



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
<https://www.fisheries.noaa.gov/region/southeast>

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SERO-2018-00109, SER-2018-19644

Chief, Miami Permits Section
Jacksonville District Corps of Engineers
Department of the Army
9900 Southwest 107th Avenue, Suite 203
Miami, Florida 33176

Ref.: SAJ-2018-02498 (NW-NML), Carlos Ferreira de Melo for 24 Plaza Corp, Waterfront Improvement Project, Miami, Miami-Dade County, Florida

Dear Sir or Madam:

The enclosed Biological Opinion (Opinion) was prepared by the National Marine Fisheries Service (NMFS) pursuant to Section 7(a)(2) of the Endangered Species Act (ESA). The Opinion considers the effects of a proposal by the Jacksonville District of the United States Army Corps of Engineers to authorize renovations to a multi-family residential seawall and dock under the authorities of Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act on ESA-listed species and designated critical habitat. NMFS concludes that the proposed action may affect, but is not likely to adversely affect, green sea turtle (North and South Atlantic distinct population segments [DPSs]), hawksbill sea turtle, Kemp's ridley sea turtle, loggerhead sea turtle (Northwest Atlantic DPS), and smalltooth sawfish (United States DPS). NMFS concludes that the proposed action is likely to adversely affect, but will not destroy or adversely modify, Johnson's seagrass critical habitat.

This project was originally assigned the tracking number SER-2018-19644 in our now obsolete tracking system. The project has been assigned the tracking number SERO-2018-00116 in our new NMFS Environmental Consultation Organizer. Please refer to this number in any future inquiries regarding this project. Please direct questions regarding this Opinion to Dana M. Bethea, Consultation Biologist, by phone at (727) 209-5974, or by email at Dana.Bethea@noaa.gov.

Sincerely,

Roy E. Crabtree, Ph.D.
Regional Administrator

Enclosures:
Biological Opinion

File: 1514-22.F.4



**Endangered Species Act - Section 7 Consultation
Biological Opinion**

Action Agency: U.S. Army Corps of Engineers, Jacksonville District

Applicant: Carlos Ferreira de Melo for 24 Plaza Corp

Permit Number SAJ-2018-02498 (NW-NML)

Activity: Renovations to an existing multi-family seawall and dock, Miami, Miami-Dade County, Florida

Consulting Agency: National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Southeast Regional Office, Protected Resources Division, St. Petersburg, Florida

Consultation Number SERO-2018-00109, SER-2018-19644

Approved By:

Roy E. Crabtree, Ph.D., Regional Administrator
NMFS, Southeast Regional Office
St. Petersburg, Florida

Date Issued:

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Acronyms and Abbreviations

CFR	Code of Federal Regulations
DPS	Distinct Population Segment
ESA	Endangered Species Act
MHW	Mean High Water
NMFS	National Marine Fisheries Service
NOAA	National Ocean and Atmospheric Administration
Opinion	Biological Opinion
PCTS	NMFS Public Consultation Tracking System
PRD	NMFS Southeast Regional Office Protected Resources Division
U.S.	United States
USACE	United States Army Corps of Engineers

Units of Measurement

ft	foot/feet
ft ²	square foot/feet
in	inch(es)
km	kilometer(s)

Introduction

Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. § 1531 et seq.), requires that each federal agency ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. Section 7(a)(2) requires federal agencies to consult with the appropriate Secretary in carrying out these responsibilities. The National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service share responsibilities for administering the ESA.

Consultation is required when a federal action agency determines that a proposed action “may affect” listed species or designated critical habitat. Informal consultation is concluded after NMFS determines that the action is not likely to adversely affect listed species or critical habitat. Formal consultation is concluded after NMFS issues a Biological Opinion (Opinion) that identifies whether a proposed action is likely to jeopardize the continued existence of a listed species, or destroy or adversely modify critical habitat, in which case reasonable and prudent alternatives to the action as proposed must be identified to avoid these outcomes. The Opinion states the amount or extent of incidental take of the listed species that may occur, develops measures (i.e., reasonable and prudent measures) to reduce the effect of take, and recommends conservation measures to further the recovery of the species.

This document represents NMFS’s Opinion based on our review of impacts associated with the proposed action within Miami-Dade County, Florida. This Opinion analyzes the project’s effects on threatened and endangered species and designated critical habitat, in accordance with Section 7 of the ESA. We based our Opinion on project information provided by the Jacksonville District of the United States Army Corps of Engineers (USACE) and other sources of information, including the published literature cited herein.

Updates to the regulations governing interagency consultation (50 CFR part 402) were effective on October 28, 2019 [84 FR 44976]. This consultation was pending at that time, and we are applying the updated regulations to the consultation. As the preamble to the final rule adopting the regulations noted, “[t]his final rule does not lower or raise the bar on Section 7 consultations, and it does not alter what is required or analyzed during a consultation. Instead, it improves clarity and consistency, streamlines consultations, and codifies existing practice.” We have reviewed the information and analyses relied upon to complete this biological opinion in light of the updated regulations and conclude the opinion is fully consistent with the updated regulations.

1 CONSULTATION HISTORY

This project was originally assigned the NMFS Public Consultation Tracking System (PCTS) identifier number SER-2018-19644. PCTS was replaced by the NMFS Environmental Consultation Organizer (ECO). The following is the consultation history for ECO identifier number SERO-2018-00109, Plaza Corp Seawall & Dock:

- On October 17, 2018, NMFS received a request for consultation under Section 7 of the ESA in a letter dated October 17, 2018, from the USACE for construction permit application SAJ-2018-02498 (NW-NML).
- NMFS requested additional information on October 25 and November 1, 2018, received response on November 1, 2018.
- NMFS initiated consultation on November 1, 2018, but consultation was held in abeyance for 38 days due to a lapse in appropriations and resulting partial government shutdown. Consultation resumed on January 28, 2019.
- NMFS requested additional information on April 1, 2019, during our internal review process. We received a final response on April 2, 2019.

2 DESCRIPTION OF THE PROPOSED ACTION AND ACTION AREA

2.1 Proposed Action

The USACE proposes to permit the applicant to:

1. Remove an existing 36-square foot (ft²) cantilevered wood dock;
2. Remove an existing 314-ft² cantilevered viewing platform;¹
3. Remove 2 existing davit cranes;
4. Remove the existing 528.58 linear foot (lin ft) seawall, 12-inch (in)-wide seawall footer, and seawall cap;
5. Install 528.58 lin ft of seawall no more than 1 ft waterward of the existing seawall (528.58 ft²); with a total of 164 new 12-in x 12-in batter/king piles;
6. Construct a new 314-ft² wooden viewing platform with railing in the same footprint as the previously existing viewing platform, using 11 new 12-in wood piles², and
7. Place approximately 4,228.64 ft² of new riprap at the toe of the new seawall (528.58 lin ft placed up to 8 feet (ft) waterward of the new seawall).

Before demolition and construction, a turbidity curtain will be placed around the site. The existing wood dock, viewing platform, and davit cranes will be removed first. Then, the existing footer and seawall cap will be removed. Next, the upland soil behind the existing seawall will be excavated and stabilized to prevent run-off in preparation for removal of the seawall. Existing seawall panels will be removed via a crane mounted on a barge and replaced immediately with new 8-in thick concrete panels, which will be driven into place with an impact hammer. The seawall will be replaced in 25-ft segments to prevent the release of upland material into the

¹ 3-ft 11-in-wide (3.92-ft-wide) × 80-ft-long = 313.6 ft², rounded up to 314 ft²

² The construction plans (S-3B) show 11 dock support piles.

waterway. Once the new seawall panels are secure, the new king/batter piles will be driven into place with an impact hammer. Then, the new seawall cap will be formed and poured from the uplands. The new viewing platform will be constructed from the uplands next, and the riprap boulders will be placed at the toe of the entire seawall via a crane with in-water support to guide their placement. Regardless of type, no more than 10 piles will be installed per day. The proposed new viewing platform will not be built to the revised *Construction Guidelines for Docks or Other Minor Structures in Florida* outlined in JAXBO³ or the two sets of dock design criteria developed by NMFS and the USACE Jacksonville District.^{4,5} The proposed structure will have wood decking with no spacing between boards. In-water work is expected to take 6 months to complete during daylight hours only. The applicant will comply with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*.⁶

Action Area

The project site is located in Miami, Miami-Dade County, Florida, at the addresses listed in Table 1.

Table 1. Location of the project site in Miami, Miami-Dade County, Florida.

Address	Latitude/Longitude (North American Datum 1983)	Water Body
701 Northeast 23 rd Street	25.800279°N, 80.185369°W	Biscayne Bay
711 Northeast 23 rd Terrace		
708 Northeast 24 th Street		
725 Northeast 24 th Street		

The project site is multi-family residential property with an existing 36-ft² cantilevered wood dock, 314-ft² marginal, cantilevered wood viewing platform, 429.75-lin ft concrete seawall, 98.83-lin ft coral rock seawall, concrete king piles, concrete bag footer, and 2 davit cranes. The project site is approximately 5 miles (mi) north of Government Cut, the nearest opening to the Atlantic Ocean (Figure 1).

³ Project Design Criteria A2.17 in U.S. Army Corps of Engineers Jacksonville District's Programmatic Biological Opinion (JAXBO) issued by NMFS on November 20, 2017 (SER-2015-17616)

⁴ Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat U.S. Army Corps of Engineers/National Marine Fisheries Service, dated August 2001

⁵ Key for Construction Conditions for Docks or Other Minor Structures Constructed in or Over Johnson's Seagrass (*Halophila johnsonii*) National Marine Fisheries Service/U.S. Army Corps of Engineers, dated October 2002

⁶ NMFS. 2006. Sea Turtle and Smalltooth Sawfish Construction Conditions revised March 23, 2006. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Regional Office, Protected Resources Division, Saint Petersburg, Florida.

http://sero.nmfs.noaa.gov/protected_resources/section_7/guidance_docs/documents/sea_turtle_and_smalltooth_sawfish_construction_conditions_3-23-06.pdf, accessed June 2, 2017.

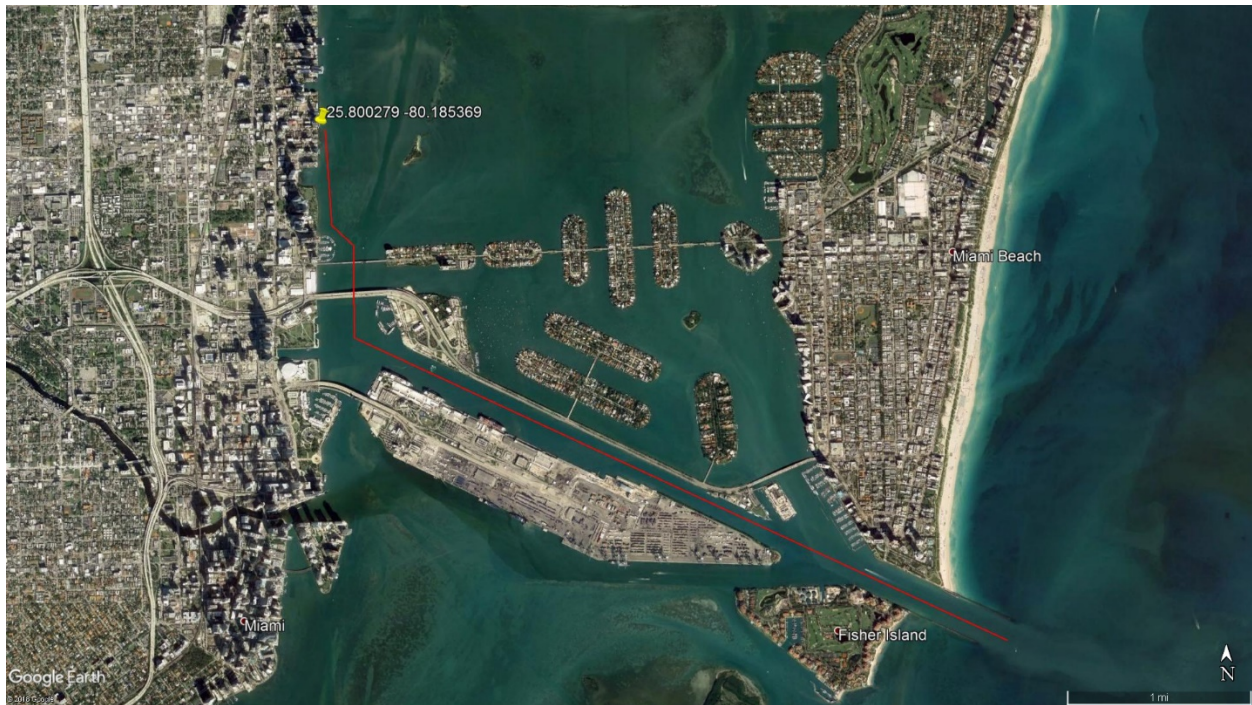


Figure 1. Image showing the project site (yellow pin) in Biscayne Bay in Miami, Miami-Dade County, Florida, in relation to Government Cut (©2018 Google).

An in-water survey was performed in August of 2018. There were no mangroves, corals, or sponges within the survey area. Approximately 20 ft² of manatee grass is located 6 ft waterward of the 701 Northeast 23rd Street location and will fall within the proposed riprap footprint. Depth where the riprap will be placed is 0-3 ft at mean high water (MHW). Johnson's seagrass was not present within the survey area.

The action area is defined as all areas to be affected by the Federal action and not merely the immediate area involved in the action (50 Code of Federal Regulations [CFR] 402.02). As such, the action area includes the areas in which construction will take place, as well as the immediately surrounding areas that may be affected by the proposed action. Based on our noise analysis in SAJ-82 (NMFS 2014), the action area is equivalent to the radius of behavioral noise effects to ESA-listed fishes based on the proposed action's installation piles using impact hammer (i.e., 705-ft behavioral noise radius; Figure 2).

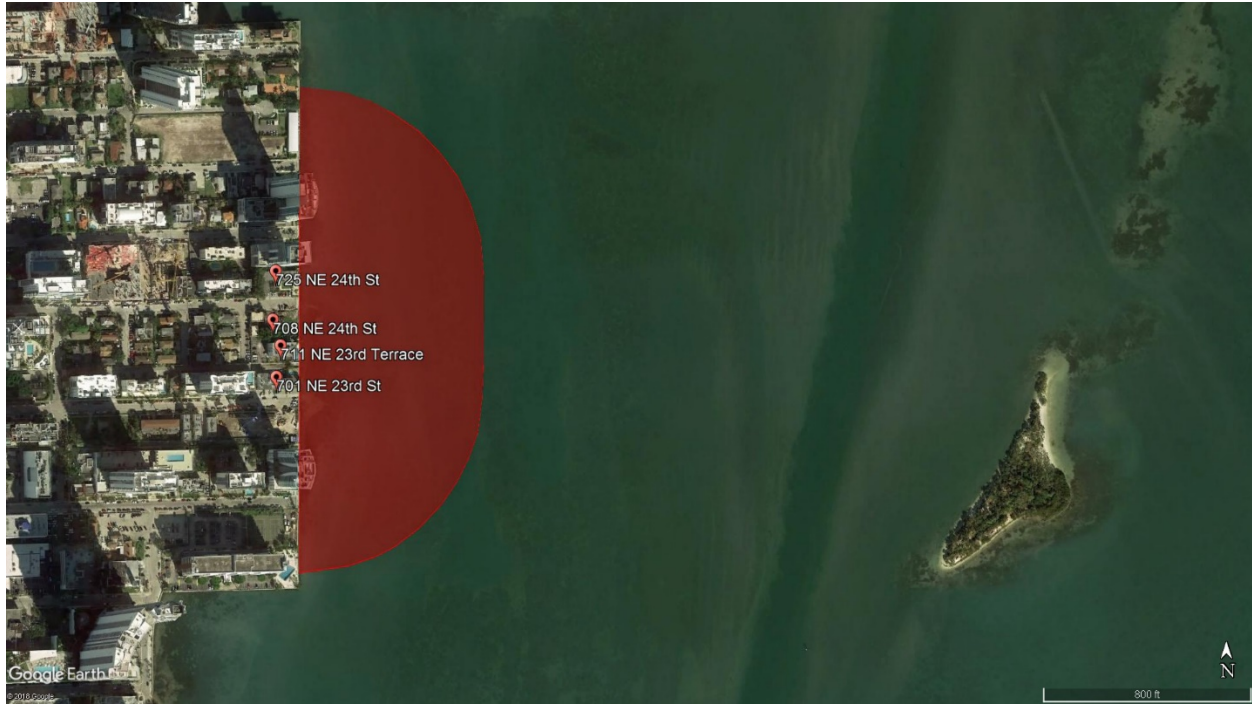


Figure 2. Image showing the action area defined by the extent of behavioral noise effects based on the proposed action's installation piles using impact hammer (©2018 Google).

3 STATUS OF LISTED SPECIES AND CRITICAL HABITAT

Table 2 provides the effect determinations for ESA-listed species the USACE and/or NMFS believe may be affected by the proposed actions.

Table 2. Effects Determinations for Species the Action Agency and/or NMFS Believe May Be Affected by the Proposed Action

Species	ESA Listing Status ⁷	Action Agency Effect Determination	NMFS Effect Determination
Sea Turtles			
Green (North Atlantic Distinct Population Segment [DPS])	T	NLAA	NLAA
Green (South Atlantic DPS)	T	NLAA	NLAA
Kemp's ridley	E	NLAA	NLAA
Leatherback	E	NLAA	NE
Loggerhead (Northwest Atlantic DPS)	T	NLAA	NLAA
Hawksbill	E	NLAA	NLAA
Fish			
Smalltooth sawfish (U.S. DPS)	E	NLAA	NLAA

We believe the project will have no effect on leatherback sea turtle due to the species' very specific life history strategy, which is not supported at the site. Leatherback sea turtles have pelagic, deepwater life history, where they forage primarily on jellyfish.

Table 3 provides the effects determinations for designated critical habitat occurring in the action area that the USACE and/or NMFS believe may be affected by the proposed actions.

Table 3. Effects Determinations for Designated Critical Habitat the Action Agency and/or NMFS Believe May Be Affected by the Proposed Action

Species	Unit	USACE Effect Determination	NMFS Effect Determination
Johnson's seagrass	Unit J	Likely to adversely affect	Likely to adversely affect, will not destroy or adversely modify

3.1 Potential Routes of Effect Not Likely to Adversely Affect Listed Species

Effects to sea turtles and smalltooth sawfish include the potential for injury from construction equipment or materials. We believe that it is extremely unlikely that such injury will occur because these species are highly mobile, we expect the species to move away from the project site if disturbed. The applicants' implementation of NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions* will further reduce the risk by requiring all construction workers to watch for sea turtles and smalltooth sawfish. Operation of any mechanical construction equipment will cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities will not resume until the protected species has departed the project area of its own volition.

⁷ E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect; NE = no effect.

The action area contains shallow water habitat and seagrass that may be used by sea turtles species and smalltooth. Sea turtles and smalltooth sawfish may be affected by their inability to access the action area to their avoidance of construction activities and physical exclusion from the project area due to blockage by turbidity curtains. We believe habitat displacement effects to sea turtles and smalltooth sawfish will be insignificant given the proposed action will be temporary and intermittent (i.e., in-water work will last up to 6 months and construction will occur during daylight hours only) and will only occur within a small area adjacent to otherwise open water. In addition, because these species are mobile, we expect that they will move away from construction activities and forage in adjacent areas with similar habitat in Biscayne Bay.

Sea turtle and smalltooth sawfish foraging and refuge habitat may be affected by the permanent loss of shallow water and seagrass habitat due to placement of the proposed riprap. We believe the effect to these species from the permanent loss of habitat will be insignificant given the proposed project's small area of impact relative to the surrounding. There are undisturbed seagrass beds adjacent to the action area and undisturbed habitat available in Biscayne Bay just outside of the action area.

The establishment of riprap may provide an indirect benefit to sea turtle foraging behavior. It is reasonable to expect encrusting organisms such as sponges, tunicates, corals, sea-whips, gorgonians, and algae, will attach and grow on the new riprap. Therefore, the proposed riprap may provide forage habitat for sea turtle species in the future.

Noise created by pile-driving activities can physically injure animals or change animal behavior in the affected areas. Injurious effects can occur in 2 ways. First, immediate adverse effects can occur to listed species if a single noise event exceeds the threshold for direct physical injury. Second, effects can result from prolonged exposure to noise levels that exceed the daily cumulative exposure threshold for the animals, and these can constitute adverse effects if animals are exposed to the noise levels for sufficient periods. Behavioral effects can be adverse if such effects interfere with animals migrating, feeding, resting, or reproducing, for example. Our evaluation of effects to listed species as a result of noise created by construction activities is based on the analysis prepared in support of the Opinion for SAJ-82 (NMFS 2014). The noise analysis in this consultation evaluates effects to ESA-listed fish and sea turtles identified by NMFS as potentially affected in the table above.

Based on our noise calculations, the installation of 12-in diameter wood piles by impact hammer will not cause single-strike or peak-pressure injury to sea turtles or ESA-listed fish. The cumulative sound exposure level (cSEL) of multiple pile strikes over the course of a day may cause injury to ESA-listed fishes and sea turtles at a radius of up to 30 ft (9 m). Due to the mobility of sea turtles and ESA-listed fish species, we expect them to move away from noise disturbances. Because we anticipate the animal will move away, we believe that it is extremely unlikely that an animal will suffer physical injury from this noise. Even in the unlikely event an animal does not vacate the daily cumulative injurious impact zone, the radius of that area is smaller than the 50-ft radius that will be visually monitored for listed species. Construction personnel will cease construction activities if an animal is sighted per NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*. Thus, we believe that it is extremely unlikely that

any injurious cSEL effects will occur. An animal's movement away from the injurious impact zone is a behavioral response, with the same effects discussed below.

Based on our noise calculations, the installation of 12-in x 12-in concrete piles by impact hammer will not cause single-strike or peak-pressure injurious noise effects. However, the cumulative sound exposure level of multiple pile strikes over the course of a day may cause injury to ESA-listed fishes and sea turtles up to 72 ft (22 m) away from the pile. Due to the mobility of sea turtles and ESA-listed fish species, and because the project occurs in open water, we expect them to move away from noise disturbances. Because we anticipate the animal will move away, we believe that it is extremely unlikely that an animal will suffer physical injury from noise. An animal's movement away from the injurious sound radius is a behavioral response, with the same effects discussed below.

The installation of 12-in diameter wood and 12-in x 12-in concrete piles using an impact hammer could also result in behavioral effects at radii 705 ft (215 m) for ESA-listed fishes and 151 ft (46 m) for sea turtles. Due to the mobility of sea turtles and ESA-listed fish species, we expect them to move away from noise disturbances in this open-water environment. Because there is similar habitat nearby in Biscayne Bay, we believe behavioral effects will be insignificant. If an individual chooses to remain within the behavioral response zone, it could be exposed to behavioral noise impacts during pile installation. Since installation will occur only during the day, these species will be able to resume normal activities during quiet periods between pile installations and at night. Therefore, we anticipate any behavioral effects will be insignificant.

3.2 Status of Designated Critical Habitat Likely to be Adversely Affected

The term "critical habitat" is defined in Section 3(5)(A) of the ESA as (i) the specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (1) essential to the conservation of the species and (2) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. "Conservation" is defined in Section 3(3) of the ESA as "...the use of all methods and procedures that are necessary to bring any endangered or threatened species to the point at which listing under the ESA is no longer necessary."

Johnson's Seagrass Critical Habitat

Description

NMFS designated Johnson's seagrass critical habitat on April 5, 2000 (65 FR 17786; see also, 50 CFR 226.213). The specific areas occupied by Johnson's seagrass and designated by NMFS as critical habitat are those with 1 or more of the following criteria:

1. Locations with populations that have persisted for 10 years
2. Locations with persistent flowering populations
3. Locations at the northern and southern range limits of the species

4. Locations with unique genetic diversity
5. Locations with a documented high abundance of Johnson’s seagrass compared to other areas in the species’ range

Ten areas (Units) within the range of Johnson’s seagrass (approximately 200 kilometers of coastline from Sebastian Inlet to northern Biscayne Bay, Florida) are designated as Johnson’s seagrass critical habitat (Table 4). The total range-wide acreage of critical habitat for Johnson’s seagrass is roughly 22,574 acres (NMFS 2002).

Table 4. Designated Critical Habitat Units for Johnson’s Seagrass

Unit A	A portion of the Indian River, Florida, north of the Sebastian Inlet Channel
Unit B	A portion of the Indian River, Florida, south of the Sebastian Inlet Channel
Unit C	A portion of the Indian River Lagoon, Florida, in the vicinity of the Fort Pierce Inlet
Unit D	A portion of the Indian River Lagoon, Florida, north of the St. Lucie Inlet
Unit E	A portion of Hobe Sound, Florida, excluding the federally marked navigation channel of the Intracoastal Waterway
Unit F	A portion of the south side of Jupiter Inlet, Florida
Unit G	A portion of Lake Worth, Florida, north of Bingham Island
Unit H	A portion of Lake Worth Lagoon, Florida, located just north of the Boynton Inlet
Unit I	A portion of northeast Lake Wyman, Boca Raton, Florida, excluding the federally marked navigation channel of the Intracoastal Waterway
Unit J	A portion of northern Biscayne Bay, Florida, including all parts of the Biscayne Bay Aquatic Preserve excluding the Oleta River, Miami River, and Little River beyond their mouths, the federally marked navigation channel of the Intracoastal Waterway, and all existing federally authorized navigation channels, basins, and berths at the Port of Miami to the currently documented southernmost range of Johnson’s seagrass, Central Key Biscayne

Essential Features of Critical Habitat

NMFS identified 4 habitat features essential for the conservation of Johnson’s seagrass: (1) adequate water quality, defined as being free from nutrient over-enrichment by inorganic and organic nitrogen and phosphorous or other inputs that create low oxygen conditions; (2) adequate salinity levels, indicating a lack of very frequent or constant discharges of fresh or low-salinity waters; (3) adequate water transparency, which would allow sunlight necessary for photosynthesis; and (4) stable, unconsolidated sediments that are free from physical disturbance. All 4 essential features must be present in an area for it to function as critical habitat for Johnson’s seagrass.

Critical Habitat Unit Impacted by this Action

This consultation focuses on an activity that occurs in Unit J, which encompasses the northern portion of Biscayne Bay from Northeast 163rd Street south to Central Key Biscayne at 25°45' N (Figure 3). This portion of Biscayne Bay is bound by heavy residential and commercial development, though a few areas of mangrove shoreline remain. Dredge and fill projects have resulted in a number of spoil islands and channels too deep for seagrass growth. Biscayne Bay supports a diversity of biological communities including intertidal wetlands, seagrasses, hard bottom, assemblages, and open water. Unit J is wholly within the Biscayne Bay Aquatic Preserve.

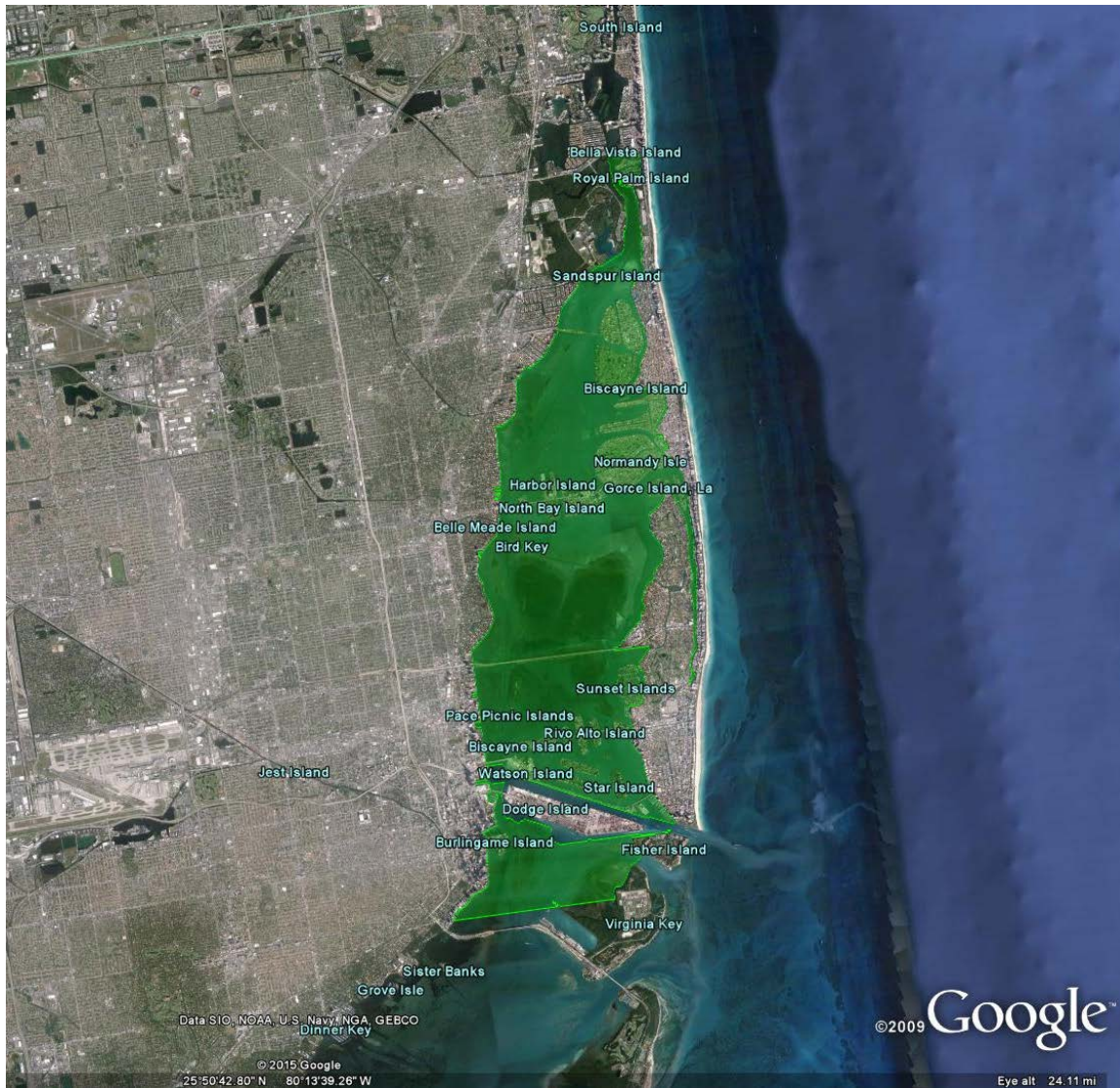


Figure 3. Johnson's seagrass critical habitat Unit J (©2015 Google, Data SIO, NOAA, U.S. Navy, NGA, GEBCO)

Status and Threats

A wide range of activities, many funded authorized or carried out by federal agencies, have and will continue to affect the essential habitat requirements of Johnson's seagrass. These are generally the same activities that may affect the species itself, and include: (1) vessel traffic and

the resulting propeller dredging; (2) dredge and fill projects; (3) dock, marina, and bridge construction; (4) water pollution; and (5) land use practices (shoreline development, agriculture, and aquaculture).

Vessel traffic has the potential to affect Johnson's seagrass critical habitat by reducing water transparency. Operation of vessels in shallow water environments often leads to the suspension of sediments due to the spinning of propellers on or close to the bottom. Suspended sediments reduce water transparency and the depth to which sunlight penetrates the water column. Populations of Johnson's seagrass that inhabit shallow water and water close to inlets where vessel traffic is concentrated, are likely to be most affected. This effect is expected to worsen with increases in boating activity.

The dredging of bottom sediments to maintain, or in some cases create, inlets, canals, and navigation channels can directly affect essential features of Johnson's seagrass critical habitat. Dredging results in turbidity through the suspension of sediments. As discussed previously, the suspension of sediments reduces water transparency and the depth to which sunlight can penetrate the water column. The suspension of sediments from dredging can also resuspend nutrients, which could result in over-enrichment and/or reduce dissolved oxygen levels. Further, dredging can destabilize sediments and alter both the shape and depth of the bottom within the dredged footprint. This may affect the ability of the critical habitat to function through the removal or modification of essential features.

Dock, marina, and bridge construction leads to loss of habitat via construction impacts (e.g., pile installation) and shading. Similar to dredging, installation of piles for docks or bridges can result in increased turbidity that can negatively impact water transparency over short durations. Additionally, installed piles also replace the stable, unconsolidated bottom sediments essential for the species. Completed structures can have long-term effects on critical habitat in the surrounding area because of the shade they produce. While shading does not affect water transparency directly, it does affect the amount and/or duration of sunlight that can reach the bottom. The threat posed by dock, marina, and bridge construction is especially apparent in coastal areas where Johnson's seagrass is found.

Other threats include inputs from adjacent land use. Johnson's seagrass critical habitat located in proximity to rivers, canal mouths, or other discharge structures is affected by land use within the watershed. Waters with low salinity that are highly colored and often polluted are discharged to the estuarine environment. This can impact salinity, water quality, and water transparency, all essential features of Johnson's seagrass critical habitat. Frequent pulses of freshwater discharge to an estuarine area may decrease salinity of the habitat and provoke physiological stress to the species. Nutrient over-enrichment, caused by inorganic and organic nitrogen and phosphorous loading via urban and agricultural land run-off, stimulates increased algal growth, decreased water transparency, and diminished oxygen content within the water. Low oxygen conditions have a demonstrated negative impact on seagrasses and associated communities. Discharges can also contain colored waters stained by upland vegetation or pollutants. Colored waters released into these areas reduce the amount of sunlight available for photosynthesis by rapidly reducing the amount of shorter wavelength light that reaches the bottom. In general, threats from adjacent land use will be ongoing, randomly occurring events that follow storm events.

4 ENVIRONMENTAL BASELINE

This section is a description of the past and ongoing human and natural factors leading to the current status of the designated critical habitat within the action area. The environmental baseline includes state, tribal, local, and private actions already affecting the critical habitat and that will occur contemporaneously with the consultation in progress. Unrelated federal actions affecting Johnson's seagrass critical habitat that have completed formal or informal consultation or are in early consultation are also part of the environmental baseline, as are federal and other actions within the action area that may benefit the critical habitat. This Opinion describes these activities in the sections below.

4.1 Status of Designated Critical Habitat within the Action Area

As discussed above, this Opinion focuses on an activity occurring in Unit J of Johnson's seagrass designated critical habitat, which encompasses the northern portion of Biscayne Bay from North East 163rd Street south to Central Key Biscayne at 25°45'N. The action area is multi-family residential property with an existing 314-ft² marginal, cantilevered wood dock, 36-ft² cantilevered wood dock, 429.75-lin ft concrete seawall, 98.83-lin ft coral rock seawall, concrete king piles, concrete bag footer, and 2 davit cranes. The project site is approximately 5 miles (mi) north of Government Cut, the nearest opening to the Atlantic Ocean. Water depth where the riprap will be placed is 0-3 ft at MHW. Approximately 20 ft² of manatee grass is located 6 ft waterward of the 701 Northeast 23rd Street location and will fall within the proposed riprap footprint. Johnson's seagrass was not present within the survey area.

4.2 Factors Affecting Johnson's Seagrass Designated Critical Habitat within the Action Area

Federal Actions

A wide range of activities funded, authorized, or carried out by federal agencies may affect the essential features of designated critical habitat for Johnson's seagrass. These include actions permitted or implemented by the USACE such as dredging, dock/marina construction, bridge/highway construction, residential construction, shoreline stabilization, breakwaters, and/or the installation of subaqueous lines or pipelines. Other federal activities that may affect Johnson's seagrass critical habitat include actions by the Environmental Protection Agency and the USACE to manage freshwater discharges into waterways, management of Biscayne Bay Aquatic Preserve, regulation of vessel traffic to minimize propeller dredging and turbidity, and/or other activities by the U.S. Coast Guard and U.S. Navy. Although these actions have probably affected Johnson's seagrass critical habitat, none of these past actions have destroyed or adversely modified Johnson's seagrass critical habitat. Other than the proposed action, no other federally permitted projects are known to have occurred or have had effects to Johnson's seagrass designated critical habitat within the action area, as per a review of the NMFS PRD's completed consultation database by the consulting biologist on November 1, 2018.

Private Recreational Vessel Traffic

Marina and dock construction increases recreational vessel traffic within areas of Johnson's seagrass critical habitat, which increases suspended sediments from propellers and could result in propeller dredging. As mentioned above, suspended sediments are known to adversely affect Johnson's seagrass critical habitat by reducing the water transparency essential feature. Shading from dock structures and vessel mooring also affects the water transparency essential feature of the designated critical habitat. Propeller dredging and installation of piles and dock support structures permanently removes the unconsolidated sediments essential feature of the critical habitat.

Marine Pollution and Environmental Contamination

The projects are located in highly developed coastal areas with extensive canal systems. This can lead to freshwater discharges and nutrient over-enrichment due to coastal runoff and canal discharges into the Bay. Freshwater discharge affects the salinity essential feature of the designated critical habitat while excess nutrients can lead to decreased water transparency and decreased dissolved oxygen content in the water.

Activities That May Benefit Johnson's Seagrass Critical Habitat in the Action Area

State and federal conservation measures exist to protect Johnson's seagrass and its habitat under an umbrella of management and conservation programs that address seagrasses in general (Kenworthy et al. 2006). These conservation measures must be continually monitored and assessed to determine if they will ensure the long-term protection of the species and the maintenance of environmental conditions suitable for its continued existence throughout its geographic distribution.

5 EFFECTS OF THE ACTION ON CRITICAL HABITAT

The proposed action area is within the boundary of Johnson's seagrass (Unit J), and all 4 essential features are present at the site. The 4 habitat features essential to the conservation of Johnson seagrass are: (1) adequate water quality, defined as being free from nutrient over-enrichment by inorganic and organic nitrogen and phosphorous or other inputs that create low oxygen conditions; (2) adequate salinity levels, indicating a lack of very frequent or constant discharges of fresh or low-salinity waters; (3) adequate water transparency, which would allow sunlight necessary for photosynthesis; and (4) stable, unconsolidated sediments that are free from physical disturbance. All 4 essential features must be present in an area for it to function as critical habitat for Johnson's seagrass and the loss of 1 essential feature of Johnson's seagrass critical habitat will result in a total loss in the conservation function of the critical habitat in that area.

We believe the proposed action will have no effect on the adequate salinity levels essential feature of Johnson's seagrass designated critical habitat because the proposed action lacks any potential to affect adequate salinity levels in the action area.

The adequate water quality and adequate water transparency essential features of Johnson's seagrass critical habitat may be affected by increased turbidity due to pile installation and the removal of the existing seawall and seawall footer; however, we believe this effect will be insignificant. We expect turbidity to be temporary (i.e., in-water work will last up to 6 months) and contained to the immediate area by the use of turbidity curtains.

The proposed work will have no effect on Johnson's seagrass critical habitat from the new dock because the new 314 ft² dock will be constructed in the same footprint as the existing 314 ft² viewing platform (to be removed). This area does not support the adequate water transparency essential features due to shading from the existing viewing platform and no new impacts are anticipated due to the new dock's size and location in the same footprint. However, the proposed work is likely to adversely affect Johnson's seagrass critical habitat by removing the stable, unconsolidated sediments essential feature due to construction of the new seawall, riprap, and dock support piles.

First, the installation of the new seawall will affect 528.58 ft² of the stable, unconsolidated sediments essential feature.⁸ Second, the installation of riprap will affect 4,228.64 ft² of the stable, unconsolidated sediments essential feature. The installation of the batter piles (to support the new seawall) will have no additional impacts on the stable, unconsolidated sediments essential feature because the batter piles would terminate under the riprap; thus, any additional habitat loss from these piles is already accounted for under the riprap habitat loss.

Finally, the installation of dock piles will also affect the stable, unconsolidated sediments essential feature. Per the drawings, it appears that 6 of the 11 dock piles would be 100% subsumed under the new dock, while the remaining 5 dock piles would be 50% subsumed (i.e., about 50% of each pile falls outside of the framing for the dock). We do not add effects to the stable, unconsolidated sediments essential feature from piles underneath the dock that are 100% subsumed because the shading from the current dock has resulted in the permanent loss of the adequate water transparency essential feature and we want to avoid double counting impacts. Thus, we believe the dock piles will affect 2 ft² of the stable, unconsolidated sediments essential feature.⁹

Together, the seawall, riprap, and the dock piles will adversely affect 4,759.22 ft² of Johnson's seagrass critical habitat by removing the stable, unconsolidated sediments essential feature.¹⁰ Thus, we believe the project will adversely affect 4,759.22 ft² of Johnson's seagrass critical habitat.

6 CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, or local private actions that are reasonably certain to occur in the action areas considered in this Opinion. Future federal actions

⁸ The proposed length of the new seawall is 528.58 ft x the proposed width (1 ft) = 528.58 ft².

⁹ The area of a round 12-in diameter pile = 0.79 ft² x 5 piles divided by 2 = 1.975 ft² rounded up to 2 ft².

¹⁰New seawall 528.58 ft² + riprap 4,228.64 ft² + dock piles 2 ft² = 4,759.22 ft² of impacts to the stable, unconsolidated sediments essential feature.

that are unrelated to the proposed actions are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA.

No categories of effects beyond those already described are expected in the action areas, and we did not identify any new future state, tribal or private actions reasonably certain to occur in the action areas of the proposed action. Dock and marina construction will likely continue at current rates, with associated loss and degradation of seagrass habitat, including Johnson's seagrass critical habitat. Because these activities are subject to USACE permitting and thus, the ESA Section 7 consultation requirement, they do not lead to cumulative non-federal effects to be discussed in this section. NMFS and the USACE have developed protocols to encourage the use of light-transmitting materials in future construction of docks constructed in or over submerged aquatic vegetation, marsh or mangrove habitat.^{11,12,13} Even if all new docks are constructed in full compliance with the NMFS and USACE's guidance, NMFS acknowledges that shading impacts, and thus, impacts to the water transparency essential feature, to Johnson's seagrass will continue via dock construction. As NMFS and the USACE continue to encourage permit applicants to design and construct new docks in full compliance with the construction guidelines discussed above, and the recommendations in (Adam 2012), Landry et al. (2008b), and Shafer et al. (2008), NMFS believes that shading impacts to Johnson's seagrass will be reduced in the short- and long-term. Moreover, even with some shading from grated construction materials, researchers have found all 4 essential features necessary for Johnson's seagrass to persist under docks constructed of grated decking (Landry et al. 2008b).

Upland development and associated runoff will continue to degrade the water quality essential feature necessary for Johnson's seagrass critical habitat. Flood control and imprudent water management practices will continue to result in freshwater inputs into estuarine systems, thereby degrading and altering the water quality and salinity essential features of Johnson's seagrass critical habitat.

Increased recreational vessel traffic will continue to result in damage to Johnson's seagrass and its designated critical habitat by improper anchoring, propeller scarring, and accidental groundings. Nonetheless, we expect that ongoing boater education programs and posted signage about the dangers to seagrass habitat from propeller scarring and improper anchoring may reduce impacts to Johnson's seagrass designated critical habitat, including that in Unit J.

7 DESTRUCTION/ADVERSE MODIFICATION ANALYSIS

NMFS's regulations define *destruction or adverse modification* to mean "a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species. (50 CFR § 402.02). Alterations that may destroy or adversely modify critical

¹¹ Project Design Criteria A2.17 in U.S. Army Corps of Engineers Jacksonville District's Programmatic Biological Opinion (JAXBO) issued by NMFS on November 20, 2017 (SER-2015-17616)

¹² Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat U.S. Army Corps of Engineers/National Marine Fisheries Service, dated August 2001

¹³ Key for Construction Conditions for Docks or Other Minor Structures Constructed in or Over Johnson's Seagrass (*Halophila johnsonii*) National Marine Fisheries Service/U.S. Army Corps of Engineers, dated October 2002

habitat may include impacts to the area itself, such as those that would impede access to or use of the essential features. NMFS will generally conclude that a Federal action is likely to “destroy or adversely modify” designated critical habitat if the action results in an alteration of the quantity or quality of the essential physical or biological features of designated critical habitat, or that precludes or significantly delays the capacity of that habitat to develop those features over time, and if the effect of the alteration is to appreciably diminish the value of critical habitat for the conservation of the species. This analysis takes into account the geographic and temporal scope of the proposed action, recognizing that “functionality” of critical habitat necessarily means that it must now and must continue in the future to support the conservation of the species and progress toward recovery. Destruction or adverse modification does not depend strictly on the size or proportion of the area adversely affected, but rather on the role the action area serves with regard to the function of the overall designation, and how that role is affected by the action.

Recovery for Johnson’s seagrass as set forth in the final recovery plan (NMFS 2002), will be achieved when the following recovery objectives are met:

- (1) The species’ present geographic range remains stable for at least 10 years, or increases.
- (2) Self-sustaining populations are present throughout the range at distances less than or equal to the maximum dispersal distance to allow for stable vegetative recruitment and genetic diversity.
- (3) Populations and supporting habitat in its geographic range have long-term protection (through regulatory action or purchase acquisition).

We evaluated the projects’ expected effects on critical habitat to determine whether it will be able to continue to provide its intended functions in achieving these recovery objectives and supporting the conservation of the species.

The first recovery objective for Johnson’s seagrass is for the present range of the species to remain stable for 10 years or to increase during that time. In the 5-year review (2007) of the status of the species, NMFS concluded that the first recovery objective had been achieved as of 2007. In fact, the species range had increased slightly northward at that time. We have no information indicating range stability has decreased since then. We determined that the proposed action will adversely affect a total of 4,759.22 ft² (0.11 ac) of Johnson’s seagrass designated critical. However, the project site is not at a boundary of the species’ range, the affected area is very small, and the loss of this area for potential colonization will not affect the stability of the species’ range now or in the future. Thus, we believe the proposed action’s effects will not affect the critical habitat’s ability to contribute to range stability for Johnson’s seagrass.

The second recovery objective for Johnson’s seagrass requires that self-sustaining populations be present throughout the range at distances less than or equal to the maximum dispersal distance for the species. Due to its asexual reproductive mode, self-sustaining populations are present throughout the range of species. As discussed above in the Status of the Critical Habitat Likely to be Adversely Affected, there are approximately 22,574 ac of Johnson’s seagrass critical habitat. The loss of 0.11 ac of designated critical habitat for Johnson’s seagrass would equate to a loss of 0.0004872% of Johnson’s seagrass critical habitat ($[0.11 \text{ ac} \times 100] \div 22,574 \text{ ac}$). This very small loss will not affect the conservation value of available critical habitat to an extent that

it would affect Johnson's seagrass self-sustaining populations by adversely affecting the availability of suitable habitat in which the species can disperse in the future. Drifting fragments of Johnson's seagrass can remain viable in the water column for 4-8 days (Hall et al. 2006), and can travel several kilometers under the influence of wind, tides, and waves. Because of this, we believe that the permanent removal of critical habitat due to the proposed actions will not appreciably diminish the conservation value of critical habitat in supporting self-sustaining populations.

The third, and final, recovery objective is for populations of Johnson's seagrass and supporting habitat in the geographic range of Johnson's seagrass to have long-term protection through regulatory action or purchase acquisition. Though the affected portions of the project sites will not be available for the long-term, thousands of acres of designated critical habitat are still available for long-term protection, which would include areas surrounding the action area.

Based on the above analysis, we conclude that the adverse effects on Johnson's seagrass critical habitat due to the proposed action will not impede achieving the 3 recovery objectives listed above and, therefore will not appreciably diminish the value of critical habitat for the conservation of the species.

8 CONCLUSION

After reviewing the current status of Johnson's seagrass designated critical habitat, the environmental baseline, and the cumulative effects, it is our opinion that the loss of 4,759.22 ft² (0.11 ac) from the proposed action will not interfere with achieving the relevant habitat-based recovery objectives for Johnson's seagrass. It is our opinion that the proposed action will not impede the critical habitat's ability to support Johnson's seagrass conservation, despite permanent adverse effects. Therefore, we conclude that the action, as proposed, is likely to adversely affect, but is not likely to destroy or adversely modify, Johnson's seagrass designated critical habitat.

9 INCIDENTAL TAKE STATEMENT

NMFS does not anticipate that the proposed action will incidentally take any species and no take is authorized. Nonetheless, any take of any ESA-listed species shall be immediately reported to takereport.nmfs@noaa.gov. Refer to the present Biological Opinion by title, Plaza Corps Seawall & Dock, issuance date, NMFS ECO identifier number, SERO-2018-00109, and USACE permit number, SAJ-2017-02498 (NW-NML). At that time, consultation must be reinitiated.

10 CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

NMFS believes the following conservation recommendations are reasonable, necessary, and appropriate to conserve and recover Johnson's seagrass. NMFS strongly recommends that these measures be considered and adopted.

1. NMFS recommends that the USACE, in coordination with seagrass researchers and industry, support ongoing research on light requirements and transplanting techniques to preserve and restore Johnson's seagrass, and on collection of plants for genetics research, tissue culture, and tissue banking.
2. NMFS recommends that the USACE continue promoting the use of the October 2002 *Key for Construction Conditions for Docks or other Minor Structures Constructed in or over Johnson's Seagrass* as the standard construction methodology for proposed docks located in the range of Johnson's seagrass.
3. NMFS recommends that the USACE review and implement the recommendations in the July 2008 report, *The Effects of Docks on Seagrasses, With Particular Emphasis on the Threatened Seagrass, Halophila johnsonii* (Landry et al. 2008a).
4. NMFS recommends that the USACE review and implement the Conclusions and Recommendations in the October 2008 report, *Evaluation of Regulatory Guidelines to Minimize Impacts to Seagrasses from Single-family Residential Dock Structures in Florida and Puerto Rico* (Shafer et al. 2008).
5. NMFS recommends that a report of all current and proposed USACE projects in the range of Johnson's seagrass be prepared and used by the USACE to assess impacts on the species from these projects, to assess cumulative impacts, and to assist in early consultation that will avoid and/or minimize impacts to Johnson's seagrass and its critical habitat. Information in this report should include location and scope of each project and identify the federal lead agency for each project. The information should be made available to NMFS.
6. NMFS recommends that the USACE conduct and support research to assess trends in the distribution and abundance of Johnson's seagrass. Data collected should be contributed to the Florida Fish and Wildlife Conservation Commission's Florida Wildlife Research Institute to support ongoing geographic information system mapping of Johnson's seagrass and other seagrass distribution.
7. NMFS recommends that the USACE prepare an assessment of the effects of other actions under its purview on Johnson's seagrass for consideration in future consultations.

11 REINITIATION OF CONSULTATION

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of taking specified in the proposed actions is exceeded; (2) new information reveals effects of the actions that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified actions are subsequently modified in a manner that causes an effect to listed species or critical habitat

that was not considered in the Biological Opinion; or (4) a new species is listed or critical habitat designated that may be affected by the identified actions.

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