts would be the similar to impacts under alternative 1b (minor to moderate adverse), with the addition of concerns about metals and other constituents found in the park soils near the L-31N canal getting into the water column. These issues could be addressed through mitigation and use of proper management practices.

Under the terms and conditions (appendix G), FPL would develop a resource stewardship plan. This plan would include a section on how pollutants or hazardous materials will be managed to minimize impacts and requires a contingency/containment plan. In the case of accidental spills from construction equipment, construction crews would be equipped with spill containment and absorption materials, so there would be short-term negligible to minor adverse localized impacts on water quality associated with accidental spills. Similarly, maintenance workers would be equipped with spill containment equipment when using herbicides during maintenance of the transmission line corridor, and all herbicides would be approved for use by the NPS. The section on erosion and sedimentation BMPs requires FPL to use state-of-the-art methods to prevent violations of state water quality standards and correct any erosion or shoaling that causes adverse impacts on water quality as soon as practicable.

Ewo wewk'kō rcew'

The cumulative projects with impacts on water quality from other past, present and reasonably foreseeable future projects would be the same as those discussed under alternative 1a, and would be mainly beneficial. Construction of the transmission lines in the proposed exchange corridor on the eastern edge of the park, would allow enhanced flows and implementation of flowage-related ecosystem restoration projects that would benefit water quality overall. Long-term minor adverse, and short-term minor to moderate adverse impacts from the construction of the transmission lines would be limited to the eastern edge of the park. Alternative 3 would contribute appreciable benefits to water quality regionally, but would also contribute noticeable short and long-term adverse impacts to cumulative effects on water quality in the study area.

Eqpenwukp''

There would be no direct impacts on water quality under alternative 3, but there would be indirect long-term beneficial impacts on water quality as the result of being able to accommodate enhanced restoration flows, and placing a large area of connected land into NPS ownership, allowing for management of park resources, including water quality, consistently with park objectives. Additional indirect impacts similar in nature to those discussed under alternatives 1b and 2 would be related to the construction of transmission lines in the FPL West Preferred Corridor and would be both long-term minor adverse impacts, and short-term minor to moderate adverse impacts. Alternative 3 would contribute appreciable benefits to water quality regionally, but would also contribute noticeable short and long-term adverse impacts to cumulative effects on water quality in the study area.

Kō RCEVUQH CNVGTP CVKKG'6<G CUGO GP V'HQT'HGG'NCPF'GZEJ CPI G''

Kō rcew'qht'j g'Ncpf 'Ces wukp' Cevkpp''

The terms and conditions for this action (appendix H) related to water quality for alternative 4 would be the same as under alternative 3, but with additional beneficial impacts resulting from terms and conditions that would reduce the risk of having additional utility facilities developed within the exchange corridor and minimize the effects of associated disturbance on water quality during construction. The impacts

related to the exchange and construction of the transmission lines on water quality under this alternative would be the same as for alternative 3. The property exchange would result in indirect long-term beneficial impacts on water quality.

Kō rcew'q̄h'Vtcpuo kulqp'Nlpg'Eqput wevqp''

Because the terms and conditions that address water quality would be essentially the same under both alternatives 3 and 4 (appendices G and H), impacts of alternative 4 would therefore be the same as under alternative 3. There would be long-term minor adverse impacts related to sheetflow disturbance, and localized negligible to minor adverse impacts at the culverts where water is channelized and scour with associated water quality effects could occur. There would also be short-term minor to moderate adverse impacts on water quality from construction activities.

Ewo wēvkg'Kō rcew''

Cumulative impacts on water quality under alternative 4 would be the same as under alternative 3. Alternative 4 would contribute appreciable benefits to water quality regionally, but would also contribute noticeable short and long-term adverse impacts to cumulative effects on water quality in the study area.

Eqpenwukqp''

Impacts on water quality would be the same as discussed under alternative 3 except no other utilities could be built in the corridor, which would lessen the risk of additional water quality impacts. There would be no direct impacts on water quality under alternative 3, but there would be indirect long-term beneficial impacts on water quality as the result of being able to accommodate enhance restoration flows, and placing a large area of connected land into NPS ownership, allowing for management of park resources, including water quality, consistently with park objectives. Additional indirect impacts similar in nature to those discussed under alternatives 1b and 2 would be related to the construction of transmission lines in the FPL West Preferred Corridor and would be both long-term minor adverse impacts, and short-term minor to moderate adverse impacts. Alternative 4 would contribute appreciable benefits to water quality regionally, but would also contribute noticeable short and long-term adverse impacts to cumulative effects on water quality in the study area.

Kō RCEVU'QH'CNVGTP CVKKG'7<RGTRGVWCN'HNQY CI G'GCUGO GPV'QP'HRN'RtQRGTVl ''

Kō rcew'q̄h'tj g'Ncpf 'Ces wukqp'Cevqp''

Under alternative 5, there would be no direct impacts on water quality. The acquisition of a perpetual flowage easement across the FPL property would give the NPS the ability to manage the area to proceed with ecosystem restoration activities that rely on enhanced flows. These restoration activities would increase the hydroperiod and improve water quality in the restoration area over the long term, and result in long-term beneficial indirect impacts on water quality.

Kō rcew'q̄h'Vtcpuo kulqp'Nlpg'Eqput wevqp''

The construction of transmission lines in this corridor would result in the same types of impacts on water quality as discussed under alternative 1b, and result in long-term major adverse impacts and short-term minor to moderate adverse impacts. The impacts would still be major because of the size of the area affected. However, the increased hydroperiod and flood stage would result in less likelihood of frequent drying and rewetting that the disturbance to sheetflow would cause, which could attenuate some of the

potential impacts on water quality discussed under alternative 1b, particularly increased concentrations of phosphorus and methyl mercury in areas that dry and rewet more often,

Ewo wɛvɛg'kɔ rcew'

The cumulative projects with impacts on water quality from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Implementation of alternative 5 would provide both long-term major adverse and short-term minor to moderate adverse impacts in the FPL West Secondary Corridor, but flow-related ecosystem restoration projects could proceed, resulting in regional benefits to water quality. The alternative would contribute appreciable beneficial impacts, and noticeable adverse impacts to cumulative effects on water quality in the area where sheetflow is disrupted, and wetlands could be more subject to drying.

Eqpenwukp''

Under alternative 5, there would be indirect long-term benefits to water quality from the flowage easement, but there would also be indirect major long-term adverse impacts and short-term minor to moderate adverse impacts related to the construction of the transmission lines, although increased flows would attenuate some of these adverse impacts downstream of the culverts and transmission lines. Alternative 5 would contribute appreciable beneficial impacts, and noticeable adverse impacts to cumulative effects on water quality in the area where sheetflow is disrupted, and wetlands could be more subject to drying.

UQKNU''

I wɛfɛpi 'Tgi wncviqpucpf'RQNEKGU''

NPS *Management Policies 2006*, Section 4.8, states that the NPS will protect geologic features from the unacceptable impacts of human activity, while allowing natural processes to continue. The term “geologic features” describes the products and physical components of geologic processes and includes soils.

CUUWO RVIQPU.'O Gvj QF QNQI [. 'CPF 'kɔ rcev'kɔ vgpun['F GHPKIQPU''

Potential impacts on soils are assessed based on the extent of disturbance to natural undisturbed soils, the potential for soil erosion resulting from disturbance, and the potential for changes to soils caused by changes in water quality. The analysis of possible impacts on soil resources was based on a review of existing literature and maps, information provided by the NPS and other agencies, experience related to transmission line construction-related effects, and professional judgment.

The following definitions were used to determine the magnitude of adverse impacts on soils:

- **Pgi ni kɛg:** Soils would not be affected, or effects would not be measurable. Any soil erosion or effects on soil productivity or the ability of the soil to support native vegetation would be slight and would occur in a localized area.
- **O kɛqt:** Effects on soils (soil erosion, effects on soil productivity or the ability of the soil to support native vegetation) would be detectable, but only a localized area would be affected. If mitigation was needed to compensate for adverse effects, it would be relatively simple to implement and would likely be successful.

- **O qf gt evg:** Effects on soils (soil erosion, effects on soil productivity or the ability of the soil to support native vegetation) would be readily apparent and would occur over a regional area. Mitigation would probably be necessary to compensate for adverse effects and would likely be successful.
- **O clqt:** Effects on soils (soil erosion, effects on soil productivity or the ability of the soil to support native vegetation) would be readily apparent, and would substantially change the soil or geologic characteristics over a regional area, with a permanent loss of large areas. Extensive mitigation would be needed to compensate for adverse effects, and its success would not be ensured.

CPCN[UKCTGC"

The area of analysis for soils includes the areas potentially developed for transmission lines, plus downstream areas where soils could be affected by changes in water quality in the EEEA and the project area surrounding the park. This includes the area in and around the transmission corridors in the 8.5-square-mile area east of the park, WCA 3B and the Pennsuco wetlands north of the park, and extending to the urban development boundary to the east of the park (see "Figure 4: General Project Area," in chapter 1).

KO RCEVUQH CNVGTP CVKKG'3C<P Q'P RU'CEVIQP '6'P Q'HRN'E QPUVTWEVIQP "
***GP XKTQPO GP VCN'DCUGNPG+ "**

KO rcew'qhtj g'Ncpf 'Ces wklkqp'Cevkqp "

Under alternative 1a, there would be no legal changes to the property's status or ownership, and FPL would not grant NPS a flowage easement. Therefore, there would be no physical change to the land, so there would be no direct impacts on soils. Because flowage would not be restored, there would be long-term adverse indirect impacts on soils in the EEEA from the lack of seasonal drying and wetting and associated growth of plants and contribution to soils. Loss of peat soils would also occur through oxidation due to ongoing drying under flowage restrictions, resulting in long-term major adverse impacts on soils.

KO rcew'qhtj Vtcpuo kulkqp'Nlpg'Eqput wevkqp "

Under alternative 1a, no transmission lines would be constructed, therefore, there would be no construction-related impacts on soils.

Ewo wvkg'KO rcew'6'Cngt pcvkg'3c "

Ecosystem restoration projects in the Everglades described in table 18 and acquisition of property throughout the park would result in beneficial impacts on soils throughout the Everglades (over a 20-30 year period, as associated projects are funded and implemented), but alternative 1a would prevent or obstruct implementation of many if these projects and would therefore result in major adverse impacts. The overall direction of the GMP to preserve park resources would indirectly benefit the soils in the park. Other projects in the area of analysis with adverse effects on soil include ongoing urban development, road construction and potential road expansions, ongoing mining (minor to moderate adverse). Use of prescribed fire in the park can have short-term adverse effects on soils from loss of organic matter, but long-term benefits from release of nutrients. Alternative 1a would result in major adverse impacts because of the lack of flowage and would contribute appreciable adverse impacts to the overall cumulative effects on soils in this area.

Eqpenwukqp'6'Cngt pc vkg'3c''

Under alternative 1a, while there would be no direct impacts from the FPL retention of property in the EEEA, but there would be major long-term adverse impacts on soils because of the lack of additional flowage and resultant loss of peat soils. There would be no impacts related to transmission line construction. Alternative 1a would contribute appreciable adverse impacts to the overall cumulative effects on soils in this area.

KO RCEVUQH'CNVGT PCVKG'3D<P Q'P RU'CEVQK'6'HRN'E QP UVTWEVQK'P'VJ G'RCTM''

KO rcew'qhvj g'Ncpf 'Ces wukwqp'Cevkqp''

Under alternative 1b, impacts of the land acquisition action would be the same as described under alternative 1a. The FPL retention of ownership of land in the EEEA would not result in direct impacts on soils; however, flowage restrictions would result in long-term indirect major adverse impacts on soils.

KO rcew'qhv Vtcpuo kukqp'Nkpg'E qput wevukqp''

Under alternative 1b, long-term major indirect adverse impacts on soils would result from the construction of transmission lines in the park and surrounding areas to the north and south of the park. Construction in these areas would occur as described earlier in this chapter and appendix F, based on the FPL State Certification Application (SCA) and responses provided to data requests by the NPS (FPL 2009a; FPL 2012a). Transmission line construction along this corridor would involve excavation for pole placement, earthmoving and grading for the construction of access roads and pads, the placement of guy-wire anchors into the soil and subsoil, and the placement of fill in pads and along access roads. Soils would also be disturbed in construction laydown and staging areas along the right-of-way. Transmission line construction would result in direct disturbances to soils and the permanent loss of 182 acres of soils. Disturbances within the park would extend to 89 acres of soils that were previously undisturbed and contain nutrient levels closer to the natural state than those found outside of the park unit. Culverts along the length of the transmission line would, through channelization, contribute to some scour and subsequent erosion and resulting loss of additional soils.

The SCA (FPL 2009a) states that cranes, bucket trucks, flatbed trucks, semi-trailer trucks, front-end loaders, bulldozers, and other support vehicles are typically used in structure erection and anchor/guying installations. Laydown areas for equipment and materials will be located in uplands to the fullest extent practical, but there are few uplands along the FPL West Secondary Corridor, so most of these areas would have to be located along the right-of-way in wetland soils.

Ground disturbance from these actions can compact soils, disturb and modify the soil layer structure, expose soils, and increase the overall potential for erosion. Compacted soils contribute to reducing water infiltration rates, allowing for greater runoff and increased potential for erosion. Compacted soils can also inhibit seed germination and plant growth, which over the long term decreases the amount of organic material in the soils and decreases overall soil productivity. During construction, mitigation measures would be implemented to minimize adverse impacts on soils from ground disturbance. As detailed in the FPL SCA (FPL 2009a), these measures would include adhering to sedimentation and erosion control specifications and measures, including the use of silt fences, hay bales, and geotextile liners in wetland areas. Reclamation would include restoring laydown areas and stabilizing potentially erodible areas, typically through seeding and mulching. Impacts on soils that are disturbed during construction but reclaimed would be short and long term (depending on the length of time needed to restore the soil function), localized, minor to moderate, and adverse.

A permanent loss of soils would occur in the areas occupied by structure pads and access roads. The construction of pads and roads involves clearing and grubbing of the road or pad footprint and then placing, spreading, shaping, and compacting hauled clean fill to the design elevation. In the footprint of the pads and roadbed, existing peat or marl soils would be permanently excavated and replaced with fill, and the natural function of the soils would be lost. Although the pads and side slopes may be seeded later, there would be no natural soil used on these areas (they are gravel) and the soil loss would be considered permanent. The width of the area graded and filled for access roads (width of main road surface and side slopes) and the dimensions of the structure pads (main area of pad plus side slopes) would vary depending on the soil conditions and the amount of fill needed, which in turn would determine the height of the road or pad surface and the area of the side slopes. In order to do a comparative assessment of acres filled for analysis in this EIS, estimates of road width and pad sizes provided by FPL (based on a preliminary conceptual design) were used (see appendix F; also Braun 2012). Based on this information, it was assumed that the access road would be 42 feet wide in wetlands, where a large amount of fill would be needed, and about 22 feet wide in non-wetland areas. Estimated pad sizes (with side slopes) were derived from information provided by FPL (FPL 2012a; Braun pers. comm. 2012). It was assumed that each larger pad would cover 1 acre in wet areas and about 0.63 acre in non-wetland areas. Similarly, the smaller pad supporting only the 230-kV line (every 500 feet) would cover 0.35 acre in wet areas and 0.05 acre in drier areas. Corner pads (at angles in the lines) were estimated at 2 acres in wetlands and 1.74 acres in uplands. The number of pads depends on the span lengths, and it was assumed that the span for the 500-kV lines would be about 1,000 feet and the span for the 230-kV line would be about 500 feet. This would result in a larger pad every 1,000 feet and a smaller pad midway between the larger pads, but also every 1,000 feet.

Based on these assumptions, the total area of permanent loss of soils along the FPL West Secondary Corridor was estimated using geographic information system (GIS) mapping and the Florida Land Use, Cover, and Forms Classification System (FLUCFCS) vegetation cover types to delineate wetlands and non-wetland areas, and using a line in the center of the corridor for route location. Table 19 summarizes an estimate done for the area of soil loss for the FPL West Secondary Corridor in the park and between points of nexus of all three routes in the project area.

Other impacts on soils could occur from changes in water quality. While excavation is taking place, sediment and suspended solids would likely travel downstream and could affect soils through sedimentation and changes in nutrient condition. Exposed soils would be expected to erode and leach nutrients (phosphorus) into the water column, and erosion can carry phosphorus-laden sediments downstream and change the quality of soils in those areas. Sedimentation would likely only occur in limited areas and would be mitigated with the use of silt fencing and erosion control devices, so adverse impacts relating to this would be long term, but localized and minor.

Short-term minor to moderate adverse construction-related impacts would occur related to temporary disturbances from earth-moving activities and increased erosion potential. The long-term maintenance of the transmission lines would have only negligible adverse effects on soils, because maintenance vehicles would access the right-of-way on established access roads and maintenance surveys could be done by helicopter.

Overall, long-term adverse impacts on soils from transmission line construction would be major in severity. Impacts would be noticeable and would last beyond the period of construction. Although impacts would be localized in the right-of-way, they would occur throughout the project area and along the entire length of the right-of-way. Mitigation for impacts on soils that are not permanently lost would include reclamation (such as replacement of disturbed soils with topsoil and subsequent reseeding) and would be expected to successfully reduce impacts to minor levels in those areas. However, there would be

a permanent loss of soils on pads and access roads, which compose about 31 percent of the total right-of-way acreage.

TABLE 19: ESTIMATE OF ACRES LOST TO PADS AND ACCESS ROAD ROUTE IN FPL WEST SECONDARY CORRIDOR

Area of Disturbance		Approximate Area Disturbed in the Park (7.3 miles) (Using approximate centerline)	Approximate Area Disturbed in Area of Analysis (Includes Areas South and North of the Park to Points of Nexus) (14.7 miles) (Using approximate centerline)
Pad every 1,000 feet, all 3 lines	Wetlands Approx. 1 acre/pad	Approximately 38 pads 38 acres	Approximately 75 pads 75 acres
	Non-wetlands Approx. 0.63 acre/pad	—	Approximately 3 pads 1.9 acres
	Wetlands – angle structure Approx. 2.0 acres/pad	—	Approximately 2 pads 4 acres
	Non-wetlands – angle structure Approx. 1.74 acres/pad	—	—
Pad every 1,000 feet 230-kV line	Wetlands Approx. 0.35 acres/pad	Approximately 39 pads 13.7 acres	Approximately 76 pads 26.7 acres
	Non-wetlands Approx. 0.05 acre/pad	—	—
Access road	Wetlands 42 feet wide	37.4 acres	74.0 acres
	Non-wetlands 22 feet wide	—	0.4 acres
Total acres lost	Wetlands	89.1 acres	179.7 acres
	Non-wetlands	—	2.3 acres
Total acres lost		89.1 acres	182 acres (about 31% of total right-of-way acres)
Total right-of-way acres	Wetlands	293.9 acres	582.6 acres
	Non-wetlands	—	7.3 acres
Total right-of-way acres		293.9 acres	590 acres

Note: These are estimates only and are subject to change with final design and site-specific mapping.

Ewo wɛɪk'kɔ rcew'd'ɕngtɕɔk'3d''

The cumulative impacts on soils from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 1b would contribute short-term minor to moderate adverse construction-related impacts and long-term major adverse effects from construction of the transmission line without a flowage easement in the FPL corridor. Alternative 1b would contribute appreciable adverse impacts to the overall cumulative effects on soils in this area.

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Under alternative 1b, there would be no direct impacts on soils from the FPL retention of property in the EEEA. Indirect impacts on soils would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short- and long-term minor to moderate adverse impacts from construction, long-term major adverse impacts from a permanent loss of 182 acres of soils, and negligible adverse impacts from line maintenance. Alternative 1b would contribute appreciable adverse impacts to the overall cumulative effects on soils in this area.

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KO rcew'qh'vj g'Ncpf 'Ces wukskqp'Cevkqp''

Under alternative 2, indirect beneficial impacts on soils would be expected from the acquisition of FPL land in the EEEA. NPS management would extend to an additional 320 acres of soils within the acquired area, and improvements to soils associated with enhancing water levels would. Flowage would allow for the development of soils from seasonal drying and wetting and would lead to improvements in soils conditions over time.

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Under alternative 2, long-term moderate adverse impacts on soils would result from the possible construction of transmission lines to the east of the park. While impacts on soils within the park would be avoided, transmission line construction in the area of the possible relocated corridor would result in disturbances to soils in this area. Impacts from transmission line construction would include erosion, compaction, and permanent removal. The severity of impacts on soils would depend on where the construction occurred in this area. While some soils in the area have been disturbed, drained, and cleared of vegetation, other areas (such as Pennsuco wetlands) contain natural, *in situ* soils. Construction in this area would affect soils that are, for the most part, already disturbed and there would be a higher likelihood of restoring any disturbed areas that are not permanently lost. If construction occurred close to the eastern boundary of the area of possible relocated corridor, 164 acres would be lost in areas adjacent to the park unit. Culverts along the length of the transmission lines would also contribute through channelization to some scour and subsequent erosion and resulting loss of soils.

Impacts such as soil compaction and erosion from excavation for pole placement, earthmoving, and grading would occur and would be similar to those described under alternative 1b. Mitigation measures as described under alternative 1b (erosion control devices and geotextile liners) would be used to minimize adverse impacts on soils. Reclamation would include stabilizing potentially erodible areas, typically through seeding and mulching, and would reduce impacts in these areas to a minor level. There would also be a permanent loss of soils in areas of access road and pad locations similar to that described under alternative 1b. In order to compare acres of permanent soil loss, the acres of soils that would be permanently removed or covered with fill at pads and along the access road were estimated by assuming a route length of approximately 15 miles, and a route that generally follows the eastern side of the area of possible relocated corridor (table 20). Impacts could be further minimized by selection of a route that is co-located with existing infrastructure and disturbed areas.

TABLE 20: ESTIMATE OF ACRES LOST TO PADS AND ACCESS ROAD ROUTE IN AREA OF POSSIBLE RELOCATED CORRIDOR

Area of Disturbance		Approximate Area Disturbed in the Park (0 Miles)	Approximate Area Disturbed in Area of Analysis (Includes Areas South and North of the Park to Points of Nexus) (using hypothetical route along the eastern portion of the area for measurement purposes) (15.0 Miles)
Pad every 1,000 feet, all 3 lines	Wetlands Approx. 1 acre/pad	No area in park.	Approximately 39 pads 39 acres
	Non-wetlands Approx. 0.63 acre/pad	—	Approximately 32 pads 20.1 acres
	Wetlands – angle structure Approx. 2.0 acres/pad	—	Approximately 6 pads 12 acres
	Non-wetlands – angle structure Approx. 1.74 acres/pad	—	Approximately 10 pads 17.4 acres
Pad every 1,000 feet 230-kV line	Wetlands Approx. 0.35 acres/pad	—	Approximately 41 pads 14.4 acres
	Non-wetlands Approx. 0.05 acre/pad	—	Approximately 29 pads 1.5 acres
Access road	Wetlands 42 feet wide	—	41.7 acres
	Non-wetlands 22 feet wide	—	18.3 acres
Total acres lost	Wetlands	—	107.1 acres
	Non-wetlands	—	57.4 acres
Total Acres Lost			164.5 acres (about 27% of total right-of-way acres)
Total right-of-way acreage	Wetlands	—	330.8 acres
	Non-wetlands	—	272 acres
Total Right-of-Way Acres			602.8 acres

Note: These are estimates only and are subject to change with final design and site-specific mapping.

Selection of this route would result in the loss of approximately 27 percent of total acreage within the right-of-way due to access road and pad construction. Although the acreage of permanent loss is comparable to that under alternative 1b, fewer impacts would accrue to soils under alternative 2 because areas in the area of possible relocated corridor to the east of the park have been developed and soils at least locations have already been disturbed or removed. The impact on soil resources would be less in these areas because of the lack of natural soils, and greater in areas in undeveloped wetlands, located primarily north of Tamiami Trail. For example, any route located to the far west of the area of possible relocated corridor east of the park would partly parallel the area currently used for rock mining, and

natural soils have already been disturbed or removed in that area. Similarly, if the construction occurred along the eastern edge of the area of possible relocated corridor, there would be little impact on soils in the area already disturbed or developed in the south end of this route in developed lands along Krome Avenue. However, adverse impacts would increase in any portions of a route that would cross undeveloped areas in Bird Drive basin and north in the Pennsuco wetlands. Also, soils in Bird Drive basin are marls and have already been disturbed by all-terrain vehicle use in that area (McMahon 1988).

There would be long-term minor adverse impacts on designated “unique” farmland soils in areas where the installation of access roads and pads was collocated with these soils types; however, soils of this designation occurring in the remainder of the right-of-way would be retained and probably not developed. Some agricultural activities could still take place under transmission lines, which would minimize the impacts on “unique” farmland soils.

Construction-related short-term impacts such as soil compaction and erosion from excavation for pole placement, earthmoving, and grading would occur, with minor to moderate adverse impacts. Mitigation measures such as erosion control devices and geotextile liners would be used to minimize adverse impacts on soils. Reclamation would include stabilizing potentially erodible areas, typically through seeding and mulching, and would reduce short-term impacts in these areas to a minor level.

Ewo wɛvɛg'kɔ rcew'

The cumulative impacts on soils from other past, present, and reasonably foreseeable future projects would be similar to those discussed under alternative 1a. Alternative 2 would allow for enhancing water levels / implementation of the ecosystem restoration projects and benefit soils, but would also result in short- and long-term minor to moderate adverse impacts from transmission line construction in areas outside the park. Alternative 2 would contribute appreciable beneficial and noticeable adverse impacts to the overall cumulative effects on soils in this area.

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Under alternative 2, there would be no direct impacts from the acquisition of FPL property in the EEEA, with indirect benefits from the acquisition itself and the ability to increase water levels in the area, which contributes to the development of soils. There would be indirect long-term moderate adverse impacts on soils from transmission line construction east of the park, which would result in the loss of 164 acres of soils outside the park. The severity of impacts would depend on where the transmission lines were located within the area of possible relocated corridor, and some of the soils in this area have been disturbed, drained, or cleared of vegetation. In general, impacts on soils would be greater along the eastern and northern portions of the area and reduced along the western and southern portions of the area where soils have already been disturbed. There would also be minor adverse impacts on designed unique farmland soils in the southern portion of the route outside the park. Impacts from transmission line construction inside the park would be avoided. Alternative 2 would contribute appreciable beneficial and noticeable adverse impacts to the overall cumulative effects on soils in this area.

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kɔ rcew'qhtj g'Ncpf 'Ces wɛvɛkɔp'Cevkɔp''

Under alternative 3, indirect beneficial impacts on soils similar to those described under alternative 2 would be expected from the acquisition of FPL land in the EEEA. NPS management would extend to an additional 320 acres of soils within the acquired area, and improvements to soils associated with enhanced water levels would occur. Flowage would allow for the development of soils from seasonal drying and

wetting and would lead to improvements in soils conditions over time. However, these gains would be offset to some degree by long-term indirect moderate adverse impacts resulting from the removal of 260 acres of soils from the park and associated park management activities.

Kō rcew'q̄h'Vtcpuo kulkp'Nlpg'Eqput wevkp''

Under alternative 3, indirect adverse impacts on soils would result from the construction of transmission lines in the exchange corridor, directly adjacent to park lands, as described earlier in this chapter and appendix F (SCA). Long-term major adverse impacts on soils would occur from compaction within the footprint of towers and roads and the permanent loss of an estimated 181 acres, including 80 acres within the park. Additionally, culverts along the length of the transmission line would contribute through channelization to some scour and subsequent erosion and resulting loss of soils. Because terms and conditions would accommodate enhanced flows across the property, the regional ecosystem restoration activities that rely on enhanced flow would be possible. However, impacts such as compaction and erosion from excavation for pole placement, earthmoving, and grading would occur. Alternative 3 would result in short-term minor to moderate adverse construction-related impacts stemming from temporary disturbances due to earth-moving activities and increased erosion potential. Erosion control measures required by the terms and conditions would minimize impacts where possible.

Similar to the other transmission line construction–related impacts described earlier, there would be a permanent loss of soils in areas of access road and pad locations. For the purposes of the analysis, it is assumed that a new access road would be constructed along the right-of-way, although if the existing levee road could be used, that would decrease impacts. In order to compare acres of permanent soil loss, the acres of soils that would be permanently removed or covered with fill at pads and along the access road were estimated by assuming a route length of approximately 15.7 miles with about 6.3 miles in the park (table 21).

Impacts on soils under alternative 3 would be similar to those described for alternative 1b and would include compaction, erosion, loss of soils on pads and access road locations, impacts from sedimentation and possible changes in water quality (nutrient release and input to soils), and negligible adverse effects from future line maintenance. Impacts on soils that are not permanently lost would be reduced somewhat areas that are already developed or in agricultural areas, since these soils are already disturbed. Also, agricultural soils can be stockpiled during construction for replacement or topsoil can be added, if needed, to restore productivity. Overall, transmission line construction along the FPL West Preferred Corridor would have localized, long-term major adverse impacts. The impacts could be noticeable and would last for more than the period of construction in most locations. Although impacts would be limited to localized areas in the right-of-way, they would occur throughout the project area and along the entire length of the right-of-way. Mitigation for impacts on soils that are not permanently lost would include reclamation and would be expected to successfully reduce impacts to minor levels in those areas. The permanent loss of soils would be limited to pads and access roads, which compose about 31 percent of the total right-of-way acreage.

There would be long-term minor adverse impacts on designated “unique” farmland soils in a few areas where the installation of access roads and pads was collocated with these soils types. Few of these soils exist within the FPL West Preferred Corridor, however, and soils of this designation occurring in the right-of-way would be retained and most likely not developed.

TABLE 21: ESTIMATE OF ACRES LOST TO PADS AND ACCESS ROAD ROUTE IN FPL WEST PREFERRED CORRIDOR

Area of Disturbance		Approximate Area Disturbed in the Park (6.3 Miles)	Approximate Area Disturbed in Area of Analysis (Includes Areas South and North of the Park to Points of Nexus) (using line located on west side of corridor within exchange corridor) (15.7 Miles)
Pad every 1,000 feet, all 3 lines	Wetlands Approx. 1 acre/pad	Approximately 33 pads 33 acres	Approximately 71 pads 71 acres
	Non-wetlands Approx. 0.63 acre/pad	—	Approximately 9 pads 5.7 acres
	Wetlands – angle structure Approx. 2.0 acres/pad	Approximately 2 pads 4 acres	Approximately 8 pads 16 acres
	Non-wetlands – angle structure Approx. 1.74 acres/pad	—	Approximately 1 pad 1.7 acres
Pad every 1,000 feet 230-kV line	Wetlands Approx. 0.35 acres/pad	Approximately 32 pads 11.2 acres	Approximately 68 pads 23.8 acres
	Non-wetlands Approx. 0.05 acre/pad	—	Approximately 10 pads 0.5 acres
Access road	Wetlands 42 feet wide	31.9 acres	70 acres
	Non-wetlands 22 feet wide	—	5.3 acres
Total acres lost	Wetlands	80.1 acres	180.8 acres
	Non-wetlands	—	13.2 acres
Total Acres Lost		80.1 acres	194 acres (about 31% of total right-of-way acres)
Total right-of-way acreage	Wetlands	175.5 acres	534.9 acres
	Non-wetlands	—	95.3 acres
Total Right-of-Way Acres		175.5 acres	630.2 acres

Note: These are estimates only and are subject to change with final design and site-specific mapping.

Alternative 3 also includes certain terms and conditions for the use of the FPL West Preferred Corridor (appendix G). Not many of the terms and conditions pertain directly to soils, except that any unavoidable fill pads needed for construction but not operation of the lines will be removed after construction is completed. Impacts on soils from vegetation management in the nonnative vegetation management easement would occur due to access and vegetation management activities. Impacts would include disturbance and compaction from equipment and access by foot. Intensity would depend on frequency of treatment, area treated, and type of equipment used for vegetation management activities.

Ewo wvkg'kō rcew'

The cumulative impacts on soils from other past, present, and reasonably foreseeable future projects would be similar to those discussed under alternative 1a. Alternative 3 would allow enhancing water levels /implementation of the ecosystem restoration projects and benefit soils, but the land exchange and construction of the transmission line in the exchange corridor would result in minor to moderate and long-term major adverse impacts; these impacts would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on soils in this area.

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Under alternative 3, there would be no direct impacts on soils from the exchange of FPL property in the EEEA. There would be indirect long-term beneficial impacts from having all the EEEA under NPS ownership, resulting in the ability to go forward with Everglades ecosystem restoration projects and the enhancement of resource conservation and values of the park, including soil resources. However, these gains would be offset to some degree by long-term indirect moderate adverse impacts occurring from the removal of 260 acres of soils from the park and associated park management activities. There would be indirect major adverse impacts on soils from the construction of the transmission lines in the FPL West Preferred Corridor with a resulting permanent loss of 181 acres of soils including 80 acres in the exchange corridor. There would also be long-term minor adverse impacts on unique farmland soils located within this corridor but in an agricultural area south of the park boundary and short-term minor to moderate adverse construction-related impacts. The unique farmland soils are not in the park, but are part of the corridor being analyzed from nexus to nexus. Alternative 3 would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on soils in this area.

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Kō rcew'qh'ij g'Ncpf 'Ces wkwkqp'Cevkqp''

Under alternative 4, there would be benefits to soils as described under alternative 3, but with terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance or removal of soils. These terms and conditions are found in appendices G and H.

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Impacts occurring on soils from transmission line construction under alternative 4 would be similar those described for alternative 3; however, the terms and conditions under this alternative allow for other utility related facilities in the right-of-way. This increases the risk of additional soil disturbance in the right-of-way either at the time of transmission line construction or at a later date. Construction of the transmission lines in the FPL West Preferred Corridor would have the following indirect impacts on soils. There would be long-term major adverse impacts on soils from compaction within the footprint of towers and roads and the permanent loss of an estimated 181 acres, including 80 acres in the exchange corridor. Long-term minor adverse impacts on designated “unique” farmland soils would occur in a few areas where the installation of access roads and pads was collocated with these soils types. Short-term minor to moderate adverse construction-related impacts on soils would stem from temporary disturbances due to earth-moving activities and increased erosion potential. Erosion control measures required by the terms and conditions would minimize impacts where possible. Impacts on soils from vegetation management in the nonnative vegetation management easement would occur due to access and vegetation management activities. Impacts would include disturbance and compaction from equipment and access by foot.

Intensity would depend on frequency of treatment, area treated and type of equipment used for vegetation management activities.

Ewo wv&g'Kō rcew'

The cumulative impacts on soils from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 4 would allow flowage/implementation of the ecosystem restoration projects and benefit soils, but the land exchange and construction of the transmission line in the exchange corridor would result in minor to moderate and long-term major adverse impacts; these impacts would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on soils in this area.

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Under alternative 4, there would be benefits to soils as described under alternative 3, but with easement terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance or removal of soils. There would be no direct impacts on soils from the exchange of FPL property in the EEEA. There would be indirect beneficial impacts from a gain in land and soils in the park and from having a majority of the EEEA under NPS ownership, resulting in the ability to go forward with ecosystem restoration without any potential future obstacles, which would enhance the conservation of the resources and values of the park, including soil resources. Additional beneficial impacts on soils would occur under terms and conditions that would reduce the risk of having additional utility facilities developed within the exchange corridor, thereby minimizing the effects of associated disturbance or removal soils. Indirect adverse impacts on soils from the construction of the transmission lines in the FPL West Preferred Corridor would include: long-term major adverse impacts on soils within the footprint of towers and roads resulting in a loss of 181 acres of soils, including 80 acres in the exchange corridor. There would be long-term minor adverse impacts on designated “unique” farmland soils outside the park; and short-term minor to moderate adverse construction-related impacts. Alternative 4 would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on soils in this area.

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Kō rcew'qh'vj g'Ncpf 'Ces w&w&qp'Cev&qp''

Under alternative 5, there would be no direct impacts of the land acquisition action on soils. Although a flowage easement would be maintained, the FPL retention of ownership of land in the EEEA would result in no direct impacts on soils.

Indirect impacts on soils associated with the flowage easement would be the same as described under alternative 2. The perpetual flowage easement across the FPL property would result in long-term beneficial impacts by allowing the NPS to manage the area to accommodate enhanced flows associated with ecosystem restoration activities. Improvements to soils associated with ecosystem restoration activities would occur on lands previously not subject to ecosystem restoration activities.

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Direct and indirect adverse impacts on soils under alternative 5 would be the very similar to those described under alternative 1b. Indirect impacts on soils would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short- and long-term minor to moderate adverse impacts from construction and negligible adverse impacts from line maintenance.

Long-term major indirect adverse impacts on soils would result from the construction of transmission lines in the park and surrounding areas to the north and south of the park from the permanent loss of soils. Transmission line construction along this corridor would involve excavation for pole placement, earthmoving and grading for the construction of access roads and pads, the placement of guy-wire anchors into the soil and subsoil, and the placement of fill in pads and along access roads. Soils would also be disturbed in construction laydown and staging areas along the right-of-way. Transmission line construction would result in direct disturbances to soils and the permanent loss of 182 acres of soils. Disturbances within the park would extend to 89 acres of soils that were previously undisturbed and contain nutrient levels closer to the natural state than those found outside of the park unit. Culverts along the length of the transmission line would, through channelization, contribute to some scour and subsequent erosion and resulting loss of additional soils.

Ewo wɔvɔg'kɔ rcew'

The cumulative impacts on soils from other past, present, and reasonably foreseeable future projects would be similar to those discussed under alternative 1a. Alternative 5 would provide beneficial impacts because flowage easement would allow the ecosystem restoration projects to proceed, but would have minor to long-term major adverse impacts due to transmission line construction in the park with no gain of park protected soils. These impacts would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on soils in this area, although the benefits would not be as extensive as those under the alternatives that result in the acquisition of soils in the park.

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Under alternative 5, impacts on soils would be similar to those for alternative 1b. There would be no direct impacts on soils from the FPL retention of property in the EEEA, but there would be long-term benefits from having a perpetual flowage easement agreement. Indirect impacts on soils would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short- and long-term minor to moderate adverse impacts from construction and negligible adverse impacts from line maintenance, and long-term major adverse impacts from the permanent loss of 182 acres of soils including 89 acres in the park. These impacts would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on soils in this area, although the benefits would not be as extensive as those under the alternatives that result in the acquisition of soils in the park.

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As described in chapter 3, most of the vegetation in the project area is wetland vegetation, with the exception of some disturbed land, cultivated land, and developed land in the area east of the park. Federal Executive Order 11990: Protection of Wetlands, directs federal agencies to avoid adverse impacts on wetlands. Director's Order 77-1 establishes policies, requirements, and standards for implementing Executive Order 11990.

Director's Order 77-1 states that the NPS will employ a sequence of avoiding adverse wetland impacts to the extent practicable, minimizing impacts that cannot be avoided, and compensating for remaining unavoidable adverse wetland impacts by restoring degraded wetlands. A wetland statement of findings will be completed for the alternative that is selected as the preferred alternative at the time of permitting.

NPS *Management Policies 2006* specifically addresses water quality, wetlands, and floodplains in Sections 4.6.3, 4.6.4, and 4.6.5, respectively. The policies state that the NPS will "take all necessary

actions to maintain or restore the quality of surface waters and ground waters in parks consistent with the Clean Water Act (CWA) and all other applicable and federal, state, and local laws and regulations.” The NPS will provide similar protective provisions for wetlands and floodplains as stated in the director’s orders discussed above (NPS 2006a).

Regarding vegetation and the habitat it provides, the NPS *Management Policies 2006* directs parks to provide for the protection of park resources. The policies state that “the Service will not attempt to solely preserve individual species (except threatened or endangered species) or individual natural processes; rather, it will try to maintain all the components and processes of naturally evolving park ecosystems, including the natural abundance, diversity, and genetic and ecological ecosystems” (NPS 2006a, Section 4.1).

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Maps showing vegetation cover in the project area derived from SFWMD FLUCFCS data (SFWMD 2011a) and communications with NPS staff were used to identify baseline conditions for vegetation and wetlands. Available information was taken from other NPS and non-NPS resources to describe these resources in more detail. The analysis of possible impacts on vegetation and wetlands was based on review of existing literature and maps, information provided by the NPS and other agencies, experience related to transmission line construction-related effects, and professional judgment. Wetlands and other vegetation communities are largely considered together in this section because the vast majority of plant communities in the project area also qualify as jurisdictional wetlands. In addition to this analysis, populations of special-status plant species are considered in the “Special-status Species” section as appropriate.

The impact intensity definitions for vegetation and wetlands are based on the amount of wetlands or other plant communities permanently altered or restored and on the size, integrity, and connectivity of the wetlands or other plant communities affected. These indicators are defined as follows:

- **Uk g:** The severity of impacts on wetlands and other plant communities depends on the size of the impacted area. A small area of impact in a large wetland would be likely to have less of an effect than a large area of impact in a small wetland. Similarly, a small area of impact on a large tree island would be likely to have less of an effect on a large area of impact on a small tree island. The change in the size of a wetland or other plant community, as a result of an impact, would also influence the integrity and connectivity of the wetland and vice versa.
- **Kvgi t k:** Highly intact wetlands or other plant communities with little prior disturbance would be more susceptible to impacts from direct development than those that were previously degraded by development or other activities. The loss of function and productivity of the higher quality area would be a greater loss than that of a lower quality area. Additionally, indirect impacts due to soil disturbance or a change in vegetation or hydrology would also impact the integrity of the area.
- **Epppgevk k:** The relationship of wetlands to other wetlands or other plant communities is also important in determining the degree of impact or project benefits. The establishment of buildings or other structures in wetlands or other plant communities would create barriers to the natural dispersal of plants and animals and impact the connectivity of those communities. Impacts to areas with more complex associations of wetlands and/or other plant communities would be more likely to affect the connectivity of the area than impacts on areas with fewer natural community types.

The following definitions were used to determine the magnitude of adverse impacts on vegetation and wetlands:

- **Pgi nli kldg:** No measurable or perceptible effects on size, integrity, or connectivity of wetlands would occur. For any other vegetation present, impacts may cause a change, but the change would have no measurable or perceptible effects on plant community size, integrity, or continuity.
- **Olpqt:** The effect on wetlands would be measurable or perceptible, but localized in terms of area and in the nature of the impact. A small effect on size, integrity, or connectivity would occur; however, the overall viability of the wetland would not be affected. If left alone, an adversely affected wetland would recover, and the impact would be reversed. For any other vegetation present, impacts may cause a change in plant community size, integrity, or continuity, but the change would be localized in a relatively small area and no change in the viability of the plant community would occur.
- **Oqf gtcvg:** The impact would be sufficient to cause a measurable effect on one of the three parameters (size, integrity, and connectivity) or would result in a permanent loss in wetland acreage, but not to large areas. Wetland functions would not be affected in the long term. For any other vegetation present, impacts may cause a change in plant community size, integrity, or continuity, and the change would be extensive but not regional in nature.
- **Oclqt:** The impact would result in a measurable effect on all three parameters (size, integrity, and connectivity) or a permanent loss of large wetland areas. The impact would be substantial and highly noticeable. The character of the wetland would be changed so that the functions typically provided by the wetland would be substantially altered. For any other vegetation present, impacts may cause a change that would be substantial, would be highly noticeable, and would affect a large area. Extensive mitigation would be needed to offset adverse effects and its success would not be ensured.

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The area of analysis for vegetation and wetlands includes the area of construction disturbance and transmission line presence along the transmission line corridors in and around the park, located in the EEEA and in the project area surrounding the park. This includes the area in and around the transmission line corridors in the 8.5-square-mile area east of the park, WCA 3B and the Pennsuco wetlands north of the park, and extending to the urban development boundary to the east of the park (see "Figure 4: General Project Area," in chapter 1). The area of analysis for vegetation and wetlands is focused on vegetation and wetlands in the proposed corridors and on adjacent lands (within 500 feet of any transmission line right-of-way) and downstream wetlands.

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***GP'XKTQPO GPVCN'DCUGNRP'G+"**

KO rcew'qhv'j g'Ncpf 'Ces wlvkqp'Cevkqp"

Under alternative 1a, there would be no legal changes to the property's status or ownership, and FPL would not grant NPS a flowage easement. Therefore, there would be no physical change to the land, so there would be no direct impacts on vegetation or wetlands. Under alternative 1a, indirect impacts would result in continued long-term major adverse impacts on vegetation and wetlands due to continued habitat degradation from altered hydrology. Habitat restoration and exotic species management efforts within the park would be hindered by FPL ownership of the parcel and the lack of a flowage easement, or sufficient interests in these properties, to flow additional water across the FPL West Secondary Corridor, thereby

having a negative impact on vegetation and wetlands. Adverse impacts on soils in the EEEA would result from the lack of a flowage easement due to the lack of seasonal drying and wetting and associated growth of plants and contribution to soils. Loss of peat soils would also occur through oxidation due to ongoing drying under flowage restrictions. This soil degradation and loss could result in the region becoming less able to support native wetland vegetation.

Kō rcew'qhlVtcpuo kulqp'Nlpg'Eqput wevkqp''

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts on vegetation or wetlands.

Ewo wevk'g'Kō rcew'δ'Cngt pcvk'g'3c''

The past, present, and reasonably foreseeable future land acquisition and ecosystem restoration actions in the Everglades described in table 18 would result in several long-term beneficial impacts, with some short-term minor adverse effects. However, many of these ecosystem restoration projects may not be completed as planned or when planned due to the inability to flow enough water over the FPL West Secondary Corridor to establish hydrologic restoration goals. Habitat degradation from altered hydrology would be expected under alternative 1a due to the lack of a flowage easement or sufficient rights to flow additional water across the FPL West Secondary Corridor, resulting in long-term major adverse impacts. Other projects in the area of analysis have contributed and would contribute adverse cumulative impacts on wetlands and vegetation through removal of vegetation and filling of wetlands. These include urban development, road construction, and mining. Park projects such as prescribed burns can cause short-term adverse effects, but long-term benefits by reducing the fuel load and reducing the severity of wildfires. Vegetation management by the park, particularly exotic plant management planning and implementation, provides beneficial cumulative impacts. The overall direction of the GMP to preserve park resources would indirectly benefit the vegetation in the park. The impacts of alternative 1a due to the lack of flowage and resultant inability to meet ecosystem restoration goals for the Everglades would contribute appreciable adverse impacts to the overall cumulative effects on wetlands and vegetation in this area.

Eqpenwukqp'δ'Cngt pcvk'g'3c''

Under alternative 1a, the retention of ownership of land in the EEEA by FPL without construction on the FPL West Secondary Corridor, in the exchange corridor, or in any area outside the park, would result in continued indirect long-term major adverse impacts on vegetation and wetlands due to continued habitat degradation from altered hydrology. Habitat restoration and exotic species management efforts within the park would be hindered by the lack of a flowage easement, or sufficient interests in these properties, to increase water levels across the FPL West Secondary Corridor, thereby having a negative impact on vegetation and wetlands. There would be no impacts on vegetation and wetlands from transmission line construction since no construction would occur on the FPL West Secondary Corridor, in the exchange corridor, or in any area outside the park. Alternative 1a would contribute appreciable adverse impacts to the overall cumulative effects on wetlands and vegetation in this area.

CNVGTPCVK'G'3D<P Q'P RU'CEVIQP'δ'HRN'EQPUVTWEVIQP'W'VJ G'RCTM''

Kō rcew'qhlNcpf 'Ces wukqp'Cevkqp''

Under alternative 1b, FPL would retain ownership of land in the EEEA, but the impacts of the land acquisition action would be the same as described under alternative 1a. There would be no physical change to the land, so there would be no direct impacts on wetlands or vegetation. Indirect impacts would result in continued long-term major adverse impacts on vegetation and wetlands due to continued habitat

degradation from altered hydrology. FPL ownership of the parcel and the lack of a flowage easement, or sufficient interests in these properties, to flow additional water across the FPL West Secondary Corridor are expected to hinder habitat restoration and exotic species management efforts within the park, thereby having a negative impact on vegetation and wetlands.

Kō rcew'qhiVtcpuo kulqp'Nlpg'Eqpwt wevqp''

Localized long- and short-term major adverse impacts on vegetation and wetlands would result from the construction of transmission lines in the park and in surrounding areas to the north and south of the park, as described earlier in this chapter and appendix F, based on the FPL SCA and responses provided to data requests by NPS (FPL 2009a; FPL 2012a). As described in the analysis of impacts on soils, transmission line construction along the FPL West Secondary Corridor would involve excavation for pole placement, earthmoving and grading for the construction of access roads and pads, the placement of guy wire anchors in the soil and subsoil, and the placement of fill in pads and along access roads. Laydown areas for equipment and materials would be located in uplands to the fullest extent practicable, but because there are few uplands along the FPL West Secondary Corridor, most of these laydown areas would have to be located along the right-of-way in wetlands. Essentially the entire right-of-way is wetland (see “Figure 9: Wetlands and Vegetative Cover Map” and “Table 5: Land Cover Types within the Corridors in the Area of Analysis,” both in chapter 3), consisting of predominantly sawgrass marsh in the EEEA, interspersed with small tree islands consisting of wetland hardwood forest, and some freshwater graminoid marsh near the Tamiami Trail. The area north of the trail is again primarily sawgrass marsh until the right-of-way turns to the east and enters the Pennsuco wetlands, which are mainly graminoid freshwater prairie marsh, with areas of wet prairie and nonnative (also called exotic) hardwoods (melaleuca) especially in disturbed areas.

Heavy equipment entering the marsh would cause localized long-term disturbance to vegetation and the wetlands located outside of areas where filling may be necessary for roads or structure pads. Vegetation in these areas would be crushed or removed, and soils compacted in areas of ground disturbance. Compacted soils can inhibit seed germination and plant growth, which over the long term, decreases the amount of organic material in the soils and decreases the overall productivity of the wetland vegetation. Also, disturbance caused by the removal of soil and vegetation is expected to make the area more vulnerable to nonnative species growth and disruption of native plant species compositions.

Where vegetation is not removed for construction purposes and can remain in the right-of-way, it must be cut to meet line clearance requirements. Trees (native and nonnative) in the corridor would be cut or removed to reduce the risk of flashovers from transmission lines. Where clearing is required, all trees and shrubs within the right-of-way limits whose mature height could exceed 14 feet and that are in the wire management zone under the transmission lines would be evaluated by FPL for pruning or clearing to ground level. Where trees are cut to ground level, stumps would either be cut or ground down to natural grade and treated with an NPS-approved herbicide to prevent regrowth, or the entire stump and root mat would be grubbed to at or below grade. When chipped material is not spread in uplands along the right-of-way, vegetation debris may be hauled to landfills or piled and burned within the limits of the right-of-way consistent with state and local regulations. Side trimming and pruning of trees along the right-of-way edges may also be required. Clearing in wetlands will be accomplished using restrictive clearing techniques, usually with chainsaws or with low-ground-pressure shear or rotary type machines, which reduce soil compaction and vegetation disturbance. In these areas, minimal clearing should be required, given the primary type of wetland vegetation present (sawgrass marsh). Also, there are areas of tree islands in the FPL West Secondary Corridor that could require clearing for access or construction laydown or staging areas, if there is no way to avoid these areas. Trees would have tops trimmed or removed.

According to the FPL SCA, construction in wetlands will retain the vegetative root mat in the right-of-way in areas not filled for road or structure pad construction, thereby minimizing impacts on wetland vegetation in these areas. Other mitigation measures would be implemented to minimize adverse impacts on vegetation. As detailed in the FPL SCA, these measures would include adhering to sedimentation and erosion control specifications and measures, including the use of silt fences, hay bales, and geotextile liners in wetland areas. Areas that are not permanently filled will be allowed to revegetate from seed stock from surrounding areas.

Areas occupied by access roads or structure pads would require the full removal of vegetation, and a permanent loss of wetland vegetation would occur in these areas. Details regarding the areas of these pads can be found in the analysis under the “Soils” topic. However, since the majority of the FPL West Secondary Corridor is wetlands, essentially all the acres identified as having loss of soils would also have loss of wetland vegetation. The loss of wetlands is detailed in table 19 under the soils analysis and is summarized in table 22, for three possible routes that would be considered for transmission line construction under this and other alternatives (based on preliminary design assumptions).

TABLE 22: SUMMARY OF WETLAND ACRES LOST TO PADS AND ACCESS ROADS (ESTIMATE)

Route	Approximate Wetland Acres Lost in the Park	Approximate Wetland Acres Lost from Nexus to Nexus in Project Area
FPL West Secondary Corridor	89.1	179.7
FPL West Preferred Corridor	80.1	180.8
Hypothetical route in area of possible relocated corridor (east side)	0	107.1

See tables 19, 20, and 21 in the “Soils” section for details.

As can be seen in table 22, about 179.7 acres of wetlands would be lost from direct construction-related activities along the FPL West Secondary Corridor right-of-way from nexus point to nexus point in the project area, and about 89.1 acres would be lost in Everglades National Park. The impacts on wetlands in this area would include the loss of acres but also the loss of wetland functions and values, including a reduced ability to support plants and animals. As noted in chapter 3, functions of these wetlands in the project area include supporting water storage and biogeochemical processes and providing habitat for numerous wildlife species, including important nesting and foraging habitat for many special-status birds (see the “Wildlife” and the “Special-status Species” sections for a more detailed assessment of impacts on these species). Mitigation for wetland losses and impacts in transmission line rights-of-way were proposed by FPL in its 2009 ERP application (FPL 2009a, Appendix 10.4, Section 3). All transmission line impacts are proposed to be mitigated through the purchase of mitigation credits from the Hole-in-the-Donut wetland mitigation bank, which is located in Everglades National Park, using a mitigation ratio of 1:1. It is stated that this would provide significant benefit to regional wetland restoration and conservation efforts and would directly benefit vegetation communities and wildlife habitat in the park. Although this mitigation would provide benefits in another area of the park, the mitigation would be off site and would not replace the functions lost within the project area or prevent the fragmentation of the wetland environment in that area by the access road along the length of the right-of-way. The U.S. Fish and Wildlife Service (USFWS) may also require mitigation of wetland impacts in the Core Foraging Area of affected wood stork colonies within the core foraging area of that colony and creation of wetlands with similar hydroperiods as those impacted.

Other impacts on wetlands could occur from changes in water quality and hydrology. It is anticipated that disturbance to the wetlands, including the excavation of soils and vegetation for each structure pad, would release nutrients into the water (as described above in “Soils” and “Water Quality”) and cause phosphorus

assimilation processes to occur downstream in the park. Vegetation in a nutrient-poor environment like the Everglades can respond to an increase in nutrients with a change in species composition or accelerated growth. Macrophyte communities may be altered, because they have shown responses from phosphorus increases as low as $5 \mu\text{gL}^{-1}$ (Gaiser et al. 2005; Gaiser et al. 2007). Nonnative species could expand if not properly managed. The level of this impact on vegetation remains unknown; however, as nutrients vital for plant growth become readily available, native and nonnative vegetation productivity may be accelerated in the project area. These effects would likely only occur in limited areas if BMPs including silt fencing and erosion control devices are implemented prior to and during construction.

Wetland vegetation can also be affected by changes in hydrology and it is expected that hydrology would change due to the placement of the access road and pads along the entire length of the corridor. According to the SCA, culverts would be included beneath access roads in wetlands to maintain channel flow and/or overland flow. However, a localized change in species composition would be expected around the culverts and along the access road and pad foundations. Flows would be channelized through the numerous culverts beneath the access road and it is likely that this could result in a change in species composition or transitional vegetation progression just downstream of most of the culvert sets, similar to what has been seen along the Tamiami Trail, resulting in localized adverse impacts on wetlands.

Vegetation would have to be maintained at an acceptable height over the life of the lines. The long-term maintenance of the transmission lines would have only negligible adverse effects on vegetation and wetlands, because maintenance vehicles would access the right-of-way on established access roads and maintenance surveys could be done by helicopter. Also, most of the wetlands crossed by the corridor, including those portions in Everglades National Park, are nonforested (herbaceous) wetlands. Here, the vegetation tends to grow low enough to not require any clearing except at access road and structure pad locations. According to the SCA, FPL plans to manage vegetation on the transmission line right-of-way by a variety of methods, including trimming, mowing, and the use of approved growth regulators and herbicides, targeting species that are incompatible with the safe access and operation and maintenance of the transmission system. The FPL right-of-way maintenance program is specific to each location, and the exact manner in which right-of-way maintenance will be done will depend on the location, type of terrain, surrounding environment, and regulatory control. Any fast-growing vegetation whose mature height could exceed 14 feet would be pruned or removed from the area between the structures to avoid interference with the conductor clearance. Any vegetation that could restrict access to the right-of-way would be removed; however, this should consist mainly of trees and shrubs in the tree island areas. FPL also states in the SCA that it would control the spread of nuisance plants that could present a fire hazard in the right-of-way through the use of approved herbicides and other removal techniques. Where vegetation maintenance activities would occur in or adjacent to the park, herbicide use and other removal techniques would be coordinated with the park and in accordance with the NPS Integrated Pest Management Plan.

Impacts on vegetation and wetlands from individual fill pads would be somewhat localized. However, overall impacts on vegetation and wetlands would be wide spread, short- and long-term, major and adverse because the construction of the access roads and pads would have a highly noticeable effect and would include a permanent loss of approximately 179.7 acres in the area of analysis, 89.1 acres of which are within the park boundary. Mitigation for impacts on wetlands that are not permanently lost would include reclamation and would be expected to successfully reduce impacts to minor levels in those areas. Although the permanent losses are limited to localized areas in the right-of-way, they would occur throughout the project area and along the entire length of the right-of-way. Wetland functions may not be substantially altered but there would be a change in the character of the wetland for which the proposed off-site mitigation may not totally compensate. A permanent loss of wetlands would occur on pads and access roads, and this acreage comprises about 30 percent of the total right-of-way acreage.

Ewo wv'kg'Kō rcew'δ'Cngt pc'kg'3d''

The cumulative impacts on vegetation and wetlands from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 1b would have long-term major adverse impacts, and localized, short-term major adverse impacts, and these would contribute appreciable adverse impacts to the overall cumulative effects on wetlands and vegetation in this area.

Eqpenwukp'δ'Cngt pc'kg'3d''

Under alternative 1b, FPL would retain ownership of land in the EEEA. Indirect long-term major adverse impacts on vegetation and wetlands would occur as described under alternative 1a. Impacts on vegetation and wetlands would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include localized short- and long-term major adverse indirect impacts from construction and operation of the transmission line. These impacts would include a permanent loss of approximately 179.7 acres of wetlands, of which 89.1 acres are within the park boundary. Alternative 1b would contribute appreciable adverse impacts to the overall cumulative effects on wetlands and vegetation in this area.

Kō RCEVUQH'CNVGT PCV'KG'4<P RU'CES WUKVQP'QH'HRN'NCPF''

Kō rcew'qhl'vj g'Ncpf 'Ces wukvqp'Cevkqp''

The park would realize a net gain of 320 acres of primarily wetlands within the park boundary under alternative 2. This would be a direct long-term benefit to vegetation and wetlands. Long-term indirect benefits to vegetation and wetlands would also occur because the land acquisition of the FPL corridor in the interior of the park would ensure that no other development would be proposed in this area and that the various Everglades ecosystem restoration projects could occur without any obstacles relating to the presence of this parcel. The connectivity of the EEEA wetlands would be ensured, and a potential source of nonnative vegetation not under NPS control would be removed. Placing ownership of this area solely with the NPS would enhance the ability to provide more natural water flows to the park, which in turn would enhance the conservation of the resources and values of the park, a long-term beneficial impact.

Kō rcew'qhl'Vtcpuo lukqp'Nlpg'Eqput wev'kqp''

Indirect impacts under alternative 2 would result from the possible construction of transmission lines to the east of the park in the area of possible relocated corridor. This area is also mostly wetlands, but there are areas of non-wetland vegetation in the southern portion of the route (agricultural lands, developed lands) and along the corridors heading north along Krome Avenue and adjoining the mining operations. Impacts of vegetation removal (temporary) from excavation for pole placement, earthmoving, and grading would occur and would be similar to those described under alternative 1b. Also, disturbance caused by the removal of soil and vegetation would be expected to make the area more vulnerable to nonnative species growth and the disruption of native plant species compositions. Mitigation measures as described under alternative 1b (erosion control devices and geotextile liners) would be implemented to minimize adverse impacts in those areas. Laydown areas for equipment and materials would be located in uplands to the fullest extent practicable. Reclamation would include seeding and mulching, and would reduce impacts in these areas to a minor level. It is expected that the USACE, through the Section 404 permitting process, would require avoidance and minimization of wetlands in the area of relocated corridor. This is anticipated to reduce wetland impacts if transmission lines are eventually constructed in this area.

Where vegetation is not removed for construction purposes and can remain in the right-of-way, it must be cut to meet line clearance requirements. As noted under alternative 1b, any trees or shrubs (native and nonnative) within the right-of-way limits whose mature height could exceed 14 feet and that are in the wire management zone under the transmission lines would be evaluated by FPL for pruning or clearing to ground level. Where trees are cut to ground level, stumps would either be cut or ground down to natural grade and treated with a herbicide to prevent regrowth, or the entire stump and root mat would be grubbed to at or below grade. When chipped material is not spread in uplands along the right-of-way, vegetation debris may be hauled to landfills or piled and burned within the limits of the right-of-way consistent with state and local regulations. Side trimming and pruning of trees along the right-of-way edges may also be required.

Clearing in wetlands will be accomplished using restrictive clearing techniques, usually with chainsaws or with low-ground-pressure shear or rotary type machines, which reduce soil compaction and vegetation disturbance. In these areas, minimal clearing should be required, given that most of the wetlands in the area of possible relocated corridor are low-growing wet prairie. There are areas of wetland hardwoods in this area that would require trimming or removal; some of these are nonnative hardwoods.

There would be a permanent loss of vegetation in areas of access road and pad locations that have vegetation. Most of the area of possible relocated corridor is vegetated, but the type of vegetation varies considerably within this area. The total number of acres of vegetation permanently removed would be the same as those acres presented in the soils analysis and are shown in table 20 in the soils analysis. An estimate of wetland acres lost is in table 22. These estimates were done for a hypothetical route on the far eastern side of the area of possible relocated corridor. The approximate values may be more or less than those estimated for the hypothetical route, depending on final route selection, co-location of infrastructure with existing roads and other filled areas, and the wetland impact minimization required for CWA Section 404 permit approval.

The impacts on wetlands from permanent filling would be less under alternative 2 compared to alternative 1b not only because there are fewer wetlands compared to the FPL West Secondary Corridor (see table 22: 107.1 total acres of wetlands lost in the hypothetical route within the area of possible relocated corridor compared to approximately 180 acres for either of the other routes with the FPL corridors), but also because of the type of wetlands present and their current condition. There is a relatively large amount of nonnative wetland hardwood in the area, dominated by melaleuca. Wetlands in the Bird Drive basin area have been disturbed by nonnative infestations as well as by all-terrain vehicle use. Non-wetland vegetation also occurs in the area of possible relocated corridor, particularly in agricultural areas in the south and in disturbed areas along the roadways and canals. The impact on vegetation and on wetlands in particular would be less in these areas because of the lack of native species and the lower functional value of wetlands with those species and with evidence of human disturbance. Also, any route located to the far west of the possible relocated corridor east of the park would partly parallel the area currently used for rock mining, and natural vegetation has already been disturbed or removed in that area. Similarly, if the construction occurred along the eastern edge of the area of possible relocated corridor, there would be little impact on vegetation in the area already as it is disturbed or developed in the south end of this route close to developed lands along Krome Avenue. However, adverse impacts would increase in any portions of a route that would cross undeveloped areas in the Pennsuco wetlands. Adverse impacts on Pennsuco wetlands could be minimized if existing filled and/or disturbed areas are used for the transmission line corridor. It is assumed that off-site mitigation would be used to compensate for any permanent wetland losses along this route, similar to what is proposed in the SCA and the mitigation plan. Off-site mitigation bank credits may or may not fully compensate for the losses, depending on the area crossed and the value of the wetlands in that location.

Other impacts on wetlands could occur from changes in water quality and hydrology. As noted under alternative 1b, it is anticipated that disturbance to the wetlands, including the excavation of soils and vegetation for each structure pad, would release nutrients into the water and cause phosphorus assimilation processes to occur downstream in the park. Vegetation in a nutrient-poor environment like the Everglades can respond to an increase in nutrients with a change in species composition or accelerated growth, and this could occur in wetter areas, such as the Pennsuco wetlands. These effects would likely only occur in limited areas if BMPs including silt fencing and erosion control devices are implemented prior to and during construction.

Wetland vegetation can also be affected by changes in hydrology, and it is expected that hydrology would change due to the placement of the access road and pads along the entire length of the corridor. According to the SCA, culverts would be included beneath access roads in wetlands to maintain channel flow and/or overland flow. However, a localized change in species composition would be expected around the culverts and along the access road and pad foundations. Flows would be channelized through the numerous culverts beneath the access road, and it is likely that this could result in a change of species or transitional vegetation progression just downstream of most of the culvert sets, resulting in localized adverse impacts on wetlands.

Vegetation would have to be maintained at an acceptable height over the life of the lines, and this long-term maintenance of the transmission lines would have only negligible adverse effects on vegetation and wetlands because maintenance vehicles would access the right-of-way on established access roads and maintenance surveys could be done by helicopter. Most of the wetlands crossed by the area of possible relocated corridor are nonforested (herbaceous) wetlands, which would require less vegetation clearing, and there are areas that are more urbanized or cultivated in the area of possible relocated corridor that would not require vegetation clearing at all. FPL states in the SCA that it would control the spread of nuisance plants that could present a fire hazard in the right-of-way through the use of approved herbicides and other removal techniques. The use of herbicides would be selective and would meet applicable federal, state, and local regulations. To enhance the safe, reliable operation of the proposed transmission lines, FPL may trim or remove danger timber outside the FPL right-of-way in coordination with the adjacent property owners. Danger timber includes trees in danger of falling or leaning into the conductors or, in areas of wildfire hazard, other vegetation that may provide excessive fuel loading in proximity to the transmission lines. For example, when the right-of-way is adjacent to the 8.5-square-mile area east of the park or the Pennsuco wetlands north of the park, FPL may acquire the necessary property rights to maintain such vegetation, as needed.

Overall, impacts on vegetation and wetlands under alternative 2 would range from negligible and adverse to short and long term, moderate, and adverse, depending on where the transmission lines are built in area of possible relocated corridor. In general, impacts on wetland vegetation would be greatest in the Pennsuco wetlands in the northern portions of the area of possible relocated corridor. Impacts would be reduced along the western and southern portions of the area of possible relocated corridor where vegetation has already been disturbed and there are fewer wetlands and wetlands of lower quality due to proximity to disturbance, interrupted flows, and abundance of nonnative plant species. Impacts from construction would be noticeable and would last beyond the period of construction in most locations, and although impacts would occur along the entire length of the right-of-way, there would be areas of previous disturbance where impacts would be less severe. It is not likely that construction in this area would change the character of the wetlands to the extent that functions provided would be substantially altered. Mitigation for impacts on vegetation and wetlands that are not permanently lost would include reclamation and would be expected to successfully reduce impacts to minor levels in those areas. A permanent loss of wetlands would be limited to pads and access roads, and this acreage comprises about 18 percent of the total right-of-way acreage. Impacts on wetlands are reduced when compared to alternative 1b since there is less wetland acreage impacted (approximately 107.1 acres impacted under

alternative 2 versus approximately 179.7 acres under alternative 1b) and no wetlands within the boundary of the park are impacted. Wetlands within the park are generally considered to be of higher quality than wetlands outside the park due to their size, integrity, and connectivity.

Ewo wv&g'kō rcew'

The cumulative impacts on vegetation and wetlands from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. It is expected that hydrologic restoration goals can be met in the EEEA since NPS would acquire the FPL West Secondary Corridor, with substantial long-term beneficial impacts, plus short-term negligible to moderate adverse impacts of constructing a transmission line outside the park; alternative 2 would contribute appreciable benefits and somewhat noticeable adverse effects to the overall cumulative effects on wetlands and vegetation in this area.

Eqpenwukp''

Under alternative 2, there would be substantial long-term beneficial impacts to vegetation and wetlands from the acquisition of FPL property in the EEEA. The land acquisition would remove a large area of non-NPS ownership of land in the interior of the park, ensuring that no other development would be proposed in this area and that the various Everglades ecosystem restoration projects could occur without any obstacles relating to the presence of this parcel.

Adverse impacts would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park and would include short- and long-term negligible to moderate adverse impacts on vegetation and wetlands, depending on the location of the lines; impacts could be less due to fewer wetland acres in the area of possible relocated corridor compared to the areas crossed by the other routes in the FPL West Secondary and FPL West Preferred Corridors and the relative quality of the wetlands. Impacts from transmission line construction inside the park would be avoided. Alternative 2 would contribute appreciable benefits and somewhat noticeable adverse effects to the overall cumulative effects on wetlands and vegetation in this area.

kō RCEVUQH'CNVGTP CV&G'5<HGG'HQT'HGG'NCPF'GZEJ CPI G''

kō rcew'qhl'vj g'Ncpf 'Ces wukwkp'Cevkp''

Under alternative 3, the exchange would remove a large area of non-NPS ownership of land in the interior of the park, and add 320 acres in the FPL right-of-way. This would ensure that no other development would be proposed in the corridor and that the various Everglades ecosystem restoration projects would be able to proceed without obstacles related to the presence of the FPL parcel. The connectivity of the EEEA wetlands would be ensured, and a potential source of nonnative vegetation not under NPS control would be removed. Placing the ownership of this area solely with the NPS would enhance the ability to provide more natural water flows to Everglades National Park, which in turn would enhance the conservation of the resources and values of the park, including wetlands, a substantial long-term beneficial impact. In addition, the park would realize a net gain of 60 acres of higher-value wetlands. The exchange corridor given to FPL would be 260 acres of mostly wetlands located at the edge of the park, close to developed areas, with several areas infested with nonnative plants. The FPL corridor gained by the park would be 320 acres that is far from developed areas, with fewer nonnative plants and containing tree islands or hardwood hammocks that support a variety of vegetation species, including some listed species.

Alternative 3 would result in a loss of 260 acres of wetlands within the park. There would be a net gain of 60 acres, but a loss of 260 acres. Alternative 3 would result in a direct, long-term major adverse impact from the loss of park wetlands/vegetation (260 acres), and negligible to minor adverse impact from the loss of the ability to maintain wetlands and vegetation according to NPS standards.

Ko rcew'lt qo 'Vt cpwo kukqp'Nlpg'Eqpwt wevkqp''

Under alternative 3, indirect short- to long-term major adverse impacts would result from the construction of transmission lines in the FPL West Preferred Corridor, directly adjacent to park lands, as described earlier in this chapter and appendix F. Impacts such as soil compaction and erosion from excavation for pole placement, earthmoving, and grading would occur that could affect vegetation and wetlands and would be similar to those described under alternative 1b. Also, disturbance caused by the removal of soil and vegetation would be expected to make the area more vulnerable to nonnative species growth and disruption of native plant species compositions. Mitigation measures as described under alternative 1b (erosion control devices and geotextile liners) would be implemented to minimize adverse impacts in those areas. Laydown areas for equipment and materials would be located in uplands to the fullest extent practicable. Alternative 3 also includes certain terms and conditions for the use of the FPL West Preferred Corridor that include provisions for the protection of wetlands and the control of nonnative and invasive species (appendix G). A construction resource stewardship plan would be developed and approved and would require steps to avoid, minimize, and mitigate wetland impacts to the maximum extent practicable, including temporary impacts that occur during construction. Terms and conditions that protect natural hydrology would also protect wetlands. These call for the elimination or reduction of adverse impacts on jurisdictional waters of the United States. These terms and conditions also call for the use of roadless and padless construction to the maximum extent practicable, the use of existing roads if possible, and varying span lengths and location of structures to eliminate or reduce wetland impacts. Assuming that these provisions are implemented, overall earthmoving and use of equipment during construction would result in short- and long-term minor adverse impacts on vegetation and wetlands.

Similar to the other transmission line construction impacts described earlier, there would be a permanent loss of wetlands in areas of access road and pad locations. The exact acreage of direct wetland impacts is unknown due to uncertainties in the design at this stage. For the purposes of the analysis, it is assumed that a new access road would be constructed along the right-of-way, although if the existing levee road could be used, that would decrease impacts. In order to compare acres of permanent soil loss, the acres of vegetation/wetlands that would be permanently removed or covered with fill at pads and along the access road were estimated by assuming a route length of approximately 15.7 miles, with about 6.3 miles inside Everglades National Park (see table 21 in the soils analysis). An estimate of wetland acres lost is summarized in table 22. The approximate acres of wetlands lost in the project area is 180.8, about the same as for the FPL West Secondary Corridor, although approximately 9 fewer acres of wetlands are lost in the park compared to the FPL West Secondary Corridor (approximately 80.1 acres versus 89.1 acres). The amount of wetland fill may increase over estimates if fill pads are located closer together (i.e., span lengths are shorter than 500 and 1,000 feet).

For alternative 3, the wetland mitigation plan proposed by FPL provides for a 1:1 compensation using the Hole-in-the-Donut wetland mitigation bank in Everglades National Park. Alternative 3 also includes certain terms and conditions for the use of the FPL West Preferred Corridor that include provisions for the protection of wetlands. A construction resource stewardship plan would be developed and approved and would require steps to avoid, minimize, and mitigate wetland impacts to the maximum extent practicable. No wetlands on the corridor can be excavated for the purpose of obtaining fill, and impacts on the hydrology of the area must be minimized. As described above, the terms and conditions also include a provision for avoidance of wetland impacts by altering structure locations, examining the need for access road and pad construction, and changing span lengths. It is assumed that the mitigation developed and the

approved terms and conditions for this alternative would provide adequate compensation for wetlands losses and other impacts on vegetation. Also, impacts on vegetation and wetlands would be considered reduced under this alternative because the FPL West Preferred Corridor crosses no large expanses of heavily forested uplands or forested wetlands. There are also a few areas along the FPL West Preferred Corridor that are already disturbed or in agricultural use in the 8.5-square-mile area east of the park. This vegetation can be readily replaced (agricultural) or has lower ecological values due to the fragmentation of habitat and the presence of nonnative plant species along this edge environment. Areas that contain nonnative species such as Brazilian pepper and melaleuca, which are more common along edge environments such as along canals and roadways, have a reduced functional value because they provide relatively poor wildlife habitat and reduced species diversity. However, the northern portion of the route near the Tamiami Trail contains habitat for nesting wood storks and kites and wading birds (see the “Special-status Species” section).

Other impacts on wetlands could occur from changes in water quality and hydrology. As noted under alternative 1b, it is anticipated that disturbance to the wetlands, including the excavation of soils and vegetation for each structure pad, would release nutrients and cause phosphorus assimilation processes to occur downstream in the park. Vegetation in a nutrient-poor environment like the Everglades can respond to an increase in nutrients with a change in species composition or accelerated growth, and this could occur in wetter areas of the route. These effects would likely only occur in limited areas if BMPs including silt fencing and erosion control devices are implemented prior to and during construction. Wetland vegetation can also be affected by changes in hydrology, and it is expected that hydrology would change based on the placement of the access road and pads along the entire length of the corridor. According to the SCA, culverts would be included beneath access roads in wetlands to maintain channel flow and/or overland flow. However, a localized change in species composition would be expected around the culverts and along the access road and pad foundations. Flows would be channelized through the numerous culverts beneath the access road, and it is likely that this could result in the transitional vegetation progression just downstream of most of the culvert sets, resulting in localized minor adverse impacts on wetlands.

Vegetation would have to be maintained at an acceptable height over the life of the lines, and this long-term maintenance of the transmission lines would have only negligible adverse effects on vegetation and wetlands because maintenance vehicles would access the right-of-way on established access roads and maintenance surveys could be done by helicopter. Most of the wetlands crossed by the corridor, including those portions in Everglades National Park, are nonforested (herbaceous) wetlands and would therefore require less vegetation clearing, and there are areas that are more urbanized or cultivated in the southern section of this route that would not require vegetation clearing at all. Much of the forested areas along the canal consist of Brazilian pepper or melaleuca, which as nonnative species should be removed. FPL states in the SCA that it would control the spread of nuisance plants that could present a fire hazard in the right-of-way through the use of approved herbicides and other removal techniques. Impacts on wetlands from vegetation management in the nonnative vegetation management easement would occur due to access and vegetation management activities. Impacts would include disturbance and soil compaction from equipment and access by foot. Intensity would depend on frequency of treatment, area treated, and type of equipment and chemicals used for vegetation management activities. The use of herbicides would be selective and would meet applicable federal, state, and local regulations and NPS Integrated Pest Management Plan requirements. To enhance the safe, reliable operation of the proposed transmission lines, FPL may trim or remove danger timber outside the FPL right-of-way in coordination with the adjacent property owners. Danger timber includes trees in danger of falling or leaning into the conductors or, in areas of wildfire hazard, other vegetation that may provide excessive fuel loading in proximity to the transmission lines. For example, when the right-of-way is adjacent to the park along the canal, FPL may acquire the necessary property rights to maintain such vegetation, as needed. There is also a 90-foot-wide vegetation management easement proposed along the border with the park to facilitate the control of

nonnative species and fire. It is not clear if the right-of-way would be sufficient to provide access to wetlands in the 90-foot easement and vehicle/equipment access may create additional impacts. The vegetation management practices are not expected to be consistent with existing park vegetation management practices in the easement area, which may lead to additional minor adverse impacts on naturally occurring vegetation and wetlands.

Overall, with the additional mitigation in place under the terms and conditions, impacts on vegetation and wetlands from transmission line construction along the FPL West Preferred Corridor would be short and long term, major, and adverse. Changes to non-wetland communities would be localized in relatively small areas and short term, with no change in the viability of the plant communities. Wetlands would be affected in the short term during construction, and many of these areas would recover. However, the impact on many wetlands would be sufficient to cause a measurable effect on one of the three parameters (size, integrity, and connectivity) and there would be a permanent loss of wetland acreage, but not in large areas of wetlands. Loss is estimated at 80.1 acres in the park, 180.8 acres in area of analysis. Mitigation for impacts on wetlands, including the mitigation that would be implemented under the required terms and conditions (including exotic species control conditions), should reduce adverse impacts especially in areas that are not permanently lost. There would still be a permanent loss of acres for pads, roads and adherence to terms and conditions cannot guarantee impacts level less than major adverse as defined by the definitions used for analysis.

Ewo wɛvɛg'kɔ rcew'

The cumulative impacts on vegetation and wetlands from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. The land exchange would result in contribution of long-term benefits and long-term major adverse impacts on wetlands and vegetation, as well as short-term negligible to major adverse impacts from construction of the transmission line in the exchange corridor. The contribution of alternative 3 to the overall cumulative impacts would include appreciable benefits and appreciable adverse impacts.

Eqpenwɛkp''

Under alternative 3, there would be substantial beneficial impacts to vegetation and wetlands from having a net gain in wetland acreage to the park and having the main body of EEEA wetlands reconnected in NPS ownership, resulting in the ability to go forward with ecosystem restoration without any potential future obstacles from the FPL parcel. Placing the majority of the EEEA under NPS ownership would enhance the conservation of the resources and values of the park, including vegetation and wetlands. Alternative 3 would also result in a loss of 260 acres of wetlands in the exchange corridor. There would be a net gain of 60 acres, but a loss of 260 acres. This is a direct long-term, major adverse impact from the loss of park wetlands/vegetation (260 acres), and negligible to minor adverse impacts from the loss of the ability to maintain wetlands/vegetation per NPS standards. There would also be adverse impacts on vegetation and wetlands from the construction of the transmission lines in the FPL West Preferred Corridor, which would include short- and long-term minor major adverse impacts from transmission line construction. Alternative 3 would contribute appreciable benefits and appreciable adverse impacts on overall cumulative impacts on vegetation and wetlands.

kɔ rcevuqh'CNvgtp'cvkɛg'6<GcUGO GP'v'hqT'Hgg'Ncpf'GZEJ CPI G''

kɔ rcew'lt qo 'vj g'Ncpf 'Ces wɛvɛg'kɔ rcew'

Under alternative 4, there would be benefits to vegetation and wetlands as described under alternative 3, but with terms and conditions that result in the reduced risk of having additional utility facilities on the

exchange corridor and associated disturbance or removal of wetlands. The easement terms and conditions do not necessarily imply the same level of protection and management as NPS *Management Policies 2006*. There would be no major adverse impacts under this alternative related to the land exchange because the acreage of vegetation /wetlands would remain the same within the park boundary (this is a difference between alternatives 3 and 4). Terms and conditions are found in appendices G and H.

Kō rcew'lt qo 'Vt cpw kukqp'Nlpg'Eqpwt wekqp''

Adverse impacts on vegetation and wetlands from transmission line construction would be the same as described under alternative 3, because there are no substantial differences in the terms and conditions under this alternative and no expected differences in how wetlands would be treated under an easement as opposed to under fee ownership, given the mitigation that FPL included in its SCA and expected conditions in the required resource stewardship plan. Indirect adverse impacts on vegetation and wetlands from the construction of the transmission lines in the FPL West Preferred Corridor would include short- and long-term major adverse impacts from transmission line construction.

Ewo wv&g'Kō rcew'

The cumulative impacts on vegetation and wetlands from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 3. However, the park would have slightly more control over vegetation management in the exchange corridor than under alternative 3. Alternative 4 would contribute appreciable benefits and appreciable adverse impacts to overall cumulative impacts on vegetation and wetlands.

Eqpenwukqp''

Under alternative 4, there would be benefits to vegetation and wetlands as described under alternative 3, but with easement terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance or removal of wetlands. There would be no major adverse impacts related to the land exchange because the acreage of vegetation /wetlands would remain the same within the park boundary (this is a difference between alternatives 3 and 4). Short- and long-term major adverse impacts on vegetation and wetlands from transmission line construction would be the same as described under alternative 3, because there are no substantial differences in the terms and conditions under this alternative and no expected differences in how wetlands would be treated under an easement as opposed to under fee ownership, given the mitigation that FPL included in its SCA and expected conditions in the required resource stewardship plan. The park would have slightly more control over vegetation management in the exchange corridor than under alternative 3. Alternative 4 would contribute appreciable benefits and appreciable adverse impacts to overall cumulative impacts on vegetation and wetlands.

Kō RCEVUQH'CNVGTP'CV&G'7<RGTRGVWCN'HNQY CI G'GcUGO GP V'QP'HRN'RtQRGT V| ''

Kō rcew'qhtj g'Ncpf 'Ces wukqp'Cevkqp''

Alternative 5 provides for a perpetual flowage easement over the FPL West Secondary Corridor that would allow flows over and around structures in the FPL corridor. Having a flowage easement on the FPL parcel in the EEEA that would allow for surface flows and would not impede any ecosystem restoration projects planned for this area would have substantial indirect, long-term benefits on park resources, including wetlands.

Long-term minor to moderate adverse impacts would occur from the continued inability to manage the corridor as NPS lands (i.e., FPL ownership of the parcel would hinder any wetland/vegetation management efforts within the park).

Kō rcew'lt qo 'Vt cpw kukp'Nlpg'Eqpwt wekqp''

There would also be adverse impacts on vegetation and wetlands both in and around the park from the transmission line construction in the FPL West Secondary Corridor, as described under alternative 1b. These impacts would be short and long term, major, and adverse. However, the additional water available from the flowage easement may enable ecosystem restoration of areas disturbed during construction to occur at a faster rate. Alternative 5 would reduce the ability to restore wetlands, but not completely prevent all ecosystem restoration efforts. Degradation of the vegetation/wetlands from FPL ownership instead of NPS will be similar to alternative 1a, except there would be a flowage easement or sufficient rights to flow additional water over the corridor.

Ewo wcvkg'Kō rcew'

The cumulative impacts on vegetation and wetlands from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 5 would result in long-term beneficial impacts from the flowage easement, but would also result in short- to long-term minor to major adverse impacts from the construction of the transmission line. Alternative 5 contributes both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on wetlands and vegetation in this area, although the benefits would not be as extensive as those under the alternatives that result in the acquisition of wetlands in the park

Eqpenwukp''

Under alternative 5, impacts would be similar to alternative 1b, except there would be substantial long-term benefits from having a perpetual flowage easement agreement. Adverse impacts on vegetation and wetlands would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short- and long-term major adverse impacts from the transmission lines. Alternative 5 would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on wetlands and vegetation in this area, although the benefits would not be as extensive as those under the alternatives that result in acquisition of wetlands in the park.

HNQQF RNCKP U'

I wvfp I 'TGI WNCVIQPU'CPF'RQNEKGU'

Procedural Manual 77-2: Floodplain Management, establishes the NPS procedures for implementing floodplain protection and management actions in units of the national park system as required by Executive Order 11988: Floodplain Management, and Director's Order 77-2: Floodplain Management. It is NPS policy to preserve floodplain values and minimize potentially hazardous conditions associated with flooding. If a proposed action is found to be in an applicable regulatory floodplain and relocating the action to a non-floodplain site is considered not to be a viable alternative, flood conditions and associated hazards must be quantified as a basis for management decision making and a formal statement of findings must be prepared. The statement of findings should describe the rationale for selection of a floodplain site, disclose the amount of risk associated with the chosen site, and explain flood mitigation plans.

NPS *Management Policies 2006* specifically addresses floodplains in Section 4.6.4. The policy states:

In managing floodplains on park lands, the National Park Service will (1) manage for the preservation of floodplain values; (2) minimize potentially hazardous conditions associated with flooding; and (3) comply with the NPS Organic Act and all other federal laws and executive orders related to the management of activities in flood-prone areas, including Executive Order 11988 (Floodplain Management), the National Environmental Policy Act, applicable provisions of the Clean Water Act, and the Rivers and Harbors Appropriation Act of 1899. Specifically, the Service will

- protect, preserve, and restore the natural resources and functions of floodplains;
- avoid the long- and short-term environmental effects associated with the occupancy and modification of floodplains; and
- adversely affect the natural resources and functions of floodplains or increase flood risks.

When it is not practicable to locate or relocate development or inappropriate human activities to a site outside and not affecting the floodplain, the Service will

- prepare and approve a Statement of Findings, in accordance with procedures described in Director's Order 77-2: Floodplain Management;
- use nonstructural measures as much as practicable to reduce hazards to human life and property while minimizing the impact on the natural resources of floodplains;
- ensure that structures and facilities are designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR 60).

CUUWO RVKPU.'O GVI QF QNQI [. 'CPF 'KORCEV'K VGPUN['F GHPKWKPU'

Impacts on floodplains were assessed by consideration of the size of impact, length of effect, and area affected, using best professional judgment and discussion with NPS staff.

The following definitions were used to determine the magnitude of adverse impacts on floodplains:

- **Pgi rik idig:** Floodplains would not be affected; effects would either be non-detectable, or, if detected, would be considered slight, local, and would likely be short term.
- **Olpqt:** Effects on floodplains would be measurable, although the effects would likely be small, short term, and localized. No mitigation measures associated with water quality or hydrology would be necessary.
- **Oqf gtcvg:** Effects on floodplains would be measurable and long term, but relatively localized. Mitigation could be required and if implemented and would likely be successful.
- **Oclqt:** Effects on floodplains would be readily measurable, would have substantial consequences, and would be observable over a relatively large area and likely long term. The character of the floodplain would be changed so that the functions typically provided by the floodplain would be substantially changed. Mitigation would be required and its success could not be ensured.

CPCN[UKCTGC''

The area of analysis for floodplains is the 100-year floodplain located in the general project area, including the NESRS in the EEEA. This includes the 8.5-square-mile area east of the park, WCA 3B and

the Pennsuco wetlands north of the park, and extending to the urban development boundary to the east of the park (see “Figure 4: General Project Area,” in chapter 1 and “Figure 10: Floodplain Map” in chapter 3; most of the study area is 100-year floodplain).

KO RCEVUQH CNVGTP CVKG'3C<P Q'P RU'CEVQP '6'P Q'HRN'E QPUVTWEVQP " ***GPXKTQPO GPVCN'DCUGNPG+ "**

KO rcew'qhvj g'Ncpf 'Ces wkvkqp 'Cevkqp "

Under alternative 1a, there would be no legal changes to the property's status or ownership, and FPL would not grant NPS a flowage easement. Therefore, there would be no physical change to the land, so there would be no direct impacts on floodplains. However, the NPS would be unable to flow additional water across FPL property from north of the park, and would be unable to implement regional ecosystem restoration activities that rely on additional flow. The inability to increase water levels across the FPL property would result in preventing restoration on a regional scale. Excess water would continue to be held in the WCAs north of the park or redirected upstream to the St. Lucie River or elsewhere rather than through the park. Floodplain values associated with the restoration related to habitat values, wetland quality, etc., would be limited to existing floodplain values. The urban areas outside the park would not be at increased risk of flooding. This would result in indirect, long-term major adverse impacts on floodplains.

KO rcew'qhVtcpuo kvkqp 'Nlpg'Eqputwekqp "

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts on floodplains.

Ewo wcvkg'KO rcew'6'Cngt pcvkg'3c "

Several past, present, and reasonably foreseeable projects related to the restoration of hydrology and enhanced flows in the Everglades over a 20- to 30-year time period, and acquisition of property throughout the park, as described in table 18, would result in large scale regional beneficial impacts on floodplain function and values in the slough and throughout the Everglades by increasing the hydroperiod and the flood stage in large parts of the Everglades in the park, and relieving stresses on water storage requirements outside the park. However, alternative 1a would prevent or obstruct implementation of these flowage-related projects and would therefore result in major adverse impacts on floodplains. Other projects and actions in the area of analysis have had and could have adverse impacts on floodplains, including any construction in the regulatory floodplain that changes flows and surface runoff characteristics; this includes all urban/suburban, commercial, and industrial development to the east of the park. Alternative 1a would have major adverse impacts that would contribute appreciable adverse impacts on floodplains in the area.

Eqpenvkqp'6'Cngt pcvkg'3c "

Under alternative 1a, there would be no direct impacts on floodplain function and values, but there would be long-term indirect major adverse impacts related to the lack of a flowage easement and the inability to proceed with flow-dependent ecosystem restoration projects that would prevent moving additional water into the park. There would be no construction under this alternative, so there would be no construction-related impacts. Alternative 1a would contribute appreciable adverse impacts to the cumulative impacts on floodplains in the area.

KO RCEVUQH'CNVGT PCVKG'3D<P Q'P RU'CEVQP'6'HRN'EQP UVTWEVQP'IP'VJ G'RCTM''

KO rcew'qhv'j g'Ncpf 'Ces wkvkqp'Cevkqp''

Under alternative 1b, impacts from the land acquisition action would be the same as under alternative 1a. There would be indirect long-term major adverse impacts due to the inability to flow additional waters across the FPL property, so more water would continue to be stored north of the park, and improvement of many floodplain values would be prevented.

KO rcew'qhv'Vtcpuo kvkqp'Nkpg'Eqput wevkqp''

There would be additional impacts related to the construction of the transmission lines in the existing corridor without a flowage easement. Without a flowage easement, noticeable improvement of floodplain function and values would therefore be prevented within the park. Indirect impacts would result from the construction of transmission lines in the park, as described earlier in this chapter and appendix F. Transmission lines in the FPL West Secondary Corridor would be constructed directly through the flow path of the NESRS.

Construction of the transmission lines through this corridor would result in construction of 7.4 miles of transmission lines in the park and 14.7 miles through both the NPS wetlands and the SFWMD Pennsuco wetlands north of the park. FPL has committed to constructing culverts under the access roads through this corridor to maintain existing surface water flows. The culverts would be designed and sized to equalize the amount of water volume created from a small rainfall event, and would therefore convey most stormwater through the culverts. There would be no substantial increase or decrease in floodplain elevation and the transmission lines would not increase threats to human safety due to flooding. Although water could pass through the culverts, the transmission lines would serve to compartmentalize the NESRS, and impacts on floodplain values and functions (such as creating a habitats for fish and other animals and providing temporary storage of high flows, slowing flow velocity, providing groundwater recharge, and reducing downstream impacts of high flows) would be measurable and localized. Impacts from transmission line construction would therefore be long-term, moderate and adverse.

Ewo wkvkg'KO rcew'6'CNgt pcvkg'3d''

The cumulative impacts on floodplain function and values from the other past, present, and reasonably foreseeable future projects considered in the cumulative analysis would be the same as those discussed under alternative 1a. Under alternative 1b, there would be long-term major adverse impacts related to the lack of a flowage easement, plus long-term moderate adverse impacts from the construction and presence of transmission lines, which would contribute appreciable adverse impacts to the overall cumulative effects on floodplains in this area.

Eqpenwkvqp'6'CNgt pcvkg'3d''

Under alternative 1b, the direct and indirect impacts on floodplains related to the land acquisition decision would be the same as under alternative 1a; with no direct impacts on floodplain function and values, but with long-term major adverse impacts related to the lack of a flowage easement and the inability to proceed with flow-dependent ecosystem restoration projects that would prevent moving additional water into the park. There would be additional long-term moderate adverse impacts on floodplain functions and values related to the construction and presence of the transmission lines. Construction of the transmission lines without a flowage easement in the FPL corridor could permanently hinder the implementation and success of these projects, and would contribute appreciable adverse impacts to the overall cumulative effects on floodplains in this area.

KO RCEVUQH'CNVGTP CVKKG'4<P RU'CES WUKVQP'QHHRN'NCPF "

KO rcew'qhv'g'Ncpf 'Ces wukvqp'Cevkqp"

Under alternative 2, no direct impacts on floodplains would be expected from the acquisition of FPL land in the EEEA. There would be indirect long-term benefits from placing ownership of this area solely with the NPS and the ability to continue flow-dependent ecosystem restoration projects. Floodplain values in the park would improve, as would long-term floodplain function. Flows could be redirected from upstream areas currently receiving excess water. Urban areas would continue to be protected from flooding because flood storage capacity in the park would increase.

KO rcew'qhv'Vtcpuo kulqp'Nlpg'Eqput wevklqp"

Under this alternative, FPL would construct the transmission lines outside the park in the area of possible relocated corridor. The possible corridor outside the park would not be affected by ecosystem restoration activities. Impacts on floodplains in this area would occur from construction of roads, pads, and culverts, and the transmission lines would serve to compartmentalize flows in the area, although water could pass through the culverts. However, wetlands and floodplains have been segmented and compartmentalized in this area. Flows are already disrupted and the area has been drained and disconnected from the broader natural floodplain, so the existing floodplain values in this area are less than they are inside the park. Impacts on floodplain function and values would therefore be long-term indirect negligible and adverse. Impacts on floodplain function and values within the park would be avoided.

Ewo wevkg'KO rcew'

The cumulative impacts on floodplain function and values from other past, present, and reasonably foreseeable future projects related to the restoration of hydrology and enhanced flows in the Everglades would be the same as those discussed under alternative 1a. Alternative 2 would allow enhanced flowage and implementation of restoration projects that rely on enhanced flows to proceed, which would provide large-scale benefits over 20 to 30 years. The alternative would also result in long-term negligible adverse impacts from the construction and presence of the transmission lines in the area of possible relocated corridor east of the park. Alternative 2 would contribute appreciable benefits to the overall cumulative impacts on floodplains; the contribution of adverse effects from the construction of the transmission lines outside the park to cumulative impacts on floodplains would be only slightly noticeable overall."

Eqpenwukqp"

Overall, there would be no direct impacts on floodplains from obtaining the FPL corridor. There would be indirect benefits of acquisition itself from placing ownership of this area solely with the NPS and the ability to continue flow-dependent ecosystem restoration projects. Under alternative 2, there would be long-term indirect negligible adverse impacts related to transmission line construction and presence in an area that has already been segmented hydrologically and disconnected from the natural floodplain. Impacts from transmission line construction inside the park would be avoided. Alternative 2 would contribute noticeable benefits to the overall cumulative impacts on floodplains; the contribution of adverse effects from the construction of the transmission lines outside the park to cumulative impacts on floodplains would be only slightly noticeable overall.

KO RCEVUQH'CNVGT PCVKG'5<HGG'HQT'HGG'NCPF'GZEJ CPI G''

KO rcew'qhl'vj g'Ncpf 'Ces wukukqp'Cevkqp''

Under alternative 3, the direct and indirect impacts associated with the land exchange would be the same as described under alternative 2, since the enhanced flowage would be accommodated across the original FPL property and the exchange corridor. There would be no direct impacts on floodplains from the acquisition of FPL land in the EEEA.

KO rcew'qhl'Vtcpuo kulkqp'Nlpg'Eqput wevukqp''

Under alternative 3, there would be long-term moderate adverse impacts related to the placement of the transmission lines in the exchange corridor adjacent to the existing L-31N levee. With the transmission lines on the edge of the park, impacts on floodplain function and values throughout the NESRS would be less than would occur if the lines were built further to the west, but impacts on floodplains would be greater than if the lines were built east of the park in (see alternative 2).

In addition to the commitment to maintain surface and subsurface flows, and accommodate enhanced flows by using culverts under the access road, alternative 3 includes certain terms and conditions for the use of the FPL West Preferred Corridor (appendix G). Under these terms and conditions for the exchange, FPL would commit to describing methods and results of hydrologic analysis to avoid and minimize impacts on sheetflow at the park to the maximum extent practicable. The presence of the road or finger pads would alter hydrologic flow locally as water is forced around the structure pads and through culverts beneath the access road or driveway portion of the finger pads, but would not noticeably alter floodplain function.

Should an access road be built parallel to the levee, it is possible that the hydrology in the channel between the levee and the transmission lines would be somewhat more compartmentalized and restricted in its flow than water on the west side of the transmission lines. FPL would be required to ensure that the design and construction of the transmission lines would be compatible with ecosystem restoration goals and activities allowing for protection of resources and values of Everglades National Park. With implementation of this mitigation and the full hydrologic analysis conducted as part of the required terms and conditions, there would be long-term moderate adverse impacts on floodplain function and values.

Ewo wevukg'KO rcew'

The cumulative impacts on floodplain function and values under alternative 3 from other past, present and reasonably foreseeable future projects would be the same as those discussed under alternative 1a, and would be mainly beneficial. There would be indirect benefits of acquisition itself from the ability to continue flow-dependent ecosystem restoration projects. Construction and presence of transmission lines would contribute long-term moderate adverse impacts on floodplains on the far eastern edge of the park. These impacts would contribute both appreciable long-term beneficial, and noticeable adverse impacts on floodplains in this area.

Eqpenwukqp''

Under alternative 3 there would be no direct impacts on floodplains from the implementation of the land exchange associated with this alternative. There would be long-term indirect beneficial impacts of acquiring the FPL land, which would enhance the conservation of the resources and values of the park, including floodplains and their values and functions, and allow for flow-dependent ecosystem restoration projects to proceed. There would be long-term moderate adverse impacts on floodplain functions and

values from construction and presence of transmission lines in the FPL West Preferred Corridor due to increased compartmentalization and the effects of the disrupted sheetflows on floodplain values, such as habitat. Alternative 3 would contribute appreciable long term beneficial, and noticeable adverse impacts to the cumulative impacts on floodplains in the area.

KO RCEVUQH CNVGTP CVKKG'6 < GCUGO GP V'HQT'HGG'GZEJ CPI G''

KO rcew'qht'ij g'Ncpf 'Ces wukq' Cevq''

Under alternative 4, the direct and indirect impacts associated with the land exchange would be the same as described under alternative 3, but with beneficial impacts on floodplains resulting from terms and conditions that would reduce the risk of having additional utility facilities developed within the exchange corridor and associated floodplain. Terms and conditions are found in appendices G and H.

KO rcew'qht'Vtcpuo kulkp'Nlpg'Eqput wevq''

The indirect impacts associated with the placement of the transmission lines in the exchange corridor would be the same as described under alternative 3. There would be long-term moderate adverse impacts on floodplains and floodplain function and values due to increased compartmentalization and the effects of the disrupted sheetflows on floodplain values.

Ewo wvkg'KO rcew'

Cumulative impacts would be the same as described under alternative 3. Alternative 4 would contribute indirect benefits of acquisition itself from the ability to continue flow-dependent ecosystem restoration projects, and long-term moderate adverse impacts on floodplains on the far eastern edge of the park. These impacts would contribute both appreciable long term beneficial, and noticeable adverse impacts on floodplains in this area.

Eqpenwukp''

Impacts would be the same as described under alternative 3 except no other utilities could be built in the corridor, which would lessen the risk of additional floodplain impacts. There would be no direct impacts on floodplains from the implementation of the land exchange, but there would be long-term indirect beneficial impacts of acquiring the FPL land, which would enhance the conservation of the resources and values of the park, including floodplains and their values and functions, and allow for flow-dependent ecosystem restoration projects to proceed. There would be indirect adverse impacts from construction and presence of transmission lines in the FPL West Preferred Corridor resulting in long-term moderate adverse impacts on floodplains and floodplain function and values. Alternative 4 would contribute appreciable long term beneficial, and noticeable adverse impacts to the cumulative impacts on floodplains in the area.

KO RCEVUQH CNVGTP CVKKG'7 < RGTRGVWCN'HNQY CI G'GCUGO GP V'QP'HRN'RtQRGTV[''

KO rcew'qht'ij g'Ncpf 'Ces wukq' Cevq''

Under alternative 5, the direct and indirect impacts associated with the land exchange would be the same as described under alternative 2. The enhanced flowage would be accommodated across the exchange corridor and across the original FPL property. Alternative 5 would have indirect long-term benefits on floodplains.

Kō rcew'qhi'Vtcpuo kulkp'Nkpg'Eqput wevkp''

Under alternative 5, indirect impacts on floodplains and floodplain functions and values would be the same as those described for alternative 1b, except that the flowage easement would allow for enhanced flows to accommodate flow-related ecosystem restoration activities. The hydroperiod would be maintained, but the enhanced flows would be forced through culverts, limiting the benefits to floodplain function, and this would continue to hamper improvements to floodplain values and result in long-term moderate adverse impacts on floodplains by compartmentalizing areas and obstructing flows and diminishing floodplain function locally.

Ewo wēvk'g'Kō rcew''

The cumulative projects considered with respect to floodplain function and values from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Implementation of alternative 5 would provide both long-term beneficial and long-term moderate adverse impacts, because the flow-related ecosystem restoration projects could proceed, but sheetflow patterns would be disrupted regionally by the transmission lines. Alternative 5 would therefore contribute appreciable beneficial impacts by allowing enhanced flows and a higher flood stage, and noticeable adverse impacts on floodplain function in the area.

Eqpenwukp''

Impacts on floodplains would be the similar to those discussed under as under alternative 1b, except that the accommodation of advanced flows would improve floodplain function and values. Alternative 5 would contribute appreciable beneficial impacts by allowing enhanced flows and a higher flood stage, and noticeable adverse impacts on cumulative impacts on floodplains in the area.

UQWPFUECRGU''

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In accordance with NPS *Management Policies 2006* (NPS 2006a) and Director's Order 47: Sound Preservation and Noise Management (NPS 2000a), an important part of the NPS mission is the preservation of natural soundscapes associated with national park units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscapes is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials.

As stated in Director's Order 47, natural sounds are intrinsic elements of the environment that are often associated with parks and park purposes. They are inherent components of the "scenery and the natural and historic objects and the wildlife" protected by the NPS Organic Act. Intrusive sounds are of concern to the NPS because they can impede the ability of the NPS to accomplish its mission.

By definition, noise is human-caused sound that is considered unnecessary and unwanted. Whether a sound is considered unpleasant depends on the individual who hears the sound and the setting and circumstance under which the sound is heard. While performing certain tasks, people expect and, as such, accept certain sounds that are considered unpleasant under other circumstances. For example, if a person works in an office, sounds from printers, copiers, telephones, and keyboards are generally acceptable and not considered unduly unpleasant or unwanted. By comparison, when resting or relaxing, these same sounds may be intolerable.

Sound levels are usually measured in A-weighted decibels (dBAs), and descriptors such as the energy equivalent noise level (L_{eq}) and the day-night average noise level (L_{dn}) are commonly used to account for fluctuations of sound over time. Generally, a 3 dBA increase in ambient sound levels is considered the minimum threshold at which most people can detect a change in the sound environment. Decibels (dBs) are often related to perceived loudness, and in some frequency bands a 10-dBA increase can result in sounds that seem twice as loud, even though this would correspond to multiplying the number of sound sources by 10.

Sounds found desirable during times of rest and relaxation are referred to as natural quiet, and include natural, outdoor ambient sounds, without the intrusion of human-caused sounds. Natural sounds throughout the park—including flowing water, animals, and rustling leaves—are not considered noise. The enjoyment of natural sounds in the park enhances the visitor's experience, and natural quiet can be essential for some individuals to achieve a feeling of peace and solitude.

CUUWO RVKQP U' O G VJ QF QN QI [. ' C P F ' K O R C E V ' K V G P U K [' F G H K V K Q P U "

Soundscape impacts in the park were assessed based on the area where noise attributable to transmission line construction or operation would be 3 dBA or greater over the *natural ambient*. For noise-sensitive residential areas outside the park, impacts were assessed based on the area where transmission line construction or operation would increase sound levels by 3 dBA or greater over the *existing ambient*. The rationale for the 3 dBA change criterion for assessing impacts is explained below, followed by further details on the methodologies used to characterize natural ambient and existing ambient sound levels, temporary construction impacts, and long-term operation impacts.

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An increase in the ambient noise level affects the ability of humans and animals to perceive other sounds within a certain distance. In general, the higher the ambient noise level, the shorter the distance from which other sounds (for example, those of a songbird) can be heard. This concept is expressed in terms of listening area and alerting distance. In terms of impact metrics, a 3 dBA increase in the natural ambient is an important indicator of potential impact because it results in a 50 percent reduction in *listening area* for humans and animals and a 30 percent reduction in *alerting distance*, as described below (NPS 2010d).

Reduction in listening area quantifies the loss of hearing ability to humans and animals as a result of an increase in ambient noise level. Under natural ambient conditions a sound is audible within a certain area around a visitor or animal. If the ambient level is increased due to a noise event, the area in which the sound is audible decreases. Table 23 and figure 45 illustrate the relationship between increased ambient and listening area reduction.

TABLE 23: REDUCTION IN LISTENING AREA AND ALERTING DISTANCE DUE TO INCREASES IN AMBIENT LEVELS

dBA Ambient Increase	3	6	10	20
Percent Reduction in Listening Area	50%	75%	90%	99%
Percent Reduction in Alerting Distance	30%	50%	70%	90%

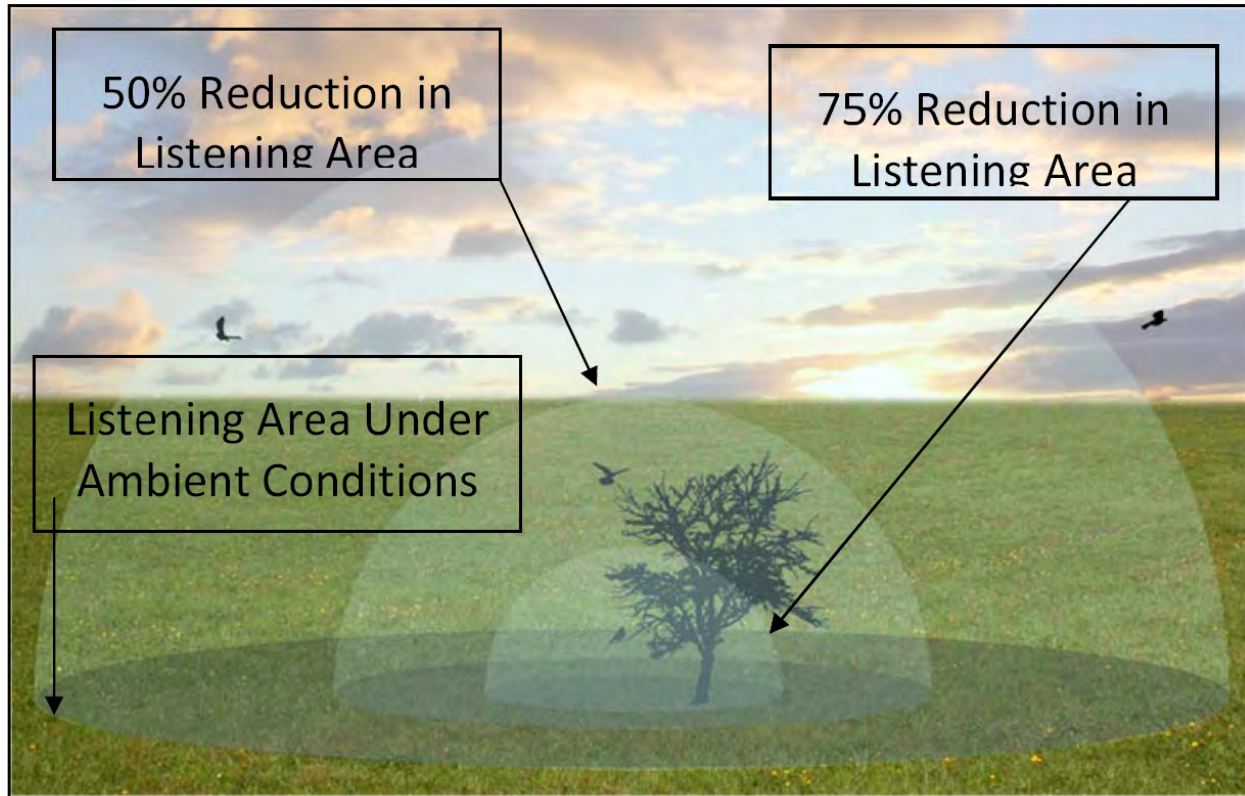


FIGURE 45: REDUCTION IN LISTENING AREA

For example, under natural ambient conditions, an owl perched in a tree may be able to hear a mouse scurrying through the brush anywhere within an area of 100 square meters of the perch. If a noise event increases the ambient level by 3 dBA, the area in which the owl can hear a mouse would decrease by 50 percent to approximately 50 square meters.

The reduction in alerting distance is closely related to the reduction in listening area. The residual alerting distance is equal to the square root of the residual listening area. Instead of addressing losses in terms of an area, reduction in alerting distance expresses the reduction as a linear distance from a source. For example, under natural ambient conditions, a hiker may be alerted to the sound of a flash flood at a distance of 1 mile. If a noise such as an off-road vehicle increases the ambient level by 6 dBA, the distance at which the flood could be detected would decrease by 50 percent to approximately 1/2 mile (NPS 2010d).

Visitors and wildlife are impacted by their failure to hear natural sounds that would have been audible in the absence of noise: a bird misses the sound of a worm, a mouse misses the footfall of a coyote, a visitor misses the sound of a distant waterfall. Reductions in listening area and alerting distance capture these types of impacts.

PcwteciCo dkgpv'cpf 'Gzkmpfi 'Co dkgpv'Uqwpf 'Ngxgn'

As discussed in chapter 3, the existing natural ambient in the park was determined from a monitoring site south of the Shark Valley Visitor Center and the results are considered generally representative of interior areas of the park in the project area. The natural ambient varies between summer and winter, with winter

being quieter. Therefore, to be conservative, the winter daytime natural ambient of 28.4 dBA was used as the basis for assessing impacts in the park.

Natural ambient is not an appropriate basis for assessing impacts in the context of residential areas, where human-caused sounds are more accepted. An existing day-night sound level (L_{dn}) of 55 dBA was estimated based on population density, as discussed in chapter 3. The L_{dn} metric incorporated a 10 dBA penalty on sound levels occurring at night. There is no monitoring data available for the affected residences. For impact assessment purposes, the estimated quietest daytime hourly L_{eq} was assumed to be approximately 10 dBA less than the estimated L_{dn} , or 45 dBA.

Uj qt v/gto 'Eqput wekp 'Kō r cew' O gj qf qmī { "

The specific activities associated with the possible future transmission line construction were evaluated in terms of the types of equipment typically used, the potential duration and frequency of occurrence of the activities, and the potential approximate noise level generated at various distances from the noise sources. Each of these factors was subsequently used to determine the degree of the impact associated with construction relative to natural ambient (in the park) or existing ambient (residential area) sound levels.

Table 24 summarizes the maximum instantaneous (L_{max}) noise levels generated by typical equipment used in transmission line construction as a function of distance from the construction site. The reference L_{max} levels at a distance of 50 feet are based on monitoring of actual construction equipment operation as reported in the documentation of the Federal Highway Administration's Roadway Construction Noise Model.³ The equipment noise levels at greater distances from the site were calculated assuming that noise levels would decrease by 6 dBA per doubling of distance, which is typical for point sources of noise. The L_{max} levels presented in the table are conservative (over-predicting as opposed to under-predicting impacts), because they do not take into account ground cover attenuation, atmospheric effects, or the effects of topography on sound levels. The "total" column presents the combined noise level of all the listed types of equipment operating simultaneously as calculated through "decibel addition" (dBs are expressed on a logarithmic scale and thus cannot be directly added together). Helicopters were not included in the sound levels shown in table 25, but helicopter sound levels on the ground during conductor stringing would be similar to the combined noise level of heavy construction equipment (e.g., 80–90 dBA maximum).

Within the park, construction noise would drop to equal the natural ambient (and thus result in a 3 dBA increase in the total sound level) at a distance of 13.7 miles under the simplified analysis assumptions used. Construction noise will drop to ambient levels at much shorter ranges than 13.7 miles on sunny days, because the warmer air near the ground will cause the noise energy to refract upwards. Propagation out to 13.7 miles will be the plausible upper bound, and will occur shortly after sunrise, possibly shortly before sunset, and possibly downwind of the construction site when wind speeds are low. Construction noise levels could exceed the natural ambient by 10 dBA or more (e.g., 38.4 dBA) out to a distance of 4.3 miles.

³ http://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/.

TABLE 24: TYPICAL TRANSMISSION LINE CONSTRUCTION NOISE LEVELS (L_{MAX})

Distance (feet)	Flat Bed Truck dBA	Grader/Scraper dBA	Crane dBA	Tractor dBA	Bulldozer dBA	Generator dBA	Saw dBA	Auger Drill Rig dBA	Total dBA
50	74	84	81	84	82	81	84	84	91.6
100	68.0	78.0	75.0	78.0	76.0	75.0	78.0	78.0	85.6
200	62.0	72.0	69.0	72.0	70.0	69.0	72.0	72.0	79.5
400	55.9	65.9	62.9	65.9	63.9	62.9	65.9	65.9	73.5
800	49.9	59.9	56.9	59.9	57.9	56.9	59.9	59.9	67.5
1,600	43.9	53.9	50.9	53.9	51.9	50.9	53.9	53.9	61.5
3,200	37.9	47.9	44.9	47.9	45.9	44.9	47.9	47.9	55.5
6,400	31.9	41.9	38.9	41.9	39.9	38.9	41.9	41.9	49.4
12,800	25.8	35.8	32.8	35.8	33.8	32.8	35.8	35.8	43.4
25,600	19.8	29.8	26.8	29.8	27.8	26.8	29.8	29.8	37.4
26,600	19.5	29.5	26.5	29.5	27.5	26.5	29.5	29.5	37.1
28,100	19.0	29.0	26.0	29.0	27.0	26.0	29.0	29.0	36.6

For residential areas, construction noise would drop to equal the existing ambient at a distance of 2.0 miles in the absence of intervening barriers to sound (such as terrain or other buildings). Construction noise would be 10 dBA or more over the existing ambient out to a distance of 0.6 miles. Building row attenuation effects were accounted for. As sound travels from near ground level sources (such as most construction equipment), the initial rows of buildings encountered serve to attenuate the noise for subsequent rows. The distance to the first row of buildings for various segments of the transmission lines was estimated using a GIS. A shielding factor of 4.5 dB was subtracted at the first row of buildings and 1.5 dB subtracted for each successive row of buildings, up to a maximum attenuation of 10 dBA as recommended by the Federal Transit Administration guidance (FTA 2006). Once the edge of a residential area was reached, additional building rows were assumed every 200 feet until the 10 dBA maximum attenuation was reached.

Residences potentially impacted by construction noise were quantified based on a database of geocoded addresses for Miami-Dade County.⁴ The address database was reviewed in comparison to 2010 orthophotography and address points on vacant land and commercial properties in the study area were removed.

⁴ <http://gisweb.miamidade.gov/GISSelfServices/Data/HTML/GeoAddress.htm>.

TABLE 25: SUMMARY OF SHORT-TERM AND LONG-TERM SOUNDSCAPE IMPACTS BY TRANSMISSION LINE CORRIDOR

	Transmission Line Corridor	Temporary Construction Impacts		Long-term Corona Noise Impact		Notes
		3 dBA of greater increase ^a	10 dBA or greater increase ^b	3 dBA of greater increase ^c	10 dBA of greater increase ^d	
Square Miles of Park Impacted	FPL West Preferred Corridor	221.4	43.3	1.4	0.11	Impact on park soundscapes less than FPL West Secondary Corridor, but greater than area of possible relocated corridor east
	FPL West Secondary Corridor	227.6	52.9	3.3	0.7	Largest potential for impact on park soundscapes
	Area of possible relocated corridor — East	223.2	37.8	0.06	0	Smallest potential for impact on park soundscapes
	Area of possible relocated corridor — West	221.7	43.9	1.8	0.6	Impact on park soundscapes less than FPL West Secondary Corridor, but greater than area of possible relocated corridor east and FPL West Preferred Corridor
Residential Structures Impacted	FPL West Preferred Corridor	155	70	NA	NA	Greater impacts on soundscapes in residential areas than FPL West Secondary Corridor, but less than area of possible relocated corridor
	FPL West Secondary Corridor	109	11	NA	NA	Smallest potential for impacts on soundscapes in residential areas
	Area of possible relocated corridor — East	3,084	1,079	NA	NA	Largest potential for impacts on soundscapes in residential areas
	Area of possible relocated corridor — West	944	56	NA	NA	Less potential for impact on soundscapes in residential areas than area of possible relocated corridor, but greater impacts than FPL West Preferred and FPL West Secondary Corridors

^a13.7 miles in park, distance varies in residential areas depending on building row attenuation (maximum of 2.0 miles with no shielding).

^b4.3 miles in park, distance varies in residential areas depending on building row attenuation (maximum of 0.6 miles with no shielding).

^c0.23 miles in park.

^d0.047 miles in park.

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The localized electric field near an energized conductor can produce tiny electric discharges that can ionize air close to the conductors.⁵ This partial discharge of electrical energy is called corona discharge, or corona. Corona generates audible noise that can be characterized as a hissing, crackling sound, which under certain conditions is accompanied by a hum. This audible noise can barely be heard in fair weather conditions on higher-voltage lines. During wet weather conditions, water drops collect on the conductor and increase corona activity so that a crackling or humming sound may be heard at higher levels than those experienced under dry conditions.⁶

Corona noise calculations were performed by FPL for 14 representative transmission line cross sections at various locations along the FPL West Preferred and FPL West Secondary Corridors as part of the SCA (FPL 2009a; appendix F). Corona noise levels in terms of L_{50} were estimated using the Bonneville Power Administration's Corona and Field Effects Program. The Bonneville Power Administration's program calculates corona noise using empirical equations that have been developed from measurements on numerous high-voltage lines.⁷ All four cross sections in the project area had an estimated maximum noise level of approximately 49 dBA (L_{50}) under foul weather conditions (FPL 2009a).

Noise from a "line source" such as a transmission line attenuates at a slower rate than noise from a point source, or approximately 4.5 dBA per doubling of distance over soft cover (e.g., vegetated areas). Based on this and assuming that the corona noise level of 49 dBA would occur at approximately 50 feet from the lines, worst-case corona conditions would drop to equal the park natural ambient of 28.4 dBA at a distance of 1,200 feet from the lines and would be 10 dBA over the natural ambient within 250 feet. Residential areas would not be affected by corona noise under any of the alternatives because the corona noise would be much less than the existing ambient of 45 dBA at the location of the closest receptors.

The following definitions were used to determine the magnitude of adverse impacts on soundscapes:

- **P gi n̄i k d̄g:** Natural or background sounds would prevail; activities associated with noise would be very infrequent or absent.
- **O l p q t:** Natural or background sounds would predominate and human-generated sounds would be heard occasionally. When noise is present, it would be passing and would occur at low to medium levels in local areas, rarely audible at a distance.
- **O qf gt c v g:** Natural or background sounds would predominate, but activities associated with noise would occur occasionally at low to moderate levels. When noise is present, it would be occasionally audible at a distance from the source and may mask natural sounds briefly. Noise would not be overly disruptive to noise-sensitive visitor or resident activities.
- **O c l q t:** Natural or background sounds would be impacted by activities associated with noise frequently or for extended periods. Noise would disrupt conversation for long periods and make enjoyment of other activities in the area difficult.

⁵ http://www.cpuc.ca.gov/environment/info/aspen/deltasub/pea/16_corona_and_induced_currents.pdf.

⁶ http://www.cpuc.ca.gov/environment/info/aspen/deltasub/pea/16_corona_and_induced_currents.pdf

⁷ Big Eddy Knight EIS. http://efw.bpa.gov/environmental_services/Document_Library/Big_Eddy-Knight/pdf/BEK_FEIS_Volume2_Appendix_E_Electric_Fields_Magnetic_Fields_Noise_and_Radio_Interference.pdf

Duration definitions for noise are as follows:

- **Uj qt v'Vgto** : Impacts on the natural soundscape occurring during the period of construction.
- **Nqpi 'Vgto** : Impacts that affect visitor or resident use patterns and consequently the associated impacts of human-generated noise on the natural soundscape for years to come.

CPCN[UK'CTGC"

The area of analysis for soundscapes includes the area of audibility along and adjacent to the various possible transmission corridors in the general project area, extending out from any source of noise to where noise would decrease to background levels, which will vary with the type of land use.

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Table 25 summarizes the quantification of potential temporary construction and long-term corona noise impacts by transmission line corridor and help in assessing the differences among the corridors. The impacts are discussed by alternative below.

In interpreting table 25, note that the duration of noise exposure is not reflected by the impact metrics, which are a simple tabulation of the acres of park land or number of residences within certain buffers. The buffer distances reflect the maximum potential extent of impacts from every point along the various transmission line routes (e.g., construction equipment L_{max}). Particularly with respect to construction impacts, impacts would not occur simultaneously along the entire line as the buffers suggest. Construction would move gradually along the line, exposing adjacent areas to high noise levels temporarily, then moving on incrementally. Nonetheless, in the absence of very detailed construction staging information, the buffers provide a way of understanding the potential impacts of the alternatives. To supplement the quantitative analysis based on L_{max} , the duration of construction noise exposure was evaluated qualitatively based on the location of the various alignments in relation to the park:

- Relative to the other transmission line routes, the duration of construction noise impacts in the park would be the highest for the FPL West Secondary Corridor because this route is surrounded by park land on either side of the FPL corridor.
- The duration of construction noise impacts would be the lowest for a transmission line on the east side of the area of possible relocated corridor. This route shares a common starting point to the south with the other alignments, but then deviates to the east, reducing the duration of the highest construction noise exposure to the park.
- The west side of the area of possible relocated corridor and the FPL West Preferred Corridor would have a relatively similar duration of construction noise impacts to the park because of their close alignment along the eastern edge of the park. The duration of impacts from construction on the west side of the area of possible relocated corridor would be slightly less than the FPL West Preferred Corridor because the west side corridor alignment turns towards the east (making it farther from the park) south of U.S. 41 / Tamiami Trail.

Figure 46 summarizes corona noise and temporary construction noise impact buffers for the park. To simplify the presentation, figure 46 shows the 4.3-mile buffer for areas of the park experiencing a 10 dBA or greater increase in sound levels over the natural ambient during construction, and not the larger area experiencing a 3 dBA or greater temporary increase. Figure 46 also shows the area experiencing 3 dBA or greater increase in sound levels due to corona noise during precipitation events. Because all of the potential transmission line corridors have the same southern starting point for analysis purposes, all the alignments have a similar extent of impact in the park in the southern portion of the project area. Moving further north, the distinctions between the alignments become clearer. The FPL West Secondary Corridor would have the greatest impact and the eastern edge of the area of possible relocated corridor would have the least.

Figure 47 compares the construction noise impacts of the FPL West Secondary Corridor and eastern edge of the area of possible relocated corridor. The FPL West Secondary Corridor has a small number of impacts on residences located near the park in the southern portion of the project area. The majority of the FPL West Secondary Corridor in the park does not impact residential areas. In contrast, the eastern edge of the area of possible relocated corridor impacts several dense residential areas. For clarity of presentation, the impacts of the other alignments are not shown, but are intermediate between the FPL West Secondary Corridor and eastern edge of the area of possible relocated corridor in terms of residential impacts (table 25).

KO RCEVUQH'CNVGT'PCVKG'3C<P Q'P RU'CEVQ'P'6'P Q'HRN'E QPUVTWEVQ'P''
***GPXKTQPO GPVCN'DCUGN'P'G+''**

KO rcew'qht'j g'Ncpf 'Ces wukqp'Cevkp''

Under alternative 1a, FPL retention of ownership of land in the EEEA would not have any impacts on soundscapes.

KO rcew'qht'Vtcpuo kulkqp'Nlpg'Eqput wevqp''

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts on soundscapes.

Ewo wvkg'KO rcew'6'Cngt pcvkg'3c''

Because there would be no impacts on soundscapes under alternative 1a, there would be no cumulative impacts.

Eqpenwukqp'6'Cngt pcvkg'3c''

FPL retention of ownership of land in the EEEA would not have any impacts on soundscapes. Alternative 1a would not involve transmission line construction and therefore would have no impacts on soundscapes from transmission line construction or presence.

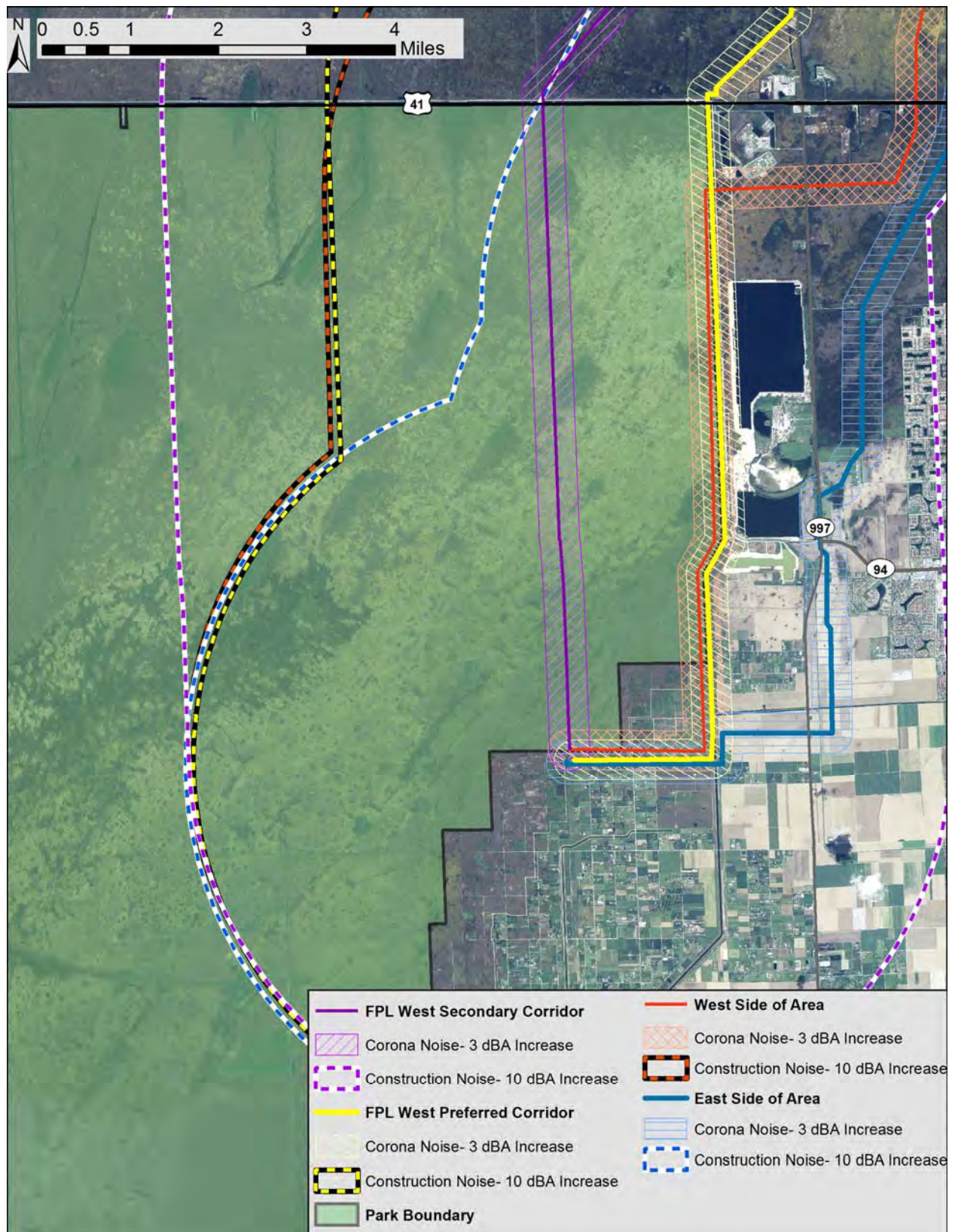


FIGURE 46: SOUNDSCAPES IMPACTS IN THE PARK – CORONA NOISE AND CONSTRUCTION NOISE

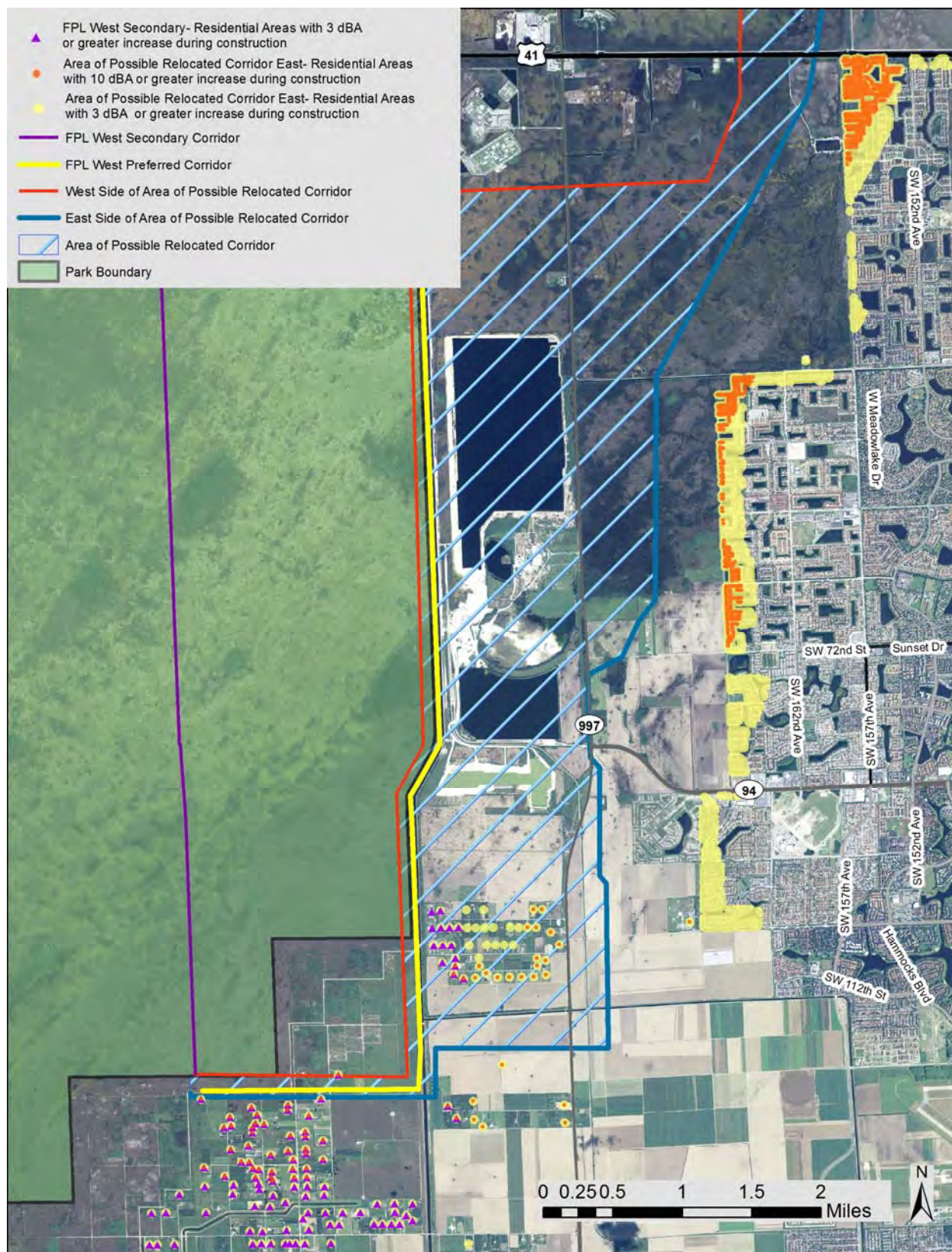


FIGURE 47: SOUNDSCAPES IMPACTS IN RESIDENTIAL AREAS – CONSTRUCTION IMPACTS OF FPL WEST SECONDARY CORRIDOR AND AREA OF POSSIBLE RELOCATED CORRIDOR EAST

KO RCEVUQH CNVGTP CVKKG'3D<P Q'P RU'CEVQ'6'HRN'E QP UVTWEVQ'P 'VJ G'RCTM'

KO rcew'qhl'vj g'Ncpf 'Ces wkwkqp 'Cevkqp''

Under alternative 1b, FPL retention of ownership of land in the EEEA would not have any impacts on soundscapes.

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Under alternative 1b, it is assumed FPL would build a transmission line in the FPL West Secondary Corridor in the park. Heavy equipment used in the construction of the FPL West Secondary Corridor transmission lines (potentially including the use of helicopters in stringing the conductor) would result in short-term moderate adverse impacts on soundscapes in the park and on adjacent lands. Construction noise would be intense (over 90 dBA within 50 feet), but would also be intermittent and would not occur for long periods in one location as crews move along the transmission line alignment. No nighttime construction is anticipated in the park. The audibility of construction would vary day to day depending on factors such as the number of pieces of equipment in use at any one time and level of natural sounds (such as wind), which can mask human-caused sounds. Construction noise impacts would be the greatest in the winter when the natural ambient is the lowest (28.4 dBA), at which time the construction activity could equal the natural ambient out to a distance of 13.7 miles, thereby reducing listening area for wildlife and visitors. Approximately 227.6 square miles of the park are within 13.7 miles of the FPL West Secondary Corridor. Impacts would be greatest within 4.3 miles of the construction activity, where sound levels would be 10 dBA or higher than the natural ambient. Approximately 52.9 square miles of the park are within 4.3 miles of the FPL West Secondary Corridor.

Short-term construction impacts would also occur in the rural residential area to the east of where the FPL West Secondary Corridor enters the park. Approximately 109 residences could experience a 3 dBA increase in ambient levels at some point, and 11 residences could experience a 10 dBA increase as a result of construction.

Corona discharge from the FPL West Secondary Corridor transmission lines would result in long-term minor adverse impacts on soundscapes in the park because the natural soundscape would be mostly maintained, with localized impacts on soundscapes from corona noise. Corona noise would be greatest during foul weather (49 dBA at 50 feet from the lines), at which time it could increase ambient levels in the park by 3 dBA or more out to a distance of 0.23 miles. Approximately 3.3 square miles of the park would be affected by corona noise from the FPL West Secondary Corridor. Both inside and outside the park, predominantly natural areas would be within the corona noise effect zone—no residential areas would be impacted. During dry weather the corona noise would be less than during wet weather, and would be barely audible within the transmission line corridor and inaudible outside the corridor.

Long-term transmission line maintenance is assumed to include periodic inspections, primarily utilizing trucks, but also aerial surveys by helicopters or airplanes, and vegetation maintenance would likely take place periodically and involve trimming and mowing. The magnitude and geographic extent of maintenance-related soundscapes impacts would be similar to the temporary construction impacts described above. Because maintenance related activities would only occur in one place for a few days per year, overall soundscapes impacts on the park and adjacent residential areas would be long-term, negligible, and adverse.

Ewo wv&g'kō rcew'ō'Cngt pc&g'3d''

There would be long-term minor adverse impacts on park soundscapes from operational activities (airboats, helicopter landings and overflights) and visitor use activities (private and commercial airboats), the use of heavy equipment for management activities, commercial aircraft overflights, and traffic on adjacent roadways; rock mining, and construction of seepage barrier along the L-31N canal. Impacts would vary substantially by geographic location, season, and time of day. Traffic, watercraft, and aircraft are accounted for in the soundscapes existing conditions assessment and are expected to continue in the future. As discussed in chapter 3, aircraft (general aviation, commercial jet, or military, not air tours) were audible 37 percent of the daytime during the summer, and 17 percent during the winter, at the EVER002 site south of the Shark Valley Visitor Center. Sounds from visitors (e.g., motor vehicles, conversation, music, and watercraft use) were audible 27 percent of the daytime during the summer, and 39 percent during the winter (NPS 2012d).

Construction of a transmission line in the park would result in long-term minor adverse impacts in the park due to corona noise, and short-term moderate adverse impacts from construction equipment use. Long-term negligible adverse impacts would result from periodic line maintenance. Alternative 1b would contribute noticeable adverse effects to cumulative impacts on soundscapes in the park, but little to no long-term cumulative impacts in residential areas.

Eqpenwukp'ō'Cngt pc&g'3d''

Under alternative 1b, there would be no impacts on soundscapes from the FPL retention of property in the EEEA. Indirect impacts in the park resulting from the construction of the transmission lines in the FPL West Secondary Corridor would be short term, moderate, and adverse as a result of construction activities and long term, minor, and adverse from corona discharge during wet weather. There would be short-term moderate adverse construction-related impacts in residential areas. Long-term impacts from maintenance activities would be negligible and adverse. Actions under alternative 1b would contribute noticeable adverse effects to cumulative impacts on soundscapes in the park, but little to no long-term cumulative impacts in residential areas.

kō RCEVUQH'CNVGTP CV&G'4<P RU'CES wukwkp'QH'HRN'NCPF''

kō rcew'qhtj'g'Ncpf 'Ces wukwkp'Cevkqp''

Under alternative 2, the NPS would acquire the FPL property in the EEEA. No impacts would be expected from the acquisition of FPL land in the EEEA.

kō rcew'qht'Vtcpuo kulkqp'Nlpg'Eqpumt wevkqp''

Under alternative 2, it is assumed FPL would build a transmission line in the area of possible relocated corridor east of the park. Heavy equipment used in the area of possible relocated corridor would result in short-term moderate adverse impacts on soundscapes in the park and on adjacent lands. Construction noise would be intense (over 90 dBA within 50 feet), but would also be intermittent and would not occur for long periods in one location as crews move along the transmission line alignment. No nighttime construction is anticipated. The audibility of construction would vary day to day depending on factors such as the number of pieces of equipment in use at any one time and level of natural sounds (such as wind), which can mask human-caused sounds. Construction noise impacts would be the greatest in the winter when the natural ambient is the lowest (28.4 dBA), at which time the construction activity could equal the natural ambient in the park out to a distance of 13.7 miles, thereby reducing listening area for wildlife and visitors. Transmission lines on the eastern or western side of the area of possible relocated

corridor would result in relatively similar areas of potential impact in the park within 13.7 miles (222 to 223 square miles). However, transmission lines on the eastern side of the area of possible relocated corridor would result in less impact on soundscapes in the park within 4.3 miles of construction activity, where sound levels would be 10 dBA or higher than the natural ambient. Approximately 38 square miles of the park are within 4.3 miles of the eastern edge of the area of possible relocated corridor, compared to 44 square miles with the western edge of the area.

Short-term construction impacts would also occur in residential areas in and adjacent to the area of possible relocated corridor. The potential for construction noise impacts on soundscapes in residential areas is substantially higher with transmission lines on the eastern side of the area of possible relocated corridor (which passes near dense development) compared to the western side. Approximately 3,084 residences could experience a 3 dBA increase in ambient levels from a line on the eastern side of the area, compared to 944 residences for the western side of the area. Construction on the eastern side of the area could result in a 10 dBA increase in sound levels at 1,079 residences, compared to 56 residences on the western side of the area.

Corona discharge from transmission lines in the area of possible relocated corridor would result in long-term negligible to minor adverse impacts on soundscapes in the park. Corona noise would be greatest during foul weather (49 dBA at 50 feet from the lines), at which time it could increase ambient levels in the park by 3 dBA or more out to a distance of 0.23 miles. Approximately 0.06 square mile of the park would be affected by corona noise from transmission lines on the eastern edge of the area of possible relocated corridor, compared to 1.8 square miles that would be impacted by transmission lines on the western side of the area. No residential areas would be impacted, based on elevated background noise levels and proximity to homes. During dry weather the corona noise would be less than during wet weather, and would be barely audible within the transmission line corridor and inaudible outside the corridor.

As described under alternative 1a, long-term transmission line maintenance is assumed to include periodic inspections, primarily utilizing trucks, but also aerial surveys by helicopters or airplanes, and use of mowers and trimmers. And the magnitude and geographic extent of maintenance-related soundscapes impacts would be similar to the temporary construction impacts described above. Because maintenance related activities would only occur in one place for a few days per year, overall soundscapes impacts on the park or residences would be long-term, negligible, and adverse.

Ewo wɔvɔg'kɔ rcew'

The cumulative impacts on soundscapes from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1b. Construction of a transmission line in the area of possible relocated corridor would result in long-term minor adverse impacts, and construction noise would generate short-term moderate adverse impacts. Periodic line maintenance would result in long-term negligible adverse impacts. The contribution of these impacts on the overall cumulative effects in the park and residential areas would be imperceptible in the long term, but noticeable in the short-term. In addition, alternative 2 would not contribute noticeable long-term cumulative impacts in residential areas.

Eqpenwɔkp''

Under alternative 2, there would be no impacts on soundscapes from the acquisition of FPL property in the EEEA. Indirect impacts resulting from the construction of the transmission lines in the area of possible relocated corridor would be short term, moderate, and adverse as a result of construction activities and long term, negligible to minor, and adverse from corona discharge during wet weather.

There would be short-term moderate adverse construction-related impacts in residential areas. Long-term impacts from maintenance activities would be negligible and adverse. The geographic extent of impacts in the park and in residential areas would vary considerably depending on the exact route alignment. Alternative 2 would contribute imperceptible impacts to overall cumulative impacts in soundscapes in the park in the long term, but noticeable adverse impacts in the short-term; alternative 2 would not contribute noticeable long-term adverse cumulative impacts in residential areas.

KO RCEVUQH'CNVGTPCVKG'5<HGG'HQT'HGG'NCPF'GZEJ CPI G"

KO rcew'qh'vj g'Ncpf 'Ces wukqp'Cevkp"

Under alternative 3, there would be no impacts on soundscapes from the exchange of FPL and NPS lands in the EEEA. The terms and conditions of the land exchange under alternative 3 do not address transmission line noise requirements.

KO rcew'qh'Vtcpuo lukqp'Nlpg'Eqput wevqp"

Heavy equipment used in the construction of the FPL West Preferred Corridor transmission lines (potentially including the use of helicopters in stringing the conductor) would result in short-term moderate adverse impacts on soundscapes in the park and on adjacent lands. Construction noise would be intense (over 90 dBA within 50 feet), but would also be intermittent and would not occur for long periods in one location as crews move along the transmission line alignment. No nighttime construction is anticipated in the park. The audibility of construction would vary day to day depending on factors such as the number of pieces of equipment in use at any one time and level of natural sounds (such as wind), which can mask human-caused sounds. Construction noise impacts would be the greatest in the winter when the natural ambient is the lowest (28.4 dBA), at which time the construction activity could equal the natural ambient out to a distance of 13.7 miles, thereby reducing listening area for wildlife and visitors. Approximately 221 square miles of the park are within 13.7 miles of the FPL West Preferred Corridor. Impacts would be greatest within 4.3 miles of the construction activity, where sound levels would be 10 dBA or higher than the natural ambient (perceived by humans as a doubling of loudness). Approximately 43 square miles of the park are within 4.3 miles of the FPL West Preferred Corridor.

Short-term construction impacts would also occur in the residential areas. Approximately 155 residences could experience a 3 dBA increase in ambient levels at some point, and 70 residences could experience a 10 dBA increase as a result of construction.

Corona discharge from the FPL West Preferred Corridor transmission lines would result in long-term minor adverse impacts on soundscapes in the park. Corona noise would be greatest during foul weather (49 dBA at 50 feet from the lines), at which time it could increase ambient levels in the park by 3 dBA or more out to a distance of 0.23 miles. Approximately 1.4 square miles of the park would be affected by corona noise from the FPL West Preferred Corridor. No residential areas would be impacted. During dry weather the corona noise would be less than during wet weather, and would be barely audible within the transmission line corridor and inaudible outside the corridor.

Long-term transmission line maintenance is assumed to include periodic inspections, primarily utilizing trucks, but also aerial surveys by helicopters or airplanes including trimming and mowing. The terms and conditions under alternative 3 would allow other infrastructure to be located in the corridor, potentially increasing the amount maintenance activity and associated noise relative to alternative 4. The magnitude and geographic extent of maintenance-related soundscapes impacts would be similar to the temporary construction impacts described above. Because maintenance related activities would only occur in one

place for several days per year, overall soundscapes impacts on the park would be long-term, negligible, and adverse. Terms and conditions are found in appendices G and H.

Ewo wɛvɔg'kɔ rcew'

The cumulative impacts on soundscapes from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1b. Construction of a transmission line in the exchange corridor would result in long term negligible to minor adverse impacts on soundscapes from corona noise and periodic line maintenance, and short term moderate adverse impacts in the vicinity of the from construction noise. The contribution of these impacts on the overall cumulative impacts in the park would be somewhat noticeable. In addition, alternative 3 would not contribute noticeable long-term cumulative impacts in residential areas.

Eqpenwɔkp''

Under alternative 3, there would be no impacts on soundscapes from the fee for fee land exchange of FPL and NPS property within the EEEA. Indirect impacts in the park resulting from the construction of the transmission lines in the FPL West Preferred Corridor would be short term, moderate, and adverse as a result of construction activities and long term, minor, and adverse from corona discharge during wet weather. There would be short-term moderate adverse construction-related impacts on residential areas. Long-term impacts from maintenance activities would be negligible and adverse. Alternative 3 would contribute somewhat noticeable impacts to the overall cumulative impacts on soundscapes in the park; alternative 3 would not contribute noticeable long –term adverse cumulative impacts in residential areas.

kɔ rcevu'qhCnvgtp cvkɔg'6<Gcugo gp v'hqT'Hgg'Ncpf'Gzej cpi g''

kɔ rcew'qh'vj g'Ncpf 'Ces wɔwɔkp'Cevkp''

Under alternative 4, FPL would construct the transmission lines in the FPL West Preferred Corridor in the park. There would be no impacts on soundscapes from the easement for fee land exchange under alternative 4. As with alternative 3, the terms and conditions of the land exchange under alternative 4 do not address transmission line noise requirements. However, under the terms and conditions for alternative 4, no other utilities could be built in the corridor, which would lessen the risk of additional noise-related impacts of construction of these facilities. Terms and conditions are found in appendices G and H.

kɔ rcew'qh'Vtcpuo kɔkp'Nɔp'Eqput wɛwɔkp''

Although FPL would not own the property, impacts on soundscapes would generally be the same as described under alternative 3. Heavy equipment used in the construction of the FPL West Preferred Corridor transmission lines (potentially including the use of helicopters in stringing the conductor) would result in short-term moderate adverse impacts on soundscapes in the park and on adjacent lands. Corona discharge from the FPL West Preferred Corridor transmission lines would result in long-term minor adverse impacts on soundscapes in the park and on adjacent lands. Transmission line maintenance activity would result in long-term negligible adverse impacts and other types of utility infrastructure would not be allowed in the corridor under the terms and conditions (unlike alternative 3, which would allow other utilities).

Ewo wɛvɔg'kɔ rcew'

Cumulative impacts to soundscapes under alternative 4 would be the same as alternative 3. The contribution of the impacts of alternative 4 to the overall cumulative impacts in the park would be

somewhat noticeable. In addition, alternative 3 would not contribute noticeable long-term cumulative impacts in residential areas.

Eqpenwukqp''

Under alternative 4, there would be no impacts on soundscapes from the easement for fee land exchange with FPL in the EEEA. Construction of the transmission lines in the FPL West Preferred Corridor would have short-term moderate adverse impacts in the park as a result of construction activities and long-term minor adverse impacts from corona discharge during wet weather. Periodic line maintenance would have long-term negligible adverse impacts. No other utilities could be built in the corridor, which would lessen the risk of additional noise-related impacts of construction of these facilities.

There would be short-term moderate adverse impacts in residential areas. Maintenance activities would result in long-term negligible adverse impacts in residential areas. Alternative 4 would contribute somewhat noticeable adverse impacts to the overall cumulative impacts on soundscapes in the park; alternative 4 would not contribute noticeable long-term adverse cumulative impacts in residential areas.

KO RCEVUQH'CNVGTFCVKG'7<RGTRGVWCN'HNQY CI G'GCUGO GPV'QP'HRN'RtQRGTV[''

KO rcew'qh'vj g'Ncpf 'Ces wukqp'Cevkqp''

Under alternative 5, FPL retention of ownership of land in the EEEA would not have any impacts on soundscapes.

KO rcew'qh'Vtcpuo kukqp'Nlpg'Eqput wekqp''

Indirect adverse impacts on soundscapes under alternative 5 would be the same as described under alternative 1b. Heavy equipment used in the construction of the FPL West Secondary Corridor transmission lines (potentially including the use of helicopters in stringing the conductor) would result in short-term moderate adverse impacts on soundscapes in the park and on adjacent lands. Corona discharge from the FPL West Secondary Corridor transmission lines would result in long-term minor adverse impacts on soundscapes in the park and on adjacent lands. Maintenance-related impacts would be the same as alternative 1b (long term, negligible, adverse).

Ewo wvkg'KO rcew'

Cumulative impacts to soundscapes under alternative 5 would be the same as under alternative 1b. Alternative 5 would contribute noticeable adverse effects to cumulative impacts to soundscapes in the park, but little to no long-term cumulative impacts in residential areas.

Eqpenwukqp''

Under alternative 5, there would be no impacts on soundscapes from the long-term flowage easement on FPL property. Construction of the transmission lines in the FPL West Secondary Corridor would have indirect, short-term moderate adverse impacts in the park as a result of construction activities and long-term minor adverse impacts from corona discharge during wet weather.

Construction would have short-term moderate adverse impacts in residential areas. Maintenance activities would have long-term negligible adverse impacts. Alternative 5 would contribute noticeable adverse effects to cumulative impacts to soundscapes in the park, but little to no long-term cumulative impacts in residential areas.

Y KNF NHG"

I WEFPI 'TGI WNCVIQPU'CPF'RQNEKGU'

The NPS Organic Act of 1916 and the NPS *Management Policies 2006* (NPS 2006a) directs parks to provide for the protection of park resources. The NPS *Management Policies 2006* states, “The National Park Service will maintain as parts of the natural ecosystems of parks all plants and animals native to park ecosystems. The term “plants and animals” refers to all five of the commonly recognized kingdoms of living things and includes such groups as flowering plants, ferns, mosses, lichens, algae, fungi, bacteria, mammals, birds, reptiles, amphibians, fishes, insects, worms, crustaceans, and microscopic plants or animals. The Service will successfully maintain native plants and animals by

- preserving and restoring the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant and animal populations and the communities and ecosystems in which they occur;
- restoring native plant and animal populations in parks when they have been extirpated by past human-caused actions; and
- minimizing human impacts on native plants, animals, populations, communities, and ecosystems, and the processes that sustain them.”

The landmark Everglades Restoration Act, which President Clinton signed on December 11, 2000, authorized federal spending to begin work projects under the CERP. Implementation of the plan greatly improves the quality, quantity, timing, and distribution of flows into the park and in doing so, restores and supports the natural wildlife of the park. Provisions in the plan support the return of the large nesting rookeries of wading birds to the park and the recovery of several endangered species.

CUUWO RVIQPU'O GVI QFQNI [.'CPF'KORCEV'KVGPUW['F GHP'KIQPU'

Information from park staff and publications was used to identify baseline conditions for wildlife. Available information was also taken from other NPS and non-NPS entities to describe these resources in more detail. In general, it was assumed that there would be impacts on wildlife during the construction phase, as well as post-construction effects. The primary steps taken in assessing impacts on wildlife included determining the following:

1. Which species are found in areas likely to be affected by management actions described in the alternatives
2. Habitat/vegetation loss or alteration caused by the alternatives
3. Displacement and disturbance potential of the actions and the species' potential to be affected by construction or future use and management activities.

Analysis of possible impacts on wildlife was based on review of existing literature and maps, information provided by the NPS and other agencies, experience related to effects of transmission line construction, and professional judgment.

The following definitions were used to determine the magnitude of adverse impacts on wildlife:

- **Pgi nli kdlg:** There would be no observable or measurable impacts on native species, their habitats, or the natural processes sustaining them. Impacts would be well within natural fluctuations.
- **Olpqt:** A change in effects on wildlife would be localized within a small area. The change would be measurable or perceptible in terms of abundance, distribution, quantity, or quality of populations. While the mortality of individual animals might occur, the viability of wildlife populations would not be affected and the community, if left alone, would recover. Impacts would be detectable and are expected to be outside the natural range of variability.
- **Oqf gt cvg:** A change in effects on wildlife would occur over a relatively large area. The change would be readily measurable in terms of abundance, distribution, quantity, or quality of populations. Impacts would be outside the natural range of variability. Disruptions to key ecosystem processes that would be outside natural variation might occur, but the ecosystem would soon return to natural conditions. Mitigation measures would probably be necessary to compensate for adverse effects and would likely be successful.
- **Oclqt:** A change in effects on wildlife would be readily apparent, and would substantially change wildlife populations over a large area in and out of the park. Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and would be expected to be outside the natural range of variability or be permanent. Key ecosystem processes might be disrupted. Loss of habitat might affect the viability of at least some native species. Extensive mitigation would be needed to compensate for adverse effects, and its success would not be ensured.

CPCN[UK'CTGC"

The area of analysis for wildlife (except avian species) includes the general project area. This includes the NESRS in the EEEA, the 8.5-square-mile area east of the park, WCA 3B and the Pennsuco wetlands north of the park, and extending to the urban development boundary to the east of the park (see "Figure 4: General Project Area," in chapter 1). The area of analysis for wildlife is focused on areas of disturbance along the possible transmission line corridors plus adjacent areas likely to experience adverse effects from noise of equipment and construction crews (see the "Soundscapes" section). For avian species, the area of analysis extends to the nearby foraging areas for wading birds, including areas around the coast to the southeast and the Pennsuco wetlands to the northeast, which includes the FPL corridor extending from Clear Sky to Pennsuco substations.

KO RCEVUQH'CNVGT'PCVKG'3C<P Q'P RU'CEVIQP'6'P Q'HRN'E QPUVTWEVIQP "
***GP XKTQPO GPVCN'DCUGNRP'G+ "**

KO rcew'qht'vj g'Ncpf 'Ces wklkqp'Cevkqp "

Under alternative 1a, there would be no legal changes to the property's status or ownership and FPL would not grant NPS a flowage easement. Therefore, there would be no physical change to the land, so there would be no direct impacts on wildlife. Alternative 1a would result in continued indirect, long-term moderate to major adverse impacts on wildlife, depending on the species being impacted, due to continued habitat degradation from altered hydrology. Impacts on wetland dependent species are expected to be major adverse, while impacts on non-wetland dependent species are expected to be moderate adverse. Habitat restoration and wildlife management efforts within the park would be hindered by FPL ownership of the parcel and the lack of a flowage easement, or sufficient interests in these properties, to

flow additional water across the FPL West Secondary Corridor. Alternative 1a would result in negative impacts on wildlife.

Kō rcew'q̄h'Vtcpuo kulkp'Nlpg'Eqpwt wevkp''

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts on wildlife.

Ewo wevk'Kō rcew'δ'Cngt pcvk'g'3c''

The past, present, and reasonably foreseeable future actions impacting wildlife include the acquisition of lands in the expansion area under the Expansion Act and all present and future actions aimed at restoring habitat and delivering additional freshwater to the park. These projects would not all be completed as planned due to the inability to flow enough water over the FPL West Secondary Corridor to establish hydrologic restoration goals, a long-term moderate to major adverse impact. The overall direction of the GMP to preserve park resources would indirectly benefit the wildlife in the park. Other projects in the area of analysis with adverse effects on wildlife include ongoing urban development, road construction and use (car collisions), ongoing mining (minor to moderate adverse from habitat loss and direct mortality). Park plans and projects that can affect wildlife include periodic prescribed burns (short-term adverse impacts from the burning; long-term benefits from reduction in extreme wildfire risk), and vegetation (exotic plant) management, which benefits wildlife by eliminating nonnative plants and improving natural habitat. Alternative 1a would result in moderate to major adverse impacts because of the lack of flowage and would contribute appreciable adverse impacts to the overall cumulative effects on wildlife in this area.

Eqpenwukp'δ'Cngt pcvk'g'3c''

There would be no direct impacts on wildlife from the land acquisition action. Long term, moderate to major, indirect adverse impacts are expected to wildlife due to continued FPL ownership of land within the park and the lack of a flowage easement. FPL ownership of land within the park and the inability to increase water levels across the FPL West Secondary Corridor is expected to hinder habitat restoration efforts. Since construction of transmission lines are not included as part of this alternative, there would be no impacts on wildlife from construction. Alternative 1a would contribute appreciable adverse impacts to the overall cumulative effects on wildlife in this area.

Kō RCEVUQH'CNVGTP CVK'G'3D<P Q'P RU'CEVQP'δ'HRN'EQPUVTWEVQP'K'VJ G'RCTM''

Kō rcew'q̄h'vj g'Ncpf 'Ces wukp'Ce'vkp''

Impacts would be the same as alternative 1a, with no direct impacts but with continued long-term moderate to major adverse impacts on wildlife, depending on the species being impacted, due to continued habitat degradation from altered hydrology.

Kō rcew'q̄h'Vtcpuo kulkp'Nlpg'Eqpwt wevkp''

I gpgtcdEqpwt wevkp/tgrvgf 'Kō rcew'

During construction, there would be construction equipment and associated noise in the vicinity of the construction area which may disrupt wildlife behaviors and travel patterns. If helicopters are needed during construction, they would introduce additional noise and disruption. The construction noise and activity may also temporarily drive some species out of the vicinity during the construction period.

Impacts would also occur due to ground disturbance and vegetation removal or treatment in work areas outside the access road and pad areas (see the “Vegetation and Wetlands” section) during the construction period; this would result in a temporary loss of nesting, resting, and foraging habitat along the corridor. Impacts on wildlife behavior from construction noise and activity and temporary ground disturbance are anticipated to be short term and adverse. The magnitude of these temporary adverse impacts would range from minor (if they are in non-critical periods) to moderate (occurring in breeding or nesting season). Less motile species may not be able to move out of the construction area and may be injured or killed during construction activities. Impacts from death of individual animals would be adverse, temporary, and minor as death of individual animals is not expected to have population impacts on non-special-status species.

Construction of access roads and structure pads would result in permanent loss of habitat for some species (see the “Soils” and “Vegetation and Wetlands” sections for details on acres lost). These activities may also fragment habitat, creating more edge habitat. The creation of edge habitat can allow nonnative species to invade an area and further reduce habitat quality. The loss or modification of habitat due to construction of the transmission lines and associated access roads would have long term minor to moderate adverse impacts, depending on the type of habitat impacted and the species that use the habitat.

I gpgt cñNlpg'O clpvpcpegót grvgf 'Kō rcevu'

Line maintenance would be done about once every 2 years and would consist of line surveys conducted by helicopter and/or vehicle using the access road that was constructed. Noise from these activities would cause impacts similar to those from vehicle use and helicopter use during construction, but there would be less equipment used and lower noise levels for ground work. Therefore, there would be short-term minor to moderate adverse impacts.

Hkij 'čpf 'Qvj gt 'Cs wčle'Urgelgu'

Impacts on fish and other aquatic species from construction activities should be short term and minor adverse. Appropriate erosion and sedimentation control measures would be implemented during construction to prevent degradation of adjacent water bodies. Transmission line construction stormwater discharges released into waters of the state would be addressed through compliance with Rule 62-621.300(4) (Generic Permit for Stormwater from Large and Small Construction Activities). Culvert sizing for the access roads and structure pads in extensive wetland areas would be based on appropriate hydrological studies and comply with applicable codes and requirements. Where construction of access roads and structure pads is required in wetlands, turbidity screens and erosion control devices would be used to minimize construction impacts on wetlands and water bodies and ensure that state water quality standards for turbidity are met. Species using wetland environments would experience a permanent loss of habitat due to filling of wetlands for structure pads and access roads. Impacts related to wetland habitat loss are expected to be long term, moderate, and adverse. The filling of wetlands for access roads may create a barrier for movement of certain species. This impact can be mitigated by proper culvert design to accommodate wildlife passage. The impacts of access roads on movement of aquatic wildlife are expected to be long term, moderate adverse depending on culvert or wildlife crossing design. The lack of a flowage easement is expected to have continued adverse impacts on aquatic fauna since the inability to flow additional water across the FPL property is expected to hinder habitat restoration efforts.

Co r j kñlcpu'čpf 'Tgr wñgu'

Amphibians and reptiles are most vulnerable during colder or drier periods when they go into a dormant condition. During these periods, the animals are not able to quickly react to changing conditions. If construction activities were to take place during a period when amphibians and reptiles were dormant,

many individuals would not be able to flee from the area of possible relocated corridor and would be injured or killed. This would represent a short term minor to moderate adverse impacts. Construction activities may also temporarily disrupt amphibian and reptile behavior resulting in short term minor to moderate adverse impacts. Amphibians and reptiles may experience a loss of habitat due to construction of structure pads and access roads. This is a long-term moderate adverse impact. The lack of a flowage easement is expected to have continued adverse impacts on amphibians and reptiles since the inability to flow additional water across the FPL property is expected to hinder habitat restoration efforts.

Dk f u'

The behavior of bird species may be impacted by construction noise and traffic. The greatest impacts on avian species would occur if construction took place during breeding and nesting periods. Impacts on avian behavior related to construction noise and traffic are expected to be short term, minor to moderate, adverse depending on the season. Construction of structure pads and access roads would also result in a loss of foraging and nesting habitat for avian species. The loss of these habitats would have long-term moderate adverse impacts. The lack of a flowage easement is expected to have continued adverse impacts on birds since the inability to flow additional water across the FPL property is expected to hinder habitat restoration efforts. This effect may be more impactful on bird species whose main prey is aquatic species. Many bird species known in this area are also listed as endangered or threatened by USFWS and the state; these impacts are discussed in more detail in the “Special-status Species” section.

Construction of the transmission lines would create a permanent electrocution and strike hazard for bird species from structures, lines, and guy wires and can result in injury or death to individuals (APLIC and USFWS 2005). Although birds from a wide range of taxa and feeding guilds are exposed to these direct risks, wading birds (such as herons, egrets, storks, and cranes) are of particular concern because they make up such a large and important component of the birds found in Everglades region of South Florida. Wading birds are behaviorally predisposed to collision due to their large size, which makes it difficult for them to take evasive action when confronted with flight obstacles. Raptors (especially snail kites, hawks, falcons, vultures, and owls) are known to experience direct mortality from collision and electrocution (Madders and Whitfield 2006). Specifically, waders and raptors are both morphologically and behaviorally more vulnerable than many other birds and have greater risk of electrocution and collision from electric utility structures, lines, and guy wires (APLIC 2006; Hunting 2002). However, all birds that fly in flocks (such as songbirds, plovers, gulls, ducks, geese, and cranes) near lines and structures are susceptible to collisions due to their reduced ability to see and avoid obstacles (Exponent 2013). In the southeast United States, birds of prey (raptors, eagles, and owls) are especially vulnerable to electrocution because of their size, relative rarity as top-of-the-food chain predators, hunting behavior that can entail soaring at heights that can correspond to the height of transmission and distribution towers and lines, or hunting from perched positions on transmission and distribution structures. Electrocution may occur when a bird or other organism completes an electric circuit by simultaneously touching two energized parts or an energized part and a grounded part of electrical equipment. Most electrocutions occur on medium-voltage distribution lines (4 to 34.5 kV), in which the spacing between conductors may be small enough to be bridged by birds. Poles with energized hardware, such as transformers, can be especially hazardous, even to small birds, because poles contain numerous, closely spaced energized parts (APLIC and USFWS 2005). Even with adequate separation distances on utility structures, scavengers and predatory species that may perch on transmission line structures, such as vultures and herons, can be electrocuted when they expel large streams of excrement, called streamers that span from an energized conductor to another transmission line structure (APLIC 2006).

The risk of electrocution to raptors and other birds that perch and nest on transmission structures can be reduced, but not eliminated, by incorporating avian-safe design measures (increased separation between energized and/or grounded structures, conductors, hardware, etc.) and avian protection devices (perch

diverters, etc.). Similarly, line strikes may be reduced, but not eliminated, by installation of line markers to enhance the visibility of the transmission lines to avian species. However, proximity to transmission lines is a major risk factor for birds and the key recommendation for minimizing risk of collision mortality of flying birds or electrocution from birds landing on wires or tower is to avoid siting new transmission lines on or near to important bird flight paths (APLIC and USFWS 2005; APLIC 2006).

In 2010, the NPS conducted an evaluation of the potential impacts of placing FPL transmission lines in Everglades National Park. The report identified nine risk factors at Everglades National Park for avian injury and mortality resulting from contact with transmission lines:

1. Abundance and diversity of species that produce streamers
2. Transmission line crosses major wetland system
3. Transmission line crosses foraging, roosting, or nesting sites
4. Transmission line crosses migratory route
5. Abundance and diversity of roosting and/or breeding/nesting birds
6. Abundance and diversity of juvenile avian species
7. Abundance and diversity of nocturnal and crepuscular species
8. Abundance and diversity of birds with morphology susceptible to transmission line collisions (i.e., high wing loading ratio, such as wading birds and waterfowl)
9. Presence of federally and state-listed threatened and endangered avian species and special-status species.

An avian risk assessment (ARA) was conducted as part of this EIS to attempt to estimate the relative risk to avian species from each of the alternatives (Exponent 2013). The Relative Risk Model and method as described by Landis and Wiegers (2004) was used to perform this assessment. The Relative Risk Model methodology integrated the following information:

- Proximity of each transmission corridor (a hypothetical corridor was chosen in the area of possible relocated corridor for comparison purposes) to a particular species and/or group of birds.
- Linkage of bird species with particular habitat types and/or known locations of concentration areas (foraging, resting, breeding areas etc.) in order to identify preferred habitats.
- Estimation of preferred avian habitats potentially impacted by each of the three corridors under consideration.

The analysis relied upon a variety of existing avian survey data from both the scientific literature as well as data provided by the NPS. Because proximity to transmission lines and towers is a known risk factor for birds (APLIC and USFWS 2005; APLIC 2006), the approach to quantify relative risk among the three corridors was to focus on the spatial juxtaposition of avian resources relative to the location of each corridor. As such, a transmission corridor that is closest to a particular avian resource, such as a multispecies colony, an individual nest of a critical species, or an important foraging habitat, was construed as posing a greater risk of collision or electrocution than a corridor that is further from a resource (APLIC and USFWS 2005; APLIC 2006). For all three corridors, quantified risks were associated with the entire corridor of each lines, which included the corridor sections that were unique to each line *plus* the sections referred to as “Common to All” (figure 48).

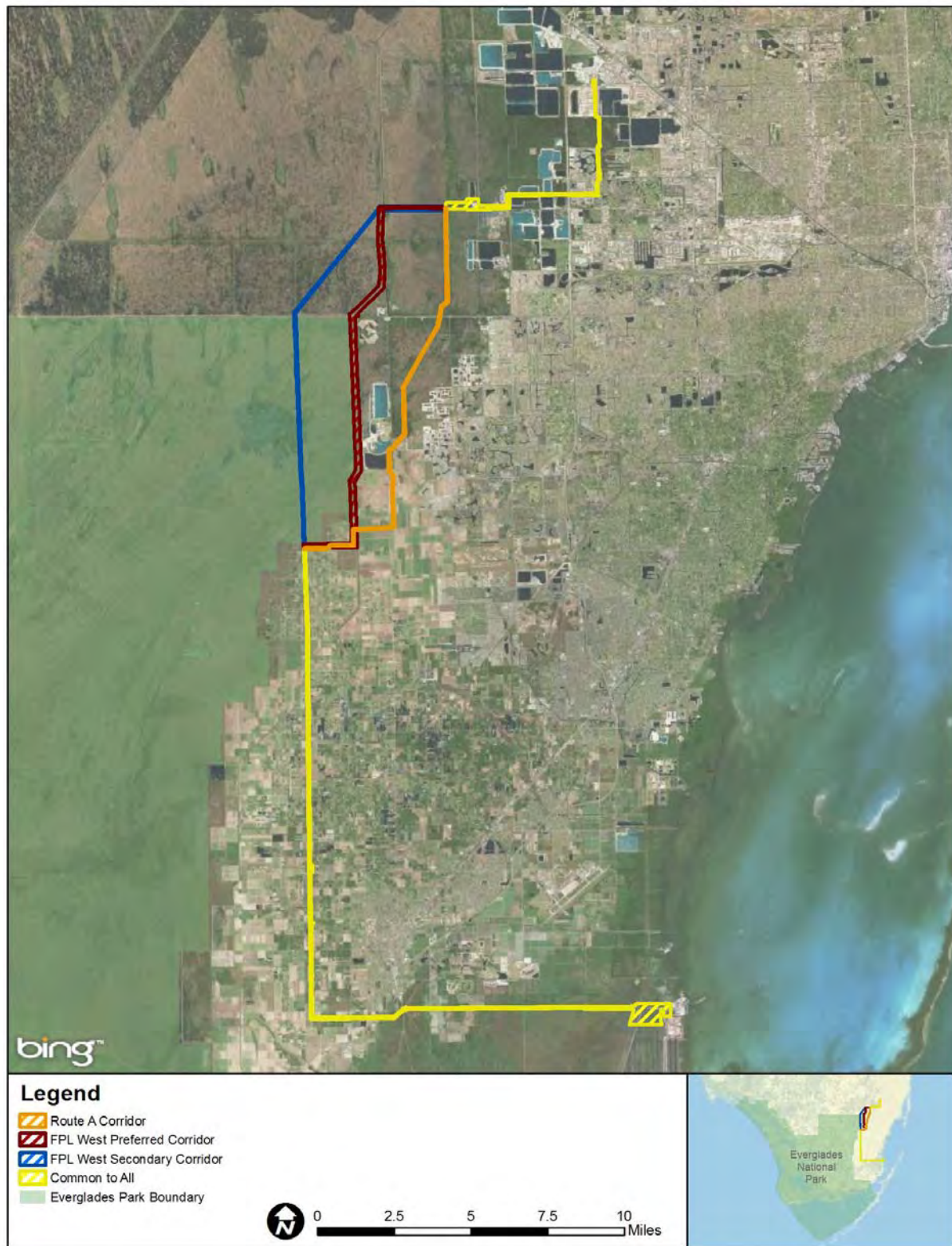


FIGURE 48: CORRIDORS EXAMINED IN THE AVIAN RISK ASSESSMENT

In the ARA (Exponent 2013), the relative risk of three potential transmission lines to 47 species from 23 different avian families was compared. The transmission lines are in the vicinity of the park and Biscayne National Park. Some focal species had multi-year survey data available, which included locations and number of birds either nesting or foraging (snail kite, wood stork, multiple waterbird species). For these species, relative risk was determined based on the available GIS data, comparing the average distance and number of birds associated with each location to the three potential corridors. A habitat-based risk assessment was also conducted based on the GIS data, such that average distances from preferred foraging habitats, as identified by the GIS data, to each potential transmission corridor, was calculated. Risks to wood stork and Everglade snail kite were examined separately and the results of the assessment are presented in the “Special-status Species” section and in appendix J.

The data-based relative risk assessment looked found that for all 16 species included in this portion of the ARA, a hypothetical corridor in the area of possible relocated corridor (Route A corridor in the ARA) presented the least risk to birds, and the FPL West Secondary Corridor posed the most risk. However, for brown pelican, double crested cormorant, and reddish egret, there were no differences in relative risk between the three corridors, because only one data point was available for each. Therefore, the data-based relative risk assessments were not reliable for these three species.

The data-based relative risk assessment results were based on past survey data that included both locations and number of birds present at each location. This data set was limited, however, to the park and Biscayne National Park areas—very few studies included data outside the park boundary, although potential habitat does exist in those places. To address this lack of data outside the park boundary, the historical survey data set was linked in GIS to land use / landcover data. Each location was counted, to determine in which preferred habitats each species was found most often. The results based on preferred habitats were similar to those discussed above, such that for all focal species, the hypothetical corridor within the area of possible relocated corridor posed the least risk to birds, while the FPL West Secondary Corridor posed the most risk. The exception was the reddish egret, for which the limited data suggested that the FPL West Secondary Corridor posed the least risk, and the hypothetical corridor posed the most risk.

The remaining 31 focal species used in the ARA did not have specific data sets available for analysis, so a habitat-based approach to relative risk was used. This analysis considered all potential habitats within the 30-mile radius of the transmission corridors. The average distance of preferred habitats to each of the transmission corridors was calculated in GIS. For 25 of the 31 focal species, the habitat-based assessment indicated that the hypothetical corridor in the area of possible relocated corridor posed the least risk, and the FPL West Secondary Corridor posed the most risk. For the remaining 6 birds (bobolink, eastern meadowlark, loggerhead shrike, barn owl, crested caracara, and northern harrier), the opposite was true: the FPL West Secondary Corridor posed the least risk, the FPL West Preferred Corridor posed intermediate risk, while the hypothetical corridor posed the most risk, based on potential habitat analysis.

Species that use wetlands and associated water-based habitats are more likely to be found closer to the FPL West Secondary Corridor, and therefore experience higher risk as a result. In contrast, birds that use upland habitats to a greater extent would be at higher risk due to the proximity of the hypothetical corridor to those types of habitats. In all instances, the FPL West Preferred Corridor posed the intermediate in risk to all species.

Avian electrocutions and strikes on transmission lines and guy wires are considered long-term adverse impacts. The magnitude of the impact would vary from minor to moderate (for non-special-status species) depending on the species and the avian protection measures employed during design of the lines.

Oco o cm'

Construction noise and traffic may impact mammal behavior. Impacts on behavior would likely be greatest during breeding and birthing seasons. There would be short-term minor to moderate adverse impacts depending on when construction takes place. Large mammals, such as white-tailed deer, are expected to move out of the area of possible relocated corridor due to the noise and traffic, and re-enter the area after construction is completed. This temporary displacement would have a short term minor to moderate adverse impact. Small mammals may be less likely to disperse from the construction area during periods of torpor or hibernation when their physiological processes are slowed down due to colder temperatures. If there is construction during these periods, small mammals may be injured or killed. This is considered a short-term moderate adverse impact. The permanent loss of habitat associated with construction of the transmission lines would result in long-term moderate adverse impact on mammals.

Ewo wcvkg'kō rcew'ō'Cngt pcvkg'3d''

The cumulative impacts on wildlife from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 1b would contribute short- and long-term moderate to major adverse impacts from lack of a flowage easement and from construction of the transmission line without a flowage easement in the FPL corridor; these impacts would contribute appreciable adverse impacts to the overall cumulative effects on wildlife in this area.

Eqpenwukp'ō'Cngt pcvkg'3d''

Under alternative 1b, the lack of a flowage easement is expected to have moderate to major adverse impacts on wildlife since the inability to increase water levels across the FPL property is expected to hinder habitat restoration efforts. Short- to long-term minor to moderate adverse impacts would be expected on wildlife (fish and other aquatic species, amphibians and reptiles, birds, and mammals) from construction and operation of transmission lines and associated access roads within the FPL West Secondary Corridor. Short-term impacts would typically be related to construction or maintenance activities and would generally be minor adverse. Long-term moderate adverse impacts would be from permanent habitat loss due to transmission line structure pads and access roads. Avian collisions with transmission lines, guy wires, and structures as well as electrocution would be additional sources of long-term moderate adverse impacts. Certain groups of birds are more susceptible to collision and electrocution due to their behavior or morphology and may be impacted more from the construction and operation of the transmission lines than other groups of birds. Alternative 1b would contribute appreciable adverse impacts to the overall cumulative effects on wildlife in this area.

Kō RCEVUQH CNVGTP CVKG'4<P RU'CES WUKVQP'QH HRN'NCPF "

Kō rcew'qhv'j g'Ncpf 'Ces wukvqp'Cevkp''

Under alternative 2, land acquisition would remove a large area of non-NPS ownership of land in the interior of the park, ensuring that no other development would be proposed in this area and that the various Everglades ecosystem restoration projects could occur without any obstacles relating to the presence of this parcel. This would result in indirect long-term benefits to wildlife. The connectivity of the EEEA wetlands would be ensured and a potential source of nonnative vegetation not under NPS control would be removed. Placing ownership of this area solely with the NPS would enhance the ability to provide more natural water flows to the park, which in turn would enhance the conservation of the resources and values of the park, including wildlife, a long-term beneficial impact. The park would realize a net gain of 320 acres of land within the park boundary, which would result in a long-term beneficial direct impact on wildlife.

Kō rcew'qhi'Vtcpuo kulkp'Nkpg'Eqpum wewkp''

Under alternative 2, FPL would build two 500-kV lines and one 230-kV line to the east of the park in the area of possible relocated corridor. Similar to alternative 1b, there would be minor to moderate adverse impacts on wildlife, depending on the species and duration; however, impacts on wetland habitats are expected to be less in the area of possible relocated corridor; therefore, impacts on species that use these habitats would be less if construction took place outside the EEEA. In general, there are fewer wetland areas in the area of possible relocated corridor than in the EEEA and the wetlands are of lower quality due to hydrologic alteration and the presence of nonnative species. Impacts on wading birds are expected to be less than under alternative 1b due the increased distance of the lines from known colonies (Exponent 2013). Impacts on wildlife within the park would be lessened under this alternative, but species that also utilize habitat outside the park may still experience impacts.

Ewo wvkg'Kō rcew'

The cumulative impacts on wildlife from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 2 would allow flowage/implementation of the restoration projects and benefit wildlife, but would also result in short and long term minor to moderate adverse impacts from construction of the transmission line in areas outside the park; these impacts would contribute appreciable beneficial and noticeable adverse impacts to the overall cumulative effects on wildlife in this area.

Eqpenwukp''

Under alternative 2, there would be benefits of the acquisition of the FPL-owned land within the park boundary due to removal of a large area of non-NPS ownership of land in the interior of the park. This would ensure that no other development would be proposed in this area and that the various Everglades ecosystem restoration projects could occur without any obstacles relating to the presence of this parcel, which would be a benefit to wildlife. Adverse impacts would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park and would range from short to long-term minor to moderate adverse impacts on wildlife. Impacts on species dependent on wetland habitats and impacts on wading birds are expected to be less in the area of possible relocated corridor compared to construction within the park because of the reduced quality of the wetlands compared to those within the park, but species that utilize habitat outside the park would be adversely affected. Alternative 2 contribute appreciable beneficial and noticeable adverse impacts to the overall cumulative effects on wildlife in this area.

Kō RCEVUQH'CNVGTP CVKG'5<HGG'HQT'HGG'NCPF'GZEJ CPI G''

Kō rcew'qhi'vj g'Ncpf 'Ces wukp'Ceukp''

Long-term indirect beneficial impacts would accrue from alternative 3 similar to alternative 2. As a result of the exchange, the park would realize a net gain of 60 acres of higher value wetlands. The exchange corridor given to FPL would be 260 acres of mostly wetlands located at the edge of the park, close to developed areas, with high coverage of nonnative plants, which thereby reduces its value as wildlife habitat. The FPL corridor gained by the park would be 320 acres that is further from developed areas and has fewer nonnative species.

Although the park would realize a net gain of 60 acres from the exchange, alternative 3 would result in the loss of 260 acres of habitat in exchange corridor. The loss of park habitat (260 acres) and the loss of

ability to maintain the habitat in the exchange corridor per NPS standards is considered a long-term major adverse impact on wildlife.

Ko rcew'qhvij g'Vt cpuo hukp'Nlpg'Eqpwt wevkp''

Impacts on wildlife under alternative 3 with construction of the transmission lines along the FPL West Preferred Corridor would generally be similar to those described for alternative 1b, but impacts would be lessened due to implementation of the terms and conditions of the land exchange (appendix G). Impacts on wading bird species are also expected to be less than alternative 1b because of the increased distance from the transmission lines to known nesting colonies. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in that area. NPS will no longer own or control the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange would minimize impacts on wildlife to the maximum extent practicable.

Impacts on wildlife from vegetation management in the nonnative vegetation management easement would occur due to access and vegetation management activities. Impacts would include disturbance from equipment and access by foot. Intensity would depend on frequency of treatment, area treated, and type of equipment and chemicals used for vegetation management activities.

Impacts on wildlife species would likely be reduced, especially for avian and bat species, due to requirements imposed by the terms and conditions of the land exchange (appendix G). Terms and conditions applicable to wildlife include:

- The FPL Fee Property will be subject to a perpetual flowage easement. FPL will allow the perpetual right, power, privilege and easement in, upon, over, and across the property for the purposes of overflowing, flooding, and submerging said property lying at a level consistent with hydrologic restoration requirements.
- Requirement to allow future use of the FPL Fee Property in furtherance of ecosystem restoration and/or environmental projects that would not interfere with FPL's proposed use of the property for utility-related facilities.
- Requirement for a resource stewardship plan. The initial resource stewardship plan shall address management of the FPL Fee Property and specifically efforts by FPL to avoid and minimize impacts on park resources to the maximum extent practicable. The resource stewardship plan shall address topics such as control of nonnative and exotic species, fire management, provisions allowing ecosystem restoration activities to go forward, natural resource monitoring, impacts on visitor use and recreational opportunities on adjacent park property, access control, and visitor and resource protection activities.
- Requirement for plans to avoid or minimize impacts on wetlands; manage pollution, contaminants, hazardous materials; control erosion and sedimentation; and control exotic and invasive species.
- Requirement for pre-construction and construction surveys for plants, wildlife, and habitat.
- Requirement for an avoidance, minimization, and mitigation plan for impacts on special-status species.
- Requirement for avian and bat protection:
 1. All utility-related infrastructure shall be constructed, operated, and maintained utilizing state-of-the-art practices to eliminate or reduce injury/mortality of avian and bat species to the maximum extent practicable. These practices shall include mitigation measures that follow

appropriate guidelines, including but not limited to Avian Power Line Interaction Committee guidelines, both during and after construction, including operations and maintenance activities. In locations where NPS determines, in consultation with FPL, that maximizing the level of protection of avian species is warranted, guy wires will not be used to the maximum extent practicable. Transmission structure spacing and sizing will be varied to lower certain structures or stagger the normal span distances in areas in proximity of wading bird colonies to minimize possible interactions. Other design alternatives may also be available in certain locales. Measures for eliminating or reducing injury/mortality of avian and bat species would all be evaluated in consultation with appropriate agency personnel prior to implementation.

2. Prior to commencing any construction, FPL shall develop a detailed pre- and post-construction avian and bat protection plan with concurrence of NPS and input from other appropriate federal and state agencies. The plan shall reflect the requirements for avian protection required by appropriate regulatory authorities. The plan will include pre- and post-construction monitoring to address avian and bat flight presence, flight level, position, and frequency in flight in relation to the transmission line configurations. The plan will focus on federal- and state-listed species in the vicinity of the proposed transmission route and assess impacts of transmission infrastructure on their populations. The pre-construction study will be conducted during an appropriate time period agreed upon by NPS and other appropriate federal and state agencies prior to initiating construction to address data variations related to inter-annual variation in the location and quality of habitat and food resources, and climatic variability. The study will be conducted throughout the year to address seasonal migratory species and flight patterns. The plan will be reviewed and updated on an annual basis.

The implementation of the terms and conditions represent an attempt at minimization of the overall impacts on wildlife by requiring FPL to avoid, minimize, and mitigate impacts on park resources during the construction and operation of the transmission lines within the FPL West Preferred Corridor.

Ewo wewkg'Kō rcew'

The cumulative impacts on wildlife from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Although, alternative 3 would allow flowage/implementation of the ecosystem restoration projects and benefit wildlife, the land exchange and construction of the transmission line in the exchange corridor would result in short- and long-term minor to moderate adverse impacts. These impacts would contribute noticeable adverse and appreciable beneficial impacts to the overall cumulative effects on wildlife in this area.

Eqpenwukp''

Under alternative 3, there would be long-term benefits to wildlife because the exchange would remove a large area of non-NPS ownership of land in the interior of the park, ensuring that no other development would be proposed in the FPL corridor and that the various Everglades ecosystem restoration projects could be implemented without any obstacles relating to the presence of this parcel. However, there would be a long-term major adverse effect of removing 260 acres of habitat from the park. Impacts on wildlife from transmission line construction under alternative 3 would be similar to those described for alternative 1b. However, impacts on wildlife would be reduced by moving the construction of the transmission lines from the relatively unimpacted contiguous wetlands in the interior of the park (FPL West Secondary Corridor), to the edge of the park (FPL West Preferred Corridor). The FPL West Preferred Corridor is generally less desirable habitat due to its proximity to already disturbed upland and wetland areas outside the park. Impacts on wading bird species are also expected to be less than alternative 1a because of the increased distance from the transmission lines to known nesting colonies. NPS acquisition of the FPL

West Secondary Corridor would allow for application of NPS policies and procedures in this area. NPS would no longer control the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange would minimize impacts on wildlife to the maximum extent practicable. Alternative 3 would contribute noticeable adverse and appreciable beneficial impacts to the overall cumulative effects on wildlife in this area.

KO RCEVUQH'CNVGT'PCVKG'6<G'UGO GP V'HQT'HGG'NCPF'GZEJ CPI G''

KO rcew'qht'ij g'Ncpf 'Ces wukqp'Cevkp''

Under alternative 4, the NPS would acquire fee title to the FPL property (FPL West Secondary Corridor) through an exchange for an easement on NPS property (exchange corridor). The indirect impacts on wildlife would be long term beneficial as described under alternative 3, but with terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance or removal of habitat. Unlike alternative 3, alternative 4 would not have a major adverse impact due to loss of habitat because there is no loss of park acreage. Terms and conditions are found in appendices G and H.

KO rcew'qht'Vtcpuo kukqp'Nkpg'Eqpwt wevqp''

While FPL would not own the property, impacts on wildlife would be the same as described under alternative 3. There are no substantial differences in the terms and conditions for species protection under this alternative and no expected differences in how wildlife would be treated under an easement as opposed to under fee ownership, given the mitigation that FPL included in its SCA and expected conditions in the required resource stewardship plan.

Ewo wvkg'KO rcew'

The cumulative impacts on wildlife from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 3. Alternative 4 would allow flowage/implementation of the ecosystem restoration projects and benefit wildlife, but the land exchange and construction of the transmission line in the exchange corridor would result in short and long term minor to moderate adverse impacts; these impacts would contribute a noticeable adverse and appreciable beneficial impacts to the overall cumulative effects on wildlife in this area.

Eqpewukqp''

Under alternative 4, there would be benefits to wildlife as described under alternative 3, but with terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance or removal of wildlife habitat. Overall impacts on wildlife would be short- to long-term, minor to moderate adverse, and impacts on wildlife species may be reduced, especially for avian and bat species, due to requirements imposed by the terms and conditions of the land exchange. Alternative 4 would contribute noticeable adverse and appreciable beneficial impacts to the overall cumulative effects on wildlife in this area.

KO RCEVUQH'CNVGT'PCVKG'7<RGTRGVWCN'HNQY CI G'G'UGO GP V'QP'HRN'RTQRGT V[''

KO rcew'qht'ij g'Ncpf 'Ces wukqp'Cevkp''

There would be minor to moderate direct adverse effects from the continued inability to manage the corridor as NPS lands (i.e., FPL ownership of the parcel would hinder habitat restoration and wildlife

management efforts within the park), thereby negatively impacting wildlife. However, alternative 5 would have a flowage easement on the FPL parcel in the EEEA, resulting in indirect long-term benefits to wildlife. With this flowage easement, there would be no impediments to ecosystem restoration projects from future use of this parcel, which would benefit park resources, including wildlife, by allowing for habitat restoration.

Kō rcew'qhiVtcpuo kulqp'Nlpg'Eqput wevkqp''

Impacts of transmission line construction on wildlife under alternative 5 would be very similar to those described under alternative 1b, except NPS would acquire a perpetual flowage easement over the FPL property within the park (FPL West Secondary Corridor). This could result in some differences in construction and impacts, but it is not known at this time what the differences would be, since design is at a very preliminary stage.

Ewo wvdkg'Kō rcew'

The cumulative impacts on wildlife from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 5 would provide beneficial impacts because flowage easement would allow the ecosystem restoration projects to proceed. However, minor to long-term moderate adverse impacts would result from transmission line construction in the park with no gain of park protected habitat. These impacts would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on wildlife in this area; the benefits would not be as extensive as those under the alternatives that result in the acquisition of the FPL corridor in the park.

Eqpenwukqp''

Under alternative 5, impacts would be similar to those described under alternative 1b, but there would be long-term benefits from having a flowage easement that would allow ecosystem restoration projects that benefit park resources to proceed over time. However, there would be long-term minor to moderate adverse effects from the continued inability to manage the corridor as NPS lands. Short and long-term minor to moderate adverse impacts would result from the construction of the transmission lines in the FPL West Secondary Corridor. Alternative 5 would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on wildlife in this area; the benefits would not be as extensive as those under the alternatives that result in the acquisition of the FPL corridor in the park.

URGEKCN/UVCVWU'URGEKGU''

I wvfpI 'TGI WNCVIQPU'CPF'RQNEKGU''

The primary regulation governing this topic is the Endangered Species Act (ESA), 16 USC 1531-1543. The purpose of the ESA is to conserve “the ecosystem upon which endangered and threatened species depend” and to conserve and recover listed species. The ESA is a comprehensive conservation law administered by the USFWS and National Oceanic and Atmospheric Administration National Marine Fisheries Service. This act mandates that all federal agencies protect listed species and preserve their habitats.

The state of Florida also has regulations for the protection of threatened and endangered species. The Florida Endangered and Threatened Species Act (Title 28, Florida Statutes, Natural Resources Conservation, Reclamation, and Use, Chapter 372, Wildlife, Section 372.072) is the primary regulation in the state, and sets the policy to conserve and wisely manage these resources, as well as provide for

research and management to conserve and protect these species as a natural resource. This act also emphasizes coordination with state agencies, and outlines annual reporting requirements as well the development of specific biological goals for manatees.

The Endangered Species Protection Act (Florida Statutes Section 372.0725) prohibits the intentional wounding or killing of any fish or wildlife species designated by the Florida Fish and Wildlife Conservation Commission (FWCC) as “endangered,” “threatened,” or of “special concern.” This prohibition also extends to the intentional destruction of the nests or eggs of any such species.

The protection of endangered, threatened, or “commercially exploited” plants is addressed in the Preservation of Native Flora of Florida Act (Florida Statutes Section 581.185). Commercially exploited plants are defined as species native to the state which are subject to being removed in substantial numbers from native habitats in the state and sold or transported for sale. This act sets the policy for the state of Florida relating to these species, and includes several prohibitions covering the “willful destroying or harvesting” of such plants. It also contains an exemption for agricultural and silviculture uses.

NPS *Management Policies 2006* (NPS 2006a, Section 4.4.2.3) provides specific guidance for management of threatened or endangered plants and animals. These policies dictate that the NPS would survey for, protect, and strive to recover all species native to national park system units that are listed under the ESA. The NPS would fully meet its obligations under the NPS Organic Act and the ESA to both proactively conserve listed species and prevent detrimental effects on these species. This section also states that the NPS would inventory, monitor, and manage state and locally listed species in a manner similar to its treatment of federally listed species to the greatest extent possible. In addition, the NPS would inventory other native species that are of special management concern to parks (such as rare, declining, sensitive, or unique species and their habitats) and would manage them to maintain their natural distribution and abundance.

CUWO RVKPU 'O GVI QF QNQI [. 'CP F 'KORCEV'K VGPUN['F GHP'KQPU'

The USFWS and National Oceanic and Atmospheric Administration National Marine Fisheries Service guidance for implementing Section 7 consultation under the ESA uses the following terminology to assess impacts on federally listed species (USFWS and NMFS 1998):

Pq'Ghgev. This conclusion is reached if the proposed action and its interrelated and interdependent actions will not directly or indirectly affect listed species or destroy/adversely modify designated critical habitat. Formal Section 7 consultation is not required when the no effect conclusion is reached. **O c{ 'Chgev.'dw'ku'pqv'lngf 'vq' cf xgt ugnf 'Chgev.** This conclusion is appropriate when effects to the species or critical habitat are expected to be beneficial, discountable, or insignificant. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or habitat. Insignificant effects relate to the size of the impact (and should never reach the scale where take occurs), while discountable effects are those that are extremely unlikely to occur. Based on best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur. If the project scientist making the determination and the project manager agree that the project “is not likely to adversely affect” listed species or critical habitat, the intra-Service Section 7 consultation process is completed.

O c{ 'Chgev.'cpf 'ku'lngf 'vq'cf xgt ugnf 'Chgev. This conclusion is reached if any adverse effect to listed species or critical habitat may occur as a direct or indirect result of the proposed Service action or its interrelated or interdependent actions, and the effect is not

discountable or insignificant (see definition of “is not likely to adversely affect”). In the event the overall effect of the proposed action is beneficial to the listed species or critical habitat, but may also cause some adverse effect on individuals of the listed species or segments of the critical habitat, then the determination should be “is likely to adversely affect.” Such a determination requires formal Section 7 consultation.

Based on these impact levels, the following definitions were used to determine the magnitude of adverse impacts on special-status species:

- **Pgi nī kdg:** There would be no observable or measurable impacts on special-status species, their habitats, or the natural processes sustaining them in the proposed project area. This impact intensity would equate to a determination of “no effect” under Section 7 of the ESA.
- **Olpqt:** Individuals may temporarily avoid areas. Impacts would not affect critical periods (e.g., breeding, nesting, denning, feeding, resting) or habitat. This impact intensity would equate to a determination of “may affect, not likely to adversely affect” under Section 7 of the ESA. Critical habitat may be affected, but the essential physical and biological features of the critical habitat would not be affected.
- **Oqf gtcwg:** Individuals may be impacted by disturbances that interfere with critical periods (e.g., breeding, nesting, denning, feeding, resting) or habitat; and the level of impact may result in physical injury or mortality of individuals, but would not be expected to affect the population’s likelihood of persistence, or lead to extirpation or declines. This impact intensity would equate to a determination of “may affect, likely to adversely affect” under Section 7 of the ESA. Critical habitat may be affected and the essential physical and biological features of the critical habitat could be minimally affected.
- **Oclqt:** Individuals may suffer physical injury or mortality such that populations may decline, perhaps even substantially, or be extirpated from the park. Critical habitat and the essential physical and biological features may be affected. This impact intensity would equate to a determination of “may affect, likely to adversely affect” under Section 7 of the ESA.

CPCN[UKCTGC"

The area of analysis for special-status species is the same as for wildlife (except for selected avian species): it includes the general project area. This includes the NESRS within the EEEA, the 8.5-square-mile area east of the park, WCA 3B and the Pennsuco wetlands north of the park, and extending to the urban development boundary to the east of the park (see “Figure 4: General Project Area,” in chapter 1). The analysis is focused on areas of disturbance along the possible transmission line corridors plus adjacent areas that are likely to experience adverse effects from noise of equipment and construction crews. For avian species, the area of analysis extends to the foraging areas for wading birds in surrounding areas, including to the coast to the southeast and to the Pennsuco wetlands to the northeast and the FPL corridor extending from Clear Sky to Pennsuco substations. For special-status plant species, the area of analysis is limited to the construction disturbance area and long-term transmission line corridor along any of the corridor options in or outside of the parks and associated new access (if any).

KO RCEVUQH'CNVGTPCVKG'3C<P Q'P RU'CEVIQP '6'P Q'HRN'E QPUVTWEVIQP " ***GPXKTQPO GPVCN'DCUGNKG'G' "**

KO rcew'qht'ij g'Ncpf 'Ces wukvqp'Cevkqp "

Under alternative 1a, there would be no legal changes to the property's status or ownership and FPL would not grant NPS a flowage easement. Therefore, there would be no physical change to the land, so there would be no direct impacts on special-status species. Alternative 1a would result in continued long-term negligible to major indirect adverse impacts on special-status species, depending on the species being impacted and its level of wetland dependence, due to continued habitat degradation from altered hydrology. However, because there is no federal action associated with this alternative (the no-action alternative), Everglades National Park would not consult with USFWS under Section 7 of the ESA on this alternative. Accordingly, the NPS does not make Section 7 determinations for this alternative, but the impacts on each of the species are described relative to the impact definitions to allow comparison with other alternatives. FPL ownership of the parcel and the lack of a flowage easement, or sufficient interests in these properties, to flow additional water across the FPL West Secondary Corridor are expected to hinder habitat restoration and wildlife management efforts within the park, thereby negatively impacting special-status species. Impacts on special-status species from the lack of a flowage easement, or sufficient interests in these properties, to flow additional water across the FPL West Secondary Corridor are discussed in detail below.

KO rcew'qht'Vtcpuo kukqp'Nkpg'E qpvt wev kqp "

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts on special-status species.

Hgf gt cmf 'Nkmgf 'Ur gelgu' "

Six federally listed wildlife species potentially occur in the area of analysis: West Indian manatee, Florida Panther, Florida bonneted bat, wood stork, Everglade snail kite, and eastern indigo snake. Four federally listed plant species may occur in the area of analysis for the project, but surveys have not been carried to determine if they are present or not. For the purposes of this document, these species are considered to be potentially present.

Y gu'Kpf kcp'O cpcvvgg—The West Indian Manatee may occasionally be found in the SFWMD canals crossed by the FPL West Secondary Corridor. FPL's continued ownership of land within the EEEA and the lack of a perpetual flowage easement or sufficient interest or sufficient rights, on FPL's property in the EEEA to implement higher water levels needed for ecosystem restoration projects, is expected to have little impact on water levels within the canals in the project area where manatee are found and no effect on the manatee.

Hqhtkf c'Repvj gt—The Florida panther is known from the area of analysis, and the FPL West Secondary Corridor is within the Primary Zone of the Panther Focus Area. Prey species of the Florida panther that are more tolerant of continued drier conditions may become more abundant, while species that are more wetland-dependent become less abundant. Alternative 1a is expected to have long-term negligible adverse impacts on the Florida panther due to possible changes in prey species abundance and diversity in the EEEA.

Hqhtkf c'Dqppgvgf 'Dcv—There is a moderate probability of Florida bonneted bat roosting in the park in the vicinity of the FPL West Secondary Corridor on tree islands and in other areas with trees. The lack of

flowage rights is not expected to reduce the acreage of tree cover within the area of analysis, but there may be increase in tree cover or a change in tree community composition due to continued drier conditions in the EEEA. Long-term negligible adverse impacts may occur to the Florida bonneted bat due to FPL's continued ownership of land within the EEEA and the lack of a perpetual flowage easement or sufficient interest or sufficient rights, on FPL's property in the EEEA to implement higher water levels for ecosystem restoration projects.

Y qqf 'Uqtm—Four wood stork colonies are known from within 5 miles of the corridors in the vicinity of Tamiami Trail. The corridors are within the Core Foraging Area of these four colonies and other colonies. Table 26 presents the distance from the colonies to the corridors and the range of the number of nests present in the colonies over the last 5 years (South Florida Natural Resources Center at Everglades National Park 2011; NPS 2010b; Frederick, Simon, and Borkhataria 2009; USACE 2009, 2010; USACE and USGS 2010; USGS 2011).

Alternative 1a is expected to have a long-term major adverse impact on wood stork due to degradation and loss of foraging habitat. Without the supplemented water levels, the EEEA will continue to be subjected to dry periods which will result in soil loss and continuing poor quality wood stork foraging habitat during dry periods and reduced fledging success. These impacts could cause a population level decline in wood storks within the park.

TABLE 26: WOOD STORK COLONIES WITHIN FIVE MILES OF THE CORRIDORS

Wood Stork Colonies	FPL West Preferred Corridor (miles)	FPL West Secondary Corridor (miles)	Hypothetical Corridor (miles)	Number of Nests Present in the last 5 Years
Tamiami East 1	0.51	1.25	2.91	10–15 ^a
Tamiami East 2	1.53	0.25	3.87	20–30 ^a
Tamiami West (Coopertown)	2.81	0.96	4.94	50–1,300 ^b
3B Mud East	0.30	0.21	2.49	7 ^c

^aNo nests observed in 2007, 2008, and 2011.

^bNo nests observed in 2008.

^cNo nests observed in 2007, 2008, 2010, and 2011.

Gxgti n f g'UpcklMlg—The Everglade snail kite is known to nest in the eastern portion of the park near the FPL West Preferred Corridor and likely forages on apple snails in wetlands in the FPL West Secondary Corridor and throughout the EEEA. A continuation of limited and poor quality foraging habitat due to continuing dry conditions is expected to result in continuing poor reproductive success. Alternative 1a would have long-term major adverse impacts on the Everglade snail kite from continued poor reproductive success, including potential population declines within the park.

Gcuwgt p'Kpf li q'Upeng—The eastern indigo snake may occasionally occur in tree inlands and other upland areas within and adjacent to the FPL West Secondary Corridor. The eastern indigo snake may also forage within wetland areas within and adjacent to the FPL West Secondary Corridor. Alternative 1a is expected to have negligible adverse impacts on eastern indigo snakes. Because eastern indigo snakes use a wide variety of habitats and consume a wide variety of prey, the eastern indigo snake is expected to adapt to the continuing dry condition of the EEEA.

Dmf i gwa'Ukxgt dwj .I ct dgt a'Ur wti g.'Uc pf 'Hcz.'t pf 'Vlp{ 'Rqf i cte—These species do not occur within the FPL West Secondary Corridor due to lack of habitat. No effects on these species from FPL's continued ownership of land within the EEEA and the lack of a perpetual flowage easement or sufficient interest or sufficient rights, on FPL's property in the EEEA to implement higher water levels are expected since these species are not known to occur in this portion of the EEEA.

Uc wv/ikwgf 'Ur gelgu'

Gxgt i mf gu'U lpm—The Everglades mink is likely to forage in wetland areas within and adjacent to the FPL West Secondary Corridor. FPL's continued ownership of land within the EEEA and the lack of a perpetual flowage easement or sufficient interest or sufficient rights, on FPL's property in the EEEA to implement higher water levels, is expected to have a long-term moderate adverse impact on Everglades mink due to continued degradation and loss of foraging habitat. Without the supplemented water levels, the EEEA will continue to be drier than its historical norm and fewer areas will support the prey species needed to sustain the Everglades mink. Alternative 1a would have long-term moderate adverse impacts on the Everglades mink due to continued degradation and loss of foraging habitat.

Hqt kf c'Uc pf j knEtcpg—The Florida sandhill may occasionally forage within the FPL West Secondary Corridor, but does not nest in the EEEA. Since the Florida sandhill crane is known to forage within both wetland and upland habitats, alternative 1a is expected to have no impact on the Florida sandhill crane since the species is known to use both wetland and upland areas.

Y j kg/etqy pgf 'Rli gqp—The white-crowned pigeon may forage on the fruit of poisonwood trees (*Metopium toxiferum*) in the FPL West Secondary Corridor and in the rest of the EEEA, but it is not known to nest in the EEEA. Impacts on white-crowned pigeons from alternative 1a, FPL's continued ownership of land within the EEEA and the lack of a perpetual flowage easement or sufficient interest or sufficient rights, on FPL's property in the EEEA to implement higher water levels, are expected to be negligible adverse since poisonwood trees are found in both wetland and upland areas.

Nlo r nlp.'Nkwg'Dwng'J gt qp.'Upqy { 'Gi tgv.'Vtleqmt gf 'J gt qp.'t pf 'Tqugcvg'Ur qqpdkm—These wading birds are likely to forage in wetland areas within the park in the vicinity of the FPL West Secondary Corridor. Mixed rookeries of wading birds also occur in the vicinity of the FPL West Secondary Corridor. FPL's continued ownership of land within the EEEA and the lack of a perpetual flowage easement or sufficient interest or sufficient rights, on FPL's property in the EEEA to implement higher water levels, is expected to have a long-term major adverse impact on these species due to continued degradation and loss of foraging habitat. Without the supplemented water levels, the EEEA will continue to be dry and fewer areas will support the forage fish needed to sustain these colonies during drier periods of the year. Alternative 1a is expected to have long-term moderate adverse impacts on wading birds from degradation and loss of foraging habitat. These impacts are not expected to result in population level changes for the species or in species being extirpated from the park.

Hqt kf c'Dwt t qy lpi 'Qy nlpf 'I qr j gt 'Vqt vqlg—Due to their preference for xeric habitats, the Florida burrowing owl, and gopher tortoise are not likely to occur in the FPL West Secondary Corridor or to be adversely impacted from drier conditions in the EEEA. Alternative 1a is expected to have no effect on the Florida burrowing owl or gopher tortoise due to their preference for xeric habitats.

Rlpgncpf 'Lces wgo qpvc.'Gcvqp a'Ur lngo qui.'Hqt kf c'T qf cniRcm .'Tqemc pf /Rclpvgf 'Ngch—These species are found within disturbed wetlands and uplands, marl prairie, mesic flatwoods, floodplain forest, rockland hammock, strand swamp, and pine rocklands. These species have not been observed within the FPL West Secondary Corridor and have a low likelihood of occurrence in the FPL West Secondary

Corridor. Alternative 1a is expected to have negligible adverse impacts on these plant species due to their low likelihood of occurrence within the FPL West Secondary Corridor and EEEA.

Uqwj gtp'Ht qi 'Ht wk'Dej co c'Ncf f gt 'Dt cng.'Rlpgnrf 'Cmro cpf c.'Gxgti ncf gu'*qt 'Rlpgnrf u'' RgpekHny gt.'O gcf qy 'Lqlpv'xgvej—These species are known to occur in or near the EEEA, with a few species known from the FPL West Secondary Corridor. Most of these species occupy a range of habitats from wetland to pine rocklands; therefore the impacts of the drying of the EEEA are expected to vary from moderate to major adverse depending on the degree of wetland dependence of the species. Alternative 1a is expected to have long-term moderate to major adverse impacts on these plant species because they are known to occur within the FPL West Secondary Corridor or the EEEA and many are found only within wetland habitat types.

Dej co c'Ucuj lc'èpf 'Rlpgnrf 'Pqugdwtp—These species are found in disturbed uplands and pine rocklands. These species are not expected to occur within the FPL West Secondary Corridor. Due to their low likelihood of occurrence and preference for upland habitats, there will be no impact on these species from alternative 1a.

Uo cmu'Hrz—There is a low likelihood that Small's flax could occur in disturbed uplands and disturbed wetlands, such as margins of canals, within the FPL West Secondary Corridor. Adverse impacts on this species from FPL's continued ownership of land within the EEEA and the lack of a perpetual flowage easement or sufficient interest or sufficient rights, on FPL's property in the EEEA to implement higher water levels are expected to be negligible adverse since this species is known to utilize both upland and wetland habitats.

Ewo wv'xg'Kō rcew'δ'Cngt pc'xg'3c''

The past, present, and reasonably foreseeable future actions impacting special-status species include the acquisition of lands in the expansion area under the Expansion Act and all present and future actions aimed at restoring habitat and delivering additional freshwater to the park. These projects would not all be completed as planned due to the inability to flow enough water over the FPL West Secondary Corridor to establish hydrologic restoration goals, a long-term negligible to major adverse impact depending on the species. The overall direction of the GMP to preserve park resources would indirectly benefit special-status species in the park. Other projects in the area of analysis with adverse effects on these species include ongoing urban development, road construction and use (car collisions), road expansion, ongoing mining (minor to major adverse from habitat loss and direct mortality). Other projects and actions in the park would be expected to have mostly beneficial effects on special-status species, including prescribed burns that decrease the risk of extreme wildfires and exotic plant management that improves natural habitat. Conduct of research and surveys to monitor park resources often focuses on special-status species and provides long-term benefits from the knowledge gained, with short-term adverse effects of the monitoring itself (noise and disturbance from use of helicopters and airboats). Alternative 1a would result in moderate to major adverse impacts because of the lack of flowage and would contribute appreciable adverse impacts to the overall cumulative effects on special-status species in this area.

Eqpenwukp'δ'Cngt pc'xg'3c''

Alternative 1a would result in a wide range of impacts on special-status species, as described for the individual species in the above analysis. Impacts on these species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28 at the end of this section. In general, the lack of a flowage easement or sufficient rights to increase water levels over the FPL West Secondary Corridor would have effects on many listed species in the area. Due to the potential degradation and loss of foraging habitat from the lack of hydrologic restoration in the EEEA, alternative

1a would have moderate to major adverse impacts on many avian species, especially wood storks and Everglade snail kites. There would be no impacts related to transmission line construction under this alternative.

The park would continue to coordinate with the USFWS and state resource agencies, to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable. Alternative 1a would contribute appreciable adverse impacts to the overall cumulative effects on special-status species in this area.

KO RCEVUQH'CNVGTP CVKKG'3D<P Q'P RU'CEVQP '6'HRN'E QPUVTWEVQP 'R'VJ G'RCTM

KO rcew'qhv'j g'Ncpf 'Ces wkvkqp'Cevkqp''

Under alternative 1b, there would be continued long term negligible to major adverse impacts on special-status species, depending on the species being impacted and its degree of wetland dependence, due to continued habitat degradation from altered hydrology as described under alternative 1a.

KO rcew'qhv'Vtcpuo kvkqp'Nkpg'E qpvt wevkvqp''

Adverse impacts would result from the construction of transmission lines within the park, as described earlier in the “Wildlife” section of this chapter. Short- and long-term, negligible to potentially major adverse impacts would occur under alternative 1b and will vary by species. Construction of transmission lines in this corridor would have a high risk to avian species because of the proximity to nesting and foraging locations.

A general discussion of the indirect impacts of construction and maintenance of the transmission lines are presented below, with a discussion of the ARA conducted for this project and a more specific discussion by species presented in the following paragraphs. There is no NPS action under this alternative, so ESA Section 7 consultation rules would not apply to this alternative. However, the effects determinations listed under this alternative represent the effect determinations that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

I gpgt cdlE qpvt wevkvqp/t grvgf 'KO rcew'

During construction, there would be construction equipment and associated noise in the vicinity of the construction area which may disrupt wildlife behaviors and travel patterns. If helicopters are needed during construction, they would introduce additional noise and disruption. The construction noise and activity may also temporarily drive some species out of the vicinity during the construction period. Impacts would also occur due to ground disturbance and vegetation removal or treatment in work areas outside the access road and pad areas (see the “Vegetation and Wetlands” section) during the construction period; this would result in a temporary loss of nesting, resting, and foraging habitat along the corridor. Impacts on wildlife behavior from construction noise and activity and temporary ground disturbance are anticipated to be short term and adverse. The magnitude of these temporary impacts would range from minor (if they are in non-critical periods) to major (occurring in breeding or nesting season). Less motile species may not be able to move out of the construction area and may be injured or killed during construction activities. Construction of access roads and structure pads would result in permanent loss of habitat for some species (see the “Soils” and “Vegetation and Wetlands” sections for details on acres lost). These activities may also fragment habitat, making more edge habitat. The creation of edge habitat can allow nonnative species to invade an area and further reduce habitat quality. The impacts due to loss or modification of habitat due to construction of the transmission lines and associated access roads would

be long term and adverse, and would range from minor to moderate depending on the type of habitat impacted and what species use it.

I gpgt cñNłpg'O cłpvgpcpegót gñvgf 'Kó r ceu'

Line maintenance would be done about once every 2 years and consist of line surveys conducted by helicopter and/or vehicle, using the access road that was constructed. Noise from these activities would cause impacts similar to those from vehicle use and helicopter use during construction, but there would be less equipment used and lower noise levels for ground work, resulting in short-term negligible to minor adverse impacts due to the frequency and limited nature of the vegetation management activities.

Cxkcp'TkñlCuguo gpv'

Impacts on avian species from transmission lines include habitat loss, collision, and electrocution. These impacts are discussed in detail in the “Wildlife” section in this chapter. An ARA was conducted as part of this EIS to attempt to estimate the relative risk to avian species from each of the alternatives (Exponent 2013). The ARA Report is included as appendix J of this document. The Relative Risk Model and method as described by Landis and Wiegers (2004) was used to perform this assessment. The Relative Risk Model methodology integrated the following information:

1. Proximity of each transmission corridor (a hypothetical corridor was chosen within the area of relocated corridor for comparison purposes) to a particular species and/or group of birds
2. Linkage of bird species with particular habitat types and/or known locations of concentration areas (foraging, resting, breeding areas etc.) in order to identify preferred habitats
3. Estimation of preferred avian habitats potentially impacted by each of the three corridors under consideration

The analysis relied on a variety of existing avian survey data from both the scientific literature as well as data provided by the NPS. Because proximity to transmission lines and towers is a known risk factor for birds (APLIC and USFWS 2005, APLIC 2006), the approach to quantify relative risk among the three corridors was to focus on the spatial juxtaposition of avian resources relative to the location of each corridor. As such, a transmission corridor that is closest to a particular avian resource, such as a multispecies colony, an individual nest of a critical species, or an important foraging habitat, was construed as posing a greater risk of collision or electrocution than a corridor that is farther from a resource (APLIC and USFWS 2005, APLIC 2006). For all three corridors, quantified risks were associated with the entire corridor of each line within the study area, which included the corridor sections that were unique to each line plus the sections referred to as “Common to All” (figure 48). Two types of relative risk assessments were conducted. The data-based relative risk assessment used actual locations and numbers of birds associated with each location within the 30-mile boundary of the study area. The average number of birds multiplied by the distance from each transmission corridor was calculated. This resulted in units of “bird-miles.” In the results figures discussed below, the greater the number of bird-miles to a corridor, the lower the risk posed by the corridor, and vice versa. Because the survey data are biased for within the park boundary, an additional habitat-based relative risk assessment was conducted using the data for preferred habitats that were available in the GIS data sets. However, as mentioned above, these specific multi-year data were available only for snail kites, wood storks, and some waterbirds. For all other species for which GIS data were not available, only a habitat-based relative risk assessment was conducted. For these species, the Florida Breeding Bird Atlas was used to determine which types of habitats are preferred by each species. The average distance of each preferred habitat to each potential transmission corridor was calculated and compared.

The risk assessment findings for special-status avian species are incorporated in the following analysis.

Hgf gt cmf 'Nkugf 'Ur gelgu'

Y guv'kpf kcp'O cpcvvgg—The West Indian Manatee may occasionally be found in the SFWMD canals crossed by the FPL West Secondary Corridor. No in-water work in the canals is anticipated during construction of the transmission lines. Appropriate erosion control measures would be implemented during construction to prevent degradation of adjacent waterbodies. Transmission line construction stormwater discharges released into waters of the state will be addressed through compliance with Rule 62-621.300(4) (Generic Permit for Stormwater from Large and Small Construction Activities). In the event of inadvertent equipment or vehicle fluid release during construction, construction crews will be equipped with spill containment and absorption materials. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Section 7 Determination of Effect—Alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA, would have no impact on the manatee since no in-water work in the canals is expected, appropriate sedimentation and erosion controls will be implemented during construction, and the lack of a flowage easement is expected to have minimal impacts on canal water levels. This would equate to a “no effect” determination. There is no NPS action under this alternative, so ESA Section 7 consultation rules would not apply to this alternative. However, the effects determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Hqutkf c'Repvj gt—The Florida panther is known from the area of analysis, and the FPL West Secondary Corridor is within the Primary Zone of the Panther Focus Area. Panthers have been known to occur in the park in the vicinity of the FPL West Secondary Corridor. Construction traffic and noise and line maintenance activities are likely to cause short-term changes to the travel patterns and hunting behaviors of panthers in this area. These impacts are considered short-term, minor, and adverse. Increases in connectivity between habitat types and areas due to the transmission corridor may have long-term minor adverse impacts on the Florida panther if they encourage movement between more developed areas where panther injury or mortality is more likely to occur. The loss of native wetland foraging habitat due to road and pad fill is considered a long-term moderate adverse impact. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. FPL will work with USFWS/FFWCC to mitigate any potential impacts on Florida panther habitat once a corridor is certified and a specific right-of-way is designed.

Section 7 Determination of Effect—Alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA, would have short- and long-term minor to moderate adverse impacts on Florida panther due to potential short-term behavior changes and long-term changes in prey abundance and diversity and habitat loss. This would equate to a “may affect, likely to adversely affect” determination. There is no NPS action under this alternative, so ESA Section 7 consultation rules would not apply to this alternative. However, the effects determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Hqtlf c'Dqppgygf 'Dev—There is a moderate probability of Florida bonneted bat occurring in the park in the vicinity of the FPL West Secondary Corridor. Right-of-way and access road clearing activities may result in loss of small amounts of roosting habitat (palm and other tree foliage), but there is relatively little amount of wetland forest or tree cover along this corridor; most is sawgrass wetland. If bats are roosting in the areas when clearing takes place, bat injury or mortality may occur. The loss of roosting habitat is considered a long-term moderate adverse impact on Florida bonneted bats. Injury or mortality to Florida bonneted bats from right-of-way or access road clearing would be considered short term, moderate, and adverse. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Section 7 Determination of Effect—Alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA, would have short- and long-term moderate adverse impacts on the Florida bonneted bat due to the loss of potential roosting trees and the potential for mortality to occur during tree clearing. This would equate to a “may affect, and is likely to adversely affect” determination. There is no NPS action under this alternative, so ESA Section 7 consultation rules would not apply to this alternative. However, the effects determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Y qgf 'Uqtm—Transmission line and access road construction would result in the loss or alteration of foraging habitat for this species when wetlands are filled to create access roads and structure pads and if the hydrology of wetlands adjacent to construction areas is altered. This loss of foraging habitat is considered a long-term moderate adverse impact on the species. Foraging and nesting behavior may also be altered during the construction period due to the construction noise and equipment traffic. These impacts are considered short term, moderate, and adverse. Minor adverse impacts may also result from line maintenance activities. The presence of the two 500-kV and one 230-kV transmission lines present a strike hazard that could result in wood stork injury or mortality. The impact of birds striking the lines is long term, major, and adverse.

Four wood stork colonies are known from within 5 miles of the corridors in the vicinity of Tamiami Trail (see “Figure 13: Wood Stork Colony and Nesting Data” in chapter 3). The corridors are within the Core Foraging Area of these four colonies and other colonies. The number of breeding birds present in the colonies varies from year to year (table 26).

The Tamiami West (Coopertown) wood stork colony is the largest colony within 5 miles of the corridors where they cross the Tamiami Trail. Over the past 5 years, 50 to 1,300 wood storks have been observed within the colony during an active nesting season. The colony is approximately 0.96 mile from the edge of the FPL West Secondary Corridor. Two smaller colonies, Tamiami East 2 and 3B Mud East, are located approximately 0.25 and 0.21 mile from the FPL West Secondary Corridor, respectively. Over the last 5 years, 20 to 30 nests were observed Tamiami East 2 during nesting seasons when the colony was active. Only 7 nests have been observed during an active nesting season at the 3B Mud East colony. Tamiami East 1, with 10 to 15 nests in an active nesting season, is located 1.25 miles from the FPL West Secondary Corridor. The proximity of the colonies to the corridor increases the likelihood that adults and fledglings from this colony will interact (collisions or electrocutions) with the transmission structures, guy wires, or lines as they are going back and forth from the colony to foraging areas.

According to the ARA (Exponent 2013), the relative risk to wood storks (based on number of birds present) is greatest for the FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor within the area of possible relocated corridor (figure 49). The data-based relative risk assessment used actual locations and numbers of birds associated with each location within the 30-mile boundary of the study area. The relative risk was calculated as the number of birds at an individual location then multiplied by the number of miles the location was located from each individual transmission corridor. This was done for each bird within the 30-mile boundary and then summed. The greater the number of bird-miles to a corridor, the lower the risk posed by the corridor, and vice versa.

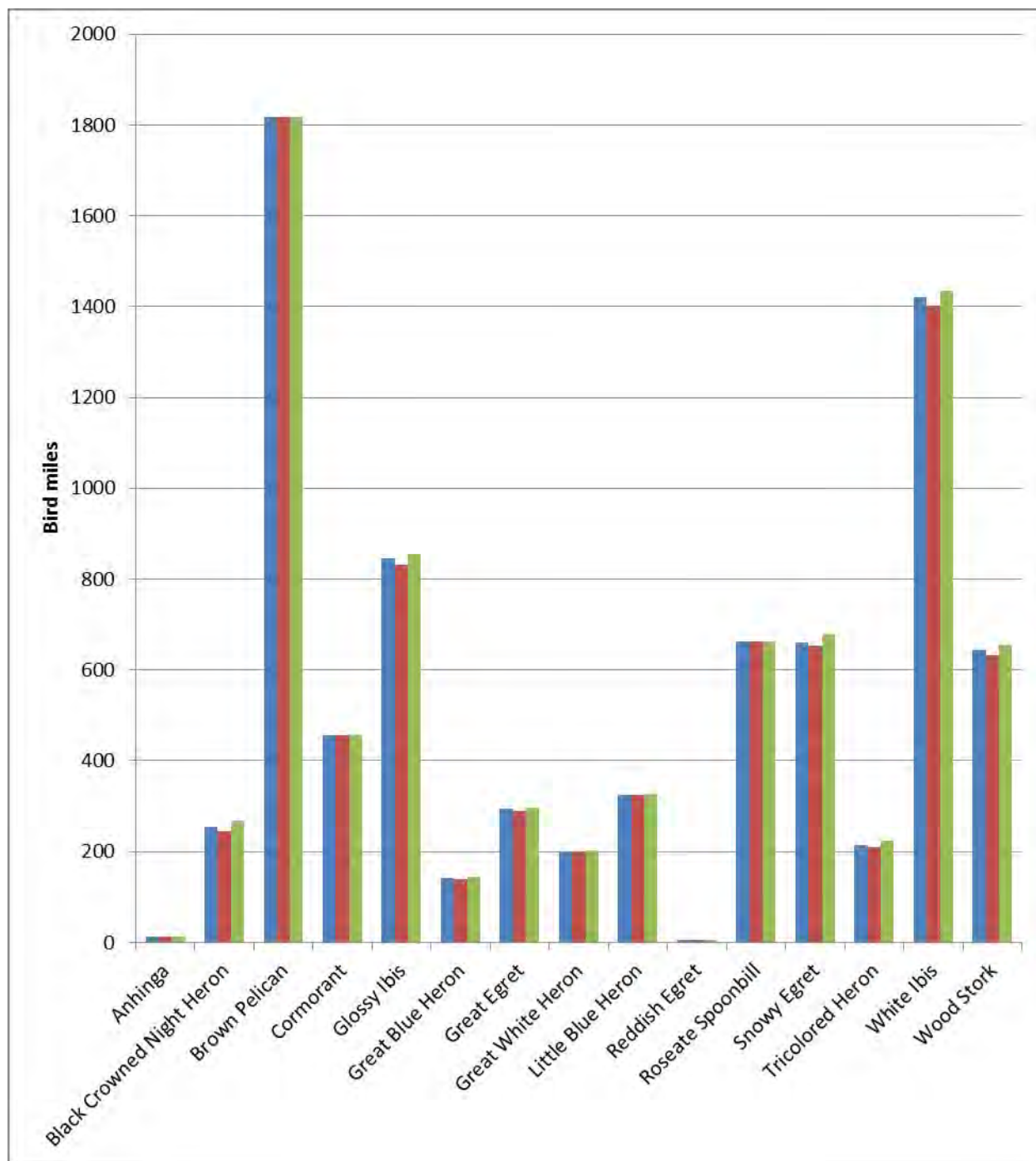
The preferred habitat for the wood stork was freshwater marshes, followed by mangrove swamps, mixed shrubs, embayments, saltwater marshes, tidal flats, cypress stands, wet prairies, natural waterways, and mixed wetland hardwoods (Exponent 2013) (figure 50).

The ARA found that the relative risk to wood storks, based on distance of the preferred habitat from the transmission corridors, was generally greatest for the FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor within the area of possible relocated corridor (figure 51).

FPL will comply with any federal permit conditions regarding wood stork colonies, including those related to mitigation for lost foraging habitat. The FPL construction designs would include features to minimize impacts on avian species including the wood stork. For example, the spacing between transmission conductors (wires) for the proposed 230- and 500-kV lines would be far greater than the 61-inch wingspan for the wood stork, greatly minimizing the threat for electrical harm to the bird. These designs would be consistent with FFWCC-recommended Conditions of Certification to install flight diverters on overhead ground wires to minimize bird interactions with the lines in areas within 1/2 mile of active wood stork colonies and the FPL design standard of installing perch discouragers on all new 230- and 500-kV transmission line structures. The FPL designs would be consistent with the Mitigation Concepts document FPL provided to the NPS (FPL 2010). However, these measures are not expected to eliminate all impacts on wood storks.

Further, an Avian Protection Plan specifically for this project, consistent with the Mitigation Concepts document and Avian Power Line Interaction Committee guidelines, would be developed in consultation with USFWS. In the mitigation concepts document, FPL suggested that various mitigation options are available in certain areas to reduce potential impacts on wading birds. These options include wildlife and wading bird colony surveys to document which species and in what areas of the right-of-way alignment potential impacts are possible in addition to the design features, such as perch discouragers on the towers and flight diverters mentioned above.

Subsequent to submission of that document to the NPS, FPL has been negotiating proposed Conditions of Certification with the FFWCC and SFWMD. Included in those proposed Conditions of Certification are requirements for pre-construction listed species surveys all along the right-of-way and ground and follow-flight surveys of wading bird usage along the right-of-way in areas of known wading bird colonies. The proposed Conditions of Certification also require potential design alternatives such as perch discouragers and flight diverters in areas of those known colonies. FPL would also work with FFWCC to design a post-construction mitigation effectiveness monitoring study. Based on the results of such a study, FPL may be required to implement further mitigation measures, such as additional flight diverters. A specific design has not yet been selected, so these measures are not specifically incorporated into the analysis in this EIS.



The greater the number of bird miles, the lower the relative risk to birds. Legend: Blue = FPL West Preferred Corridor | Red = FPL West Secondary Corridor | Green = Hypothetical Corridor

FIGURE 49: BIRD MILES FOR THE RESPECTIVE CORRIDORS

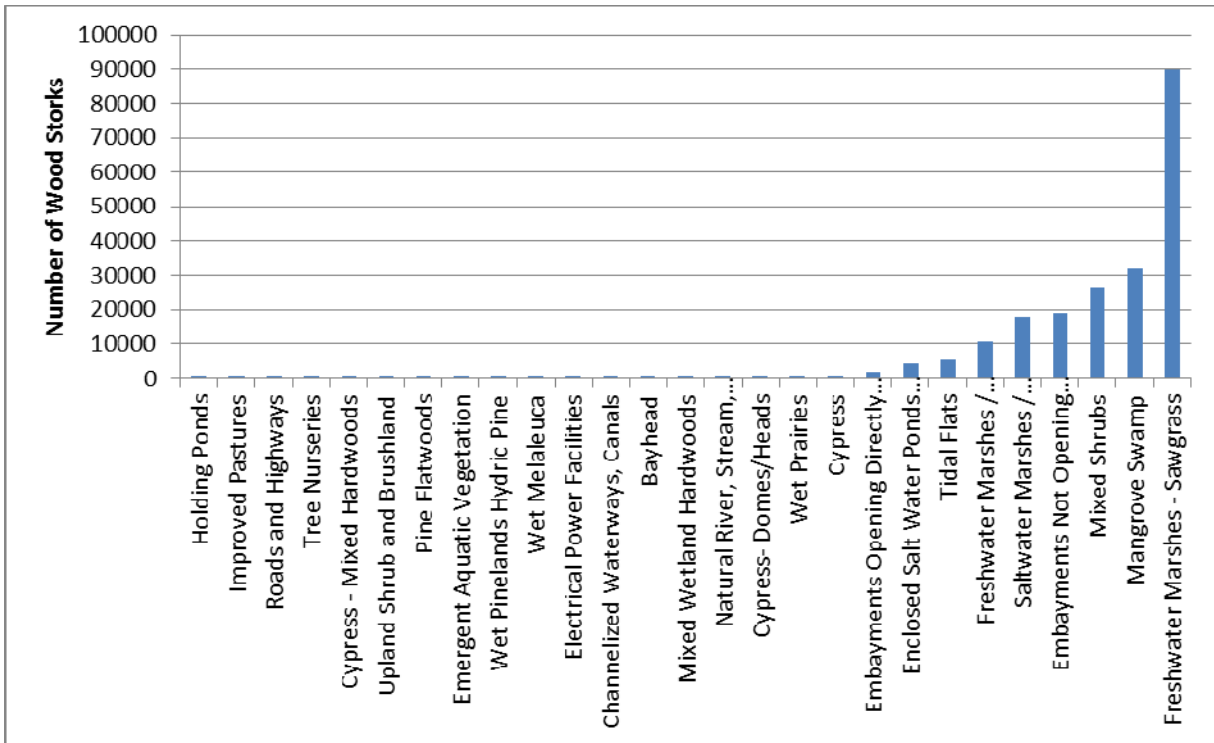
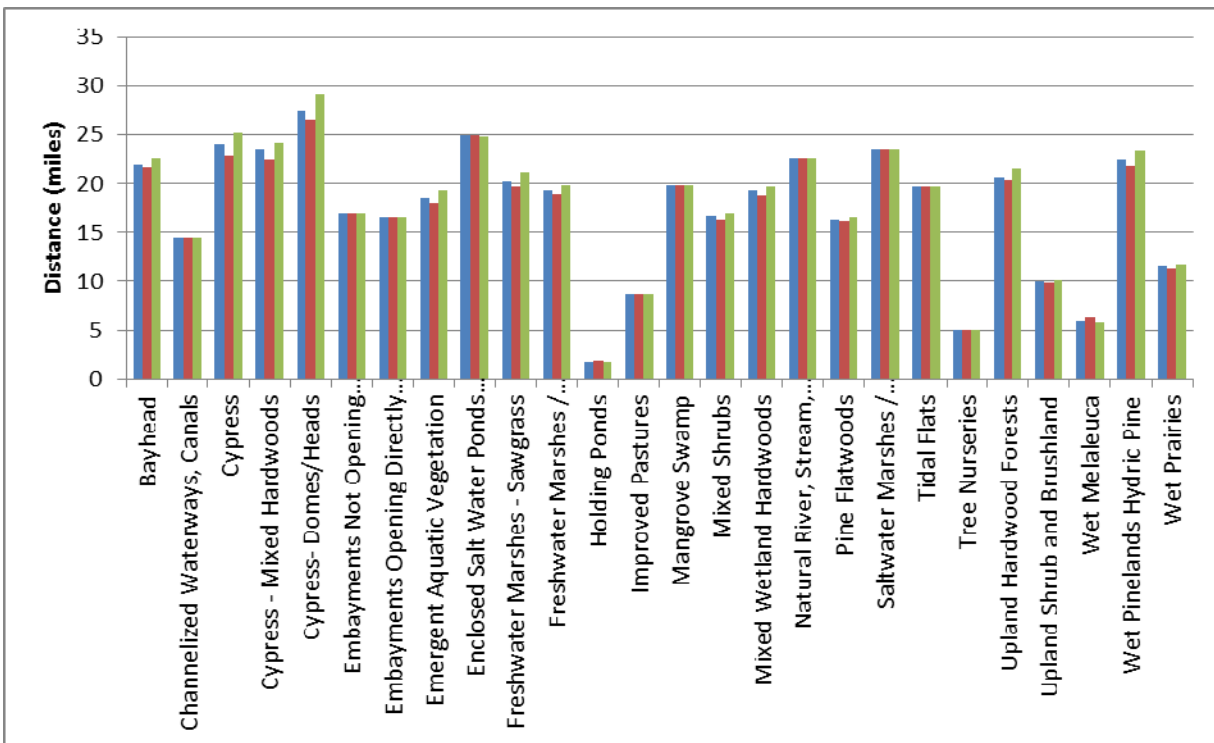


FIGURE 50: NUMBER OF WOOD STORKS ASSOCIATED WITH EACH LEVEL 3 LAND USE LAND COVER CATEGORY IN THE GIS DATABASE WITHIN THE 30-MILE BOUNDARY THAT SURROUNDS THE STUDY AREA



Legend: Blue = FPL West Preferred Corridor | Red = FPL West Secondary Corridor | Green = Hypothetical Corridor

FIGURE 51: RELATIVE RISK IN TERMS OF DISTANCE OF WOOD STORK PREFERRED HABITAT TO EACH POTENTIAL TRANSMISSION CORRIDOR WITHIN THE 30-MILE BOUNDARY THAT SURROUNDS THE STUDY AREA

Section 7 Determination of Effect—Alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA, would have short- and long-term moderate to major adverse impacts on locally significant colonies or aggregations of wood storks due primarily to loss and degradation of foraging habitat and the risk of line strikes and electrocutions. The impacts may result in population-level declines of wood storks as a result of the population-wide significance of the affected colonies to the wood stork population. This would equate to a “may affect, likely to adversely affect” determination. The findings of the Exponent Risk Assessment (Exponent 2013) and the NPS risk assessment (NPS 2010e) are incorporated by reference into this EIS. There is no NPS action under this alternative, so ESA Section 7 consultation rules would not apply to this alternative. However, the effects determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Everglade snail kite—The Everglade snail kite is known to nest in the eastern portion of the park near the FPL West Preferred Corridor and likely forages on apple snails in wetlands in the FPL West Secondary Corridor. The noise and vehicular traffic associated with construction of the transmission lines and access road construction is likely to cause changes in Everglade snail kite behaviors such as foraging, breeding, and nesting. These impacts would be considered short term, moderate, and adverse. Minor adverse impacts may also result from line maintenance activities. Filling of wetlands for structure pads and access roads would also result in loss or alteration of foraging and nesting habitat for Everglade snail kite. The loss of foraging and nesting habitat would be considered a long-term moderate adverse impact. Snail kites may also be injured or killed by collisions with transmission structures, guy wires, and lines, especially during the breeding season when birds may be distracted by aerial displays. Impacts from collision with the transmission line are considered long term, major, and adverse.

The risk assessment conducted by Exponent (2013), found that the FPL West Secondary Corridor posed the highest risk to snail kite nests, while the FPL West Preferred Corridor posed an intermediate risk, and the hypothetical corridor within the area of possible relocated corridor posed the least risk. Snail kite habitat preferences include freshwater marshes, lakes, emergent aquatic wetlands, mixed shrubs, and cypress stands (Exponent 2013) (figure 52).

The ARA found relative risk to snail kites, based on distance of the preferred habitat from the transmission corridors, was generally greatest for the FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor (figure 53). This is because preferred habitats are closer to the two FPL corridors than to the hypothetical corridor within the area of possible relocated corridor.

The FPL construction designs would include features to minimize impacts on avian species including the Everglade snail kite. The FPL designs would be consistent with the Mitigation Concepts document FPL provided to the NPS (FPL 2010). However, these measures are not expected to eliminate all impacts on the Everglade snail kite. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

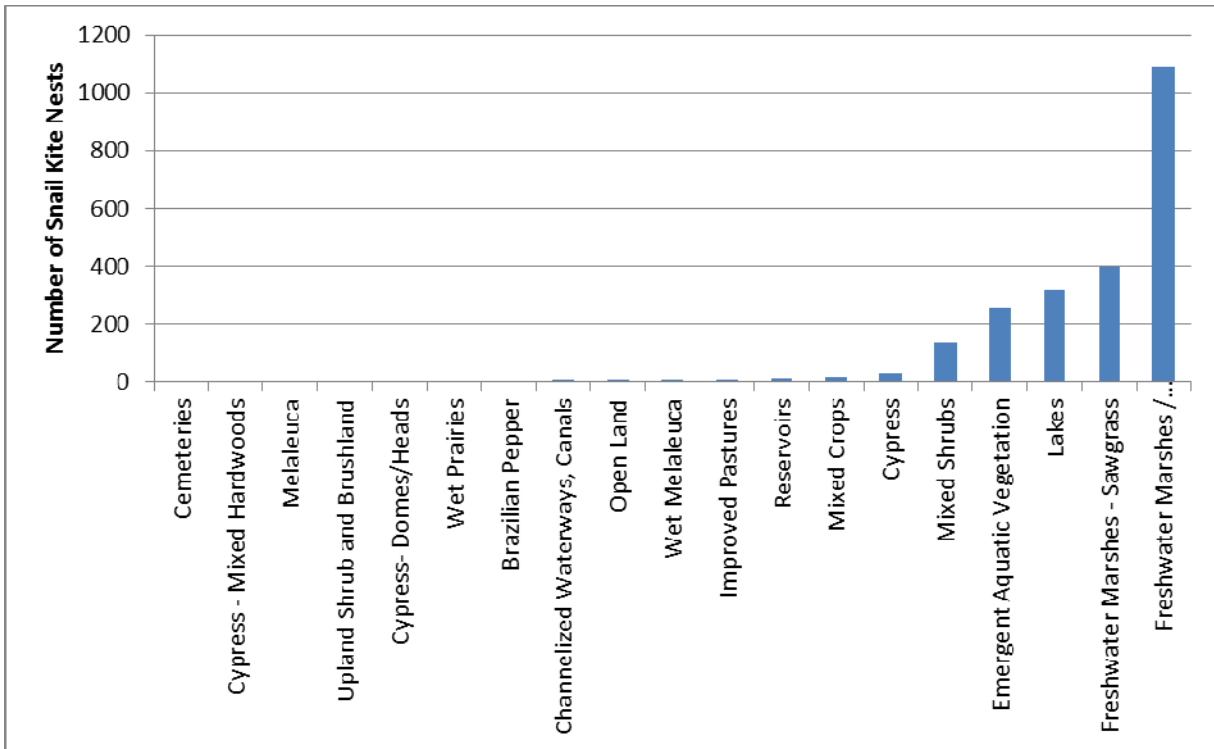
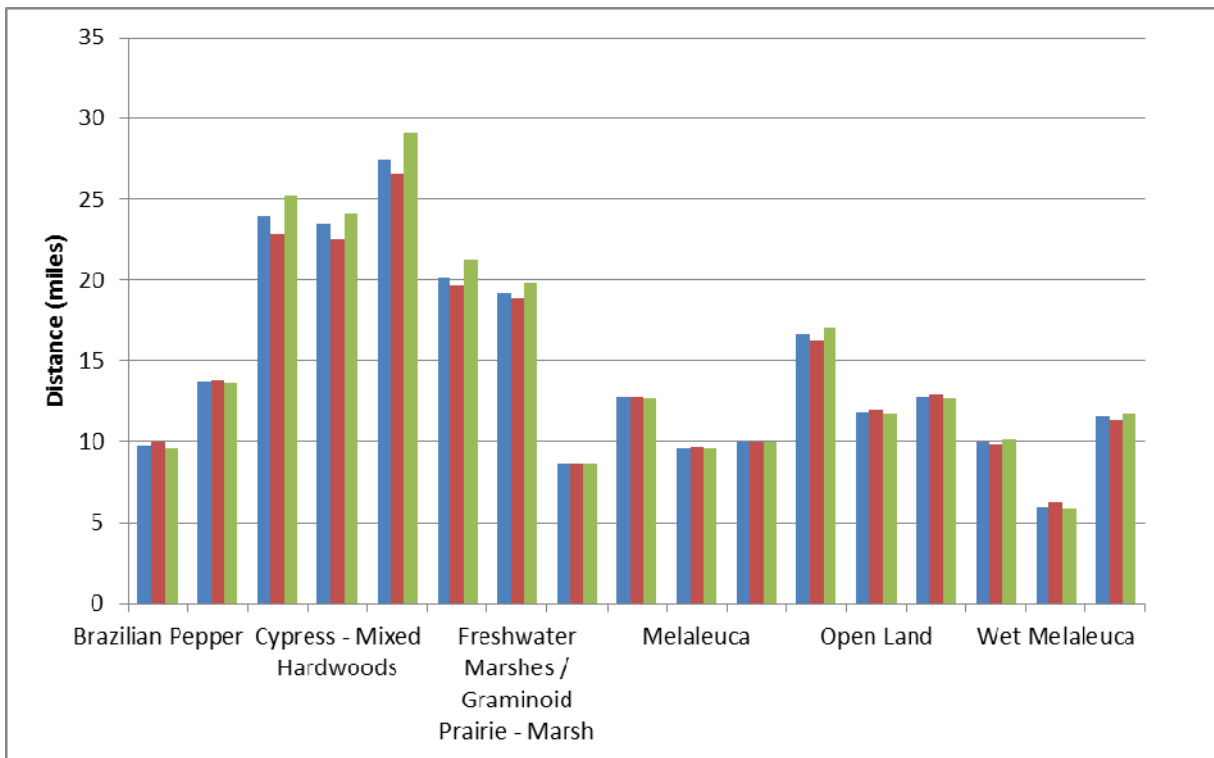


FIGURE 52: NUMBER OF SNAIL KITE NESTS ASSOCIATED WITH EACH LEVEL 3 LAND USE LAND COVER CATEGORY IN THE GIS DATABASE WITHIN THE 30-MILE BOUNDARY THAT SURROUNDS THE STUDY AREA



Legend: Blue = FPL West Preferred Corridor | Red = FPL West Secondary Corridor | Green = Hypothetical Corridor

FIGURE 53: RELATIVE RISK IN TERMS OF DISTANCE OF SNAIL KITE PREFERRED HABITAT TO EACH POTENTIAL TRANSMISSION CORRIDOR WITHIN THE 30-MILE BOUNDARY THAT SURROUNDS THE STUDY AREA

Section 7 Determination of Effect—Alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA, would have short- and long-term moderate to major adverse impacts on the Everglade snail kite due primarily to loss and degradation of foraging habitat, and the risk of line strikes and electrocutions. These impacts may result in declines in the snail kite population due to the highly imperiled condition of this species and its use of wetlands in the project area. This would equate to a “may affect, and is likely to adversely affect” determination. The findings of the Exponent Risk Assessment (Exponent 2013) and the NPS risk assessment (2010) are incorporated by reference into this EIS. There is no NPS action under this alternative, so ESA Section 7 consultation rules would not apply to this alternative. However, the effects determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Gcuugt p'kpf li q'Upeng—The eastern indigo snake may occasionally occur in tree inlands and other upland areas within and adjacent to the FPL West Secondary Corridor. Construction noise and vehicle traffic may result in changes in eastern indigo behavior. These impacts are considered short term, minor, and adverse. Indigo snakes may be killed or injured during clearing and construction activities if they are present. These impacts would be considered short to long term, moderate, and adverse. Construction of structure pads and access roads would also eliminate habitat for indigo snakes. These impacts would be considered long term, moderate, and adverse. There is a low probability that eastern indigo snakes will be present in this area, so consequently there is a low level of expected impacts relative to the population. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Section 7 Determination of Effect—Alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA, would have short- and long-term minor to moderate adverse impacts on the eastern indigo snake. Impacts related to the lack of a flowage easement or sufficient rights to flow additional water over the FPL property are expected to be negligible adverse. Impacts from transmission line construction and maintenance are expected to be minor to moderate adverse. This would equate to a “may affect, and is likely to adversely affect” determination. There is no NPS action under this alternative, so ESA Section 7 consultation rules would not apply to this alternative. However, the effects determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Dmf i gwau'Ukxgt dwuj .I ct dgt au'Ur wt i g.'Ucpf 'Hrcz.'t'pf 'Vl'p' 'Rqf i cnc—These species are unlikely to occur within the FPL West Secondary Corridor due to lack of habitat. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Effects on these species from construction, operation, and maintenance of the transmission lines are expected to be discountable since these species are not known to occur in this portion of the EEEA.

Section 7 Determination of Effect—Alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA, would have adverse impacts on Blodgett's silverbush, Garber's spurge, sand flax, and tiny polygala since these species are not expected to occur within the FPL West Secondary Corridor or EEEA. This would equate to a “no effect” determination. There is no NPS action under this alternative, so ESA Section 7 consultation rules would not apply to this

alternative. However, the effects determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

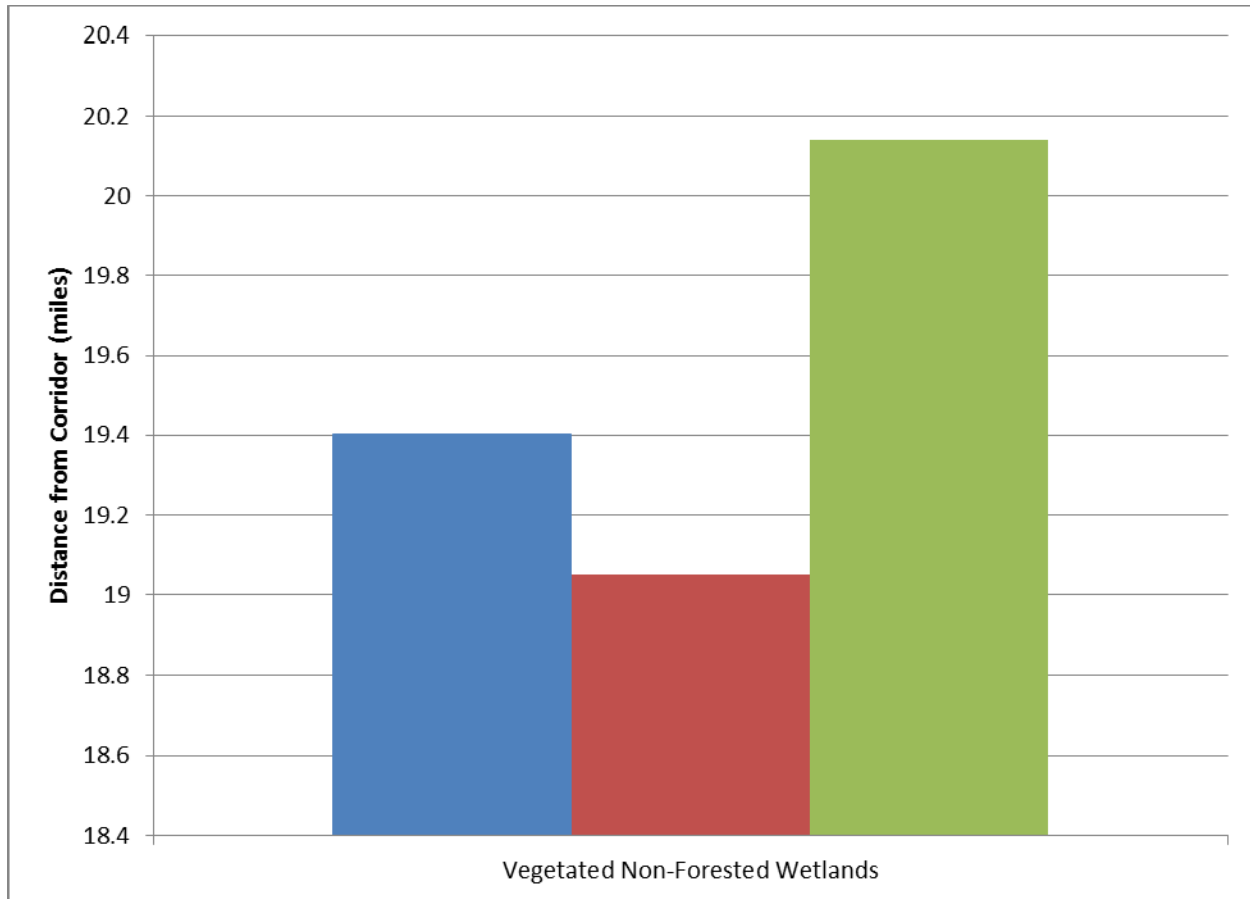
Uwvgrugf 'Urgelg'

Gxgti nfgu'lp—The Everglades mink is likely to forage in wetland areas within and adjacent to the FPL West Secondary Corridor. The impacts of the land acquisition would be the same as under alternative 1a. Construction noise and traffic may alter the behavior of Everglades mink in the area during the construction period. This would also be true for maintenance activities. These impacts would be considered short term, minor, and adverse. Filling of wetlands for structure pads and access roads would result in long-term moderate adverse impacts. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow water over the FPL property in the EEEA, would have short- and long-term minor to moderate adverse impacts on the Everglades mink.

Hnftc'Ucpgj mltcpg—The Florida sandhill may occasionally forage within the FPL West Secondary Corridor. The impacts of the land acquisition would be the same as under alternative 1a. Construction noise and traffic may impact Florida sandhill crane behavior during the construction period. This would also be true for maintenance activities. These impacts are considered short term, minor and adverse. Construction of the access roads and structure pads may result in a loss of foraging habitat for this species. These impacts are considered long term, minor, and adverse. In addition, construction of the transmission lines, including poles, lines and guy wires, would create a strike hazard for Florida sandhill crane. Impacts from Florida sandhill crane line strikes are considered long term, moderate, and adverse.

Preferred habitats of the Florida sandhill crane include freshwater herbaceous wetlands (Exponent 2013). According to the ARA, relative risk to cranes was generally greatest for the FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor within the area of possible relocated. This is because preferred habitats were closer to the FPL corridors than the hypothetical corridor within the area of possible relocated corridor (Exponent 2013) (figure 54).

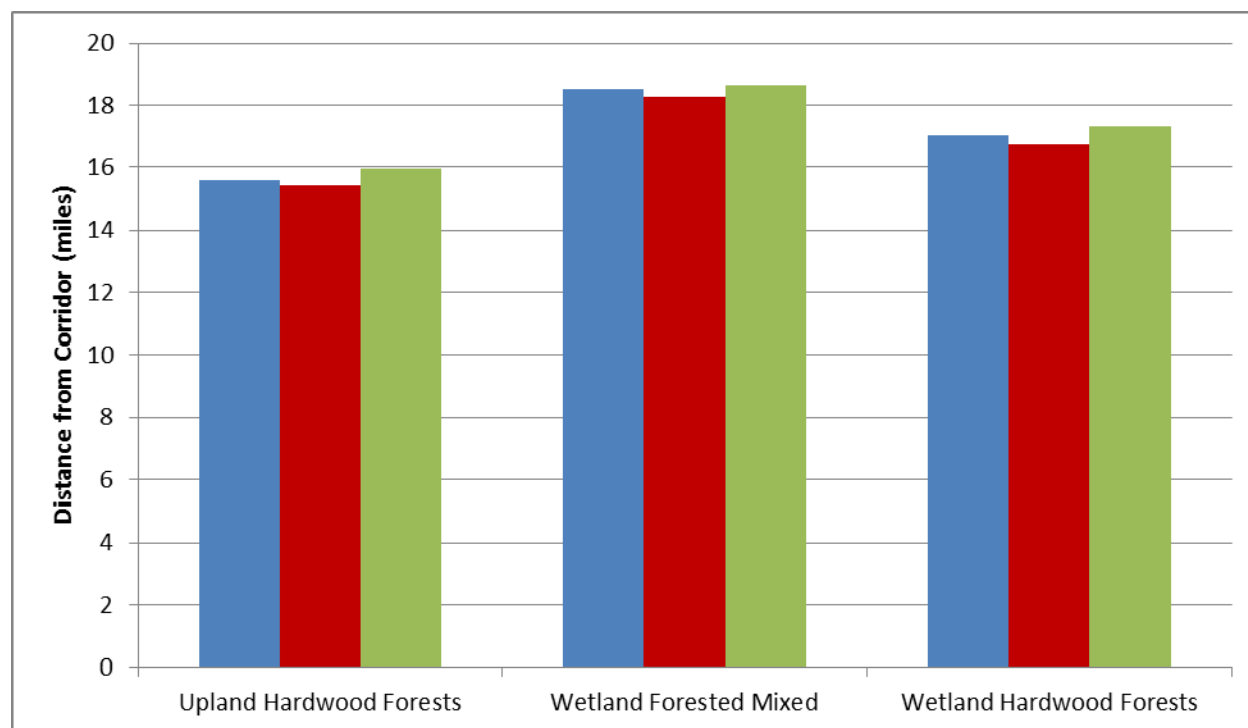
For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with the FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA, would have short- and long-term minor to moderate adverse impacts on the Florida sandhill crane.



Legend: Blue = FPL West Preferred Corridor | Red = FPL West Secondary Corridor | Green =Hypothetical Corridor

FIGURE 54: RELATIVE RISK IN TERMS OF DISTANCE OF FLORIDA SANDHILL CRANE PREFERRED HABITAT TO EACH POTENTIAL TRANSMISSION CORRIDOR WITHIN THE 30-MILE BOUNDARY THAT SURROUNDS THE STUDY AREA

Y j kg/et qy pgf 'Rli gqp—The white-crowned pigeon may forage on the fruit of poisonwood trees (*Metopium toxiferum*) in the FPL West Secondary Corridor and in the rest of the EEEA, but it is not known to nest in the EEEA. The impacts of the land acquisition would be the same as under alternative 1a. The ARA found that the relative risk to white-crowned pigeons was generally greatest for FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor within the area of possible relocated corridor. This is because preferred habitats were generally closer to the FPL corridors than to the hypothetical corridor within the area of possible relocated corridor (figure 55). For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with the FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Alternative 1b would result in minor adverse impacts on white-crowned pigeons because poisonwood trees are found throughout the Everglades region in both wetland and upland habitats.



Legend: Blue = FPL West Preferred Corridor | Red = FPL West Secondary Corridor | Green = Hypothetical Corridor

FIGURE 55: RELATIVE RISK IN TERMS OF DISTANCE OF WHITE CROWNED PIGEON PREFERRED HABITAT TO EACH POTENTIAL TRANSMISSION CORRIDOR WITHIN THE 30-MILE BOUNDARY THAT SURROUNDS THE STUDY AREA

Nlo r nlp. 'Nlsvg'Dwng'J gt qp. 'Upqy { 'Gi tgv. 'Vtleqmt gf 'J gt qp. 'cpf 'Tqugcv'Ur qqpdkm—These wading birds are likely to forage within the park in the vicinity of the FPL West Secondary Corridor. Mixed rookeries of wading birds also occur in the vicinity of the FPL West Secondary Corridor. The impacts of the land acquisition would be the same as under alternative 1a. The ARA found that the relative risk to these wading bird species was generally greatest for FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor. This is because preferred habitats were generally closer to the FPL corridors than to the hypothetical corridor within the area of possible relocated corridor (Exponent 2013).

The behavior of these birds is likely to be impacted by the increased noise and vehicle levels during the construction period. This is also true for line maintenance activities. These impacts are considered short term, moderate, and adverse. Construction of access roads and structure pads would result in loss or alteration of wetland foraging habitats. The impact of the lost habitat is expected to be long term, moderate, and adverse. Construction of the transmission lines would create a strike hazard for the wading birds. The impact of bird injury and mortality due to line strikes is considered long term, moderate, and adverse. The FPL construction designs would include features to minimize impacts on avian species. The FPL designs would be consistent with the Mitigation Concepts document FPL provided to the NPS (FPL 2010). However, these measures are not expected to eliminate all impacts on avian species. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with the FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Adverse impacts on wading birds from alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water

over the FPL property in the EEEA, are expected to be short to long term, minor to moderate, and adverse. These impacts are not expected to result in population level changes for the species or in species being extirpated from the park.

Hnqtlf c'Dwt t qy lpi 'Qy nlpf 'I q r j gt 'Vqt vqlug—Due to their preference for xeric habitats, the Florida burrowing owl and gopher tortoise are not likely to occur in the FPL West Secondary Corridor. The impacts of the land acquisition would be the same as under alternative 1a. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with the FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Adverse impacts on Florida burrowing owl and gopher tortoise from alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA, are expected to be negligible adverse.

Rlpgrpf 'Lces wgo qpvc.'Gcvpaf'Ur lngo qui'Hnqtlf c'Tqf c nRcm . 'Tqemrpf /Rclpvgf 'Ngch—These species have a low likelihood of occurrence in the FPL West Secondary Corridor. The impacts of the land acquisition would be the same as under alternative 1a. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with the Florida Department of Agriculture and Consumer Services (FDACS) (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Adverse impacts on these plant species from alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA, are expected to be negligible adverse.

Uqwj gtp'Ht qi 'Ht wlx'Dcj co c'Ncf f gt 'Dt cng.'Rlpgrpf 'Cnro cpf c.'Gxgti ncf gu'*qt 'Rlpgrpf u'
RgpeklHny gt.'bpf 'O gcf qy 'Lqlp/xgvej—These species are known to occur in or near the EEEA, with a few species known from the FPL West Secondary Corridor. The impacts of the land acquisition would be the same as under alternative 1a. Individuals of these species may be harmed or killed during construction of the transmission lines if they are present in the right-of-way. Also, habitat for these species may be lost during construction of the transmission lines. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with FDACS (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Impacts on these plant species from alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA, are expected to be long-term negligible to moderate adverse.

Dcj co c'Ucuj lc'bpf 'Rlpgrpf u'P qugdwtp – are found in disturbed uplands and pine rocklands. These species are not expected to occur within the FPL West Secondary Corridor within the park or in the area of analysis. The impacts of the land acquisition would be the same as under alternative 1a. Due to their low likelihood of occurrence, there will be no impact on these species from alternative 1b, the retention of ownership of land within the EEEA by FPL and the resulting transmission line construction and the lack of an easement or sufficient rights to flow additional water over the FPL property in the EEEA. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with FDACS (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Uo cmu/Hrz—There is a low likelihood that Small's flax could occur in disturbed uplands and disturbed wetlands, such as margins of canals, within the FPL West Secondary Corridor or the EEEA. The impacts of the land acquisition would be the same as under alternative 1a. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any

federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Adverse impacts on this species from construction, operation, and maintenance of the transmission lines are not expected.

Ewo wv&g'kō rcew'ō'Cngt pcv&g'3d

The cumulative impacts on special-status species from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 1b would have short-and long term negligible to major adverse impacts (dependent on the species) from construction of the transmission line without a flowage easement in the FPL corridor. These impacts would contribute appreciable adverse impacts to the overall cumulative effects on special-status species. The cumulative contribution to adverse effects on avian species would be high under alternative 1b because of the proximity to nesting and foraging locations.

Eqpenwukp'ō'Cngt pcv&g'3d''

Impacts on special-status species would be varied as noted in the analysis above. The Section 7 determinations for the federally listed species and the impacts on the state-listed species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28 at the end of this section. In general, construction and operation of transmission lines in the FPL West Secondary Corridor would have effects on many listed species in the area and have high risks to avian species, especially wood storks and Everglade snail kites, due to proximity of the lines to nesting and foraging locations. Impacts from the lack of a flowage easement or sufficient rights to increase water levels over the FPL West Secondary Corridor would be the same as described for alternative 1a.

The park would continue to coordinate with the USFWS and state resource agencies, to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable. Alternative 1b would contribute appreciable adverse impacts to the overall cumulative effects on special-status species. The cumulative contribution to adverse effects on avian species would be high under this alternative because of the proximity to nesting and foraging locations.

kō RCEVUQH'CNVGTP CV&G'4<P RUCES wukv&g'QH'HRN'NCPF''

kō rcew'qht'j g'Ncpf 'Ces wukv&g'3d''

Under alternative 2, the park would realize a net gain of 320 of land within the park boundary. Alternative 2 would have long-term indirect benefits to special-status species because acquisition of the FPL corridor would remove a large area of non-NPS ownership of land in the interior of the park. This would ensure that no other development would be proposed in this area and that the various Everglades ecosystem restoration projects could occur without any obstacles relating to the presence of this parcel. The connectivity of the EEEA wetlands would be ensured, and a potential source of nonnative vegetation not under NPS control would be removed. Placing ownership of this area solely with the NPS would enhance the ability to provide more natural water flows to the park, which in turn would enhance the conservation of the resources and values of the park, including special-status species, a long-term beneficial impact. A detailed discussion of the impacts of the land acquisition on individual species is provided in the discussion below.

Kō rcew'qhl'Vtcpuo kulkp'Nkpg'Eqpwt wevkp''

In general, construction and operation of transmission lines in the area of possible relocated corridor east of the park would have effects on many listed species similar to other alternatives but would have lower risks to wood storks and Everglade snail kites due to the location of the lines farther away from nesting and foraging locations than the FPL corridors. Impacts on species that are known to inhabit disturbed or more upland areas would be expected to be higher due to the land uses in the area of possible relocated corridor. Impacts on special-status species within the park would be minimized under this alternative. In general, impacts on avian species using wetland habitats would be less under this alternative since less wetland acreage would be impacted and the wetlands impacted are considered to be of lower quality based on connectivity and integrity.

A detailed discussion of the impacts of the transmission line construction on individual species is provided below.

Hgf gt cmf 'Nkmgf 'Ur gelgu'

Y gū'Kpf kcp'O cpcvgg—The West Indian Manatee may occasionally be found in the SFWMD canals in area of possible relocated corridor and in the EEEA. The NPS acquisition of the FPL West Secondary Corridor within the park and subsequent water flows for habitat restoration projects are not anticipated to have a noticeable effect on water levels or water quality within the canals. No in-water work in the canals is anticipated during construction of the transmission lines. Appropriate erosion control measures will be implemented during construction to prevent degradation of adjacent waterbodies. Transmission line construction stormwater discharges released into waters of the state will be addressed through compliance with Rule 62-621.300(4) (Generic Permit for Stormwater from Large and Small Construction Activities). In the event of inadvertent equipment or vehicle fluid release during construction, construction crews will be equipped with spill containment and absorption materials. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Section 7 Determination of Effect—Under alternative 2, NPS acquisition of the FPL West Secondary Corridor and construction of the transmission lines outside the EEEA, there may be a discountable, short-term adverse effect on the manatee from construction and maintenance of the transmission lines. There would be no impacts on manatee from NPS acquisition of the FPL West Secondary Corridor within the park. This would equate to a “no effect” determination. The effect determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Hqtlf c'Repvj gt—The Florida panther is known from the area of analysis. Panthers have been known to occur along the Tamiami Trail. NPS acquisition of the FPL West Secondary Corridor within the park is expected to have a long-term beneficial impact on the Florida Panther because it will prevent the fragmentation and loss of habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership.

Construction traffic and noise is likely to cause short-term changes to the travel patterns and hunting behaviors of panthers in the area of relocated corridor. This is also true for line maintenance activities. These impacts are considered short term, minor, and adverse. Increases in connectivity between habitat types and areas due to the transmission corridor may have long-term minor adverse impacts on the Florida panther if they encourage movement between more developed areas where panther injury or mortality is more likely to occur. For any species documented within the proposed right-of-way as a result of post-

certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. FPL will work with USFWS/FFWCC to mitigate any potential impacts on Florida panther habitat once a corridor is certified and a specific right-of-way is designed.

Section 7 Determination of Effect—Under alternative 2, NPS acquisition of the FPL West Secondary Corridor and construction of the transmission lines outside the EEEA, would have minor short- and long-term adverse impacts on the Florida panther from transmission line construction and operation. Long-term beneficial impacts would accrue from NPS acquisition of the FPL West Secondary Corridor within the park. This would equate to a “may affect, not likely to adversely affect” determination. The effect determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Impact of Drought—NPS acquisition of the FPL West Secondary Corridor may have a long-term beneficial effect on the Florida bonneted bat by protecting tree islands that may be used for roosting from clearing for transmission line construction.

There is a moderate probability of Florida bonneted bat occurring in the area of possible relocated corridor. Right-of-way and access road clearing activities in the area of possible relocated corridor may result in the loss of roosting habitat (palm and other tree foliage). If bats are roosting in the areas when clearing takes place, bat injury or mortality may occur. The loss of roosting habitat is considered a long-term moderate adverse impact on Florida bonneted bats. Injury or mortality to Florida bonneted bats from right-of-way or access road clearing would be considered short term, moderate, and adverse. These impacts could also occur during line maintenance activities. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Section 7 Determination of Effect—Alternative 2, NPS acquisition of the FPL West Secondary Corridor and construction of the transmission lines outside the EEEA, would have short- and long-term moderate adverse impacts on Florida bonneted bat from construction, operation, and maintenance of the transmission lines with some long term benefits from the acquisition of the FPL West Secondary Corridor within the park. This would equate to a “may affect, likely to adversely affect” determination. The effect determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Impact of Wetlands—NPS acquisition of the FPL West Secondary Corridor within the park would have long-term benefits to wood stork. NPS acquisition of the FPL West Secondary Corridor would prevent the fragmentation and loss of high quality foraging and potential nesting habitat that would occur if a transmission line was built in this corridor. Acquisition of the FPL West Secondary Corridor by NPS would also remove the risk of line strikes and electrocution associated with transmission lines built within the FPL West Secondary Corridor. In addition, NPS acquisition of the FPL West Secondary Corridor would allow for the additional flow of water across this corridor as needed for ecosystem restoration projects. Ecosystem restoration is expected to significantly benefit wood storks and other wading birds in the area by restoring the natural seasonal patterns of flow and improving prey availability across the landscape.

Transmission line and access road construction would result in the loss of foraging habitat for this species when wetlands are filled to create access roads and structure pads and if the hydrology of wetlands adjacent to construction areas is altered. This loss of foraging habitat within the area of possible relocated corridor is considered a long term, moderate, adverse impact on the species. Foraging and other behavior

may also be altered during the construction period due to the construction noise and equipment traffic. These impacts are considered short term, moderate, and adverse. Minor impacts may also occur from line maintenance activities. The presence of the two 500-kV and one 230-kV transmission lines in the area of possible relocated corridor present a strike hazard that could result in wood stork injury or mortality. The impact of birds striking the structures, lines, or guy wires in the area of possible relocated corridor is long term, moderate, and adverse.

Four wood stork colonies are known from within 5 miles of the FPL corridors and the area of possible relocated corridor in the vicinity of Tamiami Trail. The corridors are within the Core Foraging Area of these four colonies and other colonies. However, the colonies are not within area of possible relocated corridor. The closest colony to the hypothetical corridor within the area of possible relocated corridor is the 3B Mid East colony, which is 2.49 miles away (table 26). Only 7 wood stork nests have been observed at this colony during nesting periods over the last 5 years. The Tamiami East 1 colony is next closest at 2.91 miles; 10-15 wood stork nests have been observed at this colony during nesting periods over the last 5 years. The Tamiami East 2 colony is 3.87 miles away from the hypothetical corridor; 20-30 wood stork nests have been observed during nesting periods at this colony over the last 5 years. The Tamiami West (Coopertown) colony is the largest colony in the 5-mile radius and the further away from the hypothetical corridor (4.94 miles). Over the last 5 years, 50 to 1,300 wood stork nests have been observed at this colony during nesting periods. The risk assessment conducted by Exponent (2013) found that construction in the area of possible relocated corridor poses the least risk to wood stork when compared to the FPL West Secondary and FPL West Preferred Corridors (figures 49 and 52).

FPL will comply with any federal permit conditions regarding wood stork colonies, including those related to mitigation for lost foraging habitat. The FPL construction designs would include features to minimize impacts on avian species including the wood stork. For example, the spacing between transmission conductors (wires) for the proposed 230- and 500-kV lines would be far greater than the 61-inch wingspan for the wood stork, greatly minimizing the threat for electrical harm to the bird. These designs would be consistent with the FFWCC-recommended Conditions of Certification to install flight diverters on overhead ground wires to minimize bird interactions with the lines in areas within 1/2 mile of active wood stork colonies and the FPL design standard of installing perch discouragers on all new 230- and 500-kV transmission line structures. The FPL designs would be consistent with the Mitigation Concepts document FPL provided to the NPS (FPL 2010). However, these measures are not expected to eliminate all impacts on wood storks.

Further, an Avian Protection Plan specifically for this project, consistent with the Mitigation Concepts document and Avian Power Line Interaction Committee guidelines, would be developed in consultation with USFWS. In the mitigation concepts document, FPL suggested that various mitigation options are available in certain areas to reduce potential impacts on wading birds. These options include wildlife and wading bird colony surveys to document which species and in what areas of the right-of-way alignment potential impacts are possible in addition to the design features, such as perch discouragers on the towers and flight diverters mentioned above.

Subsequent to submission of that document to the NPS, FPL has been negotiating proposed Conditions of Certification with the FFWCC and SFWMD. Included in those proposed Conditions of Certification are requirements for pre-construction listed species surveys all along the right-of-way and ground and follow-flight surveys of wading bird usage along the right-of-way in areas of known wading bird colonies. The proposed Conditions of Certification also require potential design alternatives such as perch discouragers and flight diverters in areas of those known colonies. FPL would also work with FFWCC to design a post-construction mitigation effectiveness monitoring study. Based on the results of such a study, FPL may be required to implement further mitigation measures, such as additional flight diverters. A specific

design has not yet been selected, so these measures are not specifically incorporated into the analysis in this EIS.

Section 7 Determination of Effect—Alternative 2 NPS acquisition of the FPL West Secondary Corridor and construction of the transmission lines outside the EEEA, would have short- and long-term minor to moderate adverse impacts on the wood stork from construction, operation, and maintenance of the transmission lines along with long-term benefits from NPS acquisition of the FPL West Secondary Corridor within the park. This would equate to a “may affect, likely to adversely affect” determination. The findings of the Exponent Risk Assessment (Exponent 2013) and the NPS risk assessment (2010) are incorporated by reference into this EIS. The effect determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Everglade snail kite—The Everglade snail kite is known to nest in the eastern portion of the park in the area of analysis and may forage within herbaceous wetland areas in the area of analysis. There are no known nesting sites in area of possible relocated corridor. NPS acquisition of the FPL West Secondary Corridor would provide long-term benefits to the Everglade snail kite. NPS acquisition of the FPL West Secondary Corridor would prevent the fragmentation and loss of high quality foraging and nesting habitat that would occur if a transmission line was built in this corridor. Acquisition of the FPL West Secondary Corridor by NPS would also remove the risk line of strikes and electrocution associated with transmission lines built within the FPL West Secondary Corridor. In addition, NPS acquisition of the FPL West Secondary Corridor would allow for the flow of water across this corridor as needed for wetland habitat and hydrologic restoration projects. Hydrologic restoration would result in beneficial effects to kites through habitat improvement in EEEA.

The noise and vehicular traffic associated with the construction of the transmission lines and access road construction within the area of possible relocated corridor may cause changes in Everglade snail kite behaviors such as foraging, breeding, and nesting. This would also be true for line maintenance activities. These impacts would be considered short term, minor, and adverse. Filling of wetlands for structure pads and access roads within the area of possible relocated corridor would also result in loss of foraging habitat for Everglade snail kite. The loss of foraging habitat in the area of possible relocated corridor would be considered a long-term moderate adverse impact.

The risk assessment conducted by Exponent (2013), found that construction in the area of possible relocated corridor poses the least risk to Everglade snail kite when compared to the FPL West Secondary and FPL West Preferred Corridors (figure 53).

The FPL construction designs would include features to minimize impacts on avian species including the Everglade snail kite. The FPL designs would be consistent with the Mitigation Concepts document FPL provided to the NPS (FPL 2010) and the Avian Power Line Interaction Committee guidelines. However, these measures are not expected to eliminate all impacts on the Everglade snail kite. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Section 7 Determination of Effect—Alternative 2, NPS acquisition of the FPL West Secondary Corridor and construction of the transmission lines outside the EEEA, would have short- and long-term minor to moderate adverse impacts on the Everglade snail kite from construction, operation, and maintenance of the transmission lines along with long term benefits from NPS acquisition of the FPL West Secondary Corridor within the park. This would equate to a “may affect, likely to adversely affect” determination. The findings of the Exponent Risk Assessment (Exponent 2013) and the NPS risk assessment (2010) are

incorporated by reference into this EIS. The effect determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Gcwgtp'kpf ki q'Upeng—The eastern indigo snake may occasionally occur in upland and wetland areas within the area of analysis. The NPS acquisition of the FPL West Secondary Corridor is expected to have long-term benefits to the eastern indigo snake from protection of potential foraging habitat from development.

Construction noise and vehicle traffic in the area of possible relocated corridor may result in changes in eastern indigo behavior. These impacts are considered short term, minor, and adverse. Indigo snakes may be killed or injured during clearing and construction activities in the area of possible relocated corridor. These impacts would be considered short to long term, moderate, and adverse. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Section 7 Determination of Effect—Alternative 2 NPS acquisition of the FPL West Secondary Corridor and construction of the transmission lines outside the EEEA, would have short- and long-term minor to moderate adverse impacts on the eastern indigo snake from construction, operation, and maintenance of the transmission lines along with long term benefits from NPS acquisition of the FPL West Secondary Corridor within the park. This would equate to a “may affect, likely to adversely affect” determination. The effect determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Dmfi gwa'Ukxgdwuj .I ct dgt arUr wti g.'Ucpi 'Hcz.'t'pf 'Vlp{ 'Rqfi i cnc—Blodgett's Silverbush, Garber's spurge, sand flax, and tiny polygala are unlikely to occur within the FPL West Secondary Corridor; therefore, no impacts are expected to these species from NPS acquisition of the FPL West Secondary Corridor. These species have a low likelihood of occurrence in disturbed uplands in area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Effects to these species from construction, operation, and maintenance of the transmission lines in the area of possible relocated corridor are expected to be negligible adverse.

Section 7 Determination of Effects—Alternative 2, NPS acquisition of the FPL West Secondary Corridor and construction of the transmission lines outside the EEEA, would have no impacts on Blodgett's Silverbush, Garber's spurge, sand flax, and tiny polygala. This would equate to a “no effect” determination. The effect determination listed here represents the effect determination that the NPS expects the USACE to make in consultation with the USFWS if or when FPL seeks issuance of a CWA Section 404 permit.

Ucwg/rkxgf 'Ur gelgu'

Gxgti ncf gu'O lpm—The Everglades mink is likely to forage in wetland areas within the FPL West Secondary Corridor. NPS acquisition of the FPL West Secondary Corridor would provide long-term benefits by protecting Everglades mink habitat from loss or degradation resulting from construction of transmission lines in this corridor. In addition, NPS acquisition of the FPL West Secondary Corridor would allow for the flow of water across this corridor as needed for ecosystem restoration projects.

The Everglades mink is also likely to forage in wetland areas within the area of possible relocated corridor. Construction noise and traffic may alter the behavior of Everglades mink in the area during the construction period. These impacts would be considered short term, minor, and adverse. Filling of wetlands for structure pads and access roads would result in long term, moderate, adverse impacts. Alternative 1b, construction of the transmission lines outside the EEEA, would have short- and long-term moderate adverse impacts on the Everglades mink. FPL will work with FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Alternative 2, NPS acquisition of the FPL West Secondary Corridor and construction of the transmission lines outside the EEEA, would have short- and long- minor to moderate adverse impacts on the Everglades mink.

Florida sandhill crane—The Florida sandhill crane may occasionally forage within the FPL West Secondary Corridor. Since the Florida sandhill crane is known to forage within both wetland and upland habitats within the region, NPS acquisition of the FPL West Secondary Corridor is expected to have limited long-term benefits on the species.

The Florida sandhill may occasionally forage within area of possible relocated corridor. Construction noise and traffic in the area of possible relocated corridor may impact Florida sandhill crane behavior during the construction period. Similar impacts may occur during line maintenance. These impacts are considered short term, minor, and adverse. Construction of the access roads and structure pads in the area of possible relocated corridor may result in a loss of foraging habitat for this species. These impacts are considered long term, minor, and adverse. In addition, construction of the transmission lines in the area of possible relocated corridor would create a strike hazard for Florida sandhill crane. Impacts from Florida sandhill crane line strikes are considered long term, moderate, and adverse. Preferred habitats of the Florida sandhill crane include freshwater herbaceous wetlands (Exponent 2013). According to the ARA, relative risk to cranes, based on distance of the preferred focal habitats from the transmission corridors, was generally greatest for the FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor within the area of possible relocated (Exponent 2013) (figure 54).

FPL will work with FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Alternative 2, NPS acquisition of the FPL West Secondary Corridor and construction of the transmission lines outside the EEEA, would have short- and long-term minor to moderate adverse impacts on the Florida sandhill crane.

White-crowned pigeon—The white-crowned pigeon may forage on the fruit of poisonwood trees in the FPL West Secondary Corridor and in the rest of the EEEA, but it is not known to nest in the EEEA. Since poisonwood trees are known to occur in wetlands and uplands throughout south Florida, NPS acquisition of the FPL West Secondary Corridor is expected to have limited long-term beneficial impacts on white-crowned pigeon.

The white-crowned pigeon is has a moderate likelihood of foraging within area of possible relocated corridor, but is not known to nest in this area. The ARA found that the relative risk to white-crowned pigeons, based on distance of the preferred habitats from the transmission corridors, was generally greatest for FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor within the area of possible relocated corridor (figure 55). FPL will work with FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. The behavior of these birds is may be impacted by the increased noise and vehicle levels within area of possible relocated corridor during the construction period. Similar impacts are expected to occur during line maintenance activities. These impacts are considered short term, minor, and adverse. Construction of access roads and structure pads would result in

loss of foraging habitats. The impact of the lost habitat is expected to be long term, minor, and adverse. Construction of the transmission lines would create a strike hazard for white crowned pigeons. The impact of injury and mortality due to line strikes is considered long term, minor, and adverse. Alternative 2, NPS acquisition of the FPL West Secondary Corridor and construction of the transmission lines outside the EEEA, would have short- and long-term minor adverse impacts on the white-crowned pigeon.

Nko r nlp. 'Nkvwg'Dwng'J gt qp. 'Upqy { 'Gi tgv. 'Vtleqmt gf 'J gt qp. 'cpf 'Tqugcvg'Ur qqpdkm—These wading birds are likely to forage within the park in the vicinity of the FPL West Secondary Corridor. Mixed rookeries of wading birds also occur in the vicinity of the FPL West Secondary Corridor. NPS acquisition of the FPL West Secondary Corridor would provide long-term benefits to these wading bird species. NPS acquisition of the FPL West Secondary Corridor would prevent the fragmentation and loss of high quality foraging and nesting habitat that would occur if a transmission line was built in this corridor. Acquisition of the FPL West Secondary Corridor by NPS would also remove the risk line strikes and electrocution associated with transmission lines built within the FPL West Secondary Corridor. In addition, NPS acquisition of the FPL West Secondary Corridor would allow for the flow of water across this corridor as needed for wetland habitat and hydrologic restoration projects.

Limpkin, little blue heron, snowy egret, tricolored heron, and roseate spoonbill are also likely to forage within freshwater wetland areas in area of possible relocated corridor. Mixed rookeries of wading birds also occur in the park west of area of possible relocated corridor. The behavior of these birds is likely to be impacted by the increased noise and vehicle levels during the construction period. Similar impacts are expected to occur during line maintenance activities. These impacts are considered short term, minor, and adverse. Construction of access roads and structure pads would result in loss of wetland foraging habitats. The impact of the lost habitat is expected to be long term, moderate, and adverse. Construction of the transmission lines would create a strike hazard for the wading birds. The impact of bird injury and mortality due to line strikes is considered long term, moderate, and adverse. The ARA found that the relative risk to these wading bird species, based on distance of the preferred habitats from the transmission corridors, was generally greatest for FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor within the area of possible relocated corridor (Exponent 2013). FPL will work with FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Alternative 2 is expected to have short- to long-term minor to moderate adverse impacts on these species. These impacts are not expected to result in population level changes for the species or in species being extirpated from the park.

Hmtkf c'Dwt t qy lpi 'Qy nlc pf 'I qr j gt 'Vqt vqlug—Due to their preference for xeric habitats, the Florida burrowing owl and gopher tortoise are not likely to occur in the FPL West Secondary Corridor. Therefore, NPS acquisition of the FPL West Secondary Corridor within the park is expected to have no effect on these species.

The Florida burrowing owl and gopher have a low likelihood of occurrence in xeric habitats in area of possible relocated corridor. FPL will work with FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Impacts on Florida burrowing owl and gopher tortoise from alternative 2, NPS acquisition of the FPL West Secondary Corridor and construction of the transmission lines outside the EEEA, are expected to be short- to long-term, negligible to minor, and adverse. Short-term impacts would be related to disturbance during construction or maintenance, while long-term impacts would be related to habitat loss.

Rlpgrpf 'Lces wgo qpvc. 'Gcvpøt'Ur lngo qui 'Hmtkf c' 'T qf cni Rcm . 'Uqwj gt p' Ht qi 'Ht wls. 'Dcj co c' 'Ncf f gt 'Dt eng. 'Rlpgrpf 'Cmro cpf c. 'Tqemrpf 'Rclpvgf 'Ngch 'Rlpgrpf u'qt 'Gxgt i rcf gu' Rgpekl' Hqy gt. 'Dcj co c' 'Ucuj lc. 'Rlpgrpf 'Pqugdwtp. 'cpf 'O gcf qy 'Lqlpvxgvej—Most of these species are

have a low to moderate likelihood of occurrence within the FPL West Secondary Corridor. Southern frog-fruit is known from the FPL West Secondary Corridor. Acquisition of the FPL West Secondary Corridor by NPS is expected to have long-term beneficial impacts on these species due to preservation and restoration of habitat for these plant species.

These species have a low to moderate likelihood of occurrence in area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with FDACS (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Alternative 2 is expected to have short- to long-term negligible to minor adverse impacts on these plant species. Short-term impacts would be related to disturbance during construction or maintenance, whereas long-term impacts would be related to habitat loss.

Uo cma'Hz—There is a low likelihood that Small's flax could occur in disturbed uplands and disturbed wetlands, such as margins of canals, within the FPL West Secondary Corridor. NPS acquisition of the FPL West Secondary Corridor is expected to have no impact on Small's flax. There is a moderate likelihood that Small's flax could occur in disturbed uplands and disturbed wetlands, such as margins of canals, within area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Effects to this species from construction and maintenance of the transmission lines are expected to be negligible to minor adverse.

Ewo wæ'g'Kō rcew'

The cumulative impacts on special-status species from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 2 would allow flowage/implementation of the ecosystem restoration projects and benefit some species. However, alternative 2 would also result in short- and long-term negligible to major adverse impacts from construction of the transmission line in areas outside the park. These impacts would contribute appreciable beneficial and noticeable adverse impacts to the overall cumulative effects on special-status species in this area. The cumulative contribution to adverse effects on avian species utilizing wetland habitats are generally less under this alternative than under other alternatives.

Eqpenwukp''

NPS acquisition of the FPL West Secondary Corridor would provide long-term benefits to special-status species since this would mean there would be no impediments to water restoration projects from future use of this parcel. Impacts on special-status species would be varied as noted in the alternative 2 analysis. The Section 7 determinations for the federally listed species and the impacts on the state-listed species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28 at the end of this section. In general, construction and operation of transmission lines in the area of possible relocated corridor east of the park would have effects on many listed species in the area. Alternative 2 would have lower risks to wood storks and Everglade snail kites than construction on the FPL corridors due to the location of the lines farther away from nesting and foraging locations. Impacts on species that are known to inhabit disturbed or open areas would be expected to be higher due to the land uses in the area of possible relocated corridor.

The park would continue to coordinate with USFWS and state resource agencies to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable. Alternative 2 would contribute appreciable beneficial

and noticeable adverse impacts to the overall cumulative effects on special-status species in this area. The cumulative contribution to adverse effects on avian species using wetland habitats are generally less under this alternative than under other alternatives.

KO RCEVUQH CNVGTP CVKKG'5<HGG'HQT'HGG'NCPF'GZEJ CPI G''

KO rcew'qh'tj g'Ncpf 'Ces wukqp'Cevkqp''

Under alternative 3, there would be benefits to special-status species because the exchange would remove a large area of non-NPS ownership of land within the interior of the park, ensuring that no other development would be proposed in this area and that the various Everglades ecosystem restoration projects could occur without any obstacles relating to the presence of this parcel. The connectivity of the EEEA wetlands would be ensured, and a potential source of nonnative vegetation not under NPS control would be removed. Placing ownership of this area solely with the NPS would enhance the ability to provide more natural water flows to the park, which in turn would enhance the conservation of the resources and values of the park, including special-status species, a substantial long-term beneficial impact. In addition, as a result of the exchange, the park would realize a net gain of 60 acres of higher value wetlands. The exchange corridor given to FPL is 260 acres of mostly wetlands located at the edge of the park, close to developed areas, some of which are infested with nonnative species, which thereby reduces its value as wildlife habitat. The FPL corridor gained by the park is 320 acres that is farther from developed areas and generally has fewer nonnative species than the corridor gained by FPL. Impacts on individual special-status species from NPS acquisition of the FPL West Secondary Corridor would be the same as discussed under alternative 2 for this action and are not repeated in the species discussion below.

KO rcew'qh'Vtcpuo kulkqp'Nlpg'Eqput wevklp''

Under alternative 3, impacts would result from the construction of transmission lines within the exchange corridor, directly adjacent to park lands on the eastern edge of the park, as described earlier in this chapter and appendix F. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will no longer own or control the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable. Terms and conditions are found in appendix G.

Indirect short- and long-term impacts, ranging from no effect / negligible to potentially major adverse impacts will accrue to special-status species from transmission line construction and presence along FPL West Preferred Corridor. Construction of transmission lines in this corridor would have a relatively high risk to avian species because of the proximity to nesting and foraging locations.

In addition to the mitigation measures included in the SCA, any construction in this corridor would need to adhere to all terms and conditions of the land exchange. Terms and conditions applicable to special-status species include:

1. Requirement for pre-construction and construction surveys for plants, wildlife, and habitat
2. Requirement for an avoidance, minimization, and mitigation plan for impacts on special-status species
3. Requirement for avian and bat protection:
 - All utility-related infrastructure shall be constructed, operated, and maintained utilizing state-of-the-art practices to eliminate or reduce injury/mortality of avian and bat species to the maximum extent practicable. These practices shall include mitigation measures

that follow appropriate guidelines, including but not limited to Avian Power Line Interaction Committee guidelines, both during and after construction, including operations and maintenance activities. In locations where NPS determines, in consultation with FPL, that maximizing the level of protection of avian species is warranted, guy wires will not be used to the maximum extent practicable. Transmission structure spacing and sizing will be varied to lower certain structures or stagger the normal span distances in areas within proximity of wading bird colonies to minimize possible interactions. Other design alternatives may also be available in certain locales. Measures for eliminating or reducing injury/mortality of avian and bat species would all be evaluated in consultation with appropriate agency personnel prior to implementation.

- Prior to commencing any construction, FPL shall develop a detailed pre- and post-construction avian and bat protection plan with concurrence of NPS and other appropriate federal and state agencies. The plan shall reflect the requirements for avian protection required by appropriate regulatory authorities. The plan will include pre- and post-construction monitoring to address avian and bat flight presence, flight level, position, and frequency in flight in relation to the transmission line configurations. The plan will focus on federal- and state-listed species in the vicinity of the proposed transmission route and assess impacts of transmission infrastructure on their populations. The pre-construction study will be conducted over an appropriate time period agreed upon by NPS and other appropriate federal and state agencies prior to initiating construction to address data variations related to inter-annual variation in the location and quality of habitat and food resources, climatic variability. The study will be conducted throughout the year to address seasonal migratory species and flight patterns. The plan will be reviewed on an annual basis.

Impacts on special-status species are presented below.

Hgf gt cni 'Nkvgf 'Ur gelgu'

Y gvr'Kpf kcp'O cpcvvg—The West Indian Manatee may occasionally be found in the SFWMD canals crossed by the FPL West Preferred Corridor. No in-water work in the canals is anticipated during construction of the transmission lines. Appropriate erosion control measures will be implemented during construction to prevent degradation of adjacent waterbodies. Transmission line construction stormwater discharges released into waters of the state will be addressed through compliance with Rule 62-621.300(4) (Generic Permit for Stormwater from Large and Small Construction Activities). In the event of inadvertent equipment or vehicle fluid release during construction, construction crews will be equipped with spill containment and absorption materials. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Section 7 Determination of Effect—Under alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, there would be no impacts on the manatee from construction of the transmission lines. This would equate to a, “no effect” determination.

Hmt kf c'Rcpvj gt—The Florida panther is known from the area of analysis and the FPL West Preferred Corridor is within the Primary Zone of the Panther Focus Area. Panthers have been known to occur in the park in the vicinity of the FPL West Preferred Corridor. Construction traffic and noise is likely to cause short-term changes to the travel patterns and hunting behaviors of panthers in this area. This would also

be true for line maintenance activities. These impacts are considered short-term, minor, and adverse. The loss of native wetland foraging habitat due to road and pad fill is considered a long-term moderate adverse impact. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. FPL will work with USFWS/FFWCC to mitigate any potential impacts on Florida panther habitat once a corridor is certified and a specific right-of-way is designed.

Section 7 Determination of Effect—Alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, would have minor to moderate, short and long term, adverse impacts on Florida panther. This would equate to a “may affect, likely to adversely affect” determination.

Hnqtlf c'Dqppgvf 'Dcv—The Florida bonneted bat has been recorded in the park in the vicinity of the FPL West Preferred Corridor. Right-of-way and access road clearing activities may result in loss of small amounts of roosting habitat (palm and other tree foliage). If bats are roosting in the areas when clearing takes place, bat injury or mortality may occur. These impacts may also occur during line maintenance activities. The loss of roosting habitat is considered a long-term, moderate, adverse impact on Florida bonneted bats. Injury or mortality to Florida bonneted bats from right-of-way or access road clearing would be considered short term, moderate, and adverse. Protection measures implemented as part of the Avian and Bat Protection Plan required under the terms and conditions of the land exchange may lessen the impacts on Florida bonneted bats, but mortality could still occur. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Section 7 Determination of Effect—Alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, would have moderate adverse impacts on Florida bonneted bat. This would equate to a “may affect, likely to adversely affect” determination.

Y qqf 'Uqtm—Four wood stork colonies are known from the vicinity of the FPL West Preferred Corridor and the corridor is within the Core Foraging Area of these four colonies and additional colonies. As shown in table 26, the largest colony (Tamiami West/Cooperstown) within a five radius of where the corridors cross Tamiami Trail closer to the FPL West Secondary Corridor than to either the FPL West Preferred Corridor or the hypothetical corridor within the area of possible relocated corridor. The Tamiami West (Coopertown) is located 0.96 mile from the FPL West Secondary Corridor, while the colony is located 2.81 miles from the FPL West Preferred Corridor. Moving construction of the transmission line from the FPL West Secondary Corridor to the FPL West Preferred Corridor also increases the distance from the Tamiami East 2 and 3B Mud East colonies from the transmission lines (table 26). However, the distance from the Tamiami East 1 colony to the FPL West Preferred Corridor (0.51 mile) is less than that between the colony and the FPL West Secondary Corridor (1.25 miles). Overall, construction in the FPL West Preferred Corridor instead of the FPL West Secondary Corridor moves the transmission lines further away from a greater number of nesting wood storks. The results of the risk assessment indicate that the FPL West Preferred Corridor poses an intermediate risk to wood storks when compared to the other two corridors (Exponent 2013) (figures 49 and 52).

FPL will comply with any federal permit conditions regarding wood stork colonies, including those related to mitigation for lost foraging habitat. The FPL construction designs would include features to minimize impacts on avian species including the wood stork. For example, the spacing between transmission conductors (wires) for the proposed 230- and 500-kV lines would be far greater than the 61-

inch wingspan for the wood stork, greatly minimizing the threat for electrical harm to the bird. These designs would be consistent with the FFWCC-recommended Conditions of Certification to install flight diverters on overhead ground wires to minimize bird interactions with the lines in areas within 1/2 mile of active wood stork colonies and the FPL design standard of installing perch discouragers on all new 230- and 500-kV transmission line structures. The FPL designs would be consistent with the Mitigation Concepts document FPL provided to the NPS (FPL 2010). However, these measures are not expected to eliminate all impacts on wood storks.

Further, an Avian and Bat Protection Plan, consistent with the Mitigation Concepts document, and Avian Power Line Interaction Committee guidelines, and terms and conditions would be developed in consultation with USFWS. In the mitigation concepts document, FPL suggested that various mitigation options are available in certain areas to reduce potential impacts on wading birds. These options include wildlife and wading bird colony surveys to document which species and in what areas of the right-of-way alignment potential impacts are possible in addition to the design features, such as perch discouragers on the towers and flight diverters mentioned above.

Subsequent to submission of that document to NPS, FPL has been negotiating proposed Conditions of Certification with the FFWCC and SFWMD. Included in those proposed Conditions of Certification are requirements for pre-construction listed species surveys all along the right-of-way and ground and follow-flight surveys of wading bird usage along the right-of-way in areas of known wading bird colonies. The proposed Conditions of Certification also require potential design alternatives such as perch discouragers and flight diverters in areas of those known colonies. FPL would also work with FFWCC to design a post-construction mitigation effectiveness monitoring study. Based on the results of such a study, FPL may be required to implement further mitigation measures, such as additional flight diverters. A specific design has not yet been selected, so these measures are not specifically incorporated into the analysis in this EIS.

Transmission line and access road construction would result in the loss or alteration of foraging habitat for this species when wetlands are filled to create access roads and structure pads and if the hydrology of wetlands adjacent to construction areas is altered. This loss of foraging habitat is considered a long term, moderate, adverse impact on the species. Ecosystem restoration is expected to significantly benefit wood storks and other wading birds in the area by restoring the natural seasonal patterns of flow and improving prey availability across the landscape. Foraging and nesting behavior may also be altered during the construction period due to the construction noise and equipment traffic. These impacts are considered short term, moderate, and adverse. The presence of the two 500-kV and one 230-kV transmission lines (tower structures, guy wires, and electrical transmission cable lines) present a strike hazard that could result in wood stork injury or mortality. Avian protection devices, such as line markers may be installed on the lines as part of the terms and conditions of the land exchange, which could reduce the likelihood of line strikes, but will not eliminate all mortality. The impact of birds striking the lines is long term, major, and adverse. The impacts of powerline collisions may lead to population decline as a result of the population-wide significance of the affected colonies to the wood stork population.

Section 7 Determination of Effect—Alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, would have moderate to major short- and long-term adverse impacts on the wood stork. This would equate to a “may affect, likely to adversely affect” determination. The findings of the Exponent Risk Assessment (Exponent 2013) and the NPS risk assessment (2010) are incorporated by reference into this EIS.

Gxgti ncf g'UpcklMlg—The Everglade snail kite is known to nest in the eastern portion of the park in the footprint of the FPL West Preferred Corridor and forages on apple snails in wetlands in the area of analysis. The noise and vehicular traffic associated with construction of the transmission lines and access

road construction is likely to cause changes in Everglade snail kite behaviors such as foraging, breeding, and nesting. These impacts would be considered short term, minor, and adverse. Filling of wetlands for structure pads and access roads would also result in loss or alteration of foraging and nesting habitat for Everglade snail kite. The loss of foraging and nesting habitat would be considered a long term, moderate, adverse impact. Avian protection measures implemented as part of the Avian and Bat Protection Plan required under the terms and conditions on the land exchange may lessen the impacts of the line construction and operation on snail kite.

The risk assessment conducted by Exponent (2013), found that the FPL West Preferred Corridor posed an intermediate risk to snail kites (figure 53). Snail kite collisions with powerlines may rarely occur, but are not expected to cause a decline in the population because of the low expected occurrence. Impacts on Everglade snail kite from line collisions and electrocutions are expected to be long term, moderate, and adverse. The FPL construction designs would include features to minimize impacts on avian species including the Everglade snail kite. The FPL designs would be consistent with the Mitigation Concepts document FPL provided to the NPS (FPL 2010) and the Avian Power Line Interaction Committee guidelines. However, these measures are not expected to eliminate all impacts on the Everglade snail kite. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Section 7 Determination of Effect—Alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, would have minor to moderate short- and long-term adverse impacts on the Everglade snail kite. This would equate to a, “may affect, and is likely to adversely affect” determination. The findings of the Exponent Risk Assessment (Exponent 2013) and the NPS risk assessment (2010) are incorporated by reference into this EIS.

Gcuwgt p'kpf k q'Upeng—The eastern indigo snake may occasionally occur in tree inlands and other upland areas within and adjacent to the FPL West Preferred Corridor. Construction noise and vehicle traffic may result in changes in eastern indigo behavior. These impacts are considered short term, minor, and adverse. Indigo snakes may be killed or injured during clearing and construction activities if they are present. These impacts would be considered short term, moderate, and adverse. Terms and conditions may limit these impacts if surveys are conducted prior to construction. Construction of structure pads and access roads would also eliminate habitat for indigo snakes. These impacts would be considered moderate, long term, and adverse.

Section 7 Determination of Effect—Alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, would have moderate short term and long term adverse impacts on the eastern indigo snake. This would equate to a “may affect, likely to adversely affect” determination.

Dmf i gwa'Ukxgt dwuj .I ct dgt a'Ur wt i g.'Ucpf 'Hcz.'bpf 'Vlp{ 'Rqf i cre—These species are unlikely to occur within the FPL West Preferred Corridor due to lack of habitat. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS (for any federally listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. No effects to these species from transmission line construction and maintenance are expected

Section 7 Determination of Effects—Alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, would have

negligible adverse impacts on Blodgett's silverbush, Garber's spurge, sand flax, and tiny polygala. This would equate to a "no effect" determination.

Ucvg/rkvgf 'Ur gelgu'

Gxgti rcf gu'O lpm—The Everglades mink is likely to forage in wetland areas within and adjacent to the FPL West Preferred Corridor. Construction noise and traffic may alter the behavior of Everglades mink in the area during the construction period. This is also likely true for line maintenance activities. These impacts would be considered short term, minor, and adverse. Filling of wetlands for structure pads and access roads would result in long term, moderate, adverse impacts. FPL will work with FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, would have short- and long-term minor to moderate adverse impacts on the Everglades mink.

Hnptkf c'Ucpf j knEtpg—The Florida sandhill may occasionally forage within the FPL West Preferred Corridor. Preferred habitats of the Florida sandhill crane include freshwater herbaceous wetlands (Exponent 2013). According to the ARA, relative risk to cranes, based on distance of the preferred focal habitats from the transmission corridors, was generally greatest for the FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor within the area of possible relocated (Exponent 2013) (figure 54).

Construction noise and traffic may impact Florida sandhill crane behavior during the construction period. This would also be true for line maintenance activities. These impacts are considered short term, minor and adverse. Construction of the access roads and structure pads may result in a loss of foraging habitat for this species. These impacts are considered long term, minor, and adverse. In addition, construction of the transmission lines would create a strike hazard for Florida sandhill crane. Impacts from Florida sandhill crane line strikes are considered long term, moderate, and adverse. Avian protection measures implemented as part of the Avian and Bat Protection Plan required under the terms and conditions of the land exchange may lessen the impacts of the line construction and operation on Florida sandhill crane. FPL will work with FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor would have short- and long-term minor to moderate adverse impacts on the Florida sandhill crane.

Y j kg/et qy pgf 'Rli gqp—The white-crowned pigeon is moderately likely to forage on the fruit of poisonwood trees in the FPL West Preferred Corridor, but is not known to nest in this area. The ARA found that the relative risk to white-crowned pigeons, based on distance of the preferred habitats from the transmission corridors, was generally greatest for FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor within the area of possible relocated corridor (figure 55). Impacts on white-crowned pigeons from alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, are expected to be minor adverse as poisonwood trees are found in wetland and upland areas throughout south Florida. Avian protection measures implemented as part of the Avian and Bat Protection Plan required under the terms and conditions on the land exchange may lessen the impacts of the line construction and operation on the white-crowned pigeon. FPL will work with FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.

Nlo r nlp. 'Nlswg'Dwng'J gt qp. 'Upqy { 'Gi tgv. 'Vtleqmtgf 'J gt qp. 't'pf 'Tqugcvg'Ur qqpdkm—These wading birds are likely to forage within the park in the vicinity of the FPL West Preferred Corridor. Mixed rookeries of wading birds also occur within the vicinity of the FPL West Preferred Corridor. The ARA found that the relative risk to these wading bird species, based on distance of the preferred habitats from the transmission corridors, was generally greatest for FPL West Secondary Corridor, intermediate for the FPL West Preferred Corridor, and least for the hypothetical corridor within the area of possible relocated corridor (Exponent 2013). The behavior of these birds is likely to be impacted by the increased noise and vehicle levels during the construction period. The same would also be true for line maintenance activities. These impacts are considered short term, minor, and adverse. Construction of access roads and structure pads would result in loss or alteration of wetland foraging habitats. The impact of the lost habitat is expected to be long term, moderate, and adverse. Construction of the transmission lines and the associated towers and guy wires would create a strike hazard for the wading birds. The impact of bird injury and mortality due to line strikes is considered long term, moderate, and adverse. Avian protection measures implemented as part of the Avian and Bat Protection Plan required under the terms and conditions on the land exchange may lessen the impacts of the line construction and operation on wading birds. The FPL construction designs would include features to minimize impacts on avian species. The FPL designs would be consistent with the Mitigation Concepts document FPL provided to the NPS (FPL 2010). However, these measures are not expected to eliminate all impacts on avian species.

For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with the FFWCC (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Impacts on wading birds from alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, are expected to be short to long term, minor to moderate, and adverse. These impacts are not expected to result in population level changes for the species or in species being extirpated from the park.

Hqtlf c'Dwt t qy lpi 'Qy nlpf 'I qr j gt 'Vqt vqlug—Due to their preference for xeric habitats, the Florida burrowing owl and gopher tortoise are not likely to occur in the FPL West Preferred Corridor. Impacts on Florida burrowing owl and gopher tortoise from alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, are expected to be negligible adverse.

Pineland Jacquemontia, Eaton's Spikemoss, Florida Royal Palm, Rockland Painted-Leaf, Everglades (or Pinelands) Pencil Flower, Bahama Saschia, Pinelands Noseburn, and Small's Flax—These species have a low to moderate likelihood of occurrence in the FPL West Preferred Corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with FDACS (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Impacts on these plant species from alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, are expected to be negligible to minor, long term, and adverse.

O gcf qy 'Lqlpw/xgvej . 'Uqwj gtp'Ht qi 'Ht wlv. 'Dcj co c'Ncf f gt 'Dt cng. 't'pf 'Rlpgrpf 'Cmco cpf c—These plant species are known to occur in the EEEA and southern frog fruit, Bahama ladder brake and pineland allamanda have been observed in the proposed exchange corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with FDACS (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. Impacts on these plant species from alternative 3, the exchange of FPL and NPS lands within the EEEA and subsequent construction of transmission lines in the FPL West Preferred Corridor, are expected to be negligible to moderate, long term, and adverse.

Ewo wvkg'kō rcew'

The cumulative impacts on special-status species from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 3 would allow flowage/implementation of the ecosystem restoration projects and benefit many species, but the land exchange and construction of the transmission line in the exchange corridor would result in short- and long-term negligible to major adverse impacts. These impacts would contribute noticeable adverse and appreciable beneficial impacts to the overall cumulative effects on special-status species in this area. The cumulative contribution to adverse effects on avian species would be high under this alternative because of the proximity to nesting and foraging locations.

Eqpenwkp''

NPS acquisition of the FPL West Secondary Corridor would provide long-term benefits to special-status species since this would mean no impediments to water restoration projects could occur from future use of this parcel. Alternative 3 would result in a wide range of impacts on special-status species, as described for the individual species in the above analysis. The Section 7 determinations for the federally listed species and the impacts on the state-listed species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28 at the end of this section. In general, construction and operation of transmission lines in the FPL West Preferred Corridor would have effects on many listed species in the area and has high risks to wood storks and Everglade snail kites due to proximity of the lines to nesting and foraging locations

The park would continue to coordinate with the USFWS and state resource agencies, to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable. Alternative 3 would contribute noticeable adverse and appreciable beneficial impacts to the overall cumulative effects on special-status species in this area. The cumulative contribution to adverse effects on avian species would be high under this alternative because of the proximity to nesting and foraging locations.

kō rcevuqh'cnvgtp cvkg'6<gcugo gp v'hq t'gg'gzej cpi g''

kō rcew'qh'vj g'ncpf 'Ces wkwkp'Cevkp''

Under alternative 4, the NPS would acquire fee title to the FPL property (FPL West Secondary Corridor) through an exchange for an easement on NPS property (exchange corridor). Under alternative 4, there would be benefits to special-status species as described under alternative 3, but with terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance to special-status species or removal of habitat.

kō rcew'qh'Vtcpuo kwkp'Nkp'Eqput wewkp''

Although FPL would not own the property, impacts on special-status species would be the same as described under alternative 3. This is because there are no substantial differences in the terms and conditions under this alternative and no expected differences in how special-status species would be treated under an easement as opposed to under fee ownership, given the mitigation that FPL included in its SCA and expected conditions in the required resource stewardship plan. With an easement, the land would be used for transmission lines only and there would be less chance of other types of utility related facilities being constructed that could disrupt species in the area. The implementation of the terms and conditions represent an attempt at minimization of the overall impacts to wildlife by requiring FPL to avoid, minimize, and mitigate impacts on park resources during the construction and operation of the

transmission lines within the FPL West Preferred Corridor. Overall impacts on special-status species would be short- to long-term, negligible to major, and adverse; see descriptions under alternative 3 for details for each species.

Ewo wvkg'kō rcew'

Cumulative impacts under alternative 4 would be similar to alternative 3 with some additional cumulative benefits from having an easement arrangement and having NPS policies apply to the easement area. Also, the terms and conditions for alternative 4 result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance to special-status species or removal of habitat.

Alternative 4 would allow flowage and implementation of the ecosystem restoration projects, which would benefit many species. But the land exchange and construction of the transmission line in the exchange corridor would result in short- and long-term negligible to major adverse impacts. These impacts would contribute noticeable adverse and appreciable beneficial impacts to the overall cumulative effects on special-status species in this area. The cumulative contribution to adverse effects on avian species would be high under this alternative because of the proximity to nesting and foraging locations.

Eqpenwkp''

Impacts associated with alternative 4 would be essentially the same as described for alternative 3 except that no other utilities could be built in the corridor, which would lessen the risk of additional impacts of these facilities on special-status species. A wide range of impacts would occur on special-status species, as described for the individual species in the analysis for alternative 3. The Section 7 determinations for the federally listed species and the impacts on the state-listed species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28 at the end of this section. In general, construction and operation of transmission lines in the FPL West Preferred Corridor would have effects on many listed species in the area and have high risks to wood storks and Everglade snail kites due to proximity of the lines to nesting and foraging locations.

The park would continue to coordinate with USFWS and state resource agencies to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable. Alternative 4 would contribute noticeable adverse and appreciable beneficial impacts to the overall cumulative effects on special-status species in this area. The cumulative contribution to adverse effects on avian species would be high under this alternative because of the proximity to nesting and foraging locations.

Kō RCEVUQH'CNVGT'PCVKG'7<RGTRGVWCN'HNQY CI G'GUGO GPV'QP'HRN'RtQRGTVl ''

Kō rcew'qht'j g'Ncpf 'Ces wkwkqp'Cevkqp''

There would be substantial long-term benefits to special-status species from having a flowage easement on the FPL parcel in the EEEA, since this would mean no impediments to ecosystem restoration projects could occur from future use of this parcel. This would benefit park resources, including special-status species, by allowing habitat and hydrologic restoration projects to continue in the EEEA.

Kō rcew'qht'Vtcpuo kwlqp'Nlpg'Eqput wevklqp''

Impacts on special-status species from transmission line construction under alternative 5 would be the same as those described under alternative 1b. Please see the discussion there for impacts on individual species.

Ewo wvkg'K rcew'

The cumulative impacts on special-status species from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 5 would provide substantial beneficial impacts because flowage easement would allow the ecosystem restoration projects to proceed. However, alternative 5 would have negligible to major long-term adverse impacts due to transmission line construction in the park with no gain of park protected habitat. These impacts would contribute both appreciable adverse and appreciable beneficial impacts to the overall cumulative effects on special-status species in this area. The benefits would not be as extensive as those under the alternatives that result in the acquisition of the FPL corridor in the park.

Eqpenwukp''

NPS acquisition of a flowage easement, or sufficient rights to flow additional water over the FPL West Secondary Corridor would provide substantial long-term benefits to special-status species since this would mean no impediments to ecosystem restoration projects could occur from future use of this parcel. A wide range of impacts would occur on special-status species from transmission line construction, as described for the individual species in the analysis for alternative 1b. The Section 7 determinations for the federally listed species and the impacts on the state-listed species that could potentially occur in the area of analysis are summarized for this and other alternatives in tables 27 and 28 at the end of this section. In general, construction and operation of transmission lines in the FPL West Secondary Corridor would have impacts on many listed species in the area and have high risks to avian species, especially wood storks and Everglade snail kites, due to proximity of the lines to nesting and foraging locations.

The park would continue to coordinate with USFWS and state resource agencies to participate in the Turkey Point Power Plant Units 6 and 7 EIS project, and work to mitigate adverse impacts on these species. However, some losses may be unavoidable. Alternative 5 would contribute both appreciable adverse impacts and appreciable beneficial impacts to the overall cumulative effects on special-status species in this area. The benefits would not be as extensive as those under the alternatives that result in the acquisition of the FPL corridor in the park.

GUC'UGEVRQP'9'K RCEV'F GVGTO R'CVKQP'EQPENWUKP''

A summary of the ESA Section 7 determinations for each species and alternative is presented in table 27. Although the Section 7 determination is the same for all scenarios for each species, there may be difference in the relative risk of impact or potential for occurrence that are noted in the discussion above. For example, there are differences in risk for the avian species especially between the routes in the park and the route outside the park that are discussed in the text of this section and are addressed in more detail in the ARA completed for this project (Exponent 2013). However, the potential effects indicate that there may be adverse effects on individuals even in a lower risk situation, and so the determination remains “may affect, likely to adversely affect” in those cases.

The NPS is not seeking consultation or concurrence on species occurring on private lands. The NPS is only seeking concurrence on determinations for species occurring on federal lands. It should also be noted that the USFWS will only respond to effect determinations for the NPS preferred alternative, which has not been identified at this time.

A summary of impacts on state-listed species is presented below as well (table 28).

TABLE 27: ENDANGERED SPECIES ACT SECTION 7 DETERMINATIONS BY SPECIES AND ALTERNATIVE

Note: Refer to table 3 in chapter 2 for a summary of cumulative impacts for each impact topic.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
West Indian Manatee (<i>Trichechus manatus</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
No impact —lack of a flowage easement or sufficient rights or interest to flow additional water over the FPL West Secondary Corridor is expected to have no impact on water levels within the canals in the project area where manatee are found.	Same as 1a.	No impact —the West Indian Manatee may occasionally be found in the SFWMD canals in area of possible relocated corridor and in the EEEA. The NPS acquisition of the FPL West Secondary Corridor within the park and subsequent water flows for habitat restoration projects are not anticipated to have a noticeable effect on water levels or water quality within the canals. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	No impact —the West Indian Manatee may occasionally be found in the SFWMD canals in area the EEEA. The NPS land exchange with FPL is not anticipated to have a noticeable effect on water levels or water quality within the canals. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	Same as alternative 3 , but with terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance to special-status species or removal of habitat.	No impact —the NPS acquisition of a flowage easement over the FPL West Secondary Corridor and subsequent water flows for habitat restoration projects are not anticipated to have a noticeable effect on water levels or water quality within the canals.
<i>Impacts of Transmission Line Construction</i>					
No impact.	No impact —since no in-water work in the canals is expected and appropriate sedimentation and erosion controls will be implemented during	No impact —since no in-water work in the canals is expected and appropriate sedimentation and erosion controls will be implemented during	No impact —since no in-water work in the canals is expected and appropriate sedimentation and erosion controls will be implemented during	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
	construction.	construction.	construction.		
<i>ESA Section 7 Determination</i>					
Not applicable.	No Effect —lack of a flowage easement or sufficient rights or interest to flow additional water over the FPL West Secondary Corridor is expected to have negligible adverse impacts on water levels within the canals in the area of analysis where manatee are found. No in-water work in the canals is expected and appropriate sedimentation and erosion controls will be implemented during construction.	No Effect —NPS acquisition of the FPL West Secondary Corridor within the park and subsequent water flows for habitat restoration projects are not anticipated to have a noticeable effect on water levels or water quality within the canals. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. No in-water work in the canals is expected and appropriate sedimentation and erosion controls will be implemented during transmission line construction.	No Effect —The NPS land exchange with FPL is not anticipated to have a noticeable effect on water levels or water quality within the canals. No in-water work in the canals is expected and appropriate sedimentation and erosion controls will be implemented during transmission line construction. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	Same as alternative 3	No Effect —the flowage easement or sufficient rights or interest to flow additional water over the FPL West Secondary Corridor is expected to have negligible adverse impacts on water levels within the canals in the area of analysis where manatee are found. No in-water work in the canals is expected and appropriate sedimentation and erosion controls will be implemented during construction.
Florida Panther (<i>Felis concolor coryi</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
Long-term negligible adverse impacts —lack of a flowage easement or sufficient rights or interest to flow additional water over the FPL West	Same as alternative 1a.	Long-term beneficial impacts —NPS acquisition of the FPL West Secondary Corridor within the park will prevent the fragmentation and loss of	Long-term beneficial impacts —The land exchange will prevent the fragmentation and loss of habitat that would result if development occurred in	Same as alternative 3, but with terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor	Limited long-term beneficial impacts —from completion of the hydrologic restoration portions of planned ecosystem restoration

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
Secondary Corridor is expected to have negligible adverse impacts on the Florida panther. There may be some changes in species diversity and abundance in the area of analysis, but these changes are not expected to have an adverse impact on the Florida panther.		habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable. The FPL West Secondary Corridor is more interior to the Primary and Secondary Panther Focus Areas than the FPL West Preferred Corridor and therefore is considered higher value habitat.	and associated disturbance to special-status species or removal of habitat.	projects in the EEEA.
<i>Impacts of Transmission Line Construction</i>					
No impact.	Short- and long-term minor adverse impacts— Construction traffic and noise and line maintenance activities are likely to cause short-term changes to the travel patterns and hunting behaviors of panthers in this area. Increases in connectivity between habitat types and areas	Short- and long-term minor adverse impacts— Construction traffic and noise and line maintenance activities are likely to cause short-term changes to the travel patterns and hunting behaviors of panthers in this area. Increases in connectivity between habitat types and areas due to the transmission	Short- and long-term minor adverse impacts— Construction traffic and noise and line maintenance activities are likely to cause short-term changes to the travel patterns and hunting behaviors of panthers in this area. Increases in connectivity between habitat types and areas due to the transmission corridor may	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
	due to the transmission corridor may have long-term minor adverse impacts on the Florida panther if they encourage movement between more developed areas where panther injury or mortality is likely to occur. Also, loss of native wetland foraging habitat in the Primary Panther Zone due to road and pad fill would be considered a long term, moderate adverse impact.	corridor may have long-term minor adverse impacts on the Florida panther if they encourage movement between more developed areas where panther injury or mortality is likely to occur.	have long-term minor adverse impacts on the Florida panther if they encourage movement between more developed areas where panther injury or mortality is likely to occur. Also, loss of native wetland foraging habitat in the Primary Panther Zone due to road and pad fill would be considered a long-term moderate adverse impact.		
<i>ESA Section 7 Determination</i>					
Not applicable.	May affect, likely to adversely affect —lack of a flowage easement or sufficient rights or interest to flow additional water over the FPL West Secondary Corridor is expected to have negligible adverse impacts on Florida panther prey diversity and abundance in the area of analysis. Construction of the transmission line is expected to have short and long term, minor adverse impacts on Florida panther	May affect, not likely to adversely affect —NPS acquisition of the FPL West Secondary Corridor within the park will provide long term benefits by preventing the fragmentation and loss of habitat that would occur if a transmission line was built through the park. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. Construction of the transmission line is expected to have short and long term, minor	May affect, likely to adversely affect —the land exchange between FPL and NPS will provide long-term benefits by preventing the fragmentation and loss of habitat that would occur if a transmission line was built through the park. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on	Same as alternative 3.	May affect, likely to adversely affect —the flowage easement or sufficient rights or interest to flow additional water over the FPL West Secondary Corridor is expected to have limited long-term beneficial impacts on Florida panther from completion of the hydrologic restoration component of planned ecosystem restoration projects. Construction of the transmission line is expected to have short and long term,

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	behavior and result in a loss of native wetland foraging habitat in the Primary Panther Zone, a long-term moderate adverse impact.	adverse impacts on Florida panther behavior.	special-status species to the maximum extent practicable. The FPL West Secondary Corridor is more interior to the Primary and Secondary Panther Focus Areas than the FPL West Preferred Corridor and therefore is considered higher value habitat. Construction of the transmission line is expected to have short and long term, minor adverse impacts on Florida panther behavior and result in a loss of native wetland foraging habitat in the Primary Panther Zone, a long-term moderate adverse impact.		minor adverse impacts on Florida panther behavior and result in a loss of native wetland foraging habitat in the Primary Panther Zone, a long-term moderate adverse impact.
Florida Bonneted Bat (<i>Eumops floridanus</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
Long-term negligible adverse impacts —lack of a flowage easement or sufficient rights or interest to flow additional water over the FPL West Secondary Corridor is expected to have negligible adverse impacts on the Florida bonneted bat. The lack of flowage rights is not expected to reduce the acreage of tree cover within the area of	Same as alternative 1a.	Long-term beneficial impacts —by protecting tree islands in the park that may be used for roosting from clearing for transmission line construction. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	Long-term beneficial impacts —the land exchange will prevent the fragmentation and loss of habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this	Same under alternative 3 , but with terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance to special-status species or removal of habitat.	Limited long-term beneficial impacts —from completion of the hydrologic restoration portions of planned ecosystem restoration projects in the EEEA.

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analysis, but there may be increase in tree cover or a change in tree community composition due to continued drier conditions in the EEEA. This is expected to have negligible adverse effects on Florida bonneted bat roosting habitat.			area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species (avian and bat protection plan) to the maximum extent practicable.		
<i>Impacts of Transmission Line Construction</i>					
No impact.	Short- and long-term moderate adverse impacts —the possible mortality of Florida bonneted bats during construction is considered a short term, moderate, adverse impact. The loss of potential roosting trees during right-of-way clearing is considered a long-term moderate impact.	Short- and long-term moderate adverse impacts —the possible mortality of Florida bonneted bats during construction is considered a short term, moderate, adverse impact. The loss of potential roosting trees during right-of-way clearing is considered a long-term moderate impact.	Short- and long-term moderate adverse impacts —the possible mortality of Florida bonneted bats during construction is considered a short term, moderate, adverse impact. The loss of potential roosting trees during right-of-way clearing is considered a long-term moderate impact. Protection measures implemented as part of the Avian and Bat Protection Plan required under the terms and conditions of the land exchange may lessen the impacts on Florida bonneted bats, but mortality could still occur.	Same as alternative 3.	Same as alternative 1b.
<i>ESA Section 7 Determination</i>					
Not applicable.	May affect, likely to adversely affect —lack of a flowage easement	May affect, likely to adversely affect —the NPS acquisition of the	May affect, likely to adversely affect —the land exchange will provide long	Same as alternative 3.	May affect, likely to adversely affect —from completion of the

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	or sufficient rights or interest to flow additional water over the FPL West Secondary Corridor is expected to have negligible adverse impacts on Florida bonneted bat in the area of analysis. Construction of the transmission line is expected to have short and long term, moderate adverse impacts on Florida bonneted bat due to potential mortality during construction and the loss of potential roosting trees.	FPL West Secondary Corridor within the park will provide long-term benefits by protecting tree islands in the park that may be used for roosting from clearing for transmission line construction. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. Construction of the transmission line outside the park is expected to have short and long term, moderate adverse impacts on Florida bonneted bat due to potential mortality during construction and the loss of potential roosting trees.	term benefits by preventing the fragmentation and loss of habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable. Construction of the transmission line is expected to have short and long term, moderate adverse impacts on Florida bonneted bat due to potential mortality during construction and the loss of potential roosting trees.		hydrologic restoration portions of planned ecosystem restoration projects in the EEEA. Construction of the transmission line is expected to have short and long term, moderate adverse impacts on Florida bonneted bat due to potential mortality during construction and the loss of potential roosting trees.
Wood Stork (<i>Mycteria americana</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
Long-term major adverse impacts— without the supplemented water levels, the EEEA would continue to be	Same as alternative 1a.	Long term, substantial beneficial impacts— NPS acquisition of the FPL West Secondary Corridor within the park would	Long-term substantial beneficial impacts— NPS acquisition of the FPL West Secondary Corridor within the park through a land	Same as alternative 3, but with terms and conditions that result in the reduced risk of having additional utility facilities	Long-term substantial beneficial impacts— from completion of the hydrologic restoration portions of planned

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subjected to dry periods which would result in soil loss and continuing poor quality wood stork foraging habitat during dry periods and reduced fledging success. These impacts could cause a population level decline in wood storks within the park.		prevent the fragmentation and loss of foraging and potential nesting habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA. Acquiring ownership NPS acquisition of the FPL West Secondary Corridor would allow for application of NPS policies and procedures in this area.	transfer will prevent the fragmentation and loss of foraging and potential nesting habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	on the exchange corridor and associated disturbance to special-status species or removal of habitat.	ecosystem restoration projects in the EEEA, which are expected to improve foraging and potential nesting habitat for the wood stork.
<i>Impacts of Transmission Line Construction</i>					
No impacts.	Short- and long-term minor to major adverse impacts— short-term minor to moderate adverse impacts would be related to disturbance during the construction period and during line maintenance. Long-term moderate to major adverse impacts would be due to habitat loss or degradation and the	Short- and long-term minor to moderate adverse impacts— short-term minor to moderate adverse impacts would be related to disturbance during the construction period and during line maintenance. Long-term minor to moderate adverse impacts would be due to habitat loss or degradation and the risk of mortality from line strikes	Short- and long-term minor to major adverse impacts— short-term minor to moderate adverse impacts would be related to disturbance during the construction period and during line maintenance. Long-term moderate to major adverse impacts would be due to habitat loss or degradation and the risk of mortality from line strikes or electrocution.	Same as alternative 3.	Same as alternative 1b.

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	risk of mortality from line strikes or electrocution. These impacts could cause a population level decline in wood storks within the park.	or electrocution. An ARA conducted for this project indicates that construction in the area of possible relocated corridor poses the least risk to wood stork when compared to the FPL West Secondary and FPL West Preferred Corridors.	These impacts could cause a population level decline in wood storks within the park. Protection measures implemented as part of the Avian and Bat Protection Plan required under the terms and conditions of the land exchange may lessen the impacts on wood storks, but mortality could still occur. An ARA conducted for this project indicates that construction of transmission lines within the FPL West Preferred Corridor poses less risk to wood stork than construction in the FPL West Secondary Corridor.		
<i>ESA Section 7 Determination</i>					
Not applicable.	May affect, likely to adversely affect —lack of a flowage easement or sufficient rights or interest to flow additional water over the FPL West Secondary Corridor is expected to have long term, major adverse impacts due to the continued presence of degraded foraging and nesting habitat within the EEEA. The construction of the transmission line will result in loss of	May affect, likely to adversely affect —NPS acquisition of the FPL West Secondary Corridor within the park will prevent the fragmentation and loss of foraging and potential nesting habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor within the park and the subsequent construction	May affect, likely to adversely affect —NPS acquisition of the FPL West Secondary Corridor within the park through the land transfer will prevent the fragmentation and loss of foraging and potential nesting habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. The construction of the transmission line will result in loss of foraging and	Same as alternative 3.	May affect, likely to adversely affect —the flowage easement or sufficient rights or interest to flow additional water over the FPL West Secondary Corridor is expected to have long-term beneficial impacts on wood stork. This alternative would allow for completion of the hydrologic restoration portion of planned ecosystem restoration projects, which are expected to improve

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	foraging and potential nesting habitat and will present an ongoing risk to wood storks from line collisions and electrocutions.	of the transmission lines outside the park in the area of possible relocated corridor will reduce but not eliminate risks to wood storks from line strikes and electrocution when compared to construction in either the FPL West Secondary or FPL West Preferred Corridors.	potential nesting habitat and will present an ongoing risk to wood storks from line collisions and electrocutions. Protection measures implemented as part of the Avian and Bat Protection Plan required under the terms and conditions of the land exchange may lessen the impacts on wood storks, but mortality could still occur.		foraging and nesting habitat within the area of analysis. The construction of the transmission line would result in loss of foraging and potential nesting habitat and would present an ongoing risk to wood storks from line collisions and electrocutions.
Everglade snail kite (<i>Rostrhamus sociabilis plumbeus</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
Long-term major adverse impacts —A continuation of limited and poor quality foraging habitat due to continuing dry conditions is expected to result in continuing poor reproductive success. This may result in population declines within the park.	Same as alternative 1a.	Long-term substantial beneficial impacts —NPS acquisition of the FPL West Secondary Corridor would prevent the fragmentation and loss of high-quality foraging and nesting habitat that would occur if a transmission line were built in this corridor. This alternative would allow for application of NPS policies and procedures in this area and would allow for the flow of water across this corridor as needed for wetland habitat and hydrologic restoration projects. Hydrologic restoration would result in beneficial effects to kites	Long-term substantial beneficial impacts —NPS acquisition of the FPL West Secondary Corridor through a land exchange would prevent the fragmentation and loss of high quality foraging and nesting habitat that would occur if a transmission line was built in this corridor and would allow for the flow of water across this corridor as needed for wetland habitat and hydrologic restoration projects. Hydrologic restoration would result in beneficial effects to kites through habitat improvement in EEEA. NPS acquisition of the FPL West Secondary Corridor will	Same as alternative 3, but with terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance to special-status species or removal of habitat.	Long-term substantial beneficial impacts —would result from completion of the hydrologic restoration portions of planned ecosystem restoration projects in the EEEA. These projects are expected to improve foraging and potential nesting habitat for the Everglade snail kite.

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		through habitat improvement in EEEA.	allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.		
<i>Impacts of Transmission Line Construction</i>					
No impact.	Short- and long-term minor to major adverse impacts— short-term minor to moderate adverse impacts would be related to disturbance during the construction period and during line maintenance. Long-term moderate to major adverse impacts would be due to habitat loss or degradation and the risk of mortality from line strikes or electrocution. These impacts could cause a population level decline in Everglade snail kites within the park.	Short and long-term minor to moderate adverse impacts— short-term minor to moderate adverse impacts would be related to disturbance during the construction period and during line maintenance. Long-term moderate impacts would be due to habitat loss or degradation and the risk of mortality from line strikes or electrocution. An ARA conducted for this project indicates that construction in the area of possible relocated corridor poses the least risk to Everglade snail kite when compared to the FPL West Secondary and FPL West Preferred Corridors.	Short and long-term, minor to moderate adverse impacts— short-term minor to moderate adverse impacts would be related to disturbance during the construction period and during line maintenance. Long-term moderate impacts would be due to habitat loss or degradation and the risk of mortality from line strikes or electrocution. An ARA conducted for this project indicates that construction in the FPL West Secondary Corridor poses a greater risk to Everglade snail kite when compared to the FPL West Preferred Corridor and the hypothetical corridor within the area of possible relocated corridor. Protection measures implemented as part of the	Same as alternative 3.	Same as alternative 1b.

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			Avian and Bat Protection Plan required under the terms and conditions of the land exchange may lessen the impacts on snail kites, but mortality could still occur.		
<i>ESA Section 7 Determination</i>					
Not applicable.	May affect, likely to adversely affect —due to continued poor reproductive success from continued dry conditions that result in limited and poor quality foraging habitat in the area of analysis. Also due to the loss and degradation of habitat associated with the transmission line construction and the ongoing risk to Everglade snail kites from line collisions and electrocutions.	May affect, likely to adversely affect —NPS acquisition of the FPL West Secondary Corridor within the park will prevent the fragmentation and loss of foraging and potential nesting habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS acquisition of the FPL West Secondary Corridor within the park and the subsequent construction of the transmission lines outside the park in the area of possible relocated corridor will reduce but not eliminate risks to Everglade snail kite from line strikes and	May affect, likely to adversely affect —NPS acquisition of the FPL West Secondary Corridor within the park will through land transfer will prevent the fragmentation and loss of foraging and potential nesting habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable. NPS acquisition of the FPL West Secondary Corridor within	Same as alternative 3.	May affect, likely to adversely affect —long term benefits would accrue from completion of the hydrologic restoration portions of planned ecosystem restoration projects in the EEEA, which are expected to improve foraging and potential nesting habitat for the Everglade snail kite. Adverse impacts would accrue from the loss and degradation of habitat associated with the transmission line construction and the ongoing risk to Everglade snail kites from line collisions and electrocutions.

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		electrocution when compared to construction in either the FPL West Secondary or FPL West Preferred Corridors.	the park and the subsequent construction of the transmission lines in the FPL West Preferred Corridor will reduce but not eliminate risks to Everglade snail kite from line strikes and electrocution.		
Eastern Indigo Snake (<i>Drymarchon corais couperi</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
Long-term negligible adverse impacts— Because eastern indigo snakes utilize a wide variety of habitats and consume a wide variety of prey, the eastern indigo snake is expected to adapt to the continuing dry condition of the EEEA.	Same as alternative 1a.	Long-term beneficial impacts— from protection of potential foraging habitat from development. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	Long-term beneficial impacts— NPS acquisition of the FPL West Secondary Corridor through a land exchange would prevent the fragmentation and loss of foraging habitat that would occur if a transmission line was built in this corridor. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	Same as alternative 3, but with terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance to special-status species or removal of habitat.	Limited long-term beneficial impacts— from completion of the hydrologic restoration portions of planned ecosystem restoration projects in the EEEA.
<i>Impacts of Transmission Line Construction</i>					
No impact.	Short- and long-term, minor to moderate	Short- and long-term minor to moderate	Short- and long-term minor to moderate	Same as alternative 3.	Same as alternative 1b.

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	adverse impacts— construction noise and vehicle traffic may result in changes in short term, minor, and adverse impacts on eastern indigo behavior. Loss of habitat and mortality of eastern indigo snakes due to construction are considered long term, moderate adverse impacts.	adverse impacts— construction noise and vehicle traffic may result in changes in short term, minor, and adverse impacts on eastern indigo behavior. Loss of habitat and mortality of eastern indigo snakes due to construction are considered long term, moderate adverse impacts.	adverse impacts— construction noise and vehicle traffic may result in changes in short term, minor, and adverse impacts on eastern indigo behavior. Loss of habitat and mortality of eastern indigo snakes due to construction are considered long term, moderate adverse impacts.		
<i>ESA Section 7 Determination</i>					
Not applicable.	May affect, likely to adversely affect— lack of a flowage easement or sufficient rights or interest to flow additional water over the FPL West Secondary Corridor is expected to have no effect on the eastern indigo snake since the species is known to utilize both upland and wetland habitats. Behavioral changes, loss of habitat, and potential mortality from line construction and maintenance activities are expected to have minor to moderate adverse impacts on eastern indigo snake.	May affect, likely to adversely affect— The NPS acquisition of the FPL West Secondary Corridor is expected to have long-term benefits to the eastern indigo snake from protection of potential foraging habitat from development. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. Behavioral changes, loss of habitat, and potential mortality from line construction and maintenance activities are expected to have minor to moderate adverse impacts on eastern indigo snake.	May affect, likely to adversely affect— The NPS acquisition of the FPL West Secondary Corridor through a land exchange is expected to have long-term benefits to the eastern indigo snake from protection of potential foraging habitat from development. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent	Same as alternative 3.	May affect, likely to adversely affect— the flowage easement or sufficient rights or interest to flow additional water over the FPL West Secondary Corridor is expected to limited long term benefits to the eastern indigo snake since the species is known to utilize both upland and wetland habitats. Behavioral changes, loss of habitat, and potential mortality from line construction and maintenance activities are expected to have minor to moderate adverse impacts on

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			practicable. Behavioral changes, loss of habitat, and potential mortality from line construction and maintenance activities are expected to have minor to moderate adverse impacts on eastern indigo snake.		eastern indigo snake.
Blodgett's Silverbush (<i>Argythamia blodgettii</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
No impact —this species and its habitat are not known to occur in this area.	No impact —this species and its habitat are not known to occur in this area.	No impact —this species and its habitat are not known to occur in this area. NPS acquisition of the FPL West Secondary Corridor would allow for application of NPS policies and procedures in this area.	No impact —this species and its habitat are not known to occur in this area. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	Same as alternative 3 , but with terms and conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance to special-status species or removal of habitat.	Same as alternative 1b.
<i>Impacts of Transmission Line Construction</i>					
No impact.	No impact —this species and its habitat are not known to occur in this portion of the EEEA.	No impact —this species is unlikely to occur in the area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL would work with USFWS to identify	No impact —this species is unlikely to occur in the FPL West Preferred Corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL would work with USFWS to identify	Same as alternative 3.	Same as alternative 1b.

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		appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.	appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.		
<i>ESA Section 7 Determination</i>					
Not applicable.	No Effect —this species and its habitat are not known to occur in this portion of the EEEA.	No Effect —this species is unlikely to occur in the area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL would work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. NPS acquisition of the FPL West Secondary Corridor would allow for application of NPS policies and procedures in this area.	No Effect —this species is unlikely to occur in the FPL West Preferred Corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL would work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	Same as alternative 3.	Same as alternative 1b.
Garber's Spurge (<i>Chamaesyce garberi</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
No impact —this species and its habitat are not	Same as alternative 1a.	No impact —this species and its habitat are not	No impact —this species and its habitat are not	Same as alternative 3, but with terms and	Same as alternative 1a.

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known to occur in this portion of the EEEA.		known to occur in this portion of the EEEA. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	known to occur in this portion of the EEEA. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	conditions that result in the reduced risk of having additional utility facilities on the exchange corridor and associated disturbance to special-status species or removal of habitat.	
<i>Impacts of Transmission Line Construction</i>					
No impact.	No impact —this species and its habitat are not known to occur in this portion of the EEEA.	No impact —this species is unlikely to occur in the area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	No impact —this species is unlikely to occur in this portion of the EEEA. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land	Same as alternative 3.	Same as alternative 1b.

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			exchange will minimize impacts on special-status species to the maximum extent practicable.		
<i>ESA Section 7 Determination</i>					
Not applicable.	No Effect —this species and its habitat are not known to occur in this portion of the EEEA.	No Effect —this species is unlikely to occur in the area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	No Effect —this species is unlikely to occur in this portion of the EEEA. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	Same as alternative 3.	Same as alternative 1b.
Sand Flax (<i>Linum arenicola</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
No impact —this species and its habitat are not known to occur in this portion of the EEEA.	Same as alternative 1a.	No impact —this species and its habitat are not known to occur in the area of relocated corridor. NPS	No impact —this species and its habitat are not known to occur in this portion of the EEEA. NPS	Same as alternative 3, but with terms and conditions that result in the reduced risk of having	Same as alternative 1a.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
		acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	additional utility facilities on the exchange corridor and associated disturbance to special-status species or removal of habitat.	
<i>Impacts of Transmission Line Construction</i>					
No impact.	No impact —this species and its habitat are not known to occur in this portion of the EEEA.	No impact —this species is unlikely to occur in the area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	No impact —this species is unlikely to occur in this portion of the EEEA. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
			species to the maximum extent practicable.		
<i>ESA Section 7 Determination</i>					
Not applicable.	No Effect —this species and its habitat are not known to occur in this portion of the EEEA.	No Effect —this species is unlikely to occur in the area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	No Effect —this species is unlikely to occur in this portion of the EEEA. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.	Same as alternative 3.	Same as alternative 1b.
Tiny Polygala (<i>Polygala smallii</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
No impact —this species and its habitat are not known to occur in this portion of the EEEA.	Same as alternative 1a.	No impact —this species and its habitat are not known to occur in the area of relocated corridor. NPS acquisition of the FPL	No impact —this species and its habitat are not known to occur in this portion of the EEEA. NPS acquisition of the FPL West	Same as alternative 3, but with terms and conditions that result in the reduced risk of having additional utility facilities	Same as alternative 1a.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
		West Secondary Corridor will allow for application of NPS policies and procedures in this area.	Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	on the exchange corridor and associated disturbance to special-status species or removal of habitat.	
<i>Impacts of Transmission Line Construction</i>					
No impact.	No impact —this species and its habitat are not known to occur in this portion of the EEEA.	No impact —this species is unlikely to occur in the area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.	No impact —this species is unlikely to occur in the area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.	Same as alternative 3.	Same as alternative 1b.
<i>ESA Section 7 Determination</i>					
Not applicable.	No Effect —this species and its habitat are not known to occur in this portion of the EEEA.	No Effect —this species is unlikely to occur in the area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work	No Effect —this species is unlikely to occur in this portion of the EEEA. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
		with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with USFWS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.		

TABLE 28: IMPACTS ON STATE-LISTED SPECIES

Note: Refer to table 3 in chapter 2 for a summary of cumulative impacts for each impact topic.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
Everglades Mink (<i>Mustela vison evergladensis</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
Long-term moderate adverse impacts —due to continued degradation and loss of foraging habitat due to continued dry conditions in the EEEA.	Same as alternative 1a.	Long-term substantial beneficial impacts —by protecting Everglades mink habitat from loss or degradation resulting from construction of transmission lines in this corridor and allowing for the flow of water across this corridor as needed for ecosystem restoration projects. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	Long-term substantial beneficial impacts —The land exchange will prevent the fragmentation and loss of habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable (resource stewardship plan).	Same as alternative 3.	Long-term substantial beneficial impacts —from completion of the hydrologic restoration portions of planned ecosystem restoration projects in the EEEA.
<i>Impacts of Transmission Line Construction</i>					
No impact.	Short- and long-term minor to moderate adverse impacts —short term, minor adverse impacts would occur from disturbance during construction and maintenance activities.	Short- and long-term minor to moderate adverse impacts —short term, minor adverse impacts would occur from disturbance during construction and maintenance activities.	Short- and long-term minor to moderate adverse impacts —short term, minor adverse impacts would occur from disturbance during construction and maintenance activities. Long-term moderate adverse	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
	Long-term moderate adverse impacts would result from loss of habitat.	Long-term moderate adverse impacts would result from loss of habitat.	impacts would result from loss of habitat. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.		
Florida Sandhill Crane (<i>Grus canadensis pratensis</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
No impact —since the Florida sandhill crane is known to utilize both wetland and upland areas for foraging.	Same as alternative 1a.	Limited long-term beneficial impacts —since the Florida sandhill crane is known to forage within both wetland and upland habitats within the region, NPS acquisition of the FPL West Secondary Corridor is expected to have limited long term benefits to the species because the corridor will now be under NPS control/management and NPS policies and protection for state-listed species would apply.	Long-term beneficial impacts —the land exchange will prevent the fragmentation and loss of habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	Same as alternative 3.	Limited long-term beneficial impacts —from completion of the hydrologic restoration portions of planned ecosystem restoration projects in the EEEA, since the Florida sandhill crane is known to forage within both wetland and upland habitats within the region.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
<i>Impacts of Transmission Line Construction</i>					
No impact.	Short- and long-term minor to moderate adverse impacts— short-term minor adverse impacts would occur from disturbance during construction and maintenance activities. Long-term moderate adverse impacts would result from loss of foraging habitat and the ongoing risk of line strikes and electrocution.	Short- and long-term minor to moderate adverse impacts— short-term minor adverse impacts would occur from disturbance during construction and maintenance activities. Long-term moderate adverse impacts would result from loss of foraging habitat and the ongoing risk of line strikes and electrocution. Preferred foraging habitats for the Florida sandhill crane are located closer to the hypothetical corridor within the area of possible relocated corridor, which increases the risk of line strikes and electrocutions when compared to the FPL West Secondary and FPL West Preferred Corridors.	Short- and long-term minor to moderate adverse impacts— short-term minor adverse impacts would occur from disturbance during construction and maintenance activities. Long-term moderate adverse impacts would result from loss of foraging habitat and the ongoing risk of line strikes and electrocution. Preferred foraging habitats for the Florida sandhill crane are located closer to the FPL West Preferred Corridor, which increases the risk of line strikes and electrocutions when compared to the FPL West Secondary Corridor and the hypothetical corridor within the area of possible relocated corridor.	Same as alternative 3.	Same as alternative 1b.
White-crowned Pigeon (<i>Patagioenas leucocephala</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
Negligible adverse / no impact— since the forage tree utilized by the white-crowned pigeon (poisonwood) is found in both upland and wetland habitats in south Florida.	Same as alternative 1a.	Limited long-term benefits— since the forage tree utilized by the white-crowned pigeon (poisonwood) is found in both upland and wetland habitats in south Florida, acquisition of the FPL	Limited long-term benefits— since the forage tree utilized by the white-crowned pigeon (poisonwood) is found in both upland and wetland habitats in south Florida, acquisition of the FPL West Secondary	Same as alternative 3.	Negligible adverse / no impact— from completion of the hydrologic restoration portions of planned ecosystem restoration projects in the EEEA, since the forage tree

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
		West Secondary Corridor is expected to provide limited long term benefits to white-crowned pigeon because of NPS protection and management ability.	Corridor through land transfer is expected to provide limited long term benefits to white-crowned pigeon. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.		utilized by the white-crowned pigeon (poisonwood) is found in both upland and wetland habitats in south Florida.
<i>Impacts of Transmission Line Construction</i>					
No impact.	Short- and long-term minor adverse impacts —short-term minor adverse impacts would occur from disturbance during construction and maintenance activities. Long-term minor adverse impacts would result from loss of foraging habitat and the ongoing risk of line.	Short- and long-term minor adverse impacts —short-term minor adverse impacts would occur from disturbance during construction and maintenance activities. Long-term minor adverse impacts would result from loss of foraging habitat and the ongoing risk of line. Preferred foraging habitats for white-crowned pigeon area are located further from the hypothetical corridor within the area of possible relocated corridor than from either the FPL West Preferred or FPL West Secondary Corridors thereby reducing the risks	Short- and long-term minor adverse impacts —short-term minor adverse impacts would occur from disturbance during construction and maintenance activities. Long-term minor adverse impacts would result from loss of foraging habitat and the ongoing risk of line. Preferred foraging habitats for white-crowned pigeon area are located further from the FPL West Preferred Corridor than from the FPL West Secondary Corridor thereby reducing the risks to white-crowned pigeon from the transmission lines when compared to construction in the FPL corridors.	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
		to white-crowned pigeon from the transmission lines. when compared to construction in the FPL corridors.			
Limpkin (<i>Aramus guarauna</i>), Little Blue Heron (<i>Egretta caerulea</i>), Snowy Egret (<i>Egretta thula</i>), Tricolored Heron (<i>Egretta tricolor</i>), Roseate Spoonbill (<i>Platalea ajaja</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
Long-term moderate adverse impacts —due to continued degradation and loss of foraging habitat. Without the supplemented water levels, the EEEA will continue to be dry and fewer areas will support the forage fish needed to sustain these colonies during drier periods of the year.	Same as alternative 1a.	Long-term substantial beneficial impacts —NPS acquisition of the FPL West Secondary Corridor within the park will prevent the fragmentation and loss of foraging and potential nesting habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	Long-term substantial beneficial impacts —the land exchange will prevent the fragmentation and loss of habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable.	Same as alternative 3.	Long-term substantial beneficial impacts —from completion of the hydrologic restoration portions of planned ecosystem restoration projects in the EEEA, which are expected to improve foraging and potential nesting habitat for wading bird species.
<i>Impacts of Transmission Line Construction</i>					
No impacts.	Short- and long-term minor to moderate adverse impacts —short-term minor adverse impacts would occur from disturbance	Short- and long-term minor to moderate adverse impacts —short-term minor adverse impacts would occur from disturbance during	Short- and long-term minor to moderate adverse impacts —short-term minor adverse impacts would occur from disturbance during construction and	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
	during construction and maintenance activities. Long-term moderate adverse impacts would result from loss of foraging habitat and the ongoing risk of line strikes and electrocution.	construction and maintenance activities. Long-term moderate adverse impacts would result from loss of foraging habitat and the ongoing risk of line strikes and electrocution. In general, for most species, nesting locations and higher quality foraging habitats are located closer to the FPL West Secondary and FPL West Preferred Corridors than to the hypothetical corridor within the area of possible relocated corridor; therefore, construction of the transmission line in this corridor reduces the risk to wading bird species when compared to construction in the FPL corridors.	maintenance activities. Long-term moderate adverse impacts would result from loss of foraging habitat and the ongoing risk of line strikes and electrocution. In general, for most species, nesting locations and higher quality foraging habitats are located closer to the FPL West Secondary Corridor than the FPL West Preferred Corridor; therefore, construction of the transmission line in the FPL West Preferred Corridor reduces the risk to wading bird species when compared to construction in the FPL West Secondary Corridor.		

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
Florida Burrowing Owl (<i>Athene cunicularia floridana</i>) and Gopher Tortoise (<i>Gopherus polyphemus</i>)					
<i>Impacts of the Land Acquisition Decision</i>					
No impact —due to these species preference for xeric habitats, they are not expected to occur in the FPL West Secondary Corridor in the area of analysis.	Same as alternative 1a.	No impact —due to these species preference for xeric habitats, they are not expected to occur in the FPL West Secondary Corridor in the area of analysis or in the area of possible relocated corridor. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	No impact —due to these species preference for xeric habitats, they are not expected to occur in the FPL West Secondary Corridor in the area of analysis or in the exchange corridor.	Same as alternative 3.	No impact —due to these species preference for xeric habitats, they would not be greatly affected by the flowage provided here.
<i>Impacts of Transmission Line Construction</i>					
No impact.	No impact —due to these species preference for xeric habitats, they are not expected to occur in the FPL West Secondary Corridor in the area of analysis.	Short- to long-term negligible to minor adverse impacts —due to disturbance and loss of habitat from construction of the transmission lines.	No impact —due to these species preference for xeric habitats, they are not expected to occur in the FPL West Preferred Corridor (exchange corridor) in the area of analysis or in the exchange corridor.	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
Southern Frog Fruit, Bahama Ladder Brake, Pineland Allamanda, Everglades (or Pinelands) Pencil Flower, Meadow Joint-vetch					
<i>Impacts of the Land Acquisition Decision</i>					
Long-term moderate to major, adverse —these species are known to occur in or near the EEEA, with a few species known from the FPL West Secondary Corridor within the park. Most of these species occupy a range of habitats from wetland to pine rocklands; therefore the impacts of the drying of the EEEA are expected to vary from moderate to major adverse depending on the degree of wetland dependence of the species.	Same as alternative 1a.	Long-term beneficial impacts —These species are known to occur in or near the EEEA, with a few species known from the FPL West Secondary Corridor within the park. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	Long-term beneficial impacts —the land exchange will prevent the loss of habitat that would result if development occurred in the FPL West Secondary Corridor and allow for hydrologic restoration in the EEEA by acquiring ownership. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area. NPS will lose control over the exchange corridor; however, it is expected that application of the terms and conditions of the land exchange will minimize impacts on special-status species to the maximum extent practicable (resource stewardship plan).	Same as alternative 3.	Long-term beneficial impacts —especially for wetland dependent species from completion of the hydrologic restoration portions of planned ecosystem restoration projects in the EEEA.
<i>Impacts of Transmission Line Construction</i>					
No impact.	Short- and long-term negligible to moderate adverse impacts —individuals of these species may be harmed or killed during construction of the transmission lines if they are present in the right-of-way. Also, habitat for these species may be lost	Short- and long-term negligible to minor adverse impacts —most of these species have a low to moderate likelihood of occurrence in area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work	Short- and long-term negligible to moderate adverse impacts —southern frog fruit, Bahama ladder brake and pineland allamanda have all been observed in the proposed exchange corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
	during construction of the transmission lines, but would follow SCA that states that FPL will work with FDACS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.	with FDACS (for any state-listed species) to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.	FDACS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.		
Bahama Saschia and Pineland Noseburn					
<i>Impacts of the Land Acquisition Decision</i>					
No impact —these species are found in disturbed uplands and pine rocklands. These species are not expected to occur within the FPL West Secondary Corridor within area of analysis.	Same as alternative 1a.	No impact —these species are found in disturbed uplands and pine rocklands. These species are not expected to occur within the FPL West Secondary Corridor within the area of analysis. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	Same as alternative 1a.	Same as alternative 3.	No impact —due to these species preference for more xeric habitats, they would not be greatly affected by the flowage provided here.
<i>Impacts of Transmission Line Construction</i>					
No impacts.	No impact —these species are found in disturbed uplands and pine rocklands. These species are not expected to occur within the FPL West Secondary Corridor within the park or within	Short- and long-term negligible to minor adverse impacts —these species have a low to moderate likelihood of occurrence in area of possible relocated corridor. For any species documented within the	Short- and long-term negligible to minor adverse impacts —these species have a low to moderate likelihood of occurrence in the exchange corridor. For any species documented within the proposed right-of-way as a result of post-certification	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
	the area of analysis.	proposed right-of-way as a result of post-certification surveys, FPL will work with FDACS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.	surveys, FPL will work with FDACS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.		
Small's Flax					
<i>Impacts of the Land Acquisition Decision</i>					
No impacts —since this species is not known to occur but is known to utilize both upland and wetland habitats and has a low likelihood of occurrence within the FPL West Secondary Corridor within the park or in the area of analysis.	Same as alternative 1a.	No impacts —since this species is known to utilize both upland and wetland habitats and has a low likelihood of occurrence within the FPL West Secondary Corridor within the park or in the area of analysis. NPS acquisition of the FPL West Secondary Corridor will allow for application of NPS policies and procedures in this area.	Same as alternative 1a.	Same as alternative 3.	Limited long-term beneficial impacts —from completion of the hydrologic restoration portions of planned ecosystem restoration projects in the EEEA.
<i>Impacts of Transmission Line Construction</i>					
No impact.	No impacts —since this species is known to utilize both upland and wetland habitats and has a low likelihood of occurrence within the FPL West Secondary Corridor within the park or in the area of analysis.	Short- and long-term negligible to minor adverse impacts —this species has a moderate likelihood of occurrence in area of possible relocated corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work	Short- and long-term negligible to minor adverse impacts —this species has a low likelihood of occurrence in the FPL West Preferred Corridor. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with FDACS to identify appropriate	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
		with FDACS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.	steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.		
Pineland Jacquemontia, Eaton's Spikemoss, Florida Royal Palm, Rockland-Painted Leaf					
<i>Impacts of the Land Acquisition Decision</i>					
Negligible adverse impacts —impacts are expected to be negligible adverse due to the low likelihood of occurrence of these species within the FPL West Secondary Corridor and EEEA.	Same as alternative 1a.	Long term beneficial —due to preservation and restoration of habitat for these plant species.	Same as alternative 1a.	Same as alternative 3.	Limited long-term beneficial impacts —from completion of the hydrologic restoration portions of planned ecosystem restoration projects in the EEEA.
<i>Impacts of Transmission Line Construction</i>					
No impact.	Negligible adverse impacts —impacts are expected to negligible adverse due to the low likelihood of occurrence of these species.	Short- and long-term, negligible to minor adverse impacts —these species have a low to moderate likelihood of occurrence in area of possible relocated corridor. Short-term impacts would be related to disturbance during construction or maintenance, while long-term impacts would be related to habitat loss. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with FDACS to identify appropriate steps	Short- and long-term negligible to minor adverse impacts —these species have a low likelihood of occurrence in the FPL West Preferred and FPL West Secondary Corridors. For any species documented within the proposed right-of-way as a result of post-certification surveys, FPL will work with FDACS to identify appropriate steps to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.	Same as alternative 3.	Same as alternative 1b.

Alternative 1a: No NPS Action – No FPL Construction	Alternative 1b: No NPS Action – FPL Construction in the Park	Alternative 2: NPS Acquisition of FPL Land	Alternative 3: Fee for Fee Land Exchange	Alternative 4: Easement for Fee Land Exchange	Alternative 5: Perpetual Flowage Easement on FPL Property
		to avoid, minimize, mitigate, or otherwise appropriately address impacts on the species.			

SCENIC VIEWS AND VISUAL RESOURCES

1.1 INTRODUCTION

The NPS *Management Policies 2006* (NPS 2006a) states that scenic views and visual resources are considered highly valued associated characteristics. More specifically, Section 4.7 of those policies states that the Clean Air Act recognizes *integral vistas* as those views perceived from within areas of a specific landmark or panorama located outside the boundary of the area. Integral vistas are listed in Reference Manual 77 (NPS 2009a). There are no regulations requiring special protection of these integral vistas, but the NPS strives to protect these resources through cooperative means.

1.2 IMPACTS ON SCENIC VIEWS AND VISUAL RESOURCES

Impacts on scenic views and visual resources were determined by considering the effect of the existing conditions and the proposed construction and operation of the transmission lines on the overall visual experience of visitors who use the area and residents in the area.

As part of the analysis, photographs were taken from key observation points (KOPs) within the park and area of possible relocated corridor, as determined appropriate by park staff. Several site visits were conducted to obtain the appropriate photography required for the completion of photographic simulations. Weather conditions were not ideal during two of the major site visits, resulting in darker photographs than would be obtained on a perfectly clear day. Photographs were not digitally altered to improve visibility or brightness.

Photographic simulations were created to simulate the visual impacts of the FPL West Preferred and FPL West Secondary Corridors, as well as a route in the area of possible relocated corridor. The photographs selected for simulation demonstrate what was perceived to be a representative sampling from the determined KOPs within the park. Information on tower height was provided by FPL's SCA filing (appendix F). The following assumptions were used in creating the 3-dimensional (3-D) model to simulate the proper tower height, type, and location for each routing scenario by mimicking the viewing perspective of the photograph (see figure 56):

- The structures carrying the 500-kV lines would be tubular steel single pole structures.
- The 500-kV structures would have an average height of 145 feet, and would be single-circuit, guyed, and directly embedded into the ground.
- The structure carrying the new 230-kV transmission line would be a single-pole with a concrete pole design, would have an average height of 100 feet, and be directly embedded into the ground. The right-of-way would be 330 feet, and concrete pads would be constructed to support all structures within the right-of-way.



FPL West Secondary Corridor with Vehicle



FPL West Preferred Corridor with Vehicle

FIGURE 56: 3-D MODEL USED FOR PHOTOGRAPHIC SIMULATIONS

With the towers oriented properly in space, a “camera” was set up in the same 3-D space at the photographer’s height and location relative to the appropriate routing option. The camera’s focal length and point of view were set to those of the camera that took the photograph to obtain the correct

perspective. Light sources were set up to simulate the lighting conditions and look of the towers in the photograph. Once the perspective and sizing was comparable to the photograph, the 3-D rendered structure was placed in the digital photograph. The process of photo-simulation was accompanied by a collaborative review to ensure that the simulated route alignment appeared the way it should in the photograph. Staff from The Louis Berger Group and the park reviewed each photograph to comment on the perspective and look of the simulation so that any necessary alterations could be made to fairly represent the way in which the towers would likely appear.

It is important to note the potential limitations of photo simulations. The ability for a camera to completely and accurately capture what the human eye is able to see when standing at a location is not possible, as the human eye can see wider view of a landscape and a richer depth of perspective. A camera lens can slightly alter the depth of perspective compared with physically standing at a location and experiencing the entire viewshed. These limitations are offset through the description text in this section and through the determination of the magnitude of adverse impacts.

Lighting or marking transmission lines are sometimes required if a project is in the vicinity of an airport. Markings and lighting can have visual impacts on a landscape, particularly in regards to night lighting of an area. The Federal Aviation Administration (FAA) CFR part 77 Section 14, describes the filing requirements for the construction of air obstructions. An application must be filed if construction or alternations are greater than 200 feet above ground level or if structures are within a certain distance of a runway (FAA 2012), listed below:

- within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 feet
- within 10,000 feet of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 feet
- within 5,000 feet of a public use heliport which exceeds a 25:1 surface

The closest airport is the Kendall-Tamiami Executive Airport, which has a runway more than 3,200 feet away. The average tower height for the 500-kV transmission lines is 145 feet; thus, any towers within 14,500 feet of the end of the Kendall-Tamiami Executive Airport would have to file an application with the FAA. The edge of the area of possible relocated corridor is within this distance (however the FPL West Preferred and FPL West Secondary Corridors are not; therefore no lights or markers are expected within the park). Depending on where the right-of-way would be located within the area of possible relocated corridor, mitigation (lighting or markings) could be required and would be determined through negotiations with the FAA. For the purposes of this analysis, it is assumed towers could be configured to be outside the FAA notification zone and no lighting would be required.

The following definitions were used to determine the magnitude of adverse impacts on visual resources:

- **P g i n i k d n g**: Visitors or residents would likely be unaware of impacts associated with the implementation of the alternative. There would be no noticeable change to the scenic views and visual resources or in any defined indicators of the scenic landscape.
- **O l p q t**: Changes in scenic views and visual resources would be slight and detectable, but would not appreciably limit critical characteristics of the area. Visitor satisfaction would remain stable or residents would not likely register complaints.
- **O q f g t c v g**: Few critical characteristics of the desired scenic views and visual resources would change. The number of participants engaging in a specified activity could be altered. Some visitors who want to continue using and enjoying the area might pursue their choices in other

available local or regional areas. Visitor satisfaction would begin to decline, or residents would express some dissatisfaction in the change of landscape.

- **Overall:** Multiple critical characteristics of the desired scenic views and visual resources would change and/or the number of participants engaging in an activity would be greatly reduced. Visitors who want to continue using and enjoying the area would pursue their choices in other available local or regional areas. Visitor satisfaction would markedly decline or residents would register numerous complaints due to the heavily altered natural landscape.

CPCN[UNCTGC"

The area of analysis for visual resources includes areas where the transmission lines would be visible from the foreground and middle ground (up to about 4 miles from the corridor), along the transmission line corridors in and around the park (between points where alternative routes diverge and then merge again). Any area beyond 4 miles is considered as background and generally experiences minimal impacts due to distance and intervening structures, vegetation, or topography, but is addressed qualitatively as needed.

Potential visual impacts include temporary visual changes during construction and the overall permanent visual changes caused by the presence of the structures, conductors, and access roads. Existing and potential change in visual quality and viewer sensitivity are combined to determine visual impacts. The level of visual intrusion created by any alternative is described with respect to the different relative distance zones, types of observers, and observation points. Relative distance zones include the immediate foreground (0 to 300 feet), foreground (300 feet to 0.5 mile), middle ground (0.5 mile to 4 miles), and background (4 miles to the horizon). Many factors influence the visual impact of any route. The viewer is one of these factors. A viewer is defined as not only the person who is viewing the line, but also as their expectations, activities, and frequency of viewing the line. Types of observers include park visitors and recreational users, local residents, employees, commuters, and people traveling in the area.

KORCEVUQH CNVGTP CVKKG'3C<P Q'P RUCEVIQP '6'P Q'HRN'E QPUVTWEVIQP "
***GPXKQPO GPVCN'DCUGNKG'G+ "**

Ko rcew'qhl'vj g'Ncpf 'Ces wukq'p'Cevkp "

Under alternative 1a, FPL retention of ownership of land in the EEEA would not have any impacts on visual resources.

Ko rcew'qhl'Vtcpuo kulkp'Nlpg'Eqpwt wevkp "

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts on visual resources.

Ewo wcvkg'Ko rcew'6'Cngt pcvkg'3c "

Because there would be no impacts on visual resources under alternative 1a, there would be no cumulative impacts. See the cumulative impact discussion under alternative 1b for a description of the impacts of actions by others on visual resources.

Eqpenwukp'6'Cngt pc vkg'3c''

Alternative 1a would have no impacts on visual resources from the land acquisition decision and there would be no construction of any transmission lines; therefore visual resources would not be impacted and there would be no impacts (including cumulative impacts).

KO RCEVUQH'CNVGT PCVKKG'3D<P Q'P RU/CEVQK'6'HRN'EQPUVTWEVQK'K'VJ G'RCTM''

KO rcew'qh'vj g'Ncpf 'Ces wukwkp'Cevkqp''

Under alternative 1b, FPL retention of ownership of land in the EEEA would not have any impacts on visual resources.

KO rcew'qh'Vtcpuo kulkqp'Nlpg'Eqput wevklp''

Under alternative 1b, there would be indirect impacts associated with the construction of the transmission lines in the park, as described earlier in this chapter and appendix F. Under alternative 1b, the transmission lines would be constructed directly south of the new 1-mile bridge, continuing for 7.5 miles within the park. The transmission lines would also continue north within WCA 3B and farther south where they exit Everglades National Park.

Natural vistas provide park visitors with an immediate and lasting sensory experience that strongly conveys the character of the park. The construction of transmission towers, pads, and access roads would alter the current natural and undisrupted landscape of the park and adversely impact visitor viewpoints in this portion of the park. Under this alternative, FPL would construct one 230-kV and two 500-kV transmission lines with heights from 80 to 105 feet (average 100 feet) and from 135 to 150 feet (average 145 feet), respectively. The 500-kV towers would be placed every 1,000 feet along the approximate 7.4-mile length of the corridor within the park. The 230-kV towers would be placed every 500 feet for the length of the corridor; preliminary GIS analysis done to estimate acres of disturbance indicates that there would be approximately 77 tower pads total in the park. Additionally, a permanent access road will be constructed for the entire length of the right-of-way through the park, transecting the construction pads. Construction activities would create temporary changes in scenery by introducing brightly colored signs, helicopters (potentially), trucks, and heavy equipment such as cranes and bulldozers to the area. Construction crews would complete the construction of the transmission lines in phases and activity will likely be intermittent during the construction period for the entire project. Short term minor to moderate adverse impacts would occur due to the presence of construction equipment and construction of access roads and pads.

Under alternative 1b, the construction of the transmission lines would impact the visual quality in certain portions of the park, due to presence of new vertical infrastructure within Everglades National Park. Long-term operation and maintenance of the transmission lines would be minimal and infrequent. Most common long-term operation and maintenance activities are related to vegetation maintenance, and as stated in the vegetation section, long-term maintenance would negligible adverse because FPL would use existing roads and because of the existing and naturally low growing vegetation. The FPL West Secondary Corridor crosses the Tamiami Trail approximately 2.3 miles east of the Coopertown airboat operation. Current views in the park primarily include natural scenes situated in an expansive landscape of sawgrass marsh continuing toward the horizon, in all directions within the park, with very distant views of developed lands to the east. With the addition of the transmission lines along the FPL West Secondary Corridor through the park, human-made structures would be visible in the distance from KOPs within the park. The KOPs, areas of visual concern, are described in chapter 3 and include the airboat recreational areas, Shark Valley, Chekika Park, the Tamiami Trail, and the L-31N canal. Several photo

simulations were completed for the FPL West Secondary Corridor at various locations in the park. All simulations are shown in appendix K. Impacts on visual resources would vary from minor to major adverse dependent on the proximity to the transmission lines and period of exposure, described in more detail throughout the following paragraphs.

The closest airboat operation, and the designated recreational area likely to have the most visual impacts, is Coopertown. Figure 57 depicts the change to the existing eastern view from an airboat on the Coopertown route within the Everglades. The photograph used in the simulation was taken approximately 3.4 miles from the FPL West Secondary Corridor and indicates that the change would be nearly imperceptible from this location in the park. Impacts on visual resources viewed from the Coopertown airboat route, and all other airboat routes (farther from the FPL West Secondary Corridor), would be minor and adverse, because these routes generally go south from their base of operations and not east toward the lines. Impacts on visual resources would rise to a level of moderate to major intensity at less frequently visited locations, farther east, where kayakers and canoeists would be exposed to the transmission lines for a longer period of time and in close proximity to the tower.



Note: The inset box is a zoomed-in representation of the transmission lines. These towers may not be visible in a normal line of sight.

Refer to figure 23 and figure 26 in chapter 3.

FIGURE 57: PHOTO SIMULATION 1—LOOKING EASTWARD FROM WITHIN THE EVERGLADES

Short-term impacts on visual resources would occur during construction. Throughout this period, observers would notice an increase in construction equipment and associated disturbances in the vicinity of the construction area. If helicopters are needed during construction, they would introduce additional sources of short-term visual disturbance. Visual impacts would be most readily apparent from the observation points described above. Further, visual impacts along the Tamiami Trail from the construction of several bridges have been ongoing; therefore, if this project were to undergo construction at the same or a similar time, the presence of project-related construction equipment in addition to the current visual impacts from construction in the area would not significantly add impacts. During construction, impacts on visual resources would be short term, localized, minor to moderate, and adverse.

Present and future actions that impact visual resources include all projects intended to restore habitat and deliver additional freshwater to the park. As a result of these actions, there would be a sustained preservation of the natural aesthetic, resulting long-term beneficial impacts on visual resources. Any

projects in the area of analysis that require construction would result in short-term adverse impacts on visual resources (degrees of impact would vary based on the construction project) and long-term minor to possible major adverse impacts. Fire management actions (prescribed burns, wildland fire control actions) can adversely affect visual resources in the park by creating short-term contributions to airborne particulates, which can limit visibility by obscuring distant views. Alternative 1b would contribute long-term minor to major adverse impacts on visual resources; these impacts would be an appreciable adverse impact to overall cumulative impacts on visual resources.

Eqpenwukp'6'Cngt pcvk'3d''

Under alternative 1b, there would be no direct impacts from the FPL retention of property in the EEEA. Indirect impacts on visual resources would result from the construction of the transmission lines in the FPL West Secondary Corridor and would be short term, minor to moderate, and adverse during construction and long term, ranging from minor to major and adverse from the introduction of a built structure into a wilderness-like setting. The intensity of the adverse impact would vary with the location in the park and be greatest for recreationists such as canoeists near the Tamiami trail and for others as they approach this area and the transmission lines from trails or on the roadway. Alternative 1b would contribute long-term minor to major adverse impacts on visual resources and would be an appreciable adverse impact on overall cumulative impacts on visual resources.

KO RCEVUQH CNVGTP CVK'4<P RU'CES WUKVQP'QHHRN'NCPF''

KO rcew'qhl'vj g'Ncpf 'Ces wukvqp'Cevkp''

Under alternative 2, FPL retention of ownership of land in the EEEA would not have any impacts on visual resources.

KO rcew'qhl'Vtcpuo kukp'Nkpg'Eqput wevkp''

Under alternative 2, FPL would build two 500-kV lines and one 230-kV line to the east of the park in the area of possible relocated corridor and no transmission lines would be constructed in the EEEA or on FPL property in the park. Within the area of possible relocated corridor, impacts on visual resources of the park would be highest if the transmission lines were constructed along the western edge, which is closer to the park boundary (between 1 and 2 miles east of the park). Transmission lines would not be visible to visitors if built in the central or eastern parts of the area of possible relocated corridor. During construction, there would be short-term adverse impacts from the increase in construction equipment on Tamiami Trail and in the vicinity of the selected route. During construction impacts on visual resources would be short term, localized, minor to moderate, and adverse.

Once the construction of the transmission lines is completed, impacts on visual resources would occur over the operational lifetime of the transmission lines. Observers in the eastern portion of the park could note the presence of transmission lines to the east of the L-31N canal. These impacts would be expected to be negligible to minor and adverse due to intervening industrial development and vegetation between the park boundary and the area of possible relocated corridor. Further, visitors to the Everglades would likely be facing west when observing the park from the L-31N canal (closest viewing location), not toward the correctional facility or the cement plant to the east



Refer to figure 23 and figure 27 in chapter 3. Photograph was taken approximately 550 feet west of the closest structure in the FPL West Secondary Corridor.

FIGURE 58: PHOTO SIMULATION 2—LOOKING EAST FROM THE TAMIAMI TRAIL AND 1-MILE BRIDGE



Note: The radio tower visible in the photograph is approximately 0.26 mile away (foreground). The FPL West Secondary Corridor is approximately 2 miles away (middleground). Photograph was taken approximately 315 feet from closest structure. Refer to figure 23 and figure 31 in chapter 3.

FIGURE 59: PHOTO SIMULATION 3—LOOKING WEST FROM THE L-31N CANAL

Impacts on visual resources outside the park would occur for observation points in adjacent lands, particularly residential neighborhoods located east of the eastern border of the area of possible relocated corridor. Vantage points (looking west) from the dense residential development east of the area of possible relocated corridor would experience the greatest degree of visual impacts. If the transmission lines were built at the far eastern edge of the area of possible relocated corridor, they would be within 0.2 mile of residential development at the closest point and within 1.7 miles in other areas; most portions of the eastern border of this area are at least 0.5 mile from the urban development boundary. Viewers (most likely local residents) in this area (see the “Socioeconomics” section for further details regarding these residences) would be most able to see the lines and associated structures and would thus experience the highest visual impacts under alternative 2. There is an existing 230-kV FPL transmission line immediately adjacent to SW 157th Avenue; therefore, viewers would have to look through the existing transmission lines to see the new proposed lines in the area of possible relocated corridor. Figure 60 is a simulation of the view from the residential development along SW 157th Avenue and approximately 0.3 mile away from the eastern boundary of the area of possible relocated corridor. Note, the wires from the existing 230-kV transmission line are at the top of the photograph (no structures are shown). Impacts on visual resources outside the park would occur for observation points in adjacent lands, particularly residential neighborhoods located east of the eastern border of the area of possible relocated corridor (figure 60). These impacts would be minor to moderate and adverse, given the presence of existing transmission lines and the distance from the residential areas.



Refer to figure 23 in chapter 3. Approximately 0.4 mile from the closest structure.

FIGURE 60: PHOTO SIMULATION 4—LOOKING WEST FROM SW 157TH AVENUE (BORDER OF RESIDENTAL DEVELOPMENT)

Construction of the transmission line in the area of possible relocated corridor would result in negligible adverse visual impacts on the park, due to the distance and the fact that they would be situated behind preexisting development in the form of radio towers, commercial and industrial facilities, and existing power transmission structures. Long-term negligible to minor adverse impacts would occur if the lines were constructed along the western edge of the area of possible relocated corridor. If the construction followed the eastern edge of the area of possible relocated corridor, impacts would be no impact to negligible adverse impact.

Ewo wevkg'kō rcew'

The impacts on visual resources from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1b. In the park, alternative 2 would contribute long-term no impacts on negligible adverse impacts; these impacts would be imperceptible adverse impacts on overall visual resource cumulative impacts in the park, but outside the park, alternative 2 would have long-term minor to moderate adverse impacts and contribute a noticeable impact on visual resources cumulative impacts in the area.

Eqpenukpp''

Under alternative 2, there would be no direct impacts on visual resources, but indirect impacts on visual resources would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park. Overall, impacts on visual resources under alternative 2 would range from no impact to a moderate adverse impact, depending on where the transmission lines were built in the area of possible relocated corridor. Short-term impacts during construction would be minor to moderate and adverse. Generally, impacts on park visual resources would be greater along the western edge of the area and minimal along the eastern edge of the area of possible relocated corridor. Impacts on visual resources viewed from residential locations would be greater along portions of the line that occur in the area of possible relocated corridor. In the park, alternative 2 would contribute no impacts to negligible adverse impacts over the long term; these impacts would be imperceptible adverse impacts to overall visual resource cumulative impacts in the park. Outside the park, alternative 2 would have long-term minor to moderate adverse impacts and contribute a noticeable impact to visual resources cumulative impacts in the area.

kō RCEVUQH'CNVGTP CVKKG'5<HGG'HQT'HGG'NCPF'GZEJ CPI G''

kō rcew'qht'j g'Ncpf 'Ces wukukpp'Cevkpp''

Under alternative 3, FPL retention of ownership of land in the EEEA would not have any impacts on visual resources.

kō rcew'qht'Vtcpuo kukpp'Nlpg'Eqpum wevkpp''

Indirect impacts under alternative 3 would result from the possible construction of transmission lines along the FPL West Preferred Corridor (parallel to the L-31N canal). Visual impacts on the airboat recreational tours would be negligible adverse, because the lines are farther east (and thus would have less impact) compared with alternative 1b. Impacts on visual resources would be most apparent at the Tamiami Trail crossing, along the eastern edge of the park, and on the L-31N canal. During construction, there would be short-term minor to moderate adverse impacts from the increase in construction equipment in the vicinity, most notably along the L-31N canal. Once the construction of the transmission lines is completed, visual resources would be affected over the operational lifetime of the transmission lines.

From observation points at the extreme eastern portion of the park, visual resources would be affected by the addition of new transmission line structures. The transmission lines would be visible to drivers traveling west on the Tamiami Trail, accessing the park and airboat recreation. At this location, the Tamiami Trail is located at ground level (no bridge) with vegetation in the immediate foreground. Drivers would cross under the lines after passing a landscape largely altered by the correctional facility, the casino, and other human-made features on the landscape and with a USACE dam and several radio towers just west of the FPL West Preferred Corridor. The most frequent form of travel on the Tamiami Trail is vehicular, and while it would not take viewers long to pass through the impacted area the brief exposure approaching and immediately under the transmission lines would result in moderate to major adverse impacts on visual resources (figure 61). Note the poles in the foreground of figure 61 are approximately 250 feet and 525 feet from the location the photograph was taken. As a comparison, the FPL West Preferred Corridor is located approximately 800 feet from the location the photograph was taken. Additionally, a photosimulation was completed from 1-mile bridge on the Tamiami Trail looking east at the West Preferred Corridor (figure 62).



Refer to figure 23 and figure 29 in chapter 3.

FIGURE 61: PHOTO SIMULATION 5—LOOKING WEST ON THE TAMAMIAMI TRAIL (L-31N CANAL IN THE MIDDLEGROUND)



Refer to figure 23 in chapter 3. Approximately 1.5 miles from the closest structure.

FIGURE 62: PHOTO SIMULATION 6—LOOKING EAST FROM 1-MILE- BRIDGE ON THE TAMIAMI TRAIL

The area of greatest visual impact would be along the L-31N canal, which offers wide views of the park to the west and where viewers are typically walking, running, or biking. However, visitor use of the L-31N canal levee is very limited since there is no parking in the area for recreational use. Figure 63 shows the proposed transmission lines from the L-31N canal. At this location, observers are travelling slower (compared with drivers on the Tamiami Trail) and the FPL West Preferred Corridor parallels the L-31N for a greater distance, placing the transmission line in the direct foreground for extended periods of time. Although impacts in all other portions of the park would be reduced under this alternative, visual impacts along the L-31N canal would be much greater; resulting in long-term major adverse impacts along the L-31N canal due to prolonged exposure to views of the transmission lines in the park. Long-term moderate to major adverse impacts would occur along the Tamiami Trail (and within the park) due to the presence of human-made features in the landscape, but would quickly lessen as a traveler drives away from the transmission line crossing and the structures move to the middle and background of the viewshed.



Refer to figure 23 and figure 30 in chapter 3.

FIGURE 63: PHOTO SIMULATION 6—LOOKING NORTHWEST FROM THE L-31N CANAL AT THE TAMIAMI TRAIL

Ewo wew'g'Kō rcew'

The impacts on visual resources from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1b. Alternative 3 would contribute long-term minor to major adverse impacts; these impacts would contribute noticeable to appreciable impacts to overall cumulative impacts on visual resources.

Eqpenwukpp''

Under alternative 3, there would be no direct impacts on visual resources from the fee for fee land exchange, but indirect impacts on visual resources would result from the construction of the transmission lines on the eastern edge of the park and would include short-term minor to moderate adverse impacts during construction and minor to major adverse impacts from the introduction of built structures within the current eastern park boundary. The most severe impacts would be where the transmission lines cross the Tamiami Trail and from the L-31N canal. Alternative 3 would contribute long-term minor to major adverse impacts; these impacts would contribute noticeable to appreciable impacts to overall cumulative impacts on visual resources.

KO RCEVUQH'CNVGTP CVK&G'6<GCUGO GP V'HQT'HGG'NCPF'GZEJ CPI G''

KO rcew'qht'vj g'Ncpf 'Ces wukwukpp'Cevkpp''

Under alternative 4, FPL retention of ownership of land in the EEEA would not have any impacts on visual resources.

KO rcew'qht'Vtcpuo kulkpp'Nkpg'Eqpwt wevkpp''

Under alternative 4, impacts on visual resources would be the same as described under alternative 3, with potential for slightly reduced adverse impacts under this alternative from the restriction in the terms and conditions to only three transmission lines with no other utility infrastructure within the corridor. Terms and conditions are found in appendix H.

Ewo wevk&g'KO rcew'

Cumulative impacts would be the same as described under alternative 3. Alternative 4 would contribute long-term minor to major adverse impacts; these impacts would contribute noticeable to appreciable impacts to overall cumulative impacts on visual resources.

Eqpenwukpp''

Impacts on visual resources would be the same as described under alternative 3, with potential for slightly less adverse impacts under this alternative from the restriction to only three transmission lines with no other utility infrastructure within the corridor. There would be no direct impacts from the land exchange. Indirect impacts on visual resources would result from the construction of the transmission lines on the eastern edge of the park and would include short-term minor to moderate adverse impacts during construction and minor to major adverse impacts from the introduction of built structures within the current eastern park boundary. The most severe impacts would be where the transmission lines cross the Tamiami Trail and from the L-31N canal. Alternative 4 would contribute noticeable to appreciable impacts to overall cumulative impacts to visual resources.

KO RCEVUQH'CNVGTP CVK&G'7<RGTRGVWCN'HNQY CI G'GCUGO GP V'QP'HRN'RTQRGT V[''

KO rcew'qht'vj g'Ncpf 'Ces wukwukpp'Cevkpp''

Under alternative 5, FPL retention of ownership of land in the EEEA would not have any impacts on visual resources.

Kō rcew'qhi'Vtcpuo kulkp'Nkpg'Eqpum wewkq''

Under alternative 5, impacts on visual resources would be the same as described under alternative 1b and would include short-term minor to moderate adverse impacts during construction and long-term minor to major adverse impacts from the introduction of a built structure into a wilderness-like setting.

Ewo wewkq'Kō rcew'

Cumulative impacts would be the same as described under alternative 1b and include short-term adverse impacts from construction associated with projects intended to restore habitat and deliver additional freshwater to the park. Alternative 1b would contribute long-term minor to major adverse impacts on visual resources; these impacts would be an appreciable adverse impact to overall cumulative impacts on visual resources.

Eqpenwukq''

Impacts on visual resources would be the same as described under alternative 1b and include short term, minor to moderate, adverse impacts during construction and long term, adverse impacts ranging from minor to major adverse from the introduction of a built structure into a wilderness-like setting. The intensity of the adverse impact would vary with the location in the park and be greatest for recreationists such as canoeists near the Tamiami trail and for others as they approach this area and the transmission lines from trails or on the roadway. Alternative 5 would contribute an appreciable adverse impact to overall cumulative impacts on visual resources.

Y KNFGTPGUU'

I WEFPI 'TGI WNCVIQPU'CPF'RQNEKGU'

The Wilderness Act, passed on September 3, 1964, established a National Wilderness Preservation System, “administered for the use and enjoyment of the American people in such manner as would leave designated wilderness areas unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness” (16 USC 1131). By policy, lands identified as being eligible for wilderness designation, wilderness study areas, proposed wilderness, and recommended wilderness (including potential wilderness) are managed to preserve their wilderness character and values in the same manner as “designated wilderness” until Congress has acted on the recommendations (NPS 2006a, sec. 6.3.1).

Within the NPS, Chapter 6 of the *NPS Management Policies 2006* addresses wilderness issues. The purpose of Chapter 6 of the *NPS Management Policies 2006* is to provide accountability, consistency, and continuity within the NPS wilderness management program, and to otherwise guide Service-wide efforts in meeting the letter and spirit of the 1964 Wilderness Act. In addition, policies are based on provisions of the 1916 NPS Organic Act, the 1964 Wilderness Act, and legislation establishing individual units of the national park system.

Chapter 6 of the *NPS Management Policies 2006* addresses all aspects of wilderness management and preservation of designated wilderness in units of the national park system. This chapter directs the NPS to integrate wilderness considerations into all planning documents to “guide the preservation, management, and use of the park’s wilderness area and ensure that wilderness is unimpaired for future use and enjoyment as a wilderness.” According to Section 6.1, the purpose of wilderness in the national parks includes the preservation of wilderness character and wilderness resources in an unimpaired condition

and, in accordance with the Wilderness Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.

CUUWO RVKQPU.'O GVI QF QNQT [. 'CP F 'K RCEV'K VGPUN['F GHK VIKQPU''

Section 6.2.1 of the NPS *Management Policies 2006* dictates that NPS lands would be considered eligible for wilderness if they are at least 5,000 acres or of sufficient size to make practicable their preservation and use in an unimpaired condition, and if they possess the following characteristics (as identified in the Wilderness Act):

- The earth and its community of life are untrammelled by humans, where humans are visitors and do not remain;
- The area is undeveloped and retains its primeval character and influence without permanent improvements or human habitation;
- The area generally appears to have been affected primarily by the forces of nature, with the imprint of humans' work substantially unnoticeable;
- The area is protected and managed so as to preserve its natural conditions; and
- The area offers outstanding opportunities for solitude or a primitive and unconfined type of recreation.

Per Section 6.3.4.3, in evaluating environmental impacts, this EIS considers (1) wilderness characteristics and values, including the primeval character and influence of the wilderness; (2) the preservation of natural conditions (including the lack of human-caused noise); and (3) assurances there would be outstanding opportunities for solitude, that the public would be provided with a primitive and unconfined type of recreational experience, and wilderness would be preserved and used in an unimpaired condition. Mitigation measures considered in this analysis are listed in appendix F and are mentioned in the analysis where appropriate.

The following definitions were used to determine the magnitude of adverse impacts on wilderness:

- **Pgi rik kdig:** There would be little or no effect on wilderness character or wilderness experience. The effect on wilderness character would be so small that it would not be of any measurable or perceptible consequence.
- **O lqqt:** An effect on one or more attributes of wilderness character and wilderness experience and associated values would occur; it would be slightly detectable and highly localized.
- **O qf gt cvg:** Attributes of wilderness character and wilderness experience would be affected in a substantial way over a large area, or the impact would affect multiple areas but would not be permanent.
- **O clqt:** One or more attributes of wilderness character and wilderness experience would be affected substantially across a large area of the park on either a permanent or a frequent but temporary basis.

CPCN[UKCTGC''

The area of analysis for wilderness includes all areas eligible for wilderness designation in the EEEA. The draft General Management Plan / East Everglades Wilderness Study / EIS for Everglades National Park (NPS 2013a) found that approximately 102,100 acres of the EEEA is eligible for wilderness designation.

The eligible area includes most of the FPL West Secondary Corridor, but excludes the exchange corridor. Note: Only Congress can designate wilderness. Furthermore, the FPL corridor could at most be designated “potential” wilderness (as opposed to actual wilderness) until such time as it came into federal ownership.

KO RCEVUQH CNVGTP CVKKG'3C<P Q'P RU'CEVKQP '6'P Q'HRN'E QPUVTWE VKQP "
***GP XKTQPO GP VCN'DCUGNPG+ "**

KO rcew'qhv'j g'Ncpf 'Ces wlvkqp 'Cevkqp "

Under alternative 1a, there would be no legal changes to the property's status or ownership, and FPL would not grant NPS a flowage easement. Therefore, there would be no physical change to the land, so there would be no direct impacts on wilderness. The FPL corridor would remain under FPL ownership, which would preclude the area from being managed as part of a designated wilderness area and prevent the achievement of natural conditions in the corridor. Not having this area under NPS management means that the park cannot require that actions undertaken there undergo a minimum requirements analysis. In addition, FPL, as landowner, would have access to the area and could allow motorized access or other motorized/mechanical equipment uses such as chainsaws, tools, etc., which would adversely impact the untrammeled qualities of wilderness in that area. For these reasons, alternative 1a would result in indirect long-term major adverse impacts on wilderness.

KO rcew'qhv'Vtcpuo lvkqp 'Nlpg'Eqput wevkqp "

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts on wilderness.

Ewo wlvkg'KO rcew'6'Cngt pcvkg'3c "

Ecosystem restoration projects in the Everglades and acquisition of property throughout the park as described on table 18 would result in beneficial impacts on wilderness throughout the Everglades (over a 20-30 year period, as associated projects are funded and implemented), but alternative 1a would prevent or obstruct implementation of many if these projects. However, the overall direction of the GMP and other park programs to preserve park resources would indirectly benefit wilderness in the park. Other projects in the area of analysis with adverse effects on wilderness include airboat operations and helicopter use over EEEA and park operations such as vegetation management that introduce noise and disturbance in wilderness (short term minor to moderate adverse impacts). Alternative 1a would result in major adverse impacts because of the lack of flowage and would contribute appreciable adverse impacts to the overall cumulative effects on wilderness in this area.

Eqpenlvkqp'6'Cngt pcvkg'3c "

Under alternative 1a, there would be no direct impacts on the wilderness character of the EEEA from the FPL retention of property in the EEEA, but there would be indirect long-term major adverse impacts because the FPL corridor would remain under FPL ownership, which precludes the area from being managed as part of a designated wilderness area, would result in the inability to restore natural water conditions to the area, preventing the reestablishment of wilderness character, and allows the introduction of disturbances to wilderness quality. Because there would be no transmission line construction under this alternative, no indirect impacts would occur to wilderness characteristics from construction of transmission lines. Alternative 1a would contribute appreciable adverse impacts to the overall cumulative impacts on wilderness.

Key Findings: Potential Impacts of FPL Transmission Line Construction and Operation on Wilderness Values

Key Finding 1: Potential Impacts of FPL Transmission Line Construction and Operation on Wilderness Values

Under alternative 1b, as under alternative 1a, the retention of ownership of land in the EEEA by FPL would result in no direct impacts on the wilderness character of the EEEA because there would be no direct physical change to the land as a result of the land acquisition action. The FPL corridor would remain under FPL ownership, which would preclude the area from being managed as part of a designated wilderness area, resulting in indirect long-term major adverse impacts. Not having this area under NPS management means that the park cannot require that actions undertaken there undergo a minimum requirements analysis. In addition, FPL, as landowner, would have access to the area and could allow motorized access or other motorized/mechanical equipment uses such as chainsaws, tools, etc., which would adversely impact the untrammeled qualities of wilderness in that area.

Key Finding 2: Potential Impacts of FPL Transmission Line Construction and Operation on Wilderness Values

Under alternative 1b, the construction of transmission lines within the boundary of Everglades National Park would result in long-term major adverse impacts on wilderness values by precluding the corridor from being designated as wilderness and by creating visual and noise impacts. The severity of these impacts would decrease with increasing distance from the corridor.

The FPL West Secondary Corridor is in the area of the EEEA that is being considered for possible wilderness designation under the Wilderness Act in the draft Everglades GMP / East Everglades Wilderness Study / EIS (see “Figure 35: Land Use within the Area of analysis and Surrounding Vicinity” in chapter 3). If transmission lines were constructed in the FPL West Secondary Corridor, they would preclude the corridor from being designated as wilderness due to Section 4(c) of the Wilderness Act, which prohibits certain uses:

(c) Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

The likely future construction of the transmission lines, towers, and structure pads in the FPL West Secondary Corridor could affect the eligibility of other lands in the EEEA to achieve wilderness designation, especially those lands in which transmission lines and structures would be prominently visible. Disturbances to native Everglades communities resulting from wetland fill—such as displacement, potential injury or mortality of bird species, and other associated effects of transmission line construction—would adversely impact wilderness values and the protection and management of natural conditions. The presence of the transmission facilities, the noise from construction, operation and maintenance of the transmission facilities, and the potential limitations on the use of and access to the EEEA as a result of FPL transmission lines would impact the “undeveloped” and “solitude or primitive and unconfined recreation” criteria in the Wilderness Act. The visual qualities and soundscapes of the park would be altered with the addition of the transmission lines, as fully described in the “Viewshed (Visual Resources)” and “Soundscapes” sections of this EIS. Visitor use and experience and recreation resources would also be altered with the addition of the transmission lines, as described in the “Visitor Use and Experience / Recreation Resources” section of this EIS.

During the construction period, short-term moderate adverse construction-related impacts would occur related to temporary disturbances from construction and earth-moving activities, resulting in measurable adverse impacts on wilderness values of the corridor and surrounding lands.

Overall, the construction, maintenance, vegetation management, and operation of FPL transmission lines in the FPL West Secondary Corridor could result in short and long-term moderate to major adverse impacts on desired wilderness character conditions in the EEEA.

Ewo wɛvɔg'kɔ rcew'd'cngt pcvɔg'3d''

The cumulative impacts on wilderness from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 1b would contribute short-term moderate adverse construction-related impacts and long-term major adverse effects from construction of the transmission line without a flowage easement in the FPL corridor; these impacts would contribute appreciable adverse impacts to the overall cumulative effects on wilderness in this area.

Eqpenwukp'd'cngt pcvɔg'3d''

Under alternative 1b, there would be no direct impacts on the wilderness character of the EEEA from the FPL retention of property in the EEEA but there would be indirect long-term major adverse impacts because the FPL corridor would remain under FPL ownership, which precludes the area from being managed as part of a designated wilderness area and allows the introduction of disturbances to wilderness quality. Indirect impacts would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short-term moderate adverse impacts during construction and long term major adverse impacts on wilderness characteristics from the presence and operation of the lines. Alternative 1b would contribute appreciable adverse impacts to the overall cumulative impacts on wilderness.

kɔ rcevuqh'cngt pcvɔg'4<P RU'CES wukwqp'qh'hrn'ncpf''

kɔ rcew'qh'vj g'ncpf 'ces wukwqp'cevɔg''

Under alternative 2, there would be no direct impacts on the wilderness character of the EEEA from the exchange of FPL and NPS lands in the EEEA. However, indirect benefits would occur from the land acquisition. Following acquisition, NPS would be able to manage the acquired area consistent with park goals for improved ecosystem conditions and wilderness character on lands previously not subject to NPS authority. The defragmentation of the EEEA ownership and placing the ownership of this area solely with the NPS will enhance the ability to provide more natural water flows to Everglades National Park, which in turn will enhance the conservation of the resources and values of the park, including its wilderness character, a substantial long-term beneficial impact.

kɔ rcew'qh'vtcpuo kukqp'Nɔg'Eqput wevɔg''

Under alternative 2, construction of the transmission lines in the area of the possible relocated corridor would result in indirect impacts on the wilderness characteristics of the EEEA, because the lines may pass near to the park and could be visible from areas of wilderness in the park. The operation and maintenance of the transmission lines east of the park would result in long-term negligible to moderate adverse impacts, with the intensity dependent on the precise location of the lines within the area of possible relocated corridor. If transmission lines were located in the eastern or central portions of this area, where urbanized and agricultural land use elements already exist, impacts on wilderness values within the park (resulting from noise and visual effects of the transmission lines) would be negligible compared to

baseline conditions. However, if the aforementioned impacts were concentrated along the western portion of the area of possible relocated corridor, adverse impacts on wilderness values would be minor to moderate in severity due to the proximity of activities that would result in measurable impacts upon wilderness. The wilderness character of the EEEA would be affected over the operational lifetime of the transmission lines if the lines were visible in the park. Recreational users along the L-31N canal would experience the ongoing noise emitted by 500-kV transmission lines (for specific impacts, please see the “Soundscapes” section). Observers at points within the eastern portion of the park would note the presence of human-made structures in the relatively undeveloped landscape. The impact on those at observation points at the extreme eastern portion of the park would be slight because the transmission lines and structures would be situated against a backdrop of preexisting development in the form of radio towers, commercial and industrial facilities, and power transmission structures (for specific impacts, see the “Viewshed (Visual Resources)” section).

During the construction period, short-term negligible to moderate adverse construction-related impacts would occur related to temporary disturbances from earth-moving activities during the period of construction. If disturbances from transmission line construction were located in the eastern or central portions of this area, where urbanized and agricultural land use elements already exist, impacts on wilderness values within the park (resulting from noise and visual effects of the construction activities) would be negligible compared to baseline conditions. However, if the aforementioned impacts were concentrated along the western portion of the area of possible relocated corridor, adverse impacts on wilderness values would be minor to moderate in severity due to the proximity of these activities and the increased potential for them to result in measurable noise-related and visual impacts upon wilderness.

No permanent impacts upon wilderness designation would result from the short-term impacts on wilderness values occurring during construction activities.

Ewo wɛvɔg'kɔ rcew'

The cumulative impacts on wilderness from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 2 would allow flowage/implementation of the ecosystem restoration projects and benefit wilderness, and would remove any direct impacts on wilderness in the park. There would be short- and long-term negligible to moderate adverse impacts from construction of the transmission line in areas outside the park that can be seen and/or heard from wilderness inside the park. These impacts would contribute appreciable beneficial and imperceptible to noticeable adverse impacts to the overall cumulative effects on wilderness in this area.

Eqpenwukp''

Under alternative 2, there would be no direct impacts from the acquisition of FPL property in the EEEA, but there would be indirect benefits from the acquisition itself which gives the NPS the ability to manage the acquired area consistent with wilderness goals. Indirect impacts on the wilderness characteristics of the EEEA would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park. Alternative 2 would have short-term negligible to moderate adverse impacts and long-term negligible to moderate adverse impacts, depending on the location of the lines in the area and the proximity to the park. Alternative 2 would contribute appreciable beneficial impacts and imperceptible to noticeable adverse impacts (depending on the proximity of the lines to the park) to overall cumulative effects on wilderness in this area.

KO RCEVUQH'CNVGTPCVKG'5<HGG'HQT'HGG'NCPF'GZEJ CPI G''

KO rcew'qhl'vj g'Ncpf 'Ces wkwkqp'Cevkqp''

Under alternative 3, there would be no direct adverse impacts on the wilderness character of the EEEA from the exchange of FPL and NPS lands in the EEEA. Similar to alternative 2, there would be indirect benefits from the land acquisition, because the exchange would remove a large area of non-NPS ownership of land in the interior of the park, ensuring that no other development could be proposed in the FPL corridor and that the NPS could manage the corridor as wilderness. The exchange corridor that would be removed from the park's boundary has been determined as ineligible for wilderness in the draft GMP/East Everglades Wilderness Study, so there is no adverse effect associated with the exchange itself. The defragmentation of the EEEA ownership and placing the ownership of the FPL corridor solely with the NPS will enhance the ability to provide more natural water flows to Everglades National Park, which in turn will enhance the conservation of the resources and values of the park, including its wilderness character, a substantial long-term beneficial impact.

KO rcew'qhl'Vtcpuo kwkqp'Nkpg'Eqpwt wekqp''

Under alternative 3, indirect short-term moderate adverse construction-related impacts would result from the construction of transmission lines in the FPL West Preferred Corridor, directly adjacent to park lands, as described earlier in this chapter and appendix F. These impacts on wilderness values within the park (resulting from noise and visual effects of the construction activities) would occur during the period of construction. Effects would be concentrated along the eastern edge of park. Although the exchange corridor is not itself eligible to be designated as wilderness, adverse impacts on wilderness values would be moderate in severity due to the proximity of these activities and the increased potential for them to result in measurable impacts upon wilderness. No permanent impacts upon wilderness eligibility would result from the short-term effects to wilderness values that would occur during construction activities.

The future construction of the transmission lines, towers, and structure pads in the FPL West Preferred Corridor could affect the eligibility of adjacent lands in the EEEA to achieve wilderness designation, especially those lands in which transmission lines and structures would be prominently visible, resulting in long-term moderate adverse impacts. Although the exchange corridor is not itself eligible to be designated as wilderness, the proximity of those effects would have moderate adverse impacts on wilderness values within the park (resulting from audible noise at close distances and visual effects where the transmission lines would be visible). This could affect wilderness designation of adjacent lands in the park. The noise from operation and maintenance of the transmission facilities, and the potential limitations on the use of and access to the EEEA as a result of FPL transmission lines would impact the “undeveloped” and “solitude or primitive and unconfined recreation” criteria in the Wilderness Act. The visual qualities and soundscapes of the area of the park located adjacent to the FPL West Preferred Corridor would be altered with the addition of the transmission lines, as fully described in the “Viewshed (Visual Resources)” and “Soundscapes” sections of the EIS. Visitor use and experience and recreational resources would also be altered with the addition of the transmission lines, as described in the “Visitor Use and Experience / Recreation Resources” sections of the EIS. Ongoing maintenance, vegetation management, and operation of FPL transmission lines in the FPL West Preferred Corridor could result in long-term moderate adverse impacts on desired wilderness character conditions in the EEEA.

Ewo wkwkg'KO rcew''

The cumulative impacts on wilderness from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 3 would allow flowage/implementation of the ecosystem restoration projects and benefit wilderness, but the land

exchange and construction of the transmission line in the exchange corridor would result in short and long term moderate adverse impacts; these impacts would contribute both appreciable beneficial impacts and noticeable adverse impacts to the overall cumulative effects on wilderness in this area.

Eqpenwukqp''

Under alternative 3, there would be no direct impacts on wilderness characteristics from the exchange of NPS and FPL lands in the EEEA. Indirect benefits would occur from the exchange itself, resulting in flow restoration that would benefit wilderness character and the ownership of this area being placed solely with the NPS who could then manage the corridor as wilderness. Indirect short-term moderate adverse impacts on the wilderness character of the EEEA would result from the construction of the lines. The continued presence of the transmission lines in the FPL West Preferred Corridor would result in long-term moderate adverse impacts on the wilderness character of the EEEA. This could affect the wilderness designation of adjacent lands in the park. Alternative 3 would contribute appreciable beneficial impacts and noticeable adverse impacts to the overall cumulative effects on wilderness in this area.

Kō RCEVUQH'CNVGTP CVKKG'6<GCGUGO GP V'HQT'HGG'NCPF 'GZEJ CPI G''

Kō rcew'qhl'vj g'Ncpf 'Ces wukwukqp'Cevkqp''

Direct and indirect impacts on the wilderness character of the EEEA as a result of the land exchange under alternative 4 would be the same as those described under alternative 3. Additional beneficial impacts would result from terms and conditions (appendix H) that would reduce the risk of having additional utility facilities developed within the exchange corridor that could detract from the wilderness values of the neighboring park land. There would be no direct impacts on the wilderness character of the EEEA from the exchange of FPL and NPS lands in the EEEA; however, indirect benefits would occur from restoring flows to benefit wilderness character and from placing the ownership of this area solely with the NPS so that the NPS could manage the corridor as wilderness. The exchange corridor that would be removed from the park's boundary has been determined as ineligible for wilderness in the draft GMP/East Everglades Wilderness Study, so there would be no adverse effect associated with the exchange itself.

Kō rcew'qhl'Vtcpuo kulkqp'Nlpg'Eqput wevkqp''

Under alternative 4, indirect impacts of the transmission line construction and operation would be the same as described under alternative 3 and would include short- and long-term moderate adverse impacts on the wilderness character of the EEEA.

Ewo wvckg'Kō rcew''

Cumulative impacts would be the same as those described under alternative 3. The past, present, and reasonably foreseeable future actions described under alternative 1a would also occur under alternative 4. Alternative 4 would allow flowage/implementation of the ecosystem restoration projects and benefit wilderness, but the land exchange and construction of the transmission line in the exchange corridor would result in short and long term moderate adverse impacts; these impacts would contribute both appreciable beneficial impacts and noticeable adverse impacts to the overall cumulative effects on wilderness in this area.

Eqpenwukpp''

Under alternative 4, impacts would be essentially the same as described under alternative 3, with benefits occurring from the land exchange itself, except that no other utilities could be built in the corridor, which would lessen the risk of additional impacts of these facilities on wilderness in this area. Indirect adverse impacts would include short- and long-term moderate adverse impacts on the wilderness character of the EEEA. Alternative 4 would contribute appreciable beneficial impacts and noticeable adverse impacts to the overall cumulative effects on wilderness in this area.

KO RCEVUQH'CNVGTPCVKG'7<RGTRGVWCN'HNQY CI G'GCUGO GP V'QP'HRN'RTQRGT V[''

Ko rcew'qhvj g'Ncpf 'Ces wukwkp 'Cevkqp''

Alternative 5 would provide for a long-term flowage easement over the FPL West Secondary Corridor, but no acquisition of the corridor. There would be no direct impact on the wilderness because there would be no direct change to the land as a result of this alternative. There would be indirect benefits to having a flowage easement on the FPL parcel in the EEEA that would improve resource conditions and wilderness character. However, continued FPL ownership and control of the corridor would continue and would preclude the area from being managed as wilderness.

Ko rcew'qhv Vtcpuo kulkqp'Nlpg'Eqpum wevkqp''

Under alternative 5, indirect impacts of the transmission line construction and operation would be the same as described under alternative 1b and would include long-term major adverse impacts on the wilderness character of the park from the transmission line construction in the FPL West Secondary Corridor.

Ewo wvdkg'Ko rcew''

The cumulative impacts on wilderness from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 5 would result in mainly adverse impacts with long-term major adverse impacts from transmission-line construction and limited benefits since the corridor remains in FPL ownership and cannot be managed as wilderness. These impacts would contribute appreciable adverse impacts to the overall cumulative effects on wilderness in this area.

Eqpenwukpp''

Under alternative 5, there would be no direct impacts from the FPL retention of property in the EEEA, and benefits from having a long-term flowage easement agreement. Long-term indirect moderate adverse impacts would occur as a result of the corridor remaining under FPL ownership, which would preclude the area from being managed as wilderness. Indirect adverse impacts would also result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short-term moderate and long-term major adverse impacts on wilderness characteristics. Alternative 5 would contribute appreciable adverse impacts to the overall cumulative effects on wilderness in this area.

XXKXQT'WUG'CPF'GZRGTKGPEG'ITGETGCVKQP'TGUQWTEGU'

I WEFPI 'TGI WNCVKQPUCPF'RQNEKGU'

Enjoyment of park resources and values by the people of the United States is fundamental to the purpose of all national parks. The NPS is committed to providing appropriate, high-quality opportunities for the public to enjoy the parks. Because not all recreational activities are appropriate for each park, the NPS will encourage activities that are appropriate to the purposes for which the park was established, are appropriate to the unique park environment, will promote enjoyment through direct association with park resources, and can be sustained without causing unacceptable impacts on park resources or values (NPS 2006a, Section 8.2).

Visitors use a variety of park resources based on personal goals and interests, and the feeling they experience during their visit is the result of multiple actions and encounters. This analysis considers how the proposed alternatives would affect how people use park lands, as well as how the alternatives would alter visitors' experiences. Although several factors contribute to the quality of experience, the proposed actions would affect visitor use and experience primarily through visual and noise disruptions, as well as access limitations. Therefore, this analysis incorporates the findings from the "Soundscapes" and "Viewshed (Visual Resources)" sections of this chapter to help determine how impacts on those park resources would affect visitor use and experience. Aesthetic value is an important consideration in the management of recreation settings, especially where most people expect a natural-appearing landscape with limited evidence of "unnatural" disturbance of landscape features (USFS 1995, F-1). Scenic qualities can affect park visitors, residents of the local area or nearby communities, and a broader constituency who may either occasionally visit the parks or simply have an interest in their scenic qualities (USFS 1995, 3-3). Additional factors affecting visitor use include the impact on visitor experience from the quality of the overall ecosystem, including any improved visitor experience opportunities from restored hydrologic flow.

CUUWORVKQP.U'O GVI QFQNGI [. 'CPF'KORCEV'KVGPUK['F GHPKVKQP.U'

General information on visitors to southern Florida and the park was collected from NPS visitor statistics and previous studies at the park. Information about use of the recreational areas outside the park but in the project area was collected based on park input and data gathering done to assess the area of possible relocated corridor east of the park. This information was used to make a qualitative evaluation of the potential impacts on visitor use and experience based on professional judgment.

The following definitions were used to assess impacts on visitor use and experience and recreation resources:

- **Pgi nli kldg:** Visitors and recreational users would not be affected and/or changes in the experience would be below levels of detection, and visitors and recreational users would likely be unaware of any effects associated with implementation of the alternative. There would be no noticeable change in visitor use and experience or in any defined indicators of visitor satisfaction or behavior.
- **Olpqt:** Changes in visitor/recreational use and/or experience would be slight but detectable. The changes would not appreciably limit critical characteristics of the desired experience. Visitors or recreational users would be aware of the effects associated with the alternative, but the effects would be slight.

- **O qf gtevg:** Some characteristics of the desired experience would change and/or the number of participants engaging in an activity would be altered. The visitor or recreational user would be aware of the effects associated with the implementation of the alternative and would likely be able to express an opinion about the changes. Visitor/user satisfaction would begin to decline as a direct result of the effect.
- **O clqt:** Multiple critical characteristics of the desired visitor/user experience would change and/or the number of participants engaging in an activity would be greatly reduced. The visitor/user would be aware of the effects associated with the implementation of the alternative and would likely express a strong opinion about the change. Visitor/user satisfaction would markedly decline.

CPCN[UKCTGC"

The area of analysis for visitor use and experience and recreation resources includes the areas of visibility, audibility, recreational use, and recreational access that are used by park visitors in the EEEA. It also includes the visitor use corridor along the L-31N canal, visitor use areas in the WCAs north of Tamiami Trail, fishers on canals, and any recreation areas outside the park in the area of possible relocated corridor.

KO RCEVUQH CNVGTP CVKKG'3C<P Q'P RU'CEVIQP '6'P Q'HRN'E QPUVTWEVIQP "
***GP XKTQPO GP VCN'DCUGNPG+ "**

KO rcew'qhtj g'Ncpf 'Ces wukvqp'Cevkqp"

Under alternative 1a, FPL retention of ownership of land in the EEEA would not have any direct impacts on visitor use and experience and recreation resources. However, flowage restrictions would result in long-term indirect major adverse impacts on visitor use and experience. The lack of a perpetual easement to flow higher water levels across the FPL property would prevent the implementation of ecosystem restoration activities that rely on additional flow in the EEEA. The continued degradation of hydrology, water quality, soils, vegetation and wetlands, floodplains, and special-status species would prevent visitors from experiencing a healthy ecosystem and enhanced wildlife viewing opportunities in the EEEA and the WCAs north of Tamiami Trail. These impacts would have a long-term major adverse effect on the visitor experience.

KO rcew'qhtj Vtcpuo kulkqp'Nlpg'Eqput wevkqp"

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts visitor use and experience or recreation resources.

Ewo wcvkkg'KO rcew'6'Cngt pcvkkg'3c"

Past projects impacting visitor use and experience and recreation resources include the acquisition of lands in the EEEA under the Expansion Act. The acquisition of these properties has expanded the protected areas within Everglades National Park and has protected the backcountry experience for visitors in this area, resulting in long-term beneficial impacts. Present and future actions that impact visitor use and experience and recreation resources include all projects intended to restore habitat and deliver additional freshwater to the park. As a result of these actions, there would be additional wildlife in the park, improving the visitor experience, as well as providing additional areas for airboats to access, expanding the area available for visitor use. The draft GMP calls for an increased prominence for the EEEA for visitors and area residents to experience and understand the Everglades ecosystem. These

projects would result in long-term beneficial impacts on visitor use and experience. Fire management actions (prescribed burns, wildland fire control actions) can adversely affect visitor use in the park by restricting access to the areas being treated and from smoke. Impacts would be short term, minor, and adverse.

The past, present, and reasonably foreseeable future actions described above would result in long-term beneficial impacts, with some short-term minor adverse effects. Alternative 1a would contribute long-term major adverse indirect impacts from the prevention of the beneficial impacts from the ecosystem restoration projects and the ability for visitors to experience a restored ecosystem; these impacts would contribute appreciable adverse impacts to the overall cumulative impacts on visitor use and experience and recreational resources in the project area.

Eqpenwukp'6'Cngt pc vkg'3c''

Under alternative 1a, there would be no land acquisition and no transmission line construction within or adjacent to the EEEA. The lack of a flowage easement on the FPL property would prevent the implementation of ecosystem restoration activities that rely on additional flow in the EEEA. The resulting degradation of natural resources would prevent visitors from experiencing a healthy ecosystem and enhanced wildlife viewing opportunities in the EEEA and the WCAs north of Tamiami Trail. These impacts would have a long-term indirect major adverse effect on the visitor experience. Alternative 1a would contribute appreciable adverse impacts to overall cumulative impacts on visitor use and experience.

KO RCEVUQH CNVGTP CVKG'3D<P Q'P RUCEVIQP'6'HRN'EQPUVTWEVIQP'IP'VJ G'RCTM''

KO rcew'qh'tj g'Ncpf 'Ces wukp'Ceukp''

Under alternative 1b, the retention of ownership of land in the EEEA by FPL would result in no direct impacts on visitor use and experience or recreational users in adjacent areas. Similar to alternative 1a, the continued degradation of hydrology, water quality, soils, vegetation and wetlands, floodplains, and special-status species from the lack of a perpetual flowage easement would prevent visitors from experiencing a healthy ecosystem and enhanced wildlife viewing opportunities in the EEEA and the WCAs north of Tamiami Trail and would have a long-term indirect major adverse effect on the visitor experience.

KO rcew'qh'Vtcpuo kukp'Nlpg'Eqput weukp''

Indirect impacts would result from the construction of the transmission lines in the park, as described earlier in this chapter and appendix F. During construction, visitors and recreational users would notice an increase in construction equipment and associated noise in the vicinity of the construction area. If helicopters were needed during construction, they would introduce additional noise and disruption to the park's backcountry experience in this area. Overall, impacts on visitor use and experience and recreation resources during construction would be short term, moderate to major, and adverse.

The visual qualities of the park would be altered with the addition of the transmission lines, as fully described in the viewshed analysis (see the "Viewshed (Visual Resources)" section of the EIS). For visitors in both Shark Valley and Chekika, the views would primarily include natural scenes; very few, if any, human-made structures would be visible from viewing platforms and hiking trails. Visitors on airboat tours would be able to see several human-made structures, including radio towers, a cement plant, the Miccosukee Resort Hotel, the Krome Detention Center water storage tower, and existing power transmission structures, as well as the proposed new transmission line structures in the park. The existing

structures would remain in the background of the existing viewing opportunities, while the transmission lines would be expected to be more prominent, due to their height, and would be located in the middleground of existing views. While visitor use in the direct vicinity of the FPL West Secondary Corridor is limited, canoeists may choose not to continue to recreate in this location. The experience of canoeists would be reduced by the introduction of transmission lines within a primitive setting. This area is seen by many visitors approaching the park. Impacts on visitor use and experience within the park would be long-term, moderate, and adverse.

Outside the park, anglers along the L-29 canal would be impacted by the construction of the transmission lines. The lines would cross the L-29, introducing a new built element to the landscape. Additionally, the operation of large transmission lines in this area would introduce noise in the area of the canal that would likely be a disturbance to the anglers. This disturbance would only be in the direct vicinity of the transmission lines, however, and anglers could move along the canal to a new location to avoid this impact. Recreational users along the L-31N canal may notice the new visual element, but it likely would not impact their recreational experience. Airboaters and those visitors recreating in the WCA would notice the new visual element and would experience long-term moderate adverse impacts from the new structures in a currently undeveloped location. Overall, impacts on recreation resources outside of the park would be long-term, moderate, and adverse.

Overall, impacts on visitor use and experience and recreation resources both in and around the park would be short-term moderate to major adverse and long-term moderate adverse.

Ewo wɛvɛg'kɔ rcew'ɔ'ɕngt pɛvɛg'3d''

The impacts on visitor use and experience from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1a. Alternative 1b would contribute short-term moderate to major adverse and long-term moderate to major adverse indirect impacts of transmission line construction along the FPL West Secondary Corridor within the EEEA and would prevent the beneficial impacts from the ecosystem restoration projects and the ability for visitors to experience a restored ecosystem; these impacts would contribute appreciable adverse impacts to the overall cumulative impacts on visitor use and experience and recreational resources in the project area.

Eqpenwɛkɔp'ɔ'ɕngt pɛvɛg'3d''

Under alternative 1b, there would be no direct impacts on visitor use and experience or recreation resources from the FPL retention of property in the EEEA. Impacts on visitor use and experience and recreation resources would result from the inability to flow higher water levels across the FPL property and construction of the transmission lines in the FPL West Secondary Corridor. Effects would include short-term moderate to major adverse impacts during construction and long-term moderate to major adverse impacts from the introduction of built structures into a backcountry setting as well as from noise and visual impacts along the L-29 canal and the lack of a restored ecosystem. Alternative 1b would contribute appreciable adverse impacts to overall cumulative impacts.

Ɔɔ RCEVUQHɕNVGTPCVKɔg'4<P RUɕES wɛvɛkɔp'QHHRN'NCPF''

Ɔɔ rcew'qɛtɛj g'Nɕpf 'Ces wɛvɛkɔp'Cevɛkɔp''

Under alternative 2, the NPS would acquire the FPL property in the EEEA. No direct impacts would be expected from the acquisition of FPL land in the EEEA, however there would be long-term beneficial impacts from the ability of ecosystem restoration projects to be able to flow water in the EEEA, allowing visitors to experience an improved ecosystem.

Kō rcew'qih'Vtcpuo kulkp'Nkpg'Eqpum wevkp''

Impacts under alternative 2 would result from the possible construction of the transmission lines to the east of the park in the area of possible relocated corridor. Impacts on park visitors and recreational users along the L-31N canal would be greatest along the western edge, which is adjacent to the park and the L-31N canal. During construction, there would be short-term minor to moderate adverse impacts from the increase in construction equipment in the vicinity, most notably along the L-31N canal. Once the construction of the transmission lines was completed, recreational users along the L-31N canal would experience a noticeable difference in their recreational experience, with a new introduced element to the relatively undeveloped landscape, including additional impacts from the ongoing noise emitted by 500-kV transmission lines (for specific impacts, please see the “Soundscapes” section of this chapter). Anglers, bicyclists, runners, and other recreational users may choose to recreate in other areas and not use this canal as frequently, resulting in a long-term minor to moderate adverse impact on recreational use. If the transmission lines were constructed along the eastern edge of the area of possible relocated corridor, there would be no impact on recreational use along that corridor because no formal recreation areas exist. Canal users may notice a minor short-term increase in noise during construction in the narrow area along Krome Avenue, but would likely be unaware of the construction while on the L-31N canal.

Within the park, visitors would likely be unable to see the transmission line structures while in the Shark Valley or Chekika areas of the park and would experience no adverse impacts. Visitors experiencing the park by airboat would be most likely to see the transmission lines if they were constructed along the western edge of the area of possible relocated corridor, and these visitors would experience a long-term minor adverse impact on their use or experience. If the construction followed the eastern edge of the area of possible relocated corridor, there would be no impact on park visitors' use or experience.

Overall, impacts on visitor use and experience and recreation resources under alternative 2 would range from no impact to a long-term moderate adverse impact, depending on where the transmission lines were built in the area of possible relocated corridor. Short-term impacts during construction would be minor to moderate and adverse. Generally speaking, impacts on visitor use and experience and recreational users would be greater along the western edge of the area of possible relocated corridor and minimal along the eastern edge.

Ewo wcvkg'Kō rcew'

The impacts on visitor use and experience from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1a. Unlike alternative 1a, ecosystem restoration projects would not be prevented and there would be beneficial impacts to visitor experience. The implementation of the restoration projects would result in the experience of a healthy ecosystem with the potential for more wildlife viewing opportunities. Alternative 2 would contribute short-term minor to moderate adverse impacts and no impact to moderate adverse impacts over the long term and long-term beneficial impacts; these impacts would contribute imperceptible to noticeable adverse cumulative impacts to visitor use and experience.

Eqpenwukp''

Under alternative 2, there would be long-term beneficial indirect impacts from the acquisition of FPL property in the EEEA, allowing ecosystem restoration projects to proceed and visitors to experience an improved ecosystem. Indirect impacts on visitor use and experience and recreation resources would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park and would include short-term minor to moderate adverse impacts during construction and no impact to long-term moderate adverse impacts from the introduction of built structures in an area that is

somewhat undeveloped and is highly used by recreational users along the western boundary of the zone of possible relocated corridor. Alternative 2 would contribute appreciable beneficial effects and imperceptible to noticeable adverse impacts to overall cumulative effects on visitor use and experience and recreational resources in this area.

KO RCEVU'QH'CNVGT'PCVKG'5<HGG'HQT'HGG'NCPF'GZEJ CPI G''

KO rcew'qht'ij g'Ncpf 'Ces wukqp'Cevqp''

Under alternative 3, there would be no direct impacts on visitor use and experience or recreational users in adjacent areas from the exchange of FPL and NPS lands in the EEEA, however there would be long-term beneficial impacts from the ability of ecosystem restoration projects to be able to flow water in the EEEA, allowing visitors to experience an improved ecosystem.

KO rcew'qht'Vtcpuo kulp'Nlpg'Eqput wevqp''

Indirect impacts would result from the construction of transmission lines in the exchange corridor, directly adjacent to park lands, as described earlier in this chapter and appendix F. Any construction would need to adhere to all terms and conditions of the land exchange (appendix G).

During construction, visitors and recreational users would notice an increase in construction equipment and associated noise in the vicinity of the construction area. Visitors on airboat tours, individual airboaters and primitive recreationalists, such as canoeists would experience the largest impact with the biggest visual intrusion into the backcountry setting, as described under alternative 1b. Impacts during construction would be most noticeable in the vicinity of the L-31N canal. During construction, there would be short-term minor to moderate adverse impacts from the increase in construction equipment in the vicinity, as described under alternative 1b. Construction equipment would cause noise and air quality impacts and some portions along the L-31N canal may be closed during construction to protect the safety of recreational users. Construction activities could be longer in duration due to the potential for additional utility infrastructure that may be constructed under the fee for fee land exchange terms and conditions.

Once the construction of the transmission lines was completed, recreational users along the L-31N canal would experience a noticeable difference in their recreational experience, with a new introduced element to the relatively undeveloped landscape, including additional impacts from the ongoing noise emitted by 500-kV transmission lines (for specific impacts, please see the “Soundscapes” section of this chapter). Anglers, bicyclists, runners, and other recreational users may choose to recreate in other areas and not use this canal as frequently, resulting in a long-term moderate adverse impact on recreational use.

Within the park, visitors would likely be unable to see the transmission line structures while in the Shark Valley or Chekika areas of the park and would experience no adverse impacts. Visitors on airboat tours, individual airboaters, wildlife viewers and canoeists would experience minor to moderate adverse impacts from the visual intrusion of the transmission lines in the wilderness setting.

Overall, long-term indirect impacts on visitor use and experience and recreation resources under alternative 3 would be minor to moderate adverse impacts, with the largest impact on recreational users in lands adjacent to the FPL West Preferred Corridor. Short-term impacts during construction would be minor to moderate and adverse.

Ewo wɛvɔg'kɔ rcew'

The impacts on visitor use and experience from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 2, with ecosystem restoration projects providing for an improved visitor experience and improved ecosystem. Alternative 3 would contribute short-term minor to moderate adverse impacts and long-term beneficial and minor to moderate adverse impacts; these impacts would contribute noticeable adverse impacts to the overall cumulative impacts on visitor use and experience.

Eqpenwukp''

Under alternative 3, there would be long-term beneficial impacts from the exchange of property in the EEEA. Indirect impacts would result from the construction of the transmission lines in the FPL West Preferred Corridor and would include short-term minor to moderate adverse impacts during construction and long-term minor to moderate adverse impacts on visitor use and experience and recreation resources from the introduction of built structures along the L-31N canal (moderate adverse impacts on users and visitors along the L-31N canal; minor adverse impacts on visitors located in the park's interior). Alternative 3 would contribute noticeable adverse impacts to overall cumulative effects on visitor use and experience and recreational resources in this area.

kɔ rcevuQHcNvgTPcvkG'6<GcUGO GPV'HQT'HGG'NCPF'GZEJ CPI G''

kɔ rcew'qhvj g'Ncpf 'Ces wukwkp'Cevkp''

Under alternative 4, there would be no direct impacts on visitor use and experience and recreation resources from the easement for fee land exchange, however there would be long-term beneficial impacts from the ability of ecosystem restoration projects to be able to flow water in the EEEA, allowing visitors to experience an improved ecosystem. Also, no other utilities could be built in the corridor, which would lessen the risk of additional impacts of these facilities on visitor use and experience in this area.

kɔ rcew'qhvTcɸo kulkp'Nɔpg'Eqɸutwewkp''

Although FPL would not own the property, impacts on visitor use and experience and recreation resources would be the same as described under alternative 3. Indirect impacts on visitor use and experience and recreation resources would result in long-term minor to moderate adverse effects, with the largest impact occurring on recreational users in lands adjacent to the exchange corridor. Short-term impacts during construction would be minor to moderate and adverse.

Ewo wɛvɔg'kɔ rcew'

The impacts on visitor use and experience from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 2, with ecosystem restoration projects providing for an improved visitor experience and improved ecosystem. Similar to alternative 3, alternative 4 would contribute short-term and long-term beneficial and minor to moderate adverse impacts; these impacts would contribute noticeable adverse to the overall cumulative impacts on visitor use and experience and recreation resources.

Eqpenwukp''

Under alternative 4, there would be beneficial impacts from the fee for easement exchange of property in the EEEA. Impacts on visitor use and experience and recreation resources would result from the

construction of the transmission lines in the FPL West Preferred Corridor and would include short-term minor to moderate adverse impacts during construction and long-term moderate adverse impacts from the introduction of built structures along the L-31N canal. Also, no other utilities could be built in the corridor, which would lessen the risk of additional impacts of these facilities on visitor use and experience in this area.

Alternative 4 would contribute noticeable adverse impacts to overall cumulative effects on visitor use and experience and recreational resources in this area.

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KO rcew'qht'j g'Ncpf 'Ces wukukqp'Cevukqp"

Under alternative 5, the NPS would acquire a flowage easement on the FPL property in the EEEA. No direct impacts would be expected. However there would be long-term beneficial impacts from the ability of ecosystem restoration projects to flow higher water levels in the EEEA, allowing visitors to experience an improved ecosystem.

KO rcew'qht'Vtcpuo lukqp'Nlpg'Eqpumt wevukqp"

Adverse impacts on visitor use and experience and recreation resources from transmission line construction and presence under alternative 5 would be the same as described under alternative 1b. Overall, indirect impacts on visitor use and experience and recreation resources both in and around the park would be long term, minor to moderate and adverse. Short-term impacts during construction would be moderate to major and adverse. Alternative 5 would slightly decrease adverse impacts due to the ability of the NPS to flow additional water in the EEEA. This flowage would provide the NPS staff with interpretive opportunities to show visitors the connected ecosystem and improved wetland function in the EEEA. These slight benefits, however, would not reduce the overall adverse impacts to visitor use and experience to less than minor to moderate.

Ewo wcvukg'KO rcew'

The impacts on visitor use and experience from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1a, but with the ability for ecosystem restoration projects to be completed and improving visitor experience with a restored ecosystem. Alternative 5 would contribute short-term moderate to major adverse impacts and long-term beneficial and minor to moderate adverse impacts; these impacts would contribute noticeable adverse impacts to the overall cumulative impacts on visitor use and experience and recreation resources.

Eqpenwukqp"

Under alternative 5, there would be long-term beneficial impacts from the acquisition of a flowage easement on the FPL property in the EEEA, allowing ecosystem restoration projects to proceed and visitors to experience an improved ecosystem. Indirect adverse impacts on visitor use and experience and recreation resources would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short-term moderate adverse impacts during construction and long-term minor to moderate adverse impacts from the introduction of built structures into a wilderness-like setting as well as from noise and visual impacts along the L-29 canal. Alternative 5 would contribute noticeable adverse impacts to overall cumulative effects on visitor use and experience and recreational resources in this area.

CF LCEGP V'NCP F 'WUGU'CP F 'RQNEKGU'

I WEFPI 'TGI WNCVQPUCPF'RQNEKGU'

NPS *Management Policies 2006* do not directly address effects on adjacent land uses or conflicts with local or tribal plans and policies, but do mention cooperation and coordination with park neighbors and tribal interests in several areas (e.g., public participation, public involvement, and consultation). Also, Section 3, Land Protection, states that “the National Park Service would use all available authorities to protect lands and resources within units of the national park system, and the Park Service would seek to acquire non-federal lands and interests in land that have been identified for acquisition as promptly as possible. For lands not in federal ownership, both those that have been identified for acquisition and other non-federally owned lands within a park unit’s authorized boundaries, the Service would cooperate with federal agencies; tribal, state, and local governments; nonprofit organizations; and property owners to provide appropriate protection measures. Cooperation with these entities would also be pursued, and other available land protection tools would be employed when threats to resources originate outside boundaries.”

CUUWO RVKPU' O GVJ QF QNQI [. 'CP F 'K RCEV'K VGPUN['F GHP'KVQPU'

This topic was included to identify impacts that could occur from conflicts with land use or land use policies of the park or its adjacent lands from any of the actions for acquisition, or from the construction of the transmission lines. Maps showing land use in the project area, county sources, and communications with NPS staff were used to identify land uses and land ownership in the project area. Available information was also taken from other NPS and non-NPS resources to describe these resources and associated land use policies in more detail. The following definitions were used to determine the magnitude of adverse impacts on adjacent land uses and policies:

- **Pgi rli kdig:** Implementation of the alternative is compatible with existing area land uses and policies, existing municipal zoning, municipal and county policies, and existing easements, licenses, rights-of-way, and leases on adjacent properties. Adjacent property owners would not be impacted or changes would be considered slight and local.
- **Olpqt:** Implementation of the alternative is generally compatible with existing area land uses and policies, existing municipal zoning, municipal and county policies, and generally honors existing easements, licenses, rights-of-way, and leases on adjacent properties. Adjacent property owners would experience measurable effects although changes would be small and localized. Mitigation measures, if needed to offset impacts or conflicts, would be simple and successful.
- **Oqf gtevg:** Implementation of the alternative is generally compatible with existing area land uses and policies, existing municipal zoning, municipal and county policies, and generally honors existing easements, licenses, rights-of-way, and leases on adjacent properties. Adjacent property owners would experience measurable effects and changes would be of consequence, but would be relatively localized. Mitigation measures to offset impacts or conflicts would likely succeed.
- **Oclqt:** Implementation of the alternative does not conform to the existing area land uses or policies, existing municipal zoning, and/or does not honor all existing easements, licenses, rights-of-way, and leases on adjacent properties, and constitutes a conflicting use. Adjacent property owners would experience readily measurable effects and changes would be of substantial consequence that would be noticed on a regional scale. Mitigation measures to offset impacts or conflicts would be necessary and their success could not be guaranteed succeed.

CPCN[UK'CTGC"

The area of analysis for adjacent land uses and policies includes the EEEA, the 8.5-square-mile area east of the park, WCA 3B and the Pennsuco wetlands north of the park, and extending to the urban development boundary to the east of the park (see "Figure 4: General Project Area," in chapter 1). The analysis is focused on the transmission line corridors in and around the park in the general study area, and areas within about 1/2 mile on either side of the proposed corridors where indirect impacts related to the construction or presence of the transmission lines could adversely affect adjacent land uses or policies of the landowners.

KO RCEVUQH'CNVGT'PCVKG'3C<P Q'P RU'CEV'QP'6'P Q'HRN'E QPUVTWEV'QP "

*GPXKTQPO GPVCN'DCUGN'P G+ "

KO rcew'qht'vj g'Ncpf 'Ces wuk'kqp'Cev'kqp "

Under alternative 1a, there would be no legal changes to the property's status or ownership, and FPL would not grant NPS a flowage easement. Therefore, there would be no physical change to the land, so there would be no direct impacts on adjacent land uses and no direct impacts on land use policies. However, retention of existing FPL land ownership would preclude the NPS from maintaining adequate flowage, thereby representing an incompatible land use by preventing the NPS from fulfilling its policy obligations and presenting a conflict with the LPP, an approved NPS decision document which enshrines the management direction to adhere to proper flowage within Everglades National Park. Further, the retention by FPL of the land within the park would conflict with NPS management direction pursued for all properties within the EEEA, which focuses on NPS seeking to acquire lands that have been identified for acquisition as promptly as possible to meet the purposes of the 1989 Expansion Act, and to encourage compatible adjacent land uses. Consequently, alternative 1a would result in major adverse indirect impacts on land use policies at Everglades National Park.

KO rcew'qht'Vtcpuo kuk'qp'Nlpg'E qpwt we'kqp "

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts on adjacent land uses or policies.

Ewo wcv'kg'KO rcew'6'Cngt pc'v'kg'3c "

Other plans and actions that are part of the cumulative impact scenario would result in both adverse and beneficial long-term cumulative impacts to surrounding land use and policies. In particular, land uses in the area outside the park are affected by land development decisions and actions, including urban development, road construction and expansion (e.g., Krome Avenue expansion), and commercial and industrial uses such as mining. Cumulative impacts of these actions would be long-term and both adverse and beneficial, depending on the location of the action and the surrounding land use and if the use creates any conflicts with use or local policies. County planning requirements and zoning should prevent major adverse effects on local land use policies. Alternative 1a would result in major adverse impacts because of the conflict with existing NPS policies and would contribute appreciable adverse impacts to the overall cumulative effects on surrounding land use and policies in this area.

Eqpewuk'qp'6'Cngt pc'v'kg'3c "

Under alternative 1a, there would be no direct impacts on land uses adjacent to the park and no direct impacts on land use in the park. However, alternative 1a would result in major adverse indirect impacts

on land use policy at Everglades National Park through the retention of FPL lands within the park. Alternative 1a would result in major adverse impacts because of the conflict with existing NPS policies relating to acquisition of the FPL corridor. There would be no impacts related to transmission line construction under this alternative. Alternative 1a would contribute appreciable adverse impacts to the overall cumulative effects on surrounding land use and policies.

Impacts of Retaining FPL Land Within the Park Under Alternative 1b

Impacts of Retaining FPL Land Within the Park Under Alternative 1b

Impacts of retaining FPL land within the park under alternative 1b would be the same as those described under alternative 1a. Alternative 1b would result in major adverse indirect impacts on land use policies at Everglades National Park.

Impacts of Retaining FPL Land Within the Park Under Alternative 1b

Under alternative 1b, construction of the transmission line would occur within the park. Although land ownership would not be affected by the proposed action, long-term major indirect adverse impacts would occur as a consequence of a conflicting land use that would occur in Everglades National Park following the subsequent construction of transmission lines in the park in the FPL West Secondary Corridor. The presence of a transmission line within the legislative boundary of the park unit would represent an incompatible land use and could affect use of the surrounding property for resource management and visitor use purposes. These conditions would be in conflict with established NPS policies, the Everglades ecosystem restoration projects and the East Everglades LPP. Transmission lines within the park unit are also inconsistent with the Miami-Dade County Comprehensive Development Master Plan given its designation of the East Everglades Area of Critical Environmental Concern. Parts of this route fall outside the park and agreements are in place with SFWMD for use of right-of-way in portions of the transmission line route occurring in WCA 3B, which limits the severity of adverse effects to land use. However, the introduction of man-made artificial structures in lands formerly characterized by natural landscape conditions would result in adverse impacts on these surrounding land uses and contribute to the overall major adverse impacts of this alternative.

Impacts of Retaining FPL Land Within the Park Under Alternative 1b

The cumulative impacts on surrounding land use and policies from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 2 would contribute long-term major adverse construction-related impacts and long-term major adverse effects from policy conflicts; these impacts would contribute appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area.

Impacts of Retaining FPL Land Within the Park Under Alternative 1b

Under alternative 1b, there would be no direct impacts from the retention of FPL property in the EEEA, however, indirect adverse impacts on land use at Everglades National Park from transmission line construction through the park would be major. Alternative 1b would contribute appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area.

KO RCEVUQH'CNVGTP CVKKG'4<P RU'CES WUKVQP'QHHRN'NCPF "

KO rcew'qhv'g'Ncpf 'Ces wukvqp'Cevkp"

Under alternative 2, no direct impacts would be expected from the acquisition of FPL land in the EEEA. NPS acquisition of lands within the park would have no effect on surrounding land uses. However, indirect beneficial impacts would occur as a result of fulfillment of the park's long standing management direction to acquire private properties in the Expansion Area to meet the purposes of the 1989 Expansion Act and eliminate incompatible uses from the area. By changing ownership from FPL to NPS, any potential incompatible land use within park's authorized boundary would be eliminated.

KO rcew'qhv'Vtcpuo kulqp'Nlpg'Eqput wevqp"

Under alternative 2, long term minor to major adverse impacts would occur as a result of construction of the transmission line in the area of the possible relocated corridor. Impacts on adjacent land uses would result from the possible construction of transmission lines to the east of the park. This area is currently a mix of industrial, commercial, utility, and residential uses. Impacts could occur as a result of conflicts with these existing land uses. Easements would be acquired for construction of the necessary support structures, and no wholesale change in existing land uses would be required for the construction of the transmission lines in the area of possible relocated corridor east of the park. Construction of transmission lines in this area would preclude future land use development on certain land parcels. On private parcels, in particular, which are located south of SW 112 Street, small areas of productive agricultural lands may be lost or structures and guy wires could make it difficult to farm. This would result in moderate adverse impacts on land use if those lands are especially productive. The area of possible relocated corridor also contains lands held under federal, state, and local government ownership, including lands owned by the Bureau of Indian Affairs (see the Tribal lands section for a discussion of impacts on tribal and Indian trust resources properties).

Preliminary siting indicates that careful placement of the utility lines and structures conducted through a coordinated planning effort among the different owning entities could avoid major conflicts and would effectively lower impacts to minor adverse levels. It is possible to site a route where major conflicts can be avoided and impacts could be mostly minor adverse. The eastern edge of the area of possible relocated corridor is 1/2 mile from the Urban Development Boundary, which would result in no land use impacts on the residential areas to the east (visual and noise impacts on these residences are addressed in the "Visual Resources" and "Soundscapes" sections).

Because any transmission line constructed under this alternative would be outside the park, this alternative would avoid impacts on the County-designated East Everglades Area of Critical Environmental Concern which is located within the park. The Miami Dade County Comprehensive Development Master Plan, which describes future land use scenarios for the area, states that electric transmission line corridors are permitted in every land use category when located in established right-of-ways or certified. Thus, once a route is certified no conflicts would occur with the county development plan. Although conflicts may occur in areas where SWFMD lands are located if the proposed use of those properties is for water protection or recharge, such impacts could be avoided through consultation and appropriate mitigation.

The installation of transmission line in this area would represent an incremental increase in industrial utility-type land uses in the area along Krome Avenue. Such features are already present as part of the existing mix of land uses in the project area. Adjacent property owners would experience measurable effects from the increase in these land uses, but the changes would be small and localized. This affect would be most notable along the eastern edge of the park where current land use consists of undeveloped

wetlands owned by SWFMD and other federal, state, and private entities. Effects of land use change would present less of a conflict in areas where there is existing disturbance, such as in Bird Drive basin, which is heavily used by all-terrain vehicle recreationalists.

Overall, adverse impacts on land use under alternative 2 would range from minor to moderate in severity depending on where the transmission lines were built in the area of possible relocated corridor. Siting of transmission lines would require agency coordination to minimize impacts to less than significant levels.

Ewo wɛvɔg'kɔ rcew'

The cumulative impacts on surrounding land use and policies from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Under alternative 2, acquisition of the FPL land by NPS would result in long-term beneficial impacts but also long-term minor to moderate adverse cumulative impacts to surrounding land use including potential adverse effects on uses and policies outside the park. These impacts would contribute appreciable benefits and noticeable to appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area.

Eqpenwɔkp''

Under alternative 2, there would be no direct impacts from the exchange of FPL and NPS lands in the EEEA. Indirect impacts on land use would result from the construction of the transmission lines in the area of possible relocated corridor to the east of the park and would include long-term minor to moderate adverse impacts on uses in that area, depending on the location in the area. Alternative 2 would contribute appreciable benefits and noticeable to appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area.

kɔ rcevuqh'CNVGTPCVKKG'5<HGG'HQT'HGG'NCPF'GZEJ CPI G''

kɔ rcew'qɪ'vj g'Ncpf 'Ces wɔwɔkp'Cevkp''

Under alternative 3, indirect beneficial impacts to land use would occur following the acquisition by eliminating a conflicting land use that currently occurs within the legislative boundary of the park. However, major adverse indirect impacts would also occur as the result of removing 260 acres of land on the eastern edge of the park that was deemed critical to the park, based on its inclusion on the 1989 Everglades Expansion Area.

kɔ rcew'qɪ'Vtcpuo kɔwɔkp'Nɔpg'Eqputwɛwɔkp''

Under alternative 3, long-term major adverse indirect impacts on land use would occur as a result of the subsequent construction of transmission lines along the FPL West Preferred Corridor. Land uses within the park, adjacent to the park boundary and agricultural lands in the southern portion of the alignment could be adversely affected.

As stated by Miami-Dade County in the Site Certification Process, transmission lines in the park are inconsistent with the County Comprehensive Development Master Plan and its designation within the East Everglades Area of Critical Environmental Concern. Land use conflicts would also occur as a result of the close proximity of NPS lands to the transmission line, which would be immediately adjacent to the edge of the park and would affect NPS lands through possible access issues and differences in vegetation management approaches

Other land use conflicts under alternative 3 would result from incompatibility with land uses in the agricultural areas south of the park. Several agreements exist between different land owning entities in the 8.5-square-mile area to the east of the park (USACE) and the WCA 3B to the north of the park (SFWMD / Trustees of the Internal Improvement Trust Fund). These agreements serve to moderate the potential for impacts resulting from implementation of the transmission line constriction. This coordinated planning effort among the different owning entities effectively lowers adverse impacts to minor levels. However, while adverse effects would be minimized in lands administered by USACE and SFWMD south and north of the park where FPL has already obtained approval from for transmission line routes, the placement of man-made structures in lands that were formerly characterized by natural landscape conditions would present issues of land use incompatibility.

Moreover, fee for fee terms and conditions under this alternative would allow for future utility uses in the right-of-way, which may result in greater intensification of development along the corridor and create higher concentrations of conflicting land uses adjacent to the eastern boundary of the park.

Ewo wvlg'kō rcew'

The cumulative impacts on surrounding land use and policies from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 3 would have long-term benefits from the acquisition of the FPL land by NPS but also long-term major adverse impacts from the loss of the exchange corridor and the impacts on surrounding land use including potential adverse effects on uses and policies outside the park. These impacts would contribute appreciable benefits and appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area.

Eqpenwukp''

Under alternative 3, indirect beneficial impacts would accrue to land use from the change in land ownership from FPL to NPS; however, major adverse indirect impacts would also occur from removing 260 acres of land deemed critical to the park per the 1989 Expansion Act. Indirect major adverse impacts on land use would occur as a result of the subsequent construction of transmission lines along the FPL West Preferred Corridor under alternative 3; there are conflicts with County Comprehensive Plan language regarding transmission lines in the East Everglades Area of Critical Environmental Concern and the lines would be immediately adjacent to the park. Alternative 3 would contribute appreciable benefits and appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area.

Kō RCEVUQH'CNVGTP CVK'G'6<GCUGO GP V'HQT'HGG'NCPF'GZEJ CPI G''

Kō rcew'qht'j g'Ncpf 'Ces wukp'Ceukp''

Under alternative 4, effects of the land acquisition action would be the same as described under alternative 3 and would include indirect beneficial impacts occurring as the result of fulfillment of the park's long standing management direction to acquire private properties in the Expansion Area to meet the purposes of the 1989 Expansion Act and eliminate incompatible uses from the area. By changing ownership from FPL to NPS, any potential incompatible land use within park's authorized boundary would be eliminated. There would be no loss of park ownership of the 260-acre corridor and the intent of having this in the park per the 1989 Expansion Act would still be met.

Kō rcew'qhi'Vtcpuo kulqp'Nlpg'Eqpum wevqp''

Under alternative 4, as described for alternative 3, long-term major adverse impacts would occur as a result of land use incompatibility issues following construction of transmission lines along the FPL West Preferred Corridor. As stated by Miami-Dade County in the Site Certification Process, transmission lines in the park are inconsistent with the County Comprehensive Development Master Plan and its designation within the East Everglades Area of Critical Environmental Concern. Although additional approval authority whereby NPS must approve any FPL construction in the easement would be granted by way of the easement for fee exchange, land uses within the park in areas adjacent to the proposed corridor and agricultural lands in the southern portion of the alignment would remain adversely affected by the development of transmission lines and associated structures.

Ewo wvkvkg'Kō rcew'

The cumulative impacts on surrounding land use and policies from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1a. Alternative 4 would have long-term benefits from the acquisition of the FPL land by NPS and long-term major adverse impacts from the impacts on surrounding land use including potential adverse effects on uses and policies outside the park). These impacts would contribute appreciable benefits and appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area, although impacts would be less than under alternative 4 since the exchange corridor remains under park ownership.

Eqpenwukqp''

Under alternative 4, there would be no direct impacts from the easement for fee land exchange. Long-term major adverse impacts would occur as a result of land use incompatibility issues following construction of transmission lines along the FPL West Preferred Corridor, although there would be some additional control by way of easement, as the park must approve any FPL construction in the easement. Alternative 4 would contribute appreciable benefits and appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area

Kō RCEVU'QH'CNVGT'PCVKG'7<RGTRGVWCN'HNQY CI G'GCUGO GPV'QP'HRN'RtQRGTVl ''

Kō rcew'qhi'vj g'Ncpf 'Ces wukvqp'Cevqp''

Under alternative 5, the retention of existing FPL land ownership within the park would have no effect on land uses adjacent to the park and no direct impacts on land use in the park. Beneficial effects would occur as a result of the easements to maintain adequate flowage, thereby allowing NPS to fulfill its policy obligations under the LPP, an approved NPS decision document which enshrines the management direction to adhere to proper flowage within Everglades National Park. The retention by FPL of the land within the park, however, would conflict with NPS management direction pursued for all properties within the EEEA. The NPS management direction focuses on NPS seeking to acquire lands that have been identified for acquisition as promptly as possible to meet the purposes of the 1989 Expansion Act, and to encourage compatible adjacent land uses. Consequently, alternative 5 would result in major adverse indirect impacts on land use at Everglades National Park.

Kō rcew'qhi'Vtcpuo kulqp'Nlpg'Eqpum wevqp''

Direct and indirect adverse impacts on land use under alternative 5 would be the same as described under alternative 1b. Although land ownership would not be affected by the proposed action, indirect impacts would occur as a consequence of a conflicting land use that would occur in Everglades National Park

following the subsequent construction of transmission lines in the park in the FPL West Secondary Corridor. The presence of a transmission line within the legislative boundary of the park unit would represent an incompatible land use and could affect use of the surrounding property for resource management and visitor use purposes. These conditions would be in conflict with established NPS policies, the CERP and the East Everglades LPP. Overall, alternative 5 would result in long-term major indirect adverse impacts on surrounding land uses.

Ewo wvlg'Kō rcew'

The cumulative impacts on surrounding land use and policies from other past, present, and reasonably foreseeable future projects would be the same as those discussed under alternative 1b. Alternative 5 would contribute long-term major adverse construction-related impacts and long-term major adverse effects from policy conflicts; these impacts would contribute appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area.

Eqpenwukp''

Under alternative 5, there would be no direct impacts from the retention of FPL property in the EEEA. Indirect impacts would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include long-term major adverse impacts on land use from the introduction of a built structure into a park-like setting and the presence of an incompatible land use within the park and in conflict with the county comprehensive development master plan designation of the area as an area of critical environmental concern. Alternative 5 would contribute appreciable adverse impacts to the overall cumulative effects on surrounding land use and policy in this area.

VTDCN'NCPFUKPENWFPI 'PFKCP'VTWUV'TGUQWTEGU'

I WFPPI 'TGI WNCVIQPUCPF'RQNEKGU'

NPS *Management Policies 2006* do not directly address conflicts with tribal plans and policies, but do mention cooperation and coordination with tribal interests in several areas (e.g., public participation, public involvement, and consultation). Also, Section 3, Land Protection, states that “the National Park Service would use all available authorities to protect lands and resources within units of the national park system, and the Park Service would seek to acquire non-federal lands and interests in land that have been identified for acquisition as promptly as possible. For lands not in federal ownership, both those that have been identified for acquisition and other non-federally owned lands within a park unit’s authorized boundaries, the Service would cooperate with federal agencies; tribal, state, and local governments; nonprofit organizations; and property owners to provide appropriate protection measures. Cooperation with these entities would also be pursued, and other available land protection tools would be employed when threats to resources originate outside boundaries.”

CUUWVRVQPU'O GVI QFQNI [. 'CPF'KORCEV'KVGPUV['FGHFWQPU'

Maps showing land use in the project area and communications with NPS staff and the Bureau of Indian Affairs were used to identify tribal lands, including Indian trust resources in the project area. Available information was also taken from other NPS and non-NPS resources to describe these resources in more detail. The following definitions were used to determine the magnitude of adverse impacts on tribal lands:

- **Pgi nli kdg:** Implementation of the alternative is compatible with existing tribal uses. Adjacent tribal lands would not be impacted or changes would be considered slight and local.

- **O l p q t**: Implementation of the alternative is generally compatible with existing tribal uses. Adjacent tribal lands would experience measurable effects although changes would be small and localized. Mitigation measures, if needed to offset impacts or conflicts, would be simple and successful.
- **O q f g t c v g**: Implementation of the alternative is generally compatible with existing tribal uses. Adjacent tribal lands would experience measurable effects and changes would be of consequence, but would be relatively localized. Mitigation measures to offset impacts or conflicts would likely succeed.
- **O c l q t**: Implementation of the alternative does not conform to the existing tribal uses and/or constitutes a conflicting use. Indian trust resource properties would experience readily measurable effects and changes would be of substantial consequence that would be noticed on a regional scale. Mitigation measures to offset impacts or conflicts would be necessary and their success could not be guaranteed succeed.

CPCN[UK'CTGC"

The area of analysis for tribal lands and Indian trust resources includes the EEEA, the 8.5-square-mile area east of the park, WCA 3B and the Pennsuko wetlands north of the park, and extending to the urban development boundary to the east of the park (see "Figure 4: General Project Area," in chapter 1). The analysis is focused on the transmission line corridors in and around the park in the general study area, and areas within about 1/2 mile on either side of the proposed corridors where indirect impacts related to the construction or presence of the transmission lines could adversely affect tribal lands. The Tamiami Trail Reservation Area, as described under chapter 3, is 15 miles from the FPL West Secondary Corridor and therefore would not be impacted by any of the proposed alternatives.

KO RCEVUQH'CNVGT'PCVKG'3C<P Q'P RU'CEVIQP'6'P Q'HRN'E QPUVTWE'VKQP "
***GPXKTQPO GPVCN'DCUGN'P G+ "**

KO rcew'qht'j g'Ncpf 'Ces wukqp'Cevkqp "

Under alternative 1a, FPL retention of ownership of land in the EEEA would not have any impacts on Tribal Lands. There are no Indian Trust resources in the EEEA.

KO rcew'qht'Vtcpuo kukqp'Nlpg'Eqputwe'vkqp "

Under alternative 1a, no transmission lines would be constructed. Therefore, there would be no construction-related impacts on tribal lands or Indian Trust resources.

Ewo wcvkg'KO rcew'6'Cngt'pcvkg'3c "

Because there would be no impacts on tribal lands, including Indian Trust resources under alternative 1a, there would be no cumulative impacts.

Eqpenukqp'6'Cngt'pcvkg'3c "

There would be no impacts on tribal lands, including Indian Trust resources from the land acquisition action or from transmission line construction under alternative 1a. Because there would be no impacts, there would be no cumulative impacts.

KO RCEVUQH'CNVGTP CVKKG'3D<P Q'P RU'CEVQ'P'6'HRN'EQP UVTWEVQ'P'VJ G'RCTM'**KO rcew'qhl'ij g'Ncpf 'Ces wukwqp'Cevkqp''**

There would be no impacts on tribal lands including Indian Trust resources from the continuation of FPL land ownership within the EEEA. There are no Indian Trust resources located within the EEEA.

KO rcew'qhl'Vtcpuo kulkqp'Nlpg'Eqput wevqp''

Under alternative 1b, the transmission line would be constructed through the EEEA and up into the WCA 3B management area. In both the EEEA and WCA 3B, the transmission lines would be visible from the Indian Gaming and Resort Facility property located along Krome Avenue at the Tamiami Trail, which is an Indian Trust parcel. This visual intrusion on the existing landscape would result in long-term minor adverse impacts on tribal lands. In consultation with management at the Indian Gaming and Resort Facility, management did not foresee any economic impact from the construction of transmission lines (Shea pers. comm. 2013) and it is expected that this property would continue to operate at current levels. The additional Indian Trust properties (Lambik, SEMA, and Coral Way) as well as the fee tribal land would not be impacted by construction under alternative 1b.

Ewo wcvk'KO rcew'6'Cngt pcvk'3d''

No past, present or reasonably foreseeable projects have been identified that would impact tribal lands, including Indian Trust resources; therefore there are no cumulative impacts.

Eqpenwukqp'6'Cngt pcvk'3d''

Alternative 1b would result in no impacts from the continuation of FPL land ownership in the EEEA and long-term minor adverse impacts from the construction of transmission lines through the EEEA and WCA 3B management areas. There would be no cumulative impacts on tribal lands because no other projects were identified for this cumulative impact scenario.

KO RCEVUQH'CNVGTP CVKKG'4<P RU'CES WUKWQP'QH'HRN'NCPF''**KO rcew'qhl'ij g'Ncpf 'Ces wukwqp'Cevkqp''**

There would be no impacts on tribal lands from the acquisition of FPL land in the EEEA. There are no Indian Trust resources in the EEEA.

KO rcew'qhl'Vtcpuo kulkqp'Nlpg'Eqput wevqp''

Under alternative 2, there are Indian Trust parcels and tribal land located within or immediately adjacent to the area of possible relocated corridor. The Coral Way Indian Trust property is located within the area of possible relocated corridor and both the SEMA and Lambik Indian Trust parcels are located directly adjacent or in the immediate vicinity of the area. The additional fee tribal property is also located adjacent to the area of possible relocated corridor. All of these parcels, however, are not in active use by the Miccosukee, with the exception of overflow parking at the SEMA property. Additionally, based on the current SCA application, FPL has committed to avoid crossing tribal lands. Any construction adjacent to this property would likely have minor adverse effects. Regarding the Indian Resort and Gaming Facility parcels, instead of passing to the west of this property (as would occur under alternative 1b), the transmission line would cross the Tamiami Trail and casino property to the east. There would still be a

new visual intrusion; however, this change in viewshed from the casino would occur within a backdrop of an already developed area as opposed to the wilderness-like setting of the EEEA and WCA 3B. Therefore, adverse impacts on the tribal lands would be long-term and minor.

Ewo wɪvɔg'kɔ rcew'

No past, present or reasonably foreseeable projects have been identified that would impact tribal lands; therefore there are no cumulative impacts.

Eqpenwukp''

There would be no impacts on tribal lands from the acquisition action. There would be long-term minor adverse impacts on tribal lands, including Indian trust resources from the implementation of alternative 2 due to the proximity to tribal lands and the change in viewshed from the casino property. There would be no cumulative impacts because no other projects were identified for this cumulative impact scenario.

kɔ rcevu'qh'CNVGTP CVKKG'5<HGG'HQT'HGG'NCPF'GZEJ CPI G''

kɔ rcew'qhl'ij g'Ncpf 'Ces wukukp'Cevkqp''

There would be no impacts on tribal lands or Indian Trust resources from the fee for fee land exchange under alternative 3 because there are no Indian Trust resources within the EEEA.

kɔ rcew'qhl'Vtcpuo kukqp'Nlpg'Eqput wevukp''

Under alternative 3, the transmission lines would be constructed closer to the Indian Gaming and Resort Facility property, along the edge of the EEEA and through the WCA 3B, adjacent to Indian Trust lands. Similar to alternative 1b, construction of transmission lines in this location would alter the existing viewshed from the Indian Gaming and Resort Facility property and the lines could be seen to the west from other tribal and Indian Trust lands located along Tamiami Trail (the SEMA, Coral Way, and unnamed fee properties). Since the transmission line would be located closer to the Indian Gaming and Resort Facility property, there would be a long-term moderate adverse impact on Indian Trust resources and tribal lands. Discussions with the Miccosukee have determined that the tribe does not feel that this change in viewshed would result in economic impacts on the use of the property, because most of the casino visitors come to enjoy the inside activities and amenities (need citation) and room rates do not change based on the east or western views from the resort; however, the presence of the line would be noticeable.

Ewo wɪvɔg'kɔ rcew'

No past, present or reasonably foreseeable projects have been identified that would impact tribal lands; therefore there would be no cumulative impacts.

Eqpenwukp''

There would be no impacts on tribal lands from the acquisition action. There would be long-term moderate adverse impacts on tribal lands, including Indian Trust resources, from the implementation of alternative 3 due to the change in viewshed to the west from the Indian Gaming and Resort Facility property and other Indian Trust and tribal lands in that area. There would be no cumulative impact because no other projects were identified for this cumulative impact scenario.

KO RCEVUQH'CNVGTP CVKKG'6<GCUGO GP V'HQT'HGG'NCPF'GZEJ CPI G''**KO rcew'qhl'ij g'Ncpf 'Ces wukukqp'Cevkqp''**

Impacts under alternative 4 would be similar to those under alternative 3. There would be no impacts on Indian Trust resources from the easement for fee land exchange under alternative 4 because there are no Indian Trust resources within the EEEA. According to the terms and conditions (appendix H), no other utilities could be built in the corridor, which would lessen the risk of additional impacts of these facilities on other properties in this area.

KO rcew'qhl'Vtcpuo kukqp'Nlpg'Eqput wevukqp''

Impacts on tribal lands, including Indian Trust resources from transmission line construction under alternative 4 would be the same as described under alternative 3. There would be long-term moderate adverse impacts from construction of transmission lines in the WCA 3B adjacent to the Indian Gaming and Resort Facility and to the west of other Indian Trust and tribal lands in the vicinity.

Ewo wvukg'KO rcew''

No past, present or reasonably foreseeable projects have been identified that would impact tribal lands; therefore there would be no cumulative impacts.

Eqpenwukqp''

There would be no impacts on tribal lands from the acquisition action. There would be long-term moderate adverse impacts on tribal lands, including Indian Trust resources from the implementation of alternative 4 due to the change in viewshed to the west from the Indian Gaming and Resort Facility property and other Indian Trust and tribal lands in that area. Also, no other utilities could be built in the corridor, which would lessen the risk of additional impacts of these facilities on views in this area. There would be no cumulative impacts because no other projects were identified for this cumulative impact scenario.

KO RCEVUQH'CNVGTP CVKKG'7<RGTRGVWCN'HQY CI G'GCUGO GP V'QP'HRN'RtQRGTV[''**KO rcew'qhl'ij g'Ncpf 'Ces wukukqp'Cevkqp''**

Similar to alternative 1b, there would be no impact on tribal lands from the continuation of FPL property ownership within the EEEA. There are no Indian Trust resources within the EEEA.

KO rcew'qhl'Vtcpuo kukqp'Nlpg'Eqput wevukqp''

Impacts on tribal lands, including Indian Trust resources under alternative 5 would be the same as described under alternative 1b. There would be long-term minor adverse impacts from the visual intrusion into the landscape facing west from the Indian Gaming and Resort Facility property. Other tribal lands and Indian trust resources would not be impacted.

Ewo wvukg'KO rcew''

No past, present or reasonably foreseeable projects have been identified that would impact tribal lands; therefore there would be no cumulative impacts.

Eqpenwukpp''

There would be no impacts on tribal lands from the flowage easement. There would be long-term minor adverse impacts on tribal lands, including Indian Trust resources, from the implementation of alternative 5 due to the change in viewshed to the west from the Indian Gaming and Resort Facility property. There would be no cumulative impacts because no other projects were identified for this cumulative impact scenario.

UQE KQGE QP QO K EU'

I WEFPI 'TGI WNCV KQPUCPF'RQNE KGU'

The CEQ requires the NPS to consider the effects of actions on the quality, growth, expansion, and use of outlying and gateway communities (40 CFR 1502.16). Although the NEPA process is undertaken only when there is a physical impact on the environment, CEQ regulations require analysis of social and economic effects in an environmental assessment (EA) and an EIS. Social and economic impacts should be analyzed in any NEPA document where they are potentially affected (NPS Director's Order 12). Because the local economy could be impacted through the adoption of one or more of the alternatives proposed in this plan/EIS, socioeconomic is considered as an impact topic.

CUUWO RV KQPU' O GVJ QF QNQI [. 'CPF 'KORCEV'K VGPUN['F GHPK WQPU'

The analysis assumes that economic impacts are those that individuals, groups, properties, businesses or institutions would experience from a change—beneficial or adverse—in business and economic activity from each of the alternatives under consideration. Social impacts are those that may be borne by individuals or groups who could experience a change in their social structure and context under the proposed alternatives.

The intensity or magnitude of impacts on the local and regional economy and the social environment are described below. The extent of potential adverse social and economic impacts was assessed using the following definitions:

- **P gi nli kng:** The effects on socioeconomic conditions are below or at the level of detection and localized.
- **O l pqt:** A few individuals, groups, businesses, properties or institutions would be impacted. Impacts would be slight but detectable, and limited to a small geographic area. These impacts are not expected to substantively alter social and/or economic conditions. The impact would not be detectable outside the affected area.
- **O qf gt cvg:** Many individuals, groups, businesses, properties or institutions would be impacted. Impacts would be readily apparent and detectable in the local area and may have a noticeable effect on social and/or economic conditions.
- **O clqt:** A large number of individuals, groups, businesses, properties or institutions would be impacted. Impacts would be readily detectable and observed, extend to a wider geographic area, possibly regionally, and would have a substantial influence on social and/or economic conditions at the county-level of analysis. The impact is severely adverse in the affected area.

CPCN[UK'CTGC"

The area of analysis for socioeconomics is defined mostly by the indirect impacts of transmission line development that would result from implementation of the land exchange alternatives and includes the following:

- For impacts relating to property values, the area of analysis is the area (and structures) close to the alternative transmission line corridors, within 1/4 mile from the alternative corridors in and around the park (between points where alternative routes diverge and then merge again).
- For impacts relating to the regional economic effects of transmission line development on the local economy, the area of analysis is Miami-Dade County.
- For impacts relating to the cost of line development and easements on FPL rates, the area of analysis includes all FPL customers in Florida.

KO RCEVUQH'CNVGT'PCVKG'3C<P Q'P RU'CEVQ'P'6'P Q'HRN'E QP UVTWEVQ'P "
***GPXKTQPO GPVCN'DCUGN'P'G+ "**

KO rcew'qht'j g'Ncpf 'Ces wukqp'Cevkp "

Under alternative 1a, FPL retention of ownership of land in the EEEA would not have any impacts on socioeconomic resources.

KO rcew'qht'j g'Vtcpuo hukqp'Nlpg'Eqpum wevkp "

There would be no change in socioeconomic conditions associated with regional economic effects since there would be no project construction employment and spending.

There would be no change in socioeconomic conditions for private properties and property values due to the project since no transmission line would be built.

There would be no change in socioeconomic conditions associated with development costs and electricity rates as the project would not be built.

Ewo wcvkg'KO rcew'6'Cngt pcvkg'3c "

Because there would be no impacts on socioeconomic resources under alternative 1a, there would be no cumulative impacts. See the cumulative impact discussion under alternative 1b for a description of the impacts of actions by others on socioeconomic resources.

Eqpenukqp'6'Cngt pcvkg'3c "

There would be no impacts on socioeconomic resources associated under alternative 1a. Alternative 1a would contribute no adverse or beneficial cumulative impacts on socioeconomic resources.

KO RCEVUQH CNVGTP CVKG'3D<P Q'P RU'CEVQP'6'HRN'EQP UVTWEVQP'IP'VJ G'RCTM'

KO rcew'qht'vj g'Ncpf 'Ces wkwkqp'Cevkqp''

There would be no impacts on those socioeconomic resources being analyzed from the land acquisition action.

KO rcew'qht'vj g'Vt cpw kkwqp'Nlpg'Eqpwt wekqp''

Indirect impacts under alternative 1b would result from the possible construction of transmission lines in the park. Impacts on socioeconomic resources would include potential effects on jobs and income associated with the construction activity; adjacent properties owners and property values; and FPL development costs and potentially electricity rates.

The bulk of the impacts on social and economic conditions would occur during the construction stage of the project, and therefore they would generally be beneficial and temporary, supporting jobs and income in the regional economy. Approximately 1/2 of the FPL West Secondary Corridor would be located in the park. Construction would occur on the transmission lines in several places simultaneously with average crews of 10 to 15 workers. There would be no more than 30 workers at any one location (appendix F). Construction along the FPL West Secondary Corridor would occur through an access road, which would be located along the entire corridor.

There would be construction employment supported by this alternative through the duration of the construction activity. It is likely that the majority of transmission line construction contractors and workers would reside in the broader region, primarily Miami-Dade County, and commute to the corridor. Transmission line electricians and other specially skilled workers may relocate to the area temporarily during the construction period. Therefore, the population may slightly increase in the short term, but this increase would be negligible adverse in the Miami metropolitan area.

Transmission line construction workers would spend their money in the region, beneficially affecting the region's economy. However, the majority of these workers live in the area, so the locally residing workers' income would not add economic stimulus to the region. The skilled transmission line workers who are expected to relocate temporarily would provide revenues for some local businesses, such as hotels, restaurants, gas stations, and grocery stores, supporting jobs and incomes for these businesses and their employees. Overall, the spending would be short term and would likely have beneficial socioeconomic impacts on the overall region. Relative to the economy of Miami-Dade County, this economic contribution would be very small.

During the construction period, there would be a temporary negligible population increase in the region, with negligible adverse impacts on housing resources.

There would be negligible adverse impacts on nearby residents as a result of alternative 1b since the construction would occur in the park boundary and on vacant state and private lands to the north of the park. There are no residences within 1/4 mile of the FPL West Secondary Corridor.

Whenever land uses change, the concern is often raised about the effect the change may have on property values nearby. The question of whether nearby transmission lines can affect residential property values has been studied extensively in the United States and Canada over the last 20 years or so, with mixed results. In general, the impacts are difficult to measure, vary among individual properties, and are influenced by a number of interplaying factors, including the following (Jackson and Pitts 2010):

- Proximity of residential properties to transmission line structures
- Type and size of high-voltage transmission line structures
- Appearance of easement landscaping
- Surrounding topography.

Pitts and Jackson (2007) summarize the following conclusions on the impacts of high-voltage transmission lines.

- When negative impacts are present, studies report an average decline of prices from 2 to 9 percent.
- Value diminution is attributable to the visual unattractiveness of the lines, potential health hazards, disturbing sounds, and safety concerns.
- Impacts diminish as the distance between the high-voltage transmission lines and the affected properties increase, and disappear completely at a distance of 200 feet from the lines.
- Where views of transmission lines and towers are completely unobstructed, negative impacts can extend up to 1/4 mile.
- If high-voltage transmission-line structures are at least partially screened from view by trees, landscaping, or topography, any negative effects are reduced considerably.
- Value diminution attributed to high-voltage transmission-line proximity is temporary and usually decreases over time, disappearing completely in 4 to 10 years.

Studies of impacts during periods of physical change, such as new transmission line construction or structural rebuilds, generally reveal greater short-term impacts than long-term effects. However, most studies have concluded that other factors (e.g., general location, size of property or structure, improvements, irrigation potential, condition, amenities, and supply and demand factors in a specific market area) are far more important criteria than the presence or absence of transmission lines in determining the value of residential real estate.

Some impacts on property values (and salability) might occur on an individual basis as a result of the new transmission lines. Although there is some private property located in the northern part of the FPL West Secondary Corridor, there are no residences (structures) located within 1/4 mile of the corridor. Therefore, there would be short-term, negligible, and adverse effects expected to property values associated with alternative 1b.

Right-of-way easements as well as USACE and other federal and state permits for the construction and operations of the new transmission lines are required for the project. FPL has established the right-of-way to the north and south of the park by easements with underlying ownerships and its own fee title lands. FPL would still need to obtain siting and construction permits from federal and state agencies.

Capital expenditures for improvements to electric-utility infrastructure, and to acquire right-of-ways and siting permits are investments made to serve electricity customers in Florida. The expenditures can be

passed on to the customers served in the form of increased rates. However, as a regulated utility, FPL can increase rates only on approval by Florida Public Service Commission. Such rate-increase requests are subject to rigorous analysis by regulators and others, and to public process. FPL has secured the right-of-way north and south of the park with its fee title lands and easements with underlying federal, state, and private landowners. At this time, not all costs for transmission line development are known (FPL 2009a; Louis Berger Group, Inc. 2013), but it is expected that under alternative 1b there would be additional permitting costs that would affect FPL development costs. However, it is likely these incremental FPL permitting costs would not contribute to any electricity rate increases.

Overall, indirect impacts on socioeconomic conditions in the region would be both beneficial and short-term, negligible, and adverse. In the long-term, there would be no impacts on socioeconomic resources associated with alternative 1b.

Ewo wɔvɔg'kɔ rcew'ɔ'ɕngt pcvɔg'3d''

Past, present, and future projects that could occur and are listed on table 18 have construction components, beneficially affecting jobs and income in the region. Mining and commercial development in this area has provided economic benefits through jobs, income, and taxes. These projects would result in short-term beneficial impacts on socioeconomic resources. Additionally, future transmission projects could adversely affect adjacent property values in the short- and long-term, depending on the specific siting of the transmission lines. The FPL electrical generation and transmission projects could also adversely affect the capital costs incurred by FPL and potentially ratepayers.

Alternative 1b would contribute short-term negligible adverse impacts on property values and beneficial impacts of transmission line construction along the FPL West Secondary Corridor; these impacts would contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources.

Eqpenwukp'ɔ'ɕngt pcvɔg'3d''

There would be no impacts on socioeconomic resources associated with land acquisition under alternative 1b. Indirect impacts would result from the construction of the transmission lines in the FPL West Secondary Corridor and would include short-term beneficial impacts during construction on jobs and income in the region and short-term negligible adverse impacts on adjacent residents and property values. There are no expected impacts on electricity rates under alternative 1b. Alternative 1b would contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources.

kɔ RCEVUQH'CNVGTP CVKKG'4<PRUCES WUKWQP'QHHRN'NCPF''

kɔ rcew'qht'j g'Ncpf 'Ces wukwqp'Cevkqp''

There would be no impacts on those socioeconomic resources being analyzed from the land acquisition action.

kɔ rcew'qht'j g'Vtcpuw lukqp'Nlpg'Eqpum wevqp''

Indirect impacts under alternative 2 would result from the possible construction of transmission lines to the east of the park in the area of possible relocated corridor. Alternative 2 is expected to have the same impacts as those under alternative 1b with regard to regional effects on jobs and income associated with the construction activity, with short-term beneficial impacts on jobs and income within the region. Over the construction period, there would be a temporarily negligible population increase in the region, with negligible adverse impacts on housing resources.

Under alternative 2, there would be short-term minor adverse impacts on private properties and property values on an individual basis as a result of the transmission line development. Impacts would depend on the siting of the route within the corridor, with a greater likelihood of effects if the lines were routed closer to homes in the eastern portion of the corridor. With adequate setbacks from homes, there would be expected short-term minor adverse effects on these adjacent residences, with some potentially longer-term effects, although the property values effects associated with the transmission lines are expected to diminish with time. The residences likely to be affected are located in the southern part of the corridor, west of the Hammocks subdivision, north of 112th Street, between 187th Ave and Krome Avenue.

Under alternative 2, there would be adverse impacts on nearby residents as a result of the construction in the area of possible relocated corridor associated with increased noise from construction activities and equipment, the visual presence of construction equipment, and potential traffic and congestion resulting from construction trucks and equipment accessing the right-of-way, using local roads, and from potential short-term road closures during conductor stringing. These effects are anticipated to be short-term, adverse, and minor. However, most of the area of possible relocated corridor is more than 1/2 mile from the urban development boundary, which would minimize these effects. Operation of the proposed project would include infrequent disturbance during any maintenance or repair activities, resulting in long-term negligible adverse impacts on nearby residents.

Since most property value effects occur within 1/4 mile of transmission lines when views of the lines are unobscured (within 200 feet if there is landscaping or other visual diversions), it is possible that there would be some adverse effects on property values, especially in the neighborhood west of the Hammocks, although the impacts are anticipated to be primarily short-term. Impacts would depend on the siting of the route within the corridor, with a greater likelihood of effects if the lines were routed closer to homes. With adequate setbacks from homes, would, expect short-term minor adverse effects on these adjacent residences, with some potentially longer-term effects, although the property values effects associated with the transmission lines are expected to diminish with time. Since most of the area of possible relocated corridor is more than 1/2 mile from the urban development boundary, these adverse effects would be lessened. It is possible that there would be more residences located closer to transmission lines under this alternative when compared to alternatives 1b and 3.

Easements and land acquisition as well as siting permits and certification would be required for the construction and operations of the transmission lines in the area of possible relocated corridor. FPL would pay market value to private landowners, as established through the appraisal process, for any new land rights required for the project. The Louis Berger Group recently conducted a corridor selection study, which has been submitted to the state to certify the corridor to the east of the park a utility corridor. As part of the study, right-of way costs were estimated to be approximately \$23 million based on a fair market value assessment of properties for right-of way acquisition (Louis Berger Group, Inc. 2013). The area of possible relocated corridor to the east of the park would cross park, USACE, state of Florida, SFWMD, and possibly county lands. To facilitate a transmission siting alternative to minimize or avoid adverse impacts on park resources, these agencies would enter into agreements and contracts with FPL to provide easements across their respective government agency lands to the east of the park.

Much of the private property west of the urban boundary is in undeveloped or in agricultural use. It is possible that utility permanent easements could be obtained on these lands (and land acquisition would not be required), which would allow current agricultural production to continue. Easements on government-owned lands and agricultural lands would affect (likely reduce) the overall cost of the right-of way land right costs expected to be incurred by FPL under this alternative.

Capital expenditures for improvements to electric-utility infrastructure and to acquire right-of-ways are investments made to serve electricity customers in Florida. The expenditures can be passed on to the

customers served in the form of increased rates. However, as a regulated utility, FPL can increase rates only on approval by Florida Public Service Commission. Such rate-increase requests are subject to rigorous analysis by regulators and others, and to public process. At this time, not all costs for transmission line development and obtaining right-of-ways are known. Additionally, there are uncertainties regarding FPL obtaining approvals and permits to construct the transmission lines. The extent to which the FPL transmission line development incrementally contributes to capital costs across FPL electrical generation and transmission infrastructure, a factor on which the Florida Public Service Commission would evaluate approvals for rate increases, is highly uncertain at this time.⁸

Overall, indirect impacts on socioeconomic conditions in the region would be both beneficial and short-term negligible to minor adverse. The effect of the additional right-of-way costs on electricity rates is uncertain.

Ewo wɔvɔg'kɔ rcew'

The impacts on socioeconomics from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1b. Alternative 2 would contribute short-term and long-term minor adverse and beneficial impacts; these impacts would contribute imperceptible to noticeable impacts to overall cumulative impacts on socioeconomic resources.

The future FPL electrical generation and transmission development costs combined with the additional right-of-way costs under this alternative could have a cumulative adverse impact on electrical generation infrastructure development costs, although the extent of this effect is highly uncertain at this time.

Eqpenwukp''

There would be no impacts on socioeconomics associated with land acquisition under alternative 2. Indirect impacts would result from the construction of the transmission lines in area of possible relocated corridor to the east of the park and would include short-term beneficial impacts on jobs and income during construction and possible short-term minor adverse impacts on adjacent residents and property values. The future FPL electrical generation and transmission development costs combined with the additional right-of-way costs under this alternative could have a cumulative adverse impact on electrical infrastructure development costs, although the extent of this effect is uncertain at this time. The impact of these costs on electricity rates is also uncertain. Alternative 2 would contribute imperceptible to noticeable impacts to overall cumulative impacts on socioeconomic resources.

kɔ rcevu'qh'cnvgtp'cvk'g'5<hgg'hqt'hgg'n'cpf'gzej'cpi'g''

kɔ rcew'qht'ij'g'n'cpf'ces'wukp'cew'k'p''

There would be no impacts on those socioeconomic resources being analyzed from the land acquisition action.

⁸ Currently, FPL has requested a rate settlement for a base rate increase of \$378 million in revenue in January 2013, which is under review by the Florida Public Service Commission in November, 2012. The base rate increase would cover the capital and operational costs of power plants in Cape Canaveral, Riviera Beach, and Port Everglades. If the settlement is approved by the Florida Public Service Commission, FPL would not seek any additional base rate increases for the four-year term of the settlement agreement, provided its earnings remain within 100 basis points of the allowed 10.7 percent return on equity midpoint (FPL 2012c).

Ko rcew'qht'ij g'Vt cpuo kulkp 'Nlpg'Eqput wevkp''

Socioeconomic resources would indirectly be affected by construction activity and siting of the transmission lines, very similar impacts as those experienced under alternative 1b. The terms and conditions associated with alternative 3 (appendix G) could affect the costs to develop the transmission lines, which could beneficially affect the regional economy, although they could adversely affect FPL development costs. Again, these construction beneficial impacts in the context of the regional economy are very small.

The terms and conditions (appendix G) associated with transmission line construction in the FPL West Preferred Corridor would potentially affect socioeconomic resources in two ways: (1) the additional costs to develop the transmission lines adhering to the terms and conditions could beneficially affect the regional economy, although they could adversely affect FPL development costs; (2) the terms and conditions include protection for wetlands and wildlife, which could prevent adverse effects on the resources and limit the adverse impacts on recreation, such as bird watching, and associated visitor spending. These effects are expected to be negligible adverse on socioeconomic resources.

Over the construction period, there would be a temporarily and negligible increase population in the region, with negligible adverse impacts on housing resources.

There are 12 residences within 1/4 mile or in the FPL West Preferred Corridor while no residences are located within 500 feet. These residences are primarily located on the southern part of the corridor, west of the Hammocks subdivision, north of 112th Street, between 187th Ave and Krome Avenue. Under alternative 3, there would be adverse impacts on nearby residents as a result of the construction associated with increased noise from construction activities and equipment, the visual presence of construction equipment, and potential traffic and congestion resulting from construction trucks and equipment accessing the right-of-way, using local roads, and from potential short-term road closures during conductor stringing. These effects are anticipated to be short-term, adverse, and minor.

Since most property value effects occur within 1/4 mile of transmission lines when views of the lines are unobscured (within 200 feet if there is landscaping or other visual diversions), it is expected that there would be some adverse effects on property values, primarily in the neighborhood west of the Hammocks, although the effects are anticipated to be short-term. Since only 12 structures are located within 1/4 mile and none are located within 500 feet of the corridor, there would be short-term minor adverse effects on these adjacent residences, with some potentially longer-term effects, although the property values effects associated with the transmission lines are expected to diminish with time.

Similar to alternative 1b, right-of-way easements as well as USACE and other federal and state permits for the construction and operations of the new transmission lines are required for the project. FPL has secured contracts and agreements with USACE, SFWMD, Florida Department of Transportation Board of Trustees of the Internal Improvement Trust Fund to obtain easements and land rights for the right-of-way to the north and south of the park contingent on the land exchange with the park. FPL would still need to obtain siting and construction permits from federal and state agencies.

Capital expenditures for improvements to electric-utility infrastructure, and to acquire right-of-ways and siting permits are investments made to serve electricity customers in Florida. The expenditures can be passed on to the customers served in the form of increased rates. However, as a regulated utility, FPL can increase rates only on approval by Florida Public Service Commission. Such rate-increase requests are subject to rigorous analysis by regulators and others, and to public process. FPL has negotiated the right-of-way north and south of the park with various landowners, provided the land exchange is approved. At this time, not all costs for transmission line development are known, but it is expected that under

alternative 3 there would be additional permitting costs which would affect FPL development costs. However, it is likely these incremental FPL permitting costs would not contribute to any electricity rate increases.

Overall, indirect impacts on socioeconomic conditions in the region would be both beneficial and short-term negligible to minor adverse. There are no adverse impacts expected to electricity rates associated with the right-of-way expenditures under alternative 3.

Ewo wɛvɔg'kɔ rcew'

The impacts on socioeconomics from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1b. Alternative 3 would contribute the short-term minor adverse impacts on property values and beneficial impacts of transmission line construction in the exchange corridor in the park; these impacts would contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources."

Eqpenwukp''

Under alternative 3, there would be no impacts from the exchange of FPL and NPS lands in the EEEA. Indirect impacts would result from the construction of the transmission lines within the FPL West Preferred Corridor and, during construction, would include short-term beneficial impacts on jobs and income in the region and short-term minor adverse impacts on adjacent residents and property values. There are no expected impacts on electricity rates under alternative 3. Alternative 3 would contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources.

kɔ rcevuQHcNvgTPcvkG'6<GcUGO GPv'HQT'HGG'NCPF'GZEJ CPI G''

kɔ rcew'qht'j g'Ncpf 'Ces wukp'cevkp''

There would be no impacts on those socioeconomic resources being analyzed from the land acquisition action.

kɔ rcew'qht'j g'Vtcpuw lukp'Nlpg'Eqput wevkp''

The indirect impacts on socioeconomic resources would be the same as those described under alternative 3. These would include short-term beneficial impacts on jobs and income in the region and short-term minor adverse impacts on adjacent residents and property values.

Ewo wɛvɔg'kɔ rcew'

Cumulative impacts under this alternative would be the same as those described for alternative 3. Alternative 4 would contribute the short-term minor adverse impacts on property values and beneficial impacts of transmission line construction in the exchange corridor in the park; these impacts would contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources

Eqpenwukp''

There would be no impacts from land exchange associated with alternative 4. Indirect impacts would be the same as described for alternative 3, and include short-term beneficial impacts on jobs and income in the region and short-term minor adverse impacts on adjacent residents and property values. There are no

expected impacts on electricity rates under alternative 4. Alternative 4 would contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources.

KO RCEVUQH CNVGTP CVKKG'7<RGTRGVWCN'HNQY CI G'GCUGO GPV'QP'HRN'RtQRGTVL "

KO rcew'qh'vj g'Ncpf 'Ces wukqp'Cevkp"

There would be no impacts on those socioeconomic resources being analyzed from the land acquisition action/flowage easement.

KO rcew'qh'vj g'Vt cpw hukqp'Nlpg'Eqpwt wevkp"

The indirect impacts on socioeconomic resources would be the same as those described under alternative 1b and would include short-term beneficial impacts on jobs and income in the region and short-term and possibly long-term negligible adverse impacts on adjacent residents and property values.

Ewo wevkg'KO rcew'

Cumulative impacts under this alternative are the same as those described for alternative 1b. Alternative 5 would have short- and long-term negligible adverse (property values) and short-term beneficial (jobs and income) impacts on socioeconomic resources and contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources

Eqpenwukp"

There would be no direct impacts on socioeconomic resources associated with alternative 5. Indirect impacts would result from the construction of the transmission lines within the FPL West Secondary Corridor and, during construction, would include short-term beneficial impacts on jobs and income in the region and short-term and possibly long-term negligible adverse impacts on adjacent residents and property values. There are no expected impacts on electricity rates under alternative 5. Alternative 5 would contribute imperceptible adverse and beneficial cumulative impacts on socioeconomic resources.

RCTMQRGT CVIKPU'CPF 'O CP CI GO GP V"

I WEFPI 'TGI WNCVIKPU'CPF'RQNEKGU"

Direction for management and operations at Everglades National Park is set forth in the park's enabling legislation, the NPS Strategic Plan, NPS *Management Policies 2006*, Superintendent's Compendium (NPS 2000b, 2006a, 2009c), and the Everglades National Park General Management Plan / East Everglades Wilderness Study / Environmental Impact Statement (in development).

CUUWO RVIKPU'O GVI QFQNI [.'CPF'KO RCEV'K VGPUN['F GHP'KVIKU"

Park operations and management, for the purpose of this analysis, refers to the quality and effectiveness of park staff to maintain and administer park resources and provide for an effective visitor experience. This includes an analysis of the projected need for any additional NPS staff time or budget to implement each of the alternatives. The analysis considers possible staff changes necessary to address the actions proposed under the alternatives and details the adverse or beneficial effects that may occur. As noted in chapter 3, the main areas of park operations that could be affected by the alternatives include Fire

Management, the South Florida Natural Resources Center (SFNRC), Exotic Vegetation Management, and Visitor and Resource Protection, and the analysis focuses on effects on these divisions.

The following definitions were used to determine the magnitude of adverse impacts on park operations and management:

- **Pgi nli kllg:** Park operations would not be affected, or an action would have no measurable impact on operations in the park unit.
- **O lpqt:** Effects on park operations would not be readily apparent, and would be difficult to measure. The impacts on park operations and/or budget would have little material effect on other ongoing park operations.
- **O qf gt cwg:** Effects on park operations would be readily apparent, and would measurably affect park operations. The changes would be noticeable to park staff. Mitigation measures would probably be necessary to compensate for adverse effects and would likely be successful.
- **O clqt:** Effects on park operations would be readily apparent, and would result in a substantial change in park operations. The changes would be noticeable to park staff and would be markedly different from existing operations. Mitigation measures would be necessary to compensate for adverse effects, and their success would not be guaranteed.

CPCN[UKCTGC"

The area of analysis for park operations and management includes Everglades National Park (geophysical boundary, administrative structure, and all employees), recognizing that park operations and management activities often involve projects that extend beyond the park boundary. The analysis is focused on the EEEA, because this is the area that will be most directly affected by the alternatives.

KO RCEVUQH'CNVGT'PCVKG'3C<P Q'P RU'CEVIQP'6'P Q'HRN'E QPUVTWEVIQP "
*GPXKTQPO GPVCN'DCUGNPG+ "

KO rcew'qht'j g'Ncpf 'Ces wklkqp'Cevkqp "

Under alternative 1a, there would be no acquisition of FPL property within the EEEA. Currently NPS and NPS contractors traverse the FPL corridor, but do not actively manage the corridor for fire management or invasive species. The NPS would continue existing management practices in the EEEA as described in chapter 3.

Alternative 1a would directly affect Exotic Vegetation Management operations in the EEEA because of the differences in management practices between FPL and the NPS. The park currently manages nonnative plants in the EEEA according to NPS *Management Policies 2006* (NPS 2006a). FPL would manage nonnative plants in the FPL West Secondary Corridor according to its own standards, which may not be as rigorous or as comprehensive as those set forth in NPS *Management Policies 2006*. This creates the potential for the FPL West Secondary Corridor to act as a breeding ground for nonnative plants which could then spread into the EEEA and increase the effort needed for successful nonnative vegetation control (Taylor pers. comm. 2012a).

There would continue to be long-term minor to moderate adverse impacts on park operations and management from the inability to manage the EEEA as one combined parcel. Management limitations include no invasive species management in this location as well as the inability to implement flowage or water restoration programs without a flowage easement from FPL.

Kō rcew'qhl'Vtcpuo kulkp'Nlpg'Eqput wevkp''

Under alternative 1b, there would be no transmission line construction anywhere within or adjacent to the park. As a result, park operations and management would continue to operate as-is and there would be no impact on park operations and management from transmission line construction.

Ewo wvkg'Kō rcew'δ'Cngt pcvk'g'3c''

Ongoing projects affecting park operations and management include the Everglades restoration projects listed in table 18 and the acquisition of lands in the expansion areas under the Expansion Act. These ongoing projects involve staff time and oversight in addition to the hours spent on regular duties described above. These projects increase the total area of the park and create the need to monitor the status of the projects' outcomes, necessitating additional monitoring from the SFNRC. The increase in total land area necessitates additional security and natural resources management oversight from the Fire Management and Visitor and Resource Protection divisions. The past, present, and reasonably foreseeable future actions described above would result in minor adverse impacts on park operations and management resulting from the increased oversight required. Alternative 1a would contribute long-term minor to moderate adverse impacts; these impacts would contribute noticeable adverse impacts to the overall cumulative impacts on park operations and management.

Eqpenwukp'δ'Cngt pcvk'g'3c''

Under alternative 1a, there would no land acquisition and no transmission line construction within or adjacent to the EEEA. There would continue to be long-term minor to moderate adverse impacts on park operations and management from the inability to manage the EEEA as one contiguous parcel. There would be no impacts related to transmission line construction under this alternative. Alternative 1a would contribute noticeable adverse impacts to overall cumulative effects on park operations and management in this area.

Kō RCEVUQH'CNVGTP CVK'G'3D<P Q'P RU'CEV'QP'δ'HRN'E QP UVTWEV'QP'IP'VJ G'RCTM''**Kō rcew'qhl'vj g'Ncpf 'Ces wukp'Ce'vkp''**

Impacts on park operations and management from alternative 1b would be the same as described under alternative 1a. There would be continued long-term minor to moderate adverse impacts from the inability to manage the EEEA as one contiguous parcel.

Kō rcew'qhl'Vtcpuo kulkp'Nlpg'Eqput wevkp''

Impacts related to transmission line construction are described below by area of park operations that would be affected.

Construction and presence of transmission lines in the EEEA would increase the hazards to, and obstruct freedom of movement of, aircraft. Many of the routine park operations that take place in EEEA rely on aviation, and some parts of the EEEA are accessible only by aircraft during the dry season. Transmission lines would make aviation more difficult and increase the level of effort needed to conduct park operations and management. The presence of transmission lines in the FPL West Secondary Corridor would eliminate certain areas as potential landing and/or staging sites, which could increase the distance between landing/staging sites and the sites at which park operations are conducted. This would result in a loss of efficiency and a corresponding increase in cost, resulting in a long-term minor adverse impact on park operations and management.

NPS contractors must have an insurance policy that covers them while they are on NPS land. This insurance policy would not cover contractors while they are on FPL-owned land, and contractors would therefore not be allowed to traverse the developed corridor. This could bring about a loss of efficiency, because contractors would have to either fly over the corridor or go around it. Alternatively, the NPS could require contractors to acquire more expensive insurance policies that would cover them while on the developed corridor parcel. In either case, the cost of contractors would increase. This would have the greatest impact on the SFNRC, which makes regular use of contractors to conduct the routine operations related to its mission (Mitchell pers. comm. 2012).

During the construction phase, the NPS would monitor the transmission line construction to ensure that the construction remains within the appropriate area and that environmental protection measures are in place. This would necessitate one staff member at a time, rotated between the SFNRC and the Visitor and Resource Protection divisions, traveling to the construction site via whatever methods of transportation would be suitable. It is possible that this would require helicopter transportation, which would impose costs of \$1,000/day or more for the duration of construction (Whisenant pers. comm. 2012b). This would impose short-term minor to moderate adverse impacts on park operations and management due to the staff time and money required.

Hkt'g'O cpci go gpv'

The presence of transmission lines could create problems during fire events if the optimal point for stopping the fire was obstructed by the lines. Creating barriers to fire spread often involves wetting or burning a line of vegetation between two points. If the optimal barrier line were interrupted by transmission lines in the FPL West Secondary Corridor, then this would impede fire management efforts that rely on these techniques. If a fire were moving and the transmission lines occupied a point where the Fire Management Division would normally wet the area to stop the fire, then the division would have to develop some other strategy to stop the fire. They would not be able to work in the transmission line area. If a fire came from the eastern boundary of the park, the Fire Management Division would not be able to use the transmission line space for fire suppression. This would be a problem not only for fire response activities, but also for prescribed burns (Anderson pers. comm. 2012).

The presence of transmission lines would also create problems for EEEA aviation activities associated with fire management. While it is possible for aviators to go around the transmission lines, it is not possible to get close to them or to land near them. In order to fly safely above the lines, it would be necessary for aircraft to fly above the usual altitude of 200–300 feet to go over them. Aviators would therefore practice avoidance measures, decreasing the efficiency of conducting aviation activities necessary for fire management and increasing the field time required. Additionally, the Fire Management Division would not be able to deliver air support or bucket support to points underneath the transmission lines. This would reduce efficiency and could also create safety concerns for Fire Management Division personnel (Anderson pers. comm. 2012).

For these reasons, impacts from alternative 1b associated with the construction of transmission lines in the FPL West Secondary Corridor would have long-term minor to moderate adverse impacts on Fire Management Division operations.

Uqwj 'Hkt kf c'P cwt ctiT guwt egu'Egpgt "

Transmission line construction in the FPL West Secondary Corridor would impact all SFNRC projects that involve aviation. The efficiency of aviation would decrease due to avoidance and safety measures and due to the loss of potential landing and staging sites. This would affect SFNRC's ability to accomplish its

mission of ecological monitoring, because aviation is extremely important to SFNRC's work. During the dry season, helicopters are the only way to access the EEEA (Mitchell pers. comm. 2012).

The transmission lines could also affect any of the research projects conducted through SFNRC by external contractors. The insurance policy currently used by contractors does not protect them unless they are on NPS land. Therefore, should contractor operations require them to traverse the developed FPL West Secondary Corridor, they would have to either pay for a more expensive insurance policy or take the time to go around or fly over the corridor. In either case, this would increase the cost of hiring contractors. This would ultimately affect the ways in which SFNRC can issue research permits and funding for these projects (Mitchell pers. comm. 2012).

The presence of transmission lines along the FPL West Secondary Corridor would affect nearly all SFNRC operations. For this reason, the impacts on SFNRC operations from alternative 1b would be long term, minor to moderate, and adverse.

Gzqvl'e'Xgi gvcv'kp'O cpci go gpv'

Exotic Vegetation Management operations in the EEEA rely on aviation, and are subject to the same aviation-related impacts as described for the Fire Management Division and the SFNRC. Given that approximately 70 percent of Exotic Vegetation Management operations in the EEEA are carried out by helicopter, this would impose difficulties on the subdivision and its work (Taylor pers. comm. 2012b). It is difficult to provide a quantitative estimate of the impacts on the Exotic Vegetation Management subdivision in terms of additional cost or additional staff needed, but the loss of potential staging/landing sites due to the presence of transmission lines in the FPL West Secondary Corridor could decrease the efficiency of nonnative plant management operations (Taylor pers. comm. 2012b). Also, the Exotic Vegetation Management subdivision uses fire as a tool in its operations, and any impacts on the Fire Management Division would therefore affect Exotic Vegetation Management operations as well (Taylor pers. comm. 2012a).

Transmission line structures can act as especially suitable habitat for nonnative plants, adding to the potential for the FPL West Secondary Corridor to act as a breeding ground for nonnative plant populations (Taylor pers. comm. 2012a) and increasing the burden on the Exotic Vegetation Management subdivision. The Exotic Vegetation Management subdivision is currently understaffed (Taylor pers. comm. 2012a, 2012b). The additional issues that are expected to arise as a result of alternative 1b would add to the current demands on staff and result in long-term minor to moderate adverse impacts.

Xklsqt't'pf 'Tguqwt eg'Rt qvgev'kp''

Alternative 1b would affect the Visitor and Resource Protection division to the degree that illegal activities took place on transmission structure pads. These pads and the FPL West Secondary Corridor could foreseeably become an attractant for illegal activities, especially illegal camping (Whisenant pers. comm. 2012a; Foist pers. comm. 2012). However, NPS would not own the corridor and therefore would have no jurisdiction over any illegal activities. Any enforcement actions would come from Florida Wildlife Commission officers or Miami-Dade Police Department. Given the small parcel of land and lack of highly desirable camping opportunities, there would likely be a negligible adverse impact on the Visitor and Resource Protection division.

Ewo wrcv'kg'Kō rcew'd'Cngt pcv'kg'3d''

The impacts on park operations and management from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1a. Alternative 1b would contribute short

and long-term minor to moderate adverse impacts; these impacts would contribute noticeable adverse impacts to the overall cumulative impacts on park operations and management.

Eqpenwukp'ō'Cngt pcv&g'3d''

Under alternative 1b, there would be long-term minor to moderate adverse impacts from the FPL retention of property in the EEEA and the construction of transmission lines in the FPL West Secondary Corridor and would include short- and long-term minor to moderate adverse impacts both during the construction phase and following the completion of the lines. Alternative 1b would contribute noticeable adverse impacts to overall cumulative effects on park operations and management in this area.

Kō RCEVUQH'CNVGT PCV&G'4<P RUCES WUKVQP'QHHRN'NCPF''

Kō rcew'qhv'g'Ncpf 'Ces wukvqp'Cevkqp''

Under alternative 2, there would be a gain of 320 acres in the park, resulting in long-term benefits from having this area consolidated under NPS ownership, which would allow the park to proceed with its operations without having to account for the FPL West Secondary Corridor. Short-term negligible to minor adverse impacts would also occur from the administrative requirements associated with the land purchase, requiring additional staff time.

Kō rcew'qhv'Vtcpuo kukqp'Nlpg'Eqput wevkqp''

Alternative 2 would not result in any impacts associated with the construction of transmission lines because no lines would be constructed on NPS land. It could reasonably be expected that FPL would construct the transmission lines in the area of possible relocated corridor east of the park boundary, resulting in no impacts on park operations and management because park operations and management activities do not extend past the boundary of the park's property, and no activities involving park staff occur in the area of possible relocated corridor.

Ewo wv&g'Kō rcew''

The impacts on park operations and management from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1b. Alternative 2 would contribute short-negligible to minor adverse impacts and long-term beneficial impacts from the ability to manage the EEEA as one contiguous parcel; these impacts would contribute appreciable beneficial impacts to the overall cumulative impacts to park operations.

Eqpenwukp''

Under alternative 2, direct impacts would result from the acquisition of FPL land and would include long-term beneficial impacts from the consolidation of ownership in the EEEA as well as short-term negligible to minor adverse impacts. There would be no impacts from transmission line construction because no lines would be constructed on NPS land. Alternative 2 would contribute appreciable beneficial impacts to cumulative effects on park operations and management in this area.

KO RCEVUQH'CNVGT'PCVKG'5<HGG'HQT'HGG'NCPF'GZEJ CPI G''

KO rcew'qht'vj g'Ncpf 'Ces wkwkqp'Cevkqp''

Under alternative 3 there would be a net gain of 60 acres (a gain of 320 acres of the former FPL corridor, and a loss of 260 acres of the exchange corridor). This would result in long-term benefits from having the area of the former FPL corridor consolidated under NPS ownership, which would allow the park to manage the EEEA as one contiguous parcel without requiring FPL consent for management projects. There would be negligible to minor long term adverse impacts from the loss of area within the park and from access restrictions from the FPL ownership of the corridor along the canal, which is used by park staff to access the EEEA. There would be short-term minor to moderate adverse impacts on park operations and management for the increase in administrative requirements during the land exchange process.

KO rcew'qht'Vtcpuo kwkqp'Nlpg'Eqput wekqp''

Impacts related to transmission line construction are described below by area of park operations that would be affected.

Indirect impacts would result from the construction of transmission lines in the exchange corridor, directly adjacent to park lands, as described earlier in this chapter and appendix F. As one of the terms and conditions associated with alternative 3, the NPS would have to request permission from FPL every time it wished to access the FPL West Preferred Corridor, except for emergencies or visitor and resource protection, and those accessing the route would need to have appropriate safety training. This would impose a long-term negligible to minor adverse impact on park operations and management.

During the construction phase, the NPS would monitor the transmission line construction to ensure that the construction remains within the appropriate area and that environmental protection measures are in place. This would necessitate one staff member at a time, rotated between the SFNRC and the Visitor and Resource Protection divisions, traveling along the L-31N canal at a cost of approximately \$1,000/day (Whisenant pers. comm. 2012b). This would impose short-term minor to moderate adverse impacts on park operations and management due to the staff time and money required.

Hkt g'O cpci go gpv''

There would be no direct impacts on the Fire Management Division from the fee for fee land exchange associated with alternative 3 other than those already discussed. Should FPL construct the transmission lines in the FPL West Preferred Corridor, there would be indirect impacts on fire management operations, because the lines would impose difficulties on aviation activities and on fire response operations and would also act as an electrical hazard (Anderson pers. comm. 2012). However, these impacts would not be as severe as those described for alternative 1b due to the location of the FPL West Preferred Corridor. The location of the FPL West Preferred Corridor on the eastern boundary of the EEEA would reduce some of the indirect impacts that would accrue to the Fire Management Division if the lines were constructed. For this reason, impacts on the Fire Management Division would be long term, minor, and adverse.

Uqwj 'Hkt kf c'Pcwkt ckt'guqwt egu'Eqpvt ''

Indirect impacts would result from the presence of transmission lines in the FPL West Preferred Corridor. This would limit the use of the L-31N canal levee by airboats and would eliminate this levee as a helicopter staging/landing area. This reduction in accessibility by vehicles would lead to a reduction in

efficiency for SFNRC operations (Mitchell pers. comm. 2012). Impacts on the SFNRC would be long term, minor, and adverse.

Gzqle'Xgi gvcvkqp'O cpci go gpv'

Impacts following line construction would result from the loss of the eastern levee along the L-31N canal as a staging site for helicopters and for airboats. This levee is used as a staging site for at least one major nonnative plant management project per year, and it would be impossible to use as a helicopter staging site and difficult to impossible to use as a staging site for airboats if transmission lines were constructed in the FPL West Preferred Corridor (Taylor pers. comm. 2012). The use of alternate staging sites could potentially decrease the efficiency with which nonnative plant management activities are conducted. Additionally, alternative 3 would require monitoring of the 90-foot exotic species vegetation easement on the NPS property adjacent to the transmission line corridor. Overall, alternative 3 would result in long-term minor adverse impacts on the Exotic Vegetation Management subdivision.

Xklsqt'čpf 'Tguwt eg'Rt qvgevkqp''

Impacts would be the same as those listed under alternative 1b, but would be relatively reduced due to the location of the FPL West Preferred Corridor. The FPL West Preferred Corridor does not enjoy the same amount of vegetation cover, and the area experiences much higher visitor traffic, which would make it less attractive as a site for illegal activities such as illegal camping or firearm use. Indirect impacts on the Visitor and Resource Protection division resulting from the construction of transmission lines in the FPL West Preferred Corridor would therefore be long term, negligible to minor, and adverse.

Ewo wcvkg'kō rcew'

The impacts on park operations and management from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1a. Alternative 3 would contribute long-term beneficial as well as short-term negligible to moderate adverse impacts and long-term negligible to minor adverse impacts from the land exchange, construction, and operation of transmission lines in the exchange corridor; these impacts would contribute noticeable adverse and beneficial cumulative impacts to park operations and management.

Eqpenwvkqp''

Under alternative 3, impacts would result from the fee for fee land exchange and would include long-term negligible to minor adverse impacts and beneficial impacts. Impacts would result from the construction of the transmission lines in the FPL West Preferred Corridor, and would include short-term minor to moderate adverse impacts during the construction phase and long-term negligible to minor adverse impacts following the completion of the lines. Alternative 3 would contribute noticeable adverse and beneficial impacts to overall cumulative effects on park operations and management in this area.

kō RCEVUQH'CNVGTP CVKKG'6<GCUGO GP V'HQT'HGG'NCPF'GZEJ CPI G''

kō rcew'qhl'vj g'Ncpf 'Ces wvkvkqp'Cevvkqp''

Impacts under this alternative would be essentially identical to those discussed under alternative 3. However, the NPS would still own the property under this alternative and would be responsible for ensuring that the terms of the easement are met.

The NPS could have more control over the management of the land in an easement situation as opposed to an outright fee exchange. The easement would have little effect on park operations and management because the terms and conditions of use (appendix H) are the same for this alternative as for alternative 3, although this is an easement agreement that may require more staff involvement to monitor use of park property. Impacts of the land acquisition action would include long-term beneficial impacts from the ability to manage the EEEA as one contiguous parcel without requiring FPL consent for management projects, and short and long term negligible to minor adverse impacts from the administrative requirements of managing the easement property.

Kō rcew'q̄h'Vtcpuo kulkp'Nlpg'Eqput wekqp''

Indirect impacts would result from the construction of the transmission lines in the FPL West Preferred Corridor, and would include short-term minor to moderate adverse impacts during the construction phase and long-term negligible to minor adverse impacts following the completion of the lines, as described under alternative 3. Under alternative 4, there would be more responsibilities for NPS staff for continued management of the parcel as well as coordination with FPL for approval of FPL actions and requests than would occur under alternative 3.

Ewo wekkg'Kō rcew'

The impacts on park operations and management from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1a. Alternative 4 would contribute short-term negligible to moderate adverse impacts and long-term negligible to minor adverse impacts and long-term benefits; these impacts would contribute noticeable adverse and beneficial cumulative impacts to park operations.

Eqpenwukqp''

Under alternative 4, impacts would be the same as under alternative 3, with long-term minor adverse impacts and beneficial impacts from the land exchange except that this is an easement agreement that may require more staff involvement to monitor use of park property. Impacts would result from the construction of the transmission lines in the FPL West Preferred Corridor, and would include short-term minor to moderate adverse impacts during the construction phase and long-term negligible to mostly minor adverse impacts following the completion of the lines. Alternative 4 would contribute noticeable adverse and beneficial impacts to overall cumulative effects on park operations and management in this area.

Kō RCEVUQH'CNVGTP CVKKG'7<RGTRGVWCN'HNQY CI G'GCUGO GPV'QP'HRN'RTQRGTV[''

Kō rcew'q̄h'vj g'Ncpf 'Ces wukwukqp'Cevkqp''

All of the direct and indirect impacts described under alternative 1b would occur under alternative 5. However, there would be an additional impact associated with the additional staff and resources required to conduct oversight and monitoring and to coordinate with FPL for park programs in this area. For this reason, impacts on park operations and management under alternative 5 would be long term, minor, and adverse.

Kō rcew'q̄h'Vtcpuo kulkp'Nlpg'Eqput wekqp''

Impacts associated with the construction and placement of the transmission lines would be short and long term, minor to moderate, and adverse for the reasons discussed under alternative 1b.

Ewo wvkg'K rcew'

The impacts on park operations and management from other past, present, and reasonably foreseeable future projects would be the same as described under alternative 1a. Impacts from alternative 5 would be the same as described under alternative 1b, with long-term minor to moderate adverse impacts; these impacts would contribute noticeable adverse impacts to the overall cumulative impacts on park operations and management.

Eqpenwukp''

Under alternative 5, there would be long-term minor adverse impacts from the FPL retention of property in the EEEA. Indirect impacts resulting from the construction of the transmission lines in the FPL West Secondary Corridor would include short- and long-term minor to moderate adverse impacts both during the construction phase and following the completion of the lines. Alternative 5 would contribute noticeable adverse impacts to overall cumulative effects on park operations and management in this area.

TGNCVKQP UJ R'DGVY GGP 'NQE CN'UJ QTV/VGTO 'WUGU'QH'VJ G' GPXKTQPO GP V'CPF 'O C'P VGP CPEG'CPF 'GP J CPEGO GP V'QH' NQPI /VGTO 'RTQF WEVKXK["

NEPA regulations (40 CFR 1502.16) require an EIS to consider the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity. Special attention should be given to impacts that narrow the range of beneficial uses of the environment or pose a long-term risk to human health or safety.

Ego o qp'vq' CniCngt pcvkgu'y kj 'Vtcpuo lukp'Nlpg'Eqput wvkgp. The activities associated with the construction and maintenance of the right-of-way for any alternative would result in a number of impacts that would alter long-term uses of park resources despite mitigation measures and BMPs that would offset the level of the impacts. The drilling into soils and bedrock; the possible alteration of hydrology; the filling of wetland communities; long-term alterations of visual aesthetics and changes to visitor experience from the presence of a transmission line and permanent access roads; and the vegetation maintenance of a right-of-way are all long-term impacts that would affect resources and the uses of those resources by wildlife, visitors, and park personnel as well as influencing park operations in the long term.

Cngt pcvkg'3c<P q'P RU'Cevkp'6'P q'HRN'Eqput wvkgp'Gpxkt qpo gpvcdDeuglpg+. NPS would not acquire the FPL land within the park or a flowage easement or sufficient rights to flow additional water over the FPL right-of-way within the park, and would be unable to implement regional restoration activities that rely on additional flow. Since this is the environmental baseline and includes no transmission line construction, no short-term impacts are expected. The long-term productivity of the park's resources is expected to decline because the inability to flow additional water across the FPL property would prevent restoration on a regional scale. Habitat degradation would continue due to altered hydrology and would adversely impact management efforts for exotic species, wildlife, and special-status species.

Cngt pcvkg'3d<P q'P RU'Cevkp'6'HRN'Eqput wvkgp'lp'yj g'Retm The impacts on productivity from the not acquiring a flowage easement or sufficient rights to flow additional water over the FPL right-of-way within the park would be the same as described for alternative 1a. Short-term productivity of park resources such as vegetation, wetlands, wildlife, and special-status species is expected to decline due to disturbance while the transmission line and access roads are being constructed. Long-term productivity of park resources is also expected to decline due to construction inside the park, which would result in

changes to hydrological patterns, changes in water quality, soil disturbance and a permanent loss of 182 acres of soils (including 89 acres in the park), disturbance of wetlands and a permanent loss of approximately 179.7 wetland acres (89.1 acres of which are within the park boundary), permanent loss of habitat for wildlife and special-status species, and avian collisions with the transmission line and electrocutions.

Cngt pc vkg'4<PRUCes wkskqp'qhHRN'Ncpf . Acquiring FPL lands within the park is expected to result in long-term increases in the productivity of park resources since ownership would not be bisected. Ownership of this land would allow the park to better manage for exotic species, wildlife, and special-status species. NPS ownership of this land would also facilitate regional restoration goals, which would, in turn, increase the productivity of park resources.

Cngt pc vkg'5<Hgg'hqt 'Hgg'Ncpf 'Gzej cpi g . There would be a long-term adverse impact on the productivity of park resources from the land exchange due to the removal of 260 acres of soils, wetlands, and wildlife habitat from the park and park management. Long-term adverse impacts on productivity would also result from construction in the exchange corridor due to changes to hydrological patterns, changes in water quality (including possible increases in heavy metal concentrations or other constituents from the L-31N canal area), soil disturbance and a permanent loss of an estimated 181 acres of soil surface (including 80 acres in the exchange corridor), permanent loss of 180.8 acres of wetlands (including 80.1 acres within the park), permanent loss of habitat for wildlife and special-status species, and avian collisions with the transmission line and electrocutions. Some long-term benefits to productivity would accrue from the land exchange because NPS ownership of the FPL land in the interior of the park would allow the park to better manage for exotic species, wildlife, and special-status species, and facilitate regional restoration goals, which would increase the productivity of park resources.

Cngt pc vkg'6<Gcugo gpv'hqt 'Hgg'Ncpf 'Gzej cpi g . The impacts on the productivity of park resources associated with alternative 4 would be the same as described for alternative 3.

Cngt pc vkg'7<Rgt rgwciHuy ci g'Gcugo gpv'hp'HRN'Rt qr gt v{ . Long-term adverse impacts on the productivity of park resources would occur from the NPS decision not to acquire the FPL property since NPS would not have management control over this land that is in the interior of the park and this could hinder park management efforts on adjacent lands. However, the perpetual flowage easement would facilitate regional restoration goals, which would, in turn, increase the productivity of park resources. Long-term productivity would also be impacted by construction inside the park due to changes in hydrological patterns and water quality, soil disturbance and a permanent loss of 182 acres of soils (including 89 acres in the park), disturbance of wetlands and a permanent loss of approximately 179.7 wetland acres (89.1 acres of which are within the park boundary), permanent loss of habitat for wildlife and special-status species, and avian collisions with the transmission line and electrocutions.

KTGXGTURNG'QT'KTGVTGXCDNG'E QO O KVO GP VU'QH' TGUQWTEGU'

NEPA regulations (40 CFR 1502.16) require an EIS to address the irreversible and irretrievable commitment of resources caused by the alternatives. An *irreversible* commitment of resources is defined as the loss of future options. The term applies primarily to the effects of using nonrenewable resources (such as minerals or cultural resources) or resources that are renewable only over long periods (such as soil productivity). It could also apply to the loss of an experience as an indirect effect of a “permanent” change in the nature or character of the land. An *irretrievable* commitment of resources is defined as the loss of production, harvest, or use of natural resources; irretrievable resource commitments may or may

not be irreversible. The following identifies commitments of resources that are either irreversible or irretrievable.

Because the land used for construction of the transmission lines could be converted to another use at a future date if the transmission lines were removed (although that is not likely), these effects could be characterized as irretrievable. However, the level of restoration effort needed would be intensive and costly, and would span the course of several years to decades. Therefore, some of the impacts described below are likely irreversible. For example, wetland impacts resulting from removal of soils and replacement with fill in the project area are likely not reversible even if the fill is removed. Restored wetland habitats would have different plant species composition, hydrology, and/or different soil characteristics depending on how restoration of the resulting holes was attempted."

For all alternatives, the loss of geologic resources, special-status species (individuals), wetlands (through changes to hydrology, soils, vegetation), or wildlife habitat would be considered an irretrievable or irreversible resource commitment. Mitigation would be required for the loss of some resources, but would not fully offset impacts. Drilling or excavation could have an irreversible impact on subsurface geology if resources are lost or destroyed. Changes to rare and unique communities and important foraging and nesting habitat could be considered an irreversible resource commitment if construction activities permanently alter the resource such that it can no longer support special-status species or function as a rare and unique community. In addition to natural resources, impacts on historic resources such as archeological sites and cultural landscapes could be considered an irretrievable resource commitment if construction activities permanently alter or destroy the resource, or the resource is completely lost. Impacts on these resources would be mitigated through various mitigation measures required by the park or by permitting requirements, but the impact would be irretrievable unless the known resources are completely recovered prior to construction activities. The use of land for permanent access roads and the right-of-way for the transmission line would be an irreversible commitment of resources during the period that the land is used for transportation infrastructure or energy requirements. The following highlights irreversible/irretrievable impacts by alternative."

Cmgt pc vkg'3c <P q'P RU'Cevkqp'6'P q'HRN'E qpum wevkqp'6pxlt qpo gpwclDcuglpg+. NPS would not acquire the FPL land within the park or a flowage easement or sufficient rights to flow additional water over the FPL right-of-way within the park, and would be unable to implement regional restoration activities that rely on additional flow. Continued habitat degradation due to altered hydrology is expected to result in irretrievable or irreversible losses of wetland soils, wetland habitat, and wildlife and special-status species in the park. Prolonged continuation of altered hydrology in this area could preclude restoration of wetland soil and habitat types.

Cmgt pc vkg'3d <P q'P RU'Cevkqp'6'HRN'E qpum wevkqp'lp'vj g'Rct m The irretrievable or irreversible commitment of resources from not acquiring a flowage easement or sufficient rights to flow additional water over the FPL right-of-way within the park would be the same as described for alternative 1a. Irretrievable or irreversible commitments of resources due to construction within the park include a permanent loss of 182 acres of soils (including 89 acres in the park), disturbance of wetlands and a permanent loss of approximately 179.7 wetland acres (89.1 acres of which are within the park boundary), permanent loss of habitat for wildlife and special-status species including protected native plant populations, loss of foraging and nesting habitat, and avian collisions with the transmission line and electrocutions. Prolonged continuation of altered hydrology in this area could preclude restoration of wetland soil and habitat types.

Cmgt pc vkg'4 <P RU'Ces wlvkqp'qh'HRN'Ncpf . Acquiring FPL lands within the park is not expected to result in any irretrievable or irreversible commitments of resources within the park. Ownership of this land would allow the park to better manage for exotic species, wildlife, and special-status species and

facilitate regional restoration goals. Construction would take place outside the park thereby minimizing impacts on park resources, but construction of the transmission lines would have similar irretrievable or irreversible impacts on resources located outside the park in the area of possible relocated corridor. The type and extent of those impacts would depend on the location of the corridor used.

Cnqtpcvk'g'5<Hgg'hqt 'Hgg'Ncpf 'Gzej cpi g. The removal of 260 acres of soils, wetlands, and wildlife habitat from the park and park management, resulting in an adjustment of the park boundary is an irretrievable or irreversible commitment of resources. There would be a permanent loss of 180.8 acres of wetlands (including 80.1 acres within the park), permanent loss of habitat for wildlife and special-status species including protected native plant populations, loss of foraging and nesting habitat, and avian collisions with the transmission line and electrocutions.

Cnqtpcvk'g'6<Gcugo gpv'hqt 'Hgg'Ncpf 'Gzej cpi g. The irretrievable or irreversible impacts on park resources associated with alternative 4 would be the same as described for alternative 3 except that 260 acres would not be lost and would remain in the park. Under the easement agreement, the park would lose the ability to control all actions in the corridor, however, which would result in irretrievable commitment of those lands.

Cnqtpcvk'g'7<Rgt rgwcnHuy ci g'Gcugo gpv'hp'HRN'Rt qrgt v. Irretrievable or irreversible commitments of resources due to construction within the park include a permanent loss of 182 acres of soils (including 89 acres in the park), disturbance of wetlands and a permanent loss of approximately 179.7 wetland acres (89.1 acres of which are within the park boundary), permanent loss of habitat for wildlife and special-status species including protected native plant populations, loss of foraging and nesting habitat, and avian collisions with the transmission line and electrocutions.

WP CXQKF CDNG'CF XGTUG'KO RCE VU'

Implementation of any of the alternatives would lead to unavoidable adverse environmental impacts. These are described below by alternative.

Cnqtpcvk'g'3c<P q'P RU'Cevkqp'6'P q'HRN'Eqput wekqp'Gpxk qpo gpwcnDcugnpg. NPS would not acquire the FPL land within the park or a flowage easement or sufficient rights to flow additional water over the FPL right-of-way within the park, and would be unable to implement regional restoration activities that rely on additional flow. Inability to allow increased water levels across the FPL property would result in preventing restoration on a regional scale, an indirect adverse impact. Habitat degradation would continue due to altered hydrology and would adversely impact management efforts for exotic species, wildlife, and special-status species. Since construction is not included in this alternative, there would be no construction-related impacts.

Cnqtpcvk'g'3d<P q'P RU'Cevkqp'6'HRN'Eqput wekqp'lp'Rctm The direct adverse impacts from not acquiring a flowage easement or sufficient rights to flow additional water over the FPL right-of-way within the park would be the same as described for alternative 1a. Indirect adverse impacts would result from construction inside the park and would include changes to hydrological patterns, changes in water quality, soil disturbance and a permanent loss of 182 acres of soils (including 89 acres in the park), disturbance of wetlands and a permanent loss of approximately 179.7 wetland acres (89.1 acres of which are within the park boundary), changes to soundscapes due to construction and corona noise, permanent loss of habitat for wildlife and special-status species, avian collisions with the transmission line and electrocutions, permanent changes to the visual landscape, and changes in visitor use.

Cnqtpcvk'g'4<P RU'Ces wkukqp'qh'HRN'Ncpf. There would be no direct adverse impacts from acquiring FPL lands within the park. Indirect adverse impacts would result from construction outside the park and

include changes to hydrological patterns, changes in water quality, soil disturbance (including long-term impacts on designated “unique” farmlands soils outside of the park, disturbance of wetlands and a permanent loss of approximately 107.1 wetland acres, changes to soundscapes due to construction and corona noise, permanent loss of habitat for wildlife and special-status species, avian collisions with the transmission line and electrocutions, and permanent changes to the visual landscape).

Cnɔtɔvɔg'5<Hgg'ɣt 'Hgg'Nɔpf 'Gzej cɔi g. Direct adverse impacts from the land exchange include removal of 260 acres of soils, wetlands, and wildlife habitat from the park and park management, resulting in an adjustment of the park boundary. Indirect adverse impacts would result from construction in the exchange corridor and include changes to hydrological patterns, changes in water quality (including possible increases in heavy metal concentrations or other constituents from the L-31N canal area), soil disturbance and a permanent loss of an estimated 181 acres of soil surface (including 80 acres in the exchange corridor), disturbance to unique farmland soils outside of the park, permanent loss of 180.8 acres of wetlands (including 80.1 acres within the park), permanent loss of habitat for wildlife and special-status species, avian collisions with the transmission line and electrocutions, permanent changes to the visual landscape, and changes in visitor use.

Cnɔtɔvɔg'6<Gcugo ɔvɣt 'Hgg'Nɔpf 'Gzej cɔi g. The adverse impacts associated with alternative 4 would be the same as described for alternative 3, but 260 acres would not be removed from the park.

Cnɔtɔvɔg'7<Rɔtr ɔwɔɔɣɣɣ ci g'Gcugo ɔvɣp'HRN'Rt ɔr ɔt v{. Adverse impacts would accrue from not acquiring the FPL property since NPS would not have management control over this land that is in the interior of the park. Indirect adverse impacts would result from construction inside the park and would include changes to hydrological patterns, changes in water quality, soil disturbance and a permanent loss of 182 acres of soils (including 89 acres in the park), disturbance of wetlands and a permanent loss of approximately 179.7 wetland acres (89.1 acres of which are within the park boundary), changes to soundscapes due to construction and corona noise, permanent loss of habitat for wildlife and special-status species, avian collisions with the transmission line and electrocutions, permanent changes to the visual landscape, and changes in visitor use.



CHAPTER 5

Consultation and Coordination

EJ CRVGT'7<EQPUWVCVKQP'CPF'EQQTF KP CVKQP''

The intent of the National Environmental Policy Act (NEPA) is to encourage the participation of federal and state involved agencies and affected citizens in the assessment procedure, as appropriate. This chapter describes the consultation that occurred during development of this Acquisition of Florida Power & Light Company Land in the East Everglades Expansion Area Environmental Impact Statement (plan/EIS), including consultation with stakeholders and other agencies. This chapter also includes a description of the public involvement process and a list of the recipients of the draft document.

J KUVQT['QHRWDNKE'KP XQNXGO GP V''

The public involvement activities for this plan/EIS fulfill the requirements of NEPA and National Park Service (NPS) Director's Order 12 (NPS 2011).

VJ G'UEQRPI 'RTQEGUU''

The NPS divides the scoping process into two parts: internal scoping and external or public scoping. Internal scoping involved discussions among NPS personnel regarding the purpose of and need for management actions, issues, management alternatives, mitigation measures, appropriate level of documentation, available references and guidance, and other related topics.

Public scoping is the early involvement of the interested and affected public in the environmental analysis process. The public scoping process helps ensure people have an opportunity to comment and contribute early in the decision-making process. For this plan/EIS, project information was distributed to individuals, agencies, and organizations early in the scoping process, and each was given the opportunity to express concerns or views and to identify important issues or other alternatives.

Taken together, internal and public scoping are essential elements of the NEPA planning process. The following sections describe the various ways scoping was conducted for this impact statement.

As described in chapter 1, the NPS initially began the land transfer NEPA process as an environmental assessment (EA). The public scoping process began in July 2008, with two notices in the Miami Herald announcing an open house meeting in Homestead, Florida.

A newsletter was also distributed by electronic and conventional mail in July 2009 to the project mailing list of government agencies, organizations, businesses, and individuals. On July 9, 2008, a public scoping open house was held at the John D. Campbell Agricultural Center, in Homestead, Florida. The first hour of the meeting was an open house in which the NPS gave a brief slideshow presentation discussing the project and the EA. Both NPS and Florida Power & Light Company (FPL) staff were available at the public meeting to answer questions. Topics raised by the public and agencies during the presentation included management options or alternatives, environmental resource impacts and protection, consistency with laws and regulations, relationship of the project to energy production and transmission, and other concerns about the project. After careful consideration of the issues and analysis developed during the EA process, the NPS has determined that implementation of a land exchange with FPL could result in potential significant impacts to the human environment. Given this decision, the NPS published a Notice of Intent to proceed with the plan in the Federal Register on May 26, 2011, pursuant to the NEPA and associated implementing regulations, and NPS guidance on meeting NPS NEPA obligations.

Internal Scoping Meeting

The NPS held an internal scoping meeting for this project from April 26 to 28, 2011. This meeting was attended by representatives from the NPS, including Everglades National Park and Biscayne National Park, the United States Department of the Interior (DOI), and the NPS contractor. Internal scoping involves discussions among participants to decide what is necessary to analyze in the plan/EIS. Meeting attendees defined the purpose, need, and objectives of the plan; identified potential issues; discussed preliminary alternatives; and defined data needs. Attendees also discussed potential adaptive management strategies, indicators for such strategies, and issues and impact topics. Various roles and responsibilities for developing the plan/EIS were also clarified.

Public Scoping Process

The public scoping process began on June 7, 2011, and the public comment period was opened with the posting of a public scoping newsletter on the NPS Planning, Environment, and Public Comment (PEPC) website. The NPS provided several methods for the community to provide input on the proposed project, including directing comments to the NPS PEPC website at <http://parkplanning.nps.gov/ever>. The public was encouraged to submit comments regarding the public scoping newsletter through the PEPC website, by emailing park staff, or by mailing a letter to the NPS Service Center located in Denver, Colorado. The public comment period was closed on July 25, 2011.

In support of the public scoping effort, the NPS hosted one public scoping meeting intended to initiate public involvement early in the planning stages of the plan/EIS and to obtain community feedback on the initial purpose, need, and objective statements for the acquisition of FPL land in the East Everglades Expansion Area (EEEA). This meeting was held at the Florida International University Stadium Club in Miami, Florida, from 5:30 p.m. to 8:30 p.m. on June 22, 2011. A total of 108 people attended. Meeting attendees were given information on the issues related to the plan/EIS and a brief presentation was provided to explain the project. Attendees provided comments on this presentation by submitting completed comment forms at the meeting, mailing them in during the comment period, or submitting their comments directly to the meeting's court reporter.

During the public scoping period, the park received 10,120 correspondences containing 39,739 individual comments. There were 9,714 form letters received. The comments received were reflective of a public that is passionate about the future of the park's resources, their uses and management. The most common comment received expressed opposition to installation of any transmission lines in or adjacent to the park, representing 74 percent of all comments. The second most prevalent comment expressed opposition to "Alternative 2: Land Exchange with Conditional Requirements," representing 25 percent of all comments. Approximately 99 percent of all comments expressed opposition to all transmission lines construction or completion of the land exchange for the purposes of constructing transmission lines.

Agency Consultation

Agency Consultation with State Agencies

Agency consultation with state agencies began during the initial EA process in 2008. All correspondence sent and received regarding the land exchange EA or EIS is available in appendix E."

In 2008, the park provided the Florida State Clearinghouse with the scoping notice for processing through the appropriate state agencies. Representatives from the State of Florida agencies that have been actively

involved include the Florida Department of Environmental Protection (FDEP), the Florida Department of State and the South Florida Water Management District (SFWMD).

These state agencies actively commented on the proposed project during the EA process. The FDEP fully supported the NPS in the acquisition of FPL lands in the EEEA. The FDEP requested continued coordination with the appropriate agencies to ensure that adjacent areas or restoration projects would not be impacted.

The Florida Department of State conducted a review of the project for possible impacts to historic properties listed, or eligible for listing, in the National Register of Historic Places. The review was conducted in accordance with Section 106 of the National Historic Preservation Act of 1966 (NHPA).

The SFWMD also reviewed the scoping notice and noted that the SFWMD's Governing Board had previously approved the proposed land swap in August 2008 (Resolution # 2008-640).

GPXKTQPO GPVCN'KORCEV'UVCVGO GPV'EQPUNVCVKQP''

Between June 10 and 13, 2011, the NPS sent scoping coordination and consultation letters to various federal agencies, state agencies, elected officials, and tribes. The NPS sent five letters to federal government agencies, including the, U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), the Advisory Council on Historic Preservation (ACHP), and the United States Army Corps of Engineers (USACE); ten letters to elected officials; three letters to state and local agencies, including the Florida State Clearinghouse, SFWMD and the State Historic Preservation Office (SHPO); and nine letters to various tribal officials with the Miccosukee Tribe of Indians of Florida, the Seminole Tribe of Florida, and the Seminole Nation of Oklahoma. The NPS also published a Notice of Intent to complete an EIS in the Federal Register.

On June 21, 2011, NPS staff held an agency scoping meeting attended by a variety of federal, state, and local agencies to present the preliminary alternatives for the plan/EIS, discuss the scope of the EIS analysis, and listen to the concerns of these other agencies related to the proposed land acquisition. The meeting was held in Miami, Florida at the Miami-Dade County Department of Resource Management offices, from 1:00 p.m. to 4:30 p.m. Participants at the meeting included:

- Everglades National Park
- NPS Southeast Regional Office
- Biscayne National Park
- USFWS
- USACE
- Nuclear Regulatory Commission (NRC)
- Miami-Dade County Department of Environmental Resources Management
- Miami-Dade County Department of Planning and Zoning
- Florida Fish and Wildlife Conservation Commission (FFWCC)
- Members of the EIS contractor team.

Topics discussed at the meeting included:

- The need to consider additional alternatives or components of alternatives in order to accurately describe the likely outcomes and impacts of NPS decisions regarding the land exchange.
- How to determine the scope of analysis for the EIS. This included:
 - Determining how the NPS decision will ultimately affect overall routing and development of the power transmission corridor from the Turkey Point Power Plant to a point north of metropolitan Miami
 - Defining the geographic extent of impacts for each resource topic analyzed, and
 - Determining the projects, plans, and geographic boundaries for the cumulative impacts analyses.
- Additional information from FPL that is needed in order to accurately assess impacts and facilitate informed decision making regarding:
 - Facility design and construction methods (related to wetland impacts and interaction of the proposed transmission corridor with hydrologic and ecosystem restoration activities, including seepage management)
 - Electromagnetic field (EMF) and noise calculations for the proposed 500-kilovolt (kV) and 230-kV lines for the EIS analysis.

A second meeting was held on June 26, 2012, at the SFWMD's Fort Lauderdale Field Station Conference Room in Davie, Florida. This meeting was focused on the potential for construction of the FPL transmission lines outside the park. Participants in this meeting discussed transmission siting issues, gave an overview and held an interactive group mapping exercise, discussed the next steps and path forward.

This meeting was attended by representatives from:

- Everglades National Park
- DOI
- FPL
- Miami-Dade Limestone Products Association
- National Parks Conservation Association
- Miami-Dade Department of Environmental Resources
- SFWMD
- Miccosukee Tribe of Indians of Florida
- FDEP.

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In accordance with the Endangered Species Act of 1973 (ESA), Section 7 consultation with the USFWS concerning impacts to threatened and endangered species has been initiated by the NPS, as needed. USFWS responded to the park's EA scoping notice in a July 29, 2009 letter to the NPS. Issues and concerns raised in the letter from the USFWS include potential impacts on wetland habitats, hydrology, fire ecology, plants and wildlife, particularly threatened and endangered species such as the eastern indigo

snake, Everglade snail kite, Florida panther, and wood stork in accordance with Section 7 of the ESA, as amended. The USFWS also recommended the evaluation of potential impacts to migratory birds in accordance with the Migratory Bird Treaty Act (40 Stat. 755; 16 USC 701 et seq.).

In March 2010, the NPS requested technical assistance from the USFWS regarding potential effects of transmission lines on wood storks, snail kites, migratory birds, and their habitats in the vicinity of the exchange corridor. By memorandum dated August 12, 2010 the USFWS submitted a preliminary assessment of potential effects to threatened and endangered species and Everglades wetlands resulting from FPL's proposed construction of transmission lines in the exchange corridor along the eastern boundary of the Park. Based on this preliminary assessment, the USFWS concluded that the proposed transmission lines, if constructed, are likely to (1) adversely affect the Everglades snail kite by eliminating or altering existing nesting habitat; (2) adversely affect the Everglade snail kite and wood stork by eliminating or reducing foraging habitat; and (3) may increase the risk of injury or death of wood storks and migratory birds from collision impacts. The USFWS stated that if they were reviewing a proposed federal action for the transmission corridor, they would consult on potential effects from the proposed action to wood storks and snail kites under Section 7 of the ESA and provide technical assistance to avoid and minimize impacts to migratory birds. A copy of this memorandum is included in appendix E.

In addition, a letter was sent inviting the USFWS to participate in the agency scoping meeting held on June 21, 2011, and notifying them in the letter that impacts to endangered species were possible. A copy of this letter is included in appendix E. The USFWS also participated in the two inter agency meetings described above.

Following further communication with the chief biologist from Everglades, the USFWS informed the NPS that a stand-alone biological assessment was not required for the project, and that the project could self-generate an endangered species list using the USFWS's automated system (Wrublik, pers. comm. 2012). This automated system, known as the Information, Planning, and Conservation System, is available online and was used to generate an initial species list for the project area. The Special-status Species sections in "Chapter 3: Affected Environment" and "Chapter 4: Environmental Consequences" of this EIS contain information on those federally listed species and the potential impacts of the project on those species and serves as the biological assessment for the project. The NPS is not seeking Section 7 consultation, informal or formal, for any alternative in which future transmission lines could be built on lands where the NPS lacks a property interest. For example, if FPL chooses to build its transmission lines east of the park boundary, the NPS would lack any authority to require ESA-based mitigation or conservation measures. However, the NPS has included information for such lines in a zone outside the park in order to complete a full and equitable comparison of alternatives and indirect effects of those alternatives. The NPS would seek consultation with USFWS for alternatives 3 or 4, because the NPS would be providing land use with the expectation of transmission line development. In these cases, the construction of transmission lines would be considered an interrelated and interdependent action, and expectations of adverse effects to listed species would be analyzed to ensure that there is no jeopardy to these species. Additional consultation between the USACE and the USFWS may be required in the future to address impacts specific to the design of the transmission lines.

The USFWS has been included on the mailing list for the distribution of information about this project. Copies of this draft EIS have been sent to the agency for review and comment.

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The NPS has initiated consultation with several groups under Section 106 of the NHPA. Representatives from the Florida Division of Historical Resources have been involved in consultations throughout the

process. An archeological survey was conducted in July and August of 2009 in which no supporting evidence of archeological resources were found in the land under consideration for the land exchange. As part of the Section 106 process, the NPS also provided the Phase I Archeological Survey Report to the Florida Division of Historical Resources on August 27, 2009. In response to the results in the archeological survey report, the Florida SHPO concurred with the finding of New South Associates, Inc. (NSA) that the proposed project would have no effect on cultural resources listed or eligible for listing.

On June 8, 2011, the NPS submitted a letter to the Florida Division of Historical Resources, State Historic Preservation Officer and the ACHP at the Office of Federal Agency Programs containing information about the EIS and a scoping newsletter. Copies of these letters and the responses received from the agencies are in appendix E. Possible impacts and mitigation relating to the protection of cultural resources are addressed in the EIS in chapter 1 under "Impact Topics Dismissed from Further Analysis." The discussion provides information about cultural resources in the area of analysis and the results of surveys conducted to date. The dismissal is based on the absence of cultural resources in the project area and the assumption that surveys would be required for cultural resources along any transmission route selected. A USACE 404 permit with Section 106 consultation and avoidance/mitigation measures would be needed prior to any construction of transmission lines in any corridor selected and the agencies will have an opportunity to review and comment on this draft EIS.

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A letter to initiate government-to-government consultations and provide information about the project was sent to the following tribes in July 2009: Miccosukee Tribe of Florida, Seminole Nation of Oklahoma, and Seminole Tribe of Florida. Representatives of the Miccosukee Tribe of Florida did not participate in the public meeting or the formal consultations.

On June 10, 2011, the Superintendent of Everglades National Park sent nine letters to representatives from three tribes: the Miccosukee Tribe of Indians of Florida, the Seminole Nation of Florida, and the Seminole Nation of Oklahoma, as follows:

Official's Name and Title	Tribe
Colley Billie, Chairman	Miccosukee Tribe of Indians of Florida
Bernie Roman, Tribal Attorney	Miccosukee Tribe of Indians of Florida
Fred Dayhoff, Tribal Representative	Miccosukee Tribe of Indians of Florida
Terry L. Rice, Tribe Consultant	Miccosukee Tribe of Indians of Florida
Curtis Osceola, Tribe Consultant	Miccosukee Tribe of Indians of Florida
Betty Osceola, Tribe Administrator	Miccosukee Tribe of Indians of Florida
James E. Billie	Seminole Nation of Florida
Willard S. Steele, Tribal Historic Preservation Officer	Seminole Nation of Florida
Leonard Harjo, Principal Chief	Seminole Nation of Oklahoma

These letters updated all recipients that the EA had become an EIS and that a Notice of Intent had been published. The letters invited tribal representatives to both the agency scoping meeting on June 21, 2011 and the public scoping meeting on June 22, 2011. Copies of these letters are included in appendix E. The Miccosukee Tribe was consulted during the EIS on possible impacts to its property located to the north of

Tamiami Trail and provided its input at several meetings (including the June 26, 2012 meeting) to discuss possible routes outside the park. In general, the tribe expressed concern about visual impact to the visitors to its casino along Tamiami Trail and requested that any transmission lines sited outside the park avoid Bureau of Indian Affairs properties. In addition, contact was made with the Bureau of Indian Affairs (Chet McGhee, Regional Environmental Scientist, Bureau of Indian Affairs Nashville office) regarding potential impacts on tribal lands and Indian trust resources. As a result of that discussion, tribal lands was included as an impact topic in the EIS. All tribes contacted will have an opportunity to review and comment on this draft EIS.

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The table below identifies regulatory authorities, federal and state permits, approvals, and consultations necessary to ensure regulatory compliance with the project including those associated with the future construction and operation of FPLs proposed transmission lines that would occur as a result of the NPS decision. Most of the permit requirements will be required of FPL if and when they move forward with the construction of the proposed transmission lines. Additional compliance may be required by other state and federal agencies in order to issue permits to FPL.

Responsible Agency/Department	Permit/Approval/Consultation	Agency Responsibility
EPA Region 4	Section 404 Clean Water Act (CWA) Permit	EPA is responsible for overseeing compliance with Section 404(b)(1) guidelines, which provide criteria which must be met to receive a Section 404 permit. EPA also reviews CWA, Section 404 applications for the USACE. The final authority regarding CWA wetland jurisdiction remains with EPA.
	Section 402 CWA, National Pollutant Discharge Elimination System (NPDES)	Although the State of Florida, (through the Florida Dept. of Environmental Protection) is authorized to issue NPDES permits, EPA reviews applications to ensure that permits have been developed in accordance with state and federal laws. A NPDES permit will be necessary to address stormwater issues resulting from the increase of impervious surfaces and dewatering activities.
USACE (Jacksonville District)	Wetland/Waters of the United States Jurisdiction and Section 404 Permit	Responsible for the determination of boundaries of waters of the U.S. within the project area and issuance of dredge and fill permits to address impacts to wetlands and other waters of the U.S. (joint permitting process with FDEP)
USFWS, Region 4	ESA Section 7 Consultation	Provides affect determination (Biological Opinion) documenting the project's likelihood to impact federally listed species. Responsible for overseeing proposed mitigation measures.
	Migratory Bird Treaty Act	Ensures protection of migratory species.
	Bald and Golden Eagle Protection Act	Ensures protection of eagles.

Responsible Agency/Department	Permit/Approval/Consultation	Agency Responsibility
ACHP	Consultation involving the NHPA	The ACHP has a significant role under Section 106 of the NHPA which requires federal agencies to take into account the effects of their undertakings on properties listed, or eligible for listing, on the National Register of Historic Places, and give the ACHP an opportunity to comment on projects.
U.S. Department of Transportation, Federal Highway Administration	Encroachment Permit	Responsible for issuing permits for transmission lines crossing of federally funded roads.
Seminole and Miccosukee Indian Tribes (or Tribal Historic Preservation Office)	Consultation	Responsible for preserving historic sites and Indian culture.
Florida State Clearinghouse	Section 403.061(42), F.S.	The Florida State Clearinghouse administers the intergovernmental coordination and review process of activities within the state of Florida which involve federal financial assistance and/or direct federal activity. (These agencies are listed below separately).
FDEP	Wetland Delineation	Responsible for the determination of boundaries of waters of the state (which can differ from Waters of the United States that are under the jurisdiction of the USACE).
	Environmental Resource Permit under Part IV of Chapter 373, F.S.	Florida's water resources are regulated by the Environmental Resource Permit program. The program covers virtually all alterations to the landscape. The Environmental Resource Permit program regulates dredging and filling in wetlands and other surface waters, stormwater runoff quality and quantity, including runoff resulting from alterations of uplands, and direct, secondary and cumulative impacts.
	Section 401 Permit	FDEP issuance of an Environmental Resource Permit also constitutes a water quality certification under Section 401 of the CWA.
	Transmission Line Siting Act 403.52 - 403.539, F.S	Process for licensing electrical transmission lines. Requires Siting Board (Governor & Cabinet) certification.
FFWCC	Title XXVIII, Chapters 369-380, F.S.	Coordination with USFWS; protection of state listed species. Also reviews and comments on Environmental Resource Permit applications.
SHPO	Title XVIII, Chapter 267, F.S.	Reviews development project and provides technical assistance on preservation laws to ensure compliance with state and federal laws mandating consideration of a project's impact on historic and archeological properties.

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The following federal, state, local, and tribal government agencies and organizations and businesses that participated in scoping have been sent a copy of this draft EIS. In addition, elected officials, libraries, individuals, other businesses and organizations, media outlets, and other groups that have expressed interest in Everglades National Park in the past have been sent letters stating that this draft EIS is available for review and comment.

HGF GTCN'CI GPEKGU''

- United States Fish and Wildlife Service
- United States Army Corps of Engineers
- United States Bureau of Indian Affairs
- National Park Service, Southeast Regional Office
- National Park Service, Denver Service Center
- National Park Service, Biscayne National Park
- National Park Service, Environmental Quality Division
- United States Geological Survey
- Nuclear Regulatory Commission
- Advisory Council on Historic Preservation

UVCVG'CPF'NQECN'I QXGTPG GPVU''

- Florida Department of Transportation
- Florida Department of State
- Florida Department of Environmental Protection
- South Florida Water Management District
- Florida Fish and Wildlife Conservation Commission
- Miami-Dade County Department of Environmental Resources Management
- Miami-Dade County Department of Planning and Zoning
- Florida Department of State - Division of Historical Resources

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- Miccosukee Tribe
- Seminole Tribe
- Seminole Nation of Oklahoma

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- Audubon
- Audubon - Native Plant Society
- Audubon Society - Everglades Chapter
- Broward Sierra Club
- Calusa Group Sierra Club
- Clean Water Action
- Coalition of NPS Retirees
- Connecticut Sierra Club
- Dade County Public Schools
- Desert Protective Council
- Environmental Defense
- Environmental Services
- Everglades Committee for the Sierra Club
- Everglades Forever
- Fairchild Junior Naturalists
- Florida Biodiversity Project
- Florida Native Plant Society
- Florida Power and Light
- Florida Trail Association
- Florida Wildlife Federation
- Florida Yes
- Floridan Aquifer Legal Defense Organization
- Friends of Fakahatchee
- Green League
- Heifer International
- International Society for the Preservation of the Tropical Rainforest
- Isaak Walton League
- K&K Development, Inc.
- Miami-Dade NAACP
- National Parks Conservation Association
- National Wildlife Foundation
- Nature Coast Coalition
- Nature Conservancy
- Palm Beach County Environmental Coalition
- Parkland News & Commentary
- Palm Beach County Environmental Coalition
- Progressive Democrats of America
- Responsible Growth Management Coalition
- Save it Now Glades
- Sierra Club
- Sierra Club Miami Group
- South Florida Audubon Society
- South Florida Wildlands Association
- Tropical Audubon
- Under Sea Adventures, Inc.
- Western Lands Project
- Wildlands Network

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Name	Title/Role	Organization–Location
National Park Service/ U.S. Department of Interior		
Elsa Alvear	Supervisory Resource Management Specialist	NPS – Biscayne National Park
Joffre Castro	Water Quality Specialist	NPS – Everglades National Park
Brien Culhane	Chief of Planning and Compliance	NPS - Everglades National Park
Steve Culver	Natural Resource Specialist	NPS – Denver Service Center
Tylan Dean	Chief Biologist	NPS – Everglades National Park
Morgan Elmer	Project Manager	NPS - Denver Service Center
Bryan Faehner	Renewable Energy Specialist	NPS – Environmental Quality Division
Fred Herling	Supervisory Park Planner	NPS – Everglades National Park
Dan Kimball	Superintendent	NPS – Everglades National Park
Mark Kinzer	NEPA Specialist	NPS – Southeast Regional Office
Melissa Memory	Chief of Cultural Resources	NPS – Everglades National Park
Jimi Sadle	Botanist	NPS – Everglades National Park
Courtney Shea	Attorney	DOI, Office of the Solicitor
Roy Sonenshein	Hydrologist	NPS – Everglades National Park
Eric Thuerk	Project Specialist	NPS – Denver Service Center
Jason Waanders	Attorney	DOI, Office of the Solicitor
Ben West	Chief of Planning and Compliance	NPS – Southeast Regional Office

Name	Title	Experience	Responsibilities
The Louis Berger Group, Inc.			
Holly Bender	Senior Economist	PhD, Mineral Economics MS, Mineral Economics BA, Economics and Political Science 14 years experience	Socioeconomics and Environmental Justice dismissal
Megan Blue-Sky	Environmental Planner	B.A. Geography 3 years experience	Mapping and geographic information system (GIS) analysis
Cristy Boyd	Principal Environmental Scientist	BA, Environmental Science Graduate Studies, Geology 19 years experience	Regulatory/permitting requirements
Dara Braitman	Planner	MUP, Urban Planning BA, Urban Studies 9 years experience	Land use and Environmental Justice data (initial draft)

Name	Title	Experience	Responsibilities
Jacklyn Bryant (retired)	Environmental Scientist/	MS, Watershed Sciences, Water Resources Planning and Management with Certificate in International Development BS, Natural Resources Management, Cum Laude, Minor in Watershed Sciences 10 years experience	Former Project Manager; chapters 1 and 2
Rudi Byron, AICP	Environmental Planner	MURP, Environmental Planning BS, Environmental Policy and Politics 8 years experience	Deputy Project Manager, Visitor Use and Experience/Recreational Resources, Park Operations and Management, and Tribal Lands
Colleen Cunningham	Environmental Scientist	B.A. Biology M.S. Env Science MPA Public Affairs 14 years experience	Special-status Species, wildlife, wilderness, vegetation, and wetlands (second draft)
Nancy Van Dyke	Senior Scientist	M.S. Environmental Sciences (Ecology), University of Virginia B.A. Biology and Geography, University of Delaware 35 years experience	Project Manager; also Wetlands, Floodplains, Soils (first draft), Health and Safety and Cultural Resources dismissal
Emily Larson	Environmental Scientist	BS, Environmental Science, with a concentration in Biology 5 years experience	Visual Resources Affected Environment and Visual Simulations
Michael Mayer	Senior Regulatory Specialist	JD, Certificate in Environmental Law MS, Wildlife and Fisheries Biology/Conservation BS, Wildlife Fisheries and Biology/Conservation 16 years experience	NEPA advisor
Lia Peckman Jenkins	Environmental Scientist	BS, Biology BA, Spanish 3 years experience	Wildlife and Wilderness (initial data gathering)
Joshua Schnabel	Environmental Planner	MA, Geography BA, Sociology 6 years experience	Visual Resources (first draft assistance) and Land Use, Wilderness, Soils (second draft)
Margaret Stewart	Senior Planner	MRP, Land Use and Environmental Planning AB, Growth and Structure of Cities Program 19 years experience	Hydrology, Water Quality, Floodplains
Leo Tidd	Senior Planner	MPA, Environmental Science and Policy BS, Environmental Studies 6 years experience	Soundscapes

Name	Title	Experience	Responsibilities
Landon Vine	Environmental Scientist	MS, Environmental Science BS, Environmental Science 7 years experience	Park Management and Operations, Hydrology and Water Quality Affected Environment (first draft), and chapter 5
The Final Word			
Juanita Barboa	Technical Editor	B.S. Technical Communication, New Mexico Institute of Mining and Technology 23 years experience	Editing
Sherrie Bell	Technical Editor/Document Designer	Business Management Coursework, New Mexico State University 24 years experience	Editing/Document Design



References, Glossary, and Index

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Hqtktc'F gr ctwo gpv'qh'vj g'Gpxktqpo gpv'HF GR+ "

422; " Ucvg'qh'Hqtktc'P wo gtle'P wtlgpn'Etktktc'F gxnqr o gpv'Rcp0O ctej '422; 0Rtgr ctgf 'd{ 'vj g' Dwtgcw'qh'Cuuguu gpv'cpf 'T guvtcvkp'Uw r qtv'F kxkukp'qh'Gpxktqpo gpv'Cuuguu gpv'cpf " T guvtcvkp0Ceeguuf 'P qxgo dgt'38.'4234'cv' j wr <ly y y f gr Uvcg0r0wuly cvgt ly suu r lpwtkgpwlf qeuln/pwtkgpv'r ncp/x25252; 0 f h0'

4233" Hqtktc'Rctm'Ugtxleg'F kntlev0j wr <ly y y f gr Uvcg0r0wulr ctmlf kntlev0j vo %Uqwj gcuv' Wf cvgf 'Cwi wuv'39.'42330Ceeguuf 'P qxgo dgt'8.'42340'

HF QV*Hqtktc'F gr ctwo gpv'qh'Vtcur qtvcvkp-0'

3;; " Hqtktc'Ncpf 'Wug'Eqxgt'cpf 'Hqto u'Encukkecvkp'U{ ugo '*5tf 'Gf kxkp-0Hqtktc'F gr ctwo gpv' qh'Vtcur qtvcvkp.'Uwtxg{ kpi 'cpf 'O cr r kpi 'Qh'leg.'I gqi tcr j le'O cr r kpi 'Ugevkp0Lcpwct{ . " 3;; ; 0Cxcldng'cv' j wr <ly y y f qvUvcg0r0wulwtxg{ kpi cpf o cr r kpi IO cpwcnllwweo cpwcnf f h0'

Hqtktc'Hkuj 'cpf 'Y kf rkhg'Eqpugtxcvkp'Ego o kulkp'*HHY EE+ "

pff0' I qr j gt'Vqtvlug0Ceeguuf 'qprkpg'cv'j wr <ly y y 0 { hy e0eqo lo gfk4434366ll qr j gt/ vqtvlug0 f h'qp'P qxgo dgt'37.'42340'

4225" Eqpegr wcn'O cpci go gpv'Rcp'hqt'vj g'Gxgti ncf gu'Ego r ngz'qh'Y kf rkhg'O cpci go gpv'Ctgcuv' JQprkpg'j wr <lo { hy e0eqo lo gfk4434366: IEO RaGxgti ncf gu'Ego r ngza4224a42290 f h'Ncuu' ceeguuf <P qxgo dgt'7.'4234_0'

4233c" Hqtktc'Dqppgvgf 'DcvDkqni lecn'Ucwu'Tgxkgy 'Tgr qt0Hqtktc'Hkuj 'cpf 'Y kf rkhg' Eqpugtxcvkp'Ego o kulkp0Vcmj cuugg.'Hqtktc0O ctej '53.'42330Ceeguuf 'qprkpg' cvj wr <ly y y 0 { hy e0eqo lo gfk44954; 7IHqtktc/Dqppgvgf/DcvDUT0 f h'qp'P qxgo dgt'37.' 42340'

4233d" Gxgti ncf gu'O kpm'Dkqni lecn'Ucwu'Tgxkgy 'Tgr qt0Hqtktc'Hkuj 'cpf 'Y kf rkhg'Eqpugtxcvkp' Ego o kulkp0Vcmj cuugg.'Hqtktc0O ctej '53.'42330Ceeguuf 'qprkpg'cv' j wr <ly y y 0 { hy e0eqo lo gfk44954; 5IGxgti ncf gu'O kpm'DUT0 f h'qp'P qxgo dgt'37.'42340'

4233e" Hqtktc'Ucpf j km'Etcpg'Dkqni lecn'Ucwu'Tgxkgy 'Tgr qt0Hqtktc'Hkuj 'cpf 'Y kf rkhg' Eqpugtxcvkp'Ego o kulkp0Vcmj cuugg.'Hqtktc0O ctej '53.'42330Ceeguuf 'qprkpg'cv' j wr <ly y y 0 { hy e0eqo lo gfk4495532IHqtktc/Ucpf j km'Etcpg/DUT0 f h'qp'P qxgo dgt'37.' 42340'

4233f" Y j kg/etqy pgf 'Rki gqp'Dkqni lecn'Ucwu'Tgxkgy 'Tgr qt0Hqtktc'Hkuj 'cpf 'Y kf rkhg' Eqpugtxcvkp'Ego o kulkp0Vcmj cuugg.'Hqtktc0O ctej '53.'42330Ceeguuf 'qprkpg'cv' j wr <ly y y 0 { hy e0eqo lo gfk4495643IY j kg/etqy pgf/Rki gqp/DUT0 f h'qp'P qxgo dgt'37.' 42340'

4233g" Nko r nkp'Dlqmj lecn'Ucwu'TgxlgY "Tgr qt v0Hqtkf c'Hkuj "cpf "Y krf rkhg'Eqpugtxcvkqp"
Eqo o kulkqp0Vcmrj cuugg."Hqtkf c0O ctej "53."42330Ceeguugf "qprkpg"cv"
j wr <ly y y 0 {hy e0eqo lo gf lc 4495562 INko r nkp/DUT0 f h'qp"P qxgo dgt"37."42340'

4234c" Gxgti rnf gu'cpf "Hcpeku'U0Vc{ rqt "Y krf rkhg'O cpci go gpv'Ctgc0]Qprkpg "
j wr <lo {hy e0eqo lxlgy kpi ltgetgcvkqp ly o culgcf lgxgti rnf gu"]Ncuw'ceeguugf <P qxgo dgt"7."
4234_0'

4234d" Hqtkf c0u'Gpf cpi gtgf "cpf "Vj tgcvgpgf "Ur gekgu."Wf f cvgf "Qevqdgf "42340Ceeguugf "qprkpg"cv"
j wr <lo {hy e0eqo lo gf lc B737473 hj tgcvgpgf agpf cpi gtgf aur gekgu0 f h'qp"P qxgo dgt"37."
42340'

Hqtkf c"P cwtcn'CtgcU'Kpxgpvt { "HP CK"

4223c" Hkgrf "I wkf g'v'j g"tctg'Cplo cni'qh'Hqtkf c<Tqugcvg"Ur qqpdkn0Ceeguugf "qprkpg"cv"
j wr <ly y y 0pck0ti IHkgrf I wkf glr f hClckacclclc(RF H'qp"P qxgo dgt"37."42340'

4223d" Hkgrf "I wkf g'v'j g"tctg'Cplo cni'qh'Hqtkf c<Hqtkf c'Dwtqy kpi "Qy r0Ceeguugf "qprkpg"cv"
4223c" Hkgrf "I wkf g'v'j g"tctg'Cplo cni'qh'Hqtkf c<Tqugcvg"Ur qqpdkn0Ceeguugf "qprkpg"
cv"> j wr <ly y y 0pck0ti IHkgrf I wkf glr f hClckacclclc(RF H'qp"P qxgo dgt"37."42340'

4234c" Dkqf kxgtukf "O ctkz0Ceeguugf "qp/rkpg"cv"> j wr <lnqvo cr u0t gce0uw0gf wldkq27 lpf gz0j vo n'qp"
P qxgo dgt"34."42340'

4234d" Grgo gpv'Qeewttgpeg'F cv'hqt'O lco kF cf g'Eqwpv{ 0Rtqxkf gf "qp"P qxgo dgt"4: ."42340'

Hqtkf c'Rqy gt"("Nki j vEqo r cp{ "HRN+

422: " Tqcf IDtkf i g.'Ej cppgn'epf "Hqy ci g'Gcugo gpw.'r gtvclpki "q"Vtcev'P q0'335/5"Rqtvkqp"qh0'
O qf kkgf "Y cvgtu'F grxgtlgu"q"Gxgti rnf gu'P cvkqpcn'Rctm'Rtqlgev'O lco kF cf g'Eqwpv{."
Hqtkf c0Hqtkf "P q052/6: 32/222/2242"Rqtvkqp"qh0'Uki pgf "Cwi wuv'44."422: 0

422; c" *Site Certification Application (SCA) for the Turkey Point Units 6 & 7 Project, June, 2009,*
Chapter W9.0 and Appendix 10.2.4, Sec. 3. Cxckrdng"qp"j g'kpvgtpgv"
j wr <lr wdrk hkgu0f gr 0ncvg0r0wulUklpi IQwi qkpi IHRNa Vwtng{ aRqkpvWpkua8a9ICr r necvkqp10'

422; d" Ucvg'Egtwlecvkqp"Crr necvkqp0Ej cr vgt"; 0'Y guv'HVC"Hg f gtcn'Vtcpuk/Cf o kpkwcvkqp+."42280'
Vtcpuk'P qlug"cpf "Xkdtcvkqp"K r cev'Cuuguu gpv0HVC/XC/; 2/325/28."O c{ "42280'
j wr <ly y y 0ncf q0 qx lf qewo gpvulHVCaP qlugacpf aXkdtcvkqp aO cpwcn0 f h0'

4232" O kki cvkqp"Eqpegr wu/"Y qqf "Uqtmi"cpf "Qvj gt"Y cf kpi "Dktf u" Hqt'F kuewukqp'y kj "
Gxgti rnf gu'P cvkqpcn'Rctm0Hqtkf c'Rqy gt"("Nki j vEqo r cp{ 0F gego dgt"3."42320'

4233" *Turkey Point Units 6&7 U.S. Army Corps of Engineers Request for Additional Information*
*Response – Transmission Lines"*f qewo gpv%UCL422; /24639"RR/O NE+0F gego dgt"43."
42330'

4234c" *Turkey Point Units 6&7 FPL Response to National Park Service Data Needs Request for*
Land Exchange EIS "f qewo gpv%HRNP RU/34/2232+. lcpwct { "42340'

4234d" HRN'Hcewj gg0Ccxckrdng"qprkpg"cv"> j wr <ly y y 0gzvgtcpggti { 0eqo leqo r cp{ lhcewj gg0uj vo r0'

4234e" Ncgvu'P gy u'Chge'kpi 'l qwt'Dkn0Cxc'kdng<
j wr <ly y y 0r n'eqo lew'qo gt l'cvgu'apf adkn'pgy u0ij vo n0'

Hmktf c"Rqy gt"("Nk j vEqo r cp{"*HRN+cpf"P cvkqpcn'RctmUgtxleg"*P RU+ "

422: "" *Contingent Agreement for Exchange of Lands between the United States of American and Florida Power & Light Company for Exchange and Relocation of Florida Power & Light Company's Lands and Interests in Lands Located in or Adjacent to the Everglades National Park Expansion Area*0Lwnf "422: 0"

HVC"*Hgf gtcn"Vtcpuky/Cf o kpkutcvkq+"

4228" Vtcpuks/P kluq'cpf "Xkdtcvkp"K r cev/Cuuguu gp0HVC/XC/; 2/325/28.'O c{'42280'
j wr <ly y y 0ncf qv qx lf qewo gpvulHVCaP kluqacpf aXkdtcvkpaO cpwcr f h0'

Hfg gtlkm'R0'L0Uko qp."cpf "T0Dqtmj cvtkc"

422; " P gu lpi 'd { "Y cf lpi 'Dkf u l p "Y E Cu "3."4."cpf "5"qh"vj g"Gxgti n f gu 0F gr ctwo gpv"qh"Y kf nkg"
Geqmi { "cpf "Eqpugtxcvkap0

I kugt "GCGO"LE0Vtgzngt."LQ 0Tlej ctf u."F(N0'Ej krf gtu."F 0Ngg."C(N0'Gf y ctf u."N0L0Uekpvq."M0'
Lc{cej cpf tcp."I 0D0P qg."T0F 0Lapgu"

4227" Ecuecf kpi "geqmqi lecd'gh'gheu'qh'hqy "rgxgrh'j qur j qtwu'gptlej o gpv'kp'vj g'Hrqt'kf c'Gxgti rcf gu0J
Environ Qual'56-93969450'

I ckugt."G0"N0Uekpvq."F 0N0Ej krf gtU."cpf "L0E0Vtgzngt"

4229" F g x g n r k p i " g e q u { u n g o ' t g u r q p u g ' k f l e c v t u ' v q ' J { f t q m j k e ' c p f ' P w t k g p v O q f l h e c v k p u ' k p " P q t y j g c u v ' U j c t m l T k x g t ' U n q w i j . ' G x g t i n f g u ' P c v k a p c n ' R c t n l g c t ' 3 ' C p p w c n ' T g r q t v ' v q " G x g t i n f g u ' P c v k a p c n ' R c t n l L w n { ' 53 . ' 42290 ' }

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I cpp."I 0F 0'M0C 0'Dtcf ng{ "cpf"U0Y 0'Y qqf o cpugg"
```

4235" Vj g'Hnqt kwe'k'xg pvt{ 'qh'Uqwj 'Hnqt k'c'F c'vcdug'Qprik'g'Vj g'k'puk'w'g'hqt'T gi k'q'p'c'n'
Eqpugt'x'c'k'q'p'0'F g'nt{ 'Dgcej.'Hnqt k'c'WUC'0'

I kro qwt."E { pȳ kē."Fcxkf "Mīcddgpj qh̄v."Y knkco "Qtgp."cpf "I gqti g"Ckn̄gp"

4226" Crr gpfkz 4D/3<plmvgpeg"qhFt{ lpi "cpf "TgY gwkp "qp"J i "cpf "UE{enkp "lp"Gxgti ncf gu"cpf " UVC"Uqlnu0Cswcde"E{enkp "qh'O gtwet{ "lp"vj g"Gxgti ncf gu"CEO G+I tqwr 0Rtgrko kpct{ " Ft{ lI gy gvGzr gtlo gpw"*4l24/3l25-0lp"2004 Everglades Equuqnf cvgf Report."r wdrkuj gf " lqlpvn{d{ "vj g"Uqwj "Hrqtlf c"Y cvgt'O cpci go gpvF kntlev"cpf "vj g"Hrqtlf c"F gr ctvo gpv"qh"vj g" Gpxltqpo gpv0

J qy ctf."MOU"Y (H0Nqhwu."cpf "LOE0Vtgzrgt"

3; ;7" Ugcupcnf { pco leu'qh'huj gu'lp'ctvklekn'ewxgtv'r qqn'l'p'yj g'E/KKdcup.F cf g'Eqwv\."

Hqtkf c0Hpcntgr qtv'q'Gxgti ncf gu'P cwkqpcn'Rctm'Eqqr gtcvkxg'Ci tgggo gpv'EC"47: 2/4/; 246."

J qo guv'cf. "Hqtkf.c."56"rr0'

Tghgtgpegu"

J wo r j tg{."U0'0'cpf "V0N0\ kpp"

3; ; 4" UgcupcnJ cdkcv'Wug'd{ 'Tkggt'Qwgtu'cpf 'Gxgti rcf gu'O kpnlp'Hqtkf c0*The Journal of Wildlife Management*"68*4+597/5: 30'

J wplpi . 'M0'

4224" C'Tqcf o cr 'hqt'RkGT'Tgugctej "qp'Cxkcp'Rqy gt'Nkpg'Grgestqewkqp'lp'Ecrkhtpck0Ecrkhtpck"
Gpgti { 'Eqo o kuukqp0R722/24/294H0'y y y Qpgti { 0c0 qx lgr qt wu4224/34/46a722/24/
294HRF H0F gego dgt"42240'

Kpi gdtkugp."UG0'E0O eXq{.'D0I nc|. 'cpf "Y 0Rctni'

4227" Hqtkf c'Gxgti rcf gu<'Uwdukf gpeg'vj tgcvgpu'ci tlewnwtg'cpf "eqo r nkecvgu"gequ{ ugo 'tguvqtcvkqp"
In'I cmqy c{.'F 0'F 0'0Lqpgu."cpf "UG0'Kpi gdtkugp."gf u0Ncpf "Uwdukf gpeg'lp'vj g'Wpkxf "Ucvgu0
WU0I gqmj kcrn'Uwtxg{ 'Ekewrt"33: 40r 0; 7/3280j vr <lr vdu0ui u0 qx leke leke33: 410'

Vj g'Kpukwng'hqt'Tgi kqpcnEqpugtxcvkqp"*KE+"'

4234" Hqtkwke'Kxgqvqt{ "qh'Uqwj 'Hqtkf c'F cvdcug'Qprikpg0Ceeguugf "qprkpg'cv<
j vr <lgi kqpcnEqpugtxcvkqp0qti lkeulf cvdcuglr rcpwUHRcpvNkD{ N0tur ANgwt? C"qp"
P qxgo dgt"37."42340'

Lcemqp."V0Q0"(' Rkwu.'L0'

4232" Vj g'Ghgew'qh'Grgvte'Vtcpuo kuukqp'Nkpgu'qp'Rtqr gt v{ 'Xcnwgu<'C'Nkgtcwtg'Tgxkgy 0*Journal of Real Estate Literature*."3: *4+."45; 647; <47: 0'

Mkej gpu'F t0Y 0'gv'cn'

4233" Wpr wdrukj gf 'Upckn'Mkg'F cvc0Wpkxgtuk{ "qh'Hqtkf c.'I clpguxkng.'HN"/'o wnr ng"{ gctu0'

Mwuj rcp.'L0C0'

3; ; 2" *Freshwater Marshes*0Kp'Tqpcrf 'N0O { gtu'cpf 'Lqj p'LOGy gn'*gf kqtu+0Gequ{ ugo u'qh'Hqtkf c0'
Wpkxgtuk{ "qh'Egpvtcn'Hqtkf c'Rtgu0I clpguxkng.'Hqtkf c0'

Ncpf ku."Y 0'0'cpf 'LO'Y kgi gtu"

4226" Kvtqf wevkqp"q"vj g'tgi kqpcn'tkun'cuuguu gpv'wukpi "vj g'tgrvkg'tkun0 qf gr0Ej cr vgt"40ETE"
Rtguu0'

Ncpf tgu.'R0'O 00 0D0J gppguu{.'M0Uej rpgngt.'F 0'0Eqng.'cpf "U0Dqwej gt"

422: " *Applying the Concept of Wilderness Character to National Forest Planning, Monitoring, and Management*0I gpgtcn'Vgej plecn'Tgr qtv'TO TU/I VT/439Y Y Y 0'WU0F gr ctvo gpv'qh"
Ci tlewnwtg.'Hqtguv'Ugtxleg.'Tqen{ 'O qwpvclp'Tgugctej 'Ucvkqp0HqtvEqnkp'u.'EQ0'

Nqfi g.'V0G0'

4227" Vj g'Gxgti rcf gu'J cpf dqqm'Wpf gtuwcpf lpi "vj g'Gequ{ ugo . 'Ugeqpf 'Gf kkp.'ETE'Rtguu<'Dqec"
Tcvqp.'HN0524'r r 0'

4232" Vj g'Gxgti ncf gu'J cpf dqqn'Wpf gtucpf lpi 'y g'Gequ{ ugo . 'Vj kf 'Gf kkp. 'ETE 'Rt gu'<Dqec"
Tcvqp. 'HN05; 4'r r 0'

Nqhwu"

4222" Kpxgpvt{ 'qh'huj gu'qh'Gxgti ncf gu'P cvkqpcn'Rctn0'Florida Scientist'85*3+<49/690'

Nqwu'Dgti gt 'I tqwr . 'Kpe0'

4235" Cngtpcv'Eqttkf qt 'Ugrgcvkp 'Uwf { 'hqt 'Hqt kf c'Rqy gt 'cpf 'Nk j vu'Y guv'Rtghgttgf 'cpf 'Y guv'
Ugeqpf ct { 'Eqttkf qtu'lp 'y g'Xlekp{ 'qh'y g'Gcu'Gxgti ncf gu'Gzr cpukqp 'Ctgc'qh'y g'Gxgti ncf gu'
P cvkqpcn'Rctn0'Lcpwt { '6. '42350'

O cf fgtu. 'O 0cpf 'F R0'Y j khgrf "

4228" Wrcpf 'Tcr vtqu'cpf 'y g'Cuuguu gpv'qh'Y kpf 'Hcto 'K r ceu0'Ibis. '36: . '656780'

O eEqto lem 'R0K0'RU0Tcy rkm 'M0Nwt f lpi . 'GR0Uo kj . 'cpf 'HJ 0'Umet "

3; ; 8" Rgtkr j { vqp/y cvgt 's wrk{ 'tgrcvkpj k r u'cmpti 'c'pwtkgpv'i tcf kgpv'lp 'y g'pqt y gtp 'Hqt kf c"
Gxgti ncf gu'0'Journal of the North American Benthological Society'37<665/66; 0'

O eO cj qp. 'O 0'

3; ; : " Dkf 'F tlxg'Gxgti ncf gu'Dculp lRgppeueq 'Y gvcpf u'Xgi gcvkp 'cpf 'Eqxgt 'V{ r g'O cr r lpi "
Uwf { 0Cvi wuv'4; . '3; ; : 0'

O leequwngg"

pff 0' j wr <ly y y 0 leequwngg0eqo htdg0'

O kmt. 'T(N0'D0H0O eRj gtup. 'cpf 'M0J 0J cci "

3; ; ; " Y cvgt 'S wrk{ 'lp 'y g'Uqwj gtp 'Gxgti ncf gu'cpf 'Dki 'E { r tguu'Uy co r 'lp 'y g'Xlekp{ 'qh'y g'
Vco lco k'Vtckn'3; ; 8/3; ; 90'WU0I gqmi lecn'Uwt xg{ 'Y cvgt 'Tguqwt egu'Kpxguk c vkp u' Tgr qt v'
; ; /62840'

O gtqr qrkcp 'F cf g'Eqwpv{ 'Hqt kf c'F gr ctwo gpv'qh'Gpxkqpo gpvni'Tguqwt egu' *F GTO +"

3; ; ; " Dkf 'F tlxg'Gxgti ncf gu'Dculp lRgppeueq 'Y gvcpf u'xgi gcvkp 'cpf 'Eqxgt 'V{ r g'O cr r lpi "Uwf { 0'
F GTO 'Vgej plecn'Tgr qt v': . /7"*d{ 'O ctmiO eO cj qp+0Ugr vgo dgt'3; ; ; 0'

P cwtgUgt xg"

4234" P cwtgUgt xg'Gzr mtgt <Cp'qprikpg'gpe{ emrgf lc'qh'hkg"ly gd'cr r ncvkp_0'Xgtukqp'900'
P cwtgUgt xg. 'Ctnkpi vqp. 'Xkti lplc0Cxcckrdng'j wr <ly y y 0pcwtgugtxg0qti lgrz mtgt0*Ceeguugf <
P qxgo dgt'38. '4234+0'

P cvkqpcn'Rctm'Ugt xleg' *P RU+ "

pff 0" Gxgti ncf gu'P cvkqpcn'Rctm' Hqt kf c'0'Co r j kdkpu0Cxcckrdng'cv"
j wr <ly y y 0pr u0 qx lgxgt lpcwtguelgpeg lco r j kdkpu0j vo 'Ceeguugf "qp'O ctej '47. '42350'

- pff Ql" Gxgti rcf gu'P cvkqpcn'Rctm'Hqtkf c"ó"Trgr vkgu0Cxcckrdng'cv"
j wr <ly y y Qr u0 qx lgxgt lpcwtguelgepegltgr vkgu0 vo 'Ceeguugf"qp'O ctej '47.'42350'
- 3; ; 3" *Everglades National Park Backcountry Management Plan.*"
- 3; ; ; " *Everglades National Park Protection and Expansion Act of 1989*0J 0T0B9490'
- 3; ; 3" *Land Protection Plan*0Gcu'Gxgti rcf gu'Cf f kkp0Gxgti rcf gu'P cvkqpcn'Rctn0Cr tkl3; ; 3072"
rr 0'
- 4222c" F kgevqt0'Qtf gt"%69<"*Sound Preservation and Noise Management.* WU0F gr ctvo gpv'qh'yj g"
Kpvtkt0Y cuj kpi vqp.'F E0'
- 4222d" Gxgti rcf gu'P cvkqpcn'Rctm'Utcvgi le'Rrcp"4223642270'
- 4223" F kgevqt0'Qtf gt"34<"Eqpugtxcvqp'Rrcppkpi . 'Gpxkqpo gpvcr'K0 r cev'Cpcn'uku'cpf 'F gekukqp/
o cnkpi 'J cpf dqqn0Vj g'Wpkgf 'Ucvgu'F gr ctvo gpv'qh'yj g'Kpvtkt. 'P cvkqpcn'Rctm'Ugtxleg0'
Ceeguugf 'qprkpg0Cxcckrdng<j wr <lr rcpkpi Qr u0 qx lf qewo gpvlf q34j cpf dqqn0f h0'
- 4224" F kgevqt0'Qtf gt"%09/3<"*Wetland Protection*0WU0F gr ctvo gpv'qh'yj g'Kpvtkt0Y cuj kpi vqp."
F E0'
- 4225" F kgevqt0'Qtf gt"%09/4<"*Floodplain Management*0WU0F gr ctvo gpv'qh'yj g'Kpvtkt0'
Y cuj kpi vqp.'F E0'
- 4227" Lqkp'vTgr qtv'v'Eqpi tguu<"Gxgti rcf gu'Y cvgt'S wcrk\ =Tguqwtg'Gxcncvqp'Tgr qtv.'UHP TE"
Vgej plecn'Ugtkgu"4227<30Uqwj 'Hqtkf c'P cwtcn'Tguqwtgu'Egpgt.'Gxgti rcf gu'P cvkqpcn'Rctn0'
- 4228c" P RU'*Management Policies 2006*0P cvkqpcn'Rctm'Ugtxleg0Cxcckrdng"qp'yj g'Kpvtpgv<"
j wr <ly y y Qr u0 qx lr qnle{ IO R42280 f h03: 2'r r 0'
- 4228d" *South Florida and Caribbean Parks Exotic Plant Management Plan and Environmental
Impact Statement*"*cpf "cddtgxkcvgf 'hpcnr wdrkuj gf 'lp'Cwi wuv"4232+0Y CUQ'Gpxkqpo gpvcr'
S wcrk\ 'F kxkukp0'
- 422; c" P cwtcn'Tguqwtg'O cpci go gpv'Tghgtgpeg'O cpwcr'090Gzj kdk'4/"K gpv'kkgf 'P cvkqpcn'Rctm'
Ugtxleg'O cpf cvqt{ 'Encuu'KCtgc'Kpvi tcn'Xkrcu0'
- 422; d" Gxgti rcf gu'P cvkqpcn'Rctm'F gxgnr kpi 'yj g'Gxgti rcf gu'0Cxcckrdng'qprkpg'cv<"
j wr <ly y y Qr u0 qx lgxgt lj kvqt{ ewnwglf gxgnr o gpvj vo 0'
- 422; e" EHI"58"3'Ego r gpf kwo 'qh'F guki pcvqpu.'Emuwtgu.'Tgs wguu.'Tgs vkt go gpw'cpf 'qyj gt"
Tgutlevkpu'lo r qugf 'wpgt'vj g'f kuetgvkpct{ "cwj qtk\ 'qh'yj g'Uwr gtlpvgpf gpv0Qevqdg'9"422; 0'
- 4232c" *Draft General Management Plan / East Everglades Wilderness Study / EIS*0'
- 4232d" 4232'DRUE'Eqmpkcn'Dkf u'Uwo o ct{ 'd{ 'Ukg0zn0'
- 4232e" Vco lco k'Vtckn'O qf hkecvkpu'P gzv'Ugr u'RtqlgeviGKU0'
j wr <lr ctnr rcpkpi Qr u0 qx lr tqlgevj qo g0ho A ctnK?596(r tqlgevk?0'

4232f" *Soundscape Management Plan*0\ kqp"Pcvkqpcn'Rctn0Ugr vgo dgt"42320Cxcldng"cv"
j wr <ly y y qpr u0 qx ll kqplr ctmo i o vlr mcf l\ P R/Uqwpf uecr g/RncpaUgr a42320 f h0

4232g *Evaluation of Potential Impacts of Proposed Florida Power and Light Company Power Transmission Lines on Avian Resources in Everglades National Park*0WU0F gr ctvo gpv'qh'y g"
kpgtkqt."Pcvkqpcn'RctnUgtxleg."Uqwj "Hqtkf c"P cwtcnTguqtegu'Egpgt0J qo guvcf ."Hqtkf c0
Qevdgt'8."42320

4233c *Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making*0Y cuj kpi vqp."F E0Cxcldng"cv"
j wr <lj qo gpr u0 qx lcr r decvkpuplr ur qile{ IF Qtf gtueho 0Wf f cvgf "ghgevxg"Qevdgt'7."42330

4233d" Gxgti rcf gu"Pcvkqpcn'RctnEqmplek'Y cf kpi 'Dkf 'P gukpi 'O qpkqt kpi 'F cve042330Uqwj "
Hqtkf c"P cwtcnTguqtegu'Egpgt'cv'Gxgti rcf gu"Pcvkqpcn'Rctn0"

4234c" Ucvu0Gxgti rcf gu"Pcvkqpcn'Rctm'Xkukqtu'd{ 'I gct0'
j wr <llto cpr u0 qx llUcvuIUTUT gr qtulRctn 42Ur gekke' 42Tgr qtulCpwcni 42Rctn 42X
kukcvkp' 42' 4: Cni 42[gctu' 4; ARctn' GXGT"Ceeguuf 'P qxgo dgt'8."42340

4234d" Rrcp'I qwt'Xkuk'<Ej gnikc'F c{/Wug'Ctgc0j wr <ly y y qpr u0 qx lgxgt lr rcp{ qwtxkuklej gnikc'j vo 0'
Ceeguuf 'P qxgo dgt'8."42340

4234e" Rrcp'I qwt'Xkuk'<Uj ctn'Xcng{ "Xkukqt'Egpgt0'
j wr <ly y y qpr u0 qx lgxgt lr rcp{ qwtxkuklxf kgevkpuj vo 0Ceeguuf 'P qxgo dgt'8."42340

4234f" Dcugrpg"Co dlgpv'Uqwpf 'Ngxgu'lp'Gxgti rcf gu"Pcvkqpcn'Rctn0'Wpr wdrkj gf 'tgr qt v0

4235c" F tch/I gpgtenO cpci go gpv'Rrcp IGcu'Gxgti rcf gu'Y kf gtpgu'Uwf { IGpxkqpo gpvni'K0 r cev"
Ucvgo gpv"
j wr <lr ctnr rcpkpi qpr u0 qx lf qewo gpv0ho Ar ctn'F ? 596(r tqlge'F ? 33392(f qewo gpv'F ? 73
: ; 20'

4235d" Gxgti rcf gu'y gdukg'6"Kpxcukxg'Rrcpv'Ur gekgu'Tgo qxcn"
j wr <ly y y qpr u0 qx lgxgt lwr r qtv{ qwr ctnlpxcukxg/r rcpv'ur gekgu/tgo qxcn'j vo 0'

Pcvkqpcn'Kpukwng'qh'Gpxkqpo gpvni'J gcnj "Uekgegu"*P KGI U"

4224" GO H'Grgextle"cpf "O ci pgve"Hgrf u'cu'Cuuqekvuf 'y kj "Grgextle"Vtcpuo kulkqp0Pcvkqpcn'
Kpukwng'qh'Gpxkqpo gpvni'J gcnj "Ugtxlegu"*P KGI U+0Qpripg"cv"
j wr <ly y y qpkj u0kj 0 qx lj gcnj lf qeulgo h/240 f h0Lypg0

Pgy "Uqwj 'Cuuqekvuo'

422; " Rj cug'3"Ctej cgrqi lecn'Uwtxg{ 'hqt'c'8/O kg'Hqtkf c'Rqy gt'cpf 'Nki j v'Eqttkf qt.'Gxgti rcf gu"
Pcvkqpcn'Rctm'O lco kF cf g'Eqwpv{ "Hpcn'Tgr qt v0Cwi wuv'49."422; 0

Pcvkqpcn'Kpukwng'qp'F gchpguu'cpf "Qvj gt'Ego o wplecvxg'F kqtf gtu"*P KEP F +"

pff 0Ego o qp"Uqwpf u0Cxcldng"cv0'
j wr <ly y y qpkf ef qkj 0 qx lj gcnj lgf wecvkp kgcej gtulr ci gukego o qpauqwpf u0ur z0'

Tghgtgpegu"

Rhgwhgt. 'T00'

422; " Rguvkef g'Uwthceg'Y cvgt'cpf 'Ugf ko gpv'S wrkv{ 'Tgr qt v0UHY O F . 'Y guv'Rcm 'Dgcej . 'HN0'

4233" Rguvkef g'Uwthceg'Y cvgt'S wrkv{ 'cpf 'Ugf ko gpv'S wrkv{ 'Tgr qt v'Cr tkl'4233'Uco r npi 'Gxgpv0'
Uqwj 'Hqtkf c'Y cvgt'O cpci go gpv'F kntkv0'

Rkxu. 'Lgppkgt'O 0cpf 'Vj qo cu'Q0Lcemqp"

4229" Rqy gt 'Nkpgu'cpf 'Rtqr gt v{ 'Xcnwgu'Tgxkukgf 0Gpxkqpo gpv'cpf 'y g'Cr r tckugt0Hcm0Rr '545/
5470Cxcckrdng< j wr <ly y y 0gcn/cpcn{ vku0eqo IVCLHcm29r 0545/5470 f h0'

Tgj ci g. 'L00'cpf 'L0E0Vtgzgrgt"

4228" Cuugukpi 'y g'pgv'ghge'v'qh'cpvj tqr qi gple'f kwwtdcepeg'qp'cs wvke'eqo o wpxkku'lp'y gvrpf u<
eqo o wpxk{ 'utwewtg'tgrv'xg'vq'f kucpeg'htqo 'ecpcnu0Hydrobiologia0*4228+78; <57; 65950'

Tlej vgt. 'Y 0'

3; : : " A Preliminary Report on Wildlife in the Bird Drive Everglades Basin. Dade County,
Department of Environmental Resource Management0P qxgo dgt'45.'3; : : 0*tgxkugf +0'

Tquu. 'O 00'F 0N0Tggf. 'L0R0Ucj. 'R0N'Twk{ 'cpf 'O 0V0Ngy kp"

4225" Xgi gvcvkqp< gpxkqpo gpv'tgrv'kpuj k u'cpf 'y cvgt'o cpci go gpv'kp'Uj ctm'Uqwi j. 'Gxgti rcf gu'
P cvkqpcn'Rctm0Wetlands Ecology and Management'33<4; 3/5250'

Uekpeg'Eqqtf kpcvkqp'Vgco '*UEV+'

4225" Uekpeg'Eqqtf kpcvkqp'Vgco <'Uqwj 'Hqtkf c'Gequ{ ugo 'Tguvqtcvkqp'Y qtnkpi 'I tqwr 0Vj g'tqrg"
qh'hqy 'kp'y g'gxgti rcf gu'tkf i g'cpf 'uqwi j 'ncpf uecr g0Gzgew'xg'Uwo o ct{ 0*Cr r tqxgf 'd{ 'y g'
Uekpeg'Eqqtf kpcvkqp'Vgco "qp'36'Lcpwct{ '4225+0'

Uqwj 'Hqtkf c'Gequ{ ugo 'Tguvqtcvkqp'Vcun'Hqteg'*UHGT VH+'

422: " Uqwj 'Hqtkf c'Gpxkqpo gpvcn'Tgr qt v0VTCEM0P I 'UWEEGUU'422: <Dkppken'Tgr qt v'qh'y g'
Uqwj 'Hqtkf c'Gequ{ ugo 'Tguvqtcvkqp'Vcun'Hqteg'4228/422: 0F tch0Cxcckrdng'qp'y g'lpvgtpgv<
j wr <ly y y 0htguvgtg0qti 10'

Uqwj 'Hqtkf c'Tguvqtegu'Egpvgt'cv'Gxgti rcf gu'P cvkqpcn'Rctm'

4233" Gxgti rcf gu'P cvkqpcn'Rctm'Eqrmpken'Y cf kpi 'Dkf 'P guv'kpi 'O qp'kqtkpi 'F cvc0'

Uqwj 'Hqtkf c'Y cvgt'O cpci go gpv'F kntkv'*UHY O F +'

pf 0' Rgppuueq'O kki cvkqp'Ctgc'Qxgtxkgy 0Cxcckrdng'cv'
j wr <ly y y 0hy o f 0 qx lr qtv'cnlr ci glr qtv'cnlztr qukqt{ lhy o f atgr qukqt{ ar f hlr gppuueqaqxgt
xkgy 0 f h'Ceeguugf "qp'Cr tkl'46.'42350'

422; " 422; 'Uqwj 'Hqtkf c'Gpxkqpo gpvcn'Tgr qt v'O ctej '3.'422; 0UHY O F . '5523'I wp'Enwd'Tqcf . "
Y guv'Rcm 'Dgcej . 'Hqtkf c'556280Cxcckrdng'qp'y g'lpvgtpgv< j wr <ly y y 0hy o f 0 qx lhgto'

4233c" UHY O F '4226/27'NENW0Rgtuqpenl' gqF cxcdcug'Hgcwtg'Emuu042280I KU'F cxc0*Cu'wrf cvgf "
 kp"4233+'Cxcxkrdng"cv"
 j wr <lo { 0lhy o f 0 qx lr qcr r ulhy o f zy gdf elf cxcxky 0ur As wgt { ? wps akf ? 3: 350

4233d" 422; "UHY O F 'Rj qvqlpvgr tgcwqp'Mg{ . 'Xgtukqp'307.'Cwi wuv'24.'42330Cxcxkrdng"qprkpg"cv"
 j wr <ly y y 0 cr y kug0eqo lo cr ulhqtlf c lf qeu422; aRKMg{ 0 f h'Ceeguugf "qp'O ctej "33."42350

4234c" Uqwj 'Hqtlf c'Y cvgt'O cpci go gpv'F kxtlev0Cdqw'Wu0]Qprkpg_ "
 j wr <ly y y 0lhy o f 0 qx lr qtvnlr ci glr qtvnlhy o f o clp lj qo g' 42r ci g'JNcu'ceeguugf <
 P qxgo dgt'7."4234_0'

4234d" Dktf 'F tkg' Dculp'Wrf cvg0Dcemi tqwpf 'cpf 'Ewtgvp'Ucwu0Rtgugpvwqp0F gego dgt'36."42330
]Qprkpg_ "
 j wr <lo { 0lhy o f 0 qx lr qtvnlr ci glr qtvnlztr quksqt { lhy o f atgr quksqt { ar f hldf twr f cvgagda34
 a36a330f h'JNcu'ceeguugf <P qxgo dgt'7."4234_0'

4235" F DJ [F T Q'F cxcdcugô Y cvgt'S wcrk{ 'cpf 'Qvj gt'Uco r ng'F cxc0Hqt'uco r r kpi 'ucwkp'u/555."
 UCHCTK'cpf 'VCO DT0Ceeguugf 'cv'
 j wr <ly y y 0lhy o f 0 qx lr qtvnlr ci glr qtvnlzy gd' 42gpxkqpo gpvni 42o qpkqtkpi lf dj { f tq'
 42cr r rlecwqp0'

U\pgu.'F 0

4233" Geqpqo le'Dgpgkhu'q'NqecniEqo o wpskgu'htqo 'P cwkqpen'P ctni'Xluskwqp'cpf 'Rc{ tqn0'
 Rtgr ctgf 'hqt'yj g'P cwkqp'RctniUgtxleg0Cxcxkrdng<
 j wr <ly y y 0cwtg0r u0 qx lqelcnekpegglf qeuP RUU{ ugo Guko cygu42320f h0Ceeguugf "
 Hgdtwct { '42350

Vko o .'T0'cpf 'L0Cttq{q/Ecdtcrgu"

422: " Eumops floridanus0k<KWE'P "42340KWE'P 'Tgf 'Nku'qh'Vj tgcvgpgf 'Ur gelgu0Xgtukqp'4234040'
 >y y y 0wptgf rku0ti 00F qy pncf gf "qp'37'P qxgo dgt'42340'

Vtgzrgt.'L0E0'Y (H0Nqhwu.'H0Lqtfc p.'L0L0Nqtgpl .'L0 0Ej kem"cpf 'T00 0Mqd| c"

4222" Go r klceniCuuguwo gpv'qh'Hkuj 'Kptqf wewqp'u'P'Uwdtqr keni'Y gvrpf u<Cp'Gxcnwkwqp'qh"
 Eqpvcukpi 'Xlgy u0Biological Invasions"4-487/4990'

Vtqr keniCwf wdqp"

4235" Uqwj 'Hqtlf c'Dktf lpi 'Nqecwkp'u0Cxcxkrdng"cv"
 j wr <ly y y 0tqr kcnwfw dqp0ti lqecwkp'u0 vo n0m'Ceeguugf "qp'Cr tki'. "42350

WU0Cto { 'Eqtr u'qh'Gpi kpggtu"*WUCEG+ "

3; ; 4" General Design Memorandum and Environmental Impact Statement, Modified Water
 Deliveries to Everglades National Park0WU0Cto { 'Eqtr u'qh'Gpi kpggtu.'Lcemuqpxkng'F kxtlev."
 Lcemuqpxkng.'HNO

4227" Egpvcni'cpf 'Uqwj gtp'Hqtlf c'Rtqlgev'O qf kkgf 'Y cvgt'F grkxgtkgu'q'Gxgti rcf gu'P cwkqpen'
 Rctm'TI TT IUGU.'Gpi kpggtkpi 'Cr r gpf kz 'hqt'yj g'Vco lco K'Vtcki'O qf klecwkp'u.'F tch'Hkpen'

Tghgtgpegu"

Uwdo kwen'Cngtpevkxg"32"*Egptcnh:"Lwn' ". "42270WUOCto { 'Eqtr u'qh'Gpi kpggtu."
Lcemupxkmg'F kntlev'Lcemupxkmg.'HN0'

422; " O qpkqtkpi "qh'Y qqf 'Uqtmicpf 'Y cf lpi 'Dkf 'Tgr tqf wevkp'lp'Y ECu'3."4."cpf '5"qh'y g"
Gxgti ncf gu0'

4232" O qpkqtkpi "qh'Y qqf 'Uqtmicpf 'Y cf lpi 'Dkf 'Tgr tqf wevkp'lp'Y ECu'3."4."cpf '5"qh'y g"
Gxgti ncf gu0'

WUOCto { 'Eqtr u'qh'Gpi kpggtu"*WUCEG+"cpf "WUOGpxkqpo gpvcn'Rtqgevkp'Ci gpe{ "*"WUGRC+"}

3; ; 5" *Technical Summary Document for"The Advance Identification of Possible Future Disposal
Sites and Areas Generally Unsuitable for Dredge and Fill Material in North East Shark
River Slough (NESRS). "WUOGpxkqpo gpvcn'Rtqgevkp'Ci gpe{ "Tgi kqp'KX"lp'eqplwpevkp"
y kj "WUOCto { 'Eqtr u'qh'Gpi kpggtu.'Lcemupxkmg'F kntlev'F gego dgt'3; ; 50*

WUOCto { 'Eqtr u'qh'Gpi kpggtu"*WUCEG+"cpf "WUOI gqmqi kecn'Uwtxg{ "*"WUI U+"}

4232" Y cf lpi 'Dkf 'Eqmnp{ 'Nqecvkp.'Uk g.'Vko lpi "cpf 'Y qqf 'Uqtmicpf 'Tqugcwg'Ur qppdln'
Tgr tqf wevkxg'Uweegu0'

WUOCto { 'Eqtr u'qh'Gpi kpggtu"*WUCEG+"cpf "P cvkqpcn'Rctm'Ugtxleg"*P RU+"}

422: " O qf kkgf 'Y cvgt 'F grkxgtkgu'q'Gxgti ncf gu'P cvkqpcn'Rctm'Vco kco k'Vtckn'O qf kkecvkpu'Hkpcn'
Nko kgf 'Tggxcnecvkp'Tgr qtv'cpf 'Gpxkqpo gpvcn'Cuuguuo gpvOCxckrdng'qp'yj g'lpvgtpevkxg"
j wr <ly y y 0ucl0uceg0to { 0 knlfr lo y f gpr/'e333 lpf gz0 wo 0458'r r 0'

WUODwtgcw'qh'Geqpqo le'Cpcn'uku'

4234" Tgi kqpcn'Geqpqo le'Ceeqwpvu.'Nqecn'Ctgc'Rgtuqpcn'Kpego g"cpf 'Go r mq{ o gpv.'3; 8; "q'4232."
Vcdng'EC47P'Vqvcn'hwm'vko g"cpf 'r ctv'vko g"go r mq{ o gpv'd{ 'P CKEU'lpf wwt{ 0Kpvtcevkxg"
y gdukxg->j wr <ly y y 0lge0 qx lKvcdng lKvcdng0ho ATgs KE ?92(ugr ?3(kwtk23(cetfp?70'

WUOEgpuwu'Dwtgcw'

4222" Uwo o ct{ 'Hkg'30I gpgtcn'F go qi tcr j le'Ej ctcevgtknku0'
j wr <lhcev'lpf gt40egpuwu0 qx lhcegulpcx lluhl ci gulugctej tguwmu0j vo nAghtguj ? 0Ceeguugf "
Qevqdtg'52."42340'

4232c" Uwo o ct{ 'Hkg'30I gpgtcn'F go qi tcr j le'Ej ctcevgtknku0'
j wr <lhcev'lpf gt40egpuwu0 qx lhcegulpcx lluhl ci gulugctej tguwmu0j vo nAghtguj ? 0Ceeguugf "
Qevqdtg'52."42340'

4232d" Co gtkecp'Ego o wpx{ 'Uwtxg{ '7/[gct'Gunko cvgu."4228/42320Ugrgevgf 'J qwulpi "
Ej ctcevgtknku0."42320Cxcckrdng->
j wr <lhcev'lpf gt40egpuwu0 qx lhcegulcdngugtlegulluhl ci gulr tqf wevkgy 0j vo nA kf ?CEUa32a
7[TaFR26(r tqf V{r g? vcdng0Ceeguugf "Qevqdtg'52."42340'

WUFC'P cvkqpcn'Ci tlewnwtcn'Ucvknku0'Ugtxleg"*P CUU+"}

4235" Etqr ncpf u'F cvc'Nc{ gt0]Qprkpg_j wr <ly y y 0pcuu0wuf c0 qx ltgugctej lEtqr ncpf lUCTU3c0j vo "
]NcuV'Ceeguugf <50605_0'

Tghgtgpegu"

4234c" Wrfcvg'Cffgpfwo 'q'WUHY UEqpewttgpeg'Ngwgt'f'cv'f'Lcpwct{'47."4232"Vq'WUUCto { "
Eqtru'qh'Gpi kpggtu'Tgi ctf lpi 'Wug'qh'y'g'cwcej gf 'Gcuvgtp'kpf ki q'Upeng'Rtqi tco o cve'Ghgev"
F gvgto kpcvkp'Mg{ 0Ceeguugf 'qprkpg'cv<
j wr <ly y y 0y u0 qx kgtqdgcej I gr vkguRF Hu42322347antaHY UaEQGaeqpewttgpegaHCa28
64aRtqi aGKaMg{ ay awrfcvgaeqxgt0 f h'qp'P qxgo dgt'37."42340'

4234d" RRe'6'kphqto cvkqp.'Rrpplpi . 'cpf 'Eqpugtxcvkqp'U{ ugo <Gpxktqpo gpwn'Qprkpg'Eqpugtxcvkqp"
U{ ugo 0Ceeguugf 'qp/rkpg'cv<'j wr <lgequ0y u0 qx lkr cel'qp'P qxgo dgt'34."42340'

Wpkgf 'Ucvgu'Hkuj 'cpf 'Y krf rkhg'Ugtxleg'*WUHY U+'cpf 'P cvkqpcn'O ctkpg'Hkuj gtlgu'Ugtxleg'*P O HU"

3; ; : " Gpf cpi gtgf 'Ur gelgu'Eqpuwncvkqp'J cpf dqqm'Rtqegf wtgu'hqt'Eqpf wevpi 'Eqpuwncvkqp'cpf "
Eqphgtgpeg'Cevxkkgu'wpf gt'Ugevqp'9'qh'y'g'Gpf cpi gtgf 'Ur gelgu'Cev0O ctej '3; ; : . 'Hkpcn0'
j wr <ly y y 0y u0 qx lgp cpi gtgf lguclrdtct { lrf hlgucaugevkqp9aj cpf dqqn0 f h0'

WU0Hqtguv'Ugtxleg'*WUHU+

3; ; 7" Ncpf uecr g'Cguj g'leu<'C'j cpf dqqnihqt'Uegpgt { 'O cpci go gpv0WUF C'WUHU0Ci tlewnwtg"
j cpf dqqnIP wo dgt'9230F gego dgt'3; ; 70'

WU0I gqmi lecn'Uwtxg{ '*WUI U+

4222" O gtewt { 'lp'y'g'Gpxktqpo gpv<'Hcev'Uj ggv368/220Qevqdgdt'42220Ceeguugf 'P qxgo dgt'38."
4234'cv'j wr <ly y y 0wi u0 qx hj go gulhceuj ggv368/220'

4233" Y cf lpi 'Dkf'Eqmp{ 'Nqecvkqp.'Uk g.'Vlo lpi 'cpf 'Y qqf 'Uqtn'cpf 'Tqugcv'Ur qqpdkm'
Tgr tqf wevkg'Uweegu0'

Wpkxgtuk{ 'qh'Hqtkf c'Dwtgcw'qh'Geppqo le'cpf 'Dwukpguu'Tgugctej '*WH'DGDT +0'

422: " Hqtkf c'Ucvkulecn'Cduwce0'

4234" O kco kFcf g'Eqwpv{ 'F cv'Uwo o ct { 'Uj ggv0Cxcrcdng<
j wr <ly y y 0lgt0w0f wlf cv leqwpv{ lcn0Ceeguugf 'Qevqdgdt'52."42340'

Y qtrf 'J gcnj 'Qti cpl cvkqp'*Y J Q+

3; ; ; " I wk gkpgu'hqt'Ego o wkv{ 'P qlug0j wr <ly j s rldf qe0j j q0pvj s B; ; ; lc8: 8940 f h0'

RgtuqpcnEqo o wplecvkpu'

Cpf gtuqp.'T0*Gxgti rcf gu'P cvkqpcn'Rctm'

4234" Rgtuqpcn'eqo o wplecvkqp'y kj 'Ncpf qp'Xkpg'qh'y'g'Nqwu'Dgti gt'I tqwr.'xlc'vgrgr j qpg."
tgi ctf lpi 'Hktg'o cpci go gpv'qr gtcvkpu'cv'Gxgti rcf gu'P cvkqpcn'Rctn0O c{ '44."42340'

Dtcwp.'H0*HRN+

42340' 'Rgtuqpcn'eqo o wplecvkqp'xlc'vgrgr j qpg'y kj 'P cpe{ 'Xcp'F { ng'qh'y'g'Nqwu'Dgti gt'I tqwr'cpf "
Dtkgp'Ewj cpg'qh'P RU'tgi ctf lpi 'cetgu'qh'f kwwdcpeg'cpf 'rkpg'rgpi y u'v'ercrk{ 'f cv'r tqxkf gf "
vq'y'g'P RU'lp'tgur qpug'v'f cv'pggf u'cpf 'v'f tqxkf g'tgcuqpcdng'guw0 cvgu'qh'ctgcu'qh'

fkwtdcepeg'hqt'r cf u'cpf "ceeguu'tqcf u'hqt'i gpgtcn'eqo r ctkuqp'co qpi 'tqwgu0P qxgo dgt'48."
42340'

Ecwtq.'100'

4235" Go cklhtqo 'Lqhtg'Ecwtq.'Gxgti ncf gu'P cvkqpcn'Rctm"vq'O cti ctgv'Ugy ctv.'Nqwu'Dgti gt'I tqwr "
lp'hqmvy 'wr "vq'ugxgtcn'gctrktg'r j qpg'eqpxgtucvku'cdqwy' cvgt's wcrk{ 'ko r ceu0Lxpg'3; ."
42350'

Ewppkpi j co .'E0*NDI +'

4234" Rgtuqpcn'eqo o wplecvkqp'xlc"go ckl'y kj 'P cpe{ 'Xcp'F { ng'qh'yj g'Nqwu'Dgti gt'I tqwr "
tgi ctf kpi 'hgrf "qdugtxcvku'cv'Dktf 'F tkxg'Dculp0Cwi wuv'43.'42340'

F gcp'V0'

4234" Y cf kpi 'Dktf 'P gukpi 'Eqmp{ 'F cve'r tqxkf gf 'd{ 'V{ ncp'F gcp'qh'P RU'lp'42340'

F gcp.'V0'cpf '10'Ucf ng'*Gxgti ncf gu'P cvkqpcn'Rctm:"

4234" Rgtuqpcn'eqo o wplecvkqp'y kj 'E0'Ewppkpi j co 'cpf 'P cpe{ 'Xcp'F { ng'qh'yj g'Nqwu'Dgti gt "
I tqwr 'tgi ctf kpi 'ur geku'lp'yj g'ctgc'qh'cpcn{ uku0P qxgo dgt'34.'42340'

Hqkuv.'D0'*Gxgti ncf gu'P cvkqpcn'Rctm:"

4234" Rgtuqpcn'eqo o wplecvkqp'y kj 'Ncpf qp'Xkpg'qh'yj g'Nqwu'Dgti gt'I tqwr .'xlc'vgrgr j qpg."
tgi ctf kpi 'rcy "gphqtego gpv'qr gtcvku'cv'Gxgti ncf gu'P cvkqpcn'Rctn0Lwn{ '8.'42340'

I qtcn'Ego 'U0*W0U0Cto { 'Eqtr u'qh'Gpi kpggtu+'

4235" Rgtuqpcn'eqo o wplecvkqp'y kj 'F cp'Mko dcm'Uwr v0qh'Gxgti ncf gu'P cvkqpcn'Rctm'xlc"go ckn "
tgi ctf kpi 'ucwuu'qh'vgo r qtet{ 'gcugo gpu'hqt'yj g'Vco lco k'Vtcki'Qpg/O krg'Dtkf i g0Ugr vgo dgt "
7.'42350'

Mhpg'10'

422: " Rgtuqpcn'eqo o wplecvkqp'y kj '10'Mhpg0Gxgti ncf gu'P cvkqpcn'Rctm'Dkqmqi kuv'tgi ctf kpi "
pqppcvkxg'cr r ngupcku0422: 0'

Ncy tgpeg.'10'

4235" Rgtuqpcn'Eqo o wplecvkqp'y kj 'Lquj 'Uej pcdgn'Vj g'Nqwu'Dgti gt'I tqwr .'kpe0Cr tki'47yj .'42350'

O go qt{ .'O 0'*Gxgti ncf gu'P cvkqpcn'Rctm:"

4234" Rgtuqpcn'eqo o wplecvkqp'y kj 'Ncpf qp'Xkpg'qh'yj g'Nqwu'Dgti gt'I tqwr .'xlc'vgrgr j qpg."
tgi ctf kpi 'ewwtcn'tguqwtgu'qr gtcvku'cv'Gxgti ncf gu'P cvkqpcn'Rctn0Ugr vgo dgt'36.'42340'

Tghgtgpegu"

Okej gm'E0*Gxgti ncf gu'P cvkqpcn'Rctm"

4234" Rgtuqpcn'eqo o wplecvkqp'y kj 'Ncpf qp'Xlpg'qh'y g'Nqwu'Dgti gt'I tqwr.'xlc'vgrgr j qpg."
tgi ctf lpi 'Uqwj 'Hqtkf c'P cwtcn'T guqwtgu'E gpvgt'qr gtcvqpu'cv'Gxgti ncf gu'P cvkqpcn'Rctn0'
Ugr vgo dgt'36.'42340'

Uj gc"

4235" Rgtuqpcn'eqo o wplecvkqp'Lwpg'3;.'42350'Ecml'y kj 'GXGT'vgo "qp'ko rcev'cpcn{uku'uwo o ctkgu0'

Uqpgpuej glp.'T0'

4235" Rj qpg'f kuewukqp"qp'Lwpg'32.'4235'dgy ggp'Tq{ 'Uqpgpuj glp.'Gxgti ncf gu'P cvkqpcn'Rctm'cpf "
O cti ctgv'Ugy ctv'Nqwu'Dgti gt'I tqwr.'cdqw'ko rcew'qp'j' { f tqm{ { 'cpf'j' qy 'ewxgtu'y qwf "
cngt'uj ggvtqy 'r cwgtpu0'

Vc{ nqt.'I0*Gxgti ncf gu'P cvkqpcn'Rctm"

4234c" Rgtuqpcn'eqo o wplecvkqp'y kj 'Ncpf qp'Xlpg'qh'y g'Nqwu'Dgti gt'I tqwr.'xlc'vgrgr j qpg."
tgi ctf lpi 'gzqvk'r rpv'o cpci go gpv'cv'Gxgti ncf gu'P cvkqpcn'Rctn0'P qxgo dgt'3.'42340'

4234d" Rgtuqpcn'eqo o wplecvkqp'y kj 'Ncpf qp'Xlpg'qh'y g'Nqwu'Dgti gt'I tqwr.'xlc'vgrgr j qpg."
tgi ctf lpi 'gzqvk'r rpv'o cpci go gpv'cv'Gxgti ncf gu'P cvkqpcn'Rctn0'P qxgo dgt'4:.'42340'

Y j lugpcpv.'M0*Gxgti ncf gu'P cvkqpcn'Rctm"

4234c" "Rgtuqpcn'eqo o wplecvkqp'y kj 'Ncpf qp'Xlpg'qh'y g'Nqwu'Dgti gt'I tqwr.'xlc'vgrgr j qpg."
tgi ctf lpi 'r ctnlo cpci go gpv'cpf "qr gtcvqpu'cv'Gxgti ncf gu'P cvkqpcn'Rctn0'P qxgo dgt'4:.'42340'

4234d" "Rgtuqpcn'eqo o wplecvkqp'y kj 'Ncpf qp'Xlpg'qh'y g'Nqwu'Dgti gt'I tqwr.'xlc'vgrgr j qpg."
tgi ctf lpi 'r ctnlo cpci go gpv'cpf "qr gtcvqpu'cv'Gxgti ncf gu'P cvkqpcn'Rctn0'O c{ '47.'42340'

Y twdrkm'I0*WUHY U"

4234" Rgtuqpcn'eqo o wplecvkqp'dgy ggp'Iqj p'Y twdrkm'Wpkgf 'Ucvgu'Hkuj "cpf 'Y kf rkh'Ugtxleg."cpf "
V{ rnp'F gcp.'P cvkqpcn'Rctm'Ugtxleg.'xlc'g/o ckn'Qevdgt'52.'42340'

"

I NQUUCT["

Cevkqp 'Cngt pcvkxgô Cp "cngtpcvkxg"vj cv'r tqr qugu'c'f khtgtpv'o cpci go gpv'cevkqp"qt "cevqpu"vq'cf f tguu'vj g' r wtr qug. 'pggf. 'cpf "qdlgevkvxgu"qh'vj g'r rcp="qpg"vj cv'r tqr qugu'ej cpi gu'vq'vj g'ewtgpv'o cpci go gpv'o

Chgevgf 'Gpxkt qpo gpvô C'f guetkr vkp"qh'vj g'gzkvkpi "gpxktqpo gpv'vj cv'o c{ "dg"chgevgf "d{ 'vj g'r tqr qugf " cevqpp"62'EHI "3724087+0'

Cngt pcvkxgô Ego dkpcevqpu"qh'cevqpu"vq'cej kxg'vj g'r tqlgevu'r wtr qug'cpf "pggf "cpf "o gg'vqdlgevkvxgu'

Co dlepvô Gzkvkpi "cu'dceni tqwpf 'lp'vj g'uwtqwpf kpi "ctgc"qt "gpxktqpo gpv'r ctvkwrcn{ 'y kj 'tgi ctf "vq'ck " s wrcv{ "qt "pqkug'eqpf kkvpuo'

Co r j kdlcpô Cp{ "qh'c'emuu"Co r j kdlc+"qh'eqrf/dmqf gf 'xgtvdtcvgu'lpvgo gf kvv"dgw ggp'hkuj gu'cpf " tgr kvu'cpf "j cxkpi 'i kmgf "cs wvkv"qwp{ "cpf "ck/dtgc'vj kpi "cf wmuo'

Cpcgt qdleô P qv'eqpvckkpi "qz { i gp"qt "pqv'tgs wtkpi "qz { i gp'o

Cs wvkv'gpxkt qpo gpvô O ctkpg. "guwctkpg. "qt "htguj y cvgt "tguwtegu"vj cv'uw r qtv'cpko cn'cpf "r rcpv'ur gekguo'

Cs wvkv't guwteguô Y cvgt "dqf lgu'cpf "vj g'hqtc"cpf "hwpv"y kj kp'vj go o'

Ctej gqmj kecn't guwteguô Cp{ "o cvgtken'tgo pcpw"qt'r j { ulecn'gxkf gpeg"qh'r cu'vj wo cp'hkg"qt "cevkvkvxgu"qh' ctej gqmj kecn'lpvgt guv'lpemf kpi "vj g'tgeqtf "qh'vj g'ghgevu'qh'j wo cp'cevkvkvxgu"qp'vj g'gpxktqpo gpv'o'vj g{ " ctg'ecr cdng"qh'tgxgcnkpi "uelgpvkvle"qt "j wo cplvkv'lpvhtgo cvkqp"vj tqwi j "ctej gqmj kecn't guwtegu'0Cp{ "o cvgtken' tgo pcpw"qh'j wo cp'hkg"qt "cevkvkvxgu"cv'ngcu'322" { gctu'qh'ci g. "cpf "qh'ctej gqmj kecn'lpvgt guv'54'EHI " 44; 05*c+0'

Ctgc'qh'r qukdng't gmevvgf 'eqt t kf qtô Cp "ctgc'mecvvgf "gcu'qh'vj g'r ctnlkp'y j lej "r qukdng'hwwt g" eqputvkvqp"qh'tcpuo kvkqp"hpgu'o c{ "qeew'r gpf kpi "ur gekvkv'r tqlgev'ngxgn'f gekvkvpu't gmvvgf "vq'vj g'ncpf " gzej cpi g'o

Cxkcpô Rgtvckkpi "vq'dkfu"

Dguv'b cpci go gpv'tt cevlegu'DO Ruô DO Ru'ctg'ucvq/gh'vj g'ctv'o kki cvkqp"o gcuwtgu"vq'j gr "gpwvg"vj cv' qr gtcvkvpu'ctg'eqpf wvvgf "kp"cp "gpxktqpo gpvcm{ "tgr qpukdng'o cpggtODO Ru'ecp'dg'uko r ng. "uwej "cu'wug"qh" j c{ "dcngu'hqt "gtqvkqp'eqpvtqn"y j kvg"qy gtu'lpvqxkvxg'ewvkv /gf i g'o qpvkqt kpi "cpf "r tqf wvkvqp'vgej pqm{ lguo'

Dkqceewo wvkvqpô Vj g'ceewo wvkvqp"qh'c'uwduvpeg. "uwej "cu'c'vqzle'ej go kecn'lp'xctkvw'vkuwgu'qh'c" rkvkpi "qti cpluo 0Dkqceewo wvkvqp'vengu'r megv'y kj kp'cp'qti cpluo "y j gp'vj g'tcvq'qh'lpvcmg"qh'c'uwduvpeg'ku" i tgcvgt "vj cp'vj g'tcvq'qh'gzetgvkqp"qt "o gvcdqrlv'tcpvhtgo cvkqp"qh'vj cv'uwduvpeg'o

Dkf 'F t kvg'Dculpô Cp "ctgc'qh'xcepv'ncpf "uqwj "qh'Vco kco k'Vtckn'cpf "gcu'qh'Mtqo g'Cxgpgw"o cpci gf " hqt "vj g'r wtr qug"qh'tgej cti kpi "i tqwpf y cvgt "cpf "tguvkt kpi "y gvrcpf "j { f tqr cvgtpu'lp'vj g'Gxgti rcf gu'P cvkqpcn' Rctn'o

Ecpf kf cvg'ur gekgu'v'gf gt cnf ghpkvkvô C "ur gekgu'hqt "y j lej "vj g'WUOHkuj "cpf "Y kf rkv"Ugtxkv"j cu'qp" hkv'uw'hkvkpv'lpvhtgo cvkqp"vq'uw r qtv'c'r tqr qucn'vq'rkuv'vj g'ur gekgu'cu'gpf cpi gtgf "qt "vj tgcvgpgf. "dw'hqt " y j lej "r tqr qugf "t wgu"j cxg'pqv' { gv'dggp'kuwvgf o'

I mquuct { "

Eqf g'qhHgf gtcnTgi wvkwpuô Vj g'eqf kkecvkp"qh'v'j g'i gpgtcn'cpf 'r gto cpgpv'twgu'r wdrkuj gf 'lp'v'j g' Hgf gtcnTgi kngt'd { 'v'j g'gzgewkxg'f gr ctvo gpw'cpf 'ci gpekgu'qh'v'j g'hgf gtcn' qxgtpo gpvô

Eqwpekdqp'Gpxktqpo gpvcnS wvkw' 'EGS +ô Guvcdkuj gf 'd { 'Eqpi tgu'y kj lp'v'j g'Gzgewkxg'Qh'leg"qh" v'j g'Rtgukf gpv'y kj 'r cuuci g'qh'v'j g'P cvkqpcn'Gpxktqpo gpvcn'Rqrle { 'Cev'qh'3; 8; 0EGS 'eqqtf kpcvgu'hgf gtcn' gpxktqpo gpvcn'gh'qtu'cpf 'y qtmu'erqugn { 'y kj 'ci gpekgu'cpf 'qv'j gt 'Y j kxg'J qwug'qh'legu'lp'v'j g'f gxgnr o gpv' qh'gpxktqpo gpvcn'r qn'ekgu'cpf 'lp'k'k'v'kxguô

Eqpuwncvkwpuô Vj g'lpensukqp"qh'r wdrle"ci gpekgu'cpf 'ucn'g'j qrf gtu'lp'v'j g'r nppkpi 'r tqeguu'hqt'v'j g'r wtr qug" qh'r tqxkf lpi 'cf gs wcv'cwgpvkw'v'q'ucv'gf 'eqpegtpu'cpf 'gpuwtkpi 'r tqlgev'eqphqto k'f 'y kj 'gzkukpi " r tqvgevkwpuô

Eqtqpc'pqlugô P qlug'r tqf wegf 'd { 'j ki j /xqnci g'r qy gt 'h'p'gu'ecwugf 'd { 'v'j g'grgevtle'h'grf 'v'j g'r qy gt 'h'p'g" i gpgtcv'gu'd { 'ectt { lpi 'grgevtlek { 0Vj g'uqwpf 'o c { 'dg'q'wf gt 'h'v'j gtg'ku'lp'etgcugf 'o qluwg'gt' r qm'wcpw'lp" v'j g'ctô

Eqttlf qtô C'h'p'gct 'tcev'qh'ncpf 'ch'qt'f lpi 'r cuuci g'v'j tqwi j 'y j lej 't'cpuo kuukqp'h'p'gu'ecp'dg'lp'w'cngf 'cpf " qr gtcv'gf =eqpv'kpu'v'j g't'cpuo kuukqp'h'p'g'tki j v'q'h'y c { 0

Etgr wvewctô C'v'gto 't'ghgttkpi 'v'q'ur gekgu.'gur gekm { 'egt'v'kp'dcv'cpf 'kpugev.'v'j cv'ctg'cev'kxg'cv'f cy p'cpf " f wunô

Et'klecn'j cdlwvô Vj g'ur gekkle"ctgcu'y kj lp'v'j g'i gqi tcr j lecn'ctgc'qeew k'gf 'd { 'v'j g'ur gekgu'cv'v'j g'v'ko g'k'ku' r'k'ngf 'lp'cee'qtf cpeg'y kj 'v'j g'r tqxkukpu'qh'Ugevkw'ô'qh'v'j g'Gpf cpi gtgf 'Ur gekgu'Cev.'qp'y j lej 'ctg'h'qwpf " v'j qug'r j { 'ulecn'qt'dk'q'ni lecn'hgcw'gu'guugpv'kcn'v'j g'eqpugt'xcv'kw'p'qh'v'j g'ur gekgu'cpf 'y j lej 'o c { 'tgs v'ktg" ur gekn'o cpci go gpv'eqpukf gtcv'kwpu'qt' r tqvgevkw'p' =cpf 'ur gekkle"ctgcu'q'wukf g'v'j g'i gqi tcr j lecn'ctgc" qeew k'gf 'd { 'v'j g'ur gekgu'cv'v'j g'v'ko g'k'ku'r'k'ngf =v'j ku'ku'dcugf 'wr qp'c'f g'v'gto kpcv'kw'p'd { 'v'j g'Ugetgvt { 'v'j cv' uwe'j 'ctgcu'ctg'guugpv'kcn'hqt'v'j g'eqpugt'xcv'kw'p'qh'v'j g'ur gekguô

Ewvwt cnl'p'f uecr guô Ego d'kpcv'kwpu'qh'grgo gpw'lp'nmf lpi 'xgi gvcv'kw'p'."gct'y y qtmu.'tqcf u.'r cv'j u." dwkf lpi u.'x'kgy u.'cpf 'qv'j gt'ô cp/o cf g'cpf 'pcw'cn'hgcw'gu'v'j cv't'wn { 'tgr t'gugpv'qt'uw' i guv'c'r ct'v'ewct " gxgpv'qt'v'ko g'r g'k'qf 0

Ewvwt cnl' guqwt eguô Ctej gq'ni lecn'tcf k'k'qpcn'cpf 'dw'ku'gpxktqpo gpv't'guqwt'egu.'lp'nmf lpi 'ewvwt'cn' n'p'f uecr guô

Ewxgtvô C'y cvgt'eqpf w'k'eqo r tkugf 'qh'c'eqttwi cv'gf 'o gvcn'wdg'etquukpi 'wpf gt'c'tqcf.'ukf gy c'm'qt" get'y gp'go dcpno gpvô

Fgekdgô 'C'w'p'k'wugf 'v'q'gzr t'guu'v'j g'lp'v'g'puk { 'qh'c'ucv'wpf 'y cxgô

: 0'ls wctg'b kg'ctgcô C'ur ctugn { 'r qr wcv'gf 'ci t'lew'wtcn'eqo o w'p'k { 'h'qecv'gf 'qp'v'j g'gcv'gtp't'kpi g'qh'v'j g' Gxgti n'f gu.'lp'v'j g'i gpgtcn'ctgc'y j gtg'v'j g'HRN'Y guv'Ugeqpf ct { 'cpf 'Y guv'Rt'ghgttgf 't'q'wgu'f kxgti g'uqwj " qh'v'j g'r ctnô

Gcugo gpvô C'r qt'v'kw'p'qh'ncpf 'j grf 'd { 'qp'g'r tqr gt'v'f 'qy pgt'dw'y kj 'eqxgpcpw'lp'r n'eg'v'q'cm'qy "cp'q'y gt" gp'v'k { 'v'q'ô cng'wug'qh'v'j g'ncpf 'hqt'c'h'ko k'gf 'r wtr qug.'cu'tki j v'q'h'r cuuci gô

Geqni { ô Vj g'r cwgtp'qh't'grv'kwpu'dgy ggp'qti c'pluo u'cpf 'v'j gkt'gpxktqpo gpvô

Gequ{ ugo ô Vj g'eqo r rgz "qh'c'eqo o wpk{ "qh'qti cpluo u'cpf 'ku'gp xkqpo gpv'hwpevkqpkpi 'cu'cp'geqmqi kecn' wpkô'

Geqvppgô C"tcpukskqp"l qpg'dgvy ggp"vy q"gequ{ ugo uô'

Ggevt le'hgff uô Vj g'ur cegu'uwttqwpf kpi 'ej cti gf 'r ctvengu'y j lej "gz gt v'c'hqteg"qp"qy gt 'ej cti gf "qdlgeuô'

Gwtqr j lecvkqpô J cskpi 'y cvgtu'tlej 'kp'o kpgtcn'cpf "qti cple'pwtkcpw'y cv'r tqo qvg'c'r tqrkhtcvkqp"qh" r rcpv'hkg."gur gekm{ "cni cg."y j lej "qhggp'tgf wegu'y g'f kuqixgf "qz { i gp"eqpvgpô'

Gzqvleuô P qp/pcvkg"cpf lqt'kpxcukxg'r rcpv'cpko cni'ur gekuô'

Hcwpcô Cplo cni'qh'c'i kxgp'tgi kqp"cnngp"cu'c'y j qrg."

Hgf gtcnTgi kugtô Rwdkuj gf 'd{ 'y g'Qhleg"qh'y g'Hgf gtcnTgi kugt."P cvkqpcn'Ctej kxgu'cpf "Tgeqt f u" Cf o kpkwtcvkqp"PC TC+."y g'Hgf gtcnTgi kugt 'ku'y g'qhheknf ckn{ 'r wdkecvkqp'hqt'twgu."r tqr qugf 'twgu." cpf "pqvlegu"qh'hgf gtcn'ci gpekgu'cpf "qti cpl cvkqu."cu'y gni'cu'gz gewkxg'qtf gtu'cpf "qy gt 'r tgukf gpvken' f qewo gpvu"j wr <ly y y ô r qceeguô qx llt Hô'

Hqqf r rclpô C"pgctn{ 'hcv'r rclp'cmipi 'y g'eqwtug"qh'c'utgco "qt'tkgt 'y cv'ku'pcwtcm{ 'uwlgevvq'hqqf kpi ô'

Hqt cô Rcpv'hkg"ej ctcevgtkvke"qh'c'tgi kqpô'

Hqy ci g'gcuo gpvô Cp'gcuo gpv'y cv'cmuy u'cpqy gt "gpv{ "v'o cng'wug"qh'y g'rcpf 'hqt'y g'eqpxg{ cpeg" qh'y cvgtô'

Hqci gô verb"Vq'ugctej "cu'cpko cn'hqt'hqqf =dtqy ugô'

I gqi tcr j le'lphto cvkqp'u{ ugo "I KUô Cp{ 'u{ ugo 'y cv'ecr wtgu."uqtgu."cpcn{ | gu."o cpci gu."cpf " r tguvpw'f cv"y cv'ctg'hkngf "v'hqecvkqpô'

I tco lppkf ô I tcu/rkng"qt'eqo r qugf "qh'i tcuuguô'

I w{ 'y k gô C"vgpukqpgf "ecdng'f guki pgf "v'cf f "uwdkxk{ "v'c'htgg/uwcpf kpi "utwewtguô'

J cdkcvô Vj g'r meg"qt"gp xkqpo gpv'y j gtg'c'r rcpv'qt'cpko cn'pcwtcm{ 'kxguô'Ec p'dg'encuuhkf "cu'pgukpi " j cdkcv."hqtci kpi "j cdkcv."y kpgtkpi "j cdkcv."cpf "qy gt 'rkkg/e{ eng'f kxkukpuô'

J kugt le'utwewtguô Dwkf kpi u'qt "qy gt "o cp/o cf g'utwewtgu'tgr tguvpw'kxg"qh'c'r ctvewt'r gtkkf "lp" j kugt{ô'

J { f t le'uklô C"uqknhqto gf "wpgt"eqpf kkpqu"qh'hqqf kpi ."ucwtcvkqp."qt'r qpf kpi "hupi "gpqwi j "v'f gxgnr " cpcgtqdle"eqpf kkpquô'

J { f tqm{ { ô Vj g'uelgpv'le"uwf { "qh'y g'r tqr gtvgu."f kwtkdwkqp."cpf "ghgew"qh'y cvgt"qp'y g'gcty j u" uwthceg."lp'y g'uqki'cpf "wpgt n{ kpi "tqemu."cpf "lp'y g'cvo qur j gtgô'

Kô rcewô Vj g'rkng{ "ghgew"qh'cp'cev'kqp"wr qp"ur gekle"pcwtcn"ewmwtcn"qt"uqekqgeqpqo le'tguqwteguô' Kô rcewô c{ "dg'dgpghekn"qt'cf xgtug"cpf "f kgev."lpf kgev."cpf "Tqt'ewo wrcvkgô'

Kô rckto gpvô Cu'f ghkpgf "lp"PRUô cpci go gpv'Rqkkelgu."ôkô rckto gpvô"o gcpu'cp"ko rcev'y cv."lp'y g" r tqhguukqpcn'lwfi o gpv'qh'y g'tgur qpukdng"PRUô cpci gt."y qwrf "j cto "y g'lpvgi tkv{ "qh'r ctn'itguqwtegu"qt"

I rquuct{ "

xcnngu'lpemf lpi 'y g'qr r qtwpkkgu'yj cv'qy gty lug'y qwf 'dg'r tgugpv'ht'yj g'gplq{ o gpv'qh'yj qug'r ctm'
tguqwtegu'cpf 'xcnngu0'

Kpf kcp'Vt wu'Tguqwteguô Kpf kcp'twuw'cuugw'ctg'qy pgf 'd{ 'P c'kxg'Co gtlecpu'dw'j grf 'lp'twuw'd{ 'y g'
Wp'kgf 'Ucvgu0'

Kpxcukxg'ur gelguô Wuwcm{ 'pqp'pc'kxg'ur gelgu.'y j lej 'ecp'qweqo r gvg'pc'kxg'ur gelgu'ht'j cdkcv'cpf "
tguqwtegu0'

Lwt kuf levkpcerly gwrpf uô Y gwrpf u'y j lej 'o ggv'yj g'etkgtk'qh'öy cvgtu'qh'yj g'Wp'kgf 'Ucvguô'cpf 'ctg'
y'j gtd{ 'w'pf gt'yj g'lwtkuf levkqp'qh'yj g'Eqr u'cpf 'y'j g'WUGRC0Vj g'f gh'pkkqp'f gxgrqr gf 'd{ 'y'j g'Eqr u'
eqpukf gtu'cu'y gwrpf u'yj qug'ctgcu'y j lej 'öi ctg'lpw'pf cvgf 'qt'ucw'cvgf 'd{ 'uw'hc'eg'qt'i tqw'pf 'y'j cvgt 'cv'c'
ht'gs w'gpe{ 'cpf 'f'w'c'v'kqp'q'uwr r qtv'cpf 'y'j cv'w'pf gt'pqto c'ne'k'ewo ucpegu'f q'uwr r qtv'c'r tgxc'rgpeg'qh'
xgi g'v'kqp'v'f r lecm{ 'cf cr v'gf 'ht'ht'g'lp'ucw'cvgf 'uq'k'eqpf k'kqp'uô'W'pf gt'yj k'f'f gh'pkkqp.'cm'yj tgg'qh'yj g'
h'qm'y lpi 'eqpf k'kqp'uô wu'dg'r tgugpv'c'+c'f qo k'p'c'peg'qh'y gwrpf 'r r'p'w'c'+d+j { f t'le'u'q'ku'u'q'ku'y k'j 'h'y "
qz { i gp'eqpegpv'c'kqp'uô'lp'yj g'w'r gt'r'c' gtu'f w'kpi 'y'j g'i tqy lpi 'ugcuqp'c'p'f 'e+y gwrpf u'j { f tqm'i { 0'

Mg{ 'h'dugt xc'v'kqp'r q'lpv'MQRô Qpg'qt'c'ugt'kgu'qh'r q'kpw'qp'c'v'c'xgn'tqwg'qt'c'v'c'wug'ctgc'qt'c'r q'v'p'k'cn'
wug'ctgc.'y j gtg'yj g'x'kg'y 'qh'c'o cpci go gpv'cev'k'k'v{ 'y qwf 'dg'o quv'tgxg'cn'kpi 0'MQRu'ctg'v'f r lecm{ 'wug'f'cu'
x'kg'y r q'kpw'ht'cuugulpi 'r q'v'p'k'cn'x'kuw'cn'ko r ceu't'guw'kpi 'ht'qo 'c'r tqr qugf 'o cpci go gpv'cev'k'k'v{ 0'

Nqi ct'k'j o le'uecrgô C'uecrg'c'uecrg'qh'o gcuwt'go gpv'y j lej 'wugu'yj g'h'i ct'k'j o 'qh'c'r j { u'ecr'n's w'cp'v'k'v{ "
k'p'ugcf 'qh'yj g's w'cp'v'k'v{ 'k'ug'h'c'p'f 'y j lej 'ecp'dg'f'kur r'c' gf 'wulpi 'k'p'v'g'x'cm'e'q'tt'gur q'pf lpi 'q'q'f'gtu'qh'
o ci p'kw'f g.'tc'yj gt'yj cp'c'uc'p'f ctf 'h'p'gct'uecrg0'

O cetqr j { vgo Cp'cs w'c'le'r r'p'v'yj cv'i tqy u'lp'qt'p'gct'y cvgt'cpf 'ku'go gti gpv'u'wdo gti gpv'qt'h'q'cv'kpi 0'

O ci pg'v'le'h'grf ô C'eqpf k'kqp'h'q'w'pf 'lp'yj g'tgi k'p'ct'q'w'pf 'c'o ci pgv'qt'cp'g'rg'v'le'ewt'g'p'v'ej ctcevg'tk' gf "
d{ 'y'j g'gz'k'ng'peg'qh'c'f g'v'g'w'cd'ng'o ci pg'v'le'h'q'teg'c'v'g'x'gt { 'r q'k'p'v'lp'yj g'tgi k'p'c'p'f 'd{ 'y'j g'gz'k'ng'peg'qh'
o ci pg'v'le'r q'rgu0'

O co o c'no Cp{ 'qh'x'ct'k'q'u'y cto /dm'q'f gf 'x'gt'v'gd'tc'w'c'p'ko cnu'qh'yj g'ercu'O co o c'rk'c.'lpemf lpi 'j wo cpu.'
ej ctcevg'tk' gf 'd{ 'c'eq'x'gt'kpi 'qh'j c'k'q'p'yj g'um'k'p'f.'lp'yj g'h'go c'rg.'o k'm'r tqf w'ekpi 'o co o c't { 'i r'p'f u'ht' "
p'q'w'k'uj lpi 'y'j g'f'q'w'pi 0'

O c'tnô o w'f'j k'j 'lp'ec'ek'wo 0'

O ct'uj ô C'eqo o q'p'v'go 'c'r'r'rk'gf 'q'f'g'uet'k'g'v'tgg'rgu'y gwrpf u'ej ctcevg'tk' gf 'd{ 'uj cm'y 'y'j cvgt'cpf "
cdw'pf cpv'go gti gpv'h'q'cv'kpi.'cpf 'u'wdo gti gf 'y'j gwrpf 'h'q'tc'0V'f r lecm{ 'h'q'w'pf 'lp'uj cm'y 'd'cu'p'u'q'p'h'c'ng'
o cti k'p'u'cm'pi 'h'y 'i tcf l'gpv't'k'x'gtu.'cpf 'lp'ecm 'w'f'c'nt'c'g'u0O ct'uj gu'o c{ 'dg'ht'g'uj.'d'tcen'k'uj 'qt'uc'rk'p'g.'
f gr g'pf lpi 'q'p'yj g't'yj cvgt'u'qwt'eg'u0'

O g'rc'ng'wecô C'i gpw'qh'r r'p'w'lp'yj g'o { t'v'g'h'co k'f 'O { t'w'ceg'g'yj cv'ku'np'qy p'v'q'dg'c'p'q'p'pc'v'k'x'g'lp'xcuk'x'g'
ur gelgu'lp'u'q'w'j gtp'H'q'tk'f'c."

O g'yj { r'v'k'p'ô Vj k'u'r t'q'eg'u'e'q'p'x'gt'u'lp'q'ti c'p'le'o g'tewt { 'v'q'o g'yj { m' g'tewt { 'lp'yj g'p'c'w'c'cn'g'p'x'k'q'p'o gpv' "
o g'tewt { 'ku't'c'p'uh'q'to gf 'lp'v'q'c'h'q'to 'y'j cv'ecp'dg'ce'ewo w'c'v'gf 'lp'yj g'o w'eng'c'p'f 'h'c'w{ 'ku'w'g'qh'h'k'uj 0'

O li t'cv'qt { 'h'k'f uô D'k'f u'yj cv'o q'x'g'r g't'k'f'f lecm{ 'ht'qo 'q'p'g't'gi k'p'v'q'c'p'q'yj gt'ht'h'gg'f lpi.'d'tgg'f lpi.'qt"
y'j k'p'v'gt'kpi 0'

O kki c v k q p ô ôO kki c v k q p ô "cu'f ghkpgf 'lp'yj g'P c v k q p c n l G p x k t q p o g p w c n l R q r l e { 'C e v * 6 2 ' E H T ' E ' 3 7 2 : 0 4 2 + . " k p e n f g u < c x q k f l p i ' y j g ' l o r c e v c n q i g y j g t ' d { ' p q v ' c n l p i ' c ' e g t v c l p ' c e v k q p ' q t ' r c t v u ' q h ' c p ' c e v k q p = o l p k o k l p i " k o r c e v u ' d { ' h o k k p i ' y j g ' f g i t g g ' q t ' o c i p k w f g ' q h ' y j g ' c e v k q p ' c p f ' k u ' K 6 r n g o g p w c v k q p = t g e w h { l p i ' y j g ' l o r c e v ' q h ' t g r c k l p i . ' t g j c d k x c v k p i . ' q t ' t g u q t l p i ' y j g ' c h g e v g f ' g p x k t q p o g p v ' t g f w e l p i ' q t ' g r k o l p c v k p i ' y j g ' l o r c e v ' q x g t " v k o g ' d { ' r t g u g t x c v k q p ' c p f ' o c k p v g p c p e g ' q r g t c v k q p u ' f w t l p i ' y j g ' r h g ' q h ' y j g ' c e v k q p = e q o r g p u c v k p i ' h q t ' y j g " k o r c e v ' d { ' t g r m e k p i ' q t ' r t q x k f l p i ' u w d u k w w g ' t g u q w t e g u ' q t ' g p x k t q p o g p w u ' }

P c v k q p c n l G p x k t q p o g p w c n l R q r l e { ' C e v * P G R C + ô C p ' g p x k t q p o g p w c n l r y " g p c e v g f ' l p ' 3 ; 8 ; ' y j c v ' g u c d r k u j g f ' c " p c v k q p c n l r q r l e { ' r t q o q v k p i ' y j g ' g p j c p e g o g p v ' q h ' y j g ' g p x k t q p o g p v ' c p f ' c n u q ' g u c d r k u j g f ' y j g ' R t g u k f g p w u " E q w p e k n l q p ' G p x k t q p o g p w c n l S w e k v { * E G S + 0 V j g ' o q u v ' u k i p k l e c p v ' g h g e v ' q h ' P G R C ' y c u ' v q ' u g v ' w r ' r t q e g f w t c n l ' t g s w k t g o g p w u ' h q t ' c n l h g f g t c n l i q x g t p o g p v ' c i g p e k u ' v q ' r t g r c t g ' g p x k t q p o g p w c n l o r c e v ' u c v g o g p w u ' }

P c v k g ' C o g t l e c p ô C p { ' q h ' y j g ' l p f k i g p q w u ' r g q r r g u ' h k l p i ' y k j l p ' y j g ' W p k g f ' U c v g u ' }

P c v k g ' r r c p v ' e q o o w p k l g u ô k p v g t f g r g p f g p v ' e q o r r g z g u ' q h ' p c w t c m l ' q e e w t t l p i ' x g i g v c v k p . ' y j k e j ' p q w t k u j " p c v k g ' y k f r h g ' c p f ' y j k e j ' t g s w k t g ' u r g e k h e ' u q k r l e q p f k k q p u ' c p f ' q y j g t ' j c d k c v ' e j c t c e v g t k u k e u ' v q ' u w t x k g 0 ' }

P q / c e v k q p ' c n g t p c v k g ô C p " c n g t p c v k g ' y j c v ' o c k p v c l p u ' g u c d r k u j g f ' c e v k q p u ' q t ' o c p c i g o g p v ' f k t g e v k q p 0 ' }

P q t v j ' C o g t l e c p ' X g t v l e c n l F c w o * P C X F + ô C m l g r g x c v k q p u ' r t g u g p v g f ' l p ' y j k u ' G K U l G K T ' c t g ' d c u g f ' q p ' y j g " P C X F : : 0 P C X F : : ' t g r m e g f ' P c v k q p c n l g q f g v k e ' X g t v l e c n l F c w o ' q h ' 3 ; 4 ; * P I X F ' 4 ; + c u ' c ' t g u w n ' q h ' i t g c v g t ' c e e w t c e { ' c p f ' y j g ' c d k k v { ' v q ' c e e q w p v ' h q t ' f k h g t g p e g u ' l p ' i t c x k c v k q p c n l h q t e g u ' l p ' f k h g t g p v ' c t g c u ' d c u g f " q p ' u c v g n k g ' u { u g o u 0 P C X F : : ' k u ' 2 0 8 ' h g g v ' r q y g t ' l p ' g r g x c v k q p ' y j c p ' P I X F ' 4 ; 0 ' }

Q i l i q t q r j l e ô N c e n l p i ' l p ' r r c p v ' p w t l g p w u ' }

Q t i c p k n u ô R r c p w u ' c p f ' c p k o c n u . " d c e v g t k . " c p f ' q y j g t ' h k l p i ' y j l p i u 0 ' }

R c n w u t l p g ' y g w r c p f u ô C n l p q p v k f c n l y g w r c p f u ' f q o l p c v g f ' d { ' t g g u . ' u j t w d u . ' r g t u k u g p v ' g o g t i g p v ' r r c p w u . ' q t " g o g t i g p v ' o q u u g u ' q t ' h e j g p u . ' c u ' y g n l ' c u ' u o c m ' u j c m u y ' q r g p / y c v g t ' r q p f u ' q t ' r q y q r g u 0 Q h g p ' e c m g f " u y c o r u . " o c t u j g u . ' r q y q r g u . " d q i u . " q t ' h g p u 0 ' }

R g c v ô Q t i c p l e ' f g r q u k ' h q t o g f ' h t q o ' f g e c { l p i ' r r c p v ' o c w g t ' w p f g t ' c p c g t q d l e ' e q p f k k q p u 0 ' }

R g p p u w e q ' y g w r c p f u ô V j g ' R g p p u w e q ' y g w r c p f u ' c t g ' h q e c v g f ' p q t v j ' c p f ' g c u v ' q h ' y j g ' r c t m ' i g p g t c m l ' d q t f g t g f " q p ' y j g ' y g u v ' c p f ' p q t v j " d { ' M t q o g ' C x g p w g . ' v q ' y j g ' u q w j ' d { ' V c o k c o k ' V t c k i * W U ' 6 3 + c p f ' v q ' y j g ' g c u v ' d { ' y j g " F c f g / D t q y c t f ' N g x g g 0 ' }

R g t g p p k n ô R g t u k u k p i ' h q t ' u g x g t c n l { g c t u . ' u w w c m l { ' y k j ' p g y ' j g t d c e g q w u ' i t q y y j 0 ' }

R g t l r j { v q p — C " e q o r r g z " o c v k z ' q h ' c n i c g " c p f ' j g v g t q t q r j l e " o l e t q d g u ' c w c e j g f ' v q ' u w d o g t i g f ' u w d u n t c v c ' l p " c m q u v ' c m l ' c s w c l e ' g e q u { u g o u . }

r J ô O g c u w t g ' q h ' y j g ' c e k f k l { " q t ' c m e n l p k l { * d c u l e k l { + q h ' y c v g t * r J ' 9 ' k u ' p g w t c n ' l p e t g c u k p i ' x c n w g u ' l p f l e c v g " c m e n l p k l { ' c p f ' f g e t g c u k p i ' x c n w g ' l p f l e c v g ' c e k f k l { + 0 ' }

R t g u e t k l g f ' d w t p u ' * h k g u ô V j g ' e q p t q m g f " c r r l e c v k q p ' q h ' h k g ' v q ' y j g ' r c p f ' v q ' c e e q o r r k u j " u r g e k h e ' r c p f " o c p c i g o g p v ' i q c n u 0 ' }

T e r v q t u ô D k f u ' q h ' r t g { = c p { ' d k f ' y j c v j ' w p w ' q y j g t ' c p k o c n u 0 ' }

I mquct{ "

Tgxgi gvcvkppô Tggucdrkuj o gpv'cpf 'f gxgnr o gpv'qh'ugrh/uwucvklpi 'r rcpv'eqxgt0Qp'f kuwtdgf 'uksu.'y ku' pqt o cm' 'tgs wktgu'j wo cp'cuukncpeg.'uwej 'cu'uggf dgf 'r tgr ctcvkpp.'tguggf lpi .'cpf 'o wrj lpi 0'

Tki j vqh/Y c{ô C'r tqr gtv' 'tki j v'y cv'cmjy u'ku'qy pgt'vq'o cng'uqo g'ur gekhkf 'wug'qh'rcpf 'y cv'ku' qy gty kug'qy pgf 'd{ 'cpqy gt.'uwej 'cu'c'tki j v'qh'r cuuci g0'

Ueqr lpi ô Ueqr lpi 'ku'c'r tqeguu'f wtkpi 'y g'lpkkn'r j cug'qh'r tqlgv'r rcpplpi 'vq'uggm'kpr w'htqo 'c'xctkgv' 'qh' uqwtgcu0Vj ku'kpr w'ku'wugf 'vq'kf gpvkh' 'kuwgu.'ctgcu'tgs wtkpi 'c'f f kkpccn'uwwf { .'cngtpcvkxg'o g'y qf u'cpf " mqcwkpu.'cpf 'vqr leu'vq'dg'cpcn' | gf 'lp'y g'P cvkqpcn'Gpxktqpo gpcn'Rqrke{ 'Cev'f qewo gpv0Ueqr lpi 'ku'f qpg" l'pvgtpcm' 'y kj 'P cvkqpcn'Rctm'Ugtxleg'uvch'cpf 'gz vgtpcm' 'y kj 'y g'lpvgtgugf 'r wdike.'qy gt 'ci gpeku.'cpf " uvcngj qrf gtu0'

Uku'lgpegô c'vgo r qtct{ 'ugf ko gpv'eqpvtqnf gxleg'wugf 'qp'eqpwtwvkpp'uksu'vq'r tqvgev'y cvgt's wcrkv' 'lp' pgctd{ 'utgco u.'tkxgtu.'hngu'cpf 'ugcu'htqo 'ugf ko gpv'iqqug'uqkn'lp'utqto y cvgt'twpqh0'

Unqwi j ô C'hqy /n' lpi 'ctgc'qh'rcpf 'y cv'ej cppgu'y cvgt'y tqwi j 'y g'Gxgti rcf gu=guugpvkcm' 'c'o ctuj { 'tkxgt0' Vj qwi j 'y g' 'ctg'y g'o clp'cxgpwg'qh'y cvgt'hqy . 'y g'ewtgpvtgo clpu'ngkuwgn' . 'o qxkpi 'cdqww'322'hggv'52" o gvgtu+r gt'f c{ . "

Uqelqgeppqo leuô Tgrv'kpi 'vq'c'eqo d'kpcvkpp'qh'uqekn'cpf 'geppqo le'hrevqtu0'

Uqwpf uecr guô Vj g'qxgtcm'cw'kqt { 'ej ctcevgt'qh'cp'ctgc0'

Ur gekn'ucwuu'ur gelguô Rcpv'cpf 'cpko cn'ur gelgu'hgf gtcn' 'qt'ucvg'hkugf 'cu'gpcpi gtgf 'qt'y tgcvgpgf . 'qt' qy gty kug'lw'f i gf 'vq'dg'lp'pggf 'qh'r tqvgev'kpp0'

Ur gelgu'qhl'eqpegt p'igf gt cnf ghpkvkpp+ô Cp'lphtqo cn'vto 'y cv'tghgtu'vq'y qug'ur gelgu'y j kej "WUHY U" dgrdxgu'o ki j v'dg'lp'pggf 'qh'eqpegpvtcvf'eqpugtxcvkpp'cev'kpu0'Hqto gtn' 'hpqy p'cu'Ecvgi qt { '3'qt'4" Ecpcf kf cvg-0'

Vcnlpi 'r gt'Gpf cpi gt gf 'Ur gelgu'Cevô Ugevkpp"; 'qh'y g'Gpf cpi gtgf 'Ur gelgu'Cev'r tqj kdku'y g'övcn'kpi ô" qh'cp'gpcpi gtgf 'qt'y tgcvgpgf 'ur gelgu.'y j gtg'övcn'kpi ô'o gcpu'ö'vq'j ctcuu.'j cto . 'r wtuwg.'j wpx'uj qqv" y qwpf . 'hkn'xcr . 'ecr wtg.'qt'eqmgev.'qt'vq'cvgo r v'vq'gpi ci g'lp'uwej "eqpf wcv0"

Vtcpuo kukpp'ilpgô Utwewtg'y cv'ku'wugf 'vq'o qxg'rcti g's wcpv'kku'qh'r qy gt'cv'j ki j 'xqnci g'dgwy ggp" i gpgtcv'kpi 'qt'tgegxkpi 'r qkp'v'cpf 'o clqt'uwducv'kpu0'

Vwt dlf k{ô Vj g'tgrv'kxg'emtkv' 'qh'y cvgt.'y j kej 'f gr gpf u'lp'r ctv'qp'y g'o cvgt'kcn'lp'uwur gpukpp'lp'y g" y cvgt0'

Wpvtco o ggrf ô Kp'y g'Y kf gtpgu'Cev.'\$pqv'dgkpi 'uwldgev'vq'j wo cp'eqpvtqni'cpf 'o cplr wcv'kpu'y cv' j co r gt'y g'htgg'r n{ 'qh'pcwtn'htqegu0"

Y cvgt'eqpugtxcvkpp'ctgcô Ugevkppu'qh'Gxgti rcf gu'j cdkcv'f guki pcvf 'r tko ctkn' 'vq'tgegxg'hmqf 'y cvgtu" htqo 'cf lcegpv'ctgcu'cpf 'uvtg'y go 'hqt'dgpg'hkcn'o wplek cn'wtdcp.'cpf 'ci tlewnwtcn'wugu0Y ECu'ctg" o cpci gf 'hqt'o wnk'rg'wugu0Cuk'g'htqo 'r tqxkf lpi 'y kf rkh'j cdkcv.'y cvgt'htqo 'y g'Gxgti rcf gu'y cvgt" eqpugtxcvkpp'ctgcu'ku'wugf 'vq'tguqem'y cvgt'uw'r rkgu'ht'Uqwj 'Hqtkf c'eqo o wpkkgu0'

Y gvrpf uô Ncpf u'tcpuk'kqpcn'dgwy ggp'vgtgustkn'cpf 'cs wcv'le'u' u'vgo u.'y j gtg'y g'y cvgt'vcdrg'ku'wuwcm' 'cv' qt'pgct'y g'uwthceg'qt'y g'rcpf 'ku'eqxgtgf 'd{ 'uj cmjy 'y cvgt0Vj g'WUOCto { 'Eqr u'qh'Gpi l'pggtu'*Hgf gtcn' Tgi kugt.'3; : 4+cpf 'y g'Gpxktqpo gpcn'Rtqvgevkpp'Ci gpe{ '*Hgf gtcn'Tgi kugt.'3; : 2+!qlkpm' 'f ghkpg"

y gvrpf u'cu<Vj qug'ctgcu'yj cv'ctg'lpwpcvgf "qt'ucwtcvgf "d{ "uwlhceg"qt'i tqwvf "y cvgt'cv'c'htgs wgpe{ "cpf "
 f wtcvkqp'uwlhlegpv'q'uwr r qtv."cpf "yj cv'wpf gt"pqto cn'ekewo ucpegu'f q'uwr r qtv."c'r tgcxcgpeg'qh'xgi gvcvkqp"
 v{r lecm{ "cf cr vgf "hqt'rlhg'lp'ucwtcvgf "uqkileqpf kkkpu0Y gvrpf u'i gpgtcm{ "kpenwf g'uy co r u."o ctuj gu."dqi u."
 cpf "uko krt"ctgcu0'

Y kf gt pguuô Cp"ctgc"qh'wpf gxgnr gf 'hgf gtcn'rcpf 'tgvcvkpi 'ku'r tko gxcn'ej ctcevt "cpf 'kphwgpeg'y kj qw'
 r gto cpgpv'ko r tqxgo gpw'qt"j wo cp"j cdkcvcvkqp."y j lej 'ku'r tqvgevfg "cpf "o cpci gf "uq'cu'q'r tgugt xg'ku"
 pcwtcn'eqpf kkkpu0Uwej "ctgcu"ctg'f guki pcvgf "wpf gt'yj g'P cvkqpcn'Y kf gtpguu'Rt gugt xcvvkqp"U{ uvg0

I nquact{"

KPFGZ"

ci tlewnwtg."3."3."8." ; ."352."4; ; "

ck's wcrkv{."53."5: 7"

dgtf tqem"; 3."63: "

enko cvg"ej cpi g."55"

eqpuwncvqp."53."54."55."56."66."67."346."3; 6."499."4: 2."4: 3."4: 8."4: : ."4: ; ."4: 2."4: 5."4: 7."523."524."525."526."527."532."534."53: ."5: : ."5: 3."5: 7."5: 9."645."646."647."648."649."64: ."64: ."652"

equv"39."3: ."55."68."69."75."3: 5."623."627."633."634."635."637"

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