



ENVIRONMENTAL ASSESSMENT

Everglades National Park Flamingo Marina Bulkheads Rehabilitation Project

Flamingo, FL



May 2024

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1 PROJECT PURPOSE AND NEED

1.1 INTRODUCTION

The National Park Service (NPS) is proposing a project to repair old and damaged areas of the Flamingo Marina within the Everglades National Park (EVER). The Flamingo Marina (hereafter referred to as the Marina) was built in 1955-1956 with pre-cast concrete panels and poured concrete seawall caps, steel tie rods, and creosote-treated piles (Figure 1). Due to rusting and expanding steel, the bulkheads are showing signs of aging (Figure 2) and could eventually be a potential hazard for visitors and staff. Hurricanes and the proximity of the bulkheads to the open waters of Florida Bay cause them to be especially vulnerable to storm damage. Bulkheads may be subject to catastrophic failure, causing them to fall into the water without intervention. Such a failure could cause damage to adjoined boat docks, buildings, and other nearby facilities. For example, the Gas Station fuel tank system at the Flamingo Marina, could become subject to severe structural damage without the integrity of the adjacent bulkheads.



Figure 1. Flamingo Marina project site



Figure 2. The concrete bulkheads of the Flamingo Marina showing damage and visible wear. Photos taken by Corps during a site visit on March 17, 2022

1.2 PROJECT AREA LOCATION

Flamingo Marina is located at the southernmost tip of the Florida peninsula within EVER. It is approximately 40 miles southwest of the main park entrance in Monroe County, FL. The Marina borders Florida Bay to the south but is also connected to Coot Bay to the north. State highway 9336 is the single road that brings visitors into the Marina. There are also campsites immediately southeast and west of the Marina within Flamingo. The Marina is the primary entrance point into Whitewater Bay and Florida Bay for visitors, researchers, and park staff. The Marina provides access to the Marjory Stoneman Douglas Wilderness. The Marina has four basins with approximately 4,715 linear feet (LF) of bulkhead: 590 LF at Visitor Center Bay, 1,100 LF at Florida Bay, 1,280 LF at Whitewater Bay, and 1,000 LF at Maintenance Marina Bay (Figure 1).

1.3 PURPOSE AND NEED FOR ACTION

Purpose of Action

The purpose of this project is to rehabilitate the Marina bulkheads and associated utilities, pilings, aluminum floating docks and walkways to address safety concerns and enhance accessibility.

Need for the Action

Flamingo Marina and facilities are experiencing visible degradation, such as bulkhead cracking and spalling (Figure 2), that have resulted from years of environmental effect and public use. The bulkheads have reached the extent of their design life and are at risk of failure. Through years of harsh marine environment and boat collisions, the Maintenance Marina Bay boat shelter is in poor condition and at risk of failure. The boat shelter is showing signs of substantial deterioration resulting from spalling concrete, and exposed and corroded steel reinforcement in the support columns and piers. Without the proposed project the Marina bulkheads would continue to degrade, and visitor access, use, safety, and experience could decline.

Objectives in Taking Action

Objectives are more specific statements of purpose that provide additional basis for comparing the effectiveness of alternatives in achieving the desired outcomes of the action (NPS 2015a). The alternatives carried forward for detailed analysis must meet all objectives to a large degree and must resolve the purpose of and need for action. The following objectives were identified by the planning team for this project:

- Enhance visitor experience by updating facilities and amenities (power, water, docks for boat access, etc.).
- Improve safety by repairing cracked and damaged bulkheads, ramps, walkways, and aging amenities.
- Increase resiliency and reinforce the bulkheads to have a 50 to 100-yr life span.
- Conduct construction to minimally impact the surrounding wildlife and environment and visitor safety and experience.
- Mitigate impacts to historic resources.

1.4 ISSUES AND IMPACT TOPICS

During the NPS civic engagement period conducted from March 29 to April 27, 2023, public comment was received from participating agencies, stakeholders, and the public. Correspondences received identified specific issues and concerns, related to the project and the preliminary alternatives presented. As part of civic engagement, the NPS sent letters to U.S. and Florida senators and representatives; Monroe County commissioners; Florida City and Homestead mayors; Miccosukee Tribe of Indians of Florida, Seminole Tribe of Florida, and Seminole Nation of Oklahoma governments; and the Florida State Clearinghouse coordinator. Those issues and concerns that were retained for detailed analysis are included in the “Affected Environment and Environmental Consequences” chapter of this EA. NPS organizes the discussions of the affected environment and environmental consequences by “impact topics,” which are headings that represent the affected resources associated with the issues refined during civic engagement and internal coordination with the project’s interdisciplinary team.

Impact Topics Eliminated from Further Analysis

National Environmental Policy Act (NEPA) and Council on Environmental Quality regulations direct federal agencies to prepare NEPA documents that are, “concise, clear, and to the point.” The National Park Service (NPS) considered several issues and resource topics during the development of this Environmental Assessment (EA). Resource topics were dismissed from detailed analysis for the following reasons:

- Potential environmental impacts associated with the issue are not central to the proposal or of critical importance.
- Detailed analysis of environmental impacts related to the issue is not necessary to make a choice between alternatives.
- The environmental impacts associated with the issue are not contentious among the public or other agencies.
- Impacts to the resource are not anticipated or are expected to be negligible (i.e., the impact to the resource is barely perceptible and not measurable and confined to a small area).

Details on the dismissals for these issues and resource topics are described below.

Floodplains

Executive Order 11988, Floodplain Management instructs federal agencies “to avoid, to the extent possible, the long and short-term adverse effects associated with the occupancy and modification of floodplains and to avoid direct or indirect support of development in floodplains wherever there is a practicable alternative.” The order requires Federal agencies to develop agency specific guidance, provide leadership, and take action to reduce the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains. *NPS Director’s Order 77-2: Floodplain Management* was developed in accordance with the executive order. The Director’s Order does not apply to historic or archaeological structures, sites, or artifacts whose location is integral to their significance. The project area is located within the Flamingo Mission 66 Developed Area Historic District. The location of the historic district’s marina is integral in providing water-based access to Florida Bay, Whitewater Bay, and other nearby wilderness and backcountry areas of Everglades National Park.

Geologic Resources and Soils

No impacts to geologic features are anticipated. If the project requires a specific type and/or quality of fill material, it would be obtained outside of the project area from a permitted local or regional source. No commercial fill material sources have been selected at this time. Since work would occur in submerged areas and in locations, including staging areas, that have had soils previously disturbed from the initial construction of the Flamingo Marina, the loss of native soils is not expected to occur. The potential for increased sediment during construction would be mitigated through implementation of best management practices.

Night Sky

The National Park Service recognizes that natural lightscapes and dark night skies are critical for natural and cultural resources, the visitor experience, and astronomy-based recreation and interpretive programming. Outdoor lighting often obscures natural darkness. To minimize and mitigate this impact, proposed new and replacement permanent lighting associated with the project would incorporate NPS sustainable outdoor lighting principles (NPS 2024).

Wilderness

The Flamingo Marina project area is located outside of the Marjory Stoneman Douglas Wilderness. The untrammeled, natural, undeveloped, and other features of value qualities of this wilderness would not be impacted by the project. Although the project would adversely affect visitors accessing the nearby wilderness while the Florida Bay basin and Whitewater Bay basin boat launches are temporarily closed during construction, once visitors enter the wilderness from alternative access points, the opportunity to experience solitude or primitive and unconfined recreation would be obtainable. The effects on visitors accessing wilderness from the boat launches are described and analyzed in the Visitor Use and Experience impact topic.

Hazardous, toxic, or radioactive waste (HTRW)

No HTRW exists within the area. The bulkhead/wall rehabilitation may lead to the removal and replacement of the fuel dispensers, housekeeping pads, dispenser fuel sumps, and some of the underground fuel supply piping. A spill contingency plan will be required of the contractor prior to construction.

Aesthetics

The surrounding aesthetics of the Flamingo Marina were very natural and visually appealing. The Marina is surrounded by natural wetlands and mangroves. The Marina itself is an historic site, and though

historically important the seawall bulkheads have many cracks and holes throughout the basins. A new wall would be aesthetically beneficial and eliminate growing cracks and holes throughout the basins.

Natural Sounds

Noise levels within the project area were low and may increase during construction but any effect would be temporary and cease with construction. Ambient sources of noise come from residential insects, birds, reptiles and other animals and recreational activities such as boating, fishing, research, etc. The level of noise could vary from different seasons depending on the number of visitors. Noise levels are expected to increase from typical levels during construction. The noise created by the demolition of the boat shelter during construction can create discomfort in marine mammals and may disturb upland animals. However, this effect would be temporary and cease after construction.

Climate Change

Other than reinforcing the structural integrity of the bulkheads to protect against wave actions, the adverse impacts on the four Flamingo marina basins due to sea level rise, increased storm surges, and other climate change effects would not vary between the No Action Alternative and Alternatives B and C. This is because the height of the bulkhead walls would not be raised to shield these effects. The NPS considered constructing higher bulkheads at each of the marina basins to reduce climate change impacts but determined that this would require elevating the entire Flamingo development, which would be economically infeasible at this time (see “Alternatives Eliminated from Detailed Evaluation” section of the EA). Impacts on climate change from the implementation of Alternatives B and C are addressed under the “Greenhouse Gases and Air Quality” section of the EA.

2 ALTERNATIVES

CEQ implementing regulations for NEPA provide guidance on the consideration of alternatives in an EA. These regulations require the decision-maker (NPS) to consider the environmental effect of the proposed action and a range of alternatives, including no action (40 CFR 1502.14). The alternatives analyzed in this EA are based on the result of internal scoping and civic engagement. NPS explores and objectively evaluates three alternatives in this EA:

- Alternative A: No Action Alternative.
- Alternative B: Hydraulic Impact Hammer
- Alternative C: Hard Ground Press-in Method.

2.1 ALTERNATIVE A: NO ACTION ALTERNATIVE

Under the No Action Alternative, Alternative A, regular maintenance to the Marina, ramps, piers/docks, pilings, utilities, and boat shelter would continue as needed and as funding allows to the best of the NPS’s ability. The Flamingo Marina is showing signs of wear with cracking and spalling. Existing steel tie rods are significantly corroded, and are installed within the tidal zone, causing them to be wet and exposed to air during each tidal cycle, enhancing corrosion. Without any action, the existing bulkheads could be subject to catastrophic failure, causing them to fall into the water. Such a failure could also cause damage to adjoined boat docks. Buildings and other facilities near the bulkheads, including the Flamingo Gas Station fuel tank system, and the historically significant Flamingo Visitor Center and Flamingo Marina Store could become subject to severe structural damage without the integrity of the adjacent bulkheads. Hurricanes and the proximity of the bulkheads to the open waters of Florida Bay cause them to be especially vulnerable to storm damage. Failed bulkheads could result in partial, or potentially complete,

closure of entire boat basins and preventing access to the waters of Whitewater and Florida Bays. In addition to providing access for concession tour boat operations, private boaters, governmental and institutional researchers, and maintenance operations, Flamingo Marina facilities also provide access for park Law Enforcement rangers that, in addition to normal patrol duties, serve as the primary government search and rescue operation for much of Florida Bay.

2.2 ACTION ALTERNATIVE B: HYDRAULIC IMPACT HAMMER

Under Action Alternative B the bulkhead wall system would be built to a 50-100-year design standard. The new wall would be constructed of precast soldier piles and panels, would be built up to 18 inches in front of the existing wall system, and would be connected (old and new bulkheads) by a concrete cap (Figure 3). The existing wall structure would remain in place and undisturbed. Cantilevered soldier piles would be constructed using air or hydraulically powered impact hammer and an auger would be used for trench excavation. A preformed pile hole would be dredged, with minimum of 25' embedment. Under this alternative, excavation of concrete panels would use a backhoe or trenching machine parallel to the existing wall. Solider piles would be installed with preformed dredged holes, requiring clean cementitious fill between the existing and new bulkhead walls. Steel sheets would then be placed into the dredged holes with solider piles using a crane. A new concrete cap would cover both the former and new bulkhead. In-water barge access would be required for this construction methodology. The shallow Marina would require dredging to accommodate barge access.

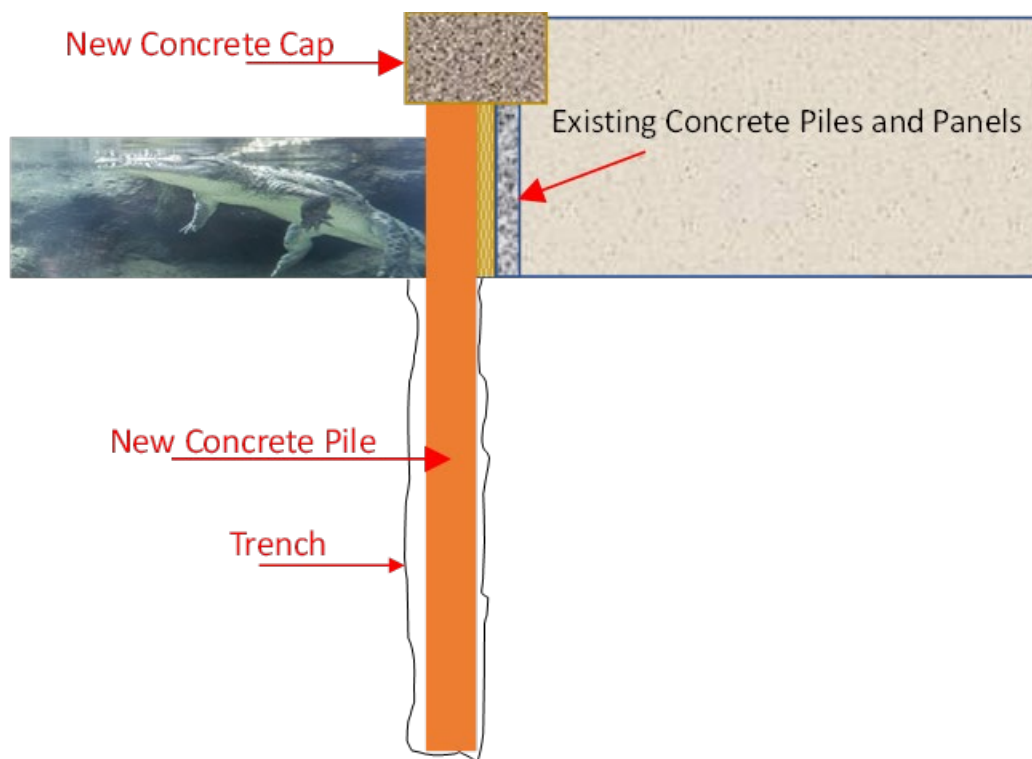


Figure 3. Alternative B: Hydraulic impact hammer

2.3 ACTION ALTERNATIVE C: HARD GROUND PRESS-IN METHOD (PROPOSED ACTION PREFERRED ALTERNATIVE)

Under Action Alternative C the bulkhead wall system would be built to a 50-100-year design standard. As in Alternative B, the new wall would be built in front of existing wall system and designed to carry the load of the existing wall (Total distance from the outside face of the old wall to the new wall Visitor Center Bay = 42", remaining basins = 39".) The new wall would be constructed of cantilevered steel sheet pile and both walls (old and new bulkheads) would be connected by a new concrete cap (Figure 4 and Figure 5). The Hard Ground Press-In method would be used to construct the wall under this alternative. The method involves specialized equipment that uses hydraulic force to push piles into the ground (Depths for pilings are as follows: Visitor Center 40 ft, Florida Bay 36 ft, Whitewater Bay 35 ft and Maintenance Marina Bay 6 ft) while simultaneously augering the hard ground with minimal loss of discharged soil. The equipment also includes the ability to crush hard rock using an auger in advance of the sheet or pile tip to ease the installation through the expected difficult soil conditions. This is a method of sheet pile construction using specialized hydraulic equipment that is low-impact and low-vibratory with minimal soil loss. The equipment uses previously placed pile to support the equipment, this allows for a significantly smaller construction footprint. On the water side of the wall, a concrete façade would be placed to provide additional impact and corrosion protection, increasing the expected service life and overall resilience of the wall. The concrete façade would be connected to the steel sheet pile and placed (not driven) in front of the wall extending to the mudline. No dredging would take place under this alternative. Clean cementitious fill material would be placed in between the two wall systems.



Figure 4. Hard Ground Press-In Methodology proposed for Alternative C

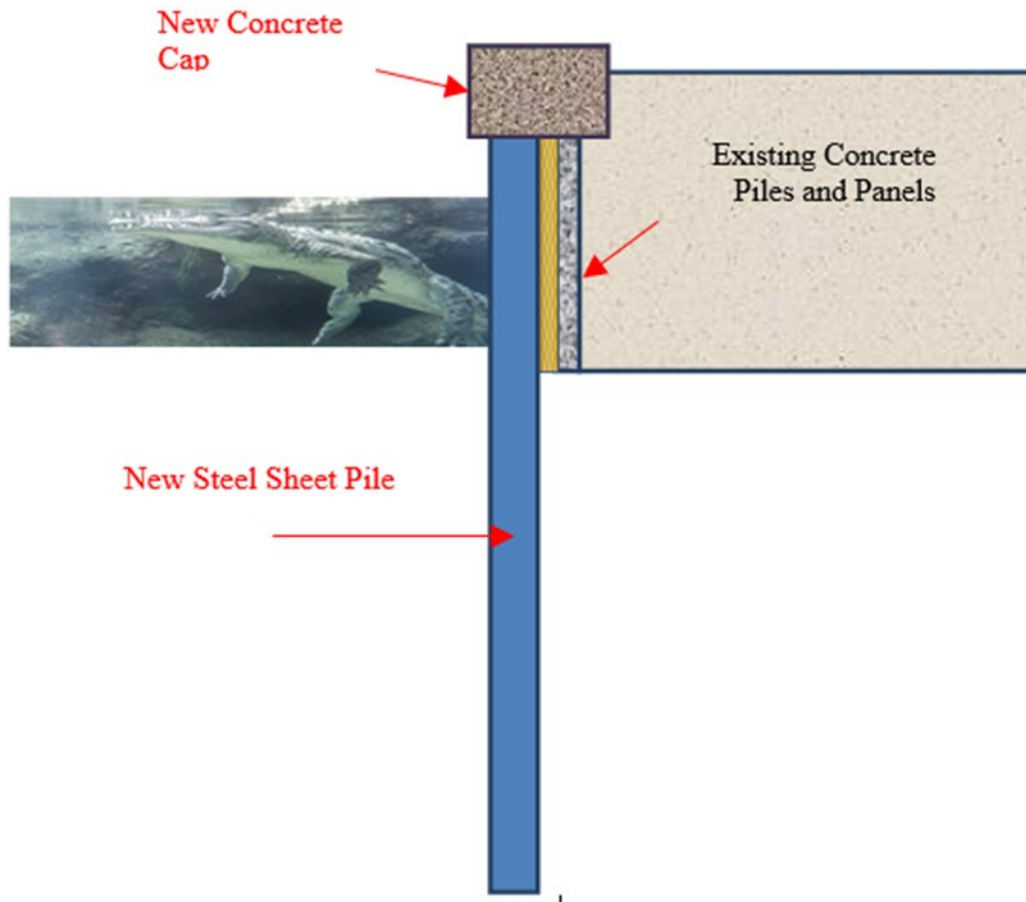


Figure 5. Alternative C - Hard Ground Press-in method

2.4 ELEMENTS COMMON TO THE ACTION ALTERNATIVES

Within the Alternatives, both Action Alternatives have common elements. Both alternatives would include:

- Built to a 50-100-year design standard.
- It is anticipated that work would occur in the following priority order depending on available funding: 1) Florida and Whitewater bays, 2) Visitor Center Bay, and 3) Maintenance Marina Bay. Work may not necessarily occur immediately after each priority is completed. Construction is expected to begin in 2025.
- Total construction duration may take one to five years. With exception of the bulkheads in the area containing the marina store, rest rooms, fuel pumps, and parking lot between Florida Bay and Whitewater Bay, the basins would be constructed one at a time. This approach would mitigate impacts on visitors and park and concessioner operations. Construction at each basin would take between six months to two years depending on basin size, implementing required protection measures for species of special concern during certain times of the year, and weather delays.
- The following areas would be closed entirely during construction within each basin:

- Staging and stockpile areas as identified in Figure 6.
 - The water and land around and immediately adjacent to the Maintenance Marina Bay boat shelter (includes demolition and replacement).
- Other areas not closed entirely during construction may be subject to periods of partial access. These areas would likely include but are not limited to.
 - Boat launch ramps in Flamingo Bay and Whitewater Bay.
 - Floating docks in Flamingo Bay, Whitewater Bay, and Maintenance Marina Bay
 - Vehicle and pedestrian access around and between Flamingo Bay, Whitewater Bay, and Visitor Center Bay basins.
 - Portions of the Guy Bradley Visitor Center building and surrounding grounds.
- Staging areas would be in previously established paved parking areas. All staging areas would be temporary. However, landscaping near staging areas may be disturbed during the transport or moving of equipment but would be returned to their original conditions post construction.
- The new bulkhead would be built in front of the existing wall.
- Clean cementitious fill would be transported on haul trucks from an approved permitted source located outside of the park to the project sites in Flamingo.
- A new concrete cap in front of the existing cap.
- Damaged walkways would be repaired unless full replacement is needed.
- There would be new electrical and water connections at bulkheads and dispensers. Whitewater and Florida Bay improvements include utility services that provide boat hookups and lighting.
- Removal and replacement of wood pilings and aluminum floating docks.
- Remove and replace the following features: utility pedestal, new boat offloading sewage pumps, fuel dispensers, circuit breakers, plumbing and wiring, sewage shore tie's, equipment housekeeping pads. In addition, makeshift water stations would be removed, but not replaced and a new sewage grinder pump station would be added.
- A small barge would be required to remove and replace aluminum floating docks and timber pilings not accessible from land and would not require dredging. Aluminum floating docks would be re-used and repaired, if necessary, depending on their condition, or replaced with new docks of similar size with no increases in docking capacities. Timber pilings would be replaced and relocated based on the new wall.

Maintenance Marina Bay Boat Shelter Replacement

The existing Maintenance Marina Bay boat shelter would be demolished prior to the replacement of the connecting bulkhead under and behind the shelter. A new boat shelter, compatible in mass, scale, and features to the existing historic boat shelter, would then be constructed within the same location of the bay. The north side of Maintenance Marina Bay, encompassing both land and water, would be closed for the duration of boat shelter demolition, bulkhead replacement construction, and boat shelter replacement construction. These closures may not coincide for each phase. The staging site for all phases of the project would be located in the open asphalt area north of the existing boat shelter. The existing wood docks and other materials associated with the boat shelter would be removed and stored for reuse in the new replacement boat shelter. During demolition, the roof of the boat shelter would be removed first, then the columns down to the existing pile caps, and finally the piles above and below the waterline. The shelter columns and pilings that are directly connected to the bulkhead would be carefully removed so that bulkhead replacement activities can occur. Safety and resource protective measures would be in place to avoid or greatly reduce the volume of debris inadvertently entering the basin during demolition activities. Such measures may include the installation of debris catchment netting and/or removing the shelter roof and columns by cutting them into smaller manageable pieces and lifting them away from the basin with a

crane or similar machine for further demolition and transport. Demolition is anticipated to take approximately 1 to 2 months. All debris would be disposed outside the park.

After the bulkhead is replaced in the vicinity of the previous boat shelter, the new replacement boat shelter, compatible in mass, scale, and features to the existing historic boat shelter, would be independently supported (not connected to the new bulkhead) utilizing new reinforced concrete piles and pile caps. Depending on the results of a geotechnical analysis, the concrete piles could be driven into the substrate of the Maintenance Marina Bay basin to bedrock. Concrete columns would be constructed with precast girders and joists. The roof would be sloped to shed water into the basin. The piles would be designed as fixed at the base to resist wind and seismic forces. A roofing material and drip edge would be applied to protect the top and sides of the precast concrete members. Potential equipment to be used would include a pile driver, a crane, and a barge to drive piles in the basin. Construction of the replacement boat shelter after bulkhead is replaced is anticipated to take approximately 8 to 12 months.



Figure 6. Proposed staging areas on pre-existing asphalt. All proposed staging areas would be temporary.

2.5 ALTERNATIVES ELIMINATED FROM DETAILED EVALUATION

The following alternatives were eliminated from further consideration:

ALTERNATIVE D: REMOVAL AND REPLACEMENT OF THE EXISTING BULKHEADS The Project Scoping Assessment Report (PSAP) called for the removal and replacement of the existing bulkheads. Due to environmental and ecological concerns associated with the removal of the existing bulkheads; the design team recommended leaving the existing bulkheads in place and constructing new bulkheads in front of the existing bulkheads.

ALTERNATIVE E: PRECAST PILE AND PANEL SYSTEM WITH TIEBACKS

Under this alternative a new wall system similar to the existing system would be constructed by using either precast I-piles or T-piles and precast wall panels. The new system would have a shorter spacing between the piles and installed in a way that the new piles are not placed in front of the old piles creating a staggered look. Tie rods would be connected to the new piles and drilled diagonally downward through the panels of the old wall and anchored into hard rock to provide a rock anchor. Ultimately this alternative was eliminated from detailed study because it would be difficult to construct due to the material and transportation costs, and because it would cause high environmental disturbance to the existing site. This method also has greater risk that the existing wall system would fail. The installation of the tiebacks would have to be installed from the water side using a barge and drilling rig which would be complicated and possibly not feasible due to the water line.

ALTERNATIVE F: SECANT/SHEET PILE WALL

Under this alternative a new a sheet pile wall system would be installed in front of the existing system. The sheet pile system would be driven to a depth deep enough to function as a cantilevered wall system. One option is the placement of a precast concrete façade on the top of the wall that extends approximately 6 to 12 inches below the low water level. Another option is covering the wall with the QuakeWrap system, or similar products. Both options would provide a similar look to the existing wall and provide additional corrosion protection to the sheet piles. This option would not require a tieback system that goes through the existing walls. If designed properly, steel piles would have a longer lifespan than concrete piles. This alternative was eliminated from detailed study because it would cause high environmental disturbance to the existing site from noise, it would have high material cost, and it would be difficult to construct given the location of the Marina. Driving of the piles would likely cause an increase in noise and vibration impacts from the pile installation methods. QuakeWrap panels would require underwater installation, which would be difficult due to the sensitive and potentially hazardous wildlife present in and surrounding the marina basins.

ALTERNATIVE G: ELEVATED BULKHEADS

Under this alternative, the bulkheads would be raised above the existing bulkhead elevations to shield from sea level rise, increased storm surges, and other detrimental effects. Elevating the bulkheads would necessitate elevating the entire Flamingo development and associated roads, an area in excess of 150 acres, a comparable height which would be economically infeasible at this time. Elevating the bulkheads without elevating the Flamingo development and associated roads would have substantial impacts on visitor and administrative access to the basins; the Flamingo Mission 66 Developed Area Historic District; and upland areas behind and adjacent to the marina basins where receding water after storms would be unable to readily retreat back into the basins due to the raised bulkheads serving as barriers.

ALTERNATIVE H: MAINTENANCE MARINA BAY BOAT SHELTER REPAIRS

Repairing the Maintenance Marina Bay boat shelter was considered. However, due to the current and noticeable extent of damage to the structure (MWM JV2 2023) the NPS determined that making such repairs would only extend the life of the shelter for less than ten years before additional repairs to other parts of the structure not currently showing signs of deterioration are needed. Also, due to the boat shelter being physically attached to the existing bulkhead wall behind it, separating the shelter from the wall would cause the shelter to become more unstable and unsafe to conduct construction work around it. A new boat shelter would achieve similar 50- to 100-year design and construction standards as the replacement bulkheads.

2.6 FINAL ARRAY OF ALTERNATIVES

Alternatives A, B, and C were carried forward for further analysis. Section 3 (Affected Environment and Environmental Consequences) compares the alternatives in more detail, providing a clear basis for choice to the decision maker and the public. Section 4 identifies the Preferred Alternative.

Table 1. Comparison of construction techniques within action alternatives.

COMPARISON OF CONSTRUCTION TECHNIQUES WITHIN ACTION ALTERNATIVES		
ALTERNATIVES	ALTERNATIVE B	ALTERNATIVE C
Design standard	50-100-year design standard	50-100-year design standard
Construction area	Majority in-water barge construction operations	Allows for majority on-land construction
Noise and vibration levels	High noise and vibration impact during construction and dredging	Designed for minimal noise and vibratory impacts during construction
Materials	Precast concrete soldier piles and precast concrete panels	Cantilevered steel sheet piles
Methods and equipment	Hydraulic Impact Hammer, Crane, barge, jackhammer, auger, excavator, dredge	Hard Ground Press- in method, crane, impact hammer, small barge, auger
Dredging and excavation	Dredging and excavation necessary	No dredging or excavation required
Material Placement	Dredged material placement area needed	No dredged material placement needed

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the affected environment, which is intended to document the existing conditions of potentially affected resources in the park. These descriptions serve as a baseline for understanding the resources that would be impacted by implementing any of the alternatives. This chapter also includes an analysis of the environmental consequences or “impacts” of the no-action alternative and action alternative, immediately following the affected environment descriptions for each resource topic. The resource topics addressed in this chapter include other wildlife and species of special concern, essential fish habitat, wetlands and vegetation, water quality, cultural and historic resources, visitor use and experience, socioeconomics and environmental justice, greenhouse gases and air quality.

3.1 ANALYSIS METHODS FOR ESTABLISHING IMPACTS

The analysis of impacts follows CEQ implementing regulations (40 CFR 1500-1508), Director’s Order 12 procedures (NPS 2011), NPS *NEPA Handbook* (NPS 2015a), and NPS *NEPA Handbook Supplemental Guidance: Preparing Focused and Concise EAs* (NPS 2015b). The intensity of the impacts is assessed in the context of the park’s purpose and significance and any resource-specific context that may be applicable. The methods used to assess impacts vary depending on the resource being considered, but generally was based on a review of pertinent literature and park studies, information provided by on-site experts and other agencies, professional judgment, and park staff knowledge and insight.

The environmental consequences for each resource were identified and characterized based on impact type (adverse or beneficial), area of analysis, intensity, and duration. In accordance with CEQ regulations finalized in 2022 [40 CFR 1508.1(g)], effects or impacts are defined as follows:

Effects or impacts means changes to the human environment from the proposed action or alternatives that was reasonably foreseeable and include the following:

- (1) Direct effects, which are caused by the action and occur at the same time and place.
- (2) Indirect effects, which are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable.
- (3) Cumulative effects, which are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions.
- (4) Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health effects, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effects would be beneficial.

3.2 AREA OF ANALYSIS FOR EFFECT

Area of analysis refers to the geographic setting within which an impact may occur, such as the affected region. For the purposes of this EA, the area of analysis is local to EVER-Flamingo Marina site (see 1.3 for description of project Area).

3.3 TYPE OF EFFECT

The potential impacts of the alternatives were described using the following terminology:

- **Beneficial:** A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
- **Adverse:** A change that moves the resource away from a desired condition or detracts from its appearance or condition.

Duration of the potential impact was rated as follows:

- **No Duration:** No effect.
- **Temporary:** Effects generally occur during construction by the end of which the resources recover their pre-construction conditions.
- **Short-term:** Effects generally occur during construction and for a limited time thereafter, generally less than two years, by the end of which the resources recover to their pre-construction conditions.
- **Long-term:** Effects last beyond the construction period, and the resources may not regain their preconstruction conditions for a longer period.

3.4 PAST, PRESENT AND REASONABLY FORESEEABLE ACTIONS

NEPA regulations require an assessment of cumulative impacts in the federal decision-making process. Cumulative impacts are defined as “the 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 nonfederal) or person undertakes such other actions” [40 CFR 1508.1(g)]. Cumulative impacts could result from individually minor but collectively significant actions taking place over a period of time.

To determine potential cumulative impacts, past, present, and foreseeable future actions were identified in or near the project area. Cumulative impacts were considered for the no-action alternative and the proposed action, by combining the impacts of the alternatives being considered with other past, present, and reasonably foreseeable future actions and are presented at the end of each impact topic discussion (Table 2).

Table 2. Past, present, and foreseeable future projects considered in the cumulative impact analysis.

Project Title	Description	Status (Past, current, or proposed)
Rehabilitate Sewage Lift Stations – Flamingo District	This project involved replacing pumps, piping, and controls at eleven lift stations, demolishing, and replacing one lift station, and installing a new 4” sewer force main from the Flamingo housing area to the Buttonwood Canal Plug. The 2,300 linear feet force main passes through the maintenance marina area.	Past - Construction completed in August 2021.
Upgrade Main Water Line to Flamingo Visitor Center and Concessionaire Land Assignment	This project involved replacing 4,600 linear feet of 6” water line leading from the Flamingo potable water treatment plant to the Flamingo visitor center and terminating at the land assignment for the concessionaire operated restaurant and cottages. The new 8” water line passes through the maintenance marina and Florida Bay marina areas. The upgrade was needed to support fire suppression sprinkler systems for the visitor center and law enforcement offices, and the planned restaurant and lodging units.	Past - Construction completed in September 2023

Rehabilitate Flamingo Visitor Center / Guy Bradley Visitor Center	<p>In 2023, NPS completed the rehabilitation of the Mission 66-era Flamingo Visitor Center Building Complex, which includes the former Flamingo Visitor Center and Flamingo Restaurant buildings connected by the 2nd story breezeway. The visitor center complex, adjacent to Florida Bay, was damaged by hurricanes in 2005 and 2017. Reconstruction included both interior and limited exterior alterations of the structure that resulted in hardening the facility to withstand major storm events, incorporating Leadership in Energy and Environmental Design (LEED) qualities, and providing accessibility consistent with the Americans with Disability Act. All occupied space would be on the second level to minimize storm impacts. Improvements include replacing all mechanical and electrical systems, the building elevator, architectural finishes, and built-in furnishings. New facility features include substantial interpretive and educational space, museum/exhibit space, multi-purpose meeting room, conference room, bookstore, backcountry permit area, restrooms, and staff offices. Upgrades to the former visitor center area could support park law enforcement and resource protection operations. The former Flamingo Visitor Center was renamed for Guy Bradley, the first Audubon game warden, who was killed in the line of duty protecting wading birds during the plume hunting era of the late 1800s and early 1900s. The Guy Bradley Visitor Center opened its doors in July 2023.</p> <p>This project is part of the vision established in the 2008 Flamingo Commercial Services Plan/Environmental Assessment, which also included the building of a new elevated restaurant and cottages within the former Flamingo Lodge site, as well as numerous other Flamingo-area improvements. They were described in greater detail in the 2010 Flamingo Master Plan and Design Program and also described and evaluated in the 2015 EVER General Management Plan/Environmental Impact Statement.</p> <p>Reference links: ParkPlanning - Rehabilitate Flamingo Visitor Facility/Guy Bradley Visitor Center (nps.gov) ParkPlanning - Flamingo Commercial Services Plan / EA (nps.gov) ParkPlanning - Flamingo Master Plan/Design Program (nps.gov) ParkPlanning - Everglades National Park GMP/East Everglades Wilderness Study (nps.gov) Flamingo Grand Opening Announcement - Everglades National Park (U.S. National Park Service) (nps.gov)</p>	Current - Construction completed in 2023.
Rehabilitate Parkwide Water and Wastewater Systems	<p>The NPS is developing plans to improve and/or replace multiple potable water treatment and distribution systems, and wastewater collection and treatment systems at key areas in Everglades National Park. The existing systems were critically deficient, expensive to maintain, and many are only partially operable or at the end of their service life. The proposed work at Flamingo includes rehabilitating the reverse osmosis potable water treatment plant, installing a new potable water distribution system, and replacing the existing wastewater treatment plant and wastewater collection</p>	Proposed

	<p>system (sewer lines and force main system). Replacement of potable water distribution lines and wastewater collection lines could occur adjacent to the maintenance marina, Florida Bay and Whitewater Bay marinas, and the Guy Bradley visitor center. NPS is preparing an environmental assessment (EA) to evaluate the likely environmental consequences resulting from a proposed action. The EA is anticipated to be available for public review in November 2024.</p> <p>Reference link: ParkPlanning - Rehabilitation of Parkwide Water and Wastewater Systems (nps.gov)</p>	
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3.5 OTHER WILDLIFE AND SPECIES OF SPECIAL CONCERN

Affected Environment

OTHER WILDLIFE

Everglades National Park is home to a unique assemblage of both plants and animals of tropical and temperate origins. Wildlife is abundant, and free roaming. Wildlife can occur throughout the park, even in developed areas with significant human presence. Within the project area, the presence of wildlife (fish, mammals, birds, reptiles, amphibians, and invertebrates) includes non-listed and listed, threatened, or endangered (T&E) species under the Endangered Species Act (ESA). Non-listed animal species found throughout the park includes about 300 different species of fresh and saltwater fish (e.g., largemouth bass, Florida gar, sunfish, bluegill, snook, mullet, red drum, grouper, sheepshead, etc.); over 350 species of birds (e.g., roseate spoonbill, bald eagles, osprey, hawks, vultures, pelicans, clapper rail, ibis, flamingos, coots, herons, warblers, kingbirds, and vireos, etc.); over 70 species of mammals (e.g., bats, raccoons and opossums, and manatee, etc.); about 60 species of reptiles (e.g., alligators, snakes, several species native lizards and anoles, as well as non-native snakes, lizards, anoles and geckos); about 40 species of amphibians (e.g., frogs, newts, and sirens); and unknown number of terrestrial and aquatic invertebrates (e.g., butterflies, dragonflies, beetles, flies, bees, crayfish, and mosquitos).

SPECIES OF SPECIAL CONCERN

Species of special concern that may occur in the area and may be affected by the project include nine Federally listed species under the ESA. The project area includes established designated critical habitat (DCH) for two listed species, the American crocodile and smalltooth sawfish. The T&E species identified within the project area (Table 3) were from the USFWS official species list received on September 26, 2023, and the National Marine Fisheries Services (NMFS) ESA species directory, or previous consultation with USFWS (2022-0053274) that occurred during the geotechnical investigations for this project (Appendix A). This EA only evaluates the T&E species that have the potential to be impacted by the proposed project alternatives. NPS is currently undergoing section 7 consultation with USFWS (formal) and NMFS (informal), which will be completed prior to a final determination and selected action. The consultations go into further detail on determinations for each species, effects from the project and species with no effect determinations. Species that may be impacted by the project and/or their associated DCH were described below.

Table 3. Federally listed T&E species that may occur within the project site.

Common Name	Scientific Name	Status	Managing agency
Eastern indigo snake	<i>Drymarchon corais cooperi</i>	Threatened	USFWS
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	USFWS/NMFS
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered	USFWS/NMFS
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered	USFWS/NMFS
Green sea turtle	<i>Chelonia mydas</i>	Threatened	USFWS/NMFS
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened	USFWS/NMFS
American crocodile ^D	<i>Crocodylus acutus</i>	Threatened	USFWS
West Indian manatee	<i>Trichechus manatus</i>	Threatened	USFWS
Elasmobranchs and Fishes:			
Smalltooth sawfish ^D	<i>Pristis pectinata</i>	Endangered	NMFS

^D Indicates the species has designated critical habitat within the project area

Eastern indigo snake

The Eastern indigo snake (*Drymarchon corais couperi*) is listed under ESA as threatened wherever it is found and managed by USFWS. The most recent recovery plan was published in 2019 by USFWS. The species' historical range has been contracted now to the coastal plains of Florida and Georgia (USFWS 2019) and the project site is within the range for the species. Threats include habitat modification, the pet trade, fragmentation, domestic pets, vehicle strikes and gassing while in gopher tortoise burrows. The snake's habitat preferences include upland and lowland habitats, but the species could also use a variety of natural or human-altered habitat in the southern portion of its range. In 2019, the USFWS estimated the population could continue to decline without conservation efforts (USFWS 2019). While there were no records of eastern indigo snakes officially reported, they have been reported as roadkill near Flamingo and could very likely be in the area (USFWS 2022).

Sea Turtles

Five species of sea turtles that were federally listed as threatened or endangered under the ESA may exist in the project area. NMFS has jurisdiction over sea turtles within the marine environment, and USFWS has jurisdiction over nesting sea turtles. There is no sea turtle nesting in the vicinity of the project area, and turtles are commonly observed farther from shore but there is always the potential that they could swim into a basin. Sea turtle species include the leatherback sea turtle (*Dermochelys coriacea*), hawksbill

sea turtle (*Eretmochelys imbricata*), Kemp's ridley sea turtle (*Lepidochelys kempii*), green sea turtle (*Chelonia mydas*), and loggerhead sea turtle (*Caretta caretta*) (FWC/FWRI website). The leatherback, hawksbill, and Kemp's ridley are all listed as endangered, while the green and loggerhead are listed as threatened.

Kemp's ridley sea turtles were listed as endangered in 1970 (35 FR 18319). No DCH has been identified for this species. They are considered the smallest sea turtle in the world and prefer nearshore habitats. Kemp's Ridley are most commonly found in the Gulf of Mexico (NOAA 2023) and primarily nest in the Gulf of Mexico. Their distribution extends to the Atlantic from Florida to New England (NOAA 2023). Their diet consists mainly of swimming crabs, but may also include fish, jellyfish, and an array of mollusks.

Green sea turtles (*Chelonia mydas*) were listed as threatened under ESA in 1978 (43 FR 32800). In 2016, 11 distinct population segments (DPS) of green sea turtles were listed (NOAA 2023). While they are found worldwide, the North Atlantic DPS (81 FR 20058) extends to the project area (NOAA 2023). Their potential lifespan is 70 years, reaching maturity around 25 years (NOAA 2023). Hatchling green turtles eat a variety of plants and animals, but adults feed almost exclusively on seagrasses and marine algae. Most green turtles spend the majority of their lives in coastal foraging grounds, which include shallow waters in both open coastline and protected bays and lagoons.

Loggerhead sea turtles (*Caretta caretta*) are found worldwide and are the most common species found in Florida (FWC 2023C). They were listed as threatened on 28 July 1978 (43 FR 32800) under the ESA. In 2011, 9 DPS were listed under the ESA. The Northwest Atlantic Ocean DPS (76 FR 58868) in the United States spans includes Florida, South Carolina, Georgia, North Carolina, and Alabama (NOAA 2023). Loggerhead critical habitat defined by NMFS is not within the project area. The loggerhead feeds on mollusks, crustaceans, fish, and other marine animals. Loggerhead sea turtles may be found hundreds of miles out to sea, as well as in inshore areas such as bays, lagoons, salt marshes, creeks, ship channels, and the mouths of large rivers.

Leatherback sea turtles (*Dermochelys coriacea*) were listed as endangered in 1970 (35 FR 8491) and are the largest species of sea turtle in the world (NOAA 2023). Their shell, unlike other species of sea turtle, is leathery and lacks scales or a hard shell. Leatherbacks have a worldwide distribution.

American Crocodile

American crocodiles (*Crocodylus acutus*) were listed as endangered under the ESA in 1975 due to habitat loss and fragmentation, and hunting, but were downlisted to threatened in 2007. The southern tip of Florida is DCH (41 FR 41914) and the proposed project site falls within Crocodile DCH (Figure 7). Crocodiles are one of the most prevalent species within the park and can be viewed sunning themselves throughout the marina. They mainly inhabit brackish or saltwater areas, or in ponds, coves, and creeks (FWC). Their diet consists of small mammals, birds, frogs, turtles, and fish (Fishman et al. 2009). Mating occurs in January and February (FWC 2023A) and nesting seasons would occur from April to September. Nests are usually laid earlier in the season and incubate for 85 to 95 days. Female crocodiles could excavate the nest when eggs have hatched and continue to care for their young. The Flamingo Marina also serves as prime nesting habitat for crocodiles and nests have often found within the bulkheads. The NPS observed 9 known nests in 2023, 6 known nests in 2022, 4 in 2021 and 5 in 2020. Over the years the Maintenance Marine Bay has had this highest number of nests and at least 1 nest consecutively. This is followed in frequency by Florida Bay, then Visitor Center Bay and whitewater Bay (Table 4). Females sometimes chose to nest in the same spot over consecutive years. Overall, the number of nests is low, and

impacts may be dependent on year. The American Alligator is lesser known in the area but is listed due to its likeness to crocodile.

Table 4. American Crocodile nesting within Flamingo Marina basins from 2022-2023. The table represents nests that were found within each basin during that year.

Year	Maintenance Marina Bay	Whitewater Bay	Florida Bay	Visitor Center Bay
2020	2	0	3	0
2021	1	0	2	1
2022	4	0	1	1
2023	6	2	1	0



Figure 7. USFWS Crocodile Designated Critical Habitat

Manatees

The West Indian manatee (*Trichechus manatus*) has been protected by the state of Florida since 1893 through the Florida Manatee Sanctuary Act (§379.2431(2), Florida Statutes). The state provided further protection in 1978 with the Florida Marine Sanctuary Act designating the state as a manatee sanctuary and providing signage and speed zones in Florida's waterways. Manatees receive federal protections under both the Marine Mammal Protection Act (MMPA), which prohibits the take of all marine mammals, and the Endangered Species Act (ESA). The manatee was listed as endangered under the Endangered Species Preservation Act of 1966 (32 FR 4001) and was subsequently grandfathered into the List of Endangered and Threatened Wildlife under the ESA in 1973. More recently, they were down listed from endangered to threatened in May 2017 (82 FR 16668). Critical habitat was designated in 1976 for the Florida subspecies (*Trichechus manatus latirostris*) (50 CFR 17.95(a)) and has not been updated since. The critical habitat federal designation is scheduled to be updated by USFWS by September 12, 2024. The scope of the project is not within federally DCH by USFWS but is within the scope of their range and are frequently observed within the Flamingo Marina Basins (NPS pers communication.) Manatees reside and feed mainly in the estuarine areas and around inlets and are only occasionally observed in the open ocean. They prefer warmer water and could migrate to springs and power plant discharge canals during the colder months. Manatees are herbivores and feed on sea grass and aquatic plants. While the manatee population has improved in recent years, there continue to be many threats to the population. Humans are manatees' biggest threat with growing pollution, loss of habitat and food, red tide, and boating strikes.

Smalltooth Sawfish

The smalltooth sawfish (*Pristis pectinata*) has been listed as endangered under the ESA by NMFS (50 CFR 224.101) since 2003. The U.S. historic population of smalltooth sawfish once ranged from Texas to North Carolina (Brame et al. 2019), but its current primary range is reduced to south Florida waters. South Florida is known as the last stronghold for this species, with the largest number of sawfish found in Charlotte Harbor through the Ten Thousand Islands of the Everglades and the Keys. This area was also established as juvenile designated critical habitat in 2009 (NMFS 2009; Figure 8), which also includes the scope of this project. Juvenile sawfish have often been observed by park staff at Visitor Center Bay, Florida Bay, and Whitewater Bay of the Flamingo Marina. In addition, there have been twenty-three sightings within six thousand feet of the marina over the last ten years (Sawfish Recovery Team Database). Shallow coastal waters, such as bays and estuaries, provide an important nursery area for juvenile smalltooth sawfish (Carlson et al, 2007.) The primary threat for smalltooth sawfish population has been from bycatch mortality from both commercial and recreational fisheries and was likely the main contributor for the decline of the species (Brame et al. 2019, NMFS 2009, Poulakis, and Grubbs 2019) Other threats include loss of habitat, entanglement in fishing lines, degraded water quality, reduction of critical habitat, disturbance by divers, and removal of their "saws" (NMFS 2009). Parturition in the everglades occurs in all months except September, but peaks in March and July (J.K. Carlson unpublished data). There is high parturition site fidelity for nurseries in the Ten Thousand Island's (Smith et al.2021).



Figure 8. NMFS Smalltooth Sawfish Juvenile Designated Critical Habitat

Environmental Consequences

ALTERNATIVE A: NO ACTION ALTERNATIVE

OTHER WILDLIFE

Under the No Action Alternative, there would be no long-term adverse or beneficial effects to other wildlife species. The existing bulkheads could eventually become unstable and unavailable/unsafe for use by the public. The benefits to species using the Marina could include reduced visitation and a decline in foot and boat traffic. The reduced interaction with humans could result in less stress and decline in potential human interaction such as car or boat interactions, species being fed or consuming trash. The noise and vibration from human use could also become reduced.

SPECIES OF SPECIAL CONCERN

Table 5. Species effect determination for the No Action Alternative.

Effect determination	Species
No effect	Manatees, Eastern Indigo snake, smalltooth sawfish, and swimming sea turtles, Designated Critical habitat for Juvenile Smalltooth sawfish. American crocodile DCH, American Crocodile
May Affect (MA)	None
May Affect, not likely to adversely affect/modify	None

Under the No Action Alternative, there would be no effect to T&E listed bird species, manatees, Eastern indigo snakes, smalltooth sawfish and swimming sea turtles. The lack of adverse effect or beneficial effects would be the same for other wildlife, with a continuation of current conditions and use of the area. The existing bulkheads could continue to degrade and eventually fail without repair. However, this would be unlikely to affect these species as they would likely continue to use the area and neighboring areas as they are currently. This area is also DCH for crocodiles and smalltooth sawfish, however, the marina does not contain the essential features required of DCH of either species, so there would be no effect to DCH.

CUMULATIVE IMPACTS:

Past, present, and reasonably foreseeable future actions would have minimal impacts on wildlife and species of special concern. Under this alternative the presence and noise from NPS actions and visitors likely have some impacts on wildlife, but species have likely adjusted to this level of disturbance. Under this alternative the cumulative impacts resulting from the projects immediately adjacent to the bulkheads could exacerbate the structural failure in multiple areas of the Marina, resulting in less visitors. Less visitors or the closing of the Marina may have beneficial effects to wildlife because of less disturbance from diminished human interaction and noise. Overall, the current condition of the bulkhead does not contribute a measurable impact to cumulative impacts to wildlife and T&E species.

ACTION ALTERNATIVE B: HYDRAULIC IMPACT HAMMER

OTHER WILDLIFE

Under Action Alternative B there would be short-term adverse effects to other wildlife. Increases in noise, vibration and turbidity could have temporary adverse impacts to nearby wildlife but would cease after construction is completed. There is the potential for in-water activities to disturb species, however wildlife in this area is accustomed to boats and people in these locations and could have minimal short-term additional effect. Benthic infauna, on which many species feed, could be disturbed and removed during construction, but should recover when construction is completed. This project may deter bald eagles and migratory birds from the area with the presence of equipment, vibrations, and excessive noise. Conservation measures to avoid and minimize project-related stressors to birds would be implemented under this action alternative. Dredging the trench for the wall would remove benthic substrate consisting of silt and mud which supports the settlement of eggs and larvae and create turbidity within the water column. Turbidity could affect vision of marine life within the sediment plume as well as those marine organisms with gills, but these effects would be temporary and limited to the duration of the dredge operations. Dredging may cause mortality or injury of individual fishes (adults, subadults, juveniles, larvae, and/or eggs, depending on species, time of year, location, etc.) due to dredge equipment during construction but most motile species would avoid the area. The construction during the demolition of the Maintenance Marina will have temporary adverse impacts to both in-water and land species. The demolition of the boat shelter will produce high noise that may disturb wildlife during construction, but they are likely to return following construction.

SPECIES OF SPECIAL CONCERN

Table 6. Species effect determinations for Action Alternative B.

Effect determination	Species
No effect	Designated Critical habitat for Smalltooth sawfish
May Affect (MA)	American Crocodile
May Affect, not likely to adversely affect/modify	Manatees, Eastern Indigo snake, smalltooth sawfish, and swimming sea turtles, American crocodile DCH

Action Alternative B would result in a variety of effects to different species. All effects to species listed under other wildlife also apply to species of special concern. However, biological resource monitors would observe any potential impacts to listed species and would call for work stoppages when animals are near (see section mitigation measure). There will be temporary adverse impacts to species due to the noise during demolition of the Maintenance Marina Bay. This project could have minor adverse impacts on swimming sea turtles as they are less commonly observed within the basins but there is always the potential to interact with in-water construction equipment. However, there are more likely to be adverse impacts on Manatees which are observed within several of the basins on a daily basis. Using a barge for a large portion of the work increases the chances of interacting with manatees with the equipment. Manatees may also be deterred by construction equipment, noise, and vibration. Smalltooth sawfish can be observed at boat ramps within the Marina and may be adversely impacted by the presence of equipment. However, they would likely retreat to nearby waters with the presence of construction

equipment. Sea Turtle and Smalltooth Sawfish in-water conditions would be followed. The Marina is also within DCH for juvenile smalltooth sawfish; however, the marina does not contain the essential features required of DCH and DCH would not be affected. Eastern indigo snakes have been documented in the area but are not common. They may be temporarily affected by the presence of staging areas or construction equipment, where there may be crevices to hide. However, standard best management practices, and the presence of biological resource monitors would reduce the risk of impacts. Crocodiles are one of the most abundant species in the area and are likely to be adversely affected. They have become accustomed to frequent human activity; however, activity could increase with the presence of contractors and increase the likelihood that crocodiles could be disturbed, scared, or prevented from nesting. Crocodiles have been nesting adjacent to the bulkheads for several years and there is a high risk of interaction, and incidental take of crocodile nests during construction. The NPS has been monitoring crocodile nesting activity in the Flamingo district, including the marinas, for several years (see Ruiz et al. 2022 & Ruiz et al. 2023) and they are expected to continue monitoring nesting activity throughout the length of this project. Two nest sites along the Maintenance Marina bulkhead, associated with asphalt cavities up against the bulkhead (Figure 9), would no longer be available after project completion. The loss of these two nesting sites is not considered a significant long-term impact since there is plenty of suitable nesting habitat available within the Maintenance Marina footprint. Any adverse effects would be temporary, ceasing after construction.



Figure 9. Crocodile nest located in asphalt cavity up against the Maintenance Marina basin bulkhead. This asphalt cavity would be repaired and become unavailable for nesting after project completion.

ACTION ALTERNATIVE C: HARD GROUND PRESS-IN METHOD

OTHER WILDLIFE

Action alternative C could have similar effects as Action Alternative B, with short-term adverse effects to other wildlife. However, under this alternative, construction techniques are designed to have minimal vibration, noise, and turbidity, causing less stress and effects to species (White et al. 2001, Figure 10). The installation of pilings could have greater noise and turbidity but would only occur within a small-time frame of construction (approximately two weeks). Similarly, most of the construction would occur from land including the construction of the wall and limiting the amount of in-water work reduced to only features inaccessible from land and limiting the disturbance and interaction with marine animals in the area. The precautions taken under this alternative should limit the vibrations and noise that may deter non-T&E species, bald eagles, and migratory birds. Conservation measures to avoid and minimize project-related stressors to birds would be implemented under this action alternative (see section 4.1). The construction during the Maintenance Marina will have temporary adverse impacts to both in-water and land species. The demolition of the marina will produce high noise that may disturb wildlife.

SPECIES OF SPECIAL CONCERN

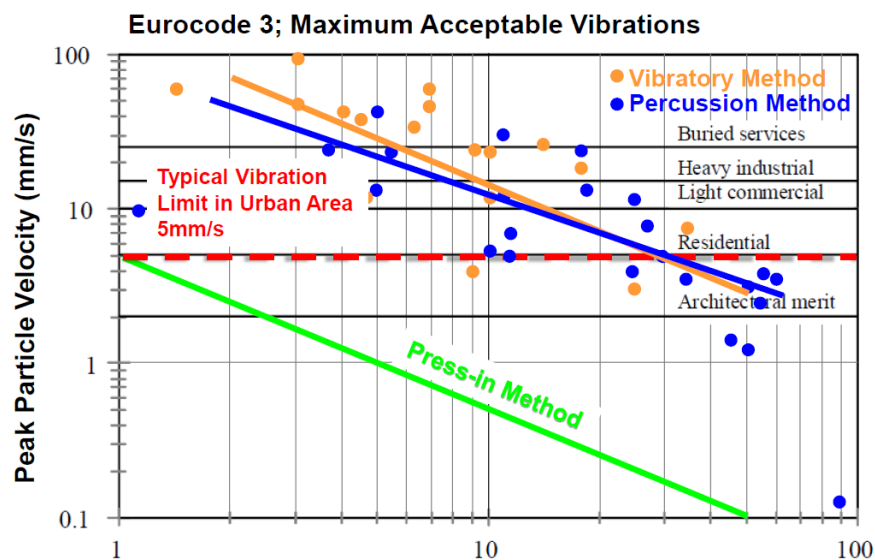
Table 7. Species effect determinations for Action Alternative C.

Effect determination	Species
No effect	Designated Critical habitat for Smalltooth sawfish
May Affect (MA)	American Crocodile
May Affect, not likely to adversely affect/modify	Manatees, Eastern Indigo snake, smalltooth sawfish, and swimming sea turtles, American crocodile DCH

Action Alternative C would have similar effects to other wildlife (above) and Species of Special Concern under Action Alternative B, with a variety of effect determinations to different species. All effects under other wildlife also apply to species of special concern. Biological resource monitors would observe any potential impacts to listed species and would call for a cease of operations when animals were near (see section mitigation measure). The majority of construction would be from land under this alternative, and in-water equipment would be limited during which would reduce the potential for interaction with in-water species. Manatees were observed within several of the basins on a daily basis and have the potential to interact with in-water equipment. Manatees may also experience temporary effects from noise and vibration, the effect which would be minor with the use of this method. Smalltooth sawfish can be observed at boat ramps within the Marina and may be impacted by the presence of equipment. However, they would likely retreat to nearby waters with the presence of construction equipment. Sea turtles and smalltooth sawfish in-water conditions would be followed. The Marina is also DCH for juvenile smalltooth sawfish. However, the marina does not contain the essential features required of DCH and would not affect existing DCH. The Eastern indigo snake has been documented in the area, but not incredibly common. They may be temporarily affected by the presence of staging areas or construction equipment, where there may be crevices to hide. Crocodiles in this area have become accustomed to frequent human activity, however activity could increase with the presence of contractors and increase the likelihood that crocodiles could be disturbed, scared, or prevented from nesting. Crocodiles have been nesting adjacent to the bulkheads for several years and there is a high risk of interaction, and incidental take of crocodile nests during

construction. The NPS has been monitoring crocodile nesting activity in the Flamingo district, including the marinas, for several years now (see Ruiz et al. 2022 & Ruiz et al. 2023) and they are expected to continue monitoring nesting activity throughout the length of this project. Two nest sites along the Maintenance Marina bulkhead, associated with asphalt cavities up against the bulkhead, would no longer be available after project completion. The loss of these two nesting sites is not considered a significant long-term impact since there is plenty of suitable nesting habitat available within the Maintenance Marina footprint. Any adverse effects would be temporary, ceasing after construction. Other than this long-term impact, the adverse effects of this project would be temporary, ceasing after construction.

Vibration Level (White, et al, 2001, ASCE)



Noise Level (White, et al, 2001, ASCE)

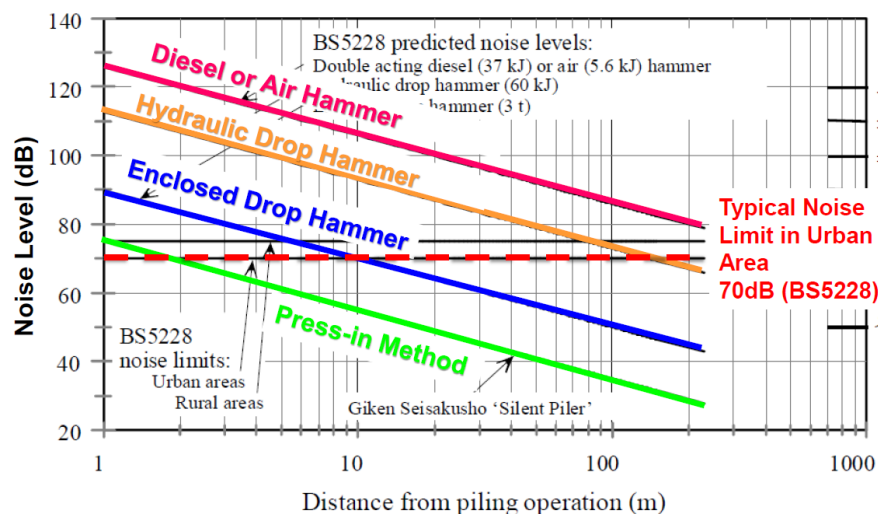


Figure 10. Vibration (top) and noise level (bottom) comparisons between the press-in-method and other construction methods. The noise and vibrations are below typical noise limits in an urban area for the press-in method.

Cumulative Impacts

The impacts of past, present, and reasonably foreseeable future actions to the Action Alternatives would be minimal to wildlife within the Marina. Other projects are occurring in the Marina area to update different facilities. The only projects that may occur at the same time are the updates to the wastewater

facility, which is away from this project area however, one of the underground utility distribution lines crosses through the project area. This effect would be temporary and any displaced wildlife would likely return after construction. The upgrading of the facilities and a trend of increasing park visitation may increase the amount of visitors to the Marina, and additional noise impacts in the future causing long-term adverse impacts to noise. While the contribution to cumulative impacts of construction may cause greater impacts to wildlife overall there is habitat available nearby for species to retreat to during construction.

3.6 ESSENTIAL FISH HABITAT

Affected Environment

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996, requires federal agencies to consult with NMFS on activities that may adversely affect Essential Fish Habitat (EFH). In 2002 NMFS issued a rule to that would implement EFH to establish guidelines in the description, and identification of fishery management plans (FMPs), identification of adverse effect and the actions required to identify, conserve, and enhance EFH. This rule directs the councils to provide recommendations for federal and state actions that may adversely affect EFH. This includes the identification of managed species and ecologically important habitat features (ex. life stage, breeding, feeding, growth, maturity, habitat areas of particular concern) to help provide additional focus for conservation efforts. Essential fish habitat (EFH) as defined by National Marine Fisheries Services (NMFS 2022) includes all types of aquatic habitat where fish spawn breed or mature, including wetlands, corals, seagrasses, and rivers (NMFS 1999).

Habitat areas of particular concern (HAPC) are defined by NMFS as “subsets of EFH that exhibit one or more of the following traits: rare, stressed by development, provide important ecological functions for federally managed species, or are especially vulnerable to anthropogenic (or human impact) degradation. These include areas such as: submerged aquatic vegetation, hard bottom, coral, coral reefs, pupping areas, sargassum, etc. Considering their designation as EFH-HAPC’s and Executive Order (E.O.) 13089, NMFS applies greater scrutiny to projects affecting corals, coral reefs, hardbottom, and seagrass to ensure practicable measures to avoid and minimize adverse effects to these habitats. However, there were no HAPCs located in the project area. Based on a review of the NOAA Fisheries EFH Mapper the project area includes the following EFH types: water column habitat, and soft bottom habitat.

There is no submerged aquatic vegetation (SAV), hard bottom, coral, or coral reefs within the project area. Several benthic surveys confirm the absence of these resource. In 2020 a benthic survey (Project Number 7-0515-001, E Sciences 2021) identified soft bottom habitat, but no submerged aquatic vegetation, or protected benthic resources were observed in Whitewater Bay, and Florida Bay. Maintenance Marina Bay and Visitor Center Bay were not evaluated within this survey. A seagrass bed of shoal grass (*Halodule wrightii*) was observed within, what the survey identified as, the Flamingo Channel (outside Visitor Center Bay). However, the seagrass is outside of the scope of the project area. An updated benthic survey was completed in November 2023, the survey used sided scan sonar and video in all four basins. Small patches of dead shoal grass were found in Florida and Visitor center bay, and a small amount of invasive *Caulerpa spp.* The survey confirmed there was no seagrass and the EFH in the area was water column, soft bottom habitat and mangrove habitat. Nearshore soft bottom is EFH for penaeid shrimps, coastal pelagic fishes, and red drum. This habitat supports a variety of infauna (e.g., annelid worms, bivalves, gastropods, and crustaceans) and epifaunal (e.g., crabs, shrimps, and other crustaceans) invertebrates, many of which fishes feed upon.

In addition, Florida Fish and Wildlife Conservation Commission (FWC) developed a GIS data set to represent the most recent seagrass mapping available in Florida from various data sets. The dataset is mapped from sources ranging from 1987 to 2021, however not all areas have been mapped. Data is classified as “continuous seagrass” or “Patchy (discontinuous) Seagrass.” There were no seagrasses identified within the Project area. However, there is a Continuous Seagrass area 121 m (399 ft) from the nearest bulkhead within the project and a smaller Patchy seagrass area within 107.37m (352 ft) from the nearest bulkhead within the project area (Figure 11).

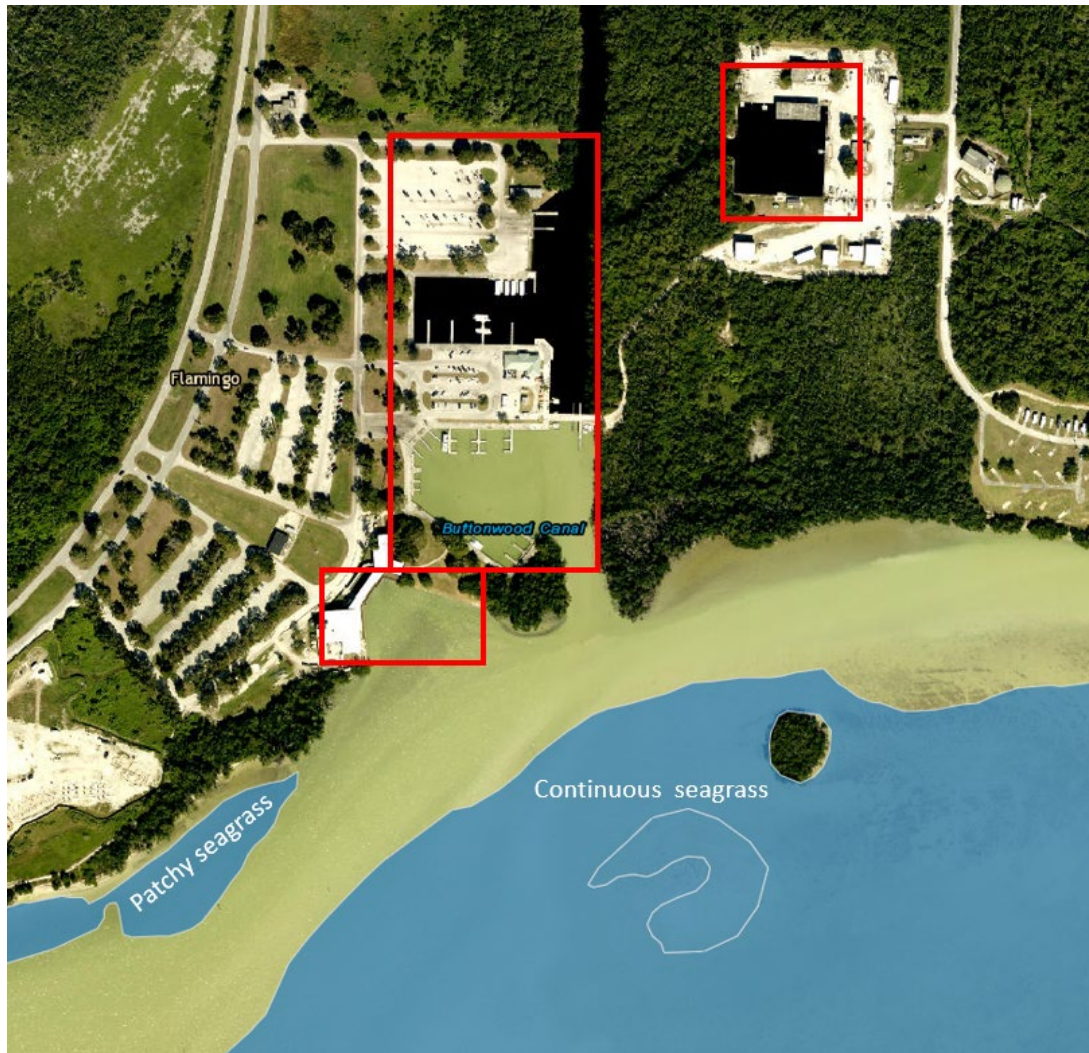


Figure 11. FWC Seagrass Map for Flamingo, FL. The project area is in red, the seagrass is in blue. There is no seagrass identified at the project area, however continuous and patchy seagrass may exist just outside the project area.

MANAGED SPECIES

With the unique location of the project area, close to both the Gulf of Mexico and Atlantic, there were species that fall under the Gulf of Fisheries Management Council and the Atlantic Highly Migratory Species. The NOAA Fisheries Essential Fish Habitat Mapper (https://www.habitat.noaa.gov/apps/efhmapper/?page=page_1) was used to identify managed species within the project area. There were seventeen managed species identified that had EFH near or within the Marina (see Table 8; Figure 12). The managed species include species of crustaceans *Spiny Lobster Fishery Management Plan*, as well as species of fishes from the *Coastal Migratory*, and *Highly Migratory Fishery Management Plans*.

Table 8. Species Managed by NMFS with EFH near the project site. Species were identified using the NOAA Fisheries Essential Fish Habitat Mapper and identified by Council (GOM = Gulf of Mexico, SA = South Atlantic, and HMS = Highly Migratory Species) and life stages.

Species	Council	Life stage
Spiny Lobster	GOM/SA	ALL
Reef Fish	GOM	ALL
Coastal Migratory Pelagic	GOM	
Snapper Grouper	SA	ALL
Sandbar Shark	HMS	ADULT
Bonnethead Shark	HMS (GOM)	ALL
Bull shark	HMS	Juvenil/adult
Blacknose Shark	HMS	Neonate
Blacktip Shark	HMS (GOM)	ALL
Spinner Shark	HMS	Neonate
Nurse Shark	HMS	Juvenile/adult
Lemon Shark	HMS	ALL
Great Hammerhead Shark	HMS	ALL
Tiger Shark	HMS	Juvenile/Adult
Sailfish	HMS	Adult
Caribbean Reef Shark	HMS	ALL
Sandbar Shark	HMS	Adult

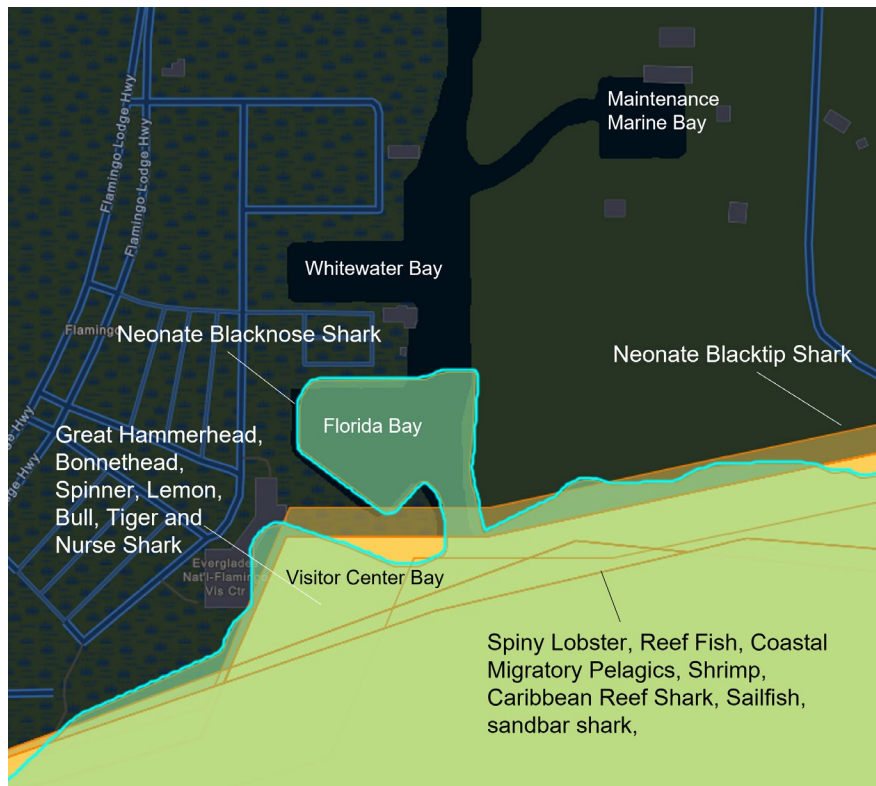


Figure 12. Species Essential Fish Habitat Layers identified by the NOAA Essential Fish Habitat Mapper. The species with the most EFH inside the project area are Neonate Blacknose Sharks with habitat that reaches up to Florida Bay, followed by Neonate Blacktip sharks, and various other shark species. Species life stages and management councils can be found in Table 8.

Environmental Consequences

ALTERNATIVE A: NO ACTION ALTERNATIVE

Under the No Action Alternative, the existing conditions of aquatic habitat within the area of analysis would remain the same. There would be no adverse impacts or benefits to in-water EFH or Marine Resources.

CUMULATIVE IMPACTS

Cumulative impacts to EFH include recreational activities such as motor boating and canoeing/kayaking within and adjacent to the Marina, and fishing on Florida Bay. The Marina is a popular tourist attraction and the only one in the area. Park restrictions such as speed minimization help reduce impacts to EFH from propeller scarring, and boat groundings. Similarly, fishing regulations help reduce fishing pressure on managed species and prevent overfishing. Trends from climate-change would also continue causing long-term adverse impacts to EFH by altering habitat. Overall, the no action alternative would not contribute to cumulative impacts on EFH or managed species.

ACTION ALTERNATIVE B: HYDRAULIC IMPACT HAMMER

Action Alternative B would have a temporary minor adverse effect to EFH, due to short-term impacts from impulse energy from pile driving. In-water work requires barges and construction with noise, vibration and turbidity impacts that could disturb EFH species and habitat in the water column and soft bottom. Species within the water column could be temporarily displaced during construction, (Table 8, Figure 12), however these species would be expected to return following the completion of construction. Dredging the trench for the wall would remove benthic substrate consisting of silt and mud which supports the settlement of eggs and larvae and create turbidity within the water column. Turbidity affects vision of marine life within the sediment plume as well as those marine organisms with gills, but these effects would be temporary and minor as they could be limited to the duration of the dredge operations. Dredging may directly affect the mortality or injury of individual fishes (adults, subadults, juveniles, larvae, and/or eggs, depending on species, time of year, location, etc.) due to dredge equipment during construction. Placement of the material elsewhere may also smother bottom dwelling species for in-water placement areas. Turbidity from dredging could impact the water column and turbidity curtains could be used to minimize impacts to species. The presence of equipment may also disturb fish and wildlife. The EFH assessment is incorporated into this NEPA, a separate assessment will not be prepared.

The Flamingo Maintenance Marina Bay falls within the South Atlantic Essential Fish Habitat (EFH) for snapper/grouper and spiny lobster (*Panulirus argus* and *Scyllarides nodifer*) and is adjacent to the Gulf of Mexico EFH. The proposed project has the potential to result in accidental discharge of chemical contaminants, demolition debris, and/or sediment loads into the basin during demolition. A spill contingency plan will be developed prior to construction. However, the species associated with the South Atlantic EFH are not known to occupy the basin, thus no adverse effects are expected for these species because of this project. Furthermore, no long-term or permanent effects to the South Atlantic EFH or the adjacent Gulf of Mexico EFH are anticipated, as well.

ACTION ALTERNATIVE C: HARD GROUND PRESS-IN METHOD

Action Alternative C would have temporary minor adverse effect to EFH. The effect of in-water work would be similar to Action Alternative B, with temporarily displacement of species within the water column. However, the majority of work would be from the land under this alternative, minimizing any temporary displacement of species within the water column. No dredging would take place under this alternative, eliminating disturbance of benthic substrate. Turbidity is expected to be reduced using these methods, but turbidity curtains would be used to minimize impacts to species. These adverse effects would be temporary and would be limited to during construction. The EFH assessment is incorporated into this NEPA, a separate assessment will not be prepared.

The Flamingo Maintenance Marina Bay falls within the South Atlantic Essential Fish Habitat (EFH) for snapper/grouper and spiny lobster (*Panulirus argus* and *Scyllarides nodifer*) and is adjacent to the Gulf of Mexico EFH. The proposed project has the potential to result in accidental discharge of chemical contaminants, demolition debris, and/or sediment loads into the basin during demolition. However, the species associated with the South Atlantic EFH are not known to occupy the basin, thus no adverse effects are expected for these species because of this project. Furthermore, no long-term or permanent effects to the South Atlantic EFH or the adjacent Gulf of Mexico EFH are anticipated, as well. In addition, a spill contingency plan will be developed prior to construction.

CUMULATIVE IMPACTS

The impacts of past, present, and reasonably foreseeable future actions to the Action Alternatives to EFH and managed species include motor boating and canoeing/kayaking within and adjacent to the Marina, and fishing on Florida Bay. Park restrictions such as speed minimization help reduce impacts to EFH from propellor scarring, and boat groundings. Fishing regulations help reduce fishing pressure on managed species and prevent overfishing. Climate-change could also cause long-term adverse impacts to EFH by altering habitat. Alternatives B & C could have temporary short-term impacts and could collectively contribute negligibly to the cumulative effects of past, present, or reasonably foreseeable future actions in the project area. Alternative construction that has or could occur in the park would not likely have impacts to EFH. Turbidity curtains would be required under both action alternatives (see Table 8). Alternative B could have added noise, vibratory impacts, and turbidity as compared to Alternative C. Impacts from construction would be temporary, but the cumulative impacts from regular boating with the added construction may deter species during construction.

3.7 WETLANDS AND VEGETATION

Affected Environment

The Flamingo Marina is surrounded by wetlands that include remote mangrove islands to the south of the Marina and upland vegetation to the north. When the original bulkhead was constructed, no mangrove species or any other type of coastal vegetation was present at the terminal ends of the bulkhead; however, over time, mangroves and other salt-tolerance species have colonized the area adjacent to the bulkhead's terminal ends (Figure 13). Vegetation, including solitary mangroves (n=4), were growing within the bulkheads, and have weakened the concrete. The marina is surrounded by mangroves and low-lying developed areas interspersed with open, non-forested wetlands dominated by *Batis maritima* and other halophytic species characteristic of the region. The USFWS National Wetlands Inventory mapper identifies the areas surrounding the Marina as *Estuarine and Marine Deepwater*, and *Estuarine and Marine Wetland* (Figure 14). A benthic and mangrove delineation survey was completed in 2020 within three of the Marina basins and the channel (not within the limitations of the project) by E Science and an additional benthic survey was completed in 2023. The channel leading into the Marina was the only area identified with shoal grass present (see also section 3.4 EFH). The density of seagrass ranged from 1 to 20%, with the higher densities observed within 400 feet off the shoreline. But no seagrass was identified in the 2023 survey.

Descriptions of project area vegetation and wetland classification based on NWI mapper, 2021 benthic survey and 2023 benthic survey.

- Maintenance Marina Bay: Mangroves surround the bay and were present at the entrance, there is scattered upland vegetation and a grassy area on the southern portion of the Bay. USFWS NWI mapper classified Water is classified as estuarine and marine deepwater, (USFWS NWI Mapper 2023) but due NPS knowledge of the site, it may actually be fresher and could be classified as deepwater riverine, depth is 3-5 ft.
- Whitewater Bay: Vegetation along both sides of the channel consisted of red mangrove (*Rhizophora mangle*), white mangrove (*Laguncularia racemosa*), seagrape (*Coccoloba uvifera*), Brazilian pepper (*Schinus terebinthifolius*), and seaside mahoe (*Thespesia populnea*) (E Sciences 2021). Mangroves were not present within the Bay, there is upland vegetation planted and grassy areas to the north and west of the Bay. USFWS NWI mapper classifies as estuarine and marine deepwater (USFWS NWI 2023), but tends to be more freshwater and may also classify as riverine (NPS pers. comm.) bottom is silt and detritus, water depth 4-8 ft.
- Florida Bay: Florida Bay Marina Bulkhead is dominated exclusively by red mangrove that established itself on riprap installed to protect the shoreline from erosion. There were Mangroves to the

east of the bay and a small patch of mangroves at the end of the piece of land that separates Florida Bay and Visitor Center Bay. Water is classified as Estuarine and Marine Wetland (USFWS NWI 2023); substrate was fine clay and silt; depth was 2-6 ft (<2 at low tide).

- Visitor Center Bay: Visitor Center Bulkhead East is a codominant mix of red mangrove and black mangrove (*Avicennia germinans*) growing interior of the riprap placed to protect the shoreline from erosion. Finally, Visitor Center Bulkhead South consists of mainly upland coastal species like Gumbo Limbo (*Bursera simaruba*), Sea Grape (*Coccoloba uvifera*) and the mangrove-associate Buttonwood (*Conocarpus erectus*) Red mangroves were also observed along Visitors Bay and within the adjacent channel. Classified as Estuarine and Marine Wetland (USFWS NWI 2023). Water depth between 2-7 ft.



Figure 13. Vegetation present at the end caps of the basins in the Flamingo Marina.

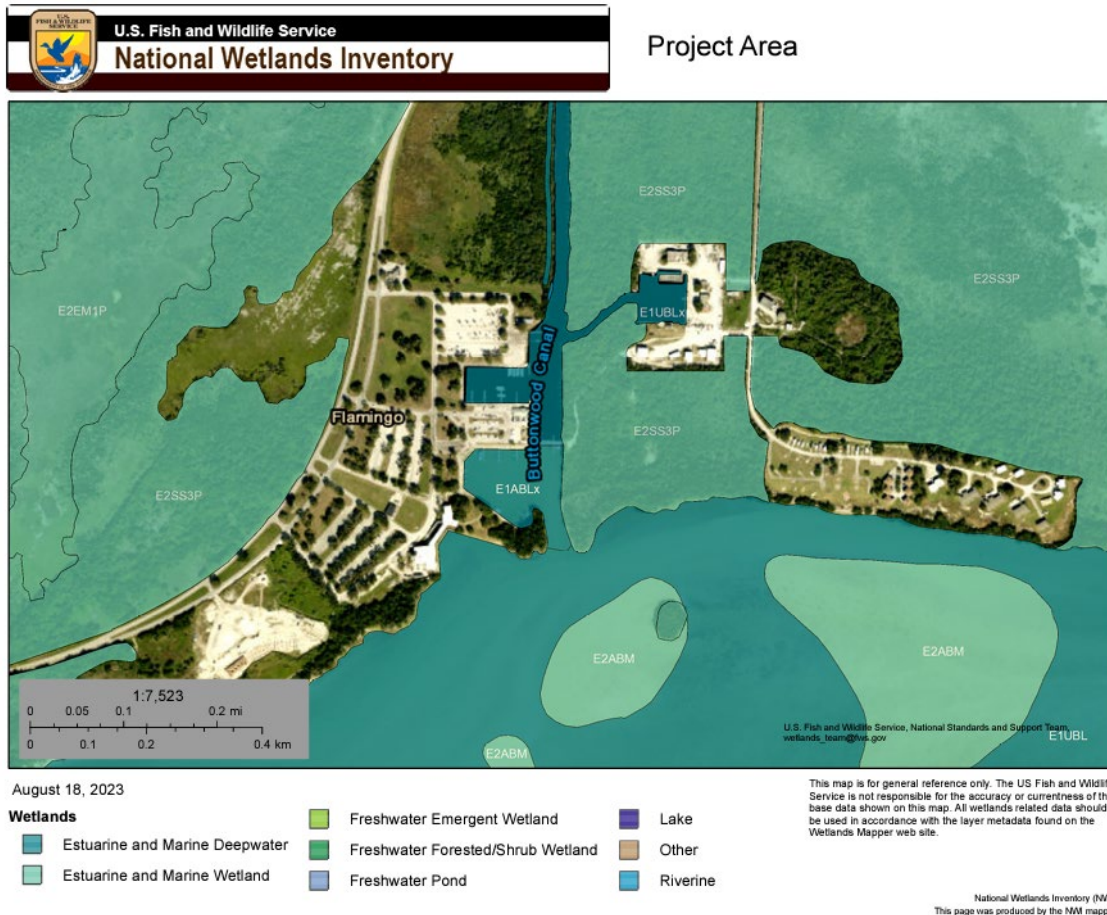


Figure 14. U.S. Fish and Wildlife Service National Wetlands Inventory Map of the Project Area.

Environmental Consequences

ALTERNATIVE A: NO ACTION ALTERNATIVE

Under the No Action Alternative there would be no adverse effects to wetlands or vegetation. Mangroves and other vegetation would continue to grow adjacent to, upon, and into the bulkheads as well as within and adjacent to the project site.

CUMULATIVE IMPACTS

Cumulative impacts under the No Action Alternative to wetlands and vegetation include additional projects within the Marina that may impact vegetation. However, there should be no major effect to the vegetation or wetlands within the Marina when considering past, present, and reasonably foreseeable actions, and no contribution to cumulative effects from the no action alternative.

ACTION ALTERNATIVE B: HYDRAULIC IMPACT HAMMER

Under this Action Alternative there is expected to be both temporary and long-term minor adverse impacts to vegetation and wetlands. Construction will require the removal of mangrove vegetation that has encroached around the caps of the installed infrastructure. When the original bulkhead was constructed, no mangrove species or any other type of coastal vegetation was present at the terminal ends of the bulkhead; however, over time, mangroves and other salt-tolerant species have colonized the area adjacent to the bulkhead's terminal ends. As a result, the construction of the new bulkhead is likely to result in removal of about 4,300 square feet (sq ft) of native and non-native vegetation. This estimated area of impact is comprised of four locations: Whitewater Bay Marina Bulkhead (~1,100 sq ft); Florida Bay Marina Bulkhead (~1,100 sq ft); Visitor Center Bulkhead East (~1,100 sq ft); and Visitor Center Bulkhead South (~1,100 sq ft). Overall impact to mangroves is likely to be less than 2,150 sq ft and limited to just two sites, the Florida Bay Marina Bulkhead, and the Visitor Center Bulkhead East. In addition, there is a small patch of upland vegetation and mangroves at the west side of Maintenance Marina Bay that may also experience temporary impacts from turbidity, that would cease after construction is completed. The dredging of the trench could cause increased turbidity that could be mitigated with turbidity curtains. There were mangroves that surround either side of the bulkheads that may experience temporary turbidity impacts from dredging and construction, but turbidity curtains would be used to mitigate the effect. But there were no effects expected to the surrounding vegetation. However, there is an abundance of mangrove habitat that surrounds the marina.

In addition to the impacts of replacing the bulkheads within the Maintenance Marina Bay, the actions associated with the replacement of the boat shelter would impact approximately 0.025 acre of estuarine and marine deepwater habitat if construction activities can occur without dewatering, and approximately 0.25 acre of deepwater habitat immediately around the boat shelter project site. No deepwater vegetation is present at the project site. Non-deepwater habitat vegetation is not expected to be impacted because the actions would occur within the previously developed boat basin area where native vegetation is not present.

ACTION ALTERNATIVE C: HARD GROUND PRESS-IN METHOD

Under this Action Alternative there is expected to be minor long-term adverse impacts to vegetation and wetlands. The project area with the greatest amount of vegetation to be impacted is between Flamingo and Visitor Center Bay. At the point between the two bays there is a larger patch of mangroves that may be impacted due to clearing and grubbing to allow equipment in to repair the bulkheads. Construction will require the removal of mangrove vegetation that has encroached around the caps of the installed infrastructure, including red mangrove (*Rhizophora mangle*). When the original bulkhead was constructed, no mangrove species or any other type of coastal vegetation was present at the terminal ends of the bulkhead; however, overtime, mangroves and other salt-tolerance species have colonized the area adjacent to the bulkhead's terminal ends. Small solitary mangroves (n=4) that have also grown within the bulkheads that would require removal. As a result, the construction of the new bulkhead is likely to result in impacts to about 4,300 sq ft of native and non-native vegetation. This estimated area of impact is comprised of four locations: Whitewater Bay Marina Bulkhead (~1,100 sq ft); Florida Bay Marina Bulkhead (~1,100 sq ft); Visitor Center Bulkhead East (~1,100 sq ft); and Visitor Center Bulkhead South (~1,100 sq ft). Overall impact to mangroves is likely to be less than 2,150 sq ft and limited to just two sites, the Florida Bay Marina Bulkhead, and the Visitor Center Bulkhead East. However, there is an abundance of mangrove habitat that surrounds the marina.

In Addition to the impacts of replacing the bulkheads within the Maintenance Marina Bay, the actions associated with the replacement of the boat shelter would impact approximately 0.025 acre of estuarine and marine deepwater habitat if construction activities can occur without dewatering, and approximately

0.25 acre of deepwater habitat immediately around the boat shelter project site. No deepwater vegetation is present at the project site. Non-deepwater habitat vegetation is not expected to be impacted because the actions would occur within the previously developed boat basin area where native vegetation is not present.

CUMULATIVE IMPACTS

When long-term minor impacts of the Action Alternatives are added to present, past, and reasonably foreseeable future actions, cumulative impacts to wetlands and vegetation would continue to be minor. The construction of the new bulkhead is likely to result in removal of about 4,300 square feet (sq ft) of native and non-native vegetation. This estimated area of impact is comprised of four locations: Whitewater Bay Marina Bulkhead (~1,100 sq ft); Florida Bay Marina Bulkhead (~1,100 sq ft); Visitor Center Bulkhead East (~1,100 sq ft); and Visitor Center Bulkhead South (~1,100 sq ft). Overall impact to mangroves is likely to be less than 2,150 sq ft and limited to just two sites, the Florida Bay Marina Bulkhead, and the Visitor Center Bulkhead East.

3.8 WATER QUALITY

Affected Environment

Waters throughout EVER were designated as Outstanding Florida Waters (OFWs). OFWs are waters designated by the Environmental Regulation Commission (ERC) as worthy of special protection because of their natural attributes. These waters were to be protected from any degradation from their current water quality classification. Activities or discharges within an OFW, or which significantly degrade an OFW, must be “clearly in the public interest.” The federal Clean Water Act requires that all surface waters of each state be classified according to designated uses. The predominantly marine waters within EVER were Class II waters, which were generally coastal waters where shellfish harvesting occurs. For a more detailed description of classes and specific waterbody designations, see 62-302.400, F.A.C.

Environmental Consequences

ALTERNATIVE A: NO ACTION ALTERNATIVE

Under the No Action Alternative there would be no immediate effect to water quality. However, under this alternative, the bulkheads would eventually fail. If the bulkhead and Maintenance Marina Bay boat shelter have a catastrophic failure, structures and other debris may fall into the water, potentially impacting temporarily impacting water quality immediately after the wall failure.

CUMULATIVE IMPACTS

Cumulative impacts under the No Action Alternative to water quality include additional projects within and immediately adjacent to the Marina and/or recreational activities that may cause temporary increases in turbidity. However, there should be no major added effect to water quality within the Marina when considering past, present and the reasonably foreseeable future of known impacts.

ACTION ALTERNATIVE B: HYDRAULIC IMPACT HAMMER

Under this Action Alternative there is expected to be temporary adverse impacts to water quality. The dredging of the trench would temporarily cause increased turbidity that could be mitigated with turbidity curtains. In addition to the impacts of replacing the bulkheads within the Maintenance Marina Bay, the

actions associated with the replacement of the boat shelter would expect to have temporary adverse impacts to water quality. Any impacts from the turbidity expected could be lessened with the use of turbidity curtains.

ACTION ALTERNATIVE C: HARD GROUND PRESS-IN METHOD

Under this Action Alternative there is expected to be minor temporary adverse impacts to water quality. The Hard Ground Press-In method involves the use of specialized equipment that uses hydraulic force to push piles into the ground while simultaneously augering the hard ground with minimal loss of discharged soil. Any impacts from the minor turbidity expected could be lessened with the use of turbidity curtains. In addition to the impacts of replacing the bulkheads within the Maintenance Marina Bay, the actions associated with the replacement of the boat shelter would expect to have temporary adverse impacts to water quality. Any impacts from the turbidity expected could be lessened with the use of turbidity curtains and would be expected to dissipate and quickly return to normal.

CUMULATIVE IMPACTS

The impacts of past, present, and reasonably foreseeable future actions for the Action Alternatives to water quality include additional projects and upgrades to the marina. While there could be temporary minor effects under the Action Alternatives, water quality may be affected during alternative park construction. In addition, the Marina experiences high boat traffic that may impact water quality by creating additional turbidity or pollution from fuel. There were also fuel pumps within the Marina that could impact water quality if there was an issue with leakage. Implementation of the action alternatives would be expected to contribute temporary adverse impacts to existing cumulative effects, but the decrease in water quality is not expected to rise to a level of concern and the turbidity would be expected to dissipate quickly and return to normal.

3.9 CULTURAL AND HISTORIC RESOURCES

AREA OF ANALYSIS

For the establishment of existing conditions, the area of potential effect (APE) includes the work zone along the seawall for direct physical effect and a 100-meter buffer for assessing potential visual effect. The cultural resources and historic properties noted within the APE were compiled from Florida Master Site File (FMSF), National Register of Historic Places (NRHP) database, and EVER records.

Affected Environment

Southern Florida has been an area of continuous human activity from the late Pleistocene and through the current era. The earliest widely accepted date of occupation by the aboriginal inhabitants of Florida dates from around 12,000 years ago (Milanich 1994). This cultural period, called the Paleo-Indian period, lasted until about 10,000 YBP (years before present). Sea level was lower, and the continental shelves were exposed in an area almost twice the width of the current size of the state. Few Paleo-Indian archeological sites were recorded in South Florida. Regional cultural traditions within southern Florida, known as the Glades culture; historically known as the Tequesta and Calusa, developed South Florida around 2,500 YBP. The Glades culture sequence (ca. 2500 YBP-A.D. 1513) produced a large number of sites. Glades site types include shell and earth middens and low sand mounds. Current estimates project that, at the time of European contact, these populations exceeded 20,000 individuals (Hann 2003). Though heavily impacted by disease, conflict, forced movement, and colonial practices, Native American populations remain in the region throughout the colonial and early American periods. Though specific groups have

changed as colonial, and then national, expansion relocated Native American populations, this presence continues into the present day. In particular, forced relocations of northern tribes in the early eighteenth century resulted in the establishment of villages across southern Florida by the 1760's (Blythe 2015). As these groups integrated with the Native American peoples already in South Florida they would become collectively known as the Seminoles. The descendants of these communities include the Seminole and Miccosukee communities which still neighbor the ENP.

The southern extent of the Florida peninsula did not see substantial expansion in the colonial or early American periods. It was only when railroad expansion reached South Florida in the late 19th century that large-scale expansion began. This includes the settlement of the town of Flamingo in 1892 by a group of six families, who applied for and received a US post office branch in 1893. Based on speculation that a railroad line linking Miami to Key West would pass through Flamingo and developing trade with nearby Seminole groups, the town grew to nine families by the turn of the 20th Century (Tebeau 1963). This growth would continue into the early years of the new century as the town swelled to 50 families and was afforded a Monroe County school. In 1932, the USDA identified the exotic and destructive pink bollworm within a local variety of wild cotton common to the Florida Keys and along the Gulf Coast. Flamingo was identified as an ideal staging area for the extermination efforts. Beginning in September 1932 and continuing through 1947, a work camp was established within Flamingo to house African American laborers conducting the clearing. White supervisors were housed in Homestead. The program was terminated in 1948, when Congress declined to continue funding the project. On May 30, 1934, the ENP was authorized by Congress. The park was formally established in 1947 (Vadas et al. 2022). By 1948, the community had grown to 34 houses, with ownership of the land divided amongst three individuals. By 1951 all residents of Flamingo were removed by the park (Blythe 2015). The ENP was founded in response to growing concerns amongst conservationists about the effects of large-scale southern Florida drainage projects, which were drying the region south of Lake Okeechobee by removing the natural sheet flow that had previously defined the area.

In 1955, the Mission 66 program was proposed by then National Park Service Director Conrad Wirth. The program was funded by Congress in 1956 and slated for completion in 1966, to coincide with the 50th anniversary of the park service. The ENP was selected for development during this initial authorization and served as one of the flagships parks for the program (Blythe 2015, Vadas et al. 2022). The program was intended to bring a modernized aesthetic to the park system as post World War II prosperity was leading to increase public interest in the National Park Service for vacationing. Due to rapidly growing tourism to South Florida, the ENP was included as one of the pilot parks. This included development of Flamingo Marina. Prior to the Mission 66 program, the guiding aesthetic for designing park facilities was more rustic and focused on the conservation of natural spaces. This older aesthetic can be seen in parks developed during the Work Project Authority and Civilian Conservation Corps (CCC) projects during the national recovery from the Great Depression in the mid to latter 1930's. In addition to the modern aesthetic, the Mission 66 program also shifted focus to creating spaces that were more accommodating to the growing national demand for automobile-friendly tourism. At the Flamingo Marina this included a motor lodge and service center. Construction of the new Flamingo Mission 66 Complex was completed in 1963.

In the years since initial construction was completed, the marina basins have been updated and modified. This modification includes the construction of a bulkhead with a public walkway along Florida and Whitewater Bays, a boat ramp in the northwest corner of Florida Bay, and an improved boat ramp overlaying the northern portion of the original Whitewater Bay boat ramp.

The property including key original park structures and the basins is collectively designated as the historic the Flamingo Mission 66 Development Area historic district (8MO2146) (historic district). The historic district was most recently evaluated in the 2011 report produced by WJE Associates, Inc. on behalf of NPS and entitled *Flamingo Mission 66 Development Area, Everglades National Park, Florida, Historic Structures Report* (FMSF Survey # 24454). Based on the report, NPS determined that the historic district was eligible for listing in the NRHP under National Register Criterion A for its association with the Mission 66 program and the development of the National Park System and Criterion C for embodying the characteristics of the Park Service Modern architectural style and planning concepts, expressed here in how the public could move through the space (circulation), what the public sees (viewshed), the visual elements of the architectural style, and use of materials. The report also presented guidelines for ongoing treatment and use of the historic district and its contributing elements. Florida SHPO concurred with this determination by letter on April 13, 2012 (DHR Project File Number: 2012-1359). Under these guidelines, potential impacts to historic structures contributing to the eligibility of the historic district, were to be assessed for potential adverse effects to the structures ability to contribute to the eligibility of the historic district. The historic district includes 40 resources, of which 14 historic structures were considered contributing elements. This includes Whitewater Bay (Basin 1, 8MO2149), Florida Bay (Basin 2, 8MO2150), Visitor Center Bay (Basin 3, 8MO2151), Maintenance Marina Bay (Basin 4, 8MO2152). Contributing structures near the basins includes the Fish Cleaning Building (8MO2335) and the Marina Store (8MO2336) on the west side of Whitewater Bay, the Boat Shop (8MO1936) on the north side of Maintenance Marina Bay, and the Flamingo Visitor Center (8MO1935) along Visitor Center Bay. A full inventory of cultural resources directly within and within 1.0 mile of the APE is presented in **Appendix B, Table B-1.**

Environmental Consequences

ALTERNATIVE A: NO ACTION ALTERNATIVE

Without the project, the basin bulkheads would continue to be impacted by human and natural impacts and failure of a bulkhead could eliminate it as a contributing visual element of 8MO2146 and likely result in further damage to adjacent historic structures and the landscape overall. This would have a direct adverse effect on 8MO2146 and potentially eliminate the district's ability to maintain its eligibility for listing in the NRHP. Treatment of cultural resources would continue to be protected by multiple state and federal regulations.

CUMULATIVE IMPACTS

Under the No Action Alternative the bulkheads would continue to be subjected to natural and visitor impacts, inevitably leading to the failure of the bulkheads due to degradation, which is already being observed. The loss of the bulkheads would significantly impact the historic districts eligibility for listing in the NRHP and the necessary closure of the marina for visitor safety could eliminate the publics' ability to experience the resource.

ACTION ALTERNATIVE B: HYDRAULIC IMPACT HAMMER

It is likely Action Alternative B would result in an adverse effect to 8MO2146. These modifications have the potential to adversely impact the historic district through deviation from the visitor circulation and viewshed intended by the original design. As the new bulkhead wall systems are designed to carry the load of the existing retaining features and the abandoned walls, the existing 12-in wide concrete caps would be replaced with new concrete caps that incorporates both the old and new bulkhead walls. This

wider concrete cap would vary in width up to 5 ft. This increased width would introduce a noticeable sidewalk where none currently exists. As a result, this expansion would create new pathways that were not originally planned, resulting in a new visitor experience.

Another potential effect of Action Alternative B is the use of a hydraulic impact hammer for the installation of the sheet pile wall. Based on analysis presented in Figure 10, the hydraulic impact hammer method has the potential to produce vibratory effects greater than typical limits in urban area in excess of 10 meters from the center of operations. This would include the potential for adverse effects to multiple historic structures within 8MO02146, including the Fish Cleaning Building, Marina Store, and Flamingo Visitor Center.

The Maintenance Marina Bay boat shelter, recorded in the FMSF as the Boat Shop (8MO1936), was also considered for direct effects as it is situated directly over Maintenance Marina Bay. The shelter, which is structurally deteriorating and physically connected to the existing bulkhead wall system, would be demolished prior to the replacement of the bulkhead. The demolition of the boat shelter would result in a permanent loss of this historic structure contributing to the NRHP eligibility of Flamingo Mission 66 Historic Developed Area. The overall long-term adverse effects on the Flamingo Mission 66 Historic Developed Area from the demolition of the boat shelter would be perceptible and localized.

The park has explored options to minimize these effects to the historic district but determined that Action Alternative B would result in an adverse impact to a historic property under Section 106 of the National Historic Preservation Act (NHPA) and the Advisory Council on Historic Preservation's regulations implementing the NHPA (36 CFR § 800-Protection of Historic Properties). These adverse effects would be mitigated by adhering to specific stipulations provided in a Memorandum of Agreement (MOA) negotiated between the NPS and the Florida State Historic Preservation Office (SHPO). Such stipulations may include, but is not limited to, documenting and archiving designs and photographs of the existing structure, and/or interpreting the contributing resources of Flamingo Marina in the context of the NPS Mission 66 era of park development.

ACTION ALTERNATIVE C: HARD GROUND PRESS-IN METHOD

The potential direct impacts to cultural resources would be the same as Action Alternative B, however the use of the press in method would minimize the potential for vibration-related impacts to nearby historic structures. As presented in Figure 10, the press-in method utilized for sheet pile installation remains below typically accepted urban limits for vibration levels and is only greater than typical urban noise limits within a meter. This could put nearby contributing structures outside the potential vibration footprint.

Though this method would lessen the potential impacts from vibration, the impact of the expanded sidewalk footprint and removed boat shelter noted for Alternative B would remain. As a result, Alternative C would result in adverse impacts to historic properties. These adverse effects would be mitigated by adhering to specific stipulations provided in a MOA negotiated between the NPS and the Florida SHPO. Such stipulations may include, but is not limited to, documenting and archiving designs and photographs of the existing structure, and/or interpreting the contributing resources of Flamingo Marina in the context of the NPS Mission 66 era of park development.

CUMULATIVE IMPACTS

The action alternatives involving the construction of new marina bulkheads and the demolition and replacement of the Maintenance Marina Bay boat shelter would have minimal adverse cumulative effects on the Flamingo Mission 66 Historic Developed Area compared to past, present, and reasonably foreseeable future actions, several of which have had a beneficial effect on the historic district.

3.10 VISITOR USE AND EXPERIENCE

Affected Environment

The Flamingo Marina is a premier experience and is one of the most popularly used areas of EVER. The untouched landscape of Flamingo attracts a wide array of visitors who were looking to enjoy nature and park resources. The Park is open year-round, and the warm south-Florida climate is an attraction for visitors. The users of the Flamingo Marina include recreational visitors (i.e. birders, naturalists, hikers, etc.), education groups, tour groups, conservation groups, tribal officials, researchers, concessioners, commercial guides, and park staff. The Flamingo Marina has access to power, water pedestals, pump out, showers, fuel, and fully stocked store. The facilities also provide berthing and launching for concession tour boats, rental fishing and house boats, canoes and kayaks, private guided fishing boats, and boats for park law enforcement, research, and maintenance operations. In addition, concession operations are provided such as sales of food and beverage, bait, fuel, and equipment rentals.

Enjoyment of park resources and values by the public is a fundamental purpose of the national park system. NPS is committed to providing the appropriate, high-quality opportunities for visitors to enjoy national park units, and NPS would maintain within the parks an atmosphere that is open, inviting, and accessible to the public. Based on records for the past 4 years, peak visitation months for Flamingo EVER were December through April, with July and August being the months with the least number of visitors. Within the Flamingo Marina there were many utilities that have been available for public use. These include utilities to care for vessels, fishing, recreation, etc. Utilities include utility pedestals, lighting, water stations, boat-offloading sewage pumps, fuel dispensers, circuit breakers, shore ties and housekeeping pads.

Environmental Consequences

ALTERNATIVE A: NO ACTION ALTERNATIVE

Under the No Action Alternative, the Flamingo Marina could experience long-term adverse impacts to bulkheads, walkways and amenities which could continue to be experience degradation from environmental impacts and human use. Eventually the bulkheads at Flamingo Marina could fail and the facilities would be unavailable and unsafe for recreational access and use. If certain structures within the marina begin to fail the marina may have to either close or have use reduced and restricted to specific areas within or adjacent to the marina. NPS facility closures due to the degradation of the marinas would have a long-term and adverse impact to visitor use and experience.

CUMULATIVE IMPACTS

When compared to past, present, and reasonably foreseeable future actions within Flamingo, the No Action Alternative would have the greatest long-term and adverse cumulative impact on visitor use and experience. The failing bulkheads would likely have major long-term impacts to visitor access, use, and experience to other areas of the park, by limiting efficient access to Florida Bay, Whitewater Bay, and other backcountry and wilderness areas.

ACTION ALTERNATIVE B: HYDRAULIC IMPACT HAMMER

This action alternative would have short-term adverse impacts on visitor use and experience. During implementation of the project, visitor use may be inconvenienced when project sites and staging areas, park concessions, including facilities/areas immediately adjacent to these sites, are temporarily closed to public access and use. Excessive, unpleasant noise and large potentially unsightly fill material haul trucks and construction equipment would have a temporary adverse impact on visitor experience. Construction related vehicle traffic to and within the park would noticeably increase during the mobilization, construction, and demobilization periods. Large staging areas would reduce the amount of parking available to visitors. Construction sites would be clearly restricted from the public and signed to avoid potential public health and safety incidences. Any effects during construction could cease after the project is completed. However, this action alternative would have long-term beneficial impacts to visitor use and experience upon completion of the project resulting in safe and sustainable facilities (design life of 50-100 years). The replacement and addition of new utilities would add longevity to these utilities, creating long-term benefits for visitors.

Although demolition and replacement actions associated with the Maintenance Marina Bay boat shelter would take place in an area where visitation does not occur (no visual impacts), noise generated from these actions would likely be heard and have localized temporary adverse impacts on visitor experience primarily at the nearby Whitewater Bay and Florida Bay marina basins and the Guy Bradley Visitor Center. Noise occurring at the project site would likely be reduced at outlying locations including the Flamingo lodge, restaurant, and campgrounds.

ACTION ALTERNATIVE C: HARD GROUND PRESS-IN METHOD

The effect on visitor use and experience would be the same as Action Alternative B, however the noise and vibratory impacts at each of the marina basin project sites are expected to be less. The effects from the demolition of the Maintenance Marina Bay boat shelter would remain the same.

CUMULATIVE IMPACTS

When compared to past, present, and reasonably foreseeable future actions within Flamingo, the Action Alternatives would have a short-term minor adverse cumulative impact on visitor use and experience from unpleasant construction views and noise. Construction would limit or restrict visitor use within the Flamingo marina and adjacent parking lots, causing inconvenience and an undesirable visitor experience. In addition, this undesirable visitor experience would result from temporarily limiting recreational opportunities in Florida Bay, Whitewater Bay, and other backcountry and wilderness areas while construction activities occur. However, improving the condition of the marina bulkheads and associated facilities would have a long-term beneficial cumulative impact on visitor experience at the marina and adjacent backcountry and wilderness areas.

3.11 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE**Affected Environment****SOCIOECONOMICS**

The Flamingo Marina provides the primary boat access to Florida Bay and Whitewater Bay and is the only location for supplying visitors or campers for miles around. The Marina attracts visitors interested in

fishing, boating, camping, birding, and enjoyment of the natural setting. There are many options for nature-related tourism including nature tours and fishing charter captains. There is a new lodge and restaurant in Flamingo and several options for camping. A marina store offers fuel, grab, and go food options, convenience items (sunscreen, bug spray, water, etc.) souvenirs, bait, fuel, and restrooms.

ENVIRONMENTAL JUSTICE

Executive Order 12898, *Environmental Justice in Minority and Low-Income Populations*, directs federal agencies to assess whether their actions may have disproportionately high and adverse human health or environmental effect on minority and low-income communities. Census data was obtained by using the U.S. Census Bureau's American Community Survey (ACS) website (<https://data.census.gov>; accessed 21 November 2022). This data is based on 2020 Decennial census (Table 9) and compares data from the project County (Monroe County) to the overall state and surrounding counties. The Environmental Protection Agency's Environmental Justice Screening and Mapping Tool was used (<https://www.epa.gov/ejscreen>) in order to review the general characteristics of the project area (Table 10).

The project site is within EVER, which is a remote area, but considered a part of Monroe County. The county has a significantly smaller population than surrounding counties, and a small minority population. Although Flamingo supports a small local population of park staff and commercial services employees, it is not anticipated that the project would impact any minority population.

The Council on Environmental Quality (CEQ) has released a new EJ tool that is in testing stages. This Climate and Economic Justice Screening Tool assists in identifying communities with environmental justice concerns. The tool uses census tracts, which were small units of geography, and datasets as indicators of burdens which include environment, climate, or socioeconomics. While there is a high social and recreational impact in Flamingo, the Flamingo area is not specifically recognized within this tool.

Table 9. U.S. Census Bureau's American Community Survey: Florida Counties data

Location	Total Population	Number of Housing units	Median Household Income	White (Race)	Black or African American	Hispanic or Latino (ethnic group)
Florida	21,538,187	9,865,530	63,062	11,100,503	3,127,052	5,697,240
Broward Co.	1,944,375	860,329	65,747	776,164	531,910	608,703
Collier Co.	375,752	228,390	74,215	257,007	23,349	102,249
Miami – Dade Co.	2,701,767	1,074,685	59,044	769,893	400,002	1,856,938

Monroe Co.	82,874	53,961	68,563	60,153	4,807	19,432
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Table 10. Environmental Protection Agency's Environmental Justice Screening and Mapping Tool

	Low income	Unemployment rate	Population under 5	Population over 64
USA Average	30%	5%	6%	16%
FL State Average	33%	5%	5%	20%
FL (EPA region 4)	0%	18%	0%	41%

Environmental Consequences

ALTERNATIVE A: NO ACTION ALTERNATIVE

There would be no effect to environmental justice communities under the No Action Alternative. However, there would be major long-term adverse effects to socioeconomics under the No Action Alternative within the project area. No action could eventually lead to failure of the bulkheads and major loss of economic contributions to the Marina and surrounding facilities. Failure of the bulkheads could decrease visitors to the Marina, which in turn could cause income losses at the marina, including the marina store and nearby lodge and restaurant. The existing conditions at the site, along with limited visitor use and opportunities, would not incentivize long-term visitation and economic success at Flamingo.

CUMULATIVE IMPACTS

Under the No Action Alternative, the impacts of past, present, and reasonably foreseeable future actions could have major adverse and long-term effects to socioeconomics within the project area but no effect on environmental justice. Visitors, recreational activities, camping and Marina use would all likely decrease with the failure of the Marina, leading to major adverse economic losses from reduced visitation.

ACTION ALTERNATIVE B: HYDRAULIC IMPACT HAMMER

Environmental justice communities would not be affected under this Action Alternative. Under Action Alternative B there could be both long-term beneficial impact and short term temporary adverse effects to socioeconomics within the project area. Long-term impacts would be from upgrades and longevity to the Marina's Florida Bay and Whitewater Bay basins and an increase of tourism to the Flamingo area. In addition, this alternative may add new jobs to the Miami-Dade metropolitan area during construction, but there may be a decrease in visitors and associated income at these two basins during construction. However, these temporary impacts would cease after construction is completed.

ACTION ALTERNATIVE C: HARD GROUND PRESS-IN METHOD

This alternative would have the same effects as Alternative B.

CUMULATIVE IMPACTS

Under the Action Alternatives the impacts of past, present, and reasonably foreseeable actions could have a beneficial impact to socioeconomics and no effect to environmental justice within the project area. Alternatives B and C could increase visitation by updating facilities. In addition, there have been other construction projects, including a new lodge and restaurant, that have increased socioeconomic benefits to the Flamingo area. Altogether the improvements to all the surrounding facilities and the bulkheads would likely increase visitor use, create additional jobs, and improve the economic environment.

3.12 GREENHOUSE GASES AND AIR QUALITY

Affected Environment

AIR QUALITY

The project area is in the Southeast Florida Intrastate Air Quality Control Region, as established by 40 CFR 81.49. USEPA designates air quality compliance on a county level. A review of USEPA data indicates that the project area (Monroe County) is in attainment status for all the criteria pollutants.

BASELINE GREENHOUSE GAS EMISSIONS

Climate change is a term commonly used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century. Natural processes and human actions have been identified as affecting the climate. However, increasing GHG concentrations in the atmosphere resulting from human activity since the 19th century, such as fossil fuel combustion, deforestation, and other activities, were believed to be a major factor in climate change. Increases in the concentrations of GHG in the atmosphere during the last 100 years such as methane and nitrous oxide have trapped additional solar radiation, intensified the natural greenhouse effect, and resulted in an increase in global average temperature which has increased at an average rate of 0.17 F per decade since 1901 (USEPA 2021).

Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride were the principal GHGs emitted which contribute to global warming. Emissions of CO₂ were largely byproducts of fossil fuel combustion, while methane results from off-gassing, natural gas leaks from pipelines and industrial processes, and incomplete combustion associated with agricultural practices, landfills, energy providers, and other industrial facilities. Other human generated GHGs include fluorinated gases such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, which have much higher potential for heat absorption than CO₂ and were byproducts of certain industrial processes. Conversely, CO₂ sinks include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution, and were two of the largest reservoirs of CO₂ sequestration.

In 2021, the United States total gross GHG emissions were approximately 6,340.2 million metric tons of CO₂e (MtCO₂e). Emissions decreased by 2.3 percent from 1990 to 2021 though there have been noteworthy fluctuations in recent years. There was a sharp decline from 2019 to 2020 due to reductions in

emissions from travel and other economic activity due to the COVID-19 pandemic though emissions from fossil fuel production rebounded from 2020 to 2021, with a 6.8 percent increase contributing to an overall increase by 5.2 percent. Emissions from the electric power sector also decreased 10 percent, reflecting both a slight decrease in demand from the COVID-19 pandemic and a continued shift from coal to less carbon intensive natural gas and renewables though was shown to rebound. Of the major sectors nationwide, transportation accounts for the highest volume of GHG emissions at approximately 27 percent of the total, followed by electricity, industry, commercial and residential, and agriculture contributing 25 percent, 24 percent, 13 percent, and 11 percent of the total, respectively (USEPA 2023).

The total gross GHG emissions for the state of Florida in 2018 were estimated to be 304.8 million metric tons of carbon dioxide equivalent (MMT CO₂e). The 2018 net emissions were estimated at 292.4 MMT CO₂e, with sinks being factored in. The corresponding emission estimates for 2005 were a gross of 297.6 and a net of 293.7 MMT CO₂e, respectively. The total gross GHG emissions in 2018 were higher compared to the 2005 baseline, however, the net emissions were similar. This is attributed to the higher GHG removals from forest management activities in 2018 (-12.4 MMT CO₂e) and from coastal wetlands (-2.4 MMT CO₂e) (Florida Climate Institute, 2022).

Although the total GHG emissions in Florida showed an increasing trend from 2005 to 2018, GHG emissions intensity [emissions per capita and emissions per million USD (\$) Gross State Product (GSP)] showed a general declining trend given the increase in population in that period (Florida Climate Institute, 2022).

In 2018, the highest GHG emissions in Florida came from the energy sector, where transportation and electric power generation (at energy utilities as well as residential, commercial, and industrial facilities) were the largest contributors. Total GHG emissions from the energy sector for 2018 amounted to 251.3 MMT CO₂e, roughly 82.5% of the state's total gross emissions. The values for the transportation and electric power generation components of that 2018 sector total were 128.6 MMT CO₂e (~42% of state gross emissions) and 122.8 MMT CO₂e (~40%), respectively (Florida Climate Institute, 2022).

The main fuel types for energy generation in Florida were petroleum, coal, and natural gas. The largest current and historical GHG emissions were generated from petroleum use, with emissions ranging from 110.2 to 153.9 MMT CO₂e across the entire time series. Coal was the second-largest emitter until 2010 when natural gas emissions surpassed those of coal. Petroleum is expected to be the largest contributor in the future although it has shown some decline (Florida Climate Institute, 2022).

Environmental Consequences

ALTERNATIVE A: NO ACTION ALTERNATIVE

AIR QUALITY

Under the No Action Alternative there would be no effect to Air Quality.

GREENHOUSE GASES

A full GHG analysis of the No Action Alternative cannot be conducted at this time due to the unknown extent and frequency of bulkhead maintenance and facility repairs.

Under the No Action Alternative, regular maintenance to the marina, ramps, piers/docks, pilings, utilities, and boat shelter would continue as needed and as funding allows to the best of the NPS ability. GHG

emissions would be generated as part of the maintenance process. If the bulkheads were subject to catastrophic failure and the adjoining infrastructure is damaged, heavy equipment would be brought to the site to perform the repairs. GHG emission would be generated during equipment transit and operation. If bulkhead failure results in the closure of boat ramps and basins, marine traffic would be reduced or eliminated completely, resulting in a corresponding decrease in GHG emissions until repairs could be performed.

CUMULATIVE IMPACTS

The impacts of the No Action Alternatives of the past, present, and reasonably foreseeable actions would have minimal effect to Air Quality or GHG. There would likely be minor maintenance and facility repairs that could have very small effects to Air Quality or GHG but would cease after construction is completed.

ACTION ALTERNATIVE B: HYDRAULIC IMPACT HAMMER

AIR QUALITY

Under this Alternative there could be temporary impacts during construction similar during use of construction equipment and the effect of air quality under this project were negligible. These impacts would be insignificant to the environment.

GREENHOUSE GASES

Action Alternative B could result in the temporary increase of GHG emissions during construction, consisting primarily of CO₂ from internal combustion engines required to drive the hydraulic impact hammer, the backhoe or trenching machine and other support equipment. A full GHG analysis of Alternative B cannot be conducted at this time due to the lack of information related to construction equipment and schedule constraints.

ACTION ALTERNATIVE C: HARD GROUND PRESS-IN METHOD

AIR QUALITY

This Action Alternative could have the same effect as action alternative B.

GREENHOUSE GAS

Action Alternative C could result in the temporary increase in GHG emissions, similar to Alternative B. However, the hard ground press-in method would utilize different equipment for construction. A full GHG analysis of Alternative C cannot be conducted at this time due to the lack of information related to construction equipment and schedule constraints.

CUMULATIVE IMPACTS

The impacts of the action alternatives of the past, present, and reasonably foreseeable actions could have temporary adverse impacts on Air Quality and GHG emissions. Cumulative adverse impacts within the marina could include recreational activities such as fishing, boating, maintenance, and construction. The impacts from the action alternatives were expected to be temporary and overall, the cumulative impacts would not have major adverse effects on the Air Quality or GHG.

4 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

4.1 MITIGATION MEASURES

NPS places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. In order to protect natural resources, the following mitigation measures, and best management practices (BMPs) would be included for Alternatives B and C.

Cultural Resources

- In accordance with Section VI of the 2008 agreement entitled *Programmatic Agreement Among the National Park Service (U.S. Department of the Interior), the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act*, if cultural resources are discovered during project implementation all work in that area must stop and the Superintendent, Chief of Cultural Resources, or park archeologist must be notified immediately.
- If items protected by the Native American Graves Protection and Repatriation Act (NAGPRA) are discovered during project implementation, all activity must cease in the area of discovery and immediate notice made to the Superintendent and Chief of Cultural Resources. The Superintendent or Chief of Cultural Resources would notify the appropriate Federally recognized Indian Tribes/Organizations and State Historic Preservation Officer (SHPO).
- Cultural resources monitor and/or fencing may be required for any work near archeological resources as determined by the Chief of Cultural Resources.
- Comply with all stipulations established by the Memorandum of Agreement in development with FL SHPO to mitigate adverse impacts to historic properties identified during consultation.

Vegetation and Wetlands

- To avoid or minimize the introduction or spread of non-native, invasive plant and animal species, disturbed areas could be allowed to recover naturally. If necessary, and in coordination with the park Botanist, any fill, mulch, reseeded, and sod material brought into the park must be free of non-native, invasive plants and animals, and noxious weeds.
- Identify measures to further minimize impacts to wetlands in the detailed design process.

Wildlife

- Implement the USFWS *Standard Protection Measures for the Eastern Indigo Snake* during project construction.
- USFWS Standard Manatee Conditions for In-Water work
- Conduct any additional species-specific surveys required by the consultation with the USFWS.
- Consultation with the USFWS in accordance with the Endangered Species Act, would be updated as needed during the design process. Work could be scheduled to avoid protected species during nesting or breeding seasons.
- All work will be conducted during daylight hours to minimize disturbance to wildlife.
- If a manatee, crocodiles, marine turtle or smalltooth sawfish is within 100 yards of in-water construction all appropriate precautions would be implemented to ensure protection. If in-water construction is closer than 50 ft to species the equipment would be shut down and activities would cease. Activities would not resume until animal has moved beyond the 50 ft-radius or until 30 minutes elapses and the animal has not reappeared.
- Crocodile nest season runs from March 1 through September 30 and the project would require monitoring for nesting and addressing nests in the area during this period.

- Open excavations will not be left overnight. If open excavations cannot be filled at the end of each workday, excavated areas would be covered by metal plates or plywood.
- Open pits, trenches or other excavations would be inspected at the beginning of the workday to ensure that entrapped animals are not present. If an entrapped animal is found in an excavation, project personnel would contact the South Florida Natural Resources Center biological resources branch chief. Entrapped animals would only be handled by NPS staff or other qualified individuals identified by NPS staff.
- Siltation or turbidity barriers shall be made of material in which listed species cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid entanglement or entrapment. Barriers must not impede listed species movement, entry to or exit from the area.
- Excavated fill would be placed in containers instead of piled next to the holes, or if not feasible, would be enclosed within plastic construction fencing that may deter crocodiles from digging.
- All project personnel would be instructed to be vigilant and watch for eggs from undetected nests when digging or moving earth. If eggs are detected, all work would cease pending inspection by NPS biologists.
- Safety plans would be needed for any activities conducted by staff in the water due to potential encounters with crocodiles, smalltooth sawfish, sharks, etc.
- All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels would follow routes of deep water whenever possible.
- Migratory Bird Protection Plan. Construction activities are to be conducted in a manner as not to impact migratory birds or induce their nesting.

Visitor Use and Experience

- Visitors would be informed in advance of construction activities by posting information at the park website, social media, visitor centers and concession on-site locations (Marina store, campground boat rental and tour check-in locations, restaurant, and lodges)
- Construction fencing and closure signage would be placed around staging and construction areas, as needed, to discourage visitors from entering an active construction site.

Hydrology and Water Quality

- During waterside construction and dredging activities, turbidity levels would be monitored to ensure that applicable water quality standards are maintained, and construction methods are in accordance with applicable regulatory permits and BMPs.
- Appropriate measures would be employed to prevent or control spills of fuels, lubricants, or other contaminants from entering waterways or wetlands. Actions would be consistent with state water quality standards and Clean Water Act, Section 401 certification requirements.
- The developed area (especially the parking lot) would use techniques such as backsloping to allow percolation and filtration of runoff through the soils to avoid potential pollution of bay waters by stormwater runoff contaminated by oil and other petroleum products.
- Implement pre-and post-construction erosion control BMPs for drainage, erosion, and sediment control to prevent or reduce runoff from entering the water column.
- Inspect and maintain erosion and sediment control BMPs on a regular basis and after each measurable rainfall to ensure they are functioning properly.
- Adhere to all BMPs resulting from required regulatory permits.
- A spill contingency plan for hazardous, toxic, or petroleum material will be created. There must be a secondary containment (110% of full tank capacity) for any fuel storage tanks (including

pumps/generators). Fuel storage tanks must have overhead cover to prevent rainwater from entering the secondary containment. The spill response material quantity must be sufficient to absorb/contain the maximum expected fuel storage.

Park Operations

- To minimize impacts on the concession operations within and adjacent to Florida Bay and Whitewater Bay basins, commercial visitor services may be relocated in advance of scheduled construction to adjacent areas in coordination with the NPS, who would coordinate with the contractor on behalf of the concessioner.
- To minimize impacts on park operations during construction, administrative access to Florida Bay and Whitewater Bay may be obtained in coordination between the NPS and the contractor.

5 CONSULTATION AND COORDINATION

5.1 PUBLIC INVOLVEMENT

Civic Engagement

Civic engagement was conducted in March 29 through April 27, 2023, to provide the public an opportunity to learn about the project and provide input. A newsletter was distributed to the park's interested parties email list and a press release was issued on March 29th. Project information, including the newsletter, was also posted on the NPS Planning, Environment and Public Comment (PEPC) website, the park website, and social media accounts. The public was invited to submit comments on the project electronically, through the PEPC website, or by mailing written comments. Comments were received at the meetings and through PEPC from the public and stakeholders, including the National Parks Conservation Association, Audubon Florida, National Marine Fisheries Service, and State of Florida Clearinghouse.

Overarching themes within the comments and questions included green infrastructure and sustainable design. Common questions were about funding, climate change, project alternatives, historic elements, and concern for future storms. Design suggestions included material suggestions, safety improvements, green infrastructure solutions, and ramp design suggestions. Out-of-scope comments included improvements to the area, but not within the scope of this project. These suggestions ranged from improvements to the location of the boat ramps, improvement to crowding at the boat ramps, removal or improvement of the fish cleaning station, addition of restaurants, freshwater boat washing station, and renovation for other areas of the park. Two non-profit agency letters, from National Parks Conservation Association and Audubon, both expressed support for the project but urged sustainable or green construction. NMFS noted the need for an Essential Fish Habitat (EFH) assessment and consultation. Social media comments revolved around project support, out of scope comments, and design. In conclusion there is support from the public for this project, with encouragement to use green infrastructure, considerations for the environment and climate change.

Environmental Assessment Review

The EA would be available for a 30-day public comment period. The public comment period would be announced by press release, posts on the PEPC website, and by electronic mail sent to the park mailing list. Agencies and tribes also would be notified by letter. Hardcopies of the Site Plan/EA would be available for review at Everglades NP headquarters. During this time, the public is encouraged to post comments online at <https://parkplanning.nps.gov/bulkheads> or mail comments to Superintendent, Attn: Flamingo Marina Bulkheads Rehabilitation Project, Everglades National Park, 40001 State Road 9336,

Homestead, Florida 33034. After the close of the public comment period, all public comments will be reviewed and analyzed prior to the release of a NPS decision document.

5.2 AGENCY CONSULTATION

NPS initiated consultation with relevant agencies during the preparation of the EA. Consultation efforts, as described in the following section, with the Corps, USFWS, NOAA Fisheries, South Florida Water Management District, SHPO and Native American Tribes, began during civic engagement and continued through the preparation of the project design and EA. All agencies would be provided with a copy of the EA for review and comment.

Endangered Species Act Section 7 Consultation and Magnuson-Stevens Fishery Conservation and Management Act Consultation

Section 7 of the Endangered Species Act requires federal agencies to ensure that the actions they authorize, fund, or carry out do not jeopardize the continued existence of listed species nor destroy or adversely affect critical habitat. The NPS conducted early coordination with the USFWS and NOAA Fisheries on this project. A Biological Assessment was prepared for USFWS and sent on March 22, 2024, and the NPS would complete Section 7 consultation prior to finalizing the NPS decision document for this plan.

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT CONSULTATION

To fulfill the requirements of Section 106 of the National Historic Preservation Act (36 CFR 800), consultations for this project are being conducted with the office of the Florida State Historic Preservation Officer (SHPO) and American Indian Tribes traditionally associated with park lands (Miccosukee Tribe of Indians of Florida and Seminole Nation of Oklahoma). Compliance with Section 106 of the National Historic Preservation Act is on a separate but parallel track with compliance for the National Environmental Policy Act (NEPA).

The EA describes the historic properties that would be affected by the proposed project and analyzes the effects of project implementation upon them. Because the proposed project would adversely affect contributing resources to the Flamingo Mission 66 Developed Area Historic District, which is eligible to be listed in the National Register of Historic Places, a NPS determination of an adverse effect was provided to the FL SHPO by letter on February 28, 2024. The Florida SHPO responded by letter on March 20, 2024, concurring with the determination (DHR Project File No. 2024-1262).

In accordance with the Section 106 regulations, the public is invited to express your views on how the adverse effects of the project on the historic district could be minimized or mitigated. The views of the public are important as the NPS and SHPO consult to reach agreement on how to minimize or mitigate the adverse effects. The agreed upon measures to resolve the adverse effects will be documented in a memorandum of agreement between the NPS and SHPO.

5.3 TRIBAL CONSULTATION

NPS consultation with the Miccosukee Tribe of Indians of Florida, Seminole Tribe of Florida, and the Seminole Nation of Oklahoma is ongoing.

6 PREPARERS

Table 11. Corps list of document preparers and reviewers.

Name and Title	Organization	Discipline/Expertise
Rachel Case, Biologist	USACE	NEPA
Jon Simon Suarez, Archeologist	USACE	Cultural and Historic Resources
Troy Mayhew, Water Quality Specialist	USACE	Water Quality
Paul DeMarco, Planning Technical Lead	USACE	NEPA
Chris Altes, Archaeology Team Lead	USACE	Cultural and Historic Resources
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7 ACRONYM LIST

Acronym	Definition
CBRA	Coastal Barrier Resources Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers, Jacksonville District
CZMA	Coastal Zone Management Act
EA	Environmental Assessment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FAC	Florida Administrative Code
FONSI	Finding of No Significant Impact
FY	Fiscal Year
HAPC	Habitat Areas of Particular Concern
HTRW	Hazardous, Toxic, and Radioactive Waste
LAA	Likely to Adversely Affect
MANLAA	May Affect, Not Likely to Adversely Affect
MBTA	Migratory Bird Treaty Act
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
NE	No Effect
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
SAFMC	South Atlantic Fish Management Council
SAD	U.S. Army Corps of Engineers, South Atlantic Division
T&E	Threatened and Endangered
USFWS	U.S. Fish and Wildlife Service

8 REFERENCES

- Brame, AB., Wiley TR, Carlson JK, Fordham SV, Grubbs DR, Osborne J, Scharer RM, Bethea DM, and Poulakis GR. "Biology, ecology, and status of the smalltooth sawfish *Pristis pectinata* in the USA." *Endangered Species Research*, No. 39 (2019): 9-23.
- Blythe, Robert W. *Wilderness on the Edge: A History of Everglades National Park. National Park Service Administrative History*. Washington, DC. 2015.
- Carlson JK, Osborne J, Schmidt TW. "Monitoring the recovery of smalltooth sawfish, *Pristis pectinata*, using standardized relative indices of abundance." *Biological Conservation*, No. 136 (2007): 195–202
- Poulakis GR, Grubbs RD. 2019. "Biology and ecology of sawfishes: global status of research and future outlook." *Endangered Species Research*. (2019) doi: 10.3354/esr00955
- E Sciences. "Benthic Resources Survey Report, Flamingo Visitor Center" Everglades National Park Miami-Dade County, Florida. 2021.
- Fishman, J., K. MacKinnon, and S. Baker. "Crocodylus acutus (On-line), Animal Diversity Web." Accessed 25 September 2023. http://animaldiversity.ummz.umich.edu/site/accounts/information/Crocodylus_acutus.html.
- Florida Fish and Wildlife Conservation Commission (FWC). 2023A. "Florida Fish and Wildlife Conservation Commission American: Profiles (Crocodiles, Sea Turtles)." *MyFWC.com*. Website Accessed 25 September 2023. <https://myfwc.com/wildlifehabitats/profiles/reptiles/american-crocodile/>.
- Florida Fish and Wildlife Conservation Commission (FWC). "Florida Fish and Wildlife Conservation Commission Florida Sea Turtle Nesting: 2022 Statewide Nesting Totals, Loggerhead Nesting in Florida, Green Turtle Nesting in Florida, Green Turtle Nesting in Florida, Leatherback Nesting in Florida." *MyFWC.com* Website Accessed 25 September 2023. <https://myfwc.com/research/wildlife/sea-turtles/nesting/>.
- Hann, John H. *Indians of Central and South Florida, 1513–1763*. University Press of Florida, Gainesville, FL. 2003, 54–60.
- Milanich, Jerald T. *Archaeology of Pre-Columbian Florida*. University Press of Florida, Gainesville, FL. 1994.
- MWM JV2. Rehabilitate Flamingo Boat Shelter PMIS 251912. Everglades National Park, Homestead, Florida. April 21st, 2023. Final Condition Assessment and Repair Options.
- National Marine Fisheries Service (NMFS). "Essential Fish Habitat." *Fisheries.NOAA.gov*. <https://www.fisheries.noaa.gov/national/habitat-conservation/essential-fish-habitat>. Website Accessed 25 September 2023.
- National Marine Fisheries Service (NMFS). "Recovery plan for smalltooth sawfish (*Pristis pectinata*)." National Marine Fisheries Service, Silver Spring, MDNMFS, 2009.
- National Marine Fisheries Service (NMFS). "Essential Fish Habitat." *New Marine Fish Habitat Conservation Mandate for Federal Agencies*. 1999 (revised 2000). Website Accessed 25 September 2023 <https://www.nrc.gov/docs/ML1018/ML101880617.pdf>.

National Oceanic and Atmospheric Administration (NOAA). “NOAA Fisheries – Species Directory: ESA Threatened & Endangered (Giant Manta Ray, Loggerhead Turtle, North Atlantic Right Whale, Sturgeon (gulf), Sawfish, Green Sea Turtles, Loggerhead Sea Turtles, Leatherback Sea Turtles, Kemp’s Ridley Sea Turtles).” Fisheries.Noaa.gov. Website Accessed 22 September 2023. <https://www.fisheries.noaa.gov/species>

NPS 2024. National Park Service. Night Skies: Sustainable Outdoor Lighting Principles. Available at: <https://www.nps.gov/subjects/nightskies/sustainable-outdoor-lighting.htm>.

National Park Service (NPS). “NPS Procedural Manual #77-1.” *Wetland Protection*. 2016.

National Park Service (NPS). “NPS NEPA Handbook.” 2015A.

National Park Service (NPS). “NEPA Handbook Supplemental Guidance: Preparing Focused and Concise EAs.” 2015b.

National Park Service (NPS). CEQ implementing regulations (40 CFR 1500-1508), Director’s Order 12 procedures. 2011.

Poulakis GR, Grubbs RD.” Biology and ecology of sawfishes: global status of research and future outlook.” *Endangered Species Research* 39(2019):77-90. <https://doi.org/10.3354/esr00955>.

Ruiz, P.L., B. Muiznieks, and M. Parry. 2024. Survey of American Crocodile (*Crocodylus acutus*) Nesting within Developed Area of the Flamingo District, Everglades National Park, FL, USA: 2023 Annual Report. Report submitted to US Fish and Wildlife Service in Fulfillment of Annual Reporting Requirement as Described in the Biological Opinion for the Everglades National Park Vegetation Maintenance at Developed Areas and Facilities in Everglades National Park. Service Consultation Code: 04EF2000-2021-F-0216. 23 pages.

Ruiz, P.L., M. Parry, B. Muiznieks, and D. Hardgrove. 2023. Survey of American Crocodile (*Crocodylus acutus*) Nesting within Developed Area of the Flamingo District, Everglades National Park, FL, USA: 2022 Annual Report. Report submitted to US Fish and Wildlife Service in Fulfillment of Annual Reporting Requirement as Described in the Biological Opinion for the Everglades National Park Vegetation Maintenance at Developed Areas and Facilities in Everglades National Park. Service Consultation Code: 04EF2000-2021-F-0216. 23 pages.

Smith, K.L., Feldheim, K., Carlson, J.K., Wiley, T.R. and Taylor, S.S. “Female philopatry in smalltooth sawfish *Pristis pectinata*: conservation and management implications.” *Endangered Species Research*, 45(2021), pp.85-98 DOI: <https://doi.org/10.3354/esr01122>.

South Atlantic Fishery Management Council (SAFMC). “Habitat Plan for the South Atlantic Region: Essential Fish Habitat Requirements for Fishery Management Plans of the South Atlantic Fishery Management Council.” 1998.

Tebeau, Charlton W. 1963. *They Lived in the Park*. University of Miami Press, Coral Gables, Florida

U.S. Census Bureau. “American Community Survey (ACS).” Census.gov website. accessed 21 November 2022. <https://data.census.gov>;

U.S. Fish and Wildlife Service (USFWS). “USFWS National Wetlands Inventory Mapper.” Website accessed September 11, 2023. <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>.

U.S. Fish and Wildlife Service (USFWS). “Coastal Barrier Resources Act.” FWS.gov. Website Accessed September 11, 2023. <https://www.fws.gov/program/coastal-barrier-resources-act>.

U.S. Fish and Wildlife Service (USFWS). “Section 7 consultation for geotechnical investigations to plan upcoming Great American Outdoors Act funded projects Expedited review.” 2023.

U.S. Fish and Wildlife Service (USFWS). “USFWS Draft Revised Recovery Plan Eastern Indigo snake.” US Fish and Wildlife Service, Athens, Georgia and Jackson, Mississippi Ecological Services Field Offices. 2019.

Vadas, Mark, Joshua Marano, Jaci Wells, Eden Brazill, Deborah Slaton, Liz Sargent, Mike Ford, and Tim Penich. *A Determination of Eligibility for Pa-Hay-Okee: Everglades National Park, Maimi-Dade County, Florida*. Everglades National Park, National Park Service U.S. Department of the Interior. January 2022.

White, D. Finlay, T. Bolton, M. and Bearss, G. “Press-in piling: Ground vibration and noise during pile installation. Proceedings of the International Deep Foundations Congress.” Orlando, USA. ASCE Special Publication 116 (2001) pp363-37

Appendix A Pertinent Correspondence

Appendix A.1 U.S. Fish and Wildlife Service (USFWS) Endangered Species Act (ESA) Consultation



Everglades National Park Flamingo Marina Bulkhead Rehabilitation Project Biological Assessment



March 2024

Cover Photo: Flamingo Visitor Center bulkhead. Photo credit Pablo L. Ruiz, December 2023

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Executive Summary:

This Biological Assessment (BA) has been prepared for the Flamingo Marina Bulkheads Rehabilitation project (project) in the Flamingo District, Everglades National Park (EVER). The purpose of this BA is to provide technical information and to review the proposed project in sufficient detail to determine the potential effects to Endangered Species Act (ESA) listed threatened, endangered, or proposed species and their U.S. Fish and Wildlife Services (USFWS) designated or proposed critical habitat. As required under the National Environmental Policy Act (NEPA), this BA was prepared in compliance with Section 7(a)(2) and Section 3(5)(A) of the ESA, as part of the Environmental Assessment (EA) drafted by the National Park Service (NPS) to evaluate the project's potential environmental effects on federally listed species and designated critical habitat under the ESA.

The purpose of the project is to repair damaged bulkheads within the Flamingo Marina EVER to improve efficiency, operation, and safety, and to address climate resiliency. The project would update or replace bulkheads, walkways, boat ramps, and pilings throughout the Flamingo Marina, Flamingo, EVER, FL.

Of the twenty-five federally listed species managed by the USFWS, known to occur in proximity to the project areas, three are potentially impacted by the proposed action.¹ Additionally, the project would occur within American crocodile & smalltooth sawfish designated critical habitat. A No Effect determination was made for 22 of the listed species because they are highly unlikely to occur and/or lack suitable habitat in the action area. Consultation with the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) would address the smalltooth sawfish and its critical habitat and other listed species under NMFS jurisdiction; those effects are not included herein. In addition, we are currently evaluating whether NMFS section 7 consultation requirement would be met through the Programmatic Biological Opinion "JaxBO".

Of the species considered in this BA, the American Crocodile was the only species that received a May Adversely Affect determination (MA). A May Affect, Not Likely to Adversely Affect determination (MANLA) was made for, Eastern indigo snake (*Drymarchon corais couperi*), West Indian manatee (*Trichechus manatus*) and the American Crocodile designated critical habitat.

All reasonable efforts would be made to avoid effects to listed species and their designated critical habitat during project construction. General protective measures, that do not otherwise conflict with species-specific protective measures, would be implemented to help avoid and/or minimize potential indirect and direct effects from the proposed work being conducted.

¹ As defined in Section 2 of this BA, the proposed action includes all construction activities of the Project and any avoidance and minimization measures, including potential mitigation activities.

1. Introduction:

The purpose of this Biological Assessment (BA) is to evaluate the potential effects of the Federal action on U.S. Fish and Wildlife Services (USFWS) species listed as threatened or endangered and their designated critical habitat (DCH) under the Endangered Species Act of 1973, as amended (ESA) and to determine whether the continued existence of any such species would be in jeopardy. The Federal Action analyzed in this BA is the proposed construction of the Flamingo Marina Bulkhead Rehabilitation Project. This project is to be delivered through an Interagency Agreement (IAA) between the National Park Service (NPS), Denver Service Center (DSC) and the U.S. Army Corps of Engineers (USACE). The NPS is the lead agency, which has contracted USACE as the supporting agency. An Environmental Assessment (EA) is in preparation and would be released in early 2024 to evaluate the potential effects to the human and natural environment from rehabilitating the bulkheads, walkways, boat ramps and amenities of the Flamingo Marina within the Everglades National Park (EVER).

1.1 Regulatory Overview:

This BA has been prepared to comply with the ESA, which requires protection of species listed as threatened or endangered and their habitats. In accordance with Section 7(a)(2) of the ESA, this document addresses the potential effects on federally listed species and their habitats for the proposed action.

As a federal entity, NPS would lead the ESA consultation under Section 7(a)(2) of the ESA, which requires the following:

Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of this section.

This BA reviews species protected under the authority of the USFWS. Several federally listed species are known to occur in proximity to the project work areas and may be affected by the project. Additionally, some of the project work being proposed occurs within or adjacent to DCH.

As a result, this BA is being prepared in accordance with ESA Section 7 requirements and USFWS guidance to: 1) provide an assessment of the proposed action and determination of likely effects to federally listed species and habitat based on biological studies, review of EVER data, and the views of species experts; 2) outline the measures to be implemented to minimize effects to listed species and/or their critical habitat to the maximum extent possible; and, 3) provide a basis for consultation with USFWS.

1.2 Consultation History:

This project is a new project with no previous consultations, however it closely associated with two previous ESA consultations that covered the Flamingo Marina area. These consultations include: 1) the Everglades National Park Parkwide Water and Wastewater Systems Rehabilitation Project: Geotechnical Investigation – Biological Assessment received concurrence on December 27, 2022 (FWS Log No. 2023-0018585); and 2) the proposed geotechnical survey work in Flamingo, FL within Everglades National Park received concurrence on July 26, 2022 (FWS Log No. 2022-0053274).

For the project, an official USFWS species list was obtained from the Information for Planning and Consultation (IPAC) website on September 26, 2023 (USFWS 2022). The official species list is shown in Table 1 and is also included with this BA as Attachment A.

2. Action Area & Proposed Action:

2.1 Action Area

The action area is all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. The action area is distinct from and can be larger than the project footprint because some elements of the project may affect listed species or critical habitat some distance from the project footprint. The action area, therefore, extends out to a point where no effects from the project are expected to occur.

For this project, the action area is the Flamingo Marina within EVER (Figure 1). Flamingo Marina is located at the southernmost tip of the Florida peninsula approximately 50 miles southwest of Homestead, in Monroe County, Florida. This area is remote, with no significant resident population. State highway 9336 is the single road that brings visitors into the marina. There are also campsites immediately south-east and west of the marina within Flamingo. The marina is the primary entrance point into Whitewater Bay and Florida Bay.

The marina consists of four basins, two of which connect to Florida Bay to the south and two that connect to Whitewater Bay via Coot bay to the north (Figure 1). The two basins to the south are saltwater with tidal influence, while the two basins to the north are brackish. Depending on tide and season, water depths in the four basins vary between two and eight feet. There is approximately 3,974 linear feet (LF) of bulkhead: 590 LF at Visitor Center Bay basin, 1,089 LF at Florida Bay basin, 1,300 LF at Whitewater Bay basin, and 995 LF at Maintenance Marina basin.



Figure 1. Everglades National Park, Flamingo Marina. Bulkheads rehabilitation project area.

The basins are surrounded by mangroves and low-lying developed areas interspersed with open, non-forested wetlands dominated by *Batis maritima* and other halophytic species characteristic of the region. The bottom type is sand and mud and no corals or hardbottom are present. A benthic survey, was completed in 2020 (ESciences 2021), showed submerged aquatic vegetation present in the channel nearby, but not within the project area (**Figure 2**). However, this survey did not include the entire project area. An updated benthic survey was completed in November 2023, and included the entire project area. Within this survey small patches of dead shoal grass were found in Florida Bay and Visitor Center Bay, and a small amount of invasive *Caulerpa spp.*

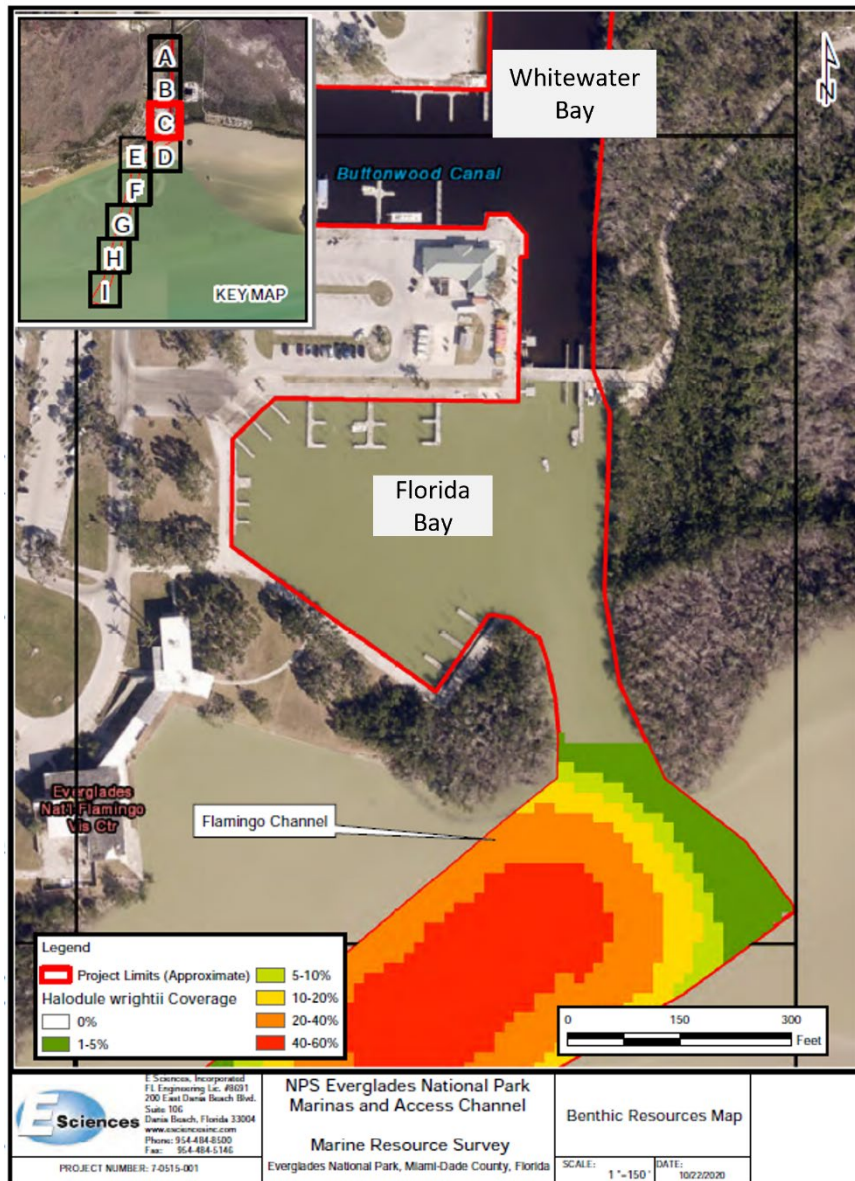


Figure 2. Benthic Resources Survey of the project site by ESciences from 2021.

2.2 Purpose and Objectives

The project purpose is to restore the bulkheads, amenities, and walkways of the Flamingo Marina. and to have a design life of 50 to 100 years. The Flamingo Marina and facilities require replacement due to visible degradation, such as cracking and spalling, that has resulted from years of storm damages and public use. The bulkheads have reached the extent of their design life and are at risk of failure. The purpose and objectives of this project are 1) restore the bulkheads, amenities, and walkways of the Flamingo Marina and 2) enhance visitor experience, safety, and park operations. The project has an expected design life of 50 to 100 years.

2.3 Proposed Action:

The project would rehabilitate the bulkheads by building a new wall composed of coated steel sheet pile in front of (water side) the existing wall. On the water side of the wall, a concrete façade would be placed to provide additional impact and corrosion protection, increasing the expected service life and overall resilience of the wall as well as increasing compatibility with the historic elements within this cultural landscape. In addition, the boat shelter in the Maintenance Marina Bay would be demolished prior to bulkhead renovation and replaced after the bulkhead was replaced. Damaged walkways and boat ramps would be repaired unless full replacement is needed. There would be new electrical and water connections at bulkheads, dispensers and reuse or replacement of aluminum boat docks. Staging areas would be in paved parking areas. All staging areas would be temporary, and conditions would be returned to their original conditions upon project completion.

2.4 Construction Methodology and Duration:

Bulkhead Replacement

A cantilevered steel sheet pile would be used to construct the wall and would be placed in front of the existing structure, within 40 inches, to allow the new wall to take the load of the existing wall (Figure 3). The new wall would not be raised higher, but the two walls would be connected with a concrete cap and clean fill material between the existing wall and new sheet pile wall. The project's sheet pile installation uses a technique called the Hard Ground Press-In method, which involves pre-drilling through rock followed by the use of hydraulic force to push piles into the ground (Figure 4).

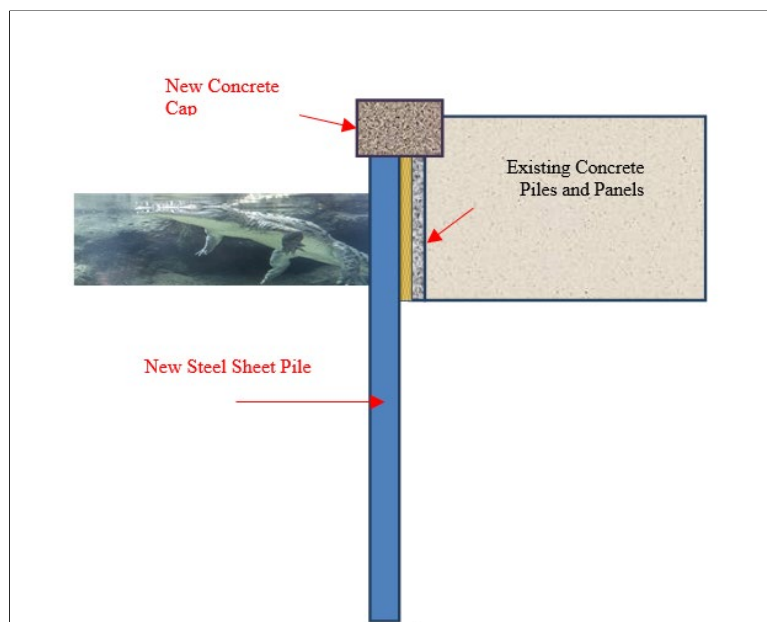


Figure 3. Schematic of bulkhead profile.



Figure 4. Proposed Hard-Ground Press-in method used to install new bulkhead.

The installation equipment would use previously placed sheet piles for support, ultimately moving like a caterpillar along the new wall, which allows for a significantly smaller construction footprint. The equipment also includes the ability to crush hard rock with an auger in advance of the sheet or pile tip to ease the installation through the expected difficult soil conditions. This method of sheet pile construction uses specialized hydraulic equipment that produces almost no sound or vibration concerns (White et al. 2001). Noise produced is comparable to the typical noise and vibration that would occur in an urban area and is much lower in noise and vibration in comparison to other construction methods (Figure 5 and 6).

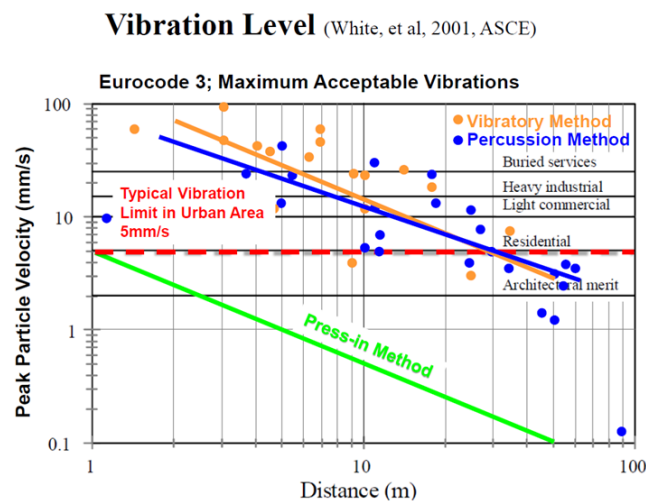


Figure 5. Vibration level comparison between the press-in method and other construction techniques.

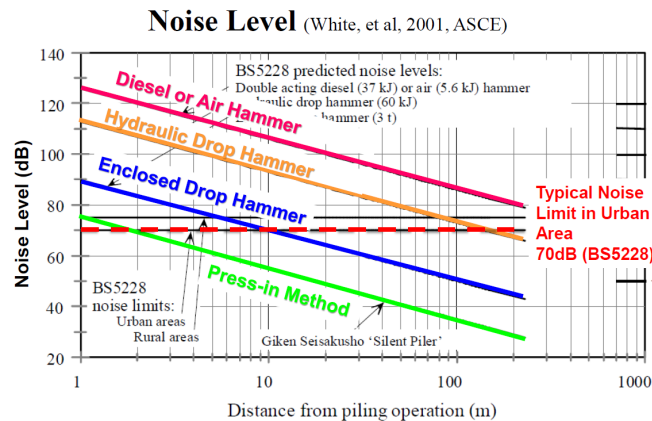


Figure 6. Noise level comparison between the press-in method and other construction techniques.

On the water side of the wall, a concrete façade wall would be placed to provide additional impact and corrosion protection, increasing the expected service life and overall resilience of the wall. These are precast at an offsite facility and delivered by truck to the site. The concrete façade would be connected to the steel sheet pile and placed (not driven) in front of the wall extending to the mudline and would provide the wall greater protection from the elements. A crane would be needed to transport material from the truck delivering equipment to the mechanical machinery working on the wall.

Floating and Fixed Docks

Old timber pilings for the floating and fixed docks would be replaced by lifting pilings straight out of ground or broken and left below the mudline if they are in poor condition. New pilings would be installed in proximity to old pilings, but in a manner that would re-align with the new wall. A small barge would be needed for timber piling removal and floating dock removal that are inaccessible from land. If ramps or docks are missing or deteriorating, they would be replaced, otherwise they would be reused.

Boat Shelter

The boat shelter in the Maintenance Marina Bay (Figure 7) is slated for replacement due to structural instability. The removal of the shelter would occur prior to the replacement of the bulkhead underneath the shelter so that the new bulkhead could be constructed. The existing wood docks and other materials associated with the boat shelter would be removed and stored for reuse in the new replacement boat shelter. During demolition, the roof of the boat shelter would be removed first, then the columns down to the existing pile caps, and finally the piles above and below the waterline. The shelter columns and pilings that are directly connected to the bulkhead would be carefully removed so that bulkhead replacement activities can occur. Safety and resource protective measures would be in place to avoid or greatly reduce the volume of debris inadvertently entering the basin during demolition activities. Such measures may include the installation of debris catchment netting and/or removing the shelter roof and columns by cutting them into smaller manageable pieces and lifting them away from the basin.

with a crane or similar machine for further demolition and transport. Demolition is anticipated to take approximately 1 to 2 months. All debris would be disposed outside the park.

After the bulkhead is replaced, the new replacement boat shelter, compatible in mass, scale, and features to the existing historic boat shelter would be constructed. The new boat shelter would be independently supported (not connected to the new bulkhead) utilizing new reinforced concrete piles and pile caps. Depending on the results of a geotechnical analysis, the concrete piles could be driven into the substrate of the Maintenance Marina Bay basin to bedrock. Concrete columns would be constructed with precast girders and joists. The roof would be sloped to shed water into the basin. The piles would be designed as fixed at the base to resist wind and seismic forces. A roofing material and drip edge would be applied to protect the top and sides of the precast concrete members. Potential equipment to be used would include a pile driver, a crane, and a barge to drive piles in the basin. Any remaining debris associated with boat shelter demolition would be removed and transport out of the park. Construction of the replacement boat shelter after the bulkhead is replaced is anticipated to take approximately 8 to 12 months.



Figure 7. Boat shelter at the Maintenance Marina Bay basin, Flamingo, Everglades National Park, slated for replacement.

Duration and Phasing of Construction

The work in each basin would follow a similar pattern: removal of utilities, walkways, and amenities; construction of new bulkheads; engineered backfill and installation of new buried utility lines; replacement of asphalt and concrete walkways and landscaping, and replacement of floating docks. When possible, phasing would be implemented to avoid endangering any wildlife, listed or otherwise (this is described in more detail in Section 5.1). Once the new seawall system is in place, boat utility

pedestals, fixed and floating boat docks, fuel pumps, and sewer pumps would be installed and commissioned. Any in water work would minimize impacts to navigation. The duration of the project is expected to last approximately between 6 - 24 months, depending on how many basins would be constructed, which is based on available funding. Work is anticipated to commence in November 2024 and potentially extend through 2027. Because of the project's impact to visitors and NPS concessionaire operations, work would be continuous from start to finish of all basins with exceptions for hurricanes or other safety-related issues.

3. ESA Listed Species and Designated Critical Habitat:

An official species list for USFWS managed species was obtained from the IPAC website on September 26, 2023 (Attachment A). There are 25 ESA-listed species under the purview of the USFWS that are found in the project area and one DCH (Table 1) Project effect determinations have been made for each species and are discussed in sections 3.1 and 3.2 below.

Table 1. ESA listed species that may occur in the project area under the purview of USFWS. Superscript D - identifies presence of Designated Critical Habitat; NE – No Effect; MA – May Affect; MANLAA – May Affect, Not likely to Adversely Affect.

Common Name	Scientific Name	Status	Determination
Eastern indigo snake	<i>Drymarchon corais cooperi</i>	Threatened	MANLAA
American crocodile ^D	<i>Crocodylus acutus</i>	Threatened	MA/MANLAA
American alligator	<i>Alligator mississippiensis</i>	Similarity of Appearance (Threatened)	NE
leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	NE
hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered	NE
Kemp's Ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered	NE
green Sea turtle	<i>Chelonia mydas</i>	Threatened	NE
loggerhead sea turtle	<i>Caretta caretta</i>	Threatened	NE
roseate tern	<i>Sterna dougallii dougallii</i>	Threatened	NE
Everglade snail kite	<i>Rostrhamus sociabilis plumbeus</i>	Endangered	NE
Eastern black rail	<i>Laterallus jamaicensis ssp. jamaicensis</i>	Threatened	NE
wood stork	<i>Mycteria americana</i>	Threatened	NE
piping plover	<i>Charadrius melodus</i>	Threatened	NE
red knot	<i>Calidris canutus rufa</i>	Threatened	NE
West Indian manatee	<i>Trichechus manatus</i>	Threatened	MANLAA
Florida panther	<i>Puma concolor coryi</i>	Endangered	NE
puma	<i>Concolor spp.</i>	Threatened	NE
Florida bonneted bat	<i>Eumops floridanus</i>	Endangered	NE
gulf sturgeon	<i>Acipenser oxyrinchus (oxyrhynchus) desotoi</i>	Threatened	NE
Bartram's scrub-hairstreak butterfly	<i>Strymon acis bartrami</i>	Endangered	NE
Florida leafwing butterfly	<i>Anaea troglodyta floridalis</i>	Endangered	NE
Miami blue butterfly	<i>Cyclargus (Hemiargus) thomasi bethunebakeri</i>	Endangered	NE
monarch butterfly	<i>Danaus plexippus</i>	Candidate	NE

3.1 Rationale for “No Effect” Determination:

The following species were eliminated from further consideration because they have a **No Effect**

determination based on the rationale below.

- **American alligator (*Alligator mississippiensis*) - Threatened (Similar Appearance)**
 - Rationale: Because the American crocodile (*Crocodylus acutus*) is listed as threatened in Florida, USFWS determined that the American alligator shall be treated as threatened under the “Similarity of Appearance” provision of the ESA (50 FR 25672), and consultation is not required. This species is not known to occur within the project area.
- **Sea turtles – Leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*), Kemp’s Ridley (*Lepidochelys kempii*), green (*Chelonia mydas*), loggerhead (*Caretta caretta*) – Endangered and Threatened**
 - Rationale: There is no nesting habitat within the project area and sea turtles do not occur within the marina basins. The project would have no effect on nesting sea turtles.
- **Gulf sturgeon (*Acipenser oxyrinchus (oxyrhynchus) desotoi*) - Threatened**
 - Rationale: The Gulf Sturgeon has the potential to visit the action area within its range, however it is not observed within the Action Area and is rarely observed this far south. Therefore, the project would have no effect on Gulf Sturgeon.
- **Florida bonneted bat (*Eumops floridanus*) - Endangered**
 - Rationale: This project would not affect critical habitat or areas where bonneted bats roost. This species is nocturnal, and construction would only occur during the day. Therefore, construction equipment is unlikely to interact with the species.
- **Everglades Snail Kite (*Rostrhamus sociabilis plumbeus*) - Endangered**
 - Rationale: Habitat preference is for freshwater marshes and shallow shorelines of lakes and are unlikely to be found in the project’s habitat area.
- **Florida panther (*Puma concolor coryi*) - Endangered**
 - Rationale: The project is not within a Panther Focus area and would have no increase and/or change in vehicle traffic patterns or other identifiable effects to panther or their habitat. The IPAC panther key was reviewed, and we determined that the project would not have impacts to the Florida Panther.
- **Puma (*Puma concolor* [all subspecies except *coryi*]) - Threatened (Similar Appearance)**
 - Rationale: Because the Florida panther (*Puma concolor coryi*) is listed as endangered, USFWS determined all other extant free-living *Puma concolor* (common names: mountain lion, cougar, puma, panther, etc.) to be threatened under the “Similarity of Appearance” provisions of the ESA wherever they may occur in Florida (56 FR

40265)., and consequently, no consultation is required.

- **Bachman's warbler (*Vermivora bachmanii*) - previously listed as Endangered**
 - Rationale: Bachman's warbler was removed from the Federal List of Endangered and Threatened Wildlife, due to extinction (88 FR 71644). Because the species is extinct, the project would have no effect on Bachman's warbler, and this species is not addressed further.
- **Eastern black rail (*Laterallus jamaicensis jamaicensis*) - Threatened**
 - Rationale: Eastern black rails are not known to occur in the action area. While the current USFWS determination for designation of critical habitat is "not prudent," recent observations show poor presence inland, and an overall widespread reduction in utilized sites across coastal habitats (USFWS 2023). The project activity areas would be confined to previously developed areas where the Eastern black rail is unlikely to occur, and the project would have no effect on the Eastern black rail.
- **Piping plover (*Charadrius melodus*) - Threatened**
 - Rationale: Piping plover are not known to occur in the action area. Because the action area is not designated as piping plover critical habitat, and because the project activity areas would be confined to previously developed areas where piping plover are unlikely to occur, the project would have no effect on piping plover, and this species is not addressed further.
- **Red knot (*Calidris canutus rufa*) – Threatened**
 - Rationale: Red knots are not known to occur in the action area. Because the action area is not designated as red knot critical habitat, and because the project activity areas would be confined to previously developed areas where red knot are unlikely to occur, the project would have no effect on red knot, and this species is not addressed further.
- **Roseate tern (*Sterna dougallii dougallii*) - Threatened**
 - Rationale: Roseate terns are not known to occur in the action area. Because the action area is not designated as roseate tern critical habitat, and because the project activity areas would be confined to previously developed areas where roseate tern are unlikely to occur, the project would have no effect on roseate tern, and this species is not addressed further.
- **Bartram scrub-hairstreak butterfly (*Strymon acis bartrami*) - Endangered**

- Rationale: only occurs within pine rocklands, which do not occur within the project area.
- **Florida leafwing butterfly (*Anaea troglodyta floridalis*) - Endangered**
 - Rationale: only occurs within pine rocklands, which do not occur within the project area.
- **Miami blue butterfly (*Cyclargus thomasi bethunebakeri*) - Endangered**
 - Rationale: The Miami blue butterfly is currently known to inhabit Big Pine Key, Boca Grande Key, and Bahia Honda Key in the Key West National Wildlife Refuge and considered to be extirpated from much of its historical range that coincided with the action area (USFWS 2012). Miami Blue butterflies were reintroduced to the Flamingo area but were subsequently determined to be extirpated. Project action area would be confined to previously developed areas where Miami blue butterfly and their forage plants are unlikely to occur, the project would have no effect on Miami blue butterfly, and this species is not addressed further.
- **Monarch butterfly (*Danaus plexippus*) - Candidate**
 - Rationale: The monarch butterfly is a candidate species and not yet listed. USFWS found that listing the monarch butterfly as an endangered or threatened species is warranted but precluded by higher priority actions (85 FR 81813). Consultation with USFWS under Section 7 of the ESA is not required for candidate species such as the monarch butterfly (USFWS 2023). Monarch butterflies are dependent on milkweed (*Asclepias* spp.) as their host plants for forage. While several species of milkweed occur within the park, they are not known to occur within the project area. The project would have no effect on monarch butterfly and its obligate host species, and this species is not addressed further.

3.2 ESA Listed Species and Designated Critical Habitat Considered under this Biological Assessment:

Listed species under the purview of the USFWS which may occur in the vicinity of and may be affected by the project include the threatened American Crocodile (*Crocodylus acutus*), threatened West Indian manatee (*Trichechus manatus*) and threatened Eastern indigo snake (*Drymarchon corais cooperi*). Designated critical habitat considered in this opinion includes the American Crocodile DCH (Figure 8).

4. Environmental Baseline Conditions:

4.1 American Crocodile

The American crocodile (*Crocodylus acutus*) occurs in the Caribbean and coastal Central and South America, with the northernmost population occurring in Florida. They were listed as endangered under the Endangered Species Act (ESA) in 1975 due to habitat loss and fragmentation, and hunting, but the American crocodiles in Florida were recognized as a distinct population segment that was downlisted to threatened in 2007. Crocodiles are known to occur within the Flamingo District and are frequently viewed basking throughout the marinas. Their diet consists of small mammals, birds, frog's, turtles, and fish (Fishman et al. 2009). Their main habitat is brackish or saltwater areas, or in ponds, coves, and creeks (Ernst et al. 1999, Kushlan & Mazzotti 1989, Platt & Thorbjarnarson 2000, Thorbjarnarson 1989, Thorbjarnarson 2010). Designated critical habitat was listed in 1976 (41 FR 41914) and includes the southern tip of Florida (Figure 8) where this project occurs.



Figure 8. USFWS Designated Critical Habitat for the American crocodile.

The area surrounding the Flamingo marina is used by crocodiles for nesting. It is not uncommon for crocodiles to place nests up against the marina's bulkhead (Figure 9). Mating occurs between January and February (FWC 2023). Males establish and defend breeding territory from late February through March. Nesting season occurs March 1 through September 30. Nests are usually laid earlier in the season and incubate for 85 days. Clutch sizes range from 8 to 56 eggs. Female crocodiles excavate the nest when eggs have hatched and may care for their young for a short period of time, from several days to three-to-four weeks.



Figure 9. Crocodile nest located in asphalt cavity up against the Maintenance Marina basin bulkhead.

As a result of the ongoing high level of construction activity projected in crocodile nesting areas at Flamingo, EVER staff started conducting weekly surveys for crocodile nesting activity in 2019, with a goal of identifying all crocodile nests that occur within and adjacent to the developed areas at Flamingo. Weekly surveys include the Main Park Road from Nine Mile Pond to Flamingo (related to the monitoring needed under NPS programmatic biological opinion for mowing and vegetation maintenance). The NPS observed 9 known nests in 2023, 6 known nests in 2022, 4 in 2021 and 5 in 2020. During this period, the Maintenance Marina Bay has had the highest number of nests within the project area. This was followed in frequency by Florida Bay Marina, Visitor Center Bay, and

Whitewater Bay Marina (**Table 2**). Females sometimes chose to nest in the same spot over consecutive years.

Table 2. Documented American crocodile nests within Flamingo Marina basins from 2020-2023.

Year	Maintenance Bay	Marina	Whitewater Bay	Florida Bay	Visitor Center Bay
2020	2		0	3	0
2021	1		0	2	1
2022	4		0	1	1
2023	6		2	1	0
Total	13		2	7	2

4.2 Manatees:

Manatees receive federal protections under both the Marine Mammal Protection Act (MMPA), which prohibits the take of all marine mammals, and the Endangered Species Act (ESA). The manatee was listed as endangered under the Endangered Species Preservation Act of 1966 (32 FR 4001) and was subsequently grandfathered into the List of Endangered and Threatened Wildlife under the ESA in 1973. More recently, they were downlisted from endangered to threatened in May 2017 (82 FR 16668). Additionally, the West Indian manatee (*Trichechus manatus*) has been protected by the state of Florida since 1893 through the Florida Manatee Sanctuary Act (§379.2431(2), Florida Statutes). The state provided further protection in 1978 with the Florida Marine Sanctuary Act designating the state as a manatee sanctuary and providing signage and speed zones in Florida’s waterways.

Manatees are frequently observed within the Flamingo Marina Basins. Manatees reside and feed mainly in the estuarine areas and around inlets and are only occasionally observed in the open ocean. They prefer warmer water and would migrate to springs and power plant discharge canals during the colder months. Manatees are herbivores and feed on sea grass and aquatic plants. While the manatee population has improved in recent years, there continue to be many threats to the population including loss of habitat, food, red tide, and boating strikes. As mentioned in Section 2.1, there is no known seagrass in the construction area.

Critical habitat was designated in 1976 for the Florida subspecies (*Trichechus manatus latirostris*) (50 CFR 17.95(a)) and is scheduled to be updated by USFWS by September 12, 2024. The project does not occur within the current USFWS Manatee DCH (Figure 10).

4.3 Eastern Indigo Snake:

The Eastern indigo snake (*Drymarchon corais couperi*) was listed under ESA as Threatened Wherever Found in 1978 and managed by USFWS. The most recent recovery plan was published in 2019 by USFWS. The species historical range has been contracted to the coastal plains of Florida and Georgia (USFWS 2019) and the project site is within the range for the species. While there are no verifiable

records of Eastern indigo snakes within the project area, they have been reported as roadkill near Flamingo and could very likely be in the area (USFWS 2023) and we received an unconfirmed but plausible report of a live indigo snake in Flamingo in 2022. In 2019 the USFWS estimated the population would continue to decline without conservation efforts (USFWS 2019). Their diet includes small species such as mammals, birds, toads, frogs, turtles, and eggs (USFWS 2023). Habitat preferences include upland and lowland habitat but would also use a variety of natural or human-altered habitat in the southern portion of their range. Threats to the species include habitat modification, the pet trade, fragmentation, domestic pets, vehicle strikes and gassing while in gopher tortoise burrows. There is no designated critical habitat for this species.

5 Effect of The Action:

5.1. American Crocodile

The project May Affect American crocodiles and their nests; therefore, the project would implement minimization measures as described in Section 6, below, to avoid or minimize effects. Crocodiles in the area experience extensive and frequent human activity in the area, including boat operation, canoeing/kayaking, and the presence of numerous visitors. It is reasonable to assume that this likely results in crocodiles being accustomed to anthropogenic activity. However, the addition of contractors, other project personnel, and their associated activities does increase the likelihood that crocodiles would be disturbed or scared, which may cause individual(s) to leave or avoid the area. It is expected that this effect would be temporary and minor, as there is nearby habitat to utilize, and crocodiles would likely return to the area after the construction ends.

Crocodiles in the area are known to nest within and around the bulkheads. Although the project would include minimization measures to avoid or minimize impact to nests to the maximum extent practicable, effects to unknown nests located directly within the bulkheads may be unavoidable. Year-round construction may result in take of unknown nests located directly within the bulkheads due to the duration overlaps between the nesting season and construction. To minimize potential effects, phasing construction would occur to avoid working in areas with the highest number of nests during nesting season. For example, the Maintenance Marina has historically had the highest number of nests per year; therefore, work in this basin could be prioritized outside of nesting season to avoid the highest potential for direct impact to nests laid directly within the bulkheads. In addition, two active nest locations within the Maintenance Marina basin will no longer be available once the asphalt border surrounding the bulkhead is replaced in kind (see Figure 9). Any nests that are not directly within the bulkheads would be avoided using best management practices. (See Section 6 for detailed information on minimization measures). In the unlikely event that avoidance of a nest was not possible, the NPS would consult with the USFWS about removing the clutch from the nest, incubate the eggs in a secure NPS location, and releasing hatchlings into suitable habitat after hatching. Because it can be extremely difficult to detect all nests and confirm the location of all nests, even with measures to avoid nests, there remains potential for an un-detected nest to be damaged or destroyed. If damaged eggs are identified, the USFWS will be contacted and consulted about removing any remaining intact eggs and incubating them as described above.

The project is **Not Likely to Adversely Affect** crocodile DCH. Its implementation would have no new lasting effects on habitat suitability or DCH as the area is well developed and actively maintained and there are existing bulkheads and floating and fixed docks present.

5.2 West Indian Manatee:

The project **May Affect, But Is Not Likely To Adversely Affect**, West Indian Manatees. Manatees occur almost on a constant basis within the marinas on both the Florida Bay and Whitewater Bay sides of the Buttonwood Canal plug. These manatees are nearly in constant presence of boats and people at these locations. There is the potential for interaction/disturbance resulting from the in-water activities (i.e., inspections, measurements of water depth with soil probing, piling removal/replacement). Work occurring immediately adjacent to the bulkheads and marinas for the bulkhead replacement may result in increased noise during the hard ground pressing method. Most of this work is similar to boat and visitor activity that already occurs, but the construction would result in temporary and minor increases in noise and presence of people and equipment. To avoid and minimize potential effects to manatees during construction, the most current copy of the USFWS' Standard Manatee Conditions for In-Water Work² would be implemented.

5.3 Eastern Indigo Snake:

The project **May Affect, But Is Not Likely To Adversely Affect**, Eastern indigo snakes. While there are no records of Eastern indigo snakes within the proposed Flamingo construction area, road killed Eastern indigo snakes were documented along Main Park Road near Flamingo; therefore, it is reasonable to assume that snakes could occur within the project area. To avoid and minimize potential effects, the most current version of USFWS' standard protection measures³ would be implemented.

6. Environmental Commitments:

Efforts to eliminate or significantly reduce the potential effects associated with construction activities, as well as avoidance and minimization measures for listed species, include the following actions:

6.1 General Commitments:

- a. A pre-construction meeting would be conducted to inform supervisors and employees about the conservation of all wildlife with emphasis on protected species, as well as penalties for harassing or harming such species.
- b. Prior to the commencement of construction activities, the contractor would instruct all

² At the time of developing this BA, the current copy of USFWS' Standard Manatee Conditions for In-Water Work is from 2011 and can be accessed here:
https://www.fws.gov/sites/default/files/documents/20130425_2011_Standard%20Manatee%20Construction%20Conditions.pdf

³ At the time of developing this BA, the current copy of USFWS' Standard Protection Measures for the Eastern Indigo Snake from 2021 and can be accessed here:
https://www.fws.gov/sites/default/files/documents/STANDARD%20PROTECTION%20MEASURES%20FOR%20THE%20EASTERN%20INDIGO%20SNAKE%20FL%26%20GA_2022.pdf

personnel associated with the project on which endangered species may be in the area, and on the civil and criminal penalties associated with harming, harassing, or take.

- c. The contractor would instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with them.
- d. Any construction incident involving the death or injury of any listed T&E species would be immediately reported to the project manager who would then notify Steven Olijnyk (Supervisory Park Ranger, 305-283-5970) and Tylan Dean (Biological Science Branch Chief, 786-205-2801).
- e. Construction access and staging areas would be identified in the contract plans and specification. Contractor vehicles, construction equipment, and storage facilities would be required to stay within the identified construction area.
- f. All vessels associated with the construction project would always operate at “no wake/idle” speeds while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels would preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- g. If needed, siltation or turbidity barriers would be made of material in which listed species cannot become entangled, would be properly secured, and would be regularly monitored to avoid entanglement or entrapment. Barriers must not impede listed species movement, entry to or exit from the area.
- h. Construction would occur during daylight hours. All vehicle access/use outside of established roadways or other impervious surfaces would be coordinated to avoid potential effects to listed species and their habitat.

6.2 Crocodile Specific Commitments:

- a. All on-site project personnel are responsible for observing construction activities for the presence of crocodiles.
- b. All in-water operations, including vessels, must be shut down if a crocodile comes within 50 feet of the operation. Activities would not resume until the crocodile has moved beyond the 50-foot radius of the project operation, and/or until 30 minutes elapses if the crocodile(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- c. Site monitors would be onsite during all construction work and during nesting season to ensure detection and protection of nests within the project area.
- d. Prior to staging any machinery on areas where crocodiles may occur, the area would be surveyed by NPS staff or trained monitors to ensure that no crocodiles are present, or the placement of the machinery does not coincide with a known crocodile nest. All personnel involved in site preparation must be informed of the potential presence of the animal and/or its nest, and the importance of protecting the species.

- e. Overnight open excavations, including the removal of the asphalt sidewalk, would be minimized to the extent possible. If excavations cannot be closed each workday, all excavated areas and exposed soils would be covered by metal plates. Excavations would be inspected for entrapped animals each morning before work resumes. Entrapped animals must not be handled and would be reported to the biological resource monitor on duty.
- f. Fill/material from excavations would be placed in containers and not piled adjacent to excavation. Containers with fill that would be left for more than a day should be of a design that ensures that they prevent access and entrapment of wildlife; to be assessed in conjunction with site monitors.
- g. In rare cases when monitors identify a location where crocodiles may be likely to nest near construction activity, efforts to exclude crocodiles from the area, such as the use of fencing or physical barriers, may be implemented. Any such feature would be inspected daily to ensure it doesn't result in entanglement or entrapment of crocodiles or other wildlife.
- h. Crocodile nest season runs from March 1 through September 30. The project would include monitoring for nesting and addressing nests (i.e., marking, adding buffers, relocations, etc.) as coordinated and approved by USFWS in the area during this period. Surveys would include developed areas, all areas where crocodile nesting has been recorded previously, and any other sites where crocodile activity is observed. Since it is often difficult to determine where the actual nest site is located, locations where disturbances such as digging, scraping (usually grass pulled and or rocks scattered), holes, or presumed nests would be documented. No excavation of presumed nests to confirm their status, nor digging around presumed scrapes and exploratory holes to confirm that eggs are absent would occur. Presumed nest determinations would be made based on the appearance of the site and changes from previous visits. Pictures will be taken of all disturbances to help determine if there is any new activity in a location since the last visit. Surveys would also document whether any crocodiles are present.
- i. All project personnel would be instructed to be vigilant and watch for eggs from undetected nests when digging or moving earth. If eggs are detected, all work would cease pending inspection by the biological resource monitor on duty.

6.3 Manatee Specific Commitments:

- a. All personnel associated with the project would be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with manatees.
- b. Construction personnel would be advised that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the MMPA and the ESA.
- c. Temporary signs concerning manatees would be posted prior to and during all in-water project activities. All signs are to be removed upon completion of the project. Example Manatee Caution/Awareness signs are available for download from the following link: [https://www.saj.usace.army.mil/About/Divisions-Offices/Engineering/Design-Branch/Specifications-Section/ Manatee Caution Signs](https://www.saj.usace.army.mil/About/Divisions-Offices/Engineering/Design-Branch/Specifications-Section/Manatee%20Caution%20Signs). One sign which reads "Caution: Manatee Habitat" must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shutdown of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities.

- d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s).
- e. All in-water operations, including vessels, must be shut down if a manatee(s) comes within 50 feet of the operation. Activities would not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, and/ or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- f. Any collision with or injury to a manatee would be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Manatee Hotline (1-844-404-FWCC (3922)) and imperiledspecies@myFWC.com and the USFWS. In addition, the following Park Service staff would be notified: Steven Olijnyk (Supervisory Park Ranger, 305-283-5970) and Tylan Dean (Biological Science Branch Chief, 786-205-2801).

6.4 Eastern Indigo Snake Specific Commitments:

- a. All personnel involved in the project would be informed of the potential presence of the animal, and the importance of protecting the species.
- b. All machinery would be inspected for the presence of Eastern indigo snakes prior to its daily use and during demobilization/mobilization from the project area. All equipment and materials leaving the secure overnight staging area would be inspected to ensure no snakes are entrapped. Prior to equipment staging, biological monitors would inspect the area to ensure that no Eastern indigo snakes are present. If present, work would not commence until the snake vacates the area. All personnel involved in site preparation must be informed of the potential presence of the animal, and the importance of protecting the species.
- c. Posters with the information for the Standard Protection Measures for the Eastern Indigo Snake would be placed at strategic locations on the construction site and along any proposed access roads. A final poster for compliance, to be printed on 11 x 17in or larger paper and laminated, is available for download at the following link: https://www.fws.gov/sites/default/files/documents/20221228_EIS_Poster_en_v2.pdf.
- d. Construction staff would be informed that if an Eastern indigo snake (live or dead) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the protection measures, which includes notification of the appropriate USFWS Field Office and Tylan Dean (Biological Science Branch Chief, 786-205-2801). During initial site preparation and inspection, an onsite biological monitors would determine whether habitat conditions suggest a reasonable probability of an Eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).
- e. Whether or not Eastern indigo snakes are observed during construction activities, the contractor will submit a monitoring report to the appropriate USFWS Field Office within 60 days of project completion.

7. Conclusions:

Based on the analysis above, the project may adversely affect American crocodiles but is not likely to adversely affect the American crocodile critical habitat. Because it includes compliance with the USFWS Standard Manatee Conditions for In-Water Work and the USFWS Standard Protection Measures for the Eastern Indigo Snake, the project may affect, but is not likely to adversely affect, West Indian manatee and Eastern indigo snake. The NPS requests written concurrence from the USFWS with these determinations and confirmation and/or update to the above commitments.

8. References:

- E Sciences. "Benthic Resources Survey Report, Flamingo Visitor Center" Everglades National Park Miami-Dade County, Florida. 2021.
- Ernst, C.H., F.D. Ross, C.A. Ross. 1999. *Crocodylus acutus* (Cuvier) American crocodile. Catalogue of American Amphibians and Reptiles 700, 1-17.
- Fishman, J., K. MacKinnon and S. Baker. 2009. "Crocodylus acutus" (On-line), Animal Diversity Web. http://animaldiversity.ummz.umich.edu/site/accounts/information/Crocodylus_acutus.html.
- Florida Fish and Wildlife Conservation Commission (FWC). 2023a. "Florida Fish and Wildlife Conservation Commission American: Profiles (Crocodiles, Sea Turtles)." MyFWC.com. Website Accessed 25 September 2023. <https://myfwc.com/wildlifehabitats/profiles/reptiles/american-crocodile/>.
- Kushlan, J.A. & F.J. Mazzotti. 1989a. Historic and present distribution of the American crocodile in Florida. *Journal of Herpetology* 23(1): 1-7.
- Platt, S.G. & J.B. Thorbjarnarson. 2000. Status and conservation of the American crocodile, *Crocodylus acutus*, in Belize. *Biological Conservation* 96: 13-20.
- Thorbjarnarson, J.B. 1989. Ecology of the American crocodile (*Crocodylus acutus*). In Hall, P.M. (Ed.), *Crocodiles: Their Ecology, Management, and Conservation*. IUCN – The World Conservation Union Publications, Gland, Switzerland, pp. 228-258.
- Thorbjarnarson, J.B. 2010. American crocodile *Crocodylus acutus*. pp. 46-53 In *Crocodiles. Status Survey and Conservation Action Plan*. Third Edition, ed. by S.C. Manolis and C. Stevenson. Crocodile Specialist Group: Darwin.
- U.S. Fish and Wildlife Service (USFWS). 2023. Environmental Conservation Online System: Eastern Black Rail; Monarch Butterfly. Website Accessed 25 September 2023. <https://ecos.fws.gov/ecp/>.
- U.S. Fish and Wildlife Service (USFWS). 2019. USFWS Draft Revised Recovery Plan Eastern Indigo snake. US Fish and Wildlife Service, Athens, Georgia and Jackson, Mississippi Ecological Services Field Offices.
- U.S. Fish and Wildlife Service (USFWS) Federal Register. 2012. Endangered and Threatened Wildlife and Plants; Listing of the Miami Blue Butterfly as Endangered Throughout Its Range; Listing of the Cassius Blue, Ceraunus Blue, and Nickerbean Blue Butterflies as Threatened Due to Similarity of Appearance to the Miami Blue Butterfly in Coastal South and Central Florida. 77 FR 20948. Docket No. FWS-R4-ES-2011-0043 4500030113

White, D. Finlay, T. Bolton, M. and Bearss, G. 2001. "Press-in piling: Ground vibration and noise during pile installation. Proceedings of the International Deep Foundations Congress." Orlando, USA. ASCE Special Publication 116 (2001) pp363-371.

Attachment A:



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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In Reply Refer To:

September 26, 2023

Project Code: 2023-0133169

Project Name: Flamingo Marina Bulkhead Rehabilitation Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Please include your Project Code, listed at the top of this letter, in all subsequent correspondence regarding this project. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of

this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Marine Mammals
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Florida Ecological Services Field Office

1339 20th Street

Vero Beach, FL 32960-3559

(772) 562-3909

PROJECT SUMMARY

Project Code: 2023-0133169
Project Name: Flamingo Marina Bulkhead Rehabilitation Project
Project Type: Bulkhead - Maintenance/Modification
Project Description: This project to be delivered through an Interagency Agreement (IAA) between the National Park Denver Service Center and the US Army Corps of Engineers. The Flamingo Marina project site is located at the southern tip of the Florida Peninsula and is part of the Everglades National Park. The Marina was constructed in 1954 and the bulkheads are showing signs of wear. The objectives of this project are to rehabilitate the bulkheads within the four basins of the Flamingo Marina to a 50-100 year life span. In addition this project will repair boat, ramps, walkways and aging amenities. This project is within Crocodile designated critical habitat.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@25.142468049999998,-80.92283472937595,14z>



Counties: Monroe County, Florida

ENDANGERED SPECIES ACT SPECIES

There is a total of 31 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Florida Bonneted Bat <i>Eumops floridanus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8630	Endangered
Florida Panther <i>Puma (=Felis) concolor coryi</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1763 General project design guidelines: https://ipac.ecosphere.fws.gov/project/ND5SL5M54RE6HD7LD65752ZUQY/documents/generated/7123.pdf	Endangered
Puma (=mountain Lion) <i>Puma (=Felis) concolor (all subsp. except coryi)</i> Population: FL No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6049	Similarity of Appearance (Threatened)
West Indian Manatee <i>Trichechus manatus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. <i>This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.</i> Species profile: https://ecos.fws.gov/ecp/species/4469	Threatened

BIRDS

NAME	STATUS
Bachman's Warbler (=wood) <i>Vermivora bachmanii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3232	Endangered
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Wood Stork <i>Mycteria americana</i> Population: AL, FL, GA, MS, NC, SC No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8477 General project design guidelines: https://ipac.ecosphere.fws.gov/project/ND5SL5M54RE6HD7LD65752ZUQY/documents/generated/6954.pdf	Threatened

REPTILES

NAME	STATUS
<p>American Alligator <i>Alligator mississippiensis</i></p> <p>No critical habitat has been designated for this species.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/776</p>	Similarity of Appearance (Threatened)
<p>American Crocodile <i>Crocodylus acutus</i></p> <p>Population: U.S.A. (FL)</p> <p>There is final critical habitat for this species. Your location overlaps the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/6604</p>	Threatened
<p>Eastern Indigo Snake <i>Drymarchon couperi</i></p> <p>No critical habitat has been designated for this species.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/646</p>	Threatened
<p>Green Sea Turtle <i>Chelonia mydas</i></p> <p>Population: North Atlantic DPS</p> <p>There is final critical habitat for this species. Your location does not overlap the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/6199</p>	Threatened
<p>Hawksbill Sea Turtle <i>Eretmochelys imbricata</i></p> <p>There is final critical habitat for this species. Your location does not overlap the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/3656</p>	Endangered
<p>Leatherback Sea Turtle <i>Dermochelys coriacea</i></p> <p>There is final critical habitat for this species. Your location does not overlap the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/1493</p>	Endangered
<p>Loggerhead Sea Turtle <i>Caretta caretta</i></p> <p>Population: Northwest Atlantic Ocean DPS</p> <p>There is final critical habitat for this species. Your location does not overlap the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/1110</p>	Threatened

FISHES

NAME	STATUS
<p>Gulf Sturgeon <i>Acipenser oxyrinchus (=oxyrhynchus) desotoi</i></p> <p>There is final critical habitat for this species. Your location does not overlap the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/651</p>	Threatened

INSECTS

NAME	STATUS
Bartram's Hairstreak Butterfly <i>Strymon acis bartrami</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4837	Endangered
Florida Leafwing Butterfly <i>Anaea troglodyta floridalis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6652	Endangered
Miami Blue Butterfly <i>Cyclargus (=Hemiargus) thomasi bethunebakeri</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3797	Endangered
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
Big Pine Partridge Pea <i>Chamaecrista lineata keyensis</i> Population: There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/8416	Endangered
Blodgett's Silverbush <i>Argythamnia blodgettii</i> Population: There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/6823	Threatened
Cape Sable Thoroughwort <i>Chromolaena frustrata</i> Population: There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4733	Endangered
Everglades Bully <i>Sideroxylon reclinatum ssp. austrofloridense</i> Population: There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/4735	Threatened
Florida Pineland Crabgrass <i>Digitaria pauciflora</i> Population: There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/3728	Threatened
Florida Prairie-clover <i>Dalea carthagenensis floridana</i> Population: There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/2300	Endangered
Florida Semaphore Cactus <i>Consolea corallicola</i> Population: There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4356	Endangered
Key Tree Cactus <i>Pilosocereus robinii</i> Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2520	Endangered
Sand Flax <i>Linum arenicola</i> Population: There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/4313	Endangered
Wedge Spurge <i>Chamaesyce deltoidea serpyllum</i> Population: There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/949	Endangered

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
American Crocodile <i>Crocodylus acutus</i> https://ecos.fws.gov/ecp/species/6604#crithab	Final

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

-
1. The [Bald and Golden Eagle Protection Act](#) of 1940.
 2. The [Migratory Birds Treaty Act](#) of 1918.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

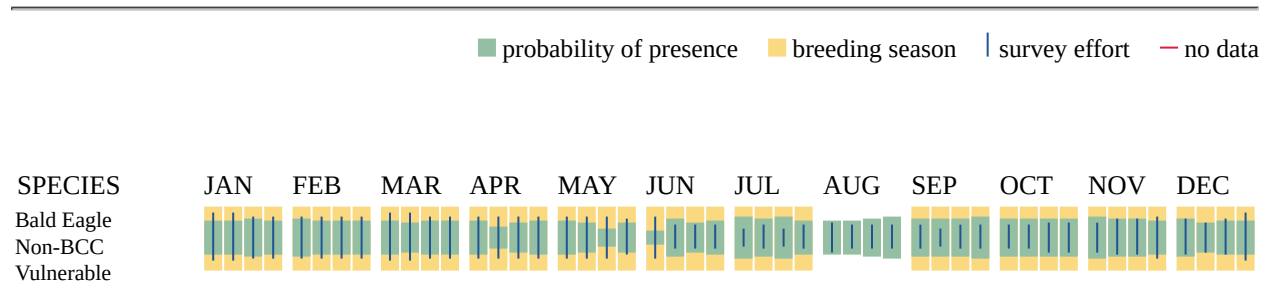
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

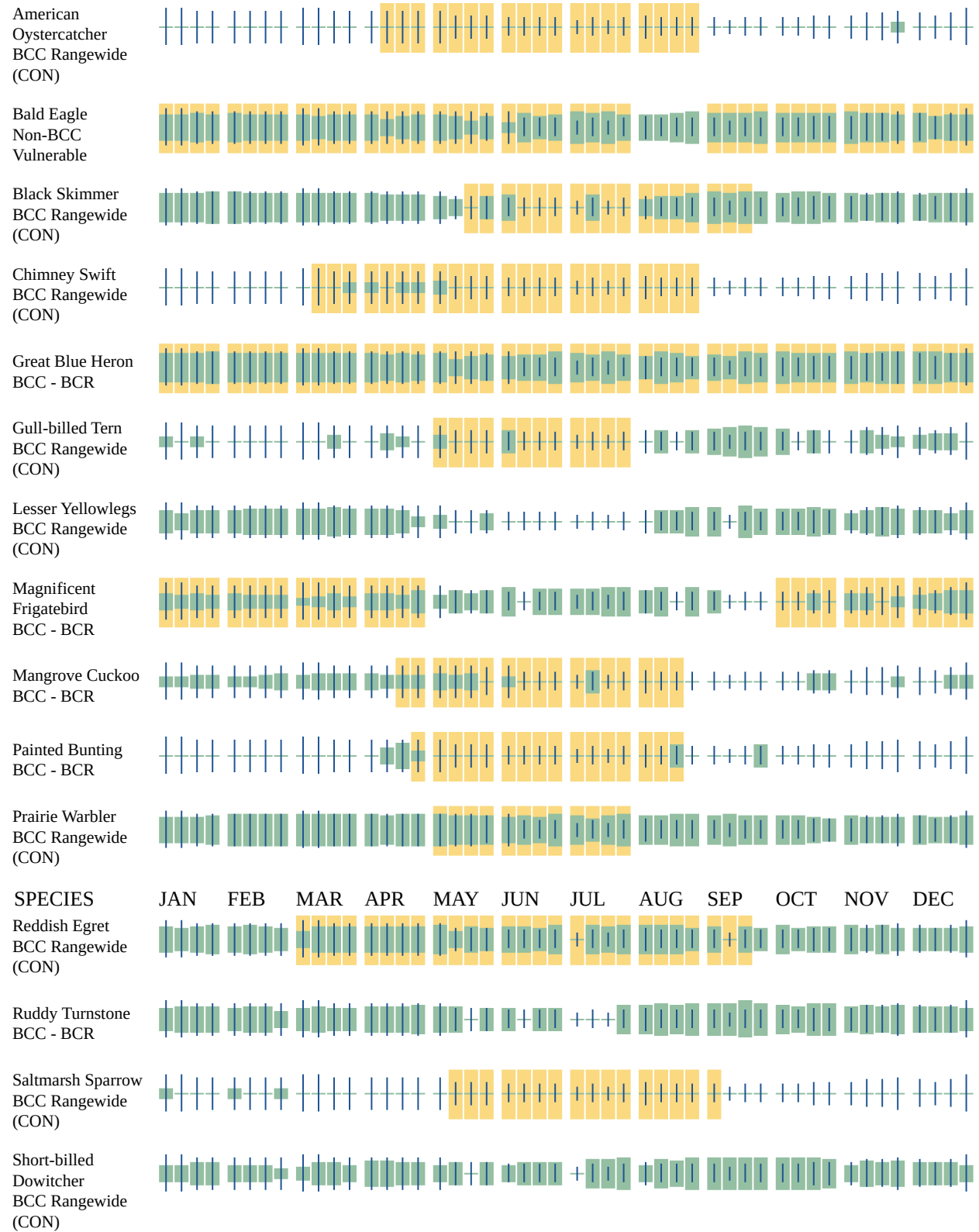
Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

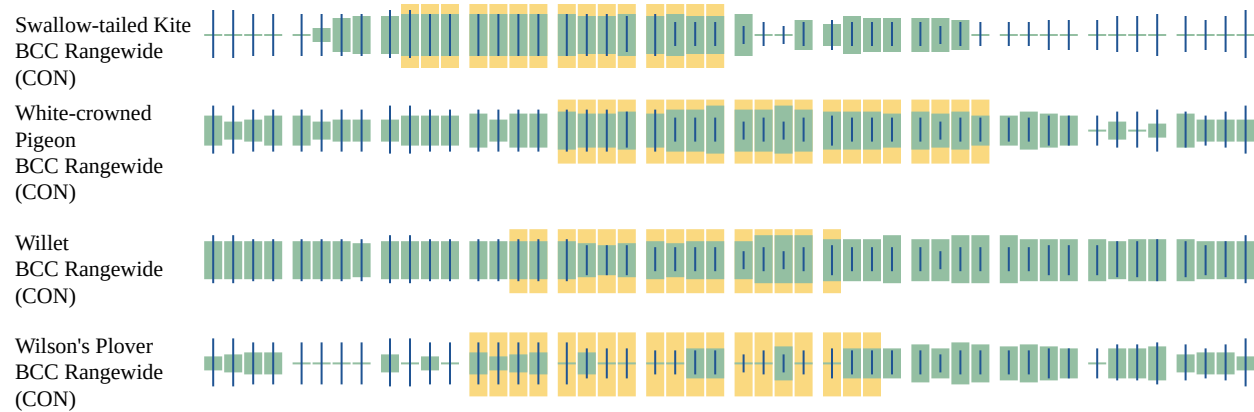
-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel <i>Falco sparverius paulus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
American Oystercatcher <i>Haematopus palliatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
Black Skimmer <i>Rynchops niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Great Blue Heron <i>Ardea herodias occidentalis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Jan 1 to Dec 31

NAME	BREEDING SEASON
Gull-billed Tern <i>Gelochelidon nilotica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Magnificent Frigatebird <i>Fregata magnificens</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Oct 1 to Apr 30
Mangrove Cuckoo <i>Coccyzus minor</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 20 to Aug 20
Painted Bunting <i>Passerina ciris</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 25 to Aug 15
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Reddish Egret <i>Egretta rufescens</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7617	Breeds Mar 1 to Sep 15
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Saltmarsh Sparrow <i>Ammodramus caudacutus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9719	Breeds May 15 to Sep 5
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Swallow-tailed Kite <i>Elanoides forficatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30





Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

MARINE MAMMALS

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act¹ and the Convention on International Trade in Endangered Species of Wild Fauna and Flora².

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries³ [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the [Marine Mammals](#) page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

-
1. The [Endangered Species Act](#) (ESA) of 1973.
 2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
-

3. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

NAME

West Indian Manatee *Trichechus manatus*

Species profile: <https://ecos.fws.gov/ecp/species/4469>

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- [R5UBH](#)

ESTUARINE AND MARINE DEEPWATER

- [E1ABLx](#)
- [E1UBL](#)
- [E1UBLx](#)

ESTUARINE AND MARINE WETLAND

- [E2SS3P](#)
-

IPAC USER CONTACT INFORMATION

Agency: Department of Defense
Name: Rachel Scharer Case
Address: 701 San Marco Blvd
City: Jacksonville
State: FL
Zip: 32207
Email: rcase926@gmail.com
Phone: 3867939492

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Interior
Name: Pablo Ruiz
Email: pablo_Ruiz@nps.gov

Appendix B: Cultural Resources

Table B-1: Historic Resources and Archaeological Sites in/around the Flamingo Area APE

Site ID	Site Name	Temporal Affiliation	Site Type	SHPO NRHP Evaluation
Historic Resources within the APE				
8MO02146	Flamingo Mission 66 Developed Area	c. 1821	Resource Group	Eligible
8DA11434/ 8MO01905	Old Ingraham Highway and Canal System	1915-1922	Resource Group	Eligible
8MO01908	Buttonwood Canal	1915-1922	Resource Group	Eligible
8MO01935	Flamingo Visitor Center	1957	Historic Building/ Property	Eligible
8MO01936	Flamingo Boat Shop	1959+	Historic Building/ Property	Eligible
8MO02147	Flamingo Mission 66 Concession Warehouse	1963+	Historic Building/ Property	Eligible
8MO02148	Flamingo Mission 66 Electrical Plant	1956	Historic Building/ Property	Eligible
8MO02148	Flamingo Mission 66 Electrical Plant	1956	Historic Building/ Property	Eligible
8MO02149	Flamingo Mission 66 Marina Basin 1	1957	Historic Building/ Property	Eligible
MO02150	Flamingo Mission 66 Marina Basin 2	1955	Historic Building/ Property	Eligible
MO02151	Flamingo Mission 66 Marina Basin 3	1955	Historic Building/ Property	Eligible
MO02152	Flamingo Mission 66 Marina Basin 4	1955	Historic Building/ Property	Eligible
MO02334	Flamingo Flagpole	1958	Historic Building/ Property	Eligible
MO02335	Flamingo Mission 66 Fish Cleaning Building	1958	Historic Building/ Property	Eligible
MO02336	Flamingo Mission 66 Marina Store	1957	Historic Building/ Property	Not Evaluated
Archaeological Sites within the APE				
EVER 230	Flamingo CCC Camp	Early 20 th century American	Artifact Scatter (remains of structure)	Not evaluated
8MO06553/ EVER 231	Flamingo Settler Houses	19 th century American, 1821-1899	Homestead (remains of structure)	Eligible
Historic Resources within the APE and within 1.0 mi of the APE				
8MO01908	Buttonwood Canal	1915-1922	Resource Group	Eligible
8MO01909	Old Ingraham Highway	1915-1922	Resource Group	Eligible
8MO01912	Flamingo Mission 66 Housing 416	1956	Historic Building/ Property	Eligible
8MO01913	Flamingo Mission 66 Housing 439	1966	Historic Building/ Property	Eligible
n/a	Flamingo mission 66 Housing 440	1966	Historic Building/ Property	Not Evaluated
MO04522	Service Station – Flamingo mission 66	1968	Historic Building/ Property	Eligible

Site ID	Site Name	Temporal Affiliation	Site Type	SHPO NRHP Evaluation
MO04526	Flamingo Mission 66 Boat Shelter	1959	Historic Building/ Property	Eligible
Archaeological Sites within 1.0 mi of the APE				
8MO00122/ EVER 59	Bradley Key	Glades IIIc	Artifact Scatter	Not evaluated
8MO00123/ EVER 60	Curry Key	Glades IIIc	Artifact Scatter	Not evaluated
EVER 232	Coastal #1	19 th century American, 1821–1899	Cistern (remains of structure)	Not Evaluated
EVER 233	Coastal #2	19 th century American, 1821–1899	Cistern (remains of structure)	Not Evaluated
EVER 234	Coastal #3	19 th century American, 1821–1899	Cistern (remains of structure)	Not Evaluated
EVER 235	Pavers	19 th cent. American, 1821-1899	Structure (remains of structure)	Not Evaluated
8MO06553/ EVER 231	Flamingo Settler Houses	19 th century American, 1821-1899	Homestead (remains of structure)	Eligible
8MO00032	Mud Lake Canal	Glades IIIa	Canoe canal	Eligible

Appendix C: Coastal Zone Consistency Determination

**Florida Coastal Zone Management Program Evaluation Procedures
Federal Consistency Determination (FCD)**

**Draft Environmental Assessment Flamingo Marina Bulkheads Rehabilitation
Flamingo, Florida
December 2023**

Enforceable Policy. Florida Statutes considers “enforceable policy” under the Coastal Zone Management Act (<https://floridadep.gov/rcp/fcmp/content/24-florida-statutes-florida-coastal-management-program>).

Applicability of the Coastal Zone Management Act. The following table summarizes the process and procedures under the Coastal Zone Management Act for federal actions and for non-federal applicants*.

Item	Non-federal Applicant (15 CFR 930, subpart D)	Federal Action (15 CFR 930, subpart C)
Enforceable Policies	Reviewed and approved by NOAA (in FL www.dep.state.fl.us/cmp/federal/24_statutes.htm)	Same
Effects Test	Direct, Indirect (cumulative, secondary), adverse or beneficial	Same
Review Time	6 months from state receipt of Consistency Certification (30-days for completeness notice) Can be altered by written agreement between state and applicant	60 Days, extendable (or contractible) by mutual agreement
Consistency	Must be Fully Consistent	To Maximum Extent Practicable**
Procedure Initiation	Applicant provides Consistency Certification to state	Federal Agency provides “Consistency Statement” to state
Appealable	Yes, applicant can appeal to Secretary (NOAA)	No (NOAA can “mediate”)
Activities	Listed activities with their geographic location (State can request additional listing within 30 days)	Listed or Unlisted Activities in State Program
Activities in Another State	Must have approval for interstate reviews from NOAA	Interstate review approval NOT required
Activities in Federal Waters	Yes, if activity affects state waters	Same

* There are separate requirements for activities on the Outer Continental Shelf (subpart E) and for “assistance to an applicant agency” (subpart F).

** Must be fully consistent except for items prohibited by applicable law (generally does not count lack of funding as prohibited by law, 15 CFR 930.32).

Coastal Zone Consistency Statement by Statute/Enforceable Policy

1. CHAPTER 161, F.S., BEACH AND SHORE PRESERVATION.

Coastal areas are among the state's most valuable natural, aesthetic, and economic resources. The state is required to protect coastal areas from imprudent activities that could jeopardize the stability of the beach-dune system, accelerate erosion, provide inadequate protection to upland structures, endanger adjacent properties, or interfere with public beach access. Coastal areas used, or likely to be used, by sea turtles are designated for nesting, and the removal of vegetative cover that binds sand is prohibited. This statute provides policy for the regulation of construction, reconstruction, and other physical activities related to the beaches and shores of the state. Additionally, this statute requires the restoration and maintenance of critically eroding beaches.

RESPONSE: The proposed plans and information will be submitted to the state in compliance with this chapter. The goal of the proposed Federal action is to rehabilitate Flamingo Marina bulkheads, walkway, boat ramps, and amenities that are showing aging from exposure to environmental elements and visitor use over time. Details of construction of the preferred alternative (alternative C) are described in Chapter 2 of the Environmental analysis. The new wall will be built in front of the old wall and therefore there will be no new effects to the shoreline. Without this project the bulkheads will continue to be effected by erosion and eventually fail. In addition, there are no beaches or dredging construction within the scope of this project.

2. CHAPTER 163, PART II, F.S., INTERGOVERNMENTAL PROGRAMS: GROWTH POLICY; COUNTY AND MUNICIPAL PLANNING: LAND DEVELOPMENT REGULATION

The purpose of this statute is to provide for the implementation of comprehensive planning programs to guide and control future development in the state. The comprehensive planning process encourages units of local government to preserve, promote, protect, and improve the public health, safety, comfort, good order, appearance, convenience, law enforcement and fire prevention, and general welfare; prevent the overcrowding of land and avoid undue concentration of population; facilitate the adequate and efficient provision of public facilities and services; and conserve, develop, utilize, and protect natural resources within their jurisdictions.

RESPONSE: Pursuant to the National Environmental Protection Act (NEPA), the proposed project will be coordinated with federal, state, federally-recognized Native American tribes, local agencies, and other interested parties. The proposed project is consistent with the goals of this chapter.

3. CHAPTER 186, F.S., STATE AND REGIONAL PLANNING

The state comprehensive plan provides basic policy direction to all levels of government regarding the orderly social, economic, and physical growth of the state. The goals, objectives, and policies of the state comprehensive plan are statewide in scope

and are consistent and compatible with each other. The statute provides direction for the delivery of governmental services, a means for defining and achieving the specific goals of the state, and a method for evaluating the accomplishment of those goals.

RESPONSE: Pursuant to NEPA, the proposed project will be coordinated with federal, state, federally-recognized Native American tribes, local agencies, and other interested parties. The proposed project is consistent with the goals of this chapter.

4. CHAPTER 252, F.S., EMERGENCY MANAGEMENT

The state of Florida is vulnerable to a wide range of emergencies, including natural, technological, and manmade disasters. This vulnerability is exacerbated by the tremendous growth in the state's population. This statute directs the state to reduce the vulnerability of its people and property to natural and manmade disasters; prepare for, respond to and reduce the impacts of disasters; and decrease the time and resources needed to recover from disasters.

Disaster mitigation is necessary to ensure the common defense of Floridians' lives and to protect the public peace, health, and safety. The policies provide the means to assist in the prevention or mitigation of emergencies that may be caused or aggravated by the inadequate planning or regulation. State agencies are directed to keep land uses and facility construction under continuing study and identify areas that are particularly susceptible to natural or manmade catastrophic occurrences.

RESPONSE: The proposed plans and information will be submitted to the state in compliance with this chapter. The purpose of the project is to rehabilitate the marina to have a life of 50-100 years. Construction of this project will provide stability to the bulkhead and prevent further erosion, including withstanding environmental emergencies such as hurricanes. The project will not increase the risk of natural or catastrophic occurrences in the area. Pursuant to NEPA, the proposed project will be coordinated with federal, state, federally-recognized Native American tribes, local agencies, and other interested parties. The project is consistent with the goals of this chapter.

5. CHAPTER 253, F.S., STATE LANDS

The Board of Trustees of the Internal Improvement Trust Fund (Trustees) is vested and charged with the acquisition, administration, management, control, supervision, conservation, protection, and disposition of all lands owned by the state. Lands acquired for preservation, conservation and recreation serve the public interest by contributing to the public health, welfare and economy. In carrying out the requirements of this statute, the Trustees are directed to take necessary action to fully: conserve and protect state lands; maintain natural conditions; protect and enhance natural areas and ecosystems; prevent damage and depredation; and preserve archaeological and historical resources.

All submerged lands are considered single-use lands to be maintained in natural condition for the propagation of fish and wildlife and public recreation. Where multiple-

uses are permitted, ecosystem integrity, recreational benefits and wildlife values are conserved and protected.

RESPONSE: Portions of the project (e.g. dredging of outer channel) will occur within the navigation servitude and on submerged lands of the State of Florida. NPS will coordinate the project with the State of Florida through the issuance of a water quality certification (WQC), Federal Consistency Determination (FCD) review, and the review process of the draft EA.

Environmental protection measures, as described in detail in Section 3 of the EA will be implemented to minimize adverse effects to the maximum extent practicable to fish and other wildlife resources, threatened and endangered (T&E) species, water quality, air quality, or other environmental resources. Consultation on the Preferred Alternative is ongoing with the Florida State Historic Preservation Office (SHPO) and appropriate federally-recognized tribes for compliance with Section 106 of the National Historic Preservation Act for the Federal portions of the project.

Pursuant to NEPA, the proposed project will be coordinated with federal, state, federally-recognized Native American tribes, local agencies, and other interested parties. The proposed project is consistent with the goals of this chapter.

6. CHAPTER 258, F.S., STATE PARKS AND PRESERVES

The statute addresses the state's administration of state parks, aquatic preserves, and recreation areas, which are acquired to emblemize the state's natural values and to ensure that these values are conserved for all time. Parks and preserves are managed for the non-depleting use, enjoyment, and benefit of Floridians and visitors and to contribute to the state's tourist appeal.

Aquatic Preserves are recognized as having exceptional biological, aesthetic, and scientific value and are set aside for the benefit of future generations. Disruptive physical activities and polluting discharges are highly restricted in aquatic preserves. State managed wild and scenic rivers possess exceptionally remarkable and unique ecological, fish and wildlife, and recreational values. These rivers are also designated for permanent preservation and enhancement for both the present and future.

RESPONSE: The proposed project is part of the Everglades National Park and will have no impacts to state parks or preserves. Rehabilitating the marina will maintain opportunities for recreational use. The proposed project complies with the goals of this chapter.

7. CHAPTER 259, F.S., LAND ACQUISITION FOR CONSERVATION OR RECREATION

The statute addresses public ownership of natural areas for purposes of maintaining the state's unique natural resources; protecting air, land, and water quality; promoting water resource development to meet the needs of natural systems and citizens of this state; promoting restoration activities on public lands; and providing lands for

natural resource based recreation. Lands are managed to protect or restore their natural resource values, and provide the greatest benefit, including public access, to the citizens of this state.

RESPONSE: Pursuant to NEPA, the proposed project will be coordinated with federal, state, federally-recognized Native American tribes, local agencies, and other interested parties. Environmental protection measures, as described in detail in Section 3 of the EA, will be implemented to minimize adverse effects to the maximum extent practicable to fish and other wildlife resources, T&E species, water quality, or other environmental resources. Rehabilitation of the Marina will assist in maintaining opportunities for recreational use and habitat for wildlife. Portions of the project will occur within the submerged lands of the State of Florida. NPS will coordinate the project with the State of Florida through the issuance of a WQC, FCD review, and the review process of the draft EA. The proposed project complies with the goals of this chapter.

8. CHAPTER 260, F.S., FLORIDA GREENWAYS AND TRAILS ACT

A statewide system of greenways and trails is established in order to conserve, develop, and use the natural resources of Florida for healthful and recreational purposes. These greenways and trails provide open space benefiting environmentally sensitive lands and wildlife and provide people with access to healthful outdoor activities. The greenways and trails serve to implement the concepts of ecosystem management while providing recreational opportunities such as horseback riding, hiking, bicycling, canoeing, jogging, and historical and archaeological interpretation. As of August 29th, 2016, Chapter 260, F.S., does not contain any enforceable policies for federal consistency purposes.

RESPONSE: No Florida greenways or trails exist in the project area or will be affected by the project.

9. CHAPTER 267, F.S., HISTORICAL RESOURCES

The management and preservation of the state's archaeological and historical resources are addressed by this statute. This statute recognizes the state's rich and unique heritage of historic resources and directs the state to locate, acquire, protect, preserve, operate and interpret historic and archeological resources for the benefit of current and future generations of Floridians.

Objects or artifacts with intrinsic historic or archeological value located on, or abandoned on, state-owned lands or state-owned submerged lands belong to the citizens of the state. The state historic preservation program operates in conjunction with the National Historic Preservation Act of 1966 to require state and federal agencies to consider the effect of their direct or indirect actions on historic and archeological resources. These resources cannot be destroyed or altered unless no prudent alternative exists. Unavoidable impacts must be mitigated.

RESPONSE: Consultation on the Preferred Alternative is ongoing with the SHPO and appropriate federally-recognized tribes for compliance with Section 106 of the National

Historic Preservation Act for the Federal portions of the project. The proposed project is consistent with the goals of this chapter.

10.CHAPTER 288, F.S., COMMERCIAL DEVELOPMENT AND CAPITAL IMPROVEMENTS

The framework to promote and develop general business, trade, and tourism components of the state economy are established in this statute. The statute includes requirements to protect and promote the natural, coastal, historical, and cultural tourism assets of the state; foster the development of nature-based tourism and recreation; and upgrade the image of Florida as a quality destination. Natural resource-based tourism and recreational activities are critical sectors of Florida's economy. The needs of the environment must be balanced with the need for growth and economic development.

RESPONSE: Construction of the project will ensure the continuation of benefits to socioeconomic resources (e.g. recreation, tourism, etc.). Environmental protection measures, as described in detail in Section 3 of the EA, will be implemented to minimize adverse effects to the maximum extent practicable to fish and other wildlife resources, T&E species, water quality, air quality, or other environmental resources. The proposed project is consistent with the goals of this chapter.

11.CHAPTER 334, F.S., TRANSPORTATION ADMINISTRATION

The statute addresses the state's policy concerning transportation administration. It establishes the responsibilities of the state, the counties, and the municipalities in the planning and development of the transportation systems; and the development of an integrated, balanced statewide transportation system. This is necessary for the protection of public safety and general welfare and for the preservation of all transportation facilities in the state. As of October 9th, 2017, Chapter 334, F.S., does not contain any enforceable policies for federal consistency purposes.

RESPONSE: Public transportation systems will not be affected by the proposed project.

12.CHAPTER 339, F.S., TRANSPORTATION FINANCE AND PLANNING

The statute addresses the finance and planning needs of the state's transportation system.

RESPONSE: Public transportation systems will not be affected by the proposed project.

13.CHAPTER 373, F.S., WATER RESOURCES

The waters in the state of Florida are managed and protected to conserve and preserve water resources, water quality, and environmental quality. This statute addresses sustainable water management; the conservation of surface and ground waters for full beneficial use; the preservation of natural resources, fish, and wildlife; protecting public land; and promoting the health and general welfare of Floridians. The state manages and conserves water and related natural resources by determining whether activities will unreasonably consume water; degrade water quality; or adversely

affect environmental values such as protected species habitat, recreational pursuits, and marine productivity.

Specifically, under Part IV of Chapter 373, the Department of Environmental Protection, water management districts, and delegated local governments review and take agency action on wetland resource, environmental resource, and stormwater permit applications. These permits address the construction, alteration, operation, maintenance, abandonment, and removal of any stormwater management system, dam, impoundment, reservoir, or appurtenant work or works (including dredging, filling and construction activities in, on, and over wetlands and other surface waters).

RESPONSE: Pursuant to NEPA, the proposed project will be coordinated with federal, state, federally-recognized Native American tribes, local agencies, and other interested parties. Environmental protection measures, as described in detail in the EA, will be implemented to minimize adverse effects to the maximum extent practicable to water resources. NPS will coordinate the project with the State of Florida through the issuance of a WQC, FCD review, and the review process of draft EA. The proposed project complies with the goals of this chapter.

14. CHAPTER 375, F.S., OUTDOOR RECREATION AND CONSERVATION LANDS

The statute addresses the development of a comprehensive outdoor recreation plan. The purpose of the plan is to document recreational supply and demand, describe current recreational opportunities, estimate the need for additional recreational opportunities, and propose the means to meet the identified needs.

RESPONSE: The rehabilitation of the marina would allow for safer facilities and allow the marina to be used for recreational purposes for the next 50-100 years. The proposed project complies with the goals of this chapter.

15. CHAPTER 376, F.S., POLLUTANT DISCHARGE PREVENTION AND REMOVAL

Regulating the transfer, storage, and transportation of pollutants, and the cleanup of pollutant discharges is essential for maintaining coastal resources (specifically the coastal waters, estuaries, tidal flats, beaches, and public lands adjoining the seacoast) in as close to a pristine condition as possible. The preservation of the seacoast as a source of public and private recreation, along with the preservation of water and certain lands are matters of the highest urgency and priority.

This statute provides a framework for the protection of the state's coastline from spills, discharges, and releases of pollutants. The discharge of pollutants into or upon any coastal waters, estuaries, tidal flats, beaches, and lands adjoining the seacoast of the state is prohibited. The statute provides for hazards and threats of danger and damages resulting from any pollutant discharge to be evaluated; requires the prompt containment and removal of pollution; provides penalties for violations; and ensures the prompt payment of reasonable damages from a discharge.

Portions of Chapter 376, F.S., serve as a complement to the national contingency plan portions of the federal Water Pollution Control Act.

RESPONSE: The proposed project does not involve the transportation or discharge of pollutants. The contract specifications will prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will include conditions on how to handle inadvertent spills of pollutants, such as vehicle fuels. A spill prevention plan will be required of the contractor. The proposed project is consistent with the goals of this chapter.

16. CHAPTER 377, F.S., ENERGY RESOURCES

The statute addresses the regulation, planning, and development of the energy resources of the state. The statute provides policy to conserve and control the oil and gas resources in the state, including products made therefrom and to safeguard the health, property and welfare of Floridians. The Department of Environmental Protection (DEP) is authorized to regulate all phases of exploration, drilling, and production of oil, gas, and other petroleum products in the state.

The statute describes the permitting requirements and criteria necessary to drill and develop for oil and gas. DEP rules ensure that all precautions are taken to prevent the spillage of oil or any other pollutant in all phases of extraction and transportation. The state explicitly prohibits pollution resulting from drilling and production activities. No person drilling for or producing oil, gas, or other petroleum products may pollute land or water; damage aquatic or marine life, wildlife, birds, or public or private property; or allow any extraneous matter to enter or damage any mineral or freshwater-bearing formation.

Penalties for violations of any provisions of this chapter are detailed.

RESPONSE: The proposed project does not involve the development of energy resources.

17. CHAPTER 379, F.S., FISH AND WILDLIFE CONSERVATION

The framework for the management and protection of the state of Florida's wide diversity of fish and wildlife resources are established in this statute. It is the policy of the state to conserve and wisely manage these resources. Particular attention is given to those species defined as being endangered or threatened. This includes the acquisition or management of lands important to the conservation of fish and wildlife.

This statute contains specific provisions for the conservation and management of marine fisheries resources. These conservation and management measures permit reasonable means and quantities of annual harvest (consistent with maximum practicable sustainable stock abundance) as well as ensure the proper quality control of marine resources that enter commerce.

Additionally, this statute supports and promotes hunting, fishing and the taking of game opportunities in the State. Hunting, fishing, and the taking of game are considered

an important part in the state's economy and in the conservation, preservation, and management of the state's natural areas and resources.

RESPONSE: The project will be in compliance with Section 7 of the ESA. To address potential effects from the Project activities to federally-listed T&E species under the purview of U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) a biological assessment and informal consultation have been prepared and sent with the notice of the draft EA (see Appendix A). Detailed analysis of effect determinations are in Section 3 of the EA.

Pursuant to NEPA, the proposed project will be coordinated with federal, state, federally-recognized Native American tribes, local agencies, and other interested parties. Environmental protection measures, as described in detail in the EA, will be implemented to minimize adverse effects to the maximum extent practicable to T&E species as well as fish and other wildlife resources. The project is consistent with the goals of this chapter.

18. CHAPTER 380, F.S., LAND AND WATER MANAGEMENT

Land and water management policies are established to protect natural resources and the environment; and to guide and coordinate local decisions relating to growth and development. The statute provides that state land and water management policies be implemented by local governments through existing processes for the guidance of growth and development. The statute also provides that all the existing rights of private property be preserved in accord with constitutions of this state and of the United States.

The chapter establishes the Areas of Critical State Concern designation, the Florida Communities Trust as well as the Florida Coastal Management Act. The Florida Coastal Management Act provides the basis for the Florida Coastal Management Program which seeks to protect the natural, commercial, recreational, ecological, industrial, and aesthetic resources of Florida's coast.

RESPONSE: Construction of the Project as described in detail in EA, will ensure the continuation of benefits to socioeconomic resources (e.g., recreation, tourism, etc.). Pursuant to NEPA, the proposed project will be coordinated with federal, state, federally-recognized Native American tribes, local agencies, and other interested parties. The project is consistent with the goals of this chapter.

19. CHAPTER 381, F.S., PUBLIC HEALTH: GENERAL PROVISIONS

The statute establishes public policy concerning the state's public health system, which is designated to promote, protect, and improve the health of all people in the state.

RESPONSE: The state's public health system will not be affected by the proposed project.

20. CHAPTER 388, F.S., MOSQUITO CONTROL

Mosquito control efforts of the state are to achieve and maintain such levels of arthropod control as will protect human health and safety; promote the economic

development of the state; and facilitate the enjoyment of its natural attractions by reducing the number of pestiferous and disease-carrying arthropods.

It is the policy of the state to conduct arthropod control in a manner consistent with protection of the environmental and ecological integrity of all lands and waters throughout the state.

RESPONSE: The proposed project will not further the propagation of mosquitoes or other pest arthropods. The proposed project is consistent with the goals of this chapter.

21. CHAPTER 403, F.S., ENVIRONMENTAL CONTROL

Environmental control policies conserve state waters; protect and improve water quality; and maintain air quality. This statute provides wide-ranging authority to address various environmental control concerns, including air and water pollution; electrical power plant and transmission line siting; the Interstate Environmental Control Compact; resource recovery and management; solid and hazardous waste management; drinking water protection; pollution prevention; ecosystem management; and natural gas transmission pipeline siting.

RESPONSE: Pursuant to NEPA, the proposed project will be coordinated with federal, state, federally-recognized Native American tribes, local agencies, and other interested parties. Environmental protection measures, as described in detail in the EA, will be implemented to minimize adverse effects to the maximum extent practicable to fish and other wildlife resources, T&E species, water quality, air quality, or other environmental resources. The proposed project complies with the goals of this chapter.

22. CHAPTER 553, F.S., BUILDING AND CONSTRUCTION STANDARDS

The statute addresses building construction standards and provides for a unified Florida Building Code.

RESPONSE: The proposed project does not include building construction.

23. CHAPTER 582, F.S., SOIL AND WATER CONSERVATION

It is the state's policy to preserve natural resources; control and prevent soil erosion, prevent floodwater and sediment damages; and to further the conservation, development and use of soil and water resources.

Farm, forest, and grazing lands are among the basic assets of the state; and the preservation of these lands is necessary to protect and promote the health, safety, and general welfare of its people.

These measures help to preserve state and private lands, control floods, maintain water quality, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, preserve wildlife and protect wildlife habitat, protect the tax base, protect public lands, and protect and promote the health, safety, and general welfare of the people of this state.

RESPONSE: The project is not located on or near agricultural lands. The proposed project will include appropriate erosion control plans and measures where applicable. The proposed project is consistent with the goals of this chapter.

24. CHAPTER 597, F.S., AQUACULTURE

The statute establishes public policy concerning the cultivation of aquatic organisms in the state. The intent is to enhance the growth of aquaculture, while protecting Florida's environment. This includes a requirement for a state aquaculture plan which provides for: the coordination and prioritization of state aquaculture efforts; the conservation and enhancement of aquatic resources; and mechanisms for increasing aquaculture production.

RESPONSE: The proposed project does not include aquaculture.

Appendix D: Environmental Compliance

APPENDIX D: ENVIRONMENTAL COMPLIANCE

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (42 U.S.C. §4321 ET SEQ.)

This EA has been prepared pursuant to NEPA and its implementing regulations. A Notice of Availability for the draft would be coordinated with pertinent agencies and interested stakeholders for a 30-calendar day review and comment period. The project is in compliance with the NEPA of 1969, as amended, 42 U.S.C. §4321, *et seq.*

ABANDONED SHIPWRECK ACT (43 U.S.C. §§2101-2106)

The Abandoned Shipwreck Act of 1987 establishes government ownership over the majority of abandoned shipwrecks located in waters of the United States of America and creates a framework within which shipwrecks are managed. Review shows no applicable cultural resources located within the project footprint. The project is in compliance with this Act.

ANADROMOUS FISH CONSERVATION ACT OF 1965, AS AMENDED (16 U.S.C. §§ 757A-757G)

The Anadromous Fish Conservation Act requires a commitment to the conservation, development, and enhancement of anadromous fishery resources. The project does not occur in an anadromous fish river or stream; therefore, no anadromous fish species are expected to be present. This Act is not applicable.

AMERICAN INDIAN RELIGIOUS FREEDOM ACT OF 1978 (42 U.S.C. §1996)

The Act requires policies of all governmental agencies to accommodate access to, and use of Native American religious sites to the extent that the use is practicable and is consistent with an agency's essential missions. The project does not inhibit access to, and use of Native American religious sites. The project is in compliance with this Act.

ANTIQUITIES ACT OF 1906 (54 U.S.C. §§320301-320303)

This Act applies to activities taking place within the boundaries of a national monument. The proposed action does not take place within the boundaries of a national monument. Therefore, this Act is not applicable to this action.

ARCHAEOLOGICAL AND HISTORIC PRESERVATION ACT (54 U.S.C. §§312501- 312508)

This Act requires that Federal agencies provide for "...the preservation of historical and archeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of any alteration of the terrain caused as a result of any Federal construction project of Federally licensed activity or program". Review has shown no archaeological resources within the project footprint and the project is in compliance with this Act.

ARCHAEOLOGICAL AND RESOURCES PROTECTION ACT (16 U.S.C. §§470AA-470MM)

This Act applies to Federally owned and tribally owned lands, including Reservation lands. Review has shown no archaeological resources within the project footprint. The project is in compliance with this Act.

CLEAN AIR ACT OF 1972 (42 U.S.C. §7401 ET SEQ.)

The Clean Air Act (CAA) requires Federal actions to conform to an approved state implementation plan designed to achieve or maintain an attainment designation for air pollutants as defined by NAAQS. The NAAQS were designed to protect public health and welfare. The criteria pollutants include carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM_{2.5} and PM₁₀), and lead (Pb). The existing air quality within Miami-Dade County, Florida meets the NAAQS. Therefore, the project is exempt from the CAA conformity requirements because it is located in a federal attainment area 40 CFR § 81.310; Rule 62-204.340, FAC. No Federal permits are required. The State of Florida does not regulate emissions from off-road equipment or marine vessels; however, it can be assumed that insignificant emissions would be produced by construction equipment during construction activities.

Section 309 of the Clean Air Act requires the Environmental Protection Agency (EPA) to review all NEPA documents prepared by Federal agencies. A letter and a copy of the EA would be sent to the EPA with release of the Draft EA. The EPA would review this EA before the FONSI is signed and all appropriate measures to avoid and mitigate environmental impacts have been taken. The project complies with this Act.

CLEAN WATER ACT OF 1972, SECTION 401, AND SECTION 404(B) (33 U.S.C. §1341 AND 33 U.S.C. §1344(B))

The project would meet the state of Florida's water quality standards. Any applicable authorizations would be obtained prior to the start of construction. There would be no dredging or material discharge into the waters of the United States. The project would implement and meet all conditions imposed by the necessary authorizations in order to minimize adverse impacts to water quality. The project complies with the Act.

COASTAL BARRIER RESOURCES ACT AND COASTAL BARRIER IMPROVEMENT ACT (16 U.S.C. §3501 ET SEQ.)

The Coastal Barrier Resources Act (CBRA) of 1982 (16 U.S.C. §3501 et. seq.), as amended by the Coastal Barrier Improvement Act (CBIA) of 1990 (Public Law 101-591) limits Federally subsidized development within CBRA Units to minimize the loss of human life by discouraging development in high-risk areas, to reduce wasteful expenditures of Federal resources, and to protect the natural resources associated with coastal barriers. Enacted under the CBRA, the John H. Chafee Coastal Barrier Resources System (CBRS) is a collection of specific units of land and associated aquatic habitats that serve as barriers protecting the Atlantic, Gulf, and Great Lakes coasts. The CBRS currently includes 585 System units, which comprise nearly 1.4 million acres of land and associated aquatic habitat, and 277 otherwise protected area (OPAs), a category of coastal barriers already held for conservation purposes that include an additional 2.1 million acres of land and associated aquatic habitat (USFWS 2023C). The CBIA provides development goals for undeveloped coastal property held in public ownership (e.g., OPAs), including wildlife refuges, parks, and other lands set aside for conservation. These public lands are excluded from most of the CBRA restrictions, although they are prohibited from receiving Federal flood insurance for new structures. This area is not in a CBRA unit.

COASTAL ZONE MANAGEMENT ACT OF 1972 (16 U.S.C. §1451 ET SEQ.)

Pursuant to the Coastal Zone Management Act (CZMA), a Federal Consistency Determination be submitted to the state of Florida for review and concurrence. The Preferred Alternative is consistent with the state's Coastal Zone Management Program. Pertinent correspondence is found in the Environmental Appendix C. The project complies with the Act.

ENDANGERED SPECIES ACT OF 1973 (16 U.S.C. §1531 ET SEQ.)

Pursuant to Section 7 of the Endangered Species Act, NPS evaluated the potential effects to T&E species that may be affected by implementation of the Preferred Alternative. Section 7 consultations would be completed prior to the signing of the NEPA decision document. Detailed discussion on the NPS determination is included in Section 3.5; consultation is ongoing and would be completed prior to construction.

ESTUARY PROTECTION ACT OF 1968 (16 U.S.C. §§1221-26)

The Estuary Protection Act requires Federal agencies to consider estuaries and their natural resources when planning for the development of water and land resources. There are no adverse effects to wetlands or estuaries. This project is in compliance with this act.

FARMLAND PROTECTION POLICY ACT OF 1981 (7 U.S.C. §4201 ET SEQ.)

No prime or unique farmland exists within the project area. This Act is not applicable.

FEDERAL WATER PROJECT RECREATION ACT (16 U.S.C. §460l-12 ET SEQ.)

The principles of the Federal Water Project Recreation Act (16 U.S.C. §460l-12 *et. seq.*) require the NPS to give full consideration to any opportunity for the project to add or improve outdoor recreation and/or fish and wildlife enhancement. Recreational resources and opportunities are considered and discussed in Chapter 3 this report. This project complies with the Act.

FISH AND WILDLIFE COORDINATION ACT OF 1958 (16 U.S.C. §661 ET SEQ.)

The central objective of the Fish and Wildlife Coordination Act (FWCA) is to allow for equal consideration of wildlife resources. The NEPA review and ESA consultation processes will be used to complete coordination responsibilities under the FWCA. The project complies with this Act.

GREENHOUSE GAS (GHG) EMISSIONS EXECUTIVE ORDER (EO) 13990 – PROTECTING PUBLIC HEALTH AND THE ENVIRONMENT AND RESTORING SCIENCE TO TACKLE CLIMATE CHANGE

On January 20, 2021, President Joe Biden signed Executive Order 13990, “Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis.” The executive order rescinded the CEQ’s 2019 draft guidance on GHGs and climate change related to NEPA. Further, the EO establishes a program for accounting for the benefits of reducing climate pollution, emphasizing that it is essential for agencies to capture the full costs of GHG emissions as accurately as possible, including by taking global damages into account.

COUNCIL ON ENVIRONMENTAL QUALITY GUIDANCE ON CONSIDERATION OF GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

On January 9, 2023, the CEQ released *National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change* (GHG Guidance) (CEQ 2023). This guidance provides details for how federal agencies can incorporate GHG and climate change considerations into the NEPA process, including assessing and reducing impacts from GHG emissions or incorporating climate resiliency. Although the GHG guidance is considered “interim,” it is effective immediately, while CEQ seeks public comment on the guidance. The guidance recommends agencies consider the potential effects

of a proposed action on climate change, including by assessing both direct and indirect GHG emissions and reductions from the proposed action, quantifying the baseline (no-action) emissions, and the effects of climate change on a proposed action and that action's impacts. The GHG guidance further recommends that GHG emissions should be quantified for the gross and net emissions for each chemical compound (i.e., methane, nitrous oxide, etc.) and summarized as carbon dioxide equivalent (CO₂e) and social cost of GHG. The GHG guidance recommends the social cost of greenhouse gas (SC-GHG) be included in NEPA studies to disclose the potential future costs to society stemming from the carbon emitted by a proposed action. Per this guidance, SC-GHG is not required for use in a cost-benefit analysis but is intended to provide an additional metric for alternatives comparison (CEQ 2023). The project is in compliance with the act.

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT (16 U.S.C. §1801 ET SEQ.)

NPS determined that the project would have minimal adverse effect on EFH and no adverse effect on Federally managed fish species. EFH consultation with NMFS would be completed prior to the signing of the NEPA decision document. Compliance with this project is ongoing.

MARINE MAMMAL PROTECTION ACT OF 1972 (16 U.S.C. §1361 ET SEQ.)

The Marine Mammal Protection Act prohibits harassing, feeding, hunting, capturing, and/or killing (referred to as "take") and importing of marine mammals and marine mammal products. The project area is accessible to marine mammals, such as the Florida manatee and dolphins. Noise associated with dredging and vessel strikes in transit areas are known to cause impacts. Incorporation of the USFWS 2011 Standard Manatee Conditions for In-water Work, BMPs, into the projects' plans and specifications could ensure that the potential adverse effect to these species are reduced to the maximum extent practicable. Implementation of the safeguards used to protect T&E species during construction and operation would extend protections to marine mammals within the area. No take of marine mammals is anticipated. The project is in compliance with the goals of this Act, compliance is ongoing, and would be in full compliance with the Act at the time of construction through implementation of referenced safeguards.

MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT (33 U.S.C. §1401 ET. SEQ.)

The Marine Protection, Research, and Sanctuaries Act regulates the placement of dredged material into the ODMDS. Ocean disposal of dredge material is not proposed as part of the Preferred Alternative; therefore, the Act is not applicable.

MIGRATORY BIRD TREATY ACT (16 U.S.C. §§703-712) AND MIGRATORY BIRD CONSERVATION ACT (16 U.S.C. §§715-715D, 715E, 715F-715R)

These Acts prohibit the take (e.g., killing, capturing, selling, or trading) and/or transporting of protected migratory bird species without prior authorization by USFWS. The Preferred Alternative is not expected to destroy migratory birds, their active nests, their eggs, or their hatchlings. The NPS would include applicable standard migratory bird protection measures in the project plans and specifications and would require the Contractor to abide by those requirements. The project is in compliance with the goals of this Act and would be in full compliance with the Act at the time of construction through implementation of standard migratory bird protection measures. The NPS would include standard migratory bird protection measures in the project plans and specifications and would require the Contractor to abide by those requirements. The project would be coordinated with USFWS and complies with these Acts.

NATIONAL HISTORIC PRESERVATION ACT OF 1966 (54 U.S.C. §300101 ET. SEQ.)

Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800, provide a regulatory framework for the identification, documentation, and evaluation of historic properties that may be affected by Federal undertakings. If a historic property is evaluated as eligible for listing on the NRHP and the undertaking is determined to present an adverse effect to this eligibility, the impact is to be avoided or mitigated for. These efforts would be coordinated with the Florida SHPO as well as the appropriate Federally recognized Native American tribes. Compliance with this act is ongoing.

NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT (25 U.S.C. §3001 ET. SEQ.)

This Act applies to Federally owned and tribally owned lands, including Reservation lands. Though the proposed action would be conducted on federally managed land, it would be conducted within a previously developed area and unlikely to impact archaeological resources. The project is in compliance with this Act.

RIVERS AND HARBORS ACT OF 1899, SECTION 10 (33 U.S.C. §403)

NPS will obtain Department of Army permit to be compliant with the Act As described in Title 33 Navigation and Navigable waters Chapter 22 Corps of Engineers Part 33 Permits for structures or Work in Navigable Waters of the United States. Compliance with this Act is ongoing.

UNIFORM RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION POLICIES ACT OF 1970 (42 U.S.C. §4601 ET. SEQ.)

The purpose of this Act is to ensure that owners of real property to be acquired for Federal and Federally assisted projects area treated fairly and consistently, and that person displaced as a result of such acquisition would not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. This Act is not applicable as this project would not be acquiring any real estate interests from private property owners.

E.O. 11988, FLOOD PLAIN MANAGEMENT AND E.O. 13690 ESTABLISHING A FEDERAL FLOOD RISK MANAGEMENT STANDARD AND A PROCESS FOR FURTHER SOLICITING AND CON-SIDERING STAKEHOLDER INPUT

Executive Order (EO) 11988, “Floodplain Management,” and EO 13690, “Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input,” require the National Park Service (NPS) and other federal agencies to evaluate the likely impacts of actions in floodplains. The objective of EO 11988 is to avoid, to the extent possible, the long-term and short-term adverse impacts associated with occupancy, modification, or destruction of floodplains and to avoid indirect support of development and new construction in such areas wherever there is a practicable alternative. EO 13690 was issued to establish a Flood Risk Management Standard for federally funded projects to improve the nation’s resilience to floods and to ensure new federal infrastructure will last as long as intended. The NPS administers floodplain policy through Director’s Order 77-2: *Floodplain Management* (DO 77-2) and Procedural Manual 77-2 *Floodplain Management* (PM 77-2). The NPS has determined that implementing the proposed action is necessary for visitor use and safety and provides for the most protection to natural and cultural resources. As an asset that is both historic and serves the public at a water-dependent location, the project to rehabilitate the Flamingo marina bulkheads is considered an excepted action and therefore does not require a floodplain statement of findings. This project complies with the order.

E.O. 11990, PROTECTION OF WETLANDS

The objective of this E.O. is to avoid long and short-term adverse impacts associated with the destruction or modification of wetlands. Wetlands will not have adverse impacts within project footprint. The project complies with the Order.

E.O. 12898 AND E.O. 14096, ENVIRONMENTAL JUSTICE

The construction of the proposed project and changes resulting from the flood damage reduction improvements would not have a disproportionately high and adverse impact on low-income and minority populations (Section 1.6). In 2023 the President issued E.O. 14096 to strengthen the EJ commitment all communities in across America (Federal Register Vol. 88). The EO takes further steps to dismantle racial discrimination and institutional bias that disproportionately affect health, environment, safety, and resiliency of communities with environmental justice concerns. This EO as it relates to the EJ community, requires review under NEPA consistent with the statute and its implementing regulations and through the exercise of the agency's expertise and technical judgment, in a manner that:

(A) analyzes direct, indirect, and cumulative effect of Federal actions on communities with environmental justice concerns.

(B) considers best available science and information on any disparate health effect (including risks) arising from exposure to pollution and other environmental hazards, such as information related to the race, national origin, socioeconomic status, age, disability, and sex of the individuals exposed; and

(C) provides opportunities for early and meaningful involvement in the environmental review process by communities with environmental justice concerns potentially affected by a proposed action, including when establishing or revising agency procedures under NEPA.

In accordance with E.O. 12898 the proposed project would not (a) exclude persons from participation in, (b) deny persons the benefits of, (c) subject persons to discrimination because of their race, color, or national origin. In accordance with the latest EJ E.O. 14096 this project has a) evaluated cumulative effect on environmental justice b) considered the best available science on pollution related to race, c) would provide early and meaningful involvement in the review process by communities with EJ concerns. Therefore, the proposed action is in compliance with this Executive Order.

E.O. 13045, PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS

On 21 April 1997, the President of the U.S. issued E.O. 13045, Protection of Children from Environmental Health Risks and Safety Risks. The E.O. mandates that each Federal agency make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. The proposed action does not affect children disproportionately from other members of the population and would not increase any environmental health or safety risks to children. The project complies with the Executive Order.

E.O. 13089, CORAL REEF PROTECTION

The objective of E.O. 13089 is to preserve and protect the biodiversity, health, heritage, social and economic value of U.S. coral reef ecosystems and the marine environment. This E.O. directs Federal Agencies to expand their research, preservation, monitoring and restoration efforts with respect to actions that affect coral reef ecosystems. The proposed action would occur in areas near coral reefs and hardbottom habitats. The NPS remains committed to reviewing new information as it becomes available, as well as applying lessons learned to inform the proposed maintenance dredging, future maintenance projects, and potential future construction to minimize potential adverse effect to corals and hardbottom habitats to the maximum extent practicable. In addition, increased awareness of the potential for adverse

dredging effect has resulted in the development of new terms and conditions for maintenance dredging projects occurring near hardbottom communities. No corals or hardbottom habitats exist within the project area. This E.O. is not applicable to the project.

E.O. 13122, INVASIVE SPECIES

E.O. 13122 is aimed to prevent the introduction of invasive species and requires that Federal Agencies provide for their control and minimize the economic, ecological, and human health impacts that invasive species can cause. The project's plans and specifications would include conditions to avoid the introduction and/or promotion of non-native species to the region. Conditions could include thoroughly cleaning all equipment prior to the start of work and reporting all sightings of invasive and nuisance species (not identified in pre-construction conditions) within 24-hours. The Corps and NPS would require the Contractor to abide by those requirements as well as submit a plan describing the protection measures (e.g., transfer prevention procedures, designated cleaning sites/locations, etc.) to be implemented by the Contractor. The project is in compliance with the goals of this E.O.

E.O. 13186, RESPONSIBILITIES OF FEDERAL AGENCIES TO PROTECT MIGRATORY BIRDS

This E.O. 13186 requires Federal agencies taking actions which have or are likely to have a measurable negative effect on migratory bird populations to take certain actions which promote the conservation of migratory bird populations. Migratory and resident bird species have been observed within the project area and are likely to use available habitat for foraging and transit. The proposed project occurs on submerged lands and is not expected to destroy migratory birds, their active nests, their eggs, or their hatchlings. The NPS would include applicable standard migratory bird protection requirements in the project plans and specifications and would require the contractor to abide by those requirements. The project is in compliance with the goals of this E.O.

E.O. 13007, INDIAN SACRED SITES

Executive Order 13007, dated May 24, 1996, directs Federal agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners. To the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, the co-lead agencies are to avoid adversely affecting the physical integrity of such sacred sites and to maintain the confidentiality of sacred sites when appropriate. The order encourages government-to-government consultation with tribes concerning sacred sites. Some sacred sites may qualify as historic properties under the National Historic Preservation Act. This E.O. is directed towards executive branch agencies with statutory or administrative responsibility for the management of federal lands. The project is in compliance with the goals of this E.O.

E.O. 13175, CONSULTATION AND COORDINATION WITH INDIAN TRIBAL GOVERNMENTS

The United States has a unique legal relationship with Indian tribal governments as set forth in the Constitution of the United States, treaties, statutes, executive orders, and court decisions. This order directs federal agencies to formulate and establish "regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes." This consultation is meant to work toward a mutual consensus and is intended to begin at the earliest planning stages before decisions are made and actions are taken. Compliance with this E.O. is ongoing.

MEMORANDUM ON GOVERNMENT-TO-GOVERNMENT REGULATIONS WITH NATIVE AMERICAN TRIBAL GOVERNMENTS

Memorandum signed by President Clinton April 29, 1994 directs the heads of executive departments and agencies to operate within a government-to-government relationship with federally recognized tribal governments; consult, to the greatest extent practicable and to the extent permitted by law, with tribal governments prior to taking actions that affect federally recognized tribal governments; assess the impact of Federal Government plans, projects, programs, and activities on tribal trust resources and assure that tribal government rights and concerns are considered during the development of such plans, projects, programs, and activities; take appropriate steps to remove any procedural impediments to working directly and effectively with tribal governments on activities that affect the trust property and/ or governmental rights of the tribes; and work cooperatively with other Federal departments and agencies to enlist their interest and support in cooperative efforts, where appropriate, to accomplish the goals of this memorandum. The project is in compliance with the goals of this E.O.