

National Park Service
Department of the Interior

Big Cypress National Preserve
Florida



Loop Road Improvements Finding of No Significant Impact

Based on the environmental analysis as documented in the EA, together with the capability of the mitigation measures to avoid, reduce, or eliminate impacts, and with the due consideration for the nature of public comments, the NPS has determined that the selected alternative is not a major federal action significantly affecting the quality of the human environment. Negative environmental impacts that could occur are no more than minor in intensity. There are no significant impacts on water quality, hydrology, wetlands, wildlife, special status species, or cultural landscapes. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the selected alternative will not violate any federal, state, or local environmental protection law.

Based on the foregoing, it has been determined that an environmental impact statement is not required for this project and thus will not be prepared.

Recommended:

A handwritten signature in black ink, appearing to be "Pedro Ramos", written over a horizontal line.

Pedro Ramos, Superintendent

12/8/10

Date

Approved:

A handwritten signature in black ink, appearing to be "David Vela", written over a horizontal line.

For David Vela, Regional Director
Southeast Region

12/22/10

Date

The National Park Service (NPS) has prepared an environmental assessment (EA) for the rehabilitation and repair of damage along 16.53 miles of Loop Road, one of the main scenic drives through Big Cypress National Preserve (Preserve). This road provides access to the Loop Road Education Center and is used by thousands of visitors each year, up to 371 per day. The road is also the only access route for some of the owners of land within Preserve boundaries (private inholders). The project area encompasses the Monroe County portion of Loop Road owned and maintained by the NPS and includes approximately 5 miles of paved and 11.53 miles of unpaved gravel road. The NPS, in cooperation with the Federal Highway Administration, has proposed the rehabilitation of the 5-mile paved portion of the road, and the NPS has proposed the rehabilitation of the 11.53-mile unpaved portion.

Loop Road was constructed by excavation of a parallel canal. The culverts of Loop Road discharge into this canal, and the water then feeds into three strands and sloughs. The road needs to be repaired to provide safe access to visitors. Continuous drainage problems have plagued the road, and in October 2005, Hurricane Wilma caused severe damage to the road and other structures in the area. Due to inadequate drainage under the road, water is impounded on the north side during high water, and road segments are commonly overtopped, resulting in road deterioration. On the low sections of the roadway, 3 to 8 inches of standing water have been present for weeks at a time. The paved portion of the road was showing signs of aging and required repairs prior to Hurricane Wilma, but there is no evidence that the hurricane made the paved portion worse. The road shoulders in both paved and unpaved sections have been washed out, which creates a safety hazard and undermines the road.

The purpose of the project is to provide a structurally and functionally adequate pavement with a long-term service life for the paved portion of Loop Road within the project area and to improve the unpaved section by replacing collapsed drainage culverts, installing additional culverts to improve drainage, and augmenting the base material (gravel) on the road surface. Repairing and improving both the paved and gravel sections of the road will provide a safer road for visitors and private inholders. Rehabilitation techniques will be employed with minimal impact to the road shoulders and will not expand the existing road footprint. The proposed actions for the entire 16.53-mile project will take place within the previously disturbed roadway prism.

The EA provides an analysis of the environmental consequences of the alternatives considered and was prepared in accordance with the National Environmental Policy Act (NEPA), *Management Policies*, and NPS Director's Order #12 – *Conservation Planning, Environmental Impact Analysis, and Decision-Making* (2001). The documents related to the National Historic Preservation Act (NHPA), in accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 (36 CFR 800.8, *Coordination with the National Environmental Policy Act*), have been completed as a separate submittal to the Florida State Historic Preservation Office (SHPO).

SELECTED ALTERNATIVE

The NPS has selected Alternative B, identified as the preferred alternative in the EA, for implementation. The selected alternative includes improvements to the 5-mile segment of paved roadway, to include asphalt pavement rehabilitation, safety improvements, replacing old culverts, and installing new culverts to improve water flow beneath the roadbed. The selected alternative also includes improvements to the 11.53-mile segment of the unpaved roadway, to include installing new culverts and replacing damaged culverts, increasing the gravel roadbed depth, and repairing washed out sections of the road.

The paved portion of Loop Road exhibits varying types and severities of distress; therefore, improvements will be performed using a combination of shallow and full-depth patching. Shallow patches will consist of removing the existing asphalt and gravel material to a depth of two inches below the existing pavement surface and placing two inches of new asphalt concrete. Full-depth patches will be used in areas that exhibit moderately to highly severe distress that is structural in nature. The full-depth patches will consist of removing the existing asphalt and gravel material to a depth of eight inches below the existing pavement surface and placing two inches of new asphalt concrete and six inches of gravel base. All corrugated metal circular culverts will be replaced with higher capacity horizontal elliptical concrete pipes. At the four single span bridges, additional riprap will be placed at the abutments to protect against contraction scour and damage from pooled water.

The selected alternative also includes complete rehabilitation of the 11.53-mile graveled section of the road and its drainage structures. The repairs to the gravel portion include replacement of damaged culverts at approximately 42 existing locations, some with multiple culverts, and installation of additional pipe or box culverts at approximately 12 new locations, most with multiple culverts. Other culverts may be added if determined necessary to improve hydrology. The road bed will also be raised by up to nine inches where the gravel has deteriorated and by up to 18 inches over new culverts and drains to provide sufficient depth to prevent damage to the new culverts. Finally, additional gravel material will be added as needed.

The overtopped and washed out areas along the edges of Loop Road will be repaired by placing small diameter riprap to an elevation of one foot above the peak height during the average wet season and then filling the remaining portions of the washed out areas above the riprap with sand/limerock base material. Approximately 265 tons of riprap will be used for repairing washed out areas and at culvert inlets and outlets for erosion protection along the entire 16.53-mile project area. The quantity will vary from less than one ton to 11 tons at each location. These areas will be designed to be functional yet not intrude into the canal. The proposed unpaved road resurfacing material will be acquired from a borrow area at "50-mile Bend," located approximately 15 miles from Loop Road within the Preserve, or at a commercial borrow site approved by the NPS.

Failing and/or inadequately-sized pipe culverts will be replaced and new pipe and box culverts will be installed at numerous locations along the unpaved and paved portions of Loop Road. Numerous existing pipe culverts will be replaced with larger pipe or box culverts. It is anticipated that 15 of the replacement or new culverts will be box culverts (precast or cast-in-place) with headwalls. Excavation of limestone may be required to achieve the required culvert invert elevations at some of the culvert locations; over-excavation will be backfilled with crushed stone to the culvert invert elevation. At some of the culvert replacement locations, the invert elevations will likely result in the culverts and/or headwalls bearing on soft or loose, saturated, natural soils. In these cases, soft or loose soils will be over-excavated to the underlying limestone and backfilled with crushed stone to the culvert invert elevation and to the headwall bearing elevation.

Construction of the proposed project is expected to be completed within, but is not limited to, one non-hurricane season. However, construction projects in the Preserve are largely weather dependent. With good weather the project may go beyond the dates of the non-hurricane season, December 1 through May 31, or this project may be extended to two seasons if weather conditions stop or slow construction (e.g., the rainy season lasts longer than expected) or if the start of construction is delayed.

OTHER ALTERNATIVES CONSIDERED

The EA considered one other alternative, the No Action Alternative. Under the No Action Alternative, improvements would not be made to Loop Road. The unpaved portion of the road would continue to degrade and pose a travel hazard for visitors and people who live in the area. Standing water would continue to pool adjacent to the road for long periods of time and cause additional washed-out areas. The paved portion of the road would continue to show signs of wear and degradation, including pavement fatigue on the edges of the road, and large potholes that require extensive pavement patching (including full depth patches) would not be repaired. Culverts that are showing signs of fatigue or have collapsed would not be replaced in either the paved or unpaved sections of the road.

Under the No Action Alternative, routine maintenance of Loop Road would continue, including grading of the gravel section and minor patches to pavement potholes. The road would continue to serve as an impediment to natural surface water flows.

RATIONALE FOR SELECTED ALTERNATIVE

Four objectives were established as a means to measure the success of the proposed alternatives. The selected alternative meets all four objectives in the following ways:

1. Provide a sustainable roadbed and road surface for Loop Road.

The selected alternative meets this objective because the road surface and shoulders will be restored, and culverts will be repaired to allow adequate drainage and minimize future deterioration.

2. Minimize the effects of floodwaters overtopping the gravel portion of Loop Road.

The selected alternative meets this objective because the road surface will be elevated and drainage improved to minimize future flooding and overtopping of floodwaters during high water events. Adding new culverts and repairing damaged culverts will better replicate natural surface water flow and mitigate the road's impediment to water flow.

3. Preserve the rural, scenic character of Loop Road.

The selected alternative meets this objective because the road will be improved without changing its rural, scenic character.

4. Reduce the burden on Preserve operations by providing a stable, long-term solution to Loop Road maintenance.

The selected alternative meets this objective because the road surface and shoulders will be restored to conditions that can be maintained by Preserve staff for long-term, safe access by visitors and residents.

THE ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is defined as “the alternative that will promote national environmental policy as expressed in Section 101 of the National Environmental Policy Act.” Section 101 states that it is the continuing responsibility of the federal government to:

- (1) Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- (2) Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- (3) Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
- (4) Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment which supports diversity and a variety of individual choices;
- (5) Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life’s amenities; and
- (6) Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The identification of the environmentally preferred alternative was based on an analysis that balances factors such as physical impacts on various aspects of the environment, mitigation measures to deal with impacts, and other factors such as the statutory mission of the NPS and the purposes for the project.

While the No Action Alternative would preserve existing conditions, it would not be considered the environmentally preferred alternative because it would not improve public safety and the effectiveness and efficiency of Preserve operations and would not meet environmental goals in the same manner as the selected alternative. The No Action Alternative is not the environmentally preferred alternative for the following reasons: 1) it would not meet the stewardship responsibility for protecting Preserve resources (criterion 1, above); 2) it would not improve public health and safety (criteria 2 and 3); and 3) it would not improve visitor access and services within the Preserve (criterion 5). Put another way, the No Action Alternative does not fully meet the provisions of NEPA Section 101 criteria 1, 2, 3, and 5 as well as the selected alternative does.

The NPS determined that the selected alternative is the environmentally preferred alternative because it surpasses the No Action Alternative in realizing the full range of national environmental policy goals, as stated in Section 101 of NEPA. The selected alternative will provide the widest range of beneficial uses without degradation and will fulfill the Preserve’s stewardship responsibility to protect resources (criterion 1). The selected alternative will improve public health and safety (criteria 2 and 3) and sustainability of the Preserve (criteria 4 and 5).

MITIGATION MEASURES

Mitigation measures to protect natural resources, cultural resources, and other values as described below will be implemented under the selected alternative. All protection measures will be clearly stated in the construction specifications/special construction requirements.

General Considerations

- Construction zones will be identified with construction tape or similar material prior to any construction activity. All protection measures will be clearly stated in the construction specifications, and workers will be instructed to avoid conducting activities and disturbing areas beyond the construction limits.
- All tools, equipment, barricades, signs, surplus materials, demolition debris, and rubbish will be removed from the project work limits upon project completion.
- Contractors will be required to properly maintain construction equipment and generators (i.e., mufflers) to minimize noise from use of the equipment.

- All equipment on the project will be maintained in a clean and well-functioning state to avoid or minimize contamination from automotive fluids. All equipment will be checked daily.
- Material will be stored, used, and disposed of in a proper manner.
- Prior to beginning construction, an approved Management of Traffic Plan and construction schedule will address how material and equipment will be transported to the site. This plan will promote site safety and minimize the impacts of trucks and equipment on the public and the residents of Loop Road. Acceptable alternatives will consist of one-way hauling from the west with no truck turn-around or completing half the project at a time with designated turn-around locations away from resident properties.
- Staging areas for equipment and materials will be away from residential properties, and residential property access roads will not be used for truck turn-around areas.
- Material used for construction activities, particularly road fill material, will be of an approved Department of Transportation road grade fill rather than unspecified generic fill material.
- In areas where work extends beyond paved surfaces, construction fencing will be installed to clearly delineate project limits.
- Traffic delays will be limited to no more than 15 minutes.
- Fill material will be processed according to specific requirements provided by the NPS according to contract requirements.
- A hazardous spill plan will be approved by the Preserve prior to construction. This plan will state what actions would be taken in the case of a spill, notification procedures, and preventive measures to be implemented, such as the placement of refueling facilities, secondary containment, and storage and handling of hazardous materials.
- Best management practices (BMPs) for drainage and sediment control will be implemented to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas. BMPs will include all or some of the following actions, depending on site-specific and Clean Water Act Section 401 and 404 permit requirements:
 - Construction will ideally occur during the dry season to limit standing water that may be affected by sediment transport.
 - Fence, silt fence, or similar material prior to construction activity will define the construction zone and confine activity to the minimum area required for construction. Fencing or silt fence will be installed immediately prior to the start of construction, will be limited in extent to those areas that require protection, and will be removed immediately upon completion of the project.
 - Waste and excess excavated materials will be stored outside of drainages to avoid sedimentation. Silt fences, temporary earthen berms, temporary water bars, sediment traps, check dams or other equivalent measures will be installed around the perimeter of stockpiled fill material.
 - Regular site inspections will occur during construction to ensure that erosion-control measures are properly installed and are functioning effectively. The contractor will be required to ensure that the erosion control measures (such as silt fences) are repaired at all times and are emptied frequently. Further, if there is evidence of breaks in the fencing due to animal crossings, the contractor will repair the fence, remove the fence, or contact preserve personnel if some animals had crossed through a break in the fence and then could not find their way back. Small mammals, alligators, snakes, and turtles are particularly susceptible to negative effects of the fence, including strandings.
 - Water sprinkling will be used as needed to reduce fugitive dust in work zones.

Water Quality and Soils

- Erosion-control BMPs for drainage and sediment control, as identified and used by the NPS (and outlined above), will be implemented to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas.
- Accumulated sediments will be removed when the fabric is estimated to be approximately 75 percent full. Silt removal will be accomplished in such a way as to avoid introduction into any flowing water bodies.

- The operation of ground-disturbing equipment will be temporarily suspended during large precipitation events to reduce the production of sediment.

Vegetation

- Rare plants are known to occur in the area. A plant survey will be completed prior to project construction to determine the presence of rare plants. If rare plants are found, they will be avoided or relocated if possible, as determined by the Preserve botanist.
- Temporary barriers will be provided to protect existing vegetation. Trees or other plants will not be removed, injured, or destroyed without prior approval.
- In an effort to avoid introduction of non-native species, no hay or straw bales will be used during revegetation or for temporary erosion control.
- To prevent the introduction of and minimize the spread of nonnative vegetation and noxious weeds, the following measures will be implemented during construction:
 - Soil disturbance will be minimized;
 - All construction equipment will be pressure washed and/or steam cleaned before entering the Preserve to ensure that all equipment, machinery, rocks, gravel, and other materials are clean and weed free;
 - All haul trucks bringing fill materials from outside the Preserve will be covered;
 - Vehicle and equipment parking will be limited to within construction limits or approved staging areas;
 - Staging areas outside the Preserve will be surveyed for noxious weeds and treated appropriately prior to use;
 - All fill, rock, and additional topsoil will be obtained from stockpiles from previous projects or excess material from this project, if possible; and if not possible, then weed-free fill, rock, or additional topsoil will be obtained from sources outside the Preserve; and
 - Monitoring for exotic vegetation will occur after project activities are completed. If exotic plants are found, they will be treated according to the methods in the existing exotic plant management plan, including hand pulling of seedlings and herbicide control.

Wildlife and Special Status Species

- The construction contractor will be required to keep all garbage and food waste contained and removed daily from the work site to avoid attracting wildlife into the construction zone. Construction workers will be instructed to remove food scraps and not feed or approach wildlife.
- Vehicle/wildlife collisions will be reported to preserve personnel.
- Construction activities will only be conducted between 7 a.m. and 6 p.m. to avoid disturbing nocturnal or crepuscular activities and construction personnel will be advised of the potential presence of special status species and instructed to avoid disturbance or injury to them. Surveys for special status species will be conducted prior to disturbance of suitable habitat. If any of these species are found, the area will be avoided (if practicable) and mitigation measures will be implemented to minimize impacts. If affected plants or animals need to be relocated, appropriate Preserve personnel will be contacted.

Cultural Resources

- Preserve staff will be available during construction to advise or take appropriate actions should any archeological resources be uncovered during construction. In the unlikely event that human remains are discovered during construction, all work will stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes and the Native American Graves Protection and Repatriation Act (Public Law 101-601; 25 U.S.C. 3001 et seq.).
- The NPS will ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging archeological sites or historic properties. Contractors and subcontractors also

will be instructed on procedures to follow in case previously unknown archeological resources are uncovered during construction.

Visitor Experience and Preserve Operations

- Preserve employees, visitors, and local landowners will be informed in advance of construction activities via a number of outlets including the Preserve website (www.nps.gov/bicy), press release, and visitor contact facility.
- During construction, visitors and residents will be alerted to activities through additional signage along the road, and information will be provided on the Preserve website.
- Law enforcement personnel will be present during construction activities to protect public health and safety and provide information on construction activities.

WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined in 40 C.F.R. 1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial

No major adverse or beneficial impacts were identified that would require analysis in an environmental impact statement (EIS). No greater than minor adverse impacts will result to any Preserve resource from implementation of the selected alternative.

Under the selected alternative, short-term impacts on water quality will be minor adverse and localized from construction. Long-term beneficial effects will result at both a local and regional scale from improved water flow.

Impacts of the selected alternative on hydrology will be short-term minor localized and adverse from construction. Long-term and beneficial effects will result at both a local and regional scale from reestablishment of natural sheet flow.

Improvements to Loop Road will result in short-term minor localized and adverse impacts to wetlands from construction. Long-term and beneficial effects to wetlands will occur at both a local and regional scale from improved wetland hydration and hydrology.

Implementation of the selected alternative will result in short-term negligible to minor and adverse localized impacts to wildlife from construction. Long-term localized and beneficial impacts to wildlife will occur. In particular, improved wetlands will benefit the species that utilize wetlands.

Short-term minor localized adverse impacts to special status species will occur from construction of Loop Road improvements. Long-term localized and beneficial impacts to special status species will occur due to improved habitats; in particular, improved wetland habitats.

Impacts of the selected alternative to the cultural landscape will be short-term minor and adverse during construction. Long-term and beneficial impacts to the cultural landscape will occur because the condition of the Loop Road roadbed will be improved, and culvert drainage will be rehabilitated.

Improvements to Loop Road will result in short-term minor adverse impacts on visitor use, recreational resources, and transportation during road repair and rehabilitation activities. Long-term and beneficial impacts will result from improved road conditions.

The degree to which the proposed action affects public health and safety

Loop Road is generally used as a scenic driving road as well as residential and recreational access, and the primary public health and safety issues are driving hazards. The selected alternative would provide a smoother, more consistent driving surface and have a beneficial impact on public health and safety. The current speed limit is 25 miles per hour, which allows visitors to observe the surrounding landscape. The speed limit will not change under the proposed action, and therefore driving hazards are not expected to differ from current conditions. Visitor safety will remain a priority under the selected alternative. None of the actions proposed in the selected alternative will affect public health or safety.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

As described in the EA, prime and unique farmlands, wild and scenic rivers or ecologically critical areas will not be affected by this project because none are located within the project area. No National Register-eligible or -listed properties are located within the project area. The proposed project is not expected to impact archeological resources because construction activities will be confined to previously disturbed areas, including the road prism and designated staging areas.

Executive Order 11990 (Protection of Wetlands) requires an examination of impacts to wetlands, and the 2006 NPS Management Policies and Director's Order #77-1 provide guidelines for proposed actions within wetlands. The project will not require a wetlands Statement of Findings because it qualifies as an exception under Director's Order #77-1 (Wetland Protection). According to the NPS Procedural Manual #77-1: Wetland Protection, actions designed specifically for the purpose of restoring degraded (or completely lost) natural wetland, stream, riparian, or other aquatic habitats or ecological processes are excepted. For purposes of this exception "restoration" refers to reestablishing environments in which natural ecological processes can, to the extent practicable, function at the site as they did prior to disturbance. Temporary wetland disturbances that are directly associated with and are necessary for implementing the restoration are allowed under this exception (see "conditions" in Section 4.2.2). Actions causing a cumulative total of up to 0.25 acre of new long-term adverse impacts on natural wetlands may be allowed under this exception if they are directly associated with and necessary for the restoration (e.g., small structures or berms). The project will meet these requirements, thus no Statement of Findings for wetlands is required.

During construction activities associated with this alternative, some wetlands may be impacted or filled, particularly in areas where new culverts are installed. Wetland soils and vegetation may be disturbed or removed where culverts are installed or replaced. The filling of wetlands will be minimized to the extent possible during construction, and wetlands that are filled will be mitigated elsewhere. The area to be impacted would be less than 0.1 acres, and these wetlands would be mitigated at a site near the Preserve Headquarters. The use of BMPs during construction will reduce the transport of sediment to adjacent wetlands during construction. Under the selected alternative, installation of additional culverts to improve sheet flow will benefit adjacent wetlands by mimicking the natural hydrology of the wetlands, with the natural cycles of wetting and drying, which will address the NPS concern of improving wetland function where possible.

Degree to Which Effects on the Quality of the Human Environment are Likely to Be Highly Controversial

During public review and agency consultation there was no indication that the environmental effects of the preferred alternative were considered to be potentially controversial.

Degree to Which the Possible Effects on the Quality of the Human Environment Are Highly Uncertain or Involve Unique or Unknown Risks

No highly uncertain, unique, or unknown risks were identified during either preparation of the EA or the public comment period.

Degree to Which the Action May Establish a Precedent for Future actions with Significant Effects or Represents a Decision in Principle about a Future Consideration

The selected alternative will not set any NPS precedent for future actions with significant effects, nor does it represent a decision in principle about a future consideration.

Whether the Action is Related to Other Actions with Individually Insignificant but Cumulatively Significant Impacts

Impacts on water quality, hydrology, wetlands, wildlife, special status species, cultural landscapes, and visitor use, recreational resources, and transportation were analyzed for the selected alternative (preferred alternative of the EA).

As described in the EA, cumulative impacts were determined by combining the impacts of the selected alternative (preferred alternative) with other past, present, and reasonably foreseeable future actions. Therefore, it was

necessary to identify other ongoing or reasonably foreseeable future projects at the Preserve and, if applicable, the surrounding area. Overall, the selected alternative will contribute minimally to adverse cumulative effects for each of the resources impacted by the selected alternative. It will also add a beneficial increment to cumulative effects from the additional culverts by reestablishing sheet flow and moving water away from pooling along the road and into the wetlands.

Degree to Which the Action May Adversely Affect Districts, Sites, Highways, Structures, or Objects Listed On National Register of Historic Places or May Cause Loss or Destruction of Significant Scientific, Cultural, or Historical Resources

Compliance with Section 106 of NHPA was completed when the NPS consulted with the SHPO. NPS found that the improvements would not preclude a future evaluation of Loop Road for National Register eligibility and would have no adverse effect on the historic character of Loop Road. On July 28, 2010, the SHPO concurred with this finding in writing.

Degree to Which the Action May Adversely Affect an Endangered or Threatened Species or Its Critical Habitat

The NPS determined that the selected alternative is not likely to have an adverse effect on any federally threatened or endangered species. In informal consultation with the U.S. Fish and Wildlife Service, it was concluded that the implementation of improvements to Loop Road is not likely to adversely affect listed species or critical habitat. Specifically, the U.S. Fish and Wildlife Service, South Florida Ecological Services Office was sent a copy of the EA for review with a transmittal letter and Interagency Section 7 Biological Evaluation initiating informal consultation and requesting concurrence with the NPS determination that the project is not likely to adversely affect Everglade snail kite or its critical habitat, wood stork, Florida panther, or eastern indigo snake. The U.S. Fish and Wildlife Service concurred with this determination on October 28, 2010.

Whether the Action Threatens a Violation of Federal, State or Local Environmental Protection Law

This action violates no federal, state, or local environmental protection laws.

IMPAIRMENT

In addition to determining the environmental consequences of implementing the preferred and other alternatives, NPS Management Policies 2006 (section 1.4) requires analysis of potential effects to determine whether or not proposed actions would impair a park's resources and values.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the NPS the management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of the park. That discretion is limited by the statutory requirement that the NPS must leave resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.

An impact on any park resource or value may or may not constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- Identified in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated.

Impairment may result from visitor activities, NPS administrative activities, or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park.

An impairment determination is not made for visitor experience, recreation resources, and transportation, as these impact areas are not generally considered to be park resources or values according to the Organic Act and cannot be impaired in the same way that an action can impair park resources and values.

The impairment determination for the selected alternative is found in Appendix A.

PUBLIC INVOLVEMENT AND AGENCY CONSULTATION

The National Park Service consulted with tribes and the federal and state agencies responsible for the protection and management of natural and cultural resources.

Summary of Tribal Consultation

The Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida were sent scoping letters on February 25, 2010, describing the proposed project and requesting comments. The NPS also met with the Miccosukee Tribe on May 6, 2010; requests identified by the Miccosukee Tribe during that meeting include the following:

- Loaded dump trucks should enter the project area from the west and exit only if empty to the east;
- Identify the trucks with good size (18-inch by 18-inch or better) placards or numbered signs in the event there is a need to report driving behavior or other observations about the trucks to the NPS;
- Avoid residential areas when selecting staging areas. Recommended use of Pinecrest campground, Golightly's, former Giese property, and areas to the west of Crooked Culvert (former Smith property) on the north side of the road, and west before the curve;
- Law enforcement presence and monitoring on Loop Road during construction;
- Provide culvert plan for Tribe review; and
- Use Department of Transportation road grade fill material instead of generic fill.

Further, the Miccosukee Tribe stated their concerns about the prompt removal of silt fencing upon completion of construction.

To date, the Seminole Tribe of Florida has not provided comments in response to the scoping letter.

Each tribe received copies of the EA for their review and comment. No written comments were received from the tribes. However, if subsequent issues or concerns are identified, appropriate consultations will be undertaken.

Summary of Agency Consultation

The following federal and state agencies were sent a scoping letter on February 25, 2010, describing the proposed project and requesting comments:

- U.S. Fish and Wildlife Service, South Florida Ecological Services Office (see listed species discussion above)
- Department of Environmental Protection, Florida State Clearinghouse
- State Historic Preservation Office, Florida Department of State (see cultural resources discussion above)

Summary of Public Scoping

A scoping notice was sent to local stakeholders in February 2010 and published by press release in April 2010 in which the NPS proposed to complete an EA to analyze the impacts of implementing Loop Road Improvements in Big Cypress National Preserve. In addition, Preserve staff and resource professionals under contract with the NPS Denver Service Center conducted a public meeting on April 28, 2010, to discuss the proposed project. Comments received were generally supportive of the proposed improvements, especially the addition of culverts to decrease

sheet flow on the road. Concerns were expressed regarding the potential for an increase in wildlife fatalities as a result of the improved road surface leading to increased driving speeds.

Summary of Comments Received on the EA

Comments were received from two people via PEPC during the public review of the EA. Substantive comments are defined by NPS Director's Order 12 (DO-12, Section 4.6A) as comments that do one or more of the following:

- Question, with a reasonable basis, the accuracy of information in the EA;
- Question, with a reasonable basis, the adequacy of the environmental analysis;
- Present reasonable alternatives other than those presented in the EA; and/or
- Cause changes or revisions in the proposal.

Substantive comments to the EA were supportive of repairs to the road and centered on 2 topics regarding resurfacing of the road: a belief that this will allow for a wider range of visitors and disbelief that resurfacing will result in increased traffic. These comments are described in more detail on the errata sheets to this FONSI. Comments resulting in changes to the text of the EA are addressed in errata sheets attached to this FONSI. The FONSI and errata sheets will be sent to all commenters.

Errata Sheets

Big Cypress National Preserve

Loop Road Improvements

Environmental Assessment

Corrections and revisions to the draft environmental assessment (EA) are listed in this section. Revisions were made in response to comments from public and agency reviews of the EA. These revisions have not resulted in substantial modification of the selected alternative. It has been determined that the revisions do not require additional environmental analysis. The page numbers referenced are from the *Environmental Assessment Loop Road Improvements*.

SUBSTANTIVE COMMENTS

Comment Topic: Resurfacing Loop Road

Comment: *Resurfacing Loop Road would allow a wider range of people to visit and enjoy the Big Cypress National Preserve. In its current damaged state, the Loop Road is difficult to use with standard street-legal vehicles. Relatively few people with the proper vehicles can visit it safely (i.e., without damaging their cars).*

Response:

Page 46. Under the Visitor Experience, Recreation Resources, and Transportation, the following paragraph has been added to Impacts of Alternative B, the Preferred Alternative. After Paragraph 1:

“Resurfacing of Loop Road and the addition of and repairs to culverts, especially on the unpaved portion of the road, would improve driving conditions by providing a more consistently dry and level driving surface. These repairs would result in road conditions more suitable to a greater variety of vehicles and would allow for a wider range of visitors and residents to use the road in its entirety.”

Comment Topic: Increase in Vehicle Traffic

Comment: *Based on experience visiting the Loop Road, the commentor does not believe that resurfacing the Loop Road will lead to a significant increase in vehicle traffic.*

Response:

Page 46. Under the Visitor Experience, Recreation Resources, and Transportation, “Impacts of Alternative B, the Preferred Alternative” section, add the following sentence to the end of the new paragraph inserted in response to the previous comment:

“While it is anticipated that more residents and visitors may drive the Loop Road in its entirety, rather than detouring around the unpaved portion, the repairs are not anticipated to result in a substantial increase in visitors, recreational users, or residents.”

TEXT CHANGES

The following text changes were made to clarify the text or provide additional information that had unintentionally been omitted from the EA prior to it being published. These revisions have not resulted in substantial modification of the selected alternative or the impact analysis.

Page 11. Under the “Impact Topics Dismissed from Further Analysis” section. Impact Topic: Public Health and Safety.

To clarify the text, “The speed limit is enforced by the Preserve and by Miccosukee tribal police.” is deleted.

Page 14. Under the “ALTERNATIVE B, THE PREFERRED ALTERNATIVE” section. Paragraph 1.

To clarify the text, “The repairs to the gravel portion include replacement of damaged culverts and installation of a small percentage of additional pipe or box culverts (approximately 12 new culverts and more than 70 existing culvert locations).” is changed to read “The repairs to the gravel portion include replacement of damaged culverts at approximately 42 existing locations, some with multiple culverts, and installation of additional pipe or box culverts at approximately 12 new locations, most with multiple culverts. Other culverts may be added if determined necessary to improve hydrology.”

Page 14. Under the “ALTERNATIVE B, THE PREFERRED ALTERNATIVE” section. Paragraph 3.

To correct the text, “16.53-acre project area” is revised to read “16.53-mile project area”.

Page 14. Under the “ALTERNATIVE B, THE PREFERRED ALTERNATIVE” section. Paragraph 4.

To clarify the text, “Construction of the proposed project is expected to be completed within one non-hurricane season. The Atlantic hurricane season is June 1 through November 30; therefore, construction would occur between December 1 and May 31. However, construction may be extended to two seasons if weather conditions stop or slow construction (e.g., how long the rainy season lasts) or depending on when construction begins.” The revised text reads as follows:

“Construction of the proposed project is expected to be completed within, but is not limited to, one non-hurricane season. Construction projects in the Preserve are largely weather dependent. With good weather the project may go beyond the dates of the non-hurricane season, December 1 through May 31, or this project may be extended to two seasons if weather conditions stop or slow construction (e.g., how long the rainy season lasts) or depending on when construction begins.” Page 17. Under the “MITIGATION MEASURES OF THE PREFERRED ALTERNATIVE General Considerations” section. Eighth bullet.

To remove duplicative text, the following is deleted:

- “During construction visitors and residents will be alerted to activities through additional signage along the road, and information will be provided on the Preserve website (www.nps.gov/bicy).
- Law enforcement presence will be apparent on Loop Road during construction activities.”

Page 18. Under the “MITIGATION MEASURES OF THE PREFERRED ALTERNATIVE General Considerations” section. First bullet.

To clarify the text, “The Preserve is typically flooded with a shallow sheet of surface water starting after the onset of the rainy season, usually in June, ending in the winter. November is a popular gun hunting season in the Preserve when some standing water is generally present. Therefore, the Preserve would begin construction in November when standing water would still be present in the area but after hunting season has peaked, and use BMPs to limit sediment transport.” is deleted. The revised text reads as follows:

“– Construction would ideally occur during the dry season to limit standing water that may be affected by sediment transport.”

Page 18. Under the “MITIGATION MEASURES OF THE PREFERRED ALTERNATIVE Vegetation” section. First bullet.

Additional information about state-listed plant species has been provided since the EA was published.

To correct the text, “Although rare plants are not known to occur in the area, a plant survey will be completed prior to project construction to determine the presence of rare plants.” The revised text reads as follows:

“Rare plants are known to occur in the area. A plant survey will be completed prior to project construction to determine the presence of rare plants.”

Page 19. Under the “MITIGATION MEASURES OF THE PREFERRED ALTERNATIVE Vegetation” section. Third subbullet under the second bullet.

“– All haul trucks bringing fill materials from outside the Preserve would be covered to prevent seed transport;”

To remove redundant statements in the text, “to prevent seed transport” is deleted. The revised text reads as follows:

“– All haul trucks bringing fill materials from outside the Preserve would be covered;”

Page 19. Under the “MITIGATION MEASURES OF THE PREFERRED ALTERNATIVE Vegetation” section. Seventh (last) subbullet under the second bullet.

To clarify the text, “Existing exotic plant monitoring stations are located along Loop Road.” is deleted.

Page 19. Under the “MITIGATION MEASURES OF THE PREFERRED ALTERNATIVE Wildlife and Special Status Species” section. First bullet.

To avoid duplication with other mitigation measures the following bullet is deleted:

- Construction activities will be limited to 7 a.m. – 6 p.m.

Page 19. Under the “MITIGATION MEASURES OF THE PREFERRED ALTERNATIVE Wildlife and Special Status Species” section. Fourth bullet.

To clarify the text, “...to avoid disturbance or injury to these animals). If affected animals need to be relocated, appropriate Preserve personnel would be contacted.” is corrected to read “...to avoid disturbance or injury to them). If affected plants or animals need to be relocated, appropriate Preserve personnel would be contacted.”

Page 21. Under the “ALTERNATIVES COMPARISON TABLE” section. For the Alternative B column of the second objective row “Minimize the effects of floodwaters overtopping the gravel portion of Loop Road”.

Minimize the effects of floodwaters overtopping the gravel portion of Loop Road.	Fails to meet or partially meets this objective because continuous drainage problems cause damage to the road surface. Due to inadequate drainage, water is impounded by the road and road segments are commonly overtopped, resulting in road deterioration.	Meets this objective because the road surface would be elevated and drainage improved to minimize future flooding and overtopping of floodwaters during high water events.
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To clarify the text, “Adding new culverts and repairing damaged culverts will better replicate natural surface water flow and mitigate the road’s impediment to water flow.” has been inserted after the existing sentence. The revised cells of the table read as follows:

Minimize the effects of floodwaters overtopping the gravel portion of Loop Road.	Fails to meet or partially meets this objective because continuous drainage problems cause damage to the road surface. Due to inadequate drainage, water is impounded by the road and road segments are commonly overtopped, resulting in road deterioration.	Meets this objective because the road surface would be elevated and drainage improved to minimize future flooding and overtopping of floodwaters during high water events. Adding new culverts and repairing damaged culverts will better replicate natural surface water flow and mitigate the road’s impediment to water flow.
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Page 33. Under the “Affected Environment and Environmental Consequences section. Impact Topic: Wetlands. Impacts of Alternative B, the Preferred Alternative. Paragraph 1.

To clarify the text: “It is expected that the construction activities would remove 0.02 acres of wetlands, and these wetlands would be mitigated at a site near the Preserve Headquarters.”

The text will be revised to read as follows:

“It is expected that the construction activities would impact wetlands, by removal or filling. The area to be impacted would be less than 0.1 acres, and these wetlands would be mitigated at a site near the Preserve Headquarters.”

This revision will not change the level of impact to wetlands from local short-term minor adverse.

Page 37. Under the “Affected Environment and Environmental Consequences section. Impact Topic: Special Status Species. Paragraph 2.

To clarify the text: “In addition to the federally listed species, there are four state-listed species that may occur in the area. Based on the Florida Natural Areas Inventory (FNAI), state-listed species that also may occur in the . . .”

The text will be revised to read as follows:

“In addition to the federally listed species there are four state-listed animal species that may occur in the area. Based on the Florida Natural Areas Inventory (FNAI), state-listed animal species that also may occur in the . . .”

Page 37. Additional information about state-listed plant species has been provided since the EA was published. The following paragraph will be added after paragraph 2:

“State-listed endangered and threatened plant species may occur in the project area (Florida Department of Agriculture and Consumer Services 2000). State listed endangered plant species include the Florida clamshell orchid (*Encyclia cochleata*), dingy-flowered epidendrum (*Epidendrum anceps*), night-scented epidendrum (*Epidendrum nocturnum*), rigid epidendrum (*Epidendrum rigidum*), pale-flowered polystachya (*Polystachya concreta*), common or stiff-leaved wild-pine (*Tillandsia fasciculata*), fuzzy-wuzzy or hoary air-plant (*Tillandsia pruinosa*), and giant wild-pine (*Tillandsia utriculata*). State listed threatened plant species include the pine-pink orchid (*Bletia purpurea*), satin leaf (*Chrysophyllum oliviforme*), threadroot orchid (*Harrisella filiformis*), small-leaved melanthera (*Melanthera parvifolia*), Simpson’s stopper (*Myrcianthes fragrans*), giant sword fern (*Nephrolepis biserrata*), long-lip ladies’ tresses (*Spiranthes longilabris*), inflated and reflexed wildpine (*Tillandsia balbisiana*), and soft-leaved wildpine (*Tillandsia valenzuelana*). The butterfly orchid (*Encyclia tampensis*) is listed as a commercially exploited plant, a species native to the state, which is subject to being removed in significant numbers from native habitats in the state and sold or transported for sale.”

Page 41. Under the “Affected Environment and Environmental Consequences section. Impact Topic: Special Status Species. Impacts of Alternative B, the Preferred Alternative. Paragraph 1.

To clarify the text: “No more than 0.02 of an acre of wetlands in the wood stork CFA and Florida panther focus area would be removed as a result of the proposed project. These wetland impacts would be mitigated as described under Wetlands.” The revised text will read as follows:

“Less than 0.1 acre of wetlands in the wood stork CFA and Florida panther focus area would be impacted, by removal or filling, as a result of the proposed project.”

This revision will not change the level of impact to special status species from local short-term minor adverse.

Page 41. Under the “Affected Environment and Environmental Consequences section. Impact Topic: Special Status Species. Impacts of Alternative B, the Preferred Alternative.

The following paragraph will be added after paragraph 1: “Construction activities associated with the proposed action could potentially disturb state-listed plant species occurring adjacent to the existing road corridor. Dust may adversely impact state-listed plant species occurring outside of the road prism. To avoid and minimize these adverse impacts, mitigation measures described in Chapter 2 would be implemented. After the construction is completed, improved sheet flow would benefit state-listed plant species.”

This addition will not change the level of impact to special status species from local short-term minor adverse.

Appendix B Impairment Determination. Special Status Species

To clarify the text: “In addition to the federally listed species, there are four state-listed species that may occur in the area. Based on the Florida Natural Areas Inventory (FNAI), state-listed species that also may occur in the . . .”

The text will be revised to read as follows:

“In addition to the federally listed species there are four state-listed animal species that may occur in the area. Based on the Florida Natural Areas Inventory (FNAI), state-listed animal species that also may occur in the . . .”

Additional information about state-listed plant species has been provided since the EA was published. The following paragraph will be added after paragraph 3:

“State-listed endangered and threatened plant species may occur in the project area (Florida Department of Agriculture and Consumer Services 2000). State listed endangered plant species include the Florida clamshell orchid (*Encyclia cochleata*), dingy-flowered epidendrum (*Epidendrum anceps*), night-scented epidendrum (*Epidendrum nocturnum*), rigid epidendrum (*Epidendrum rigidum*), pale-flowered polystachya (*Polystachya concreta*), common or stiff-leaved wild-pine (*Tillandsia fasciculata*), fuzzy-wuzzy or hoary air-plant (*Tillandsia pruinosa*), and giant wild-pine (*Tillandsia utriculata*). State listed threatened plant species include the pine-pink orchid (*Bletia purpurea*), satin leaf (*Chrysophyllum oliviforme*), threadroot orchid (*Harrisella filiformis*), small-leaved melanthera (*Melanthera parvifolia*), Simpson’s stopper (*Myrcianthes fragrans*), giant sword fern (*Nephrolepis biserrata*), long-lip ladies’ tresses (*Spiranthes longilabris*), inflated and reflexed wildpine (*Tillandsia balbisiana*), and soft-leaved wildpine (*Tillandsia valenzuelana*). The butterfly orchid (*Encyclia tampensis*) is listed as a commercially exploited plant, a species native to the state, which is subject to being removed in significant numbers from native habitats in the state and sold or transported for sale.”

APPENDIX A
IMPAIRMENT DETERMINATION

**ENVIRONMENTAL ASSESSMENT
LOOP ROAD IMPROVEMENTS, BIG CYPRESS NATIONAL PRESERVE
IMPAIRMENT DETERMINATION**

Based on the aforementioned guidelines and basis for determining impairment of park resources and values, an impairment determination is made for each of the resource impact topics carried forward and analyzed in the environmental assessment for the selected alternative.

WATER QUALITY

The Preserve is a predominantly self-contained, rain-driven watershed that is upgradient of Everglades National Park. The waters of the Preserve are currently designated as an Outstanding Florida Water. This is a state designation delegated by the U.S. Environmental Protection Agency under the Clean Water Act and is intended to protect existing, high-quality waters. Water quality in the Preserve is naturally affected by seasonal and long-term changes in rainfall, water levels, and water flows through the Preserve. The low-nutrient, high-quality water in the Preserve is vulnerable to degradation from contaminants, and even small amounts of contaminants could result in relatively large adverse impacts.

Construction activities associated with repairs and improvements to Loop Road under the selected alternative could result in adverse impacts to water quality in the form of increased turbidity and pollution from construction vehicles during the construction period. These impacts will be mitigated by the use of BMPs during the construction activities. After the construction period, with the additional culverts in place, water quality is expected to improve because of the reestablishment of sheet flow, lessening the potential for stagnation along the road providing a long-term beneficial impact. The selected alternative will not result in impairment of water quality because the adverse impacts to water quality will be temporary and will be minimized by the use of BMPs, and there will also be long-term beneficial impacts to water quality from the reestablishment of sheet flow.

HYDROLOGY

The elevation of the land areas within the Preserve varies from sea level to 19 feet above sea level. The hydrologic regime of the Big Cypress physiographic province largely determines the patterns in which vegetative communities and their related wildlife species occur. During the summer and fall wet season, when heavy rains lead to widespread surface inundation, the almost imperceptible slope of the land creates a slowly moving, overland sheet flow, and water generally drains southwest towards the coast. The Preserve is essentially a self-contained hydrologic unit recharged primarily by local rainfall.

The Tamiami Trail and subsequent roads obtained road fill via excavation of a parallel canal, resulting in both an elevated obstruction to sheet flow as well as re-routing of water in open canals. Construction of Loop Road also included excavation of a parallel canal to provide road fill. The result of this is seen in both the paved and unpaved sections of the road. During the high water event after Hurricane Wilma, the north side of the unpaved section had pooled water adjacent to the road, overtopping of the road, and resulting in severe road erosion, including washouts. The paved section of the road also experienced overtopping. These events indicate that the sheet flow hydrology has been interrupted by the presence of Loop Road. The selected alternative will not result in impairment of hydrology because the installation of additional culverts will improve sheet flow of water in the local area and reduce damage to the existing road during high flow events, resulting in overall long-term beneficial impacts to hydrology.

WETLANDS

Wetlands comprise approximately 88 percent, or 635,000 acres, of the Preserve. The vast majority of wetland acreage is palustrine, under the Cowardin classification system. Most of the remaining wetlands are estuarine, located in the tidally influenced, southwest corner of the Preserve. Prairies and marshes are generally wetlands with an open expanse of grasses, sedges, rushes, and other herbaceous plants and occur where standing water exists most of the year. Where woody plants occur, cypress is the dominant woody vegetation, covering approximately 43 percent of the Preserve.

The herbaceous wetlands in the project area are primarily prairies and marshes. The wetlands with woody vegetation are generally cypress strands and cypress savannas.

During construction some wetlands may be adversely impacted or filled where new culverts will be installed. Wetland soils and vegetation may be disturbed or removed where culverts are installed or replaced. The area to be impacted would be less than 0.1 acre, and these wetlands would be mitigated at a site near the Preserve Headquarters. BMPs will also be used to reduce any indirect impacts, such as sedimentation, in adjacent wetlands. The additional culverts will have an overall long-term beneficial impact to wetlands by improving sheet flow and wetland hydrology. The selected alternative will not result in impairment of wetlands because the adverse indirect impacts to wetlands will be mitigated through the use of BMPs, the loss of wetlands will be less than 0.1 acre, the wetland loss will be minimized to the extent possible and mitigated elsewhere, and the overall impact to wetlands will be long-term and beneficial by improving sheet flow and wetland hydrology.

WILDLIFE

The Preserve is home to a variety of species of birds, reptiles, fish, invertebrates, and mammals, and most of the species utilize wetlands of the Preserve to some extent. Woody plants, including those found in dwarf cypress savannas and cypress domes, provide food, cover, nesting sites, and hibernating places for a variety of animals which spend a portion of the year in the woody vegetation within wetlands and then move to upland areas as water levels fluctuate.

The American alligator (*Alligator mississippiensis*) is a common wildlife species in the Preserve and is considered a keystone species because of the “gator holes” it creates and maintains. A keystone species is a species that plays a critical role in maintaining the structure of an ecological community and whose impact on the community is greater than would be expected based on relative abundance or total biomass. During the dry season, the holes are vigorously defended and are generally where small fish and other animals congregate to survive the dry season and then recolonize the marshes when water levels rise.

There are 13 wildlife species that are hunted in the Preserve, and the two most important hunted animals are white-tailed deer and feral hogs, both of which are prey for the endangered Florida panther, discussed under Special Status Species. The 1991 General Management Plan contains a detailed description of wildlife, and several species lists are available at the Preserve’s website, www.nps.gov/bicy.

The construction associated with the selected alternative will not substantially alter the existing wildlife habitats in the area nor is it anticipated to affect the home ranges or foraging areas of wildlife species in the area. Construction activities could cause some disturbance to wildlife in causing wildlife to be displaced, but this adverse impact will be short-term and localized to the project area. The selected alternative will not result in impairment of wildlife because the adverse indirect impacts to wildlife will be localized and temporary and will be mitigated by limiting construction to between 7 a.m. and 6 p.m., providing respite to wildlife from construction activity.

SPECIAL STATUS SPECIES

Special status species are those listed under federal and state statutes and species considered sensitive by the Preserve to provide protection from further loss of the species. The Endangered Species Act of 1973, as amended (Public Law 93-205), was developed to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. It is NPS policy to survey for, protect, and strive to recover all species that are listed under the Endangered Species Act and are native to national park system units. The NPS strives to fully meet its obligations under the NPS Organic Act and the Endangered Species Act to both proactively conserve federally listed species and prevent detrimental impacts on these species. According to the U.S. Fish and Wildlife Service website [http://www.fws.gov/verobeach/images/pdflibrary/Monroe County 3.pdf](http://www.fws.gov/verobeach/images/pdflibrary/Monroe%20County%203.pdf), many federally listed species are known to occur in Monroe County. However, suitable habitat for the majority of these listed species does not occur in the proposed project area. Based on preliminary analysis by the U.S. Fish and Wildlife Service, four federally listed species may be present in the project area, including wood stork (*Mycteria americana*), Florida panther (*Puma concolor coryi*),

Everglade snail kite (*Rostrhamus sociabilis plumbeus*), and Eastern indigo snake (*Drymarchon corais couperi*). These federally listed species are also state listed and have the following state classifications: wood stork (Endangered), Florida panther (Endangered), Everglade snail kite (Endangered), and Eastern indigo snake (Threatened).

In addition to the federally listed species, there are four state-listed animal species that may occur in the area. Based on the Florida Natural Areas Inventory, state-listed animal species that may occur in the project area include the Everglades mink (*Mustela vison evergladensis*; Endangered), Florida black bear (*Ursus americanus floridana*; Threatened), Florida sandhill crane (*Grus canadensis pratensis*; Threatened), and limpkin (*Aramus guarauna*; Species of Special Concern).

State-listed endangered and threatened plant species may occur in the project area (Florida Department of Agriculture and Consumer Services 2000). State listed endangered plant species include the Florida clamshell orchid (*Encyclia cochleata*), dingy-flowered epidendrum (*Epidendrum anceps*), night-scented epidendrum (*Epidendrum nocturnum*), rigid epidendrum (*Epidendrum rigidum*), pale-flowered polystachya (*Polystachya concreta*), common or stiff-leaved wild-pine (*Tillandsia fasciculata*), fuzzy-wuzzy or hoary air-plant (*Tillandsia pruinosa*), and giant wild-pine (*Tillandsia utriculata*). State listed threatened plant species include the pine-pink orchid (*Bletia purpurea*), satin leaf (*Chrysophyllum oliviforme*), threadroot orchid (*Harrisella filiformis*), small-leaved melanthera (*Melanthera parvifolia*), Simpson's stopper (*Myrcianthes fragrans*), giant sword fern (*Nephrolepis biserrata*), long-lip ladies' tresses (*Spiranthes longilabris*), inflated and reflexed wildpine (*Tillandsia balbisiana*), and soft-leaved wildpine (*Tillandsia valenzuelana*). The butterfly orchid (*Encyclia tampensis*) is listed as a commercially exploited plant, a species native to the state, which is subject to being removed in significant numbers from native habitats in the state and sold or transported for sale.

All native birds present within the Preserve are protected under the Migratory Bird Treaty Act. The Act made it illegal for people to "take" migratory birds, their eggs, feathers or nests. Take is defined in the Act to include by any means or in any manner an attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof. The Act allows for legal hunting of certain species protected under the Act and within the hunting regulations established by the Preserve.

The construction associated with the selected alternative will not substantially alter the existing habitat for special status species in the area or affect the home ranges or foraging areas of special status species in the area. Construction activities may cause special status species to be displaced, but this adverse impact will be short-term and localized to the project area. Several special status species will benefit from the improvement of wetland habitat. The selected alternative will not result in impairment of special status species because the adverse indirect impacts to special status species will be localized and temporary and will be mitigated by limiting construction to between 7 a.m. and 6 p.m., providing respite to special status species from construction activity.

CULTURAL LANDSCAPES

Loop Road is part of the cultural landscape of the Preserve. Captain James Franklin Jaudon first proposed a road connecting Florida's Gulf and Atlantic coasts to develop his properties in the Everglades. Construction of what was to be called the Tamiami Trail began in 1914. Loop Road was originally constructed to be part of the Tamiami Trail. In 1919 Captain Jaudon offered to build a portion of the Tamiami Trail through Monroe County if Dade and Lee counties agreed to change the original route and re-route the Trail through Monroe County. Captain Jaudon's company, the Chevelier Corporation, began construction in 1921. In 1922, the State of Florida ran out of funds to construct the east-west section, and in the intervening year or so, factions developed regarding the eventual alignment. The Florida State Road Department agreed with the Collier County alignment, but the Dade County Board of County Commissioners backed the Chevelier segment because so much money had already been spent and because only a few miles of road remained to be completed.

Despite the protest, the Florida State Road Department reinstated the original route of the Tamiami Trail, and the already completed portion of roadway in Monroe County was accepted as a "South Loop" of the Tamiami Trail. In 1928, the Tamiami Trail was considered a feat of engineering because it traversed the impenetrable Everglades, although no one considered the damage to the Everglades by the roadway and Tamiami Canal.

The five-mile paved section of Loop Road was first paved prior to the establishment of the Preserve in 1974. In 1990, 30 culverts were replaced or repaired. The road surface has been continually maintained by patching potholes. In 1999, the roadway was officially acquired by the Preserve. In 2005, Hurricane Wilma caused severe damage to the road.

The restoration of Loop Road will maintain the integrity of the resource. The construction associated with the selected alternative will not alter the alignment, width of the road prism or change the historic character of the existing roadway. The adverse visual impacts to the road from repairs will be short-term. The selected alternative will not result in impairment of the cultural landscape because the condition of Loop Road will be improved, and the rural, scenic character of the road will be maintained, resulting in long-term beneficial impacts to the road. The proposed improvements will not preclude a future evaluation of Loop Road for National Register eligibility and will have no adverse effect on the historic character of Loop Road. On July 28, 2010, the SHPO concurred with this finding in writing.