**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

10/22/2020

F/SER31:KBD
SERO-2019-02036
SERO-2019-02940
SERO-2019-02946

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

Ref.: SAJ-2013-01858, Craig Kalil, Dock & Boat Lift, Miami Beach, Miami-Dade County, Florida
SAJ-2019-01827, Reed Zaroof, Seawall & Riprap, Miami, Miami-Dade County, Florida
SAJ-2014-01561, Paraiso Bay Marina, LLC, Floating Platform, Miami, Miami-Dade County, Florida

Dear Sir or Madam:

The enclosed Biological Opinion (Opinion) was prepared by the National Marine Fisheries Service (NMFS) pursuant to Section 7(a)(2) of the Endangered Species Act (ESA). The Opinion considers the effects of 3 proposals by the Jacksonville District of the United States Army Corps of Engineers (USACE) to authorize the following proposed actions at 3 separate locations: 1) a dock construction project; 2) a seawall/riprap installation project; and 3) a floating platform installation project. NMFS concludes that the proposed actions may affect, but are not likely to adversely affect, green sea turtle (North and South Atlantic distinct population segments [DPSs]), hawksbill sea turtle, Kemp's ridley sea turtle, loggerhead sea turtle (Northwest Atlantic DPS), giant manta ray, Nassau grouper, and smalltooth sawfish (United States DPS). NMFS concludes that the proposed actions are likely to adversely affect, but will not destroy or adversely modify, Johnson's seagrass critical habitat.

Please direct questions regarding this Opinion to Kay Davy, Consultation Biologist, by phone at (727) 415-9271, or by email at Kay.Davy@noaa.gov.

Sincerely,

CRABTREE.ROY.E.DR.1365849559
Digitally signed by CRABTREE.ROY.E.DR.1365849559
Date: 2020.10.22 16:31:05 -04'00'

Roy E. Crabtree, Ph.D.
Regional Administrator

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

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

| | |
|---|---|
| **Action Agency:** | United States Army Corps of Engineers (USACE), Jacksonville District |
| **Applicants:** | Craig Kalil<br>Permit Number SAJ-2013-01858<br><br>Reed Zaroof<br>Permit Number SAJ-2019-01827<br><br>Paraiso Bay Marina<br>Permit Number SAJ-2014-01561 |
| **Activities:** | Dock Construction, Seawall/Riprap Installation, and Floating Platform Installation, Miami-Dade County, Florida |
| **Consulting Agency:** | National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Southeast Regional Office, Protected Resources Division, St. Petersburg, Florida<br><br>Tracking Number SERO-2019-02036, Craig Kalil Dock<br>Tracking Number SERO-2019-02940, Reed Zaroof Seawall<br>Tracking Number SERO-2019-02946, Paraiso Bay Marina Floating Platform |
| **Approved By:** | CRABTREE.ROY.E.DR.1365849559 Digitally signed by CRABTREE.ROY.E.DR.1365849559 Date: 2020.10.22 16:32:23 -04'00'<br>Roy E. Crabtree, Ph.D., Regional Administrator<br>NMFS, Southeast Regional Office<br>St. Petersburg, Florida |
| **Date Issued**: | 10/22/2020 |

**Table of Contents**


1 CONSULTATION HISTORY ..... 6
2 DESCRIPTION OF THE PROPOSED ACTION AND ACTION AREA ..... 6
3 STATUS OF LISTED SPECIES AND CRITICAL HABITAT ..... 11
4 ENVIRONMENTAL BASELINE ..... 18
5 EFFECTS OF THE ACTION ON CRITICAL HABITAT ..... 19
6 CUMMULATIVE EFFECTS ..... 21
7 DESTRUCTION/ADVERSE MODIFICATION ANALYSIS ..... 22
8 CONCLUSION ..... 24
9 INCIDENTAL TAKE STATEMENT ..... 24
10 CONSERVATION RECOMMENDATIONS ..... 24
11 REINITIATION OF CONSULTATION ..... 26
12 LITERATURE CITED ..... 26


**List of Figures**


Figure 1. Image showing the 3 project sites in relation to each other in Biscayne Bay, Miami-Dade County, Florida (©2020 Google). ..... 8
Figure 2. Image showing the Craig Kalil project site in Biscayne Bay at 5446 North Bay Road, Miami Beach, Miami-Dade County, Florida (©2020 Google). ..... 9
Figure 3. Image showing the Reed Zaroof project site in Biscayne Bay at 244 West Rivo Alto Drive, Miami Beach, Miami-Dade County, Florida (©2020 Google). ..... 10
Figure 4. Image showing the Paraiso Bay Marina project site in Biscayne Bay at 3131 NE 7th Avenue, Miami, Miami-Dade County, Florida (©2020 Google). ..... 11
Figure 5. Johnson's seagrass critical habitat Unit J (©2015 Google, Data SIO, NOAA, U.S. Navy, NGA, GEBCO) ..... 16


**List of Tables**


Table 1. Effects Determinations for Species the Action Agency and/or NMFS Believe May Be Affected by the Proposed Action ..... 12
Table 2. Effects Determinations for Designated Critical Habitat the Action Agency and/or NMFS Believe May Be Affected by the Proposed Action ..... 12
Table 3. Designated Critical Habitat Units for Johnson's Seagrass ..... 15


**Acronyms and Abbreviations**

| | |
|---|---|
| CFR | Code of Federal Regulations |
| DPS | Distinct Population Segment |
| ECO | NMFS Environmental Consultation Organizer |
| ESA | Endangered Species Act |
| MHW | Mean High Water |
| MLW | Mean Low Water |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic 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) |
| km | kilometer(s) |
| lb | pound(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 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. 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.

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

This document represents NMFS's Opinion based on our review of impacts associated with the proposed actions within Miami-Dade County, Florida. This Opinion analyzes the proposed actions' effects on threatened and endangered species and designated critical habitat, in accordance with Section 7 of the ESA. We based our Opinion on individual 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 ECO identifier number SERO-2019-02036, Craig Kalil Dock. On August 1, 2019, NMFS received a request for formal consultation under Section 7 of the ESA from the USACE for construction permit application SAJ-2013-01858 in a letter dated July 31, 2019. NMFS initiated consultation on August 1, 2019, but then the project was reassigned to the current biologist on April 1, 2020.

The following is the consultation history for ECO identifier number SERO-2019-02940, Reed Zaroof Seawall. On August 29, 2019, NMFS received a request for formal consultation under Section 7 of the ESA from the USACE for construction permit application SAJ-2019-01827 in a letter dated August 28, 2019. NMFS initiated consultation on August 29, 2019.

The following is the consultation history for ECO identifier number SERO-2019-02946, Paraiso Bay Marina Floating Vessel Platform. On September 5, 2019, NMFS received a request for formal consultation under Section 7 of the ESA from the USACE for construction permit application SAJ-2014-01561 in a letter dated September 5, 2019. NMFS initiated consultation the same day.

NMFS batched the 3 consultations into 1 Opinion due to the similarities in project location, scope, and scale, and effects to ESA-listed species and designated critical habitat.

# 2 DESCRIPTION OF THE PROPOSED ACTIONS AND ACTION AREAS

## 2.1 **Proposed Actions**

### 2.1.1 Craig Kalil Dock and Boatlift

The USACE proposes to permit the removal of an existing 334.8 square foot ($ft^2$) dock and installation of a 490$ft^2$ L-shaped concrete dock with grated ipe hardwood inlay decking. According to the plans submitted by the permit applicant, the project will include the installation of 15 new 12 inch (in) diameter concrete piles, a new 7,000 pound (lb)-capacity boatlift supported by 2 new 8 in diameter metal I-beams, and 5 new 12 in diameter concrete fender piles and 2 new 12 in diameter concrete mooring piles. Concrete piles will be installed with an impact hammer and metal I-beams will be installed by a vibratory hammer. All work will be completed from a barge. A maximum of 10 piles will be installed per day. The proposed dock will be installed 5 feet (ft) above mean high water (MHW), but will not be built to dock construction guidelines for structures in Johnson's seagrass designated critical habitat. The proposed action will result in adding 2 additional slips (for jet skis) to the existing vessel slip at the project site for a total of 3 slips. In-water work is expected to take 1 month to complete during daylight hours only. The applicant will comply with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*[1] and will use turbidity curtains.

[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. (Sea Turtle and Smalltooth Sawfish Construction Conditions)

### 2.1.2 Reed Zaroof Seawall

The USACE proposes to permit the removal of an existing unauthorized viewing platform (overhanging dock), and the installation of a 60-ft long concrete sectional seawall and new limestone boulder riprap adjacent to the existing seawall over a 60-ft long by 8-ft wide area. The unauthorized viewing platform that is cantilevered over the water will be removed. In addition, the project will include the installation of 14 new 12-in diameter concrete piles (according to the plans submitted by the permit applicant 7 king piles and 7 batter piles). The concrete sections to form the new seawall will be installed via a crane. The concrete piles will be installed with an impact hammer. All work will be completed from a barge. A maximum of 10 piles will be driven per day. In-water work is expected to take 1 month to complete during daylight hours only. The applicant will comply with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions* and will use turbidity curtains.

### 2.1.3 Paraiso Bay Marina, LLC Floating Dock

The USACE proposes to permit the installation of a 462.5 $ft^2$ floating platform for docking 1 jet ski and multiple kayaks. In addition, the project will include the installation of 3 new 2.9 in diameter galvanized metal poles to anchor the platform. It will also utilize 3 existing 12 in diameter wood piles. The metal poles will be driven manually using a piling bull or piling driver. It is expected that the poles can be driven in under 50 strikes. All work will be completed from a barge. The proposed action will not result in adding a new boat slip as the platform will be positioned within an existing boat slip. In-water work is expected to take 1 day to complete during daylight hours only. The applicant will comply with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions* and will use turbidity curtains.

## 2.2 **Action Areas**

All project sites fall within the boundaries of Johnson's seagrass designated critical habitat Unit J, which encompasses the northern portion of Biscayne Bay from Northeast 163rd Street south to Central Key Biscayne at 25º45´N (Figure 1).


**Figure 1. Image showing the 3 project sites in relation to each other in Biscayne Bay, Miami-Dade County, Florida (©2020 Google).**

### 2.2.1 Craig Kalil Dock and Boatlift

The proposed project site is located on an upland lot developed for a single family residence with an existing seawall, batter piles, seawall cap, existing wood dock, with one boat slip, at 5446 North Bay Road, Miami Beach, Miami-Dade County, Florida (25.833885°N, 80.130341°W [North American Datum 1983 (NAD83)]) in Biscayne Bay approximately 5.6 miles (mi) northwest of the mouth of Government Cut, the nearest opening to the Atlantic Ocean (Figure 2).

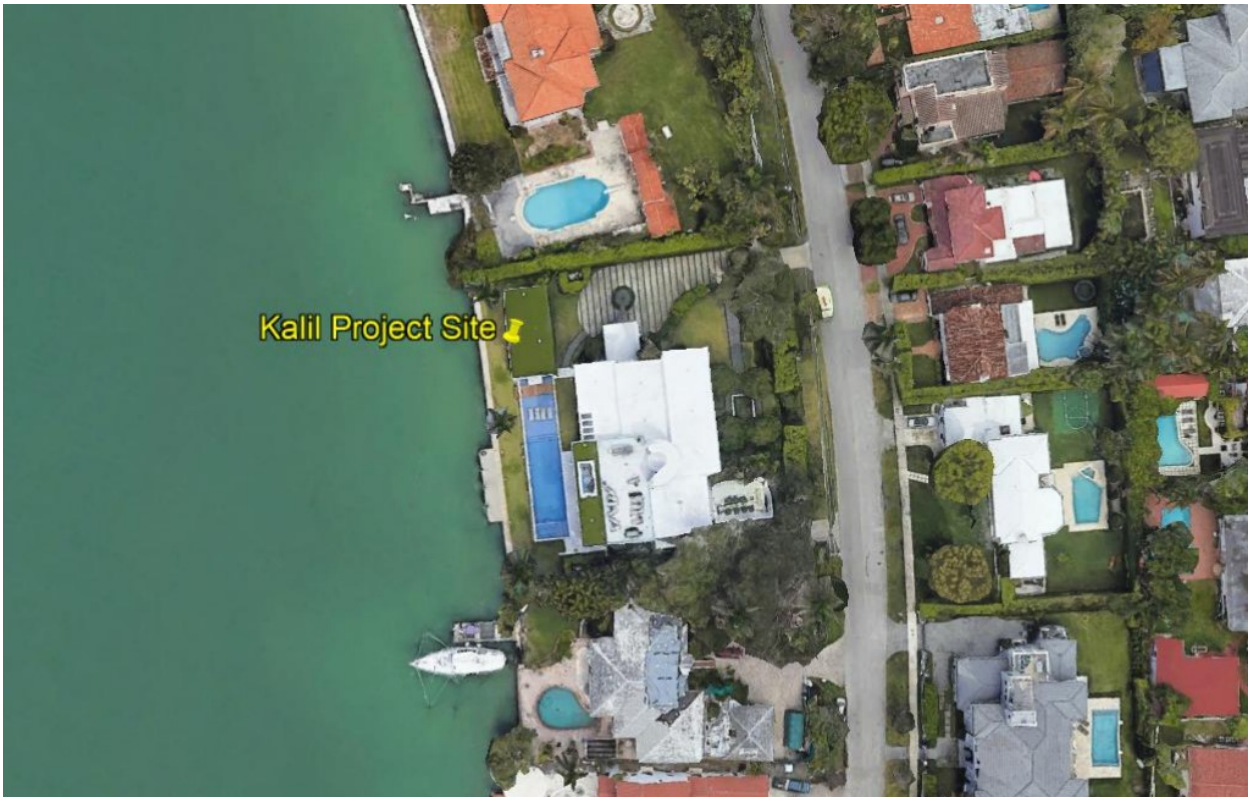


**Figure 2. Image showing the Craig Kalil project site in Biscayne Bay at 5446 North Bay Road, Miami Beach, Miami-Dade County, Florida (©2020 Google).**

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). For the purposes of this Federal action, the action area includes the shoreline and submerged habitat within the immediate vicinity of the project site that will be affected by the proposed action, including the submerged habitat within the boundary of the turbidity curtain. 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).

A benthic survey was performed on April 3, 2019. There were no mangroves or seagrasses within the project footprint. According to the survey, there are small patches of sparse turtle grass found adjacent to the project area approximately 20 ft seaward of the existing dock. One colony of *Siderastrea* was found 4 ft seaward of the existing seawall, just beyond the project footprint. Water depths adjacent to the existing seawall range from 4.0 ft to 5.1 ft mean low water (MLW). The project area has a silty substrate.

### 2.2.2 Reed Zaroof Seawall

The proposed project site is located on an upland lot developed for a single family residence with an existing concrete seawall, T-piles, seawall cap, and wood viewing platform that will be removed. There are no boat slips. The site is located at 244 West

Rivo Alto Drive, Miami Beach, Miami-Dade County, Florida (25.791583°N, 80.155882°W [NAD83]) in Biscayne Bay approximately 2.6 mi northwest of the mouth of Government Cut, the nearest opening to the Atlantic Ocean (Figure 3).


**Figure 3. Image showing the Reed Zaroof project site in Biscayne Bay at 244 West Rivo Alto Drive, Miami Beach, Miami-Dade County, Florida (©2020 Google).**

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). For the purposes of this Federal action, the action area includes the shoreline and submerged habitat within the immediate vicinity of the project site that will be affected by the proposed action, including the submerged habitat within the boundary of the turbidity curtain. 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).

A benthic survey was performed on September 26, 2018. There were no mangroves or seagrasses within the project footprint. According to the survey, there are patches of sparse paddle grass found adjacent to the project area approximately 9 ft seaward of the existing seawall. One coral colony of *Siderastrea* was noted beyond the project footprint. Water depths adjacent to the existing seawall range from 2.6 ft to 5.5 ft MLW. The project area has a silty substrate.

### 2.2.3 Paraiso Bay Marina, LLC Floating Platform

The proposed project site is located on an upland lot developed for a multi-family residence with an existing marina and 5 boat slips at 3131 NE 7th Avenue, Miami, Miami-Dade County, Florida (25.80715°N, 80.18527°W [NAD83]) in Biscayne Bay approximately 5 mi northwest of the mouth of Government Cut, the nearest opening to the Atlantic Ocean (Figure 4).


**Figure 4. Image showing the Paraiso Bay Marina project site in Biscayne Bay at 3131 NE 7th Avenue, Miami, Miami-Dade County, Florida (©2020 Google).**

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). For the purposes of this Federal action, the action area includes the submerged habitat within the immediate vicinity of the project site that will be affected by the proposed action, including the submerged habitat within the boundary of the turbidity curtain.

A benthic survey was performed on June 10, 2019. There were no mangroves or seagrasses within the project footprint. According to the survey, there is a small colony of *Siderastrea* growing on one of the pilings that will be utilized for the floating platform. Water depths in the project site range from 2.0 ft to 5.5 ft MLW. The project area has a sandy substrate.

## 3 STATUS OF LISTED SPECIES AND CRITICAL HABITAT

We believe the species listed in Table 1 may be present within the action area.

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

| Species | ESA Listing Status[2] | Action Agency Effect Determination | NMFS Effect Determination |
|---|---|---|---|
| **Sea Turtles** | | | |
| Green (North Atlantic [NA] distinct population segment [DPS]) | T | NLAA | NLAA |
| Green (South Atlantic [SA] DPS) | T | NLAA | NLAA |
| Kemp's ridley | E | NLAA | NLAA |
| Leatherback | E | NLAA | NE |
| Loggerhead (Northwest Atlantic [NWA] DPS) | T | NLAA | NLAA |
| Hawksbill | E | NLAA | NLAA |
| **Fish** | | | |
| Smalltooth sawfish (U.S. DPS) | E | NLAA | NLAA |
| Nassau grouper* | T | NLAA | NE |
| Giant manta ray | T | ** | NLAA |

*USACE determined NE for the Kalil project
**USACE did not provide a determination

We believe the project will have no effect on leatherback sea turtles 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. Likewise, we would not expect Nassau grouper to be present at the project site because we do not believe that Nassau grouper will be present in the nearshore waters north of Government Cut (the federally authorized shipping channel for the Port of Miami) in Miami, Florida.

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**

| Critical Habitat | Unit | USACE Effect Determination | NMFS Effect Determination |
|---|---|---|---|
| Johnson's seagrass | Unit J | Likely to adversely affect | Likely to adversely affect |

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

We believe that sea turtles (green, loggerhead, hawksbill, and Kemp's ridley), giant manta rays, and smalltooth sawfish may be found in or near the action areas and may be affected by the

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

proposed actions covered in this Opinion. We have identified the following potential adverse effects to these species and concluded that they are not likely to be adversely affected by the proposed action for the reasons described below.

The action areas contain shallow water habitat that may be used by sea turtle species, giant manta rays, and smalltooth sawfish for foraging and refuge. Sea turtles, giant manta rays, and smalltooth sawfish may be affected by their inability to access the action areas due to their avoidance of construction activities and physical exclusion from the project area due to blockage by turbidity curtains. We believe habitat displacement effects to sea turtles, giant manta rays, and smalltooth sawfish will be insignificant because the proposed action will be temporary and intermittent (i.e., in-water work will last up to 1 month for each project and construction for all proposed actions will occur during daylight hours only) and will only occur within a small area adjacent to otherwise open water. In addition, because these species are mobile, we expect that they will move away from construction activities and forage in adjacent areas with similar habitat in Biscayne Bay.

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

The proposed action will result in the addition of 2 new vessel slips; however, the vessels will be jet skis. Jet skis do not have propellers and do not have the same collision risk as boats with propellers. Because the slips will be used by jet skis, we do not expect an increase in boat traffic from the construction of 2 new slips.

Noise created by pile driving activities can physically injure animals or change animal behavior in the affected areas. Injurious effects can occur in 2 ways. First, immediate adverse effects can occur to listed species if a single noise event exceeds the threshold for direct physical injury. Second, effects can result from prolonged exposure to noise levels that exceed the daily cumulative exposure threshold for the animals, and these can constitute adverse effects if animals are exposed to the noise levels for sufficient periods. Behavioral effects can be adverse if such effects interfere with animals migrating, feeding, resting, or reproducing, for example. Our evaluation of effects to listed species as a result of noise created by construction activities is based on the analysis prepared in support of the Opinion for SAJ-82.[3] The noise analysis in this consultation evaluates effects to sea turtles, giant manta rays, and smalltooth sawfish identified by NMFS as potentially affected in the table above.

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

Based on our noise calculations for the Kalil and Zaroof projects, installation of 12-in diameter concrete piles by impact hammer will not cause single-strike or peak-pressure injurious noise effects. However, the cumulative sound exposure level of multiple pile strikes over the course of a day may cause injury to ESA-listed fish species and sea turtles up to 72 ft (22 m) away from the pile. Due to the mobility of ESA-listed fish species and sea turtles, and because the project construction 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. An animal's movement away from the injurious sound radius is a behavioral response, with the same effects that are discussed below.

The installation of concrete piles by impact hammer could also result in behavioral effects at radii 705 ft (215 m) for ESA-listed fishes and 151 ft (46 m) for sea turtles. Due to the mobility of ESA-listed fish species and sea turtles, we expect them to move away from noise disturbances in this open-water environment. Because there is similar habitat nearby, we believe behavioral effects will be insignificant. If an individual animal 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.

The project will require installation of 2 metal boatlift I-beams. Based on our noise calculations, installation of the 2 metal boatlift I-beams using a vibratory hammer will not result in injurious noise effects or behavioral noise effects.

We do not have noise information on the use of a piling bull to install metal poles as proposed in the Paraiso Bay Marina project, but based on the information we have about other impact installation of larger metal pipe piles, we believe that the noise from installing 12-in concrete piles represents the worst case noise scenario for these 3 projects and would conservatively serve as a surrogate noise analysis for the installation of the 2.9-in diameter metal poles. Thus, the noise related effects are expected to be the same as discussed above for the Kalil and Zaroof projects.

## 3.2 **Designated Critical Habitat Likely To Be Adversely Affected**

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

### 3.2.1 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 | Location/Area |
|---|---|
| **A** | A portion of the Indian River, Florida, north of the Sebastian Inlet Channel |
| **B** | A portion of the Indian River, Florida, south of the Sebastian Inlet Channel |
| **C** | A portion of the Indian River Lagoon, Florida, in the vicinity of the Fort Pierce Inlet |
| **D** | A portion of the Indian River Lagoon, Florida, north of the St. Lucie Inlet |
| **E** | A portion of Hobe Sound, Florida, excluding the federally marked navigation channel of the Intracoastal Waterway |
| **F** | A portion of the south side of Jupiter Inlet, Florida |
| **G** | A portion of Lake Worth, Florida, north of Bingham Island |
| **H** | A portion of Lake Worth Lagoon, Florida, located just north of the Boynton Inlet |
| **I** | A portion of northeast Lake Wyman, Boca Raton, Florida, excluding the federally marked navigation channel of the Intracoastal Waterway |
| **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 activities 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 5). 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, coral assemblages, and open water. Unit J is wholly within the Biscayne Bay Aquatic Preserve.

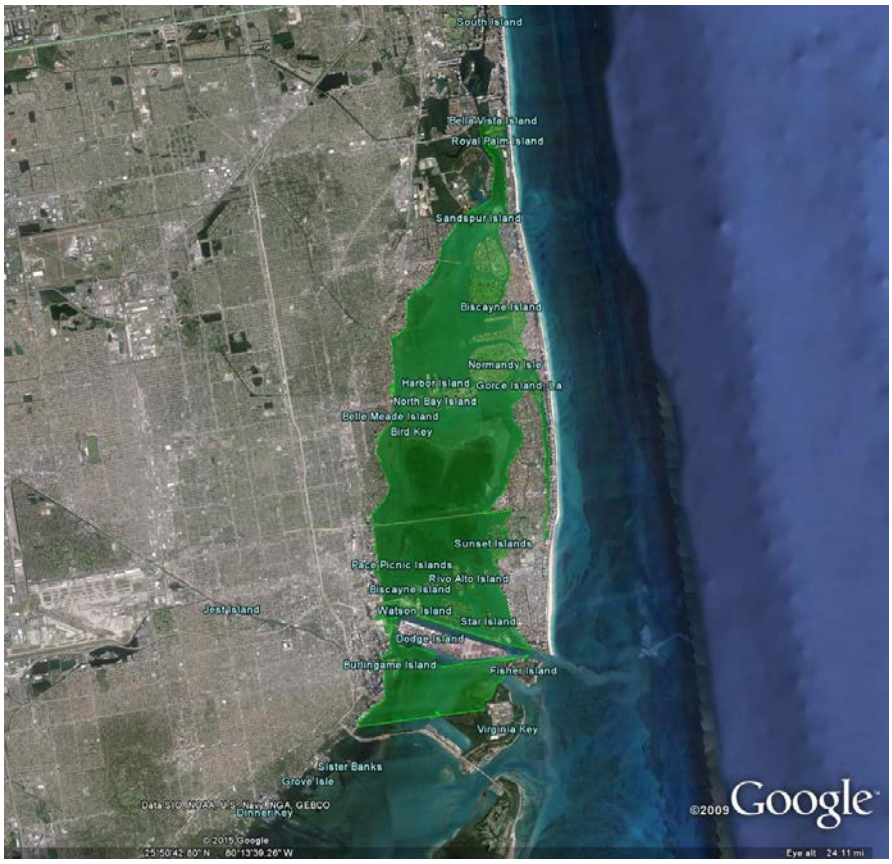


**Figure 5. Johnson's seagrass critical habitat Unit J (©2015 Google, Data SIO, NOAA, U.S. Navy, NGA, GEBCO)**

*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

By regulation, the environmental baseline for an Opinion refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions that are contemporaneous with the consultation in process. The consequences to the listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR 402.02).

## 4.1 Status of Johnson's Seagrass Critical Habitat Within the Action Areas

As discussed above, this Opinion focuses on activities 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 actions will occur at residential properties in Biscayne Bay Aquatic Preserve located from more than 1 mile to 4.5 miles north of Government Cut. The projects have existing seawalls, and/or docks and boat slips. They are adjacent to other residential properties with existing seawalls, docks, and boat slips. Turtle grass or paddle grass in varying densities was observed at 2 of the project sites, but there were no other seagrasses, including Johnson's seagrass, documented within any of the project footprints.

## 4.2 Factors Affecting Johnson's Seagrass and its Designated Critical Habitat in the Action Areas

**Federal Actions**

A wide range of activities funded, authorized, or carried out by federal agencies may affect Johnson's seagrass and its designated critical habitat. 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. These projects are located in Miami-Dade County. The Miami-Dade programmatic general permit (SAJ-42) authorizes docks that may affect Johnson's seagrass and its designated critical habitat. NMFS issued an Opinion concerning the Programmatic General Permit on February 10, 2011, and the USACE issued the permit on April 29, 2013. 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 adversely affected Johnson's seagrass critical habitat, none of these past actions have destroyed or adversely modified Johnson's seagrass critical habitat. As per a review of NMFS PRD's completed consultation database by the consulting biologist on August 30, 2020, there are 2 other projects with adverse effects to Johnson's seagrass critical habitat within the action areas. On January 14, 2014, NMFS consulted on a dock/seawall project (SER-2013-12213) at the Kalil property, and on April 26, 2016, NMFS consulted on a dock project (SER-2015-16316) at the Paraiso Bay Marina property; both projects resulted in a loss of Johnson's seagrass critical habitat. (SER-2013-12213 – 808 $ft^2$, SER- 2015-16316 – 3,061 $ft^2$).

**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 docks and vessels also affects the water transparency essential feature of the designated critical habitat. Propeller dredging and installation of piles and bridge support structures may adversely affect Johnson's seagrass and permanently removes the unconsolidated sediments essential feature of the critical habitat.

**Marine Pollution and Environmental Contamination**

The projects are all located in a highly-developed coastal area with extensive canal systems. This can lead to freshwater discharges and nutrient over-enrichment due to coastal runoff and man-made canal discharges into the Bay. Freshwater discharge from canals may affect 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 ACTIONS ON CRITICAL HABITAT

Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed actions, including the consequences of other activities that are caused by the proposed actions. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in

time and may include consequences occurring outside the immediate area involved in the action (50 CFR 402.02). The proposed actions are within the boundary of Johnson's seagrass critical habitat (Unit J).

## 5.1 **Johnson's Seagrass Critical Habitat**

The 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 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.

The projects are located within Johnson's seagrass critical habitat and all 4 essential features are present at the Paraiso Bay Marina project site. The adequate water transparency feature is partially missing at the Kalil project due to the existing dock and at the Zaroof seawall project due to the existing unauthorized viewing platform that was constructed over the water causing shading. The removal of the Zaroof dock would result in a gain of the adequate water transparency essential feature. However, we will not subtract the gain of adequate water transparency essential feature from removing the existing Zaroof dock in the analysis of this feature. This is because the Zaroof dock was never authorized, and its effect on the habitat was never analyzed. In addition, it entirely overlaps the area of the riprap to be installed, and all 4 essential features must be present for the critical habitat to be functional. We will fully consider the loss of the riprap area in the ensuing discussion of the adequate unconsolidated sediment essential feature.

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

The adequate water quality and adequate water transparency essential features of Johnson's seagrass critical habitat may be affected by increased turbidity due to pile installation; however, we believe this effect will be insignificant. Turbidity is expected to be minor and temporary (not more than 1 month each for the Kalil and Zaroof projects and 1 day for the Paraiso Bay Marina project) and contained to the immediate area by the use of turbidity curtains.

Next, we consider loss of the stable, unconsolidated sediments essential feature from the installation of dock support piles and riprap. Per the drawings, 15 of the Kalil piles will be subsumed by the dock. Because all 4 essential features must be present for the critical habitat to be functional, we do not add effects to the stable, unconsolidated sediments essential feature from piles underneath the dock when estimating the amount of critical habitat affected. This avoids double-counting the effects to critical habitat. Thus, effects include the installation of the Kalil project dock piles (7 concrete piles impacting 1 $ft^2$ per pile and 2 new 8-in-diameter metal

I-beams impacting 0.22 ft² per pile[4]), the riprap at the Zaroof project (480 ft$^2$), and the Paraiso Bay Marina floating platform's 3 new 2.9-in-diameter metal poles impacting 0.05 ft² per pole. Therefore, we believe the proposed actions will adversely affect 487.59 ft² of Johnson's seagrass critical habitat by removal of the stable, unconsolidated sediments essential feature.

Next, we consider loss of the adequate water transparency essential feature by shading from the dock. We only expect adverse effects in the area immediately underneath the docks, as any other shading to nearby areas or from mooring piles will be temporary in nature (i.e., shading and light transmission will change over the course of the day) and therefore insignificant. The Kalil project will effect 490 ft² by shading caused by the new dock and 462.5 ft² of shading will be caused by the installation of the Paraiso Bay Marina floating platform. Shading from docks not built to the dock construction guidelines mentioned in Section 3 results in the complete loss of the water transparency essential feature of Johnson's seagrass critical habitat; therefore, we believe the installation of the new dock and floating platform is likely to adversely affect Johnson's seagrass designated critical habitat. Together, these projects will contribute to a loss of 952.5 ft² (490 ft$^2$ + 462.5 ft$^2$ = 952.5 ft$^2$) of the adequate water transparency feature by shading impacts. Now, we subtract the area of the existing Kalil dock that will be removed, thereby eliminating the existing shading effects. Therefore, 952.5 – 334.8 equals 617.7 ft$^2$ of loss of the adequate transparency feature by shading impacts from the docks.

Next, we consider the potential impact of shading from the storage of new vessels. We believe that shading due to new vessels 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 vessels, but we estimate each vessel to be 176 ft$^2$, based on the average vessel size in Florida used in the analysis for the Statewide Programmatic Biological Opinion (SWPBO).[5] Since the proposed actions will result in 3 new vessel slips, total impact by shading from vessel storage will be 528 ft$^2$ (176 ft$^2$ x 3). Therefore, the total effect to the adequate water transparency essential feature from the proposed action will be the sum of the area impacted by the new docks (952.5 ft$^2$) minus the minus the removal of the existing dock (334.8 ft$^2$) plus the shading from vessels (528 ft$^2$) for a total of 1,145.7 ft$^2$. Thus, we believe the new docks will adversely affect 1,145.7 ft² of Johnson's seagrass critical habitat through removal of the adequate water transparency essential feature.

Combining the total impacts to Johnson's seagrass critical habitat from the loss of the stable, unconsolidated sediments essential feature (487.59 ft²) and the adequate water transparency essential feature (1,145.7 ft²), we believe the project will adversely affect 1,633.29 ft² (0.0375 ac)[6] of Johnson's seagrass critical habitat.

## 6 CUMMULATIVE EFFECTS

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

[4] 0.22 ft² = 8" x 4" I beam

[5] Florida Statewide Programmatic Biological Opinion (SWPBO) issued by NMFS on December 4, 2015 (SER-2013-12540).

[6] 1 square foot = 0.0000229568 acre. Therefore, 1,633.29 ft$_2$ x (0.0000229568 ac/1ft$_2$) = 0.037495 ac.

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 area, and we are not aware of any other future state, tribal or local private actions that are reasonably certain to occur within the action area. 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 (SAV), marsh or mangrove habitat.[7,8,9] 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 critical habitat 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 affect the water quality and water clarity essential features of 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

[7] 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)
[8] 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
[9] 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

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

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

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

We evaluated the proposed actions' 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 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 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 actions will adversely affect a total of 1,633.29 ft² (0.0375 ac) of Johnson's seagrass critical habitat. Combined with the impacts from previous projects at 2 of the properties (808 $ft^2$ for SER-2013-12213 and 3,061 $ft^2$ for SER-2015-16316), the loss of Johnson's seagrass critical habitat totals 5,502.29 $ft^2$ (0.1263 ac). However, the action areas are not at a boundary of the species' range. The action areas that will be impacted are very small and the loss of these areas 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 impact 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 Designated Critical Habitat Likely To Be Adversely Affected section, there are approximately 22,574 ac of Johnson's seagrass critical habitat. The loss of 5,502.29 $ft^2$ (0.1263 ac) of designated critical habitat for Johnson's seagrass

would equate to a loss of 0.000166% of Johnson's seagrass critical habitat (0.0375 ac x 100 /22,574 ac). This loss will not affect the conservation value of available critical habitat to an extent that it would impact Johnson's seagrass self-sustaining populations by adversely affecting the availability of suitable habitat in which the species can spread/flow 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 km under the influence of wind, tides, and waves. Because of this, we believe that the removal of 5,502.29 $ft^2$ of critical habitat for these projects combined will not appreciably diminish the conservation value of critical habitat in supporting self-sustaining populations.

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

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, the effects of the proposed actions, and the cumulative effects, it is our opinion that the loss of 5,502.29 $ft^2$ (0.1263 ac) associated with the proposed actions will not interfere with achieving the relevant habitat-based recovery objectives for Johnson's seagrass. It is our opinion that the proposed actions will not impede the critical habitat's ability to support Johnson's seagrass conservation, despite permanent adverse effects. Therefore, we conclude that the actions, as proposed, are likely to adversely affect, but are 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, issuance date, NMFS ECO identifier numbers SERO-2019-02036, SERO-2019-02940, or SERO-2019-02946. 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.

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. 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

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.