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Ref.: SAJ-2019-03306 (LP-AG), West Investments Baywalk, Miami Beach, Miami-Dade County, Florida

Dear Ms. Gilbert:

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 referenced action.

The Opinion considers the effects of the proposed action by the applicant on the following listed species and critical habitat: green sea turtle, hawksbill sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, smalltooth sawfish and Johnson's seagrass critical habitat. NMFS concludes that the proposed action is not likely to adversely affect: green sea turtle, hawksbill sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, and smalltooth sawfish. NMFS also concludes that the proposed action is likely to adversely affect, but will not destroy or adversely modify, Johnson's seagrass critical habitat.

We look forward to further cooperation with you on other projects to ensure the conservation of our threatened and endangered marine species and designated critical habitat. If you have any questions on this consultation, please contact Melissa Alvarez, Consultation Biologist, by phone at (954) 734-0716 or by email at Melissa.Alvarez@noaa.gov.

Sincerely,

Andrew J. Strelcheck
Regional Administrator

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



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

Action Agency: United States Army Corps of Engineers, Jacksonville District

Applicant: 1100 West Investments, LLC.

Permit Number: SAJ-2019-03306 (LP-AG)

Activity: Baywalk, Miami Beach, 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

Tracking Number SERO-2021-00621
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Approved by:

Andrew J. Strelcheck, Regional Administrator
NMFS, Southeast Regional Office
St. Petersburg, Florida

Date Issued:

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ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
CR	Conservation Recommendation
DPS	Distinct Population Segment
ECO	NMFS Environmental Consultation Organizer
ESA	Endangered Species Act
FR	Federal Register
MHW	Mean High Water
MLW	Mean Low Water
NA DPS	North Atlantic DPS of Green Sea Turtle
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWA DPS	Northwest Atlantic Distinct Population Segment of Loggerhead Sea Turtle
Opinion	Biological Opinion
PRD	NMFS Southeast Regional Office Protected Resources Division
SA DPS	South Atlantic Distinct Population Segment of Green Sea Turtle
U.S.	The United States of America
U.S. DPS	U.S. Distinct Population Segment of Smalltooth Sawfish

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)
m	Meter(s)
mi	Mile(s)

INTRODUCTION

Section 7(a)(2) of the 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 those species. Section 7(a)(2) requires federal agencies to consult with the appropriate Secretary in carrying out these responsibilities. NOAA 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 with NMFS (hereafter referred to as “we” or “us”) is concluded after we determine that the action is not likely to adversely affect listed species or critical habitat. Formal consultation is concluded after we issue a Biological Opinion (hereafter referred to as “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 our Opinion based on our review of impacts associated with the USACE’s 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 USACE and other sources of information, including the published literature cited herein.

1 CONSULTATION HISTORY

The following is the consultation history for ECO tracking number SERO-2021-00621, 1100 West Investments, LLC.'s Baywalk project.

On March 9, 2021, we received a request for formal consultation under Section 7 of the ESA from the USACE for construction permit application SAJ-2019-03306 in a letter dated March 9, 2021, and initiated formal consultation that day.

During the writing of this consultation, on September 9, 2021, we requested additional information. We received a final response on September 14, 2021.

2 DESCRIPTION OF THE PROPOSED ACTION AND ACTION AREA

2.1 Proposed Action

The USACE proposes to permit the applicant to construct a baywalk from 10th Street to 12th Street on Biscayne Bay. The project will provide public access from the park at the end of 10th Street with an Americans with Disabilities Act (ADA) accessible ramp. The proposed baywalk is 928 feet (ft) long by 10 ft wide and supported by 140-12-inch (in), concrete pilings, 65 of the pilings will be in an area that currently has riprap. There is a 6 ft separation between the inside edge of the baywalk and the existing seawall. Any coral in the footprint of the pilings will be relocated prior to pile installation. There are also three access stairways for the properties at 1000, 1100 and 1200 West Avenue. The total overwater square footage is 9,646 square feet (ft²) or 0.22 acres (ac), with 6,416 ft² or 0.15 ac over unconsolidated sediment and the remaining 3,230 ft² over riprap.

The proposed overwater structure will not be built to the revised *Construction Guidelines for Docks or Other Minor Structures in Florida* outlined in the JAXBO (Project Design Criteria A2.17 in U.S. Army Corps of Engineers Jacksonville District's Programmatic Biological Opinion issued by NMFS on November 20, 2017 [SER-2015-17616]); the size of the structure does not meet the guidelines restrictions; however it does meet the light transmission requirement by having grated decking and the height above mean high water (MHW) exceeds the minimum of 5 ft above MHW at 5.4 ft.

Demolition of the existing wooden stairs and a section of the wood dock at the existing marinas at 1000 and 1200 West Avenue will occur to accommodate the Baywalk. Debris will be contained on the barge and disposed of off-site. Work will occur from a barge because there is limited space on the upland. In-water work is expected to take 6 months to complete during daylight hours only. The applicant has also agreed to adhere to NMFS Southeast Region *Protected Species Construction Conditions*. The piles will be installed using an impact hammer with approximately 80 strikes per pile. A maximum of 10 piles will be driven per day and all piles in the unconsolidated sediment will be completely under the decking of the walkway, as confirmed by USACE communication on September 15, 2021.

2.2 Action Area

The project site is located between the 10th and 12th Street at 1000, 1100 and 1200 West Avenue, in Section 33, Township 53 South, Range 42 East, Miami Beach, Miami-Dade County, Florida (25.781944°, 80.143333°). The 10th Street-end is a public park and City right-of-way that will provide access to the Baywalk in front of the private properties. There are two private marinas, each with a T-dock and 13 slips, in front of 1,000 and 1,200 West Avenue. The marina at 1,000 West Avenue has an overwater size of 1418.2 ft² and a 0.26 ac submerged land lease area. The marina at 1,200 West Avenue has an overwater size of 1431.4 ft² and a submerged land lease area of 0.28 ac. Orientation is generally east to west. By boat, the proposed project site is approximately 1.5 miles (mi) to Government Cut, the nearest opening to the Atlantic Ocean (Figure 1).

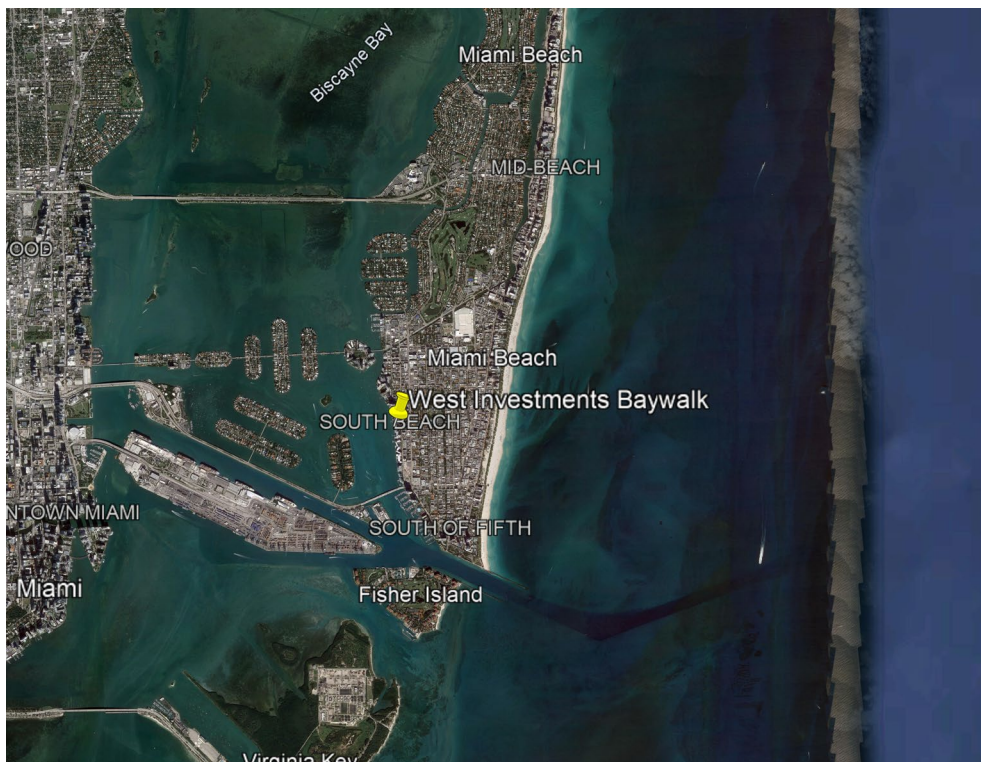


Figure 1. The Project Location in Relation to Neighboring Properties (©2021 Google)

An in-water benthic survey was performed in September 2020, there were no mangroves, ESA-listed corals, or Johnson's seagrass observed within the survey area. The bottom was described as sandy and silty; however at the 10th Street City right-of-way, there are two mounds of riprap at the seawall due to outfall pipes. Smaller riprap rubble with scattered coral is present adjacent to the seawall in front of the three private multifamily properties. Seagrasses are present in the vicinity of the project and 12 ft² occur within the footprint of the project. Seagrasses documented adjacent to the project footprint are composed of a mixture of *Thalassia testudinum*, *Halophila decipiens* and *Halodule wrightii*. The project also contains various types of macroalgae, sponges and other benthic resources normally found in Biscayne Bay as well as several species of fish normally present. Depths range

from 2 ft mean low water (MLW) near the seawall and gradually slope to 10 ft MLW away from the seawall.

The action area is defined by regulation as all areas to be affected by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). As such, the action area includes the areas in which construction will take place, as well as the immediately surrounding areas that may be affected by the proposed action. Based on our noise analysis in SAJ-82, 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).

3 STATUS OF LISTED SPECIES AND CRITICAL HABITAT

Table 1 provides the effect determinations for species the USACE and we believe may be affected by the proposed action.

Table 1. Effects Determination(s) for Species the Action Agency or NMFS Believes May Be Affected by the Proposed Action. Please note abbreviations used in the table below: E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect; NE = no effect; N/A = not applicable.

Species	ESA Listing Status	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	NE
Fish			
Smalltooth sawfish (U.S. DPS)	E	NLAA	NLAA
Giant manta ray	T	NE	NLAA

We believe the proposed action will have no effect on hawksbill sea turtle and leatherback sea turtle, due to the species’ very specific life history strategies, which are not supported at the project site. Leatherback sea turtle has a pelagic, deepwater life history, where they forage primarily on jellyfish. Hawksbill sea turtle typically inhabit inshore reef and hard bottom areas where they forage primarily on encrusting sponges. These species will not be considered further in this Opinion.

Table 2 provides the effects determinations for designated critical habitat occurring within the action area that the USACE and we believe may be affected by the proposed action.

Table 2. Effects Determinations for Designated Critical Habitat the Action Agency and NMFS Believe May Be Affected by the Proposed Action

Species	Critical Habitat Unit	Action Agency Effect Determination	NMFS Effect Determination
Johnson’s seagrass	Unit J	Likely to adversely affect	Likely to adversely affect, will not destroy or adversely modify

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

We believe that sea turtles (green, loggerhead, and Kemp’s ridley) and ESA-listed fish may be found in or near the action areas and may be affected by the proposed actions covered in this Opinion. We have identified the following potential routes of adverse effects to these species and concluded that the species are not likely to be adversely affected by the proposed actions for the reasons described below.

Effects to ESA-listed sea turtles (green sea turtles [NA and SA DPSs], Kemp’s ridley sea turtles, and loggerhead sea turtles [NWA DPS]) and ESA-listed fish (smalltooth sawfish and giant manta ray) include the potential for injury from construction equipment or materials. We believe the risk of injury to ESA-listed sea turtles and ESA-listed fish is extremely unlikely to occur due to the species’ ability to move away from the project site and into adjacent suitable habitat, if disturbed. Limiting construction to daylight hours only will help construction workers regularly monitor for ESA-listed species near the project area and avoid interactions with these species. The applicants’ implementation of NMFS’s *Protected Species Construction Conditions* will further reduce the risk of injury with the requirement that all work will cease if a sea turtle or an ESA-listed fish species is observed within 150 ft from the operating or moving equipment.

The action areas contain shallow water habitat that may be used by ESA-listed sea turtle species and ESA-listed fish species for foraging and refuge. These species may be affected by their inability to access the action areas due to their avoidance of construction activities and due to their physical exclusion from the project area by the use of turbidity curtains. We believe temporary loss of habitat access for these species will be insignificant given the proposed action will be temporary and intermittent (i.e., proposed in-water work will take 6 months, and construction will occur during daylight hours). In addition, because these species are mobile, we expect that they will move away from the construction activities to adjacent areas in Biscayne Bay with similar habitat.

Green sea turtles, which forage on seagrasses, may be affected by the potential loss of approximately 12 ft² of seagrass habitat due to shading from overwater structures. We believe this effect on green sea turtles would be insignificant, given the availability of similar, undisturbed seagrass habitat nearby and throughout Biscayne Bay. The applicant has also designed the project with minimization measures that minimize the impacts to seagrass,

including the height of the Baywalk is greater than 5 ft above MHW as well as grated decking, both of which allow more light to reach the seagrasses.

Noise created by pile driving activities can physically injure animals or change animal behavior in the affected areas. Injurious effects can occur in two 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. The noise analysis in this consultation evaluates effects to ESA-listed fish and sea turtles identified by NMFS as potentially affected in the table above. While we have no information regarding noise effects specific to giant manta rays, we believe that effects to giant manta rays from pile driving noise would be very similar to effects on smalltooth sawfish (which are considered in the Opinion for SAJ-82), because both species are elasmobranchs and lack swim bladders.

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 ESA-listed fishes and sea turtles up to 72 ft (22 m) away from the pile. Due to the mobility of sea turtles and ESA-listed fish species, and because the project occurs in open water, we expect them to move away from noise disturbances. Because we anticipate the animal will move away, we believe that 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 discussed below.

The installation of piles using an impact hammer could also result in behavioral effects up to radii 705 ft (215 m) for ESA-listed fishes and 151 ft (46 m) for sea turtles. Due to the mobility of sea turtles and ESA-listed fish species, we expect them to move away from noise disturbances in this open-water environment. Because there is similar habitat nearby, 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 Critical Habitat Likely to be Adversely Affected

The term "critical habitat" is defined in Section 3(5)(A) of the ESA as (i) the specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (1) essential to the conservation of the species and (2) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. "Conservation" is defined in Section 3(3) of the ESA as "...the use of all methods and procedures that are

necessary to bring any endangered or threatened species to the point at which listing under the ESA is no longer necessary.”

Johnson’s Seagrass Critical Habitat

Description

NMFS designated Johnson’s seagrass critical habitat on April 5, 2000 (65 FR 17786; see also, 50 CFR 226.213). The specific areas occupied by Johnson’s seagrass and designated by NMFS as critical habitat are those with one 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 1). The total range-wide acreage of critical habitat for Johnson’s seagrass is roughly 22,574 acres (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

Unit	Location/Area
J	A portion of northern Biscayne Bay, Florida, including all parts of the Biscayne Bay Aquatic Preserve excluding the Oleta River, Miami River, and Little River beyond their mouths, the federally marked navigation channel of the Intracoastal Waterway, and all existing federally authorized navigation channels, basins, and berths at the Port of Miami to the currently documented southernmost range of Johnson's seagrass, Central Key Biscayne

Critical Habitat Unit Impacted by this Action

This consultation focuses on an activity that occurs in Unit J, which encompasses the northern portion of Biscayne Bay from Northeast 163rd Street south to Central Key Biscayne at 25°45'N (Figure 1). 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.

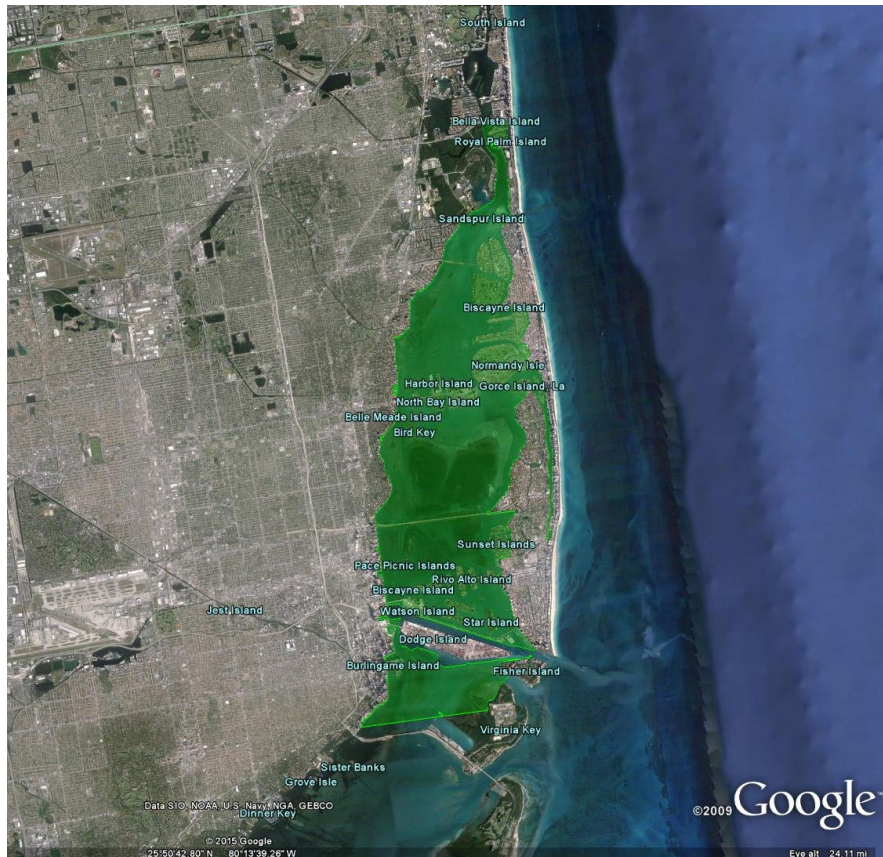


Figure 2. Johnson's seagrass critical habitat Unit J (©2015 Google, Data SIO, NOAA, U.S. Navy, NGA, GEBCO)

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) adequate stable, unconsolidated sediments that are free from physical disturbance. All four 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 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 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 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), 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 which 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.

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

4.1 Status of Designated Critical Habitat within the Action Area

Johnson's Seagrass Critical Habitat

As discussed above, this Opinion focuses on an activity occurring in Unit J of Johnson's seagrass designated critical habitat, which encompasses the northern portion of Biscayne Bay from North East 163rd Street south to Central Key Biscayne at 25°45'N.

4.2 Factors Affecting Designated Critical Habitat within the Action Area

4.2.1 Federal Actions

A wide range of activities funded, authorized, or carried out by federal agencies may affect the essential features of designated critical habitat for Johnson's seagrass. These include actions permitted or implemented by the USACE such as dredging, dock/marina construction, bridge/highway construction, residential construction, shoreline stabilization, breakwaters, and 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 the 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.

Other than the proposed action, no other federally permitted projects are known to have occurred or have had effects to Johnson's seagrass designated critical habitat within the action area, as per a review of the NMFS PRD's completed consultation database by the consulting biologist on September 20, 2021.

4.2.2 Private Recreational Boat Traffic

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

4.2.3 Marine Pollution and Environmental Contamination

The project is located in a highly developed coastal area. 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.

4.2.4 Conservation and Recovery Actions Shaping the Environmental Baseline

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

Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR 402.02). The proposed action is within the boundary of Johnson's seagrass critical habitat (Unit J), and all four essential features are present at the project site.

5.1 Johnson's Seagrass Critical Habitat

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

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

The adequate water quality and adequate water transparency essential features of Johnson's seagrass critical habitat may be affected by increased turbidity due to pile installation; however, we believe this effect will be insignificant. Turbidity is expected to be temporary (not more than 6 months) and contained to the immediate area by the use of turbidity curtains.

The proposed work could adversely affect Johnson's seagrass critical habitat by removing the adequate water transparency essential feature due to shading from the new structure. In addition, the proposed work could adversely affect Johnson's seagrass critical habitat by removing the stable, unconsolidated sediments essential feature due to the placement of new piles.

The adequate water transparency essential feature of Johnson's seagrass critical habitat may be affected by shading from the new structure. Shading from structures not built to the dock construction guidelines, as mentioned in Section 3, results in the complete loss of the water transparency essential feature of Johnson's seagrass critical habitat. We only expect adverse effects in the area immediately underneath the structure, as any shading to nearby areas will be

temporary in nature (i.e., shading and light transmission will change over the course of the day) and therefore insignificant. The project is expected to adversely affect approximately 9,646 ft² of the adequate water transparency essential feature of Johnson seagrass critical habitat resulting from the installation of the proposed 9,646 ft² baywalk. However, although the water transparency essential feature of critical habitat is present in this area, not all of this area is currently functioning as critical habitat. Riprap covers 3,230 ft² of the area to be shaded. The riprap has removed the stable, unconsolidated sediments essential feature and, because of the loss of an essential feature of critical habitat, the riprap area is not currently functioning as critical habitat. Therefore, the project is expected to adversely affect approximately 6,416 ft² (including the 12 ft² of seagrass that will be shaded under the baywalk), of Johnson's seagrass critical habitat as a result of removal of the adequate water transparency essential feature of Johnson seagrass critical habitat.

The proposed action could adversely affect Johnson's seagrass critical habitat by permanently removing the stable, unconsolidated sediments essential feature as a result of the installation of the piles. The applicant is proposing to install 140 piles, of which 65 piles will be located in an area that is currently covered by riprap. The riprap area does not contain the stable, unconsolidated sediments essential feature (as it is removed by the riprap) and therefore is not currently functioning as critical habitat. Installing these piles will not affect the stable, unconsolidated sediments essential feature or critical habitat. The remaining 75 piles to be installed will be located under the proposed docks, piers, and platforms, in the same area that will be shaded by those proposed structures. Installing these 75 piles would adversely affect the stable, unconsolidated sediments essential feature. However, adverse effects to the feature in these areas will not be included when estimating the amount of critical habitat adversely affected by the proposed action. An area needs all four essential features to function as critical habitat, and we determined that the area underneath the proposed overwater structures would lack the adequate water transparency feature due to shading from proposed structures. Therefore, our analysis above already accounts for the total amount of critical habitat adversely affected in this particular location.

Therefore, we believe the project will adversely affect 6,416 ft² of Johnson's seagrass critical habitat or 0.15 ac of Johnson's seagrass critical habitat. Because the area of Johnson's seagrass designated critical habitat is measured in acres, we will use acres, not square feet, in our analysis below.

6 CUMULATIVE EFFECTS

ESA Section 7 regulations require NMFS to consider cumulative effects in formulating its Opinions (50 CFR 402.14). Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this Opinion (50 CFR 402.02). Future federal actions that are unrelated to the proposed actions are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA.

No categories of effects beyond those already described are expected in the action area, 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. As previously referenced, 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. 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. (2008), 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. 2008).

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

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

7 DESTRUCTION AND ADVERSE MODIFICATION ANALYSIS

NMFS's regulations define *destruction or adverse modification* to mean "a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species" (50 CFR 402.02). Alterations that may destroy or adversely modify critical habitat may include impacts to the area itself, such as those that would impede access to or use of the essential features. NMFS will generally conclude that a Federal action is likely to "destroy or adversely modify" designated critical habitat if the action results in an alteration of the quantity or quality of the essential physical or biological features of designated critical habitat and if the effect of the alteration is to appreciably diminish the value of critical habitat as a whole for the conservation of the species.

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).

Below, we evaluate the project's expected adverse effects on Johnson's seagrass designated critical habitat to determine whether it will be able to continue to provide its intended functions in achieving these recovery objectives and supporting the conservation of the species.

The first recovery objective for Johnson's seagrass is for the present range of the species to remain stable for 10 years or to increase during that time. NMFS concluded that the first recovery objective had been achieved as of the 5-year review completed in 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 the proposed action will adversely affect a total of 6,416 ft² (0.15 ac) of Johnson's seagrass designated critical habitat. However, the project site is not at a boundary of the species' range, the affected area is very small, and the loss of this area for potential colonization will not affect the stability of the species' range now or in the future. Thus, we believe the proposed action's effects will not affect the critical habitat's ability to contribute to range stability for Johnson's seagrass.

The second recovery objective for Johnson's seagrass requires that self-sustaining populations be present throughout the range at distances less than or equal to the maximum dispersal distance for the species. Due to its asexual reproductive mode, self-sustaining populations are present throughout the range of the species. As discussed above in the Status of the Critical Habitat Likely to be Adversely Affected section (Section 3.2), there are approximately 22,574 ac of Johnson's seagrass designated critical habitat. The loss of 6,416 ft² (0.15 ac) of designated critical habitat for Johnson's seagrass would equate to a loss of 0.00066% of Johnson's seagrass critical habitat ($[(0.15 \text{ ac} \times 100) \div 22,574 \text{ ac}]$). This minimal loss will not affect the conservation value of available critical habitat to an extent that it would affect Johnson's seagrass self-sustaining populations by adversely affecting the availability of suitable habitat in which the species can disperse in the future. Drifting fragments of Johnson's seagrass can remain viable in the water column for 4-8 days (Hall et al. 2006), and can travel several kilometers under the influence of wind, tides, and waves. Because of this, we believe that the permanent removal of critical habitat due to the proposed actions will not appreciably diminish the conservation value of critical habitat as a whole 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 site will not be available for the long-term, thousands of acres of designated critical habitat are still available for long-term protection, which include areas surrounding the action area.

Based on the above analysis, we conclude that the adverse effects on Johnson's seagrass critical habitat due to the proposed action will not impede achieving the three recovery objectives listed

above and, therefore will not appreciably diminish the value of critical habitat as a whole for the conservation of the species.

8 CONCLUSION

After reviewing the current status of Johnson's seagrass designated critical habitat, the environmental baseline, and the cumulative effects, it is our opinion that the loss of 6,416 ft² (0.15 ac) from the proposed action will not interfere with achieving the relevant habitat-based recovery objectives for Johnson's seagrass, and therefore will not appreciably diminish the value of designated critical habitat as a whole for the conservation of Johnson's seagrass. It is our opinion that the proposed action will not impede the critical habitat's ability to support Johnson's seagrass conservation, despite permanent adverse effects. Therefore, we conclude that the action, as proposed, is likely to adversely affect, but is not likely to destroy or adversely modify, Johnson's seagrass designated critical habitat.

9 INCIDENTAL TAKE STATEMENT

NMFS does not anticipate that the proposed action will incidentally take any species and no take is authorized. Nonetheless, any take of any ESA-listed species shall be immediately reported to takereport.nmfsser@noaa.gov. Refer to the present Opinion by title, 1100 West Investments, LLC, issuance date, NMFS tracking number, SERO-2021-00621, and USACE permit number, SAJ-2019-03306 (LP-AG). At that time, consultation must be reinitiated.

10 CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs federal agencies to utilize their authority to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations (CRs) identified in Opinions can assist action agencies in implementing their responsibilities under Section 7(a)(1). CRs are discretionary activities 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. The following CRs are discretionary measures that NMFS believes are consistent with this obligation and therefore should be carried out by the federal action agency:

1. 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.
2. NMFS recommends that the USACE include a special condition that limits pile driving to 10 piles per day.
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 2008 et al).

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 the USACE, in coordination with seagrass researchers and industry, should 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.
6. NMFS recommends that the USACE prepare a report of all current and proposed projects in the range of Johnson's seagrass to be 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 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.
7. 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 FWC FWRI to support ongoing geographic information system mapping of Johnson's seagrass and other seagrass distribution.
8. NMFS recommends that the USACE prepare an assessment of the effects of other actions under its purview on Johnson's seagrass critical habitat for consideration in future consultations.

To stay abreast of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

11 REINITIATION OF CONSULTATION

This concludes NMFS's consultation on the proposed action. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary federal action agency involvement or control over the action has been retained, or is authorized by law, and if (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action on listed species or designated critical habitat in a manner or to an extent not considered in this Opinion, (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat not considered in this Opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action.

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. Di Carlo. 2008. 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.
- 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.