

**Environmental Assessment**

for

**Billie Camp:  
New Home and Septic System Expansion**

within

**Big Cypress National Preserve**

proposed by

**Miccosukee Tribe of Indians of Florida  
Real Estate Services**



**Big Cypress National Preserve  
33100 Tamiami Trail East  
Ochopee, Florida 34141**



# **ENVIRONMENTAL ASSESSMENT**

## **BILLIE CAMP: NEW HOME AND SEPTIC SYSTEM EXPANSION**

The National Park Service (NPS) proposes to issue a Special Use Permit to the Miccosukee Tribe of Indians of Florida to build and occupy a new home at the Billie Camp in Big Cypress National Preserve. The project area is located along U.S. 41 (Tamiami Trail), in Collier County, Florida, 5.5 miles east of State Road 29 on the south side of the road (Figure 1). This action is needed in order to provide adequate housing to support a healthy and safe living environment for a tribal member at this camp. The member currently resides in a “chickee,” or traditional Miccosukee housing, and desires to advance to more adequate housing. The proposed home and septic system would be on U.S. government property. This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act, related regulations, and NPS policies to analyze the environmental impacts of the proposed action.

This action is authorized by the Preserve’s enabling act, Public Law 93-440, which permits the Miccosukee and the Seminole Tribe of Florida, subject to reasonable regulations established by the Secretary of the Interior, to continue their usual and customary use and occupancy of federal or federally acquired lands and waters within the Preserve.

### **Issues and Impact Topics**

The primary issue related to this action is the impact to wetlands. The home site as proposed would require the filling of approximately 0.5 acre of wetlands, impacting native soils, vegetation, special status species, and wildlife. Accordingly, wetlands, soils, vegetation, special status species, and wildlife are included as impact topics analyzed in this EA. Water quality and flow could be affected through siltation from construction and alteration of sheet flow, and the site is within the 100-year regulatory floodplain, so water quality/flow and floodplains are included as impact topics as well.

According to Loehman and Anderson (2010), predicted climate changes in the Gulf Coast bioregion, which includes the Preserve, include increased air and sea surface temperatures, altered fire regimes and rainfall patterns, increased frequency of extreme weather events, rising sea levels, increased hurricane intensity, and potential destruction of coastal wetlands and the species that reside within them. Prolonged drought conditions, storm surges, and rising sea levels may reduce availability of freshwater resources, alter river and wetland hydrology, increase erosion, and induce changes in the distribution of coastal plant and animal species. Neither of the alternatives described in this EA would contribute to climate change, as greenhouse gas emissions would be negligible. Climate change impacts on resources impacted by the alternatives are addressed under Environmental Consequences.

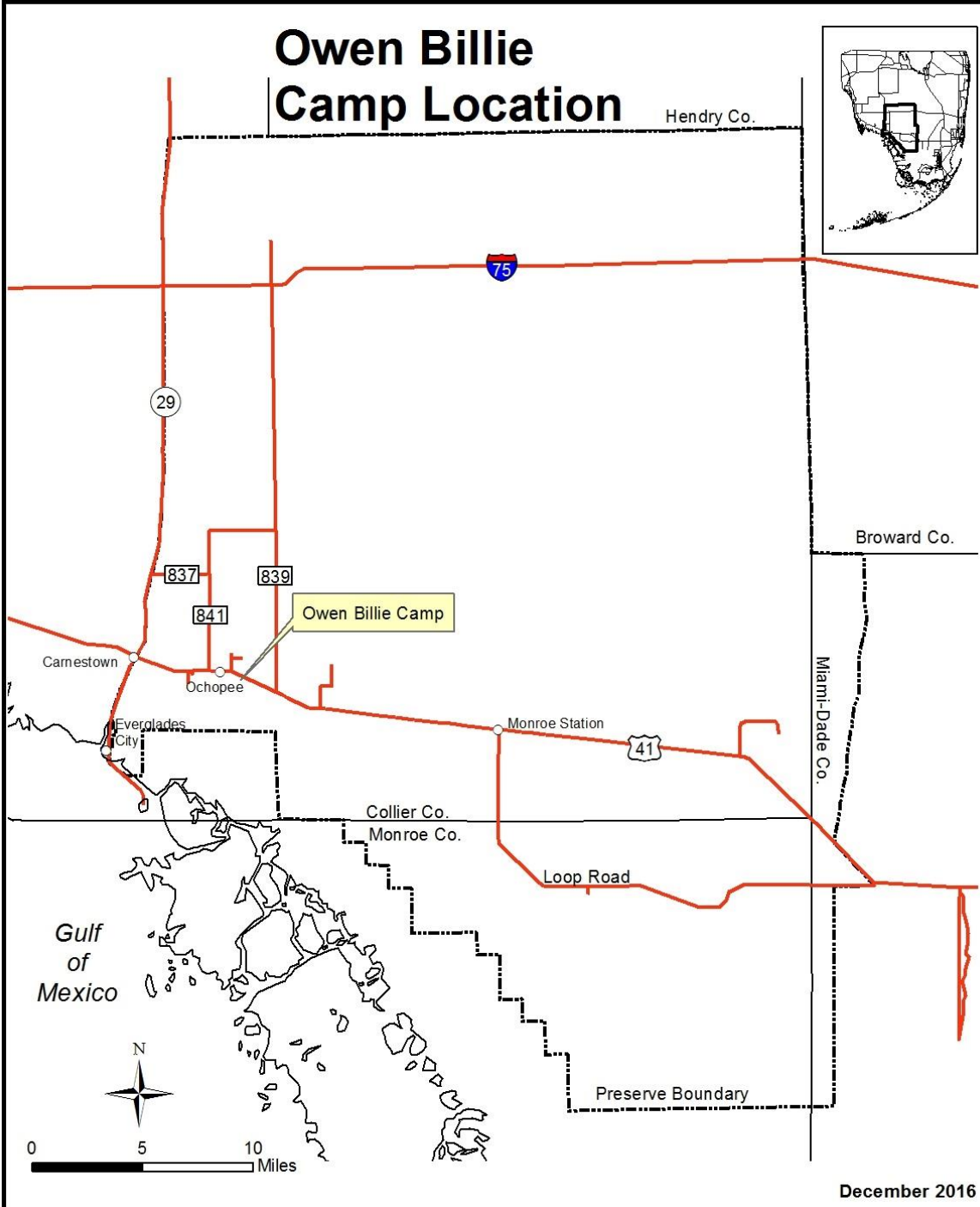


Figure 1. Billie Camp location.

Two impact topics, environmental justice and Indian trust resources, were considered but dismissed from detailed analysis. The proposed action is not expected to cause adverse health or environmental impacts to minorities, low-income populations, or communities; thus, environmental justice will not be considered further. Since there are no Indian trust resources in the Preserve, and no Preserve lands are held in trust by the Secretary of the Interior for the benefit of the Indians due to their status as Indians, Indian trust resources was dismissed as an impact topic.

## **Alternatives**

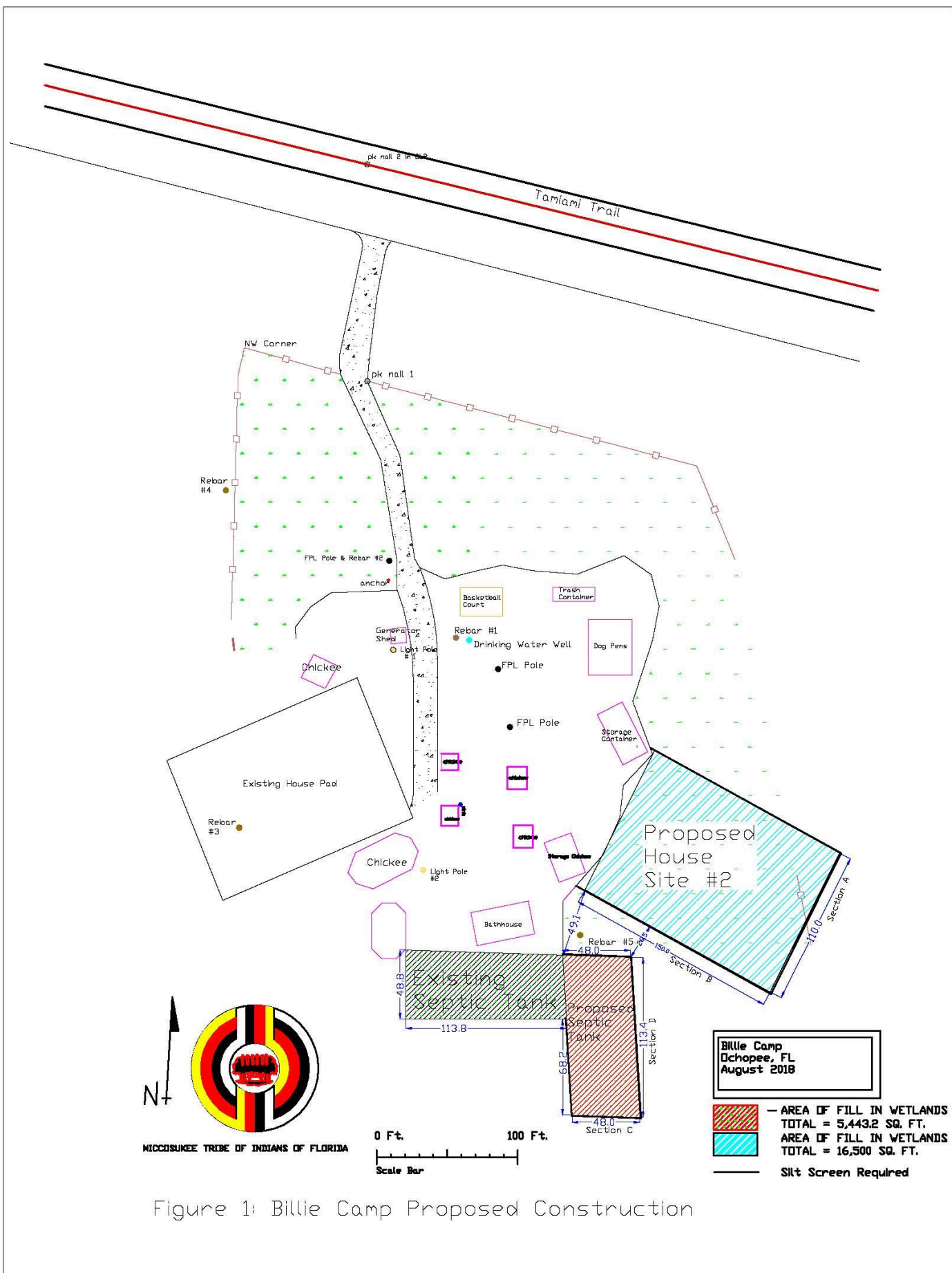
### **Preferred Alternative**

The proposed action, i.e., issuance of a Special Use Permit to would be for construction and would allow the Tribe to construct one new home, is the preferred alternative. Under this alternative, a new home and septic system would be built at the site location (Figure 2) located along U.S. 41 (Tamiami Trail) in Collier County, Florida, 5.5 miles east of State Road 29 on the south side of the road. The new home and septic system would allow an updated standard of living and provide adequate waste treatment for the current residents of the camp.

The home and septic system would be situated to impact the least amount of wetlands possible while still maintaining the 75-foot setback from wetlands required by the Florida Department of Health for septic tanks and drain fields as well as the required 100-foot setback from drinking water wells. A total of approximately 0.5 acre of wetlands would be filled in order to meet these requirements. Equipment would be transported via truck and trailer to the site, where it would be offloaded. Access to the camp is via U.S. 41, and the southern shoulder of the road and driveway entrance would be utilized for staging. Fill would consist of shot rock and crushed rock from NPS-approved locations in Collier and/or Miami-Dade counties and would be transported by dump truck to the site, where it would be dumped by the truck and spread by bulldozer. Lifts would be compacted in one-foot increments to achieve appropriate density. After filling is completed, construction would begin on the home and septic system. Drinking water wells exist onsite, and Lee County Electric Cooperative would supply electrical needs to the home.

Mitigation. The following mitigation measures would be implemented as part of the preferred alternative:

- The home would be constructed on fill in order to raise the building elevation above the average high water line as per State of Florida requirements.
- No dredging or alteration of existing waterways would be required.
- Outdoor lighting would be installed so that it would be directed toward the ground and not affect night sky viewing opportunities.
- Silt screen and Best Management Practices (BMPs), including sodding of the slopes of the fill area, would be employed around the perimeter of the fill and construction area to prevent sediment from being introduced into the surrounding wetlands.
- Should previously unknown archeological resources be discovered during construction, all work would be stopped and consultation with the State Historic Preservation Officer and the Advisory Council on Historic Preservation would take place, as



necessary, per 36 CFR 800.13. Should human remains be discovered, the provisions of the Native American Graves Protection and Repatriation Act (1990) would be followed.

- The eastern indigo snake is a culturally significant species for the Tribe, and tribal contractors would follow the *Standard Protection Measures for the Eastern Indigo Snake* (USFWS 2013a) to minimize the potential harm to resident snakes during the construction period.
- To compensate for the loss of wetland function from filling wetlands, a mitigation site near the camp (Figure 3) would be established. The mitigation site consists of 2.2 acres of previously filled wetlands, including a 0.5-acre borrow pit, and mostly exotic vegetation. The National Park Service would restore a 1.7-acre area of former forested wetlands. Restoration would consist of removal of exotic vegetation and fill, which would either be deposited back into the pit or stockpiled offsite for reuse. The site would be graded to the elevation of the adjacent wetlands, and naturally occurring wetland vegetation would be allowed to colonize the site. The Tribe would reimburse the National Park Service for construction costs and be responsible for restoring, maintaining, and monitoring the site.

### **No-action Alternative**

In addition to the preferred alternative, environmental effects of the no-action alternative were analyzed. This alternative would continue current management of the site; i.e., no home and septic system would be constructed. The site, a somewhat disturbed wetland, would remain in its current state.

### **Environmental Consequences**

An analysis of impacts is presented below for each impact topic. Also, for each topic, a description of the affected environment is given so that a comparison can be made between existing and projected conditions from implementation of the alternatives. Detailed descriptions of the natural and cultural resources of the Preserve can be found in the following documents:

The 1991 *General Management Plan/Environmental Impact Statement* for the original Preserve (NPS 1991), available at <http://www.nps.gov/bicy/learn/management/lawsandpolicies.htm>

The 2000 *Recreational Off-Road Vehicle Management Plan/Environmental Impact Statement* for the original Preserve (NPS 2000), available at <https://www.nps.gov/bicy/learn/management/upload/BICY-ORV-Manangement-Plan-2012-Scan.pdf>

The 2010 *Addition Final General Management Plan/Wilderness Study/Off-Road Vehicle Management Plan/Environmental Impact Statement* (NPS 2010), available at <http://www.nps.gov/bicy/learn/management/addition-lands-gmp.htm>

### **Cumulative Impacts**

A cumulative impact is an “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40



CFR 1508.7). Past, present, and reasonably foreseeable future actions that may affect the same resources as the proposed action as follows:



Figure 3. Proposed Mitigation site.

- Improvement of up to six off-road vehicle (ORV) trail heads and construction of up to five turn lanes on U.S. 41 was completed. Trail head improvement at Skillet Strand North (U.S. 41), Monroe Station (U.S. 41), and Paces Dike (Loop Road) was completed in 2013, and construction at additional sites and turn lanes will occur as funding becomes available. Trail head and turn lane construction will involve filling of wetlands.
- In 2010 the Billie Camp was expanded to accommodate a house and septic system for another tribal member. This expansion impacted similar resources as the current proposal.
- In 2006 the National Park Service completed construction of ten visitor safety highway improvements along U.S. 41 and Loop Road in the Preserve. These improvements resulted in benefits to visitor use by improving visitor safety and providing visitors information about the Preserve and its resources. The construction resulted in adverse, long-term impacts on vegetation and wetlands.



- In 2005 six home sites in the Preserve along U.S. 41 several miles east of the Billie Camp were set aside for the Seminole tribe to construct housing. These sites involved filling of wetlands. Five of the fill pads have been constructed and three houses have been built.

## **Wetlands**

Affected Environment. Wetlands comprise approximately 88% of the Preserve. The main wetland types are wet prairies, marshes, cypress swamps, mixed hardwood swamps (project site), mangroves, and hydric pinelands. The U.S. Fish and Wildlife Service National Wetlands Inventory (USFWS 2016) describes the predominant wetland type at the project site as palustrine forested, deciduous, and seasonally flooded, which is a common wetland type in the Preserve. This wetland type provides important biotic and hydrologic functions, including wildlife habitat, flood attenuation, and sediment entrapment.

The wetlands at the project site are somewhat disturbed by the presence of a cleared ORV trail/firebreak and a 6-foot chain-link fence surrounding the nearby Ochopee Fire Station. Common wetland plant species at the site include dahoon holly, bald cypress, red bay, and blechnum fern.

Climate change could affect the wetlands at this site. Increases in sea level and salinity as a result of climate change may result in reduction of coastal wetland area, a landward shift in wetland extent, and/or changes in wetland species composition and distribution more characteristic of estuarine systems.

Impacts of the No-Action Alternative. Implementation of the no-action alternative would leave the wetlands unaffected and result in no impacts.

Cumulative Impacts. Since this alternative would have no impacts on wetlands, it would result in no contribution to cumulative impacts.

Impacts of the Preferred Alternative. The primary impact to wetlands would be the filling of approximately 0.5 acre of wetlands, resulting in conversion of the site to uplands and removal of the wetland functions listed above. The filling of wetlands would expand the footprint of the Billie Camp, resulting in possible adverse impacts to wetlands not currently immediately adjacent to the camp. These impacts could include increased runoff and sedimentation during construction and impacts from human activity, such as noise, both during construction and occupancy of the site. As mitigation, the Tribe would restore approximately 1.7 acres of previously filled wetlands near the camp. The mitigation goal would be to restore the site to wetlands similar to the wetlands lost from the home and septic system construction, i.e., mixed hardwood swamp. Since there would be a lag time of several years for a forested system to develop, the full compensational benefits of the mitigation would be delayed.

As stated above, wetlands comprise 88% of the 700, 000 acres in the Preserve. Adverse impacts to the wetlands would be minimal due to the relatively small project site, and the restoration of 1.7 acres at the mitigation site.

Since the preferred alternative would adversely affect wetlands, a Wetlands Statement of Findings is included at Appendix A.

Cumulative Impacts. All of the past, present, and reasonably foreseeable future development projects along U.S. 41 in and near the Preserve have resulted or will result in loss of wetlands. However, all of the projects have been or will be accompanied by appropriate wetlands mitigation. Since mitigation cannot totally replace wetland functions lost, the net effect of these projects is a loss of wetland function, an adverse impact. The impacts of this proposed action, including the mitigation, would add a small adverse increment to this impact.

## **Soils**

Affected Environment. Duever et al. (1979) characterized the soils of the Preserve as not typical soils in the textbook sense but as simple geological and biological products that have not had sufficient time or proper environmental conditions for evolution into true soils. A 1954 soil survey of Collier County (Leighty et al. 1954) described the soils at the project site as Ochopee fine sandy marl, shallow phase. Most of this phase is associated with other Ochopee soils and with Tucker marl. It differs from Ochopee fine sandy marl chiefly in having limestone at shallower depths, or 6 to 12 inches below the surface instead of 12 to 36 inches. It is very poorly drained and has fewer narrow natural drainageways than the Ochopee fine sandy marl.

Impacts of the No-Action Alternative. Implementation of the no-action alternative would leave the soils somewhat disturbed; any impacts would be result of continued use of the adjacent uplands.

Cumulative Impacts. Since this alternative would have no impacts on soils, it would result in no contribution to cumulative impacts.

Impacts of the Preferred Alternative. The addition of 0.5 acre of fill would cover the native wetland soils of the site and thus remove any benefits from the ecosystem, such as habitat for burrowing organisms, and processes that the soils contribute to wetlands, such as chemical transformations and nutrient cycling.

Overall these effects, while adverse, would be localized and limited to the footprint of the filled area and somewhat offset by removal of fill and re-exposure of native soils at the mitigation site.

Cumulative Impacts. All of the past, present, and reasonably foreseeable future development projects along U.S. 41 in and near the Preserve have resulted or will result in loss of native soils through filling of wetlands. However, all of the projects have been or will be accompanied by appropriate wetlands mitigation entailing removal of fill from wetlands and re-exposure of native soils. The net effect would be a small, adverse impact to soils, and the impacts of this proposed action, including the mitigation, would add a small, adverse increment to this impact.

## **Vegetation**

Affected Environment. Vegetation at the proposed home site consists of species commonly found in mixed hardwood swamps in the Preserve. Commonly occurring woody species include dahoon holly, red bay, bald cypress, red maple, pond apple, and wax myrtle. Herbaceous species include blechnum fern, cattail, pennywort, and sawgrass. The effects of rising sea levels from climate change could allow salt water to encroach into the area, causing a shift from freshwater plant community composition to one more characteristic of estuarine hydrology.

Impacts of the No-Action Alternative. Since the Billie Camp is immediately adjacent to the proposed home site, the introduction of exotic plant species from human activity is possible but unlikely. Any establishment of exotics would be detected and removed by Preserve staff as part of the Preserve's exotic plant management program.

Cumulative Impacts. The past, present, and future developments along U.S. 41 in the vicinity of the proposed action have caused minimal to no perceptible cumulative adverse impact from exotic plant introduction. Continuation of current management at the project site would add no perceptible increment to this cumulative impact.

Impacts of the Preferred Alternative. The implementation of this alternative would result in adverse impacts to approximately 0.5 acre of natural vegetation, consisting of primarily wetland grasses and sedges, native weedy herbaceous species, and native trees and shrubs. Prior to filling, all the existing vegetation would be removed, a permanent loss. Once the site is filled, the home is built, and the septic system is installed, the site would be landscaped with native vegetation typical of a residential site. The home site could serve as an indirect source for the introduction of exotic plant species; however, this adverse impact would be expected to be unlikely and negligible.

The loss of native vegetation would be offset by the restoration of native vegetation at the mitigation site, although it would be several years before the woody species mature. The native vegetation located at the camp is commonly found throughout the Preserve. The temporary loss of mature vegetation would not affect the overall ecosystem.

Cumulative Impacts. All of the past, present, and reasonably foreseeable future development projects along U.S. 41 in and near the Preserve have resulted or will result in loss of native vegetation. However, all of the projects have been or will be accompanied by appropriate wetlands mitigation entailing removal of fill from wetlands and re-establishment of native plants. The net effect would be a small, adverse impact to vegetation, and the impacts of this proposed action, including the mitigation, would add a small, adverse increment to this impact.

## **Special Status Species**

Affected Environment. As of 2010, 102 plant species occurred in the Preserve that were listed by the state as endangered, threatened, or commercially exploited (NPS 2010). None of these are federally endangered or threatened, although three are candidates for listing (USFWS 2013b).

A total of 29 animal species that could occur in the Preserve receive some level of special protection or are recognized as rare species by the state of Florida or the federal government (FWC 2016, FNAI 2016, USFWS 2015). Nine species are listed as federally endangered or threatened and reside in the Preserve. Of these nine species, the four below may occur at the project site; however, their presence is likely minimal due to proximity to human activity. No critical habitat exists at the project site.

*Florida Panther (Puma concolor coryi)*. Endangered Florida panthers once lived throughout most of the southeastern United States, but intensive persecution of these animals, prey decline, and destruction of wildlands severely reduced the population. Today, the only confirmed breeding population is located in south Florida. The current panther population is centered in and around the Preserve, including Everglades National Park, Fakahatchee Strand Preserve State Park, Florida Panther National Wildlife Refuge, and privately owned lands north of the Preserve in Collier and Hendry counties.

Panthers are a landscape species that require large contiguous areas with adequate prey availability and reduced levels of human disturbance. Forest patches comprise an important component of panther habitat in south Florida. Panthers select forested habitat types interspersed with other habitat types that are used in proportion to their availability. Panthers prefer to move through vegetated areas and rarely move through open areas except at night. It is important to maintain vegetated corridors between habitats to allow for panther movement.

The panther's preferred prey items are white-tailed deer and feral hogs. Secondary prey includes raccoons, nine-banded armadillos, marsh rabbits, and American alligators.

The National Park Service has an ongoing project monitoring the status of the panther population within the Preserve. The overall purpose is to provide information to management so that their decisions will support and enhance panther recovery and to determine the panthers' behavioral and/or demographic responses to natural events, management actions, and human impacts in south Florida.

*Wood Stork (Mycteria americana)*. Endangered wood storks forage annually in the Preserve when lower water levels provide concentrations of fish. Documented nesting in the Preserve was rare until 1996 when 45 colonies were reported (Jansen and Brooks 1996). The previous two consecutive years of high water and subsequent buildup of the prey base apparently provided ideal conditions in which to raise young. Wood stork nests have been found only sporadically in the Preserve since 1996. The storks feed on fish in shallow water and may use the project site for feeding. The project site is not within the 1,500-foot primary zone or the 2,500-foot secondary zone of a known nesting or roosting site (Ogden 1990).

*Eastern Indigo Snake (Drymarchon corais couperi)*. The threatened eastern indigo snake is a long, black snake of mostly upland habitats in Florida; however, in portions of south Florida, it may also occupy agricultural sites and areas along canals and other artificial waterways. In the northern parts of their range, eastern indigo snakes often take refuge from the cold in gopher tortoise burrows, but even in south Florida, where thermal stress may not be a limiting factor, the snakes still seek and use underground refuges.

*Florida Bonneted Bat (Eumops floridanus)*. Endemic to Florida, the endangered Florida bonneted bat has been recorded or observed in Collier, Charlotte, Lee, Miami-Dade, Monroe, Okeechobee, and Polk counties in a wide variety of habitat types. Little is known about the life history and ecology of this species. Like most bats in Florida, it probably forages for insects over wetlands or open water and roosts in tree cavities or manmade structures. The species has been recorded in the Preserve in the Deep Lake and Cal Stone's camp areas.

Several additional federally listed species are known to occur within the Preserve, including the American crocodile, West Indian manatee, Cape Sable seaside sparrow, Everglade snail kite, red-cockaded woodpecker, and Audubon's crested caracara. These species are unlikely to be present in the project area due to lack of suitable habitat, and thus no impacts from the alternatives are expected.

Impacts of the No-Action Alternative. Since the Owen Billie Camp is immediately adjacent to the proposed home site, special status and prey species may currently be adversely affected by human activity and may avoid the area. This impact from camp activity is probably minimal compared to the impact from the nearby highway, waysides, visitor centers, campgrounds, boardwalks, and other Indian camps.

Cumulative Impacts. Human activity related to past, present, and future development along U.S. 41 has adversely impacted special status species to a small extent. The activity at the Billie Camp contributes a very small increment to this cumulative impact.

Impacts of the Preferred Alternative. Construction and occupation of the home site could adversely affect special status species by causing animals to avoid the area. There would also be an adverse effect from removal of 0.5 acre of habitat that would otherwise be available for nesting, roosting, or foraging. This habitat type is commonly found throughout the Preserve. As previously noted, the presence of special status species at the project site is likely minimal due to proximity to human activity, so impacts of the preferred alternative, if any, would be minimal. Adverse impacts of the preferred alternative would be minimal due to the relatively small project site, and would be at least partially offset by the restoration of disturbed habitat at the mitigation site to more natural conditions.

The determination of effect under Section 7 of the Endangered Species Act for the Florida panther, wood stork, eastern indigo snake, and Florida bonneted bat is *may affect, not likely to adversely affect*. The determination of effect for the American crocodile, West Indian manatee, Cape Sable seaside sparrow, Everglade snail kite, red-cockaded woodpecker, and Audubon's crested caracara is *no effect*.

Cumulative Impacts. The presence of U.S. 41 developments has cumulatively caused displacement of special status and prey species and loss of preferred habitat, an adverse effect. Construction and occupation of the home site would not add any appreciable increment to this cumulative impact, as there are vast tracts of available habitat for displaced animals.

## **Wildlife**

Affected Environment. Because of the proximity to human activity associated with the Billie Camp and U.S. 41, usage of the home site by wildlife other than special status species is probably not high. During a field visit on December 19, 2016, no wildlife was observed, but wildlife could possibly use the site, including white-tailed deer, black bears, feral hogs, raccoons, barred owls, snakes, turtles, frogs, and a variety of other reptiles, birds, and mammals. Such usage would consist of nesting, roosting, and/or foraging.

Impacts of the No-Action Alternative. Since the Billie Camp is immediately adjacent to the proposed home site, wildlife may be adversely affected by human activity and may avoid the area. This impact from camp activity is probably minimal compared to the impact from the nearby highway, waysides, visitor centers, campgrounds, boardwalks, and other Indian camps.

Cumulative Impacts. Human activity related to past, present, and future development along U.S. 41 has adversely impacted wildlife to a small extent. The activity at the Billie Camp contributes a very small increment to this cumulative impact.

Impacts of the Preferred Alternative. Construction and occupation of the home site could adversely affect wildlife by causing wildlife to avoid the area; however, wildlife currently using the area may have grown accustomed to human activity and may return after construction is completed. There would also be an adverse effect from removal of 0.5 acre of habitat that would otherwise be available for nesting, roosting, or foraging, although there may be minimal usage of the constructed home site. As previously noted, the presence of wildlife at the project site is likely minimal due to proximity to human activity, so impacts of the preferred alternative, if any, would be minimal.

Cumulative Impacts. The presence of U.S. 41 developments has cumulatively caused displacement of wildlife and loss of preferred habitat, an adverse effect. Construction and occupation of the home site would not add any appreciable increment to this cumulative impact, as there are vast tracts of available habitat for displaced animals.

## **Water Quality and Flow**

Affected Environment. The original boundary of the Preserve was established at the perimeter of a predominantly self-contained, rain-driven watershed that lies upgradient of Everglades National Park. Major cypress strands were logged in the early 1900s, and areas of the watershed were used as farmland in the decades prior to the Preserve's establishment. However, the area's remoteness limited it to only sparse development, much of which has been reclaimed since the Preserve's establishment in 1974.

The waters of the Preserve are currently designated as Outstanding Florida Waters. 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.

The low-nutrient, high-quality water in the Preserve is vulnerable to degradation from contaminants. Because the water is of such high quality, even small amounts of contaminants can result in relatively large adverse effects. Potential external sources of non-point source pollution

primarily include nutrient-enriched runoff from upstream agricultural activities, especially along the Preserve's northern boundary. Potential internal contaminant sources include leakage and ancillary activities associated with oil and gas exploration and development, operation of vehicles along roads, and oil and fuel leakage and soil disturbance caused by the operation of ORVs.

Water flows through the Preserve and under U.S. 41 through numerous culverts and bridges before discharging into the Gulf of Mexico. Flows in some sections of U.S. 41 were improved in the mid-1990s by the construction of several new water control structures. The Preserve is essentially a self-contained hydrologic unit recharged primarily by local rainfall (Miller et al. 2004). U.S. 41, finished in 1928, and subsequently constructed roads obtained fill via excavation of parallel canals, resulting in both elevated obstructions to sheet flow as well as channeling of water in open canals.

The water quality at the project site is expected to be high, as it is away from the contaminant sources described above. The construction of U.S. 41 and other manmade features in the last century has resulted in interception of much of the sheet flow from the north and east and diversion of the water into canals, causing a lowering of the water table and a decrease in the hydroperiod. As the effects of climate change progress, the freshwater regime adjacent to the home site would be expected to transition to brackish conditions due to rising sea level and saltwater intrusion.

Impacts of the No-Action Alternative. Continuation of current management would result in no impact to water quality or flow.

Cumulative Impacts. Since this alternative would have no impacts on water quality or flow, it would result in no contribution to cumulative impacts.

Impacts of the Preferred Alternative. Adverse impacts to water quality could result from home site and mitigation construction. Deposition of fill at the home and septic system sites and excavation of fill from the mitigation site could cause short-term elevations in turbidity levels and increased potential for leaks and spills of fluids from construction equipment. Implementation of silt screen and BMPs would mitigate these impacts. Collectively, the impacts would be adverse but temporary.

Construction of the home and septic system fill pads would alter sheet flow at the site to a small extent, but hydrology has already been impacted from other developments, most notably U.S. 41. The removal of fill at the mitigation site would mitigate impacts by re-establishing natural flow at that site.

Cumulative Impacts. The past, present, and future developments along U.S. 41 in the vicinity of the proposed action have caused minimal to no cumulative impact to water quality, as storm water structures have minimized or eliminated contaminated discharges. These developments, however, have contributed a small adverse impact to water flow by disrupting sheet flow, which can alter ecosystems through decreased hydroperiod. The



construction of the home and septic sites, in conjunction with the mitigation site, would contribute a very small increment to this impact.

## **Floodplains**

Affected Environment. The Billie Camp and project site are located within the 100-year regulatory (Base Floodplain) floodplain according to the Federal Emergency Management Agency's Digital Flood Insurance Rate Map (Collier County 2016). The proposed action qualifies as a Class I action as defined by NPS Director's Order #77-2 (NPS 2003). Since the project site is within the 100-year regulatory floodplain, a Floodplains Statement of Findings has been prepared (Appendix B).

Impacts of the No-Action Alternative. Continuation of current management would result in no impacts to floodplains.

Cumulative Impacts. Since this alternative would have no impacts on floodplains, it would result in no contribution to cumulative impacts.

Impacts of the Preferred Alternative. Implementation of the preferred alternative would affect the capacity of the floodplain to store floodwaters. The flow of water in the floodplain during floods would also be slightly affected. These impacts would be adverse but localized. The mitigation site is also located within the 100-year regulatory floodplain, and restoring the site to its original pre-disturbance elevations would benefit floodplains by restoring natural floodplain values such as soils, vegetation, wildlife habitat, dissipation of flood energy, floodwater storage, sedimentation processes, and ground water recharge.

Cumulative Impacts. Almost all of the past, present, and foreseeable future development projects along U.S. 41, including the Billie Camp, have impacted or will impact the 100-year regulatory floodplain. These impacts are slightly adverse and result from filling the sites, largely wetlands, to accommodate facilities such as parking areas, trails, and residences. Implementation of the preferred alternative would add a small increment to these cumulative impacts but would be offset by beneficial impacts to floodplains at the mitigation site.

## **Agencies and Individuals Consulted**

This EA will be made available for a 30-day public comment period. In addition, consultation letters will be sent to the U.S. Fish and Wildlife Service, Florida State Historic Preservation Office, Florida Department of Environmental Protection Florida State Clearinghouse, and affected tribes.

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