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

04/20/2020

F/SER31:HA
SERO-2019-00374

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

Ref.: SAJ-2019-00170 (LP-AG), Steven Sparks c/o Tricon Group, Dock and Boat Lift, Miami Beach, 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 (U.S.) Army Corps of Engineers (USACE) to authorize the replacement of an existing L-shape wood dock with a new reverse L-shape dock and boat lift 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]), Kemp's ridley sea turtle, leatherback sea turtles, loggerhead sea turtles (Northwest Atlantic DPS), hawksbill sea turtles and smalltooth sawfish (U.S. DPS). NMFS concludes that the proposed action is likely to adversely affect, but will not destroy or adversely modify, Johnson's seagrass critical habitat.

Please direct questions regarding this Opinion to Helena Antoun, Consultation Biologist, by phone at 787-729-6848, or by email at Helena.antoun@noaa.gov.

Sincerely,

CRABTREE.ROY.E.DR.1365849559 Digitally signed by CRABTREE.ROY.E.DR.1365849559 Date: 2020.04.20 17:01:27 -04'00'

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:	Steven Sparks c/o Tricon Group, Lazaro Diaz
	Permit Number SAJ-2019-00170 (LP-AG)
Activity:	Dock and Boat Lift, Miami Beach, 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-2019-00374
Approved By:	CRABTREE.ROY.E.DR.1365849559 Digitally signed by CRABTREE.ROY.E.DR.1365849559 Date: 2020.04.20 17:01:27 -04'00'
	Roy E. Crabtree, Ph.D., Regional Administrator NMFS, Southeast Regional Office St. Petersburg, Florida
Date Issued:	04/20/2020

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Acronyms and Abbreviations

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

Units of Measurement

ac	acre(s)
ft	foot/feet
ft^2	square foot/feet
in	inch(es)
m	meter(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 Beach, 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 U.S. Army Corps of Engineers (USACE) and other sources of information, including the published literature cited herein.

1 CONSULTATION HISTORY

The following is the consultation history for Environmental Consultation Organizer (ECO) identifier number SER0-2019-00374, Sparks Dock & Boat Lift:

- On April 19, 2019, NMFS received a request for formal consultation under Section 7 of the ESA in a letter dated April 18, 2019, from the USACE for construction permit application SAJ-2019-00170 (LP-AG).
- NMFS requested additional information on May 14, 2019, received response on June 13, 2019, and initiated formal consultation that day.

2 DESCRIPTION OF THE PROPOSED ACTION AND ACTION AREA

2.1 Proposed Action

The USACE proposes to permit the following:

- Removal of a 176 square foot (ft^2) L-shaped dock and 11 12-inch (in) wood piles using an overhead crane.
- Replace original dock with a new, 344 ft^2 reverse L-shape wood dock. The dock will have an 8-foot (ft) wide by 22 ft long (176 ft^2) marginal platform with a 6 ft wide by 28 ft (168 ft^2) walkway connecting to a 30,000 pound (lb) capacity 4 posted elevator boatlift. The dock will require 10 12-inch (in) wood piles, 6 of which will be installed under the dock and 4 of which will be installed half-under the dock. The boat lift will require 4 12-in wood piles. All piles will be installed via impact hammer from a barge.

The proposed action will not be built to the revised *Construction Guidelines for Docks or Other Minor Structures in Florida* outlined in JAXBO[1] since dock construction does not meet minimum size guidelines nor will it be oriented in a north-south direction; however, the applicant will follow the dock design criteria developed by NMFS and the USACE Jacksonville District.[2,3] The proposed structure will have wood decking spaced at 1-in. Dock surface will be at 5 ft above MHW. Overwater area will be 344 square feet (ft^2).

[1] 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).
[2] 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.
[3] 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.

In-water work is expected to take 3 months and will be done during daylight hours only. The applicant has agreed to comply with NMF's *Sea Turtle and Smalltooth Sawfish Construction Conditions*[4]. Turbidity curtains will be temporarily deployed during all in-water work and will remain in place until water conditions return to pre-construction conditions.

2.2 Action Area

The proposed project site is located on a developed upland lot with an existing seawall at 2614 Biarritz Dr., Miami Beach, Florida (25.8564 °N, 80.1456 °W [North American Datum 1983 (NAD83)]) in Biscayne Bay approximately 3 miles (mi) south from the nearest opening to the Atlantic Ocean (Figure 1).

A benthic survey was performed on October 16, 2018. Substrate consists of a sandy bottom with sparse coverage (5% - 30% coverage) of paddle grass, shoal grass and manatee grass was observed throughout the site. Johnson's seagrass was not present within the survey area. There were no mangroves or ESA listed coral species within the survey area.

The action area is defined by regulation as "all areas to be affected directly or indirectly 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 direct effects and indirect effects of 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 of 12-in piles using impact hammer (i.e., 705-ft behavioral noise radius; Figure 2).

[4] 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. https://www.fisheries.noaa.gov/webdam/download/92937961

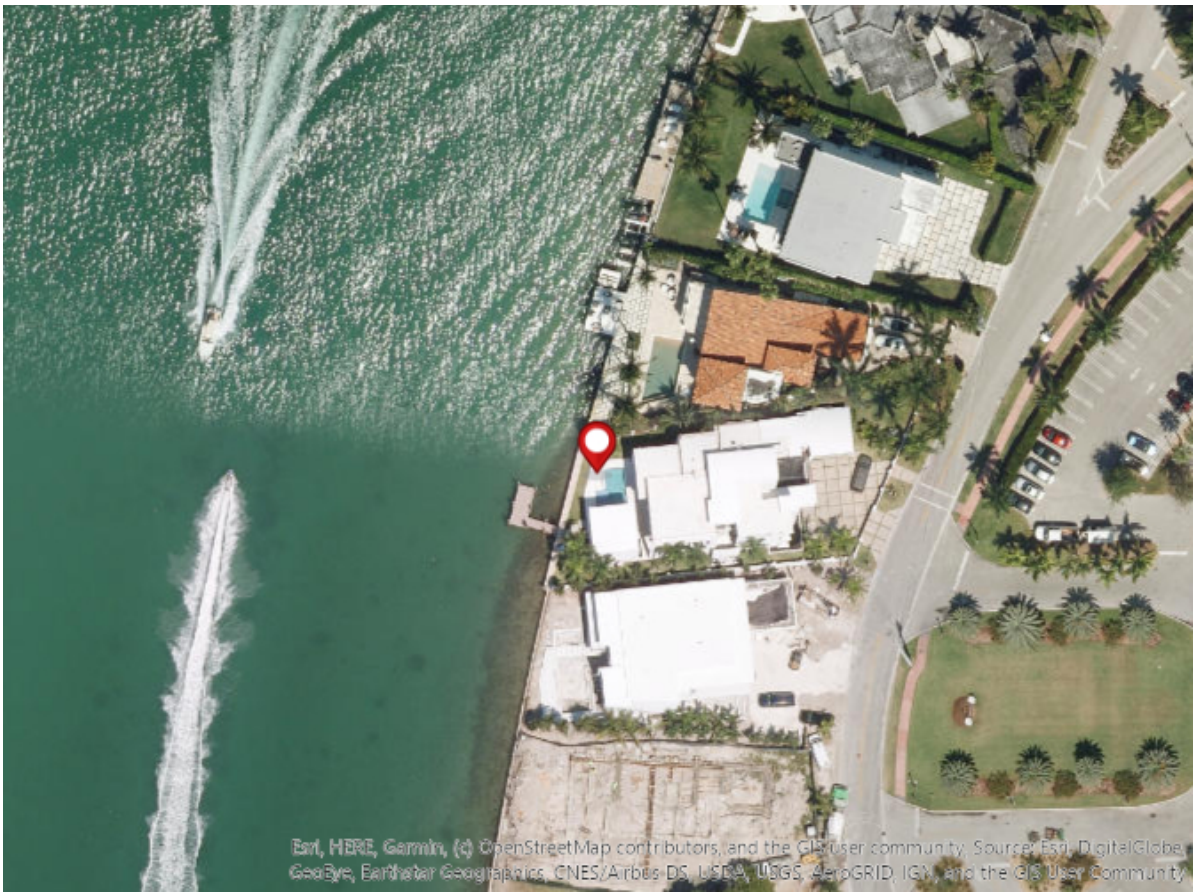

Figure 1. Image showing the project site (red pin) in Biscayne Bay at 2614 Biarritz Drive, Miami Beach, Florida (ArcGIS).

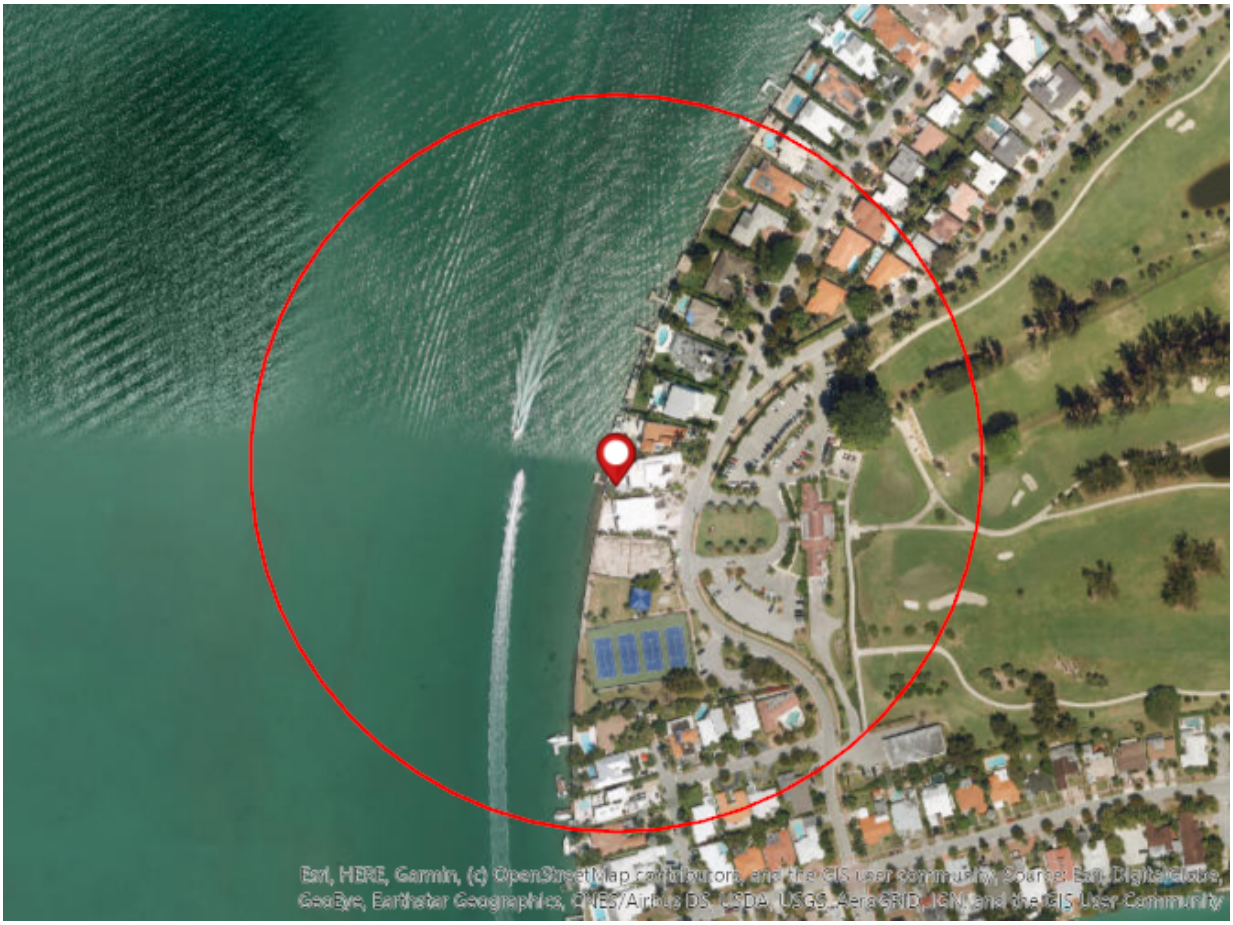

Figure 2. Image showing the action area defined by the extent of behavioral noise effects based on the proposed action's installation of 12-inch wood piles using impact hammer (ArcGIS). The red circle delineates the radius where endangered species could be exposed to potentially harmful noise levels (705 ft).

3 STATUS OF LISTED SPECIES AND CRITICAL HABITAT

Table 1 provides the effect determinations for ESA-listed species the USACE and/or NMFS believe may be affected by the proposed actions.

Table 1. Effects Determinations for Species the Action Agency and/or NMFS Believe May Be Affected by the Proposed Action

Species	ESA Listing Status[5]	Action Agency Effect Determination	NMFS Effect Determination
Sea Turtles			
Green (North and South Atlantic Distinct Population Segments [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 (United States [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 2 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 2. 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 risk of direct physical impact from the in-water construction machinery and pile installation. We believe the risk of injury is discountable due to the species' ability to move away from the project site and into adjacent suitable habitat, if disturbed. Limiting construction to daylight hours only will help construction workers regularly monitor for ESA-listed species near the project area and avoid interactions with these species. The required implementation of NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions* will further reduce the risk of injury with the requirement that all work

[5] E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect; NE = no effect

be stopped if a sea turtle or smalltooth sawfish is observed less than 50 ft from the operating or moving equipment.

The action area contains shallow water habitat and seagrass that may be used by sea turtles species and smalltooth sawfish for foraging and refuge. Sea turtles and smalltooth sawfish may be affected by being temporarily unable to use the site due to avoidance of construction activities, related noise, and physical exclusion from the area blocked by turbidity curtains. Although these ESA-listed species will be temporarily unable to access the construction area, these effects will be insignificant because of the project's limited footprint and construction period (an anticipated 3 months for in-water work and construction will occur during daylight hours only). 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. The turbidity curtains will only enclose a small area at any time, will be removed after construction, and will not block use of the surrounding area by ESA-listed species.

Sea turtles and smalltooth sawfish may be affected by the permanent loss of 344 ft^2 of habitat due to overwater shading from the placement of the proposed dock. We believe the permanent loss of habitat will be insignificant to sea turtles and smalltooth sawfish given the proposed project's small area of impact, and the similar surrounding habitat available in Biscayne Bay.

Vessels can strike sea turtles, leading to injury or death. The project will result in the addition of 2 new slips and 1 boat lift. We believe this route of effect is extremely unlikely, and therefore discountable. According to a NMFS Protected Resources Division analysis, it would take an introduction of at least 300 new vessels to an area to result in a take of 1 sea turtle in any single year (Barnette 2013).

Vessel interactions with smalltooth sawfish are highly unlikely, and therefore, discountable. Little information exists on vessel interactions with smalltooth sawfish. This is likely due to the fact this species is primarily demersal and rarely would be at risk from moving vessels. Vessels need sufficient water to navigate without encountering the bottom, and when transiting shallow areas with marginal clearance, vessels typically transit cautiously (i.e., slowly).

Effects to listed species as a result of noise created by construction activities can physically injure animals in the affected areas 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.[6] 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.

[6] NMFS. Biological Opinion on Regional General Permit SAJ-82 (SAJ-2007-01590), Florida Keys, Monroe County, Florida. June 10, 2014.

Wood piles/impact hammer

Based on our noise calculations, the installation of 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 these sea turtles and fish species, we expect them to move away from noise disturbances. Because we anticipate the animal will move away, we believe that an animal's suffering physical injury from noise is extremely unlikely to occur. 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 the likelihood of any injurious cSEL effects is discountable.

Based on our noise calculations, impact hammer pile installation could also cause behavioral effects at radii of 151 ft (46 m) for ESA-listed sea turtles and 705 ft (215 m) for ESA-listed fishes. Due to the mobility of these sea turtles and fish species, we expect them to move away from noise disturbances. Because there is similar habitat nearby, 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.

Johnson's Seagrass Critical Habitat

3.2 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 (km) of coastline from Sebastian Inlet to northern Biscayne Bay, Florida) are designated as Johnson's seagrass critical habitat (Table 3). The total range-wide acreage of critical habitat for Johnson's seagrass is roughly 22,574 acres (ac) (NMFS 2002).

Table 3. 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

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 25º45´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.

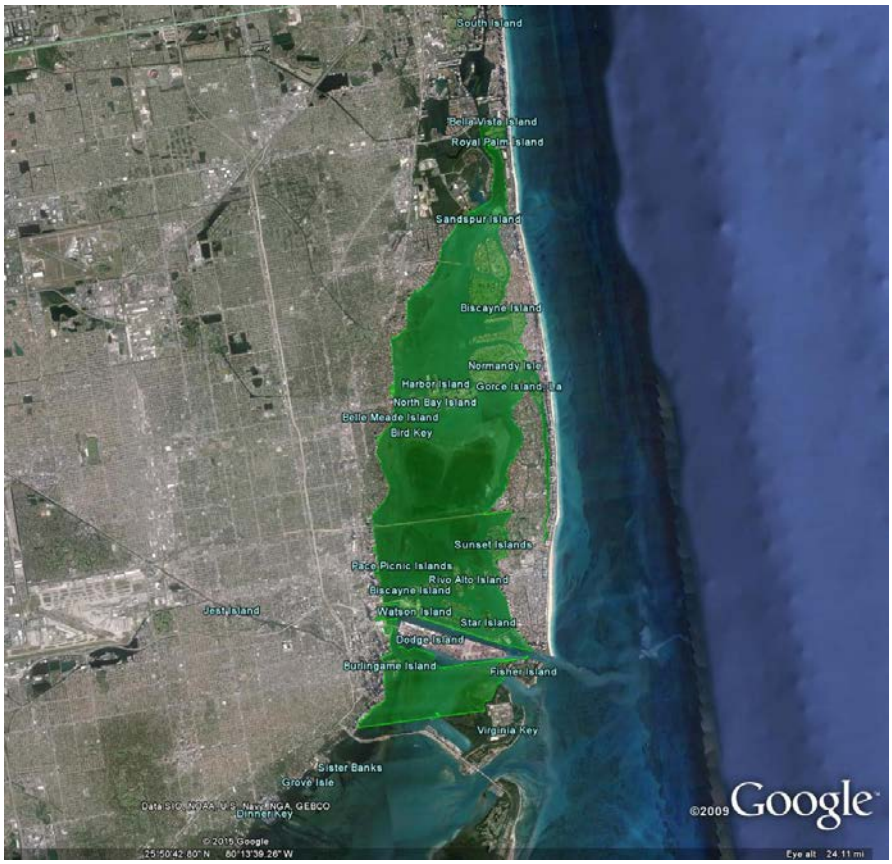

Figure 3. Johnson's seagrass critical habitat Unit J (©2015 Google, Data SIO, NOAA, U.S. Navy, NGA, GEBCO)

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.

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 describes the effects of past and ongoing human and natural factors contributing to the current status of the affected Johnson's seagrass critical habitat in the action area. The environmental baseline describes the critical habitat's health based on information available at the time of this consultation.

By regulation, environmental baselines for Opinions include the past and present impacts of all state, federal, or private actions and other human activities in the action area. We identify the anticipated impacts of all proposed federal projects in the action area of the consultation at issue that have already undergone formal or early Section 7 consultation (as defined in 50 CFR 402.11), as well as the impact of state or private actions, which are concurrent with the consultation in process (50 CFR 402.02).

Focusing on the current state of critical habitat is important because in some areas, critical habitat features will commonly exhibit, or be more susceptible to, adverse responses to stressors than in other areas, or may have been exposed to unique or disproportionate stresses. These localized stress responses or stressed baseline conditions may increase the severity of the adverse effects expected from the proposed action.

4.1 Status of Designated Critical Habitat within the Action Areas

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 25º45´N.

The proposed project site is a residential property located on a developed upland lot with an existing seawall and L-shaped dock in Biscayne Bay approximately 3 miles (mi) south from the nearest opening to the Atlantic Ocean. The substrate consists of a sandy bottom; wide navigable channel, water depths between 4 to 7 ft MWL from shoreline out to 40 ft waterward. Water quality is clear. Benthic survey identified sparse coverage (5% - 30%

coverage) of paddle grass, shoal grass and manatee grass throughout the site. Johnson's seagrass was not present within the survey area. There were no mangroves or ESA listed coral species within the survey area.

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

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 April 1, 2020.

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 is within the boundary of Johnson's seagrass critical habitat (Unit J), and all 4 essential features are present at the site. The 4 habitat features essential to the conservation of Johnson's 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 removal of the old dock and construction of the new dock; however, we believe this effect will be insignificant. Turbidity is expected to be temporary and contained to the immediate area by the use of turbidity curtains.

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 dock support piles. In addition, we believe the proposed work is likely to adversely affect Johnson's critical habitat by removing the adequate water transparency essential feature due to shading from the new dock and vessel.

We first consider the loss of the stable, unconsolidated sediments essential feature from the installation the dock piles. Per the drawings, it appears that 6 of the piles would be installed under the dock and 4 would be installed half under the dock (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 because the shading from the dock, discussed below, will cause a 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 1.58 ft^2 of the stable, unconsolidated sediments essential feature.[7]

The adequate water transparency essential feature of Johnson's seagrass critical habitat may be affected by shading from the new dock. We only expect adverse effects in the area immediately underneath the dock, as any shading to nearby areas will be temporary in nature (i.e., shading and light transmission will change over the course of the day) and therefore insignificant. In order to calculate adverse impacts from shading within the footprint of the dock, first we consider the area of the new dock, which is 344 ft^2. An estimated 35% of the new dock will be overlapping the old dock. Since functioning Johnson's seagrass critical habitat requires all 4 essential features, and the area with under the current dock is without the adequate water transparency essential feature, we subtract the overlapping portion of the new dock. The area overlap will be 120 ft^2; therefore, the new dock will result in the loss of 224 ft^2 of the adequate water transparency essential feature.[8,9]

Next, we consider potential impact by shading from the storage of a new vessel. We believe that shading due to new vessels stored at a proposed project site (i.e., vessels moored dockside or stored on an uncovered boat lift) will adversely affect the adequate water transparency essential feature of Johnson's seagrass designated critical habitat. When we do not know the size of the new vessel, we estimate the vessel to be 176 ft^2 based on the average vessel size in Florida used in the analysis for the Florida Statewide Programmatic Biological Opinion. Combining the total shading from the new dock and the vessel, we believe the project will adversely affect 400 ft^2 (176 ft^2 + 224 ft^2 = 400 ft^2) of the adequate water transparency feature of Johnson's seagrass critical habitat

Combining the total impacts to the stable, unconsolidated sediments essential feature and the adequate water transparency essential feature, we believe the project will adversely affect 402 ft^2 of Johnson's seagrass critical habitat (1.58 ft^2 + 400 ft^2 = 402 ft^2).

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 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

[7] The area of a round 12-in diameter pile = 0.79 ft^2 x 4 piles divided by 2 = 1.58 ft^2.
[8] Area overlap = 344 ft^2 x 0.35 = 120 ft^2.
[9] Area impacted by new dock = 344 ft^2 – 120 ft^2 = 224 ft^2.

of light-transmitting materials in future construction of docks constructed in or over submerged aquatic vegetation, marsh or mangrove habitat.[10,11,12] 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). 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

[10] 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)

[11] 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

[12] 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

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 402 ft^2 (0.0092 ac) of Johnson's seagrass designated critical habitat due to shading and pile installation. 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 actions' 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 in section 3.2.1, Johnson Seagrass Critical Habitat, there are approximately 22,574 ac of Johnson's seagrass critical habitat. The loss of 402 ft^2 (0.0092 ac)[13] of designated critical habitat for Johnson's seagrass would equate to a loss of 0.000041% of Johnson's seagrass critical habitat ([0.0092 ac ÷ 22,574 ac] x 100). This 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.

[13] 1 ft^2 = 0.0000230 ac

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 402 ft^2 (0.0092 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.nmfsser@noaa.gov. Refer to the present Biological Opinion by title, Sparks Dock and Boat Lift, issuance date, NMFS tracking number, SERO-2019-00374, and USACE permit number, SAJ-2019-00170 (LP-AG). 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.

12 LITERATURE CITED

Adam, T. 2012. Mutualistic cleaner fish initiate trait-mediated indirect interactions by influencing the behaviour of coral predators. Journal of Animal Ecology 81(3):692-700.

Barnette, M. C. 2013. Threats and Effects Analysis for Protected Resources on Vessel Traffic Associated with Dock and Marina Construction. NMFS SERO PRD Memorandum, April 18, 2013. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Regional Office, Protected Resources Division, Saint Petersburg, Florida.

Hall, L. M., M. D. Hanisak, and R. W. Virnstein. 2006. Fragments of the seagrasses *Halodule wrightii* and *Halophila johnsonii* as potential recruits in Indian River Lagoon, Florida. Marine Ecology Progress Series 310:109-117.

Kenworthy, W. J., S. Wyllie-Echeverria, R. Coles, G. Pergent, and C. Pergent-Martini. 2006. Seagrass Conservation Biology: An Interdisciplinary Science for Protection of the Seagrass Biome. Pages 595-623 *in* A. W. D. Larkum, R. J. Orth, and C. M. Duarte, editors. Seagrasses: Biology, Ecology and Conservation. Springer Netherlands.

Landry, J. B., W. J. Kenworthy, and G. D. Carlo. 2008a. The effects of docks on seagrasses, with particular emphasis on the threatened seagrass, *Halophila johnsonii*. Report submitted to NMFS Office of Protected Resources.

Landry, J. B., W. J. Kenworthy, and G. Di Carlo. 2008b. The effects of docks on seagrasses, with particular emphasis on the threatened seagrass, *Halophila johnsonii*. Report submitted to NMFS Office of Protected Resources.

NMFS. 2002. Recovery plan for Johnson's seagrass (*Halophila johnsonii*). National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Protected Resources, Silver Spring, Maryland.

NMFS. 2014. Biological Opinion on Regional General Permit SAJ-82 (SAJ-2007-01590), Florida Keys, Monroe County, Florida. June 10, 2014.

Shafer, D. J., J. Karazsia, L. Carrubba, and C. Martin. 2008. Evaluation of regulatory guidelines to minimize impacts to seagrasses from single-family residential dock structures in Florida and Puerto Rico. U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi.