



UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office

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F/SER31:KBD
SER-2018-19615

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

Dear Sir or Madam:

The enclosed Biological Opinion (“Opinion”) responds to your request for consultation with us, the National Marine Fisheries Service (NMFS), pursuant to Section 7 of the Endangered Species Act (ESA) for the following action:

Permit Number	Applicant	SER Number	Project Type
SAJ-2017-02137 (LP-AG)	Terry Bienstock	SER-2018-19615	Dock and Boatlift

This Opinion considers the effects of dock and boatlift construction by Terry Bienstock on the following listed species and/or critical habitat: loggerhead sea turtle (Northwest Atlantic [NWA] distinct population segment [DPS]), Kemp’s ridley sea turtle, hawksbill sea turtle, green (North Atlantic [NA] and South Atlantic [SA] DPSs), leatherback sea turtle, smalltooth sawfish (United States [U.S.] DPS), and designated critical habitat for Johnson’s seagrass. This analysis is based on project-specific information provided by the U.S. Army Corps of Engineers (USACE), the consultant, and NMFS’s review of published literature. We conclude that the proposed action may affect, but is not likely to adversely affect, loggerhead sea turtle (NWA DPS), Kemp’s ridley sea turtle, hawksbill sea turtle, green sea turtle (NA and SA DPSs), and smalltooth sawfish (U.S. DPS). We conclude that the project is likely to adversely affect, but is not likely to destroy or adversely modify, Johnson’s seagrass critical habitat. The Opinion includes conservation recommendations for your consideration.

We look forward to further cooperation with you on other USACE projects to ensure the conservation and recovery of our threatened and endangered marine species. If you have any questions regarding this consultation, please contact Kay Davy, Consultation Biologist, at (727) 415-9271, or by email at kay.davy@noaa.gov.

Sincerely,

Roy E. Crabtree, Ph.D.
Regional Administrator

Enc.: Biological Opinion
File: 1514-22.f.4



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

Agency: United States Army Corps of Engineers, Jacksonville District

Applicant: Terry Bienstock

Permit Number SAJ-2017-02137 (LP-AG)

Activity: New dock and boatlift, Miami Beach, Miami-Dade County, Florida

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

Consultation Number SER-2018-19615

Approved By:

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

Date Issued

Table of Contents

1	CONSULTATION HISTORY	5
2	DESCRIPTION OF THE PROPOSED ACTION AND ACTION AREA	5
3	STATUS OF LISTED SPECIES AND CRITICAL HABITAT	7
4	ENVIRONMENTAL BASELINE.....	14
5	EFFECTS OF THE ACTION.....	15
6	CUMULATIVE EFFECTS	17
7	DESTRUCTION/ADVERSE MODIFICATION ANALYSIS	18
8	CONCLUSION.....	19
9	INCIDENTAL TAKE STATEMENT.....	19
10	CONSERVATION RECOMMENDATIONS.....	20
11	REINITIATION OF CONSULTATION.....	21
12	LITERATURE CITED.....	22

List of Figures

Figure 1. Image showing project site (©2018 Google Earth).....	6
Figure 2. Image showing the action area defined by the extent of behavioral noise effects based on the proposed installation of concrete piles using an impact hammer (©2018 Google Earth). ..	7
Figure 3. Johnson’s seagrass critical habitat Unit J (©2015 Google, Data SIO, NOAA, U.S. Navy, NGA, GEBCO)	12

List of Tables

Table 1. Effects Determinations for Species the Action Agency and/or NMFS Believe May Be Affected by the Proposed Action.....	8
Table 2. Effects Determinations for Designated Critical Habitat the Action Agency and/or NMFS Believe May Be Affected by the Proposed Action.....	8
Table 3. Designated Critical Habitat Units for Johnson's Seagrass.....	11

Glossary of Acronyms

CFR	Code of Federal Regulations
DPS	Distinct Population Segment
ESA	Endangered Species Act
NMFS	National Marine Fisheries Service
NWA	Northwest Atlantic
NA	North Atlantic
PCTS	Pubic Consultation Tracking System
PWC	Personal Watercraft
SA	South Atlantic
U.S.	United States of America
USACE	U.S. Army Corps of Engineers

Units of Measurement

ac	acre(s)
ft	foot/feet
ft ²	square foot/feet
in	inch(es)

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 to meet these responsibilities. The National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) and the United States 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. Consultation concludes after NMFS determines that the action is not likely to adversely affect listed species or critical habitat or 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 to issue a permit within Miami-Dade County, Florida. This Opinion analyzes the proposed action’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 United States 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 the Public Consultation Tracking System (PCTS) identifier number SER-2018-19615, Bienstock Dock & Lift:

NMFS received a request for formal consultation under Section 7 of the ESA for construction permit SAJ-2017-02137 (LP-AG) on October 2, 2018, and consultation was initiated on the same day. The partial federal government shutdown for 35 days delayed our final response.

2 DESCRIPTION OF THE PROPOSED ACTION AND ACTION AREA

2.1 Proposed Action

The USACE proposes to permit the applicant to:

1. Remove the existing dock and boatlift,
2. Construct a new concrete dock measuring 30-feet (ft)-long by 14-ft-wide with 2 concrete accesses measuring 5-ft by 8-ft, requiring 16 new 12 inch (in) diameter concrete piles.
3. Install a 10,000 pound capacity elevator boatlift

The project site presently includes a concrete seawall that will remain and a 392 ft² dock and boatlift that will be removed. The total new dock area will be approximately 500 square feet (ft²). The new dock will have 12 transparent inserts each measuring 32-in by 20 in for a total of 53.33 ft² of light-transmitting dock area. In-water work will be completed from a barge and land crews will install the boatlift. The applicant has stated that 5 piles will be driven by impact hammer per day. In-water work is expected to take 3-4 days during daylight hours only. The applicant will comply with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*.¹ Since the existing dock already has 3 boat slips, the number of boat slips will not change with the dock improvement. The project has been significantly modified and reduced in size since the issuance of a public coordination letter on October 26, 2017, but since it will not have appropriate deck board spacing it will not conform to the revised *Construction Guidelines for Docks or Other Minor Structures in Florida* outlined in JAXBO² or the two sets of dock design criteria developed by NMFS and the USACE Jacksonville District.^{3,4}

¹ 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.

² 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)

³ 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

⁴ 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

2.2 Action 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 concrete piles using impact hammer (i.e., 705-ft behavioral noise radius, Figure 2).

The project site is located on Biscayne Bay adjacent to a single family property at 2312 Bay Avenue, Miami Beach, Miami-Dade County, Florida(25.79914° N, 80.14726° W [North American Datum 1983]) (Figure 1). The action area for this project includes the waters and submerged lands within the footprint of the dock and boatlift.

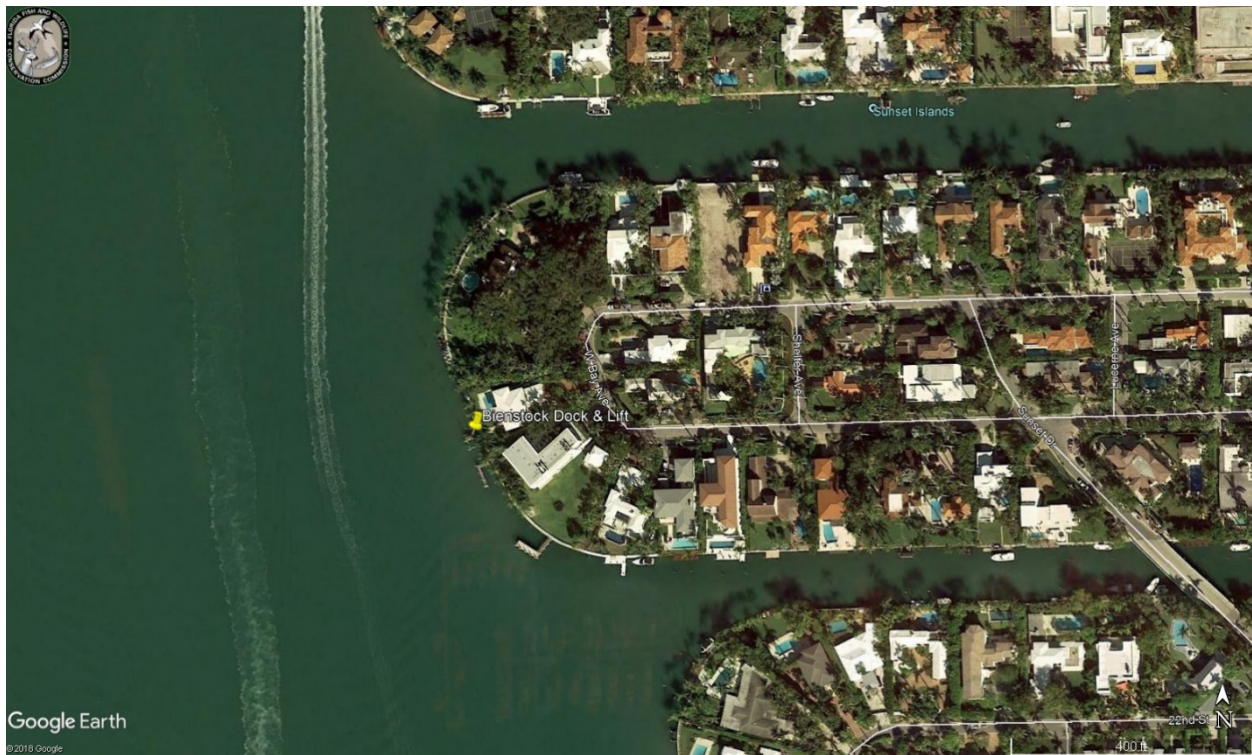


Figure 1. Image showing project site (©2018 Google Earth).

The USACE provided a biological assessment, which was conducted on August 23, 2017. The assessment indicates that water depth within the project footprint varies between 4.2 ft and 6.4 ft and the substrate is silty with muck. The area is devoid of mangroves and ESA-listed corals. The project site contains sponges, macroalgae, and a patchy distribution (15-20%) of paddle grass. Johnson’s seagrass was not documented at the project site.

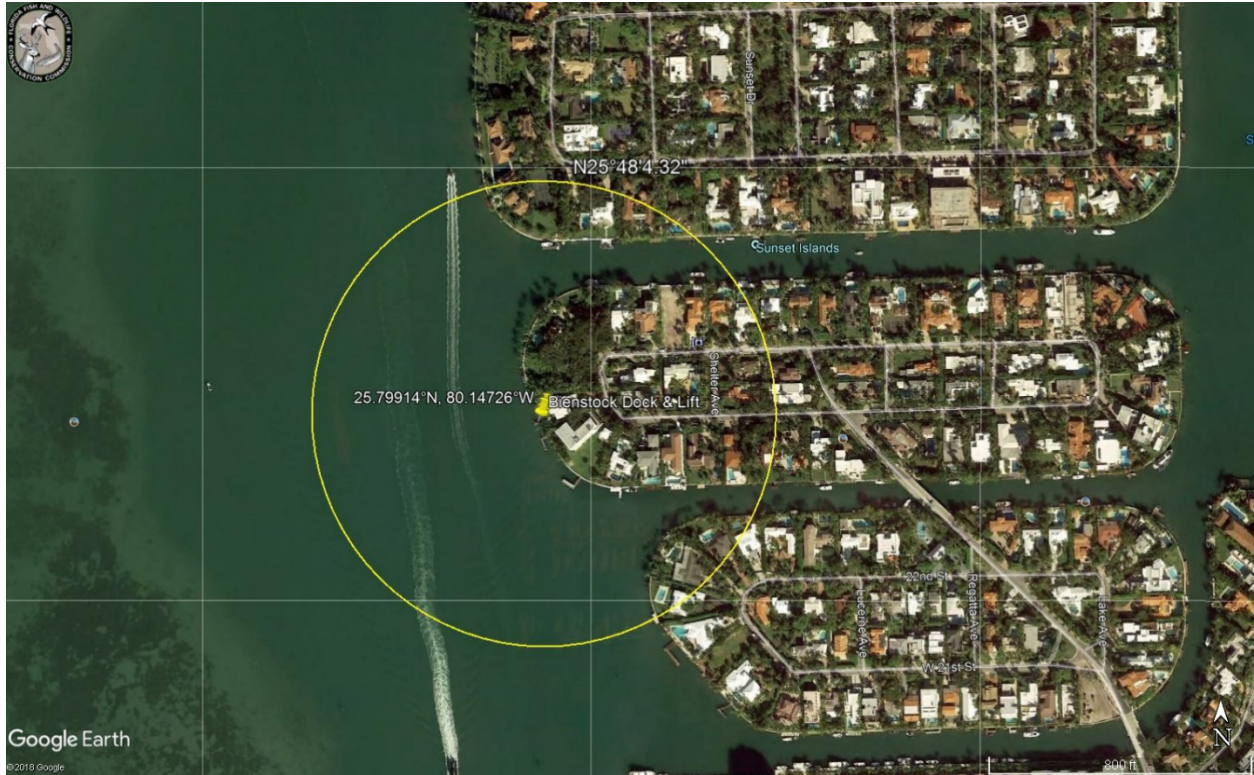


Figure 2. Image showing the action area defined by the extent of behavioral noise effects (705-ft radius) based on the proposed action’s installation of 12-inch concrete piles using an impact hammer (©2018 Google Earth).

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 action.

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

Species	ESA Listing Status	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 (United States [U.S.] DPS)	E	NLAA	NLAA
E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect; NE = no effect			

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 project site. Leatherback sea turtles have pelagic, deepwater life history, where they forage primarily on jellyfish. We also believe the project will have no effect on Nassau grouper. Based on the best available scientific information, we do not believe Nassau grouper will be present in the nearshore waters along the Atlantic coast north of Government Cut.

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 action.

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 Species and Critical Habitat Not Likely to be Adversely Affected

Sea turtles and smalltooth sawfish may be injured if struck by mechanical equipment used for pile installation. We believe that physical effects directly related to in-water construction equipment are extremely unlikely to occur and discountable. Sea turtles and smalltooth sawfish are mobile species and are expected to avoid the project area during construction. The applicant's implementation of NMFS's *Sea Turtle and Smalltooth Sawfish Construction*

Conditions will further reduce the risk by requiring all construction workers to watch for smalltooth sawfish and sea turtles. Operation of any mechanical construction equipment will cease immediately if a sea turtle or smalltooth sawfish is observed within a 50-ft radius of moving equipment. Activities will not resume until the protected species has departed the project area of its own volition. Turbidity curtains will also offer additional protection by preventing animals from entering the work site.

The action area contains habitat that may be used by sea turtles and smalltooth sawfish for foraging and refuge. These species may be temporarily unable to use the project site due to the 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 due to the small project footprint, the project's short duration (3-4 days during daylight hours only), and the availability of similar alternative habitat near the project site in Biscayne Bay.

Green sea turtles use seagrass for foraging. Impacts from the proposed action may include reduction of seagrass populations from shading caused by the dock decking installation and seagrass loss during pile installation. The potential decrease in seagrass within the action area may decrease the amount of foraging area available for green sea turtles. However, we believe this loss will be insignificant given the relatively small footprint of the project, the sparse distribution of the seagrass within the project site, and the availability of seagrass resources surrounding the project site that may provide for foraging outside the action area.

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 (NMFS 2014). The noise analysis in this consultation evaluates effects to ESA-listed fish and sea turtles identified by NMFS as potentially affected in Table 1 above.

Based on our noise calculations, installation of 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 smalltooth sawfish and sea turtles up to 72 ft (22 m) away from the pile. Due to the mobility of sea turtles and smalltooth sawfish, 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 an animal's suffering physical injury from noise is extremely unlikely to occur and is therefore discountable. An animal's movement away from the injurious sound radius is a behavioral response, with the same effects discussed below.

Based on our noise calculations, impact hammer pile installation could also cause behavioral effects at radii of 151 ft (46 m) for sea turtles and 705 ft (215 m) for smalltooth sawfish. Due to the mobility of sea turtles and smalltooth sawfish, 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.

3.2 Status of 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 the measures provided pursuant to this Act are 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 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

The physical habitat that supports Johnson's seagrass includes both shallow intertidal and deeper subtidal zones. The species thrives either in water that is clear and deep (2-5 meters) or in water that is shallow and turbid. In tidal channels, it inhabits coarse sand substrates. The spread of the species into new areas is limited by its reproductive potential. Johnson's seagrass possesses only female flowers; thus vegetative propagation, most likely through asexual branching, appears to be its only means of reproduction and dispersal. If an established community is disturbed, regrowth and reestablishment are extremely unlikely. This species' method of reproduction impedes the ability to increase distribution, as establishment of new vegetation requires considerable stability in environmental conditions and protection from human-induced disturbances.

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 2). 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.

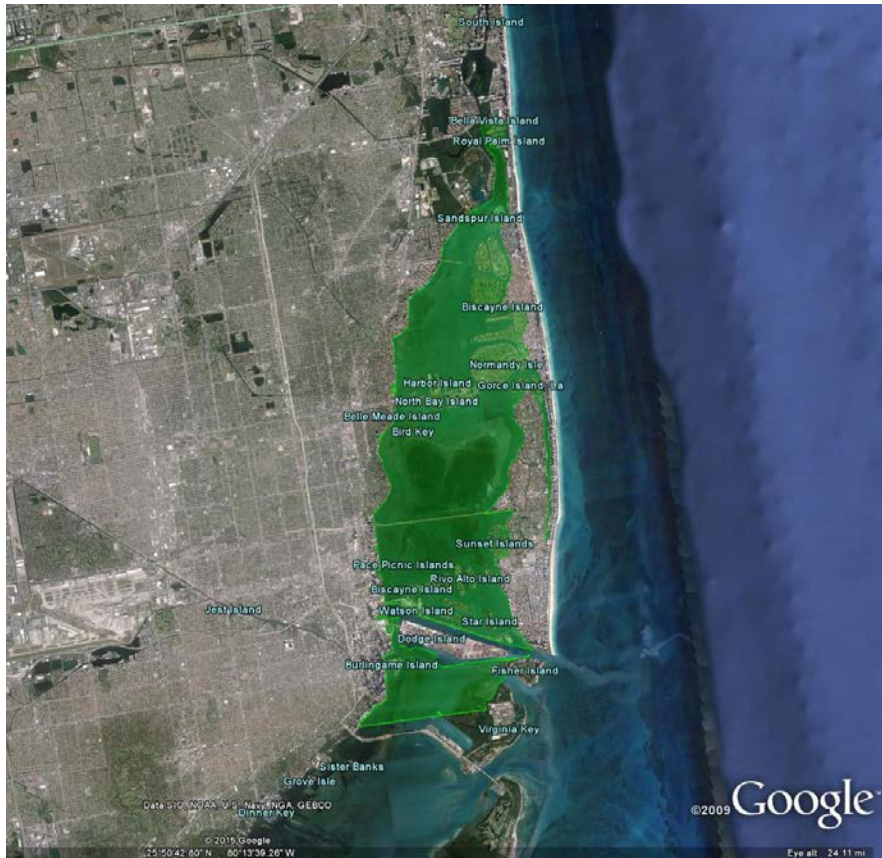


Figure 3. Johnson's seagrass critical habitat Unit J (©2015 Google, Data SIO, NOAA, U.S. Navy, NGA, GEBCO)

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 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 (50 CFR 402.02), environmental baselines for Opinions include the past and present impacts of all state, federal, or private actions and other human activities in, or having effects in, the action area. We identify the anticipated impacts of all proposed federal projects in the specific 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, or the impacts of natural phenomena, which are concurrent with the consultation in process (50 CFR 402.02).

Focusing on the impacts of the activities in the action area specifically allows us to assess the prior experience and state (or condition) of areas of designated critical habitat that occur in an action area, and that will be exposed to effects from the actions under consultation. 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 Johnson's Seagrass Critical Habitat in the Action Area

As discussed above, this consultation focuses on activities occurring in Unit J, which encompasses the northern portion of Biscayne Bay from North East 163rd Street south to Central Key Biscayne at 25°45'N (Figure 3). The project site is a residential property in Biscayne Bay approximately 2.85 miles from the closest entrance to the Atlantic Ocean. It has an existing seawall, boatlift, and a 392 ft² dock supported by wood piles, with three boat slips. The project site is adjacent to other residential properties with existing seawalls, docks, and boatlifts. There were no mangroves, corals, or Johnson's seagrass documented in the project footprint. However, a sparse distribution of paddle grass was documented occurring within the project footprint.

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

Federal Actions

A wide range of activities funded, authorized, or carried out by federal agencies may affect the essential features of 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 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 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. Two 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 December 8, 2018. The 1844 W 23rd, LLC dock construction project (SER-2015-17035) and the Blanca Cisneros dock construction project (SER-2016-18220) both resulted in a 'likely to adversely affect, not likely to adversely destroy or modify' determination for effects to Johnson's seagrass designated critical habitat. Neither residential dock was built in compliance with the August 2001 NMFS-USACE *Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat*. Johnson's seagrass was not present at either project location.

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 bridge support structures permanently removes the stable, unconsolidated sediments essential feature of the critical habitat.

Marine Pollution and Environmental Contamination

The project is 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.

State and Federal 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 project is located within Johnson's seagrass critical habitat (Unit J). The physical and biological 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.

The adequate water quality essential feature of Johnson's seagrass critical habitat may be affected by increased turbidity due to pile installation; however, we believe this effect will be insignificant. We expect turbidity to be temporary (i.e., in-water work will last up to 4 days) and contained to the immediate area by the use of turbidity curtains.

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

The adequate water transparency essential feature is likely to be adversely affected by shading from the new boatlift and from the portions of the concrete dock that do not include the transparent inserts; shading reduces light penetration into the water column thereby resulting in the loss of the water transparency essential feature. The loss of one of the essential features results in a total loss in the conservation function of the critical habitat. The proposed transparent inserts will allow light transmittance, so we subtract that area from the total dock area to reach an approximate calculation for total shaded area underneath the dock. The total area of the new boatlift is 100 ft² (10 ft by 10 ft), and the approximate area shaded by the new dock and access ways (minus the area where the transparent inserts exist) is 447 ft² (500.33 ft² – 53.33 ft²). Portions of the new dock and boatlift will overlap the footprint of the previous dock and boatlift, but it is difficult to determine the exact shading impacts of the new structures versus the previous dock and boatlift, so we erred on the side of the resource in our calculations of shading impacts. Therefore, we believe the project will adversely affect a total of 547 ft² (100 ft² + 447 ft²) of the adequate water transparency essential feature due to the boatlift installation and the dock construction.

The stable, unconsolidated sediments essential feature will be adversely affected by the installation of boatlift piles. The removal of any 1 of the essential features renders the area incapable of functioning as critical habitat, despite the persistence of the other essential features, so effects to multiple essential features in the same area are not additive. Thus, the area under the 16 piles that support the boatlift structure and dock, which would remove the stable, unconsolidated sediments essential feature, is not separately counted toward the total area of affected critical habitat, if the piles are located wholly underneath the boatlift and dock within the area that has been lost due to the shading. The plans for this project show that all 16 piles will be fully underneath the dock structure and where the lift will be mounted, so no additional area of the Johnson's seagrass designated critical habitat is expected to be affected due to the loss of the stable, unconsolidated sediments essential feature.

In summary, we believe the project will adversely affect 547 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 that are unrelated to the proposed action 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.^{5,6,7} 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.

⁵ 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)

⁶ 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

⁷ 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

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 for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features" (50 CFR § 402.02). Alterations that may destroy or adversely modify critical habitat may include impacts to the area itself, such as those that would impede access to or use of the essential features. We intend the phrase "significant delay" in development of essential features to encompass a delay that interrupts the likely natural trajectory of the development of physical and biological features in the designated critical habitat to support the species' recovery. 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; and (3) populations and supporting habitat in its geographic range have long-term protection (through regulatory action or purchase acquisition). We evaluated the project's expected impacts 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 criterion for Johnson's seagrass is for its present range to remain stable for 10 years or to increase during that time. NMFS's 5-year review (2007) of the status of the species concluded that the first recovery objective had been achieved as of 2007. In fact, the range had increased slightly northward at that time and we have no information indicating range stability has decreased since then. We determined that the proposed action will adversely affect a total of 547 ft² of Johnson's seagrass critical habitat. However, the action area is not at a boundary of the species' range, the area that will be impacted is very small, and the loss of this potential area for 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 impact the critical habitat's ability to contribute to range stability for Johnson's seagrass.

The second recovery criterion 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 reproduction, self-sustaining populations are present throughout the species' range. As discussed in Section 3.2, there are approximately 22,574 ac of Johnson's seagrass critical habitat. The loss of 547 ft² (0.012557 ac)⁸ of designated critical habitat for Johnson's seagrass would equate to a loss of 0.00005% of Johnson's seagrass critical habitat $([0.012557 \text{ ac} \times 100] / 22,574 \text{ ac})$. This loss of Johnson's seagrass critical habitat will not significantly impact Johnson's seagrass self-sustaining populations by adversely affecting the availability of suitable habitat in which the species can spread/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 removal of 547 ft² (0.012557 ac) of critical habitat for this project will not appreciably diminish the conservation value of critical habitat in supporting self-sustaining populations.

The final recovery criterion is for populations 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 site 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 areas.

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

8 CONCLUSION

We have analyzed the best available data, the current status of Johnson's seagrass critical habitat, the environmental baseline, effects of the proposed action, and cumulative effects to determine whether the proposed action is likely to destroy or adversely modify Johnson's seagrass critical habitat. It is our Opinion that the proposed action is likely to adversely affect, but is not likely to destroy or adversely modify, Johnson's seagrass 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 sea turtles or smalltooth sawfish shall be immediately reported to takereport.nmfsser@noaa.gov. Refer to the present Opinion by title, Bienstock Dock & Lift, issuance date, NMFS PCTS identifier number, SER-2018-19615, and USACE permit number, SAJ-2017-02137 (LP-AG). At that time, consultation must be reinitiated.

⁸ 1 square foot = 0.0000229568 acre

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 designed 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

This concludes NMFS's formal consultation on the proposed action. 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 action is exceeded, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered, (3) the identified action is 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 action.

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