Islamorada, Village of Islands

Breakwater/Artificial Reef Feasibility Study Report

Islamorada, Village of Islands

Monroe County, Florida

RES Project Number: RPJ111263 | May 8, 2025

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May 8, 2025

Alyssa Panzer
Sustainability and Resiliency Coordinator
Islamorada, Village of Islands
86800 Overseas Highway
Islamorada, FL 33036

Subject: Breakwater/Artificial Reef Feasibility Study Report
Work Order 1 to Contract No. RFQ #20-03
Islamorada, Monroe County, Florida
RES Project Number: PRJ111263

Dear Ms. Panzer:

RES Florida Consulting, LLC (RES) is pleased to submit this Feasibility Study Report for a breakwater/artificial reef in Islamorada, Florida. The attached report presents the existing marine resources within the survey areas to determine the best locations for a breakwater/artificial reef. This assessment was prepared in general accordance with Work Authorization Number 1, dated October 22, 2024, under the Continuing Services Agreement for Architectural and Engineering Services, dated September 28, 2020.

We appreciate the opportunity to perform these services for you. Please contact us at (954) 484-8500 if you have any questions.

Sincerely,
RES Florida Consulting, LLC

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1.0 Site Description and Background

Islamorada, Village of Islands (hereinafter referred to as "the Village") conducted a Vulnerability Assessment (VA) in June 2024 and identified potential projects for critical areas of concern. Two potential projects identified in the VA included implementing shoreline stabilization using erosion control techniques to safeguard against storm surges at two sites (Sites), one near Sea Oats Beach in Lower Matecumbe Key (Site 1) and the second in Upper Matecumbe Key (Site 2) (**Figures 1A-1B**). The Village requested a feasibility study to evaluate the installation of an artificial reef in the critical areas as a breakwater. The breakwater/artificial reef will satisfy five primary objectives as defined by the Village:

(1) provide erosion control to safeguard against storm surges and sea level rise,

(2) provide a refuge for juvenile fish species and coral (e.g., snapper/grouper complex),

(3) protect sea turtle critical habitat as identified by the U.S. Fish and Wildlife Service (USFWS) (e.g., loggerhead sea turtle);

(4) incorporate habitat components to aid in water quality enhancements and shoreline protection (e.g., seagrass and mangroves), and

(5) create an economic resource for the Village (e.g., ecotourism industry, education).

Both Sites are situated just off the coast of the Village in Monroe County, Florida, in the Atlantic Ocean. Site 1 is near Sea Oats Beach in Lower Matecumbe Key, adjacent to Section 21 of Township 64 S and Range 36 E (**Figure 2A**). Site 2 is adjacent to Tom's Beach in Upper Matecumbe Key, located in Section 32 of Township 63 S and Range 37 E (**Figure 2B**). Property owner and site information can be found in **Appendix A**.

2.0 Desktop Review

RES conducted a thorough desktop review of current environmental conditions at potential assessment sites (**Figures 2A-2B**), encompassing existing environmental permits, wetland classifications, protected species, critical habitats, bathymetry, permitting requirements, and permitted breakwater examples in the Florida Keys.

2.1 Existing Environmental Permits

2.1.1 Site 1 – Sea Oats Beach

2.1.1.1 Permits

After reviewing databases for the U.S. Army Corps of Engineers (USACE), the Florida Department of Environmental Protection (FDEP), and the South Florida Water Management District (SFWMD); authorized activities in the area included a Nationwide Permit (SAJ-2019-01895-MMT) issued by the USACE to the Florida Department of Transportation (FDOT) District 6 on November 5th, 2020, for Overseas Highway (US 1) from mile marker 74.3 to 75.0 for beach restoration.

Other permits in the area include FDEP permits along the adjacent shorelines for single-family properties, which allow activities such as the installation of a dock or boatlift.

Sovereign Submerged State Lands

The Village owns several parcels along the Site 1 Beach shoreline (Parcel Nos. 00398780-000000, 00398790-000000, 00097910-000000, and 00097900-000000) with boundaries that extend down into the water. Submerged lands within the boundaries are deeded, owned, and classified as State Parks. Submerged lands outside the deed boundaries are subject to state land rules and proprietary authorization. These waters do not fall within an aquatic preserve but are classified as Outstanding Florida Waters (OFW) because it is within the Florida Keys National Marine Sanctuary (FKNMS). Adjacent parcels were designated as non-agricultural and were owned by a condominium association, a corporation, or single-family homeowners located to the northeast of the site.

2.1.2 Site 2 – Upper Matecumbe

2.1.2.1 Permits

After reviewing databases for the USACE, the FDEP, and the SFWMD, the only permits in the area are FDEP permits along the adjacent shorelines for single-family properties for activities such as the installation of a dock or boat lift.

Sovereign Submerged State Lands

Parcels along the shoreline are owned by single-family residences, vacant residences, hotels, and one multi-family residence. The majority of the property boundaries and deeds extend down into the water. Some homes and resorts have existing state land authorizations, such as leases around their docks. Submerged lands within the boundaries are deeded as privately owned. Submerged lands outside the deed boundaries are subject to state land rules and proprietary authorization. These waters do not fall within an aquatic preserve but are classified as OFW because they are in the FKNMS.

2.2 Wetlands & Other Surface Waters

A desktop review of the following documents and GIS resources was performed to help identify wetlands and other surface waters within the survey area:

- Google Earth and Maps
- Florida Department of Environmental Protection (FDEP) Statewide Land Use Land Cover GIS Data https://geodata.dep.state.fl.us/datasets/FDEP::statewide-land-use-land-cover/explore
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) GIS Data https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/
- FDEP Outstanding Florida Waters GIS Data https://geodata.dep.state.fl.us/datasets/FDEP::outstanding-florida-waters/explore

Both sites are located in the FKNMS, an OFW. According to the SFWMD Florida Land Use, Cover, and Forms Classification System (FLUCCS) data, the land use within both sites is mapped as Atlantic Ocean (FLUCCS 5710) (**Table 1**, **Figures 3A-3B**).

Table 1. Land Use

Land Use Code	Description	Acreage
Site 1 - Sea Oats Beach		
5710	Atlantic Ocean	8.99
8100	Transportation	3.19
Site 2 - Upper Matecumbe Key		
5710	Atlantic Ocean	9.2

A review of the NWI GIS data indicated that the wetlands present on both sites are persistently estuarine and marine deepwater. Wetlands present in both Site 1 and Site 2 are classified as both M1ABL (Marine, Subtidal, Aquatic Bed, Subtidal) and M2USM (Marine, Intertidal, Unconsolidated Shore, Irregularly Exposed). M1ABL is characterized as a marine system consisting of the open ocean overlying the continental shelf and its associated high-energy coastline, and dominated by plants that grow primarily on or below the surface of the water for most of the growing season. The water regimes are determined primarily by the ebb and flow of oceanic tides, and the substrate in these habitats is continuously covered with tidal water (i.e., located below extreme low water). M2USM is characterized similarly to M1ABL Estuarine and Marine Deepwater Wetlands; however, the substrate in M2USM Estuarine and Marine Deepwater Wetlands is flooded and irregularly exposed by tides. This classification (M2USM) includes all wetland habitats that have unconsolidated substrates with less than 75 percent areal cover of stones, boulders, or bedrock and less than 30 percent areal cover of vegetation (i.e. landforms such as beaches, bars, and flats) (**Table 2**, **Figures 4A-4B**).

Table 2. NWI Features

NWI Classification	Feature	Type	Acreage
Site 1 - Sea Oats Beach			
Estuarine & Marine Deepwater (M1ABL)	Atlantic Ocean	Other Surface Water	10.476
Estuarine & Marine Deepwater (M2USM)	Atlantic Ocean	Other Surface Water	0.0364
Site 2 - Upper Matecumbe Key			
Estuarine & Marine Deepwater (M1ABL)	Atlantic Ocean	Other Surface Water	6.6925
Estuarine & Marine Deepwater (M2USM)	Atlantic Ocean	Other Surface Water	2.5026

2.3 Protected Species & Habitat

A desktop review was also conducted to evaluate the Sites for the presence of suitable habitat that may support the occurrence of wildlife and/or plant species listed by the Florida Fish and Wildlife Conservation Commission (FWC), National Marine Fisheries Servise (NMFS), or the USFWS as threatened, endangered, or species of special concern ("listed species"). Desktop resources reviewed included the following documents and GIS resources:

- USFWS Environmental Conservation Online System (ECOS) Information for Planning and Consultation (IPaC) https://ecos.fws.gov/ipac/location/index
- Florida Natural Areas Inventory (FNAI) Biodiversity Matrix https://www.fnai.org/BiodiversityMatrix/index.html
- FWC Florida's Official Endangered and Threatened Species (December 2022) https://myfwc.com/media/1945/threatened-endangered-species.pdf
- National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) Threatened and Endangered Species https://www.fisheries.noaa.gov/species-directory/threatened-endangered
- Florida Department of Transportation (FDOT) Efficient Transportation Decision Making (ETDM) Environmental Screening Tool (EST) https://www.fla-etat.org/est/secure
- Audubon Florida EagleWatch Public Nest Map https://www.arcgis.com/apps/webappviewer/index.html?id=9ade9794b8494d2b84c8dea339ea1428

Prior to the field visit, a list of protected wildlife species most likely to be present within the study areas was developed from a review of the literature and GIS information listed above (**Appendix B**). The list underwent additional refinement based on the specific habitat types present, species-specific habitat requirements, and the likelihood of encountering protected species within the project area. For the West Indian manatee, the "Effect Determination" listed in **Tables 3** and **4** and described below are based on the U.S. Army Corps of Engineers (USACE) Manatee Key (April 2013). For all other species, the effect determination was based on observations of potential species habitat and the quality of that habitat relative to species requirements. Please note that federally listed species are also listed by the State (FWC). A brief description of these protected species is provided below, and where applicable, species "Consultation Areas," or other special designated species areas that overlap with the study area, are listed with the species descriptions. The summary of listed species, their federal and state listing status, and their respective effect determination is provided in **Tables 3** and **4**.

Table 3: Listed Species Potentially Present in Site 1 – Sea Oats Beach

Common Name	Scientific Name	Federal Listing	State Listing	Effect Determination
Mammals				
West Indian manatee	*Trichechus manatus*[1]	T	T	MANLAA
Birds				
Piping plover	*Charadrius melodus*[1]	T	T	NE
Roseate tern	*Sterna dougallii dougallii*	T	T	NE
Reptiles				
American alligator	*Alligator mississippiensis*	SAT	T(S/A)	N/A
American crocodile	*Crocodylus acutus*[1,2]	T	T	MANLAA
		CH	CH	NE
Green sea turtle	*Chelonia mydas*	E	E	MANLAA
Hawksbill sea turtle	*Eretmochelys imbricata*	E	E	MANLAA
Leatherback sea turtle	*Dermochelys coriacea*	E	E	MANLAA
Loggerhead sea turtle	*Caretta caretta*	T	T	MANLAA
Coral				
Staghorn coral	*Acropora cervicornis*[2]	T	T	NE
Elkhorn coral	*Acropora palmata*[2]	T	T	NE
Boulder star coral	*Orbicella franksi*[2]	T	T	MANLAA
Lobed star coral	*Orbicella annularis*[2]	T	T	NE
Mountainous star coral	*Orbicella favolata*[2]	T	T	NE
Pillar coral	*Dendrogyra cylindricus*[2]	T	T	NE

Species: [1] = Project falls within the USFWS Consultation Area for this species; [2] = Project falls within designated Critical Habitat for this species
Listing: E = Endangered; T = Threatened; SAT, T(S/A) = Threatened due to Similarity of Appearance; CH = Critical Habitat
Effect Determination: NE = "No Effect"; MANLAA = "May Effect, Not Likely to Adversely Affect"; MALAA = "May Effect, Likely to Adversely Affect"

Table 4: Listed Species Potentially Present in Site 2 – Upper Matecumbe

Common Name	Scientific Name	Federal Listing	State Listing	Effect Determination
Mammals				
West Indian manatee	*Trichechus manatus*[1]	T	T	MANLAA
Birds				
Piping plover	*Charadrius melodus*[1]	T	T	NE
Roseate tern	*Sterna dougallii dougallii*	T	T	NE
Reptiles				
American alligator	*Alligator mississippiensis*	SAT	T(S/A)	N/A
American crocodile	*Crocodylus acutus*[1,2]	T	T	MANLAA
		CH	CH	NE
Green sea turtle	*Chelonia mydas*	E	E	MANLAA
Hawksbill sea turtle	*Eretmochelys imbricata*	E	E	MANLAA
Leatherback sea turtle	*Dermochelys coriacea*	E	E	MANLAA
Loggerhead sea turtle	*Caretta caretta*	T	T	MANLAA
Corals				
Staghorn coral	*Acropora cervicornis*[2]	T	T	NE
Elkhorn coral	*Acropora palmata*[2]	T	T	NE
Boulder star coral	*Orbicella franksi*[2]	T	T	MANLAA

Common Name	Scientific Name	Federal Listing	State Listing	Effect Determination
Lobed star coral	*Orbicella annularis*[2]	T	T	NE
Mountainous star coral	*Orbicella favolata*[2]	T	T	NE
Pillar coral	*Dendrogyra cylindricus*[2]	T	T	NE

Species: [1] = Project falls within the USFWS Consultation Area for this species; [2] = Project falls within designated Critical Habitat for this species
Listing: E = Endangered; T = Threatened; SAT, T(S/A) = Threatened due to Similarity of Appearance; CH = Critical Habitat
Effect Determination: NE = "No Effect"; MANLAA = "May Effect, Not Likely to Adversely Affect"

2.3.1 Federally Listed Species

2.3.1.1 WEST INDIAN MANATEE

The West Indian manatee is federally and state listed as threatened. The species inhabits coastal waters, bays, rivers, and occasionally lakes. Manatees require warm water refugia, such as springs or cooling effluent during cold weather. The manatee's diet primarily consists of marine and freshwater vegetation. The main threats to manatees are boat collisions and the loss of warm water habitat. Manatees feed in shallow waters making them susceptible to interactions with boats.

Designated critical habitat for the West Indian manatee includes, but is not limited to, Biscayne Bay, and all adjoining and connected lakes, rivers, canals, and waterways from the southern tip of Key Biscayne northward to and including Maule Lake, Dade County; all of Lake Worth, from its northernmost point immediately south of the intersection of U.S. Highway 1 and Florida State Highway A1A southward to its southernmost point immediately north of the town of Boynton Beach, Palm Beach County; the Loxahatchee River and its headwaters, Martin and West Palm Beach Counties; that section of the intracoastal waterway from the town of Seawalls Point, Martin County to Jupiter Inlet, Palm Beach County; the entire inland section of water known as the Indian River, from its northernmost point immediately south of the intersection of U.S. Highway I and Florida State Highway 3.

Based on the ETDM report, both Sites are located within the USFWS Manatee Consultation Area. Although the sites are within waters accessible to manatees, the project corridor does not contain any federally designated critical habitat for the West Indian manatee, nor is it located within an Important Manatee Area (IMA), Warm Water Aggregation Area (WWAA), or a No Entry Area. Additionally, since the project elects to follow the *Standard Manatee Conditions for In-Water Work* (2011) and proposed project impacts do not include expanding access to watercraft, impacts to submerged aquatic vegetation are unlikely. Following the effect determination path of A>B>C>D>G>N>O>P per the USFWS *Manatee Key* (2013). Therefore, per review of the *USACE Manatee Key (April 2013)*, a "**May Affect, Not Likely to Adversely Affect**" determination was designated following the highlighted path in **Appendix C**.

2.3.1.2 PIPIING PLOVER

The piping plover is listed as state and federally threatened. These small, migratory shorebirds nest and forage along small creeks, wetlands, and open, sandy beaches. Piping plovers utilize coastal areas across southern Canada and the northern U.S. for breeding and nesting from late March to June. From mid-July through late October, and sometimes as late as mid-May, plovers migrate to and overwinter in coastal areas of the U.S., ranging from North Carolina to Texas. Wintering plovers forage in exposed, wet sand in wash zones, intertidal areas, wrack lines, mud, sand, and algal flats, and shorelines of streams, lagoons, and salt marshes. The USFWS has designated critical habitat in Florida for the piping plover in various locations in Bay, Collier, Duval, Escambia, Franklin, Gulf, Lee, Martin, Monroe, Nassau, Pasco, Pinellas, Santa Rosa, Taylor, and Volusia Counties.

Based on the ETDM report, both sites are located within the USFWS Piping Plover Consultation Area, and Site 1 in Sea Oats Beach is nearby federally designated critical habitat for this species (**Figure 5A**). Additionally, piping plovers have been observed on both Lower and Upper Matecumbe Keys in Islamorada. Impacts to this species are unlikely if the Sites are accessed via watercraft and installation of the breakwater/artificial reef is conducted in-water, thus resulting in a "**No Effect**" determination.

2.3.1.3 ROSEATE TERN

The roseate tern is listed as state and federally threatened. These mid-sized migratory birds inhabit coastal areas, salt bays, and estuaries while nesting in broken coral deposits, bare limestone, shell/sandy beaches, new deposits of mudstone and rock, and rooftops. This tern species forages in coastal waters and sometimes well offshore, with a seeming preference for warmer waters as their diet consists of small fish (ex. sand lance, hake, and herrings) and some invertebrates. Roseate terns embark upon breeding grounds at the end of April and breed from May to August. This species can be found from Nova Scotia, south to the Florida Keys, and on islands throughout the Caribbean. No critical habitat has been designated for this species, and impacts to this species from the installation of breakwater/artificial reef is unlikely. Therefore, a "**No Effect**" determination has been assigned to the roseate tern.

2.3.1.4 AMERICAN CROCODILE / AMERICAN ALLIGATOR

The American crocodile is listed as state and federally threatened. This species lives in coastal areas throughout the Caribbean and occurs at the northern end of its range in south Florida and the Florida Keys. They occur in brackish or saltwater areas and can be found in ponds, coves, and creeks in mangrove swamps. They are occasionally encountered inland in freshwater areas of the southeast Florida coast as a result of the extensive canal system. American crocodiles build nests that are either holes in or mounds of sand and other earthen material. Based on the ETDM report, both Sites are located within the USFWS Consultation Area and are within Critical Habitat for the American crocodile (**Figure 5A-5B**). Although the sites are within waters accessible to crocodiles, beaches that have high tidal action and wave energy are not suitable nesting habitats as eggs need to be laid above the high-water mark. Therefore, a "**No Effect**" determination was assigned to the American crocodile critical habitat. Due to the lack of suitable nesting habitat and minimal use of crocodiles utilizing surface waters in this area, a "**May Affect, Not Likely to Adversely Affect**" determination was assigned for the American crocodile.

American alligator is listed as threatened due to their similarity of appearance to the American crocodile by the USFWS and FWC. Alligators are adaptable and can be found in various freshwater habitats, including lakes, rivers, and wetlands but will occasionally venture into brackish and saltwater environments. During the breeding season from late June to early July, female alligators build mound nests of soil, vegetation, and debris, laying approximately 32 to 46 eggs, and hatching typically occurs in August and September. Adult males can reach up to fourteen feet in length, while females are typically smaller, rarely exceeding ten feet. Their range extends from southeast Texas to southern North Carolina. No individuals were observed during the field review and minimal use of alligators utilizing surface waters in this area. Therefore, the project is not expected to negatively impact American alligators.

2.3.1.5 GREEN SEA TURTLE

The green sea turtle is listed as state and federally endangered. These sea turtles can be found in subtropical and temperate oceans of the world. Florida hosts one of the largest groupings of green turtle nests in the western Atlantic. More than 37,000 green sea turtle nests were documented in Florida in 2015, a record number. During the day, green turtles occupy shallow flats and seagrass meadows. In the evening, they return to their sleeping quarters of rock ledges, oyster bars, and coral reefs. Adult green turtles have a mostly vegetarian diet of seagrasses and algae, unlike other sea turtles. During the breeding season, late spring and early summer, male sea turtles will migrate to offshore waters to mate with females. The Florida population nests between the months of June and September. Critical habitat for this species has been proposed, but neither of the Sites overlap this habitat. The location of the breakwater/artificial reef is proposed offshore where green sea turtles have access to these waters; however, beaches utilized for nesting will not be impacted. In addition, the project will follow the *Protected Species Construction Conditions* (NOAA NMFS, 2021) during construction; therefore, a determination of "**May Affect, Not Likely to Adversely Affect**" was assigned to the green sea turtle.

2.3.1.6 HAWKSBILL SEA TURTLE

The hawksbill sea turtle is listed as state and federally endangered. These sea turtles can be found in the subtropical and temperate oceans of the world. Hawksbills are the rarest sea turtle that regularly occurs in Florida but are found primarily on reefs in the Florida Keys and along the southeastern Atlantic coast. Females come on shore and develop nests primarily from June to August in Florida on sandy beaches, mainly during daytime hours. This species prefers developing nests near or under vegetation; however, they may develop nests in any zone along the beach. The diet of the hawksbill sea turtle

primarily consists of sponges. Critical habitat is designated for the hawksbill, but neither of the Sites overlap this area. The location of the breakwater/artificial reef is proposed off-shore where hawksbill sea turtles have access to these waters; however, beaches utilized for nesting will not be impacted. The project will follow the Protected Species Construction Conditions (NOAA NMFS, 2021) during construction; therefore, a determination of "**May Affect, Not Likely to Adversely Affect**" was assigned to the hawksbill sea turtle.

2.3.1.7 LEATHERBACK SEA TURTLE

The leatherback sea turtle is listed as state and federally endangered. Leatherbacks can be found in marine waters throughout the Atlantic, Pacific, and Indian Oceans and nest on sandy beaches in this same range. Leatherbacks are found in Florida's coastal waters, with a small number nesting mostly on the Atlantic coast. Globally, they are found throughout the Atlantic, Pacific, and Indian oceans, traveling as far north as Alaska and Labrador. Nesting in the United States usually occurs in Florida, Puerto Rico, and St. Croix (U.S. Virgin Islands) from late February and peaks in May; however, nests have been found as late as August. The leatherback's diet primarily consists of jellyfish and salps (sac-like filter feeders). Critical habitat is designated for the leatherback, but neither of the Sites overlaps with this habitat. The location of the breakwater/artificial reef is proposed offshore where leatherbacks have access to these waters; however, beaches utilized for nesting will not be impacted. The project will follow the Protected Species Construction Conditions (NOAA NMFS, 2021) during construction; therefore, a determination of "**May Affect, Not Likely to Adversely Affect**" was assigned to the leatherback sea turtle.

2.3.1.8 LOGGERHEAD SEA TURTLE

The loggerhead sea turtle is listed as state and federally threatened. Loggerheads can be found in subtropical and temperate oceans of the world and are Florida's most common sea turtle. The sandy Atlantic and Gulf of Mexico beaches along the Florida coast host one of the largest loggerhead nesting aggregations in the world. Loggerheads mate every two to three years in shallow marine waters near nesting beaches and along migratory corridors between the months of April and September. The diet of the loggerhead sea turtle primarily consists of jellyfish, crabs, and a variety of mollusks. Critical habitat is designated for loggerheads, but neither of the Sites overlaps this habitat. The location of the breakwater/artificial reef is proposed offshore where loggerheads have access to these waters; however, beaches utilized for nesting will not be impacted. The project will follow the Protected Species Construction Conditions (NOAA NMFS, 2021) during construction; therefore, a determination of "**May Affect, Not Likely to Adversely Affect**" was assigned to the loggerhead sea turtle.

2.3.1.9 CORALS

The following corals are listed as state and federally threatened: staghorn coral (*Acropora cervicornis*), elkhorn coral (*Acropora palmata*), boulder star coral (Orbicella franksi), lobed star coral (*Orbicella annularis*), mountainous star coral (*Orbicella favolata*), and pillar coral (*Dendrogyra cylindricus*). Staghorn can grow anywhere from the water surface to 100 feet (30.5 meters) below the surface in marine waters and can be found from Boca Raton, Florida, south to Venezuela. Elkhorn inhabits marine waters at depths of 20 feet (six meters) or less from Broward County, Florida to Venezuela. Boulder star is native to shallow waters in the Caribbean Sea, the Gulf of Mexico, the Bahamas, Bermuda, and Florida. Lobed star can be found in the Caribbean Sea, Gulf of Mexico, and southern Atlantic (southern Florida) and is the most abundant species of reef-building coral in the Caribbean. Mountainous star can be found in the Caribbean Sea, the Gulf of Mexico, and the southern Atlantic (southern Florida). Pillar coral can be found in warm marine waters throughout the coral reef, rock, or sand substratum (underlying soil layer) of the Caribbean Sea and the subtropical and tropical West Atlantic Ocean, ranging from the northern coast of South America (Colombia) north to southern Florida.

The Sites are located within Critical habitats (**Figure 5A-5B**) for all these coral species. However, staghorn, elkhorn, lobed star, mountainous star, and pillar corals tend to grow in deeper water offshore, and therefore, it was determined that the project would have "**No Effect**" on staghorn coral, elkhorn coral, lobed star coral, mountainous star coral, and pillar coral. Due to the potential of boulder star coral to be present in the project areas as it tends to establish in shallow waters, this species was assigned a "**May Affect, Not Likely to Adversely Affect**".

2.3.2 Other Protected Species

Additional species with the potential to be located within the project corridor that are not listed as threatened or endangered by the USFWS or FWC but still receive other protections include the bald eagle (*Haliaeetus leucocephalus*).

2.3.2.1 BALD EAGLE

Florida has one of the densest concentrations of nesting bald eagles in the lower 48 states, with an estimated 1,500 nesting pairs. Bald eagles use forested habitats for nesting and roosting and expanses of shallow fresh or salt water for foraging. Nesting habitat generally consists of mature canopy trees located along habitat edges, providing an unobstructed view of surrounding areas. Their nesting territories are concentrated around inland lake and river systems in peninsular Florida, such as the Kissimmee Chain of Lakes, and along the Gulf Coast. Although they were removed from the Endangered Species Act on June 28, 2007, bald and golden eagles are still protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) in 1940 and the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712). Two confirmed bald eagle nests have been documented within a 10-mile radius (~314 square miles) of the Sites. Nest No. MO014 is inactive (unoccupied), and one (Nest No. MO014a) has an unknown status. Both are located approximately 0.3 miles from Site 1 to the north and approximately 6.5 miles from Site 2 to the southwest. Impacts to this species from the installation of breakwater/artificial reef are unlikely; therefore, the project is not anticipated to affect the bald eagle.

2.4 Essential Fish Habitat

A desktop review of the National Oceanic and Atmospheric Administration (NOAA) Inland Essential Fish Habitat (EFH) Mapper was performed to identify EFH within the survey area. A field review was conducted to identify and document EFH and the benthic habitats within the survey area.

- NOAA EFH Mapper https://www.habitat.noaa.gov/apps/efhmapper/?page=page_8
- NOAA Inland EFH Mapper https://efhtools.github.io/InlandEFH/Mapper.html

Based on the results of the NOAA Inland EFH Mapper and the benthic survey, the project area has the potential to provide EFH for the species listed in **Tables 5** and **6**. Although no species-specific Habitat Areas of Particular Concern (HAPCs) are located within the project corridor, three generic HAPCs (Florida Keys National Marine Sanctuary [FKNMS], Southeast Area Monitoring and Assessment Program (SEAMAP) Hard Bottom, and SEAMAP Nearshore Hard Bottom) were identified for both Sites, and one additional HAPC (Discontinuous Seagrass) was identified for Site 1 in the EFH Mapper. The red drum (*Sciaenops ocellatus*) was listed as having EFH within the project area based on results from the Inland EFH Mapper. However, in 2008, management of the Atlantic red drum was transferred from the Magnuson-Stevens Act to the Atlantic Coast Act, and with that transfer, the EFH designations that were established for the red drum are no longer applicable. Therefore, the red drum is not included in **Tables 5** and **6**.

Table 5: EFH Results from Inland EFH Mapper – Site 1, Sea Oats Beach

Common Name	Species Name	Life Stage	EFH in the Project Area
Pink shrimp	*Farfantepenaeus duorarum*	Juveniles	Submerged aquatic vegetation (SAV); soft bottom; sand/shell
		Subadults	SAV; soft bottom; sand/shell
White shrimp	*Litopenaeus setiferus*	Postlarvae	Water column associated
		Juveniles	SAV; soft bottom
		Subadults	Soft bottom; sand/shell
		Adults	Soft bottom
		Spawning adults	
Spiny lobster	*Panulirus argus*	Puerulus postlarvae	Water column associated; SAV
		Juveniles	SAV; hard bottom
		Adults	
Spanish mackerel	*Scomberomorus maculatus*	Early juveniles	Water column associated
		Late juveniles	
		Adults	Water column associated

Gag grouper	*Mycteroperca microlepis*	Early juveniles	SAV
Red grouper	*Epinephelus morio*	Early juveniles	SAV; hard bottom
		Juveniles	
Goliath grouper	*Epinephelus itajara*	Juveniles	Soft bottom
Gray snapper	*Lutjanus griseus*	Postlarvae	SAV
		Juveniles	SAV; soft bottom
		Adults	Hard bottom; soft bottom; sand/shell; banks/shoals
Cobia	*Rachycentron canadum*	Eggs	Water column associated
		Larvae	
Mutton snapper	*Lutjanus analis*	Early juveniles	SAV
		Late juveniles	
		Adults	
Cubera snapper	*Lutjanus cyanopterus*	Early juveniles	SAV
		Late juveniles	
Lane snapper	*Lutjanus synagris*	Larvae	Water column associated
		Postlarvae	Water column associated; SAV
		Juveniles	SAV; sand/shell; soft bottom; banks/shoals
Yellowtail snapper	*Ocyurus chrysurus*	Juveniles	SAV; hard bottom
Black grouper	*Mycteroperca bonaci*	Juveniles	SAV; hard bottom
Yellowfin grouper	*Mycteroperca venenosa*	Juveniles	SAV; hard bottom
Hogfish	*Lachnolaimus maximus*	Juveniles	SAV

Table 6: EFH Results from Inland EFH Mapper – Site 2, Upper Matecumbe Key

Common Name	Species Name	Life Stage	EFH in the Project Area
Pink shrimp	*Farfantepenaeus duorarum*	Juveniles	Submerged aquatic vegetation (SAV); soft bottom; sand/shell
White shrimp	*Litopenaeus setiferus*	Postlarvae	Water column associated
		Juveniles	SAV; soft bottom
		Subadults	Soft bottom; sand/shell
		Adults	Soft bottom
Goliath grouper	*Epinephelus itajara*	Juveniles	Soft bottom
Gray snapper	*Lutjanus griseus*	Postlarvae	SAV
		Juveniles	SAV; soft bottom
		Adults	Hard bottom; soft bottom; sand/shell
Cubera snapper	*Lutjanus cyanopterus*	Early juveniles	SAV
		Late juveniles	

2.5 Bathymetry

The depths surrounding the Sites are fairly shallow, ranging from zero to six feet according to nautical maps shown below in **Photos 1** and **2**. Depths increase towards the southeast within the Atlantic Ocean but do not substantially change until 0.5 mile waterward of the Site 1's shoreline and one mile waterward of Site 2.

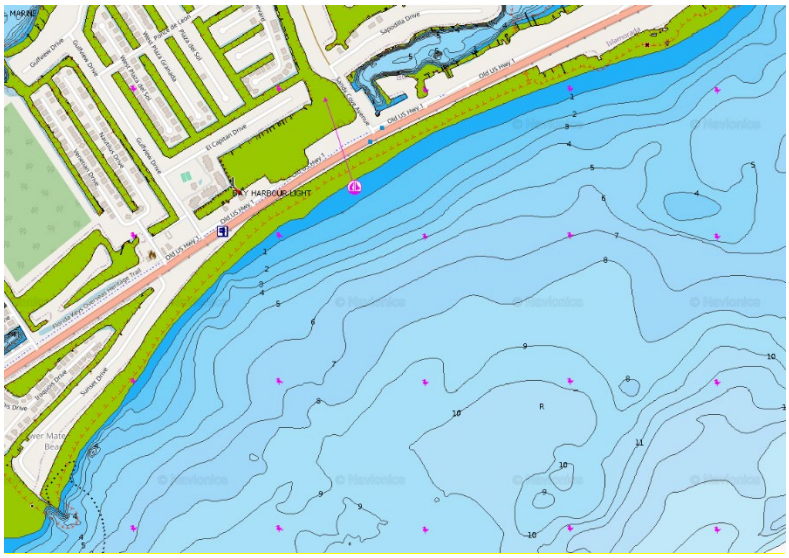

Photo 1 – Depths at Site 1 – Sea Oats Beach

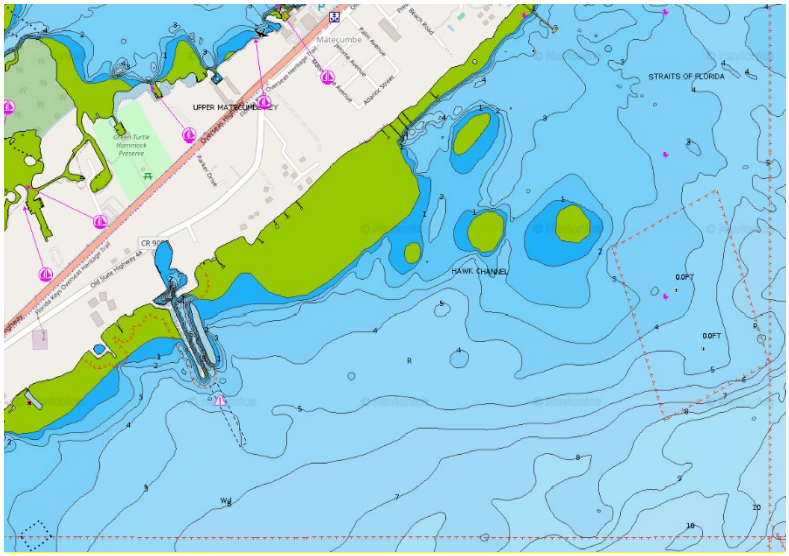

Photo 2 – Depths at Site 2 - Upper Matecumbe Key

2.6 Federal and State Environmental Permits

RES conducted a thorough review of state and federal permit requirements for installing a breakwater/artificial reef. These requirements are listed below.

2.6.1 State Requirements

2.6.1.1 Florida Department of Environmental Protection or South Florida Water Management District

Proposed breakwaters or artificial reefs will require an Environmental Resources Permit (ERP) Individual Permit in accordance with 62-330, F.A.C., and 62-312, F.A.C. The project may also be subject to Chapter 258 F.S. if proposed within the limits of lands designated as State Parks. If the proposed structure satisfies the specified criteria, it may qualify for a general permit. Otherwise, the project will require an ERP Individual Permit.

62-330.600 General Permit for the Construction of Breakwater/Artificial Reefs:

(1) A general permit is provided for the construction of an breakwater/artificial reef by any person provided:

(a) The material to be used shall be clean concrete or rock, clean steel boat hulls, other clean, heavy gauge steel products with a thickness of 1/4 inch or greater and prefabricated structures that are mixture of clean concrete and heavy gauge steel;

(b) The material shall be free of soils, oils and greases, debris, litter, putrescible substances or other pollutants;

(c) The material shall be firmly anchored to the bottom and shall not be indiscriminately dumped; and,

(d) The material shall be placed so that the top of the reef does not exceed 1/2 the distance from the bottom to the surface of the water unless a greater distance from the surface is required for safe navigation. At no time shall the distance between the top of the reef and the surface of the water be less than six feet.

(2) This general permit shall be subject to the following specific conditions:

(a) The permittee shall conduct a survey of the bottom of the waterbody on which the structure is to be built and shall submit the survey to the Agency with the notice required in Rule 62330.402, F.A.C., demonstrating that the bottom does not have submerged grass bed communities, shellfish or other hardbottom communities, or corals;

(b) There shall be no reefs constructed in bays, lagoons, or estuaries that are less than 12 feet deep

(c) There shall be no "white goods" (inoperative and discarded refrigerators, freezers, ranges, water heaters, washers and other similar domestic and commercial appliances), asphalt material, tires, other polluting materials used in construction of the reef;

(d) The site shall be marked with perimeter buoys during construction to ensure that no material is deposited outside of the site;

(e) The size of the boundaries within which the artificial reef is to be deposited shall not exceed 1/4 nautical mile on any side;

(f) The artificial reef site shall not be established within any shipping lanes; and,

(g) The permittee shall notify the National Ocean Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Rockville, Maryland, and the FWC, Division of Marine Fisheries Management, via email at artificialreefdeployments@myfwc.com of the precise location of the reef within 30 days of placement of the reef material.

Authorization of State-Owned Submerged Lands

If the proposed structures are placed outside of deeded submerged lands, they are subject to 18-21 F.A.C. authorization of state-owned submerged lands. A public easement will be required for the proposed activities if the structure is placed more than 10 feet waterward of the Mean High-Water Line along with a noticing process to property owners within a 500-foot radius of the proposed easement footprint.

Mitigation for Impacts to Submerged Resources

Mitigation will be required for proposed impacts to submerged resources such as seagrass, corals, shellfish, and hardbottom habitat. If permittee responsible mitigation is proposed, monitoring and maintenance will be required.

2.6.1.2 Florida Fish & Wildlife Conservation Commission (FWC)

The FWC Artificial Reef Program does not grant permits for breakwater/artificial reef sites. FDEP/SFWMD will coordinate directly with FWC for input and comments during the permit application review process. FWC will provide specific permit conditions related to navigation and state listed species as necessary. Consultation with FWC may need to occur for specific state listed and protected species if they or their habitat are present within the project area. Coordination with FWC's Division of Law Enforcement, Boating and Waterways Section will need to occur for a Florida Uniform Waterway Marker Permit for the installation of waterway marker signs to indicate the navigational hazard of the breakwaters.

2.6.1.3 Florida Keys National Marine Sanctuary

A permit is required to conduct activities within sanctuary boundaries and certain coastal construction activities such as the construction of a breakwater/artificial reef. A NOAA National Marine Sanctuaries Permit Application will need to be

submitted. Mitigation will be required for any proposed impacts to submerged aquatic resources such as coral, seagrass, and hardbottom habitat.

2.6.2 Federal Requirements

2.6.2.1 U.S. Army Corps of Engineers

1. Regulatory Authority:
   - Breakwater installation and artificial reef deployment are regulated under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.
   - The USACE oversees permits for artificial reefs from the mean high-water line to the outer continental shelf. Reefs within U.S. territorial seas (up to three nautical miles off Florida's Atlantic coast) fall under both Section 10 and Section 404. Reefs beyond this boundary are subject to Section 10 only.
2. Authorization and Review Process:
   - Nationwide permits that would be applicable to the proposed activities include NWP 13 for Bank Stabilization, NWP 54 for Living Shorelines and NWP 27 for Aquatic Habitat Restoration, Establishment and Enhancement Activities. NWP 13 has limits that generally make them unsuitable for use on living shoreline or breakwater projects exceeding 500 linear feet in length. NWP 54 has the same 500 linear foot limit as well as a requirement that the project be constructed no more than 30 feet out from the MLW line in tidal waters.

     NWP 27 requires the project the following:

     > *"be planned, designed, and implemented so that it results in aquatic habitat that resembles an ecological reference, living shorelines are an example of resiliency projects in coastal areas that do not resemble ecological references because they may include engineered structures such as sills or breakwaters."*

     While the USACE may allow use of NWP 27 for specific types of living shoreline projects, a permittee will likely have to clarify that the primary intent of a particular project is to re-establish estuarine wetland and oyster habitats as well as identify nearby ecological reference sites containing those target habitats and demonstrate how the project will result in restored habitats comparable to those ecological reference sites.

     If able to be used, NWP 27 presents a permitting advantage as it does not have specific length or acreage limits; however, it does require coordination with, and in most circumstances written authorization to use from, the USACE. The USACE has 45 days to issue an authorization to use a NWP after they receive a complete permit application, known as a pre-construction notification (PCN). The USACE has the first 30 days after receipt to determine if a PCN is complete. If it is not complete, the USACE notifies the applicant of the deficiencies, and the 45-day clock stops. The clock also stops if the project has any potential to affect threatened or endangered species (NWP General Condition 18) or cultural resources (NWP General Condition 20) and the USACE must coordinate with outside agencies such as the U.S. Fish and Wildlife Service (USFWS), and the State Historic Preservation Office (SHPO) on those issues. In addition, the USACE conducts a 33 CFR 408 (a.k.a. "Section 408") review, making sure the applicant's project does not impact a USACE Civil Works project or USACE real estate (which can also stop the clock).

     Between PCN preparation, submittal, outside agency coordination, Section 408 review and USACE authorization, this process can easily take six months or more. Designing a project to fit within the NWP requirements can speed up the permitting process. Pre-coordination with the USACE and clear permit application documents are critical to avoid the USACE deeming an application incomplete and issuing a request for additional information, which slows down the review process.

   - Authorization Form: The proposed project does not appear to fit within any existing Nationwide Permits and will require a Standard Permit.
   - Review Steps: The review process includes pre-application consultation, formal project review, and decision-making. Initial contact with the local USACE office is advised before submitting a permit application.
   - Artificial Reef Size: New reef sites generally measure ¼ nautical mile by ¼ nautical mile, facilitating monitoring of the material's effectiveness and stability. Permits are valid for ten years and must be reissued if the construction window expires.
3. Pre-Application Consultation:

- A pre-application meeting involves the applicant, the USACE, the FWC, and other stakeholders.
- This meeting discusses site location, material, and reef management to preemptively address potential issues. Stakeholders might include the U.S. Coast Guard, SHPO, and local industry representatives.
- The goal is to clarify factors affecting the permit review to streamline the application process.

4. Breakwater / Artificial Reef Material Requirements:
   - Materials must be durable and stable during a 20-year storm event, and should not adversely affect marine life or move from the deployment site.
   - Accepted materials include:
     - Prefabricated modules of metals (≥¼ inch thick), concrete, rock, or combinations.
     - Natural rock boulders and precast concrete items.
     - Large concrete demolition materials (e.g., bridges) with steel reinforcements severed.
5. Formal Project Review:
   - Application Submission: Applicants must provide detailed project descriptions, including material types, quantities, deployment methods, and site coordinates.
   - Review Process: The USACE will review the application for completeness and may request additional information. A public notice is issued with a comment period, and the project undergoes review by various agencies and stakeholders.
   - Consultations: The USACE consults with the National Marine Fisheries Service, USFWS, and other relevant bodies under the Endangered Species Act for potential impacts on protected species.
6. Permit Conditions:
   - Reporting: The permit includes conditions for reporting and communication with USACE, NOAA, and FWC.
   - Pre-Deployment: A pre-deployment notification is required, including material inspections and certification.
   - Post-Deployment: A placement report and as-built drawing must be submitted within 30 days of deployment.
   - Maintenance and Liability: The permittee is responsible for maintenance and assumes liability for any related damage.
   - Navigation Assurance: If required, the permittee must remove or alter structures that obstruct navigation such as buoy markers to indicate the boundaries of the breakwater.
   - Protected Species: Compliance with guidelines for sea turtles, sawfish, sturgeon, and manatees is mandatory.

JAXBO

Breakwater structures are not specifically listed on the USACE Jacksonville District Programmatic Biological Opinion Summary checklist, however under Activity 7.5, it mentions "permanent wave attenuation structures to be constructed out of the following materials: oyster breakwaters, clean limestone boulders or stone, small mangrove islands, biologs, coir, rock sills, are pre-fabricated structures made of concrete and rebar that are designed in a manner so that they do not trap sea turtles, smalltooth sawfish, or sturgeon."

A7.6. "Both living shoreline and oyster reefs must have five-foot gaps at least every 75 feet in length, as measured parallel to the shoreline and at the seafloor, to allow for tidal flushing and species movement."

Artificial reefs are listed on the Jacksonville District Programmatic Biological Opinion Summary checklist under Activity 7: Aquatic Habitat Enhancement, Establishment, and Restoration. Additional conditions for the installation of artificial reefs from the placement of man-made materials are listed below.

A7.13. Artificial reef materials shall be clean and free from asphalt, creosote, petroleum, other hydrocarbons and toxic residues, loose free-floating material, or other deleterious substances.

A7.14. "New reef sections are limited to 1 reef section measuring ¼- by ¼-nmi area (40 ac) in size with a distance of 500 ft between each section. Offshore reefs shall maintain a minimum vertical clearance of twice the height of the structure from the top of the deployed material relative to the MLW at all times."

A7.15. Reauthorization of existing reefs is limited to the previously permitted size. Approved materials defined in PDC A7.19 can be added to the existing reef area.

A7.16. No artificial reef materials shall be deployed until a benthic assessment of the bottom conditions has been accomplished by diver or submersible video camera. The inspection of the deployment area may occur at the time of

deployment but no more than 1 year prior to deployment. The permittee shall maintain a deployment buffer of at least 200 ft from any submerged aquatic resources, including seagrasses, macroalgae, hard or soft coral (including coral reefs), sponges, oysters, or hard bottom when placed in areas of sand. If materials are off-loaded from a barge or placed in areas that may generate turbidity (e.g., areas with fines or muck), a 500 ft buffer is required.

A7.17. The project does not include the use of mid-water fish aggregation devices.

A7.18. All reefs will be cleaned annually to remove marine debris and derelict fishing line in areas safely accessible to recreational SCUBA divers. Cleanup efforts shall follow the PDCs for Activity 9, marine debris removal, and all pertinent general PDCs.

Only the following reef material may be used:

A7.19. Individual reef units or modules must weigh at least 500 pounds. Reef materials will be clean and free from asphalt, petroleum, other hydrocarbons, and toxic residues, as well as loose, free-floating material, or other deleterious substances. All artificial reef materials and/or structures will be selected, designed, constructed, and deployed to create stable and durable marine habitat.

A7.19.1. Prefabricated artificial reef modules composed of ferrous and/or aluminum alloy metals, concrete, rock, or a combination of these materials.

A7.19.2. Natural rock boulders and pre-cast concrete material, such as culverts, stormwater junction boxes, power poles, railroad ties, jersey barriers, or other similar concrete material.

A7.19.3. Clean steel and concrete bridge or large building demolition materials such as slabs or piles with all steel reinforcement rods cut at the base of the concrete so no rebar or metal protrudes from.

A7.20. Reef structures, materials, and installation methods will be designed and deployed to prevent entanglement and entrapment of listed species. Open-bottom pre-fabricated reef modules may not be used unless the module also has a top opening sufficiently large to allow a turtle to escape. Approved open-bottom modules include:

A7.20.1. Three-sided modules where each side of the tope opening is at least 36-in in length along its edge.

A7.20.2. Four or more sided modules where each side of the top opening is at least 40-in in length along its edge.

A7.20.3. Modules with a round opening with a diameter of at least 40-in (oval openings are not allowed unless a 40-in diameter circle space can fit within the oval).

A7.20.4. Modules that are approved by the FWS Artificial Reef Program as being turtle friendly. FWS is currently working on developing this list. No open-bottom modules are allowed that include additional modules, discs, or other materials stacked or placed on or immediately adjacent to the top opening, as they may prevent turtles from easily escaping.

If the project is unable to qualify for the JAXBO, an informal or formal consultation with the National Marine Fisheries Service (NMFS) may be required.

Mitigation for Impacts to Submerged Resources

Mitigation will be required for proposed impacts to submerged resources such as seagrass, corals, shellfish, and hardbottom habitat. If permittee responsible mitigation is proposed, monitoring and maintenance will be required.

2.6.2.2 U.S. Fish and Wildlife Service (USFWS)

USACE will coordinate directly with USFWS and NOAA for input and comments during the permit application review process. USFWS will provide specific permit conditions related to navigation and state listed species as necessary. Consultation with USFWS may need to occur for specific listed and endangered species that have habitat or may occur within the project area.

2.6.2.3 U.S. Coast Guard (USCG)

Coordination with the USCG will need to occur to ensure no conflict will occur with federal waterways, channels, or navigation. A letter of authorization/concurrence may be required from the USCG to provide to the regulatory agencies upon request.

2.6.2.4 Key Differences between Artificial Reefs vs. Breakwater Permitting

While both breakwaters and artificial reefs typically require environmental permits from the FDEP or SFWMD and the USACE, the permitting process differs based on the project's purpose, design, and potential impacts.

Breakwaters are typically shoreline protection structures and are more likely to require an Individual Environmental Resource Permit and a USACE Standard Permit due to their larger size, structural complexity, and potential to alter coastal dynamics. These projects often require engineering analyses (i.e. wave energy modeling, alternatives analysis) and may trigger additional conditions for navigation safety and mitigation if natural resources are impacted.

Artificial reefs, on the other hand, are generally habitat enhancement projects and may qualify for a General Permit if strict criteria are met, such as minimum water depth (12 feet), use of clean durable materials, and no impacts to sensitive habitats like seagrass or coral. These projects often involve coordination with NOAA, FWC, and the FKNMS and must follow additional requirements related to site location, construction methods, and notification protocols.

In both cases, consultation with FWC, NOAA, and USFWS may be necessary, especially if protected species or sensitive habitats are present. Mitigation and ongoing monitoring are generally required when impacts to regulated resources cannot be avoided.

2.6.2.5 Permitting Hurdles

Permitting hurdles that could be encountered with projects within Sites 1 and 2 include the regulation of state-owned submerged lands that are subject to state land rules and proprietary authorization. The project footprint for Site 1 is under a historic state submerged lands lease from August 31, 1882 (DM ID: 135187) that has been classified as a State Park. Both Sites are also within OFW and the boundaries of the FKNMS.

2.7 Permitted Breakwater and Nearshore Artificial Reef Examples in the Florida Keys

RES conducted a thorough review of permitted nearshore artificial reefs and breakwaters in the Florida Keys. No permitted nearshore artificial reefs were found. An example of a breakwater that has recently been under permit in the Florida Keys is the repairs to the Rock Harbor Breakwater. The project proposes to repair a manmade coastal breakwater structure within the Sunrise Point neighborhood of Key Largo that was damaged during Hurricane Irma in 2017 by constructing a 460.0-foot long by 6.0-foot wide and 2.0-foot thick riprap breakwater along with an air curtain system and 110 linear feet of seaweed barrier. Issuance of this permit constitutes certification of compliance with state water quality standards in accordance with Rule 62-330.062, F.A.C. The riprap breakwater lies perpendicular between Cuda Lane and Bonito Lane on the Atlantic side of Key Largo, Monroe County. Additional information regarding the permitting process with the SFWMD can be found in **Appendix D**.

3.0 Site Assessments

3.1 Benthic Resource Survey Methods

RES marine biologists conducted benthic resource surveys at Site 1 (Sea Oats Beach) and Site 2 (Upper Matecumbe Key) on February 24, 2025, and on February 25, 2025. The purpose of this survey was to assess and document the status of marine habitats and species potentially impacted by the proposed activities. The survey was conducted in general accordance with the *Guidance on Surveys for Submerged Aquatic Vegetation Compensatory Mitigation Projects* from the Office of Resilience and Coastal Protection Florida Department of Environmental Protection (2020), the Florida Administrative Code (FAC) *Part IV Additional Criteria for Dredging and Filling within Outstanding Florida Waters in Monroe County* (Chapter 62-312.440-.450), the Florida Fish and Wildlife Commission (FWC) *Recommended Survey Protocols for Estuarine and Marine Submerged Aquatic Vegetation Related to Permitting Applications* (2020), the *Florida Keys National Marine Sanctuary Resource Assessment Survey Protocols for Nearshore Construction Projects* (2022).

The surveys were conducted by RES marine biologists using snorkel equipment. The Site 1 survey area was approximately 12 acres, and the Site 2 survey area was approximately nine acres. Site 1 was approximately 2,400 feet long and 220 feet wide. Site 2 had four survey areas, each with an area of about two to three acres, with widths ranging from approximately 400 to 800 feet and lengths of approximately 180 feet. At Site 1, the divers swam five meandering transects encompassing the entire survey area. At Site 2, the divers swam two meandering transects in each of the four survey areas. Survey methods are illustrated in **Figures 6A-6B**.

The density of SAV was recorded on waterproof paper, using the Braun-Blanquet (BB) cover-abundance score (see **Table 7**), if observed. Data was collected every five meters using a half-meter quadrat. Coral resources and additional benthic data were collected along the transects, and if the benthic habitat changed drastically in between five meters. SAV beds were mapped using a sub-meter differential global positioning system (GPS) unit (Juniper Systems Geode GNS3) floated along the surface. Photographs were recorded using an Olympus Tough TG-6 Waterproof Camera.

Table 7: BB Cover – Abundance Scores

Score	Coverage
0	Not present
0.1	Solitary specimen
0.5	Few with small cover
1.0	Numerous but less than 5% cover
2.0	5% to 25% cover
3.0	25% to 50% cover
4.0	50% to 75% cover
5.0	75% to 100% cover

Coral colonies, octocorals, and sponges were also identified within the survey limits. Corals were identified to the species level, and octocorals were identified to the genus. Corals and octocorals were measured to the nearest centimeter for length and width, and condition was recorded. Sponges were identified based on morphology. Photographs were recorded using an Olympus Tough TG-6 Waterproof Camera.

3.1.1 Benthic Resources Survey February 24, 2025 (Site 1 and Site 2 Survey Areas 1 & 2)

On February 24, 2025, weather conditions were mostly cloudy, with wind gusts reaching up to 11 mph and air temperatures in the lower 70s Fahrenheit. During the survey period, tidal conditions were ebbing, with high tide occurring around 8:59 am and the proceeding low tide around 2:15 pm. Water clarity and visibility were moderate, with visibility estimated between five to 12 feet.

3.1.2 Benthic Resources Survey February 25, 2025 (Site 2 Survey Areas 3 & 4)

On February 25, 2025, weather conditions were characterized by scattered clouds, with wind gusts reaching up to seven mph and air temperatures in the mid-60s to mid-70s Fahrenheit. The survey period experienced an ebbing tide, with high tide occurring around 9:26 am and low tide around 3:16 pm. Water clarity and visibility were moderate, estimated at approximately five to 12 feet.

3.2 Habitat Descriptions

3.2.1 Site 1 – Sea Oats Beach Habitat Description

The bathymetry varied from approximately zero to three and a half feet. The benthic composition included beds of seagrasses, macroalgae, and tube/vase-shaped sponges. The sediment consisted of sand and muck mixed with detritus and reached up to approximately two feet in depth.

3.2.2 Site 2 – Upper Matecumbe Habitat Description

The bathymetry varied from about one to four feet. The benthic composition included dense to sparse beds of seagrasses and scattered branching/erect and ball/spherical-shaped sponges. The sediment consisted of sand and muck and reached approximately one and a half feet in depth.

3.3 Benthic Resource Observations

3.3.1 Site 1 – Sea Oats Beach Benthic Resource Observations

Two species of seagrass were found within the survey area, shoal grass (*Halodule wrightii*) and turtle grass (*Thalassia testudinum*). A meandering bed of shoal grass was observed throughout the entire project area approximately 30-50 feet from the shoreline within the parcel boundaries continuing waterward. The density of shoal ranged between 5-50% (BB

scores of 2 to 3) in Beds 1, 3, and 5, increasing to 50-100% (BB scores of 4 to 5) in Beds 2 and 4. Bed 2 had the densest areas of shoal grass, between 75-100% (BB score of 5). Continuing waterward, approximately 10 feet from the waterward line of the shoal grass, turtle grass was present in the survey area. The density of the turtle grass increases from 5% (BB score of 2) to 75-100% (BB score of 5) within Bed 6. Manatee grass (*Syringodium filiforme*) was also observed in patches waterward of the survey area beyond Bed 6 with a density of 25% (BB score of 2). **Table 8** summarizes the seagrass beds observed and they are shown in **Figure 7A**. Representative photographs of seagrass are shown in **Appendix E**.

Table 8. Seagrass Bed Species Size and Density

Bed	Species	Size (Square feet)	Size (acres)	BB Score	Density (% cover)
1	Shoal grass (*Halodule wrightii*)	45,738	1.05	2 to 3	5-50%
2	Shoal grass (*Halodule wrightii*)	20,473	0.47	4 to 5	50-100%
3	Shoal grass (*Halodule wrightii*)	13,939	0.32	2 to 3	5-50%
4	Shoal grass (*Halodule wrightii*)	2,178	0.05	3 to 5	50-100%
5	Shoal grass (*Halodule wrightii*)	871	0.02	2 to 3	5-50%
6	Shoal grass (*Halodule wrightii*) & turtle grass (*Thalassia testudinum*)	288,802	6.63	2 to 5	5-100%
Total		**372,001**	**8.54**		

3.3.2 Site 2 – Upper Matecumbe Benthic Resource Observations

Two species of seagrass were found within Site 2, including shoal grass (*Halodule wrightii*) and turtle grass (*Thalassia testudinum*).

- Survey Area 1: Shoal grass was between 5-25% (BB score of 2) in Bed 1 with denser patches observed in Bed 2, reaching densities between 50-75% (BB score of 4). Turtle grass was present in Bed 3, ranging in density from 0.5-25% (BB score of 1 to 2).
- Survey Area 2: Bed 1, turtle grass was observed between 0.5-50% (BB score of 1 to 3) with density increasing moving waterward within the survey area. There was also a bed of shoal grass present within Survey Area 2 Bed 2 at 0.5% (BB score of 1).
- Survey Area 3: Bed 1 consisted of turtle grass at 5-25% (BB score of 2) and Bed 3 had turtle grass at densities between 0.5-25% (BB score of 0.5 to 2). However, portions of Bed 3 consisted of macroalgae such as *Hypnea musciformis*, *Halimeda spp.*, and *Penicillus spp.* at varying densities. In addition, portions of this bed were barren of seagrass and in some areas barren of seagrass and macroalgae. Turtle grass was observed in Bed 2 with densities ranging between 5-25% (BB score of 2).
- Survey Area 4: Bed 1 and Bed 3 had turtle and shoal grass present. The density of both grasses in Bed 1 was 5-25% (BB score of 2), and in Bed 3 was 5-50% (BB score of 2 to 3). Bed 2 consisted of only turtle grass with density ranging from 5-50% (BB score of 2 to 3). In addition to seagrass, Survey Area 4 had varying densities of macroalgae throughout the entire area.

Table 9 summarizes the seagrass beds observed, and they are shown in **Figure 7B**. Representative photographs of seagrass are shown in **Appendix E**.

Table 9. Seagrass Bed Species Size and Density

Survey Area	Bed	Species	Size (Square feet)	Size (acres)	BB Score	Density (% cover)
1	1	Shoal grass (*Halodule wrightii*)	8,277	0.19	2	5-25%
	2	Shoal grass (*Halodule wrightii*)	3,049	0.07	4	50-75%
	3	Turtle grass (*Thalassia testudinum*)	66,647	1.53	0.5 to 2	0.5-25%
2	1	Turtle grass (*Thalassia testudinum*)	75,794	1.74	0.5 to 3	0.5-50%
	2	Shoal grass (*Halodule wrightii*)	2,178	0.05	0.5	0.5%
3	1	Turtle grass (*Thalassia testudinum*)	28,314	0.65	2	5-25%
	2	Shoal grass (*Halodule wrightii*)	10,454	0.24	2	5-25%
	3	Turtle grass (*Thalassia testudinum*)	55,321	1.27	0.5 to 2	0.5-25%
4	1	Shoal grass (*Halodule wrightii*) & turtle grass (*Thalassia testudinum*)	33,541	0.77	2	5-25%
	2	Turtle grass (*Thalassia testudinum*)	32,670	0.75	2 to 3	5-50%
	3	Shoal grass (*Halodule wrightii*) & turtle grass (*Thalassia testudinum*)	81,457	1.87	2 to 3	5-50%
		Total	**397,702**	**9.13**		

3.4 Incidental Species Observations

Incidental species observed at Site 1 included juvenile bonnethead shark (*Sphyrna tiburo*) and sponges of tube/vase morphology. Incidental species observed at Site 2 included green sea turtle (*Chelonia mydas*), Caribbean spiny lobster (*Panulirus argus*), donkey dung sea cucumber (*Holothuria mexicana*), and sponges of branching/erect and ball/spherical morphology. Macroalgae species observed included *Halieda tuna, Halimeda incrassate, Penicillus demetosus, Udotea spp., Sargassum spp., and Hypnea musciformis*.

4.0 Artificial Reef/Breakwater Options and Estimated Costs

4.1 Vendors for Breakwater

A review of potential vendors was conducted to identify suitable options for the project. A matrix summarizing the findings is provided in **Appendix F**. Of the 11 vendors evaluated, three were selected based on the quality and benefits of their products, as well as their manufacturing methods, and both pre-installation and installation procedures.

4.1.1 Reef Arches

Reef Arches is a company based out of South Florida pioneering in nature-based engineered structures designed to rebuild shorelines and provide critical habitat for wildlife. The breakwater design is a unique honeycomb arch-shaped design that revolutionizes coastal restoration by effectively recruiting sediment and attenuating wave energy. Reef Arches' design offers an impressive 100 square feet of surface area, minimal ground footprint that allows for light penetration, and the ability to be stacked, ensuring a robust and eco-friendly approach to coastal engineering. Reef Arches provides a comprehensive

service package that includes permitting, manufacturing, delivery, and installation. These arches can be constructed to support the project's needs, such as the weight of each unit, color, dimensions, or any entirely customized arch to best fit the project. Arches can also be deployed and installed in a matter of days without the use of a barge or gas-powered equipment.

A typical unit is made from Calcium Sulfoaluminate (CSA) Concrete for 50-pound oyster restoration units and CSA Concrete and marine safe stainless steel in 1,000-pound units, both of which are precast construction. 1,000-pound units are 6' long, 4' wide, and 2.5' tall, and 50-pound units are 11 9/16 tall, 2'x3 1/8" long, and 1'x6 1/16" wide. The 50-pound arches cost $300 per unit, and the 1,000-pound arches cost $2,500 per unit. Since these arches are customizable, these breakwaters are scalable and flexible for a wide range of deployments, but costs will vary based on the size. The design is visually appealing as it has curves and honeycombs. In addition, this type of concrete allows for the recruitment of marine species due to a low pH in the material, disrupts high energy waves, and creates turbulence to stir up nutrients for organisms that will utilize these structures.

Reef Arches has worked alongside municipalities for a variety of applications including breakwaters, living shorelines, and seawall preservation. One of these partnerships includes MANG, a nonprofit whose mission is to change the world, one mangrove at a time. Since starting MANG back in 2015 in Fort Myers, Florida, they have been able to expand their nursery operations and have planted mangroves across the globe with other nonprofits, scientific researchers, and community leaders who share their same passion for Eco-restoration. Other partnerships include Plant a Million Corals and the Guy Harvey Foundation. Reef Arches' product sheets are included in **Appendix G**.

4.1.2 Natrx

Natrx specializes in coastal resilience and reef restoration and can offer comprehensive services, including construction, installation, and permitting. Additionally, Natrx can offer to install pieces from other contractors. Natrx utilizes an eco-friendly concrete produced through 3D printing, allowing Natrx to produce cost-effective and resource-efficient structures. The 3D printing method reduces material usage by 90% compared to traditional methods. Natrx's modular designs facilitate straightforward installation and adjustment. Additionally, their structures feature a naturalistic appearance that integrates well with the environment. Natrx's designs also provide a 50% increase in surface area relative to breakwaters and seawalls, enhancing hydrodynamic stability and promoting biodiversity.

Natrx provides structures with wave slope solutions. Wave slope solutions use up to 90% less material compared with rock solutions, reduce bottom impact by up to 80%, provide easy installation, and blend seamlessly with surroundings. The pricing for 30 of these structures at 33 inches long by 33 inches wide and 24 inches high is estimated to be $21,150. Natrx also provides wave brush solutions, which also provide up to 90% less material used, reduce bottom impacts, and are designed to be hydro-dynamically stable. The price for 30 wave brush structures that are 33 inches in length by 33 inches in width and 24 inches in height is estimated to be approximately $18,750. Additionally, Natrx custom designed structures that provide crab habitat, termed "Crabitat". Crabitat structures are estimated to be approximately $21,300 for 24 structures that are 33 inches in length by 33 inches in width by 18 inches in height. The product sheets provided by NATRX can be found in **Appendix H**.

4.1.3 KindDesigns

KindDesign was founded to protect Miami's coastlines by combating the destructive flooding and degrading of marine habitats that have the potential to be scaled to all coastal cities. This company has created products for artificial reef purposes constructed through 3D-printed modules that can create intricate tailored structures that support local marine life and serve as captivating attractions for divers. All products are made using non-toxic, eco-friendly materials that promote marine life and improve the health of coastal ecosystems that mimic the natural environment. KindDesigns provides a comprehensive service package including design, permitting, production, and installation. More information and product sheets can be found in **Appendix I**.

5.0 Recommendations

Two locations were evaluated to determine the feasibility of installing a breakwater or artificial reef, Site 1 - Sea Oats Beach and Site 2 – Upper Matecumbe Key. Based on a review of environmental conditions, shoreline dynamics, and regulatory

constraints, both sites are more suitable for breakwater installations rather than traditional artificial reefs. This determination is rooted in the specific physical and ecological characteristics of each location, as well as the relative permitting feasibility.

At Site 1, the proposed project area lies directly along the shoreline and is characterized by an unconsolidated sandy beach fronting a segment of the Overseas Highway vulnerable to washouts and storm surge. This site provides a clear opportunity for the strategic placement of low-profile breakwater units within the shallow intertidal zone. The proposed design includes mangrove implants incorporated into the structure and planting in between the structure and the road, which would enhance shoreline stabilization, reduce erosion, and facilitate the natural establishment of mangrove vegetation, a key ecosystem component in the Keys. The relatively shallow and calm conditions, along with the presence of bare substrate and minimal submerged aquatic vegetation (SAV), make permitting more feasible by reducing the likelihood of direct impacts to protected marine resources such as seagrass, coral, or hardbottom habitat.

In contrast, Site 2 is located offshore in slightly deeper, nearshore waters, which makes it less appropriate for traditional emergent breakwaters but still suitable for a submerged breakwater system. The intent at this site is to reduce incoming wave energy while simultaneously supporting marine biodiversity through the incorporation of coral inserts or modules designed for fish and invertebrate colonization. This approach offers ecological and economic co-benefits by potentially drawing eco-tourism interest to the area, particularly from divers and snorkelers.

However, nearly the entire survey area at Site 2 contains some degree of seagrass or SAV cover, including mixed beds with varying densities. As a result, any structural installation here will likely result in unavoidable impacts to benthic resources, triggering more rigorous mitigation requirements under state and federal regulations. This includes the need for seagrass mitigation planning, post-construction monitoring, and possibly permittee-responsible or compensatory mitigation, which increases both the complexity and cost of permitting.

A comparison of key features at each site is provided in **Table 10** below, outlining critical considerations such as access, substrate conditions, and environmental sensitivities.

Table 10. Comparison of Site Features

Feature	Site 1	Site 2
Accessible from land	Y	Y
Accessible from boat	N	Y
Proximity to boat traffic	N	N
Bare substrate to place features	Y	N
Species recruitment features nearby	Y	Y
Avoidance of marine resources	Y	N
Protection from tidal elements	N	N
Mangrove habitat nearby	Y	Y

In summary, Site 1 offers a more straightforward permitting path due to its location on bare substrate, limited SAV coverage, and potential for upland and nearshore-based construction. It also provides a prime opportunity for mangrove enhancement, which aligns with multiple resource agency objectives. Site 2, while ecologically rich and accessible by boat, presents more permitting challenges due to the prevalence of seagrass and other benthic resources, necessitating a more strategic and carefully mitigated approach to breakwater placement.

5.1 Recommended Vendors

Following a comprehensive evaluation of the services provided, RES recommends the following for vendors for Site 1 and Site 2.

5.1.1 Site 1 – Sea Oats Beach Vendor Recommendations

RES recommends the Village consider breakwater designs from Reef Arches. Reef Arches, proposes a linear breakwater system placed along the mean low water line in one or more rows. This design aims to reduce wave energy and prevent shoreline erosion while also offering several ecological and logistical benefits. Notably, Reef Arches has partnered with

MANG, a well-known organization specializing in mangrove restoration, to incorporate mangrove inserts directly into the breakwater units, as well as planting in between the breakwater and US 1 Highway. The dual-purpose approach enhances coastal resilience by providing wave attenuation and long-term shoreline stabilization through mangrove root structures. The partnership offers positive public relations value by visibly supporting coastal habitat restoration and community-based conservation.

From a design perspective, Reef Arches units are engineered to allow light penetration, which minimizes potential impacts to submerged aquatic vegetation such as seagrass, which is particularly important given the project's proximity to the shoreline and seagrass beds. Additionally, their units are modular and lightweight, allowing for installation without the need for a barge, which reduces overall cost, complexity, and environmental disturbance during construction.

5.1.2 Site 2 – Upper Matecumbe Vendor Recommendations

RES recommends moving forward with all three vendors for Site 2, Reef Arches, Natrx, and KindDesign, as each offers modular breakwater units that not only provide effective coastal protection but also enhance habitat complexity to support marine life. The diversity in design approaches among the vendors allows for flexibility in tailoring the final solution to the unique environmental conditions and goals of Site 2. To maximize the benefits and performance of each system, RES recommends allocating dedicated zones within Site 2 for each vendor's modules. This will allow for site-specific optimization, comparison of ecological performance, and adaptive management over time.

Reef Arches offers an innovative modular design featuring open hexagonal spaces that can accommodate coral inserts, promoting coral recruitment and the development of new colonies over time. This approach supports long-term reef-building processes and enhances ecological value by creating vertical relief and niche spaces attractive to reef-associated species. Additionally, these open structures allow for light penetration, reducing potential shading impacts on underlying seagrass beds, an important consideration given the presence of benthic resources within the site. Their lightweight design facilitates installation without the use of barges, further minimizing environmental disturbance during construction.

Natrx provides engineered units with a low seabed footprint, reducing bottom impact by approximately 80% compared to traditional rock-based solutions. This is a critical consideration at Site 2, where benthic resources, including seagrass and macroalgae, were documented throughout the survey area. The Natrx approach combines durability with environmental sensitivity, making it an ideal candidate for areas where resource protection is a priority.

KindDesigns is currently developing a new line of breakwater modules that incorporate biomimicry principles, replicating the complex forms of natural reef structures to encourage biological settlement and community development. These units are designed to support a wide variety of marine organisms, enhancing biodiversity and ecosystem function. Additionally, their aesthetic and ecological appeal may help support eco-tourism opportunities by attracting snorkelers and educational groups interested in restored and artificial reef systems.

6.0 Conclusion

The placement of artificial reefs and/or breakwaters provides environmental, economic, and recreational benefits, which can yield immediate and measurable positive impacts. Both structures can reduce wave energy, protect coastlines from erosion, create the establishment of new habitats, and boost the local economy. These structures can facilitate connectivity between critical reef habitats and offshore structures, thereby providing juvenile fish with essential developmental environments as they mature. In addition, breakwater placements protect the local beaches and roads from washouts during high tides, and natural disasters lessen the amount of damage to the local area. This effect could be enhanced by incorporating additional installations such as mangrove and coral inserts within the breakwaters.

This feasibility study assesses the viability of establishing a breakwater or artificial area at two sites in Islamorada in Monroe County, Florida. The locations of these Sites are shown in **Figures 1A-1B** and have been deemed as having the highest potential for success with the implementation of breakwater structures. The primary objective of this breakwater/artificial reef is to provide economic and ecological value; protect the shoreline and critical assets via a structure designed to simultaneously enhance ecological value, and secondary to protection, provide added benefits through ecotourism and educational opportunities. A comparison of potential installation sites investigated is provided in **Table 10**.

The desktop review and field surveys reveal that the sites contain shallow depths that are not deep enough to meet the requirements to permit artificial reefs. The benthic resource surveys conducted at two distinct sites provide valuable insights into the current habitat conditions. The project proposed at Site 1 would be best suited to the placement of breakwaters along the shoreline within mangrove planting to stabilize the unconsolidated sandy shoreline and protect the adjacent Overseas Highway from potential washouts. This would also provide the opportunity for the establishment of a mangrove fringe that will continue to grow over time. The project that would be proposed at Site 2 would also be best suited for a breakwater; however, this design would be submerged near-shore to help reduce wave energy but allow for the installation of coral colonies to be implanted, promoting marine biodiversity and tourism to the local area.

Figures

Figure 1A
Location Map
Site 1 - Sea Oats Beach

Islamorada Artificial Reef Feasibility Study
Lower Matecumbe Key,
Monroe County, FL
80.7268°W 24.8598°N

Survey Area

N
1 in = 2,000 ft
0 1,000 2,000
Feet

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Street Map
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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Figure 1B
Location Map
Site 2 - Upper Matecumbe Key

Islamorada Artificial Reef Feasibility Study
Upper Matecumbe Key,
Monroe County, FL
80.639°W 24.9142°N

Survey Area

N

1 in = 2,000 ft

0 1,000 2,000

Feet

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Street Map
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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Cartographer: lgebow | POC: JN | Path: R:\Resgis\Projects\FL\111263_Islamorada_Artificial_Reef_Feasibility_Study\PRO\111263 Islamorada Artificial Reef.aprx | Layout: Figure 1A-1B. Location Map

Figure 2A
2023 Aerial Photograph
Site 1 - Sea Oats Beach

Islamorada Artificial Reef Feasibility Study
Lower Matecumbe Key,
Monroe County, FL
80.725°W 24.857°N

Survey Area

N

1 in = 400 ft

0 200 400

Feet

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/25/2025
Project Number: 111263

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Figure 2B
2023 Aerial Photograph
Site 2 - Upper Matecumbe Key

Islamorada Artificial Reef Feasibility Study
Upper Matecumbe Key,
Monroe County, FL
80.6349°W 24.9119°N

Survey Area

N

1 in = 400 ft

0 200 400

Feet

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
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Figure 3A
Land Use Map
Site 1 - Sea Oats Beach

Islamorada Artificial Reef Feasibility Study
Lower Matecumbe Key
Monroe County, FL
80.725°W 24.857°N

Survey Area

Land Use

- 1110: Fixed Single Family Units
- 1210: Fixed Single Family Units
- 1330: Multiple Dwelling Units, Low Rise
- 1340: Multiple Dwelling Units, High Rise
- 1400: Commercial and Services
- 1920: Inactive Land with Street Pattern
- 5120: Channelized Waterways, Canals
- 5410: Embayments Opening Directly to Gulf or Ocean
- 5710: Atlantic Ocean
- 6120: Mangrove Swamp
- 6510: Tidal Flats
- 8100: Transportation

N

1 in = 300 ft

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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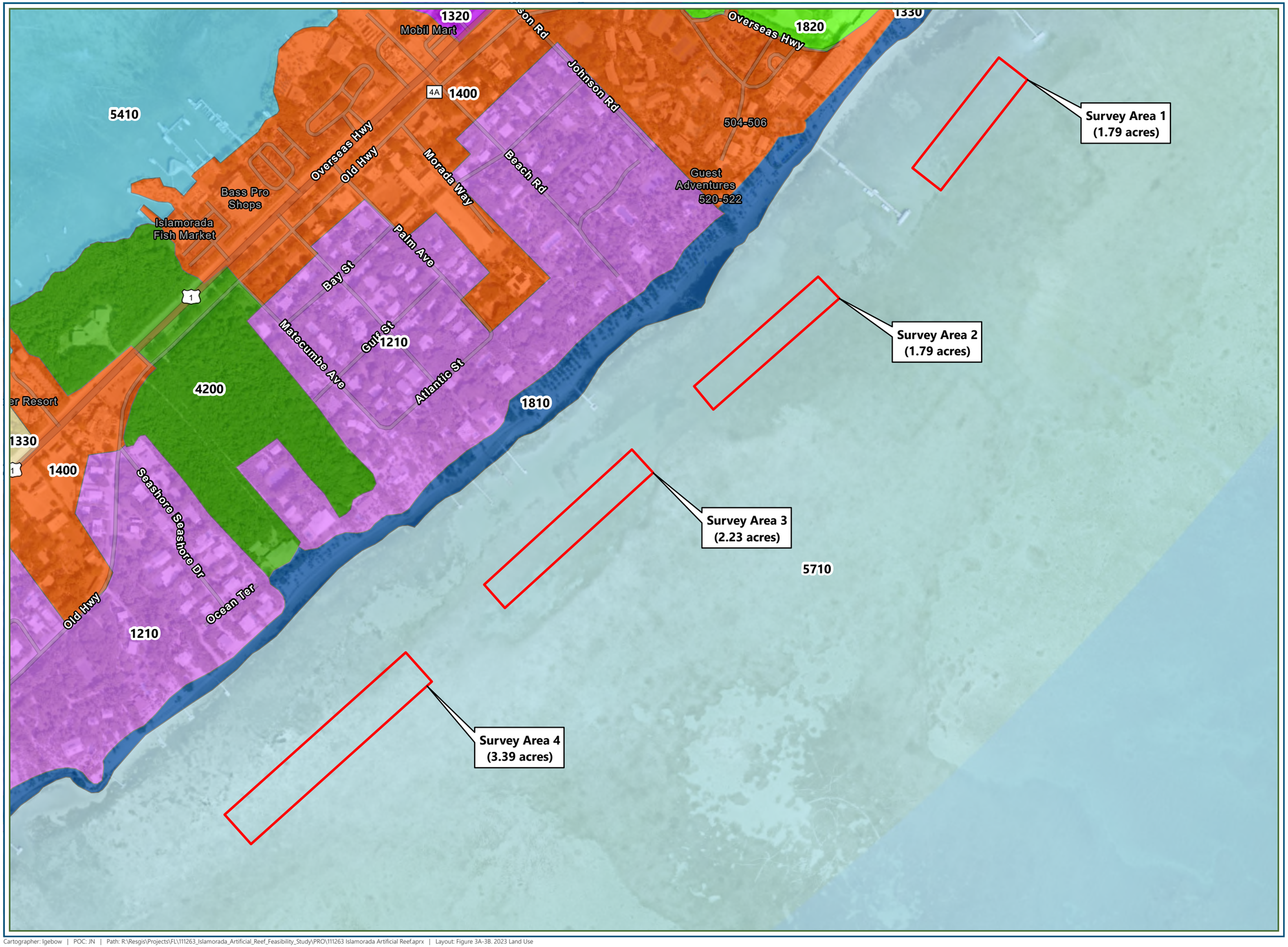

Figure 3B
Land Use Map
Site 2 - Upper Matecumbe Key

Islamorada Artificial Reef Feasibility Study
Upper Matecumbe Key, Monroe County, FL
80.6349°W 24.9119°N

Survey Area

Land Use

- 1210: Fixed Single Family Units
- 1320: Mobile Home Units
- 1330: Multiple Dwelling Units, Low Rise
- 1400: Commercial and Services
- 1810: Swimming Beach
- 1820: Golf Course
- 4200: Upland Hardwood Forests
- 5410: Embayments Opening Directly to Gulf or Ocean
- 5710: Atlantic Ocean

N

1 in = 350 ft

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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Figure 4A
National Wetland Inventory Map
Site 1 - Sea Oats Beach

Islamorada Artificial Reef Feasibility Study
Lower Matecumbe Key
Monroe County, FL
80.725°W 24.857°N

Survey Area

Wetland Type - Wetland Attribute

- E1ABLx - Estuarine and Marine Deepwater
- E1UBLx - Estuarine and Marine Deepwater
- M1ABL - Estuarine and Marine Deepwater (10.48 acres)
- M2USM - Estuarine and Marine Wetland (0.04 acres)

N

1 in = 300 ft

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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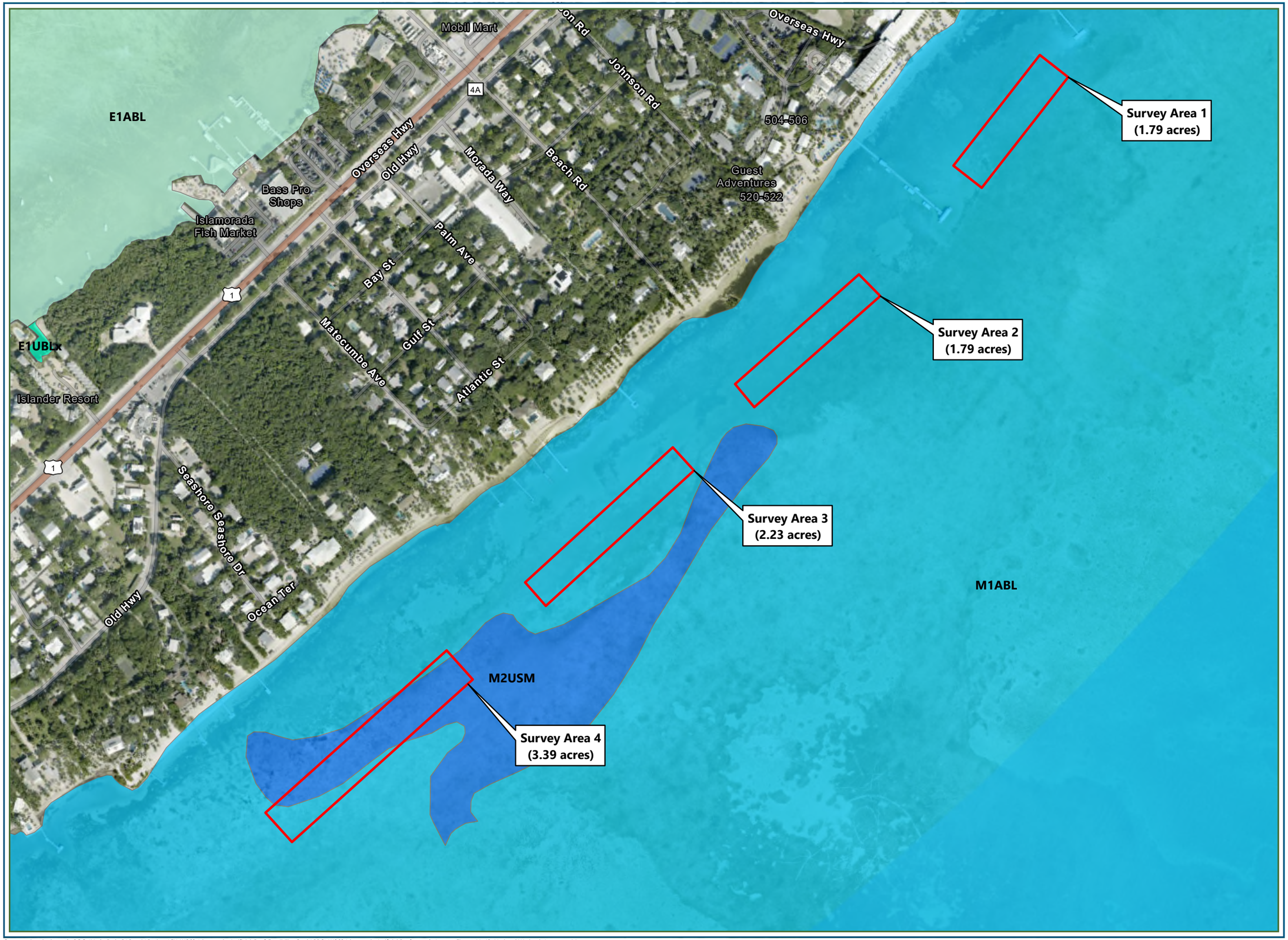

Figure 4B
National Wetland Inventory Map
Site 2 - Upper Matecumbe Key

Islamorada Artificial Reef Feasibility Study
Upper Matecumbe Key,
Monroe County, FL
80.6354°W 24.9118°N

Survey Area

Wetland Type - Wetland Attribute

- E1ABL - Estuarine and Marine Deepwater
- E1UBLx - Estuarine and Marine Deepwater
- M1ABL - Estuarine and Marine Deepwater (6.69 acres)
- M2USM - Estuarine and Marine Wetland (2.5 acres)

N

1 in = 350 ft

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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Figure 5A
Critical Habitat Map
Site 1 - Sea Oats Beach

Islamorada Artificial Reef Feasibility Study
Lower Matecumbe Key,
Monroe County, FL
80.725°W 24.8571°N

Critical Habitat (Common Name)

- Piping Plover
- American crocodile
- Coral
- Survey Area

Survey Area 1
(12.18 acres)

Costa Bravo D
Lisbon Ct
Biscayne Blvd
e ASandy Cove Ave
Ve
Sapodilla Dr
Ponce de Leon Blvd
W Plaza del Lago
Gulfview Dr
Nautilus Dr
Venetian Dr
El Capitan Dr
Sandy Cove Ave
Overseas Hwy
Overseas Hwy
Overseas Hwy
Overseas Hwy
1
Country Store
Iroquois Dr
Sunset Dr

N

1 in = 500 ft

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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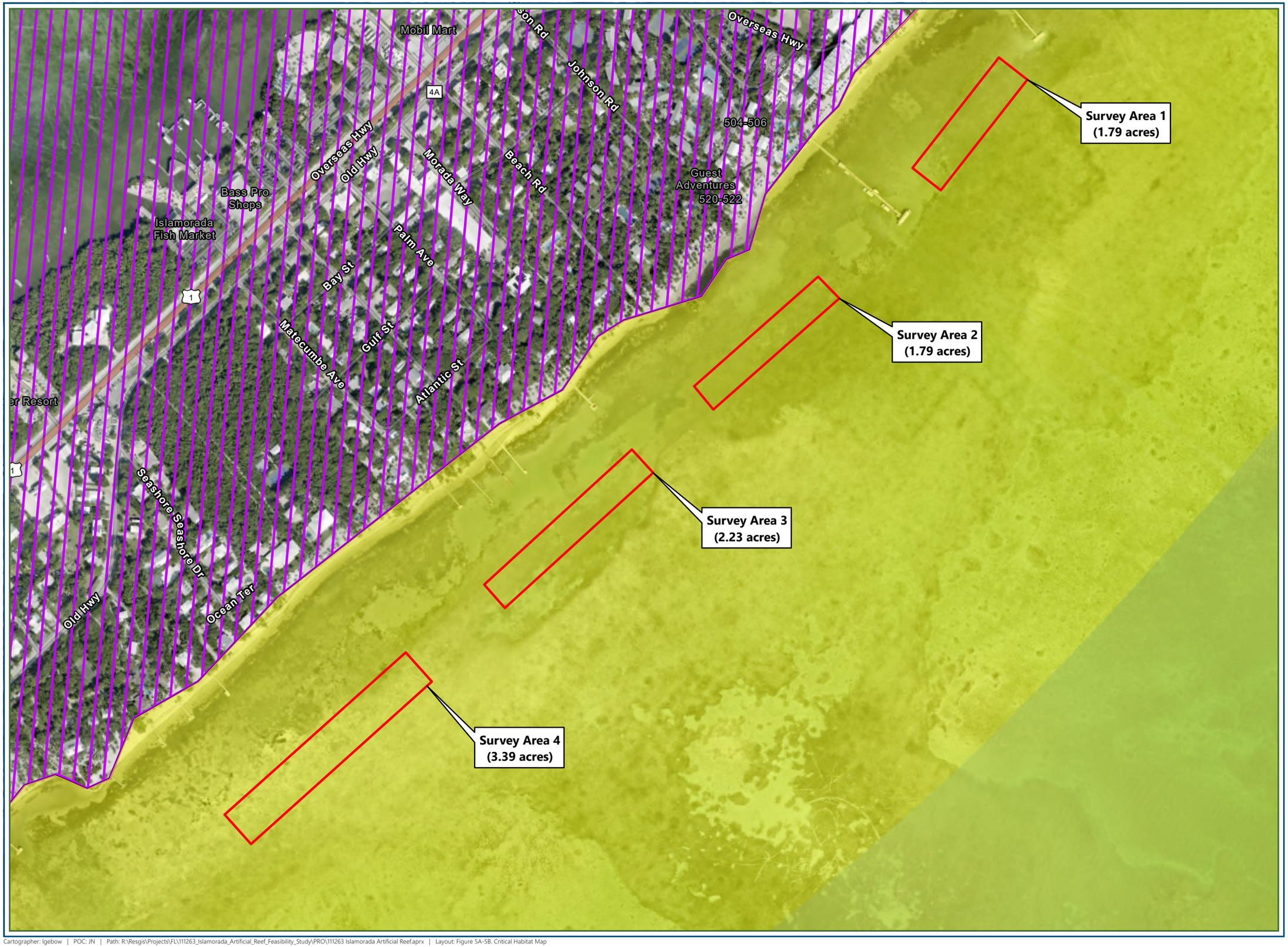

Figure 5B
Critical Habitat Map
Site 2 - Upper Matecumbe Key

Islamorada Artificial Reef Feasibility Study
Upper Matecumbe Key,
Monroe County, FL
80.6349°W 24.9119°N

Critical Habitat (Common Name)
- American crocodile
- Coral
- Survey Area

N
1 in = 350 ft

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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Figure 6A
Survey Methods Map
Site 1 - Sea Oats Beach

Islamorada Artificial Reef Feasibility Study
Lower Matecumbe Key,
Monroe County, FL
80.7252°W 24.8575°N

Survey Area
Transcects

N

1 in = 200 ft

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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Figure 6B
Survey Methods Map
Site 2 - Upper Matecumbe Key

Islamorada Artificial Reef Feasibility Study
Upper Matecumbe Key,
Monroe County, FL
80.6342°W 24.9121°N

Survey Area
Transects

N

1 in = 317 ft

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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Figure 7A
Benthic Survey Results Map
Site 1 - Sea Oats Beach

Islamorada Artificial Reef Feasibility Study
Lower Matecumbe Key, Monroe County, FL
80.7252°W 24.8575°N

Survey Area

Benthic Survey Results

- Shoal Grass, Turtle Grass: 5 - 100%
- Shoal Grass: 5 - 50%
- Shoal Grass: 50 - 100%

N

1 in = 200 ft

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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Figure 7B
Benthic Survey Results Map
Site 2 - Upper Matecumbe Key

Islamorada Artificial Reef Feasibility Study
Upper Matecumbe Key,
Monroe County, FL
80.6342°W 24.9121°N

- Survey Area

Benthic Survey Results

- Patch of Shoal Grass: 0.5%
- Patch of Shoal Grass: 50 - 75%
- Shoal Grass: 5 - 50%, Turtle Grass: 0.5% - 50%,
- Shoal Grass, Turtle Grass: 5 - 25%
- Shoal Grass: 5 - 25%
- Turtle Grass: 0.5% - 25%
- Turtle Grass: 0.5% - 50%
- Turtle Grass: 5 - 25%
- Turtle Grass: 5 - 50%

N

1 in = 317 ft

Reference: Project limits are approximate. The property boundaries depicted on this map have not been surveyed and are for prospect assessment purposes only. This information is not to be used as final legal boundaries.
Data Source: World Imagery
Spatial Reference:
NAD 1983 2011 StatePlane Florida East FIPS 0901 Ft US
Date Exported: 3/21/2025
Project Number: 111263

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Appendix A / Property Owner Information

Monroe County, FL

PROPERTY RECORD CARD

Disclaimer

The Monroe County Property Appraiser's office maintains data on property within the County solely for the purpose of fulfilling its responsibility to secure a just valuation for ad valorem tax purposes of all property within the County. The Monroe County Property Appraiser's office cannot guarantee its accuracy for any other purpose. Likewise, data provided regarding one tax year may not be applicable in prior or subsequent years. By requesting such data, you hereby understand and agree that the data is intended for ad valorem tax purposes only and should not be relied on for any other purpose.

By continuing into this site you assert that you have read and agree to the above statement.

Summary

Parcel ID	00097910-000000
Account#	1114430
Property ID	1114430
Millage Group	50VI
Location Address	VACANT LAND, LOWER MATECUMBE KEY
Legal Description	21 64 36 LOWER MATECUMBE KEY PT LOT 3 (PARCEL C) OR528-1047 OR748-417/18 OR749-264 OR1724-113/31 (Note: Not to be used on legal documents.)
Neighborhood	10021
Property Class	STATE PARKS (8000)
Subdivision	
Sec/Twp/Rng	21/64/36
Affordable Housing	No

Owner

ISLAMORADA VILLAGE OF ISLANDS
86800 Overseas Hwy
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$0	$0	$0	$0
+	Market Misc Value	$0	$0	$0	$0
+	Market Land Value	$2,635	$2,635	$2,635	$2,635
=	Just Market Value	**$2,635**	**$2,635**	**$2,635**	**$2,635**
=	Total Assessed Value	**$1,120**	**$1,019**	**$927**	**$843**
-	School Exempt Value	($2,635)	($2,635)	($2,635)	($2,635)
=	School Taxable Value	**$0**	**$0**	**$0**	**$0**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$2,635	$0	$0	$2,635	$1,120	$2,635	$0	$0
2023	$2,635	$0	$0	$2,635	$1,019	$2,635	$0	$0
2022	$2,635	$0	$0	$2,635	$927	$2,635	$0	$0
2021	$2,635	$0	$0	$2,635	$843	$2,635	$0	$0
2020	$2,635	$0	$0	$2,635	$767	$2,635	$0	$0
2019	$2,635	$0	$0	$2,635	$698	$2,635	$0	$0
2018	$2,635	$0	$0	$2,635	$635	$2,635	$0	$0

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Land

Land Use	Number of Units	Unit Type	Frontage	Depth
(8900)	0.31	Acreage	0	0

View Tax Info

View Taxes for this Parcel

Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00398780-000000
Account#	1491161
Property ID	1491161
Millage Group	50VI
Location Address	VACANT LAND, LOWER MATECUMBE KEY
Legal Description	MATECUMBE OCEAN BCH SEC A REVISED PLAT PB 2-103 LOWER MATECUMBE PT TRACT A -PARCEL B- NO-66-218-CIV-JE OR490-544/46 OR837-922/23 OR843-2073C OR1116-438/43 OR1737-638/40 (Note: Not to be used on legal documents.)
Neighborhood	10021
Property Class	STATE PARKS (8000)
Subdivision	MATECUMBE OCEAN BEACH SEC A REV
Sec/Twp/Rng	21/64/36
Affordable Housing	No

Owner

ISLAMORADA VILLAGE OF ISLANDS
86800 Overseas Hwy
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$0	$0	$0	$0
+	Market Misc Value	$0	$0	$0	$0
+	Market Land Value	$14,110	$14,110	$14,110	$14,110
=	Just Market Value	**$14,110**	**$14,110**	**$14,110**	**$14,110**
=	Total Assessed Value	**$6,086**	**$5,533**	**$5,030**	**$4,573**
-	School Exempt Value	($14,110)	($14,110)	($14,110)	($14,110)
=	School Taxable Value	**$0**	**$0**	**$0**	**$0**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$14,110	$0	$0	$14,110	$6,086	$14,110	$0	$0
2023	$14,110	$0	$0	$14,110	$5,533	$14,110	$0	$0
2022	$14,110	$0	$0	$14,110	$5,030	$14,110	$0	$0
2021	$14,110	$0	$0	$14,110	$4,573	$14,110	$0	$0
2020	$14,110	$0	$0	$14,110	$4,158	$14,110	$0	$0
2019	$14,110	$0	$0	$14,110	$3,780	$14,110	$0	$0
2018	$14,110	$0	$0	$14,110	$3,437	$14,110	$0	$0

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Land

Land Use	Number of Units	Unit Type	Frontage	Depth
(8900)	1.66	Acreage	0	0

Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00398780-000100
Account#	1491179
Property ID	1491179
Millage Group	50VI
Location Address	VACANT LAND, LOWER MATECUMBE KEY
Legal Description	PT TRACT A MATECUMBE OCEAN BEACH SEC A REVISED PLAT PB2-103 OR528-128 OR786-1230-/31 OR811-2208 OR1075-2500 OR1116-434 (Note: Not to be used on legal documents.)
Neighborhood	1475
Property Class	NON AGRICULTURE (9900)
Subdivision	MATECUMBE OCEAN BEACH SEC A REV
Sec/Twp/Rng	21/64/36
Affordable Housing	No

Owner

SANDY COVE CORPORATION THE
4238 Beeline Rd
Holland MI 49423

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$0	$0	$0	$0
+	Market Misc Value	$0	$0	$0	$0
+	Market Land Value	$46	$46	$46	$46
=	Just Market Value	**$46**	**$46**	**$46**	**$46**
=	Total Assessed Value	**$46**	**$46**	**$46**	**$46**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$46**	**$46**	**$46**	**$46**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$46	$0	$0	$46	$46	$0	$46	$0
2023	$46	$0	$0	$46	$46	$0	$46	$0
2022	$46	$0	$0	$46	$46	$0	$46	$0
2021	$46	$0	$0	$46	$46	$0	$46	$0
2020	$46	$0	$0	$46	$46	$0	$46	$0
2019	$46	$0	$0	$46	$46	$0	$46	$0
2018	$46	$0	$0	$46	$42	$0	$46	$0

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Land

Land Use	Number of Units	Unit Type	Frontage	Depth
ENVIRONMENTALLY SENS (000X)	0.46	Acreage	0	0

Monroe County, FL

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Summary

Parcel ID	00398780-000102
Account#	8967784
Property ID	8967784
Millage Group	50VI
Location Address	VACANT LAND, LOWER MATECUMBE KEY
Legal Description	MATECUMBE OCEAN BEACH SEC A REV PLAT PB2-103 UPPER MATE PT TR A OR1618-793/74AC (Note: Not to be used on legal documents.)
Neighborhood	1475
Property Class	NON AGRICULTURE (9900)
Subdivision	MATECUMBE OCEAN BEACH SEC A REV
Sec/Twp/Rng	21/64/36
Affordable Housing	No

Owner

SANDY COVE TOWNHOMES CONDOMINIUM ASSOC INC
75000 Overseas Hwy
Apt 3
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$0	$0	$0	$0
+	Market Misc Value	$0	$0	$0	$0
+	Market Land Value	$36	$36	$36	$36
=	Just Market Value	**$36**	**$36**	**$36**	**$36**
=	Total Assessed Value	**$36**	**$36**	**$36**	**$36**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$36**	**$36**	**$36**	**$36**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$36	$0	$0	$36	$36	$0	$36	$0
2023	$36	$0	$0	$36	$36	$0	$36	$0
2022	$36	$0	$0	$36	$36	$0	$36	$0
2021	$36	$0	$0	$36	$36	$0	$36	$0
2020	$36	$0	$0	$36	$36	$0	$36	$0
2019	$36	$0	$0	$36	$36	$0	$36	$0
2018	$36	$0	$0	$36	$36	$0	$36	$0

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Monroe County, FL

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Summary

Parcel ID	00398790-000000
Account#	1491187
Property ID	1491187
Millage Group	50VI
Location Address	VACANT LAND, LOWER MATECUMBE KEY
Legal Description	MATECUMBE OCEAN BCH SEC A REVISED PLAT PB 2-103 LOWER MATECUMBE PT TRACT A - PARCEL C OR528-1047 OR748-417/18 OR749-264 OR1116-438/43 OR1724-113CE (Note: Not to be used on legal documents.)
Neighborhood	10021
Property Class	STATE PARKS (8000)
Subdivision	MATECUMBE OCEAN BEACH SEC A REV
Sec/Twp/Rng	21/64/36
Affordable Housing	No

Owner

ISLAMORADA VILLAGE OF ISLANDS
86800 Overseas Hwy
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$0	$0	$0	$0
+	Market Misc Value	$0	$0	$0	$0
+	Market Land Value	$5,610	$5,610	$5,610	$5,610
=	Just Market Value	**$5,610**	**$5,610**	**$5,610**	**$5,610**
=	Total Assessed Value	**$1,500**	**$1,364**	**$1,240**	**$1,128**
-	School Exempt Value	($5,610)	($5,610)	($5,610)	($5,610)
=	School Taxable Value	**$0**	**$0**	**$0**	**$0**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$5,610	$0	$0	$5,610	$1,500	$5,610	$0	$0
2023	$5,610	$0	$0	$5,610	$1,364	$5,610	$0	$0
2022	$5,610	$0	$0	$5,610	$1,240	$5,610	$0	$0
2021	$5,610	$0	$0	$5,610	$1,128	$5,610	$0	$0
2020	$5,610	$0	$0	$5,610	$1,026	$5,610	$0	$0
2019	$5,610	$0	$0	$5,610	$933	$5,610	$0	$0
2018	$5,610	$0	$0	$5,610	$849	$5,610	$0	$0

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Land

Land Use	Number of Units	Unit Type	Frontage	Depth
(8900)	0.66	Acreage	0	0

View Tax Info

View Taxes for this Parcel

Monroe County, FL

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Summary

Parcel ID	00398800-000000
Account#	1491195
Property ID	1491195
Millage Group	50VI
Location Address	75055 OVERSEAS Hwy, LOWER MATECUMBE KEY
Legal Description	MATECUMBE OCEAN BCH SEC A REVISED PLAT PB 2-103 LOWER MATECUMBE PT TRACT A KNOWN AS PT LOTS 61-62 PB2-39 OR546-911 OR822-2274 OR1029-191/192 OR1072-1947 OR1180-2495/96 OR3082-0079 OR3099-1589 (Note: Not to be used on legal documents.)
Neighborhood	1459
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	MATECUMBE OCEAN BEACH SEC A REV
Sec/Twp/Rng	21/64/36
Affordable Housing	No

Owner

BARROSO MARIA TRUST 5/10/2019
14430 Glencairn Rd
Miami Lakes FL 33016

HERNANDEZ MARIA DE LOS ANGELES TR 8/22/2019
14430 Glencairn Rd
Miami Lakes FL 33016

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$255,910	$245,228	$237,063	$199,931
+	Market Misc Value	$45,144	$31,282	$21,977	$22,623
+	Market Land Value	$1,213,091	$1,189,874	$899,662	$717,795
=	Just Market Value	**$1,514,145**	**$1,466,384**	**$1,158,702**	**$940,349**
=	Total Assessed Value	**$1,402,029**	**$1,274,572**	**$1,158,702**	**$336,997**
-	School Exempt Value	$0	$0	$0	($25,000)
=	School Taxable Value	**$1,514,145**	**$1,466,384**	**$1,158,702**	**$311,997**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$1,213,091	$255,910	$45,144	$1,514,145	$1,402,029	$0	$1,514,145	$0
2023	$1,189,874	$245,228	$31,282	$1,466,384	$1,274,572	$0	$1,466,384	$0
2022	$899,662	$237,063	$21,977	$1,158,702	$1,158,702	$0	$1,158,702	$0
2021	$717,795	$199,931	$22,623	$940,349	$336,997	$25,000	$311,997	$500,000
2020	$717,795	$204,807	$23,268	$945,870	$332,345	$25,000	$307,345	$500,000
2019	$457,172	$103,148	$8,455	$568,775	$273,334	$25,000	$248,334	$295,441
2018	$424,139	$105,575	$8,455	$538,169	$268,238	$25,000	$243,238	$269,931

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Monroe County, FL

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Summary

Parcel ID	00398810-000000
Account#	1491209
Property ID	1491209
Millage Group	50VI
Location	75051 OVERSEAS Hwy, LOWER
Address	MATECUMBE KEY
Legal Description	MATECUMBE OCEAN BCH SEC A REV PLAT PB2-103 LOWER MATECUMBE PT TR A & PT TR A (A/K/A SW'LY 66.67' OF LOT 61 PB2-39) OR430-189 OR895-2047 OR1117-2250 OR1329-1840/41 OR1329-1854/55 OR1329-2024D/C OR1351-2104/06 OR1505-686/88 OR1559-1646/47 OR1559-1660 OR3086-100 (Note: Not to be used on legal documents.)
Neighborhood	1465
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	MATECUMBE OCEAN BEACH SEC A REV
Sec/Twp/Rng	21/64/36
Affordable Housing	No

Owner

ABELLANA EMMA
75051 Overseas Hwy
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$693,134	$676,007	$659,911	$643,091
+	Market Misc Value	$96,205	$96,384	$96,563	$92,984
+	Market Land Value	$1,448,515	$1,420,783	$1,092,262	$791,474
=	Just Market Value	**$2,237,854**	**$2,193,174**	**$1,848,736**	**$1,527,549**
=	Total Assessed Value	**$2,236,971**	**$2,033,610**	**$1,848,736**	**$980,455**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$2,237,854**	**$2,193,174**	**$1,848,736**	**$1,527,549**

Monroe County, FL

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Summary

Parcel ID	00095230-000000
Account#	1110515
Property ID	1110515
Millage Group	50VI
Location Address	123 BEACH Rd, UPPER MATECUMBE KEY
Legal Description	12 63 37 ISLAND OF UPPER MATECUMBE PB1-41 PT GOVT LOT 1 AND ADJ BAY BOTTOM AND A PORTION OF CATHERINE STREET AND BK 3 LTS 4-5-6 AND BK 5 LTS 1-2-3-4 MATECUMBE BEACH PB1-133 C2-527 G7-56 OR161-61(II DEED 22218) OR166-70(II DEED 22259) OR289-528(II DEED 23451) OR445-548/53 OR489-748 OR489-973/77 OR489-980/85 OR493-696/97 OR497-302D/C OR497-386 OR497-388 OR498-648 OR572-219/23 OR572-225/29 OR572-231/35 OR609-424/28 OR641-318 OR704-14/18 OR847-2481/84 OR847-2485/88 OR847-2489/92 OR847-2493/96 OR885-111/14 OR885-1115/18 OR903-970/71 OR945-163 OR948-1912/15 OR958-254/57C OR1011-1823E OR1046-1852/57 OR1048-2337D/C OR1049-215/217(WILL) OR1059-248/53 OR1059-255/59AFF OR1080-1853 OR1101-168 OR1249-926/29 OR1401-1116/23 OR3188-1201RES (Note: Not to be used on legal documents.)
Neighborhood	10024
Property Class	HOTEL - LUXURY (3900)
Subdivision	
Sec/Twp/Rng	32/63/37
Affordable Housing	No

Owner

WITNESS RESOURCES INC
200 Industrial Dr
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$937,611	$937,611	$937,611	$937,611
+	Market Misc Value	$153,932	$153,932	$153,932	$153,932
+	Market Land Value	$4,408,457	$4,408,457	$4,408,457	$4,408,457
=	Just Market Value	**$5,500,000**	**$5,500,000**	**$5,500,000**	**$5,500,000**
=	Total Assessed Value	**$5,500,000**	**$5,500,000**	**$5,500,000**	**$5,289,623**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$5,500,000**	**$5,500,000**	**$5,500,000**	**$5,500,000**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$4,408,457	$937,611	$153,932	$5,500,000	$5,500,000	$0	$5,500,000	$0
2023	$4,408,457	$937,611	$153,932	$5,500,000	$5,500,000	$0	$5,500,000	$0
2022	$4,408,457	$937,611	$153,932	$5,500,000	$5,500,000	$0	$5,500,000	$0
2021	$4,408,457	$937,611	$153,932	$5,500,000	$5,289,623	$0	$5,500,000	$0
2020	$3,608,065	$1,227,706	$164,229	$5,000,000	$4,808,749	$0	$5,000,000	$0
2019	$5,241,409	$4,717,268	$524,141	$10,482,818	$4,371,590	$0	$10,482,818	$0
2018	$4,832,642	$4,349,378	$483,264	$9,665,284	$3,974,173	$0	$9,665,284	$0

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Monroe County, FL

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Summary

Parcel ID	00095230-000100
Account#	9104514
Property ID	9104514
Millage Group	50VI
Location Address	125 BEACH Rd, UPPER MATECUMBE KEY
Legal Description	12 63 37 ISLAND OF UPPER MATECUMBE PB1-41 PT GOVT LOT 1 AND ADJ BAY BOTTOM AND A PORTION OF CATHERINE STREET AND BK 4 LTS 8-9-10-11-12-13-14 MATECUMBE BEACH PB1-133 C2-527 G7-56 OR161-61(II DEED 22218) OR166-70(II DEED 22259) OR289-528(II DEED 23451) OR445-548/53 OR489-748 OR489-973/77 OR489-980/85 OR493-696/97 OR497-302D/C OR497-386 OR497-388 OR498-648 OR572-219/23 OR572-225/29 OR572-231/35 OR609-424/28 OR641-318 OR704-14/18 OR847-2481/84 OR847-2485/88 OR847-2489/92 OR847-2493/96 OR885-111/14 OR885-1115/18 OR903-970/71 OR945-163 OR948-1912/15 OR958-254/57C OR1011-1823E OR1046-1852/57 OR1048-2337D/C OR1049-215/217(WILL) OR1059-248/53 OR1059-255/59AFF OR1080-1853 OR1101-168 OR1249-926/29 OR1401-1116/23 OR3013-512 OR3013-517 (Note: Not to be used on legal documents.)
Neighborhood	10024
Property Class	HOTEL - PRIVATE (3902)
Subdivision	
Sec/Twp/Rng	32/63/37
Affordable Housing	No

Owner

NWCL BEACH LLC
C/O NORTHWOOD ACQUISITIONS LLC
575 5TH AVE FL 23
New York NY 10017

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$4,072,157	$4,446,961	$4,717,268	$4,717,268
+	Market Misc Value	$1,816,079	$635,280	$524,141	$524,141
+	Market Land Value	$6,817,367	$7,623,362	$5,241,409	$5,241,409
=	Just Market Value	**$12,705,603**	**$12,705,603**	**$10,482,818**	**$10,482,818**
=	Total Assessed Value	**$12,557,515**	**$11,415,923**	**$10,482,818**	**$10,482,818**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$12,705,603**	**$12,705,603**	**$10,482,818**	**$10,482,818**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$6,817,367	$4,072,157	$1,816,079	$12,705,603	$12,557,515	$0	$12,705,603	$0
2023	$7,623,362	$4,446,961	$635,280	$12,705,603	$11,415,923	$0	$12,705,603	$0
2022	$5,241,409	$4,717,268	$524,141	$10,482,818	$10,482,818	$0	$10,482,818	$0
2021	$5,241,409	$4,717,268	$524,141	$10,482,818	$10,482,818	$0	$10,482,818	$0
2020	$5,241,409	$4,717,268	$524,141	$10,482,818	$10,482,818	$0	$10,482,818	$0

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Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00095490-000000
Account#	1110825
Property ID	1110825
Millage Group	50VI
Location Address	123 BEACH Rd, UPPER MATECUMBE KEY
Legal Description	32 63 37 ISLAND OF UPPER MATECUMBE PB1-41 PT LOTS 1-2 AND LTS 1-2 & SE'LY 40' LT 3 BLK 10 GROVE PARK ADDN PB1-196 & PT PALM DR & 5' ALLEY RES B C C AND BAY BOTTOM ADJ TO PT LOTS 1-2 NO27-1963 YY-369 G3-251 OR120-4 OR287-325/26 OR577-654 OR616-677 PROB #82-135-CP-12 OR616-683 OR853-255 OR962-1994/97 OR968-390 OR969-996/98 OR1009-2471/73 OR1152-234/37 OR1192-714 OR1401-1095/1100 OR1401-1098/01 OR1401-1102/05 (Note: Not to be used on legal documents.)
Neighborhood	10024
Property Class	HOTEL - LUXURY (3900)
Subdivision	
Sec/Twp/Rng	32/63/37
Affordable Housing	No

Owner

MOORINGS-ISLAMORADA INC
200 Industrial Dr
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$1,433,496	$1,433,496	$1,433,496	$1,433,496
+	Market Misc Value	$159,277	$159,277	$159,277	$159,277
+	Market Land Value	$1,592,774	$1,592,774	$1,592,774	$1,592,774
=	Just Market Value	**$3,185,547**	**$3,185,547**	**$3,185,547**	**$3,185,547**
=	Total Assessed Value	**$1,595,838**	**$1,450,762**	**$1,318,875**	**$1,198,978**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$3,185,547**	**$3,185,547**	**$3,185,547**	**$3,185,547**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$1,592,774	$1,433,496	$159,277	$3,185,547	$1,595,838	$0	$3,185,547	$0
2023	$1,592,774	$1,433,496	$159,277	$3,185,547	$1,450,762	$0	$3,185,547	$0
2022	$1,592,774	$1,433,496	$159,277	$3,185,547	$1,318,875	$0	$3,185,547	$0
2021	$1,592,774	$1,433,496	$159,277	$3,185,547	$1,198,978	$0	$3,185,547	$0
2020	$1,552,194	$1,724,660	$172,466	$3,449,320	$1,089,980	$0	$3,449,320	$0
2019	$1,489,485	$1,340,536	$148,948	$2,978,969	$990,891	$0	$2,978,969	$0
2018	$1,466,051	$1,319,446	$146,605	$2,932,102	$900,810	$0	$2,932,102	$0

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00095510-000000
Account#	1110841
Property ID	1110841
Millage Group	50VI
Location Address	329 ATLANTIC St, UPPER MATECUMBE KEY
Legal Description	32 63 37 ISLAND OF UPPER MATECUMBE PB1-41 PT LOTS 1 & 2 & ADJ FILL BAY BTM OR118-315 OR463-341 OR476-908 OR933-2147 OR1096-942 OR1239-2056 OR1401-1106 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	
Sec/Twp/Rng	32/63/37
Affordable Housing	No

Owner

BALATE INTERNATIONAL LIMITED
200 Industrial Dr
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$676,562	$604,680	$620,593	$589,437
+	Market Misc Value	$203,204	$198,197	$203,396	$208,592
+	Market Land Value	$4,267,668	$3,985,530	$3,314,896	$2,117,337
=	Just Market Value	**$5,147,434**	**$4,788,407**	**$4,138,885**	**$2,915,366**
=	Total Assessed Value	**$3,880,352**	**$3,527,593**	**$3,206,903**	**$2,915,366**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$5,147,434**	**$4,788,407**	**$4,138,885**	**$2,915,366**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$4,267,668	$676,562	$203,204	$5,147,434	$3,880,352	$0	$5,147,434	$0
2023	$3,985,530	$604,680	$198,197	$4,788,407	$3,527,593	$0	$4,788,407	$0
2022	$3,314,896	$620,593	$203,396	$4,138,885	$3,206,903	$0	$4,138,885	$0
2021	$2,117,337	$589,437	$208,592	$2,915,366	$2,915,366	$0	$2,915,366	$0
2020	$2,117,337	$603,814	$213,791	$2,934,942	$2,934,942	$0	$2,934,942	$0
2019	$1,737,311	$397,151	$48,620	$2,183,082	$2,183,082	$0	$2,183,082	$0
2018	$1,581,524	$407,884	$25,041	$2,014,449	$2,014,449	$0	$2,014,449	$0

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Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00095540-000000
Account#	1110876
Property ID	1110876
Millage Group	50VI
Location Address	224 ATLANTIC St, UPPER MATECUMBE KEY
Legal Description	32 63 37 ISLAND OF UPPER MATECUMBE PB1-41 PT LOT 2 AND ADJ BAY BTM (.46 AC) AND ACCRETED LAND (.09AC) OR118-235(II DEED 21706) OR378-50/51 OR789-1796/98 OR889-955/57 OR905-445/46 OR971-1524/25 OR1887-199/201 OR2607-329/30 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	
Sec/Twp/Rng	32/63/37
Affordable Housing	No

Owner

MATA MARK
10520 Major Ave N
Minneapolis MN 55443

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$938,690	$839,882	$849,707	$788,713
+	Market Misc Value	$171,179	$166,616	$171,234	$175,852
+	Market Land Value	$3,762,663	$3,551,780	$2,954,134	$1,886,909
=	Just Market Value	**$4,872,532**	**$4,558,278**	**$3,975,075**	**$2,851,474**
=	Total Assessed Value	**$3,795,311**	**$3,450,283**	**$3,136,621**	**$2,851,474**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$4,872,532**	**$4,558,278**	**$3,975,075**	**$2,851,474**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$3,762,663	$938,690	$171,179	$4,872,532	$3,795,311	$0	$4,872,532	$0
2023	$3,551,780	$839,882	$166,616	$4,558,278	$3,450,283	$0	$4,558,278	$0
2022	$2,954,134	$849,707	$171,234	$3,975,075	$3,136,621	$0	$3,975,075	$0
2021	$1,886,909	$788,713	$175,852	$2,851,474	$2,851,474	$0	$2,851,474	$0
2020	$1,886,909	$806,452	$180,471	$2,873,832	$2,873,832	$0	$2,873,832	$0
2019	$1,531,736	$677,900	$135,437	$2,345,073	$2,345,073	$0	$2,345,073	$0
2018	$1,397,053	$693,693	$131,578	$2,222,324	$2,222,324	$0	$2,222,324	$0

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Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00095550-000000
Account#	1110884
Property ID	1110884
Millage Group	50VI
Location Address	208 ATLANTIC St, UPPER MATECUMBE KEY
Legal Description	32 63 37 ISLAND OF UPPER MATECUMBE PB1-41 PT LT 2 OR259-138/39 OR712-114/15 OR2372-2364/02 OR2506-1404/06 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	MULTI-FAMILY 5 UNITS (0805)
Subdivision	
Sec/Twp/Rng	32/63/37
Affordable Housing	No

Owner

BAUER SALLY ELAINE DEC TR 9/16/2009
75995 Overseas Hwy
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$382,138	$361,022	$361,250	$295,779
+	Market Misc Value	$32,644	$33,511	$34,377	$35,243
+	Market Land Value	$3,475,942	$3,308,906	$2,752,119	$1,535,141
=	Just Market Value	**$3,890,724**	**$3,703,439**	**$3,147,746**	**$1,866,163**
=	Total Assessed Value	**$2,429,912**	**$2,209,011**	**$2,008,192**	**$1,825,629**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$3,890,724**	**$3,703,439**	**$3,147,746**	**$1,866,163**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$3,475,942	$382,138	$32,644	$3,890,724	$2,429,912	$0	$3,890,724	$0
2023	$3,308,906	$361,022	$33,511	$3,703,439	$2,209,011	$0	$3,703,439	$0
2022	$2,752,119	$361,250	$34,377	$3,147,746	$2,008,192	$0	$3,147,746	$0
2021	$1,535,141	$295,779	$35,243	$1,866,163	$1,825,629	$0	$1,866,163	$0
2020	$1,535,141	$296,367	$36,110	$1,867,618	$1,659,663	$0	$1,867,618	$0
2019	$1,430,292	$300,138	$36,976	$1,767,406	$1,481,096	$0	$1,767,406	$0
2018	$1,290,734	$223,608	$3,886	$1,518,228	$1,346,451	$0	$1,518,228	$0

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Land

Land Use	Number of Units	Unit Type	Frontage	Depth
MULTI RES WATERFRONT (080W)	36,155.00	Square Foot	0	0

Monroe County, FL

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Summary

Parcel ID	00095560-000000
Account#	1110892
Property ID	1110892
Millage Group	50VI
Location Address	220 ATLANTIC St, UPPER MATECUMBE KEY
Legal Description	32 63 37 ISLAND OF UPPER MATECUMBE PB1-41 PT LOT 2 AND ADJ BAY BOTTOM (.29AC) AND ACCRETED LAND (.08AC) OR118-235(II DEED 21706) OR378-50/51 OR789-1796/98 OR889-955/57 OR905-445/46 OR954-548/49 OR1208-312/13 OR2496-710D/C OR3172-30 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	
Sec/Twp/Rng	32/63/37
Affordable Housing	No

Owner

STEVENS ALBERT F FAMILY TRUST 12/22/2021
C/O ALBERT F STEVENS TRUSTEE
43 ISMAEL ROAD
Tuckerton NJ 08087

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$955,239	$933,550	$939,157	$789,663
+	Market Misc Value	$82,780	$72,544	$75,815	$77,369
+	Market Land Value	$3,137,209	$2,887,361	$2,401,546	$1,534,020
=	Just Market Value	**$4,175,228**	**$3,893,455**	**$3,416,518**	**$2,401,052**
=	Total Assessed Value	**$3,195,800**	**$2,905,273**	**$2,641,157**	**$2,401,052**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$4,175,228**	**$3,893,455**	**$3,416,518**	**$2,401,052**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$3,137,209	$955,239	$82,780	$4,175,228	$3,195,800	$0	$4,175,228	$0
2023	$2,887,361	$933,550	$72,544	$3,893,455	$2,905,273	$0	$3,893,455	$0
2022	$2,401,546	$939,157	$75,815	$3,416,518	$2,641,157	$0	$3,416,518	$0
2021	$1,534,020	$789,663	$77,369	$2,401,052	$2,401,052	$0	$2,401,052	$0
2020	$1,534,020	$799,896	$78,927	$2,412,843	$2,412,843	$0	$2,412,843	$0
2019	$1,264,588	$810,969	$80,646	$2,156,203	$2,083,110	$0	$2,156,203	$0
2018	$1,180,069	$671,519	$42,148	$1,893,736	$1,893,736	$0	$1,893,736	$0

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Monroe County, FL

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Summary

Parcel ID	00095570-000000
Account#	1110906
Property ID	1110906
Millage Group	50VI
Location Address	200 ATLANTIC St, UPPER MATECUMBE KEY
Legal Description	32 63 37 ISLAND OF UPPER MATECUMBE PB1-41 PT LOT 2 AND PT LOT 3 OR25-104/08 OR464-318 OR684-824/27 OR834-1993 OR1251-998/1002 OR1402-198/207 OR1402-208/10 OR1402-211/13 OR1402-214/16 OR1402-217/19 OR1402-220/25 OR1449-1120/24 OR3096-1659 OR3096-1662 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	
Sec/Twp/Rng	32/63/37
Affordable Housing	No

Owner

200 ATLANTIC LLC
3215 W Fullerton Ave
Chicago IL 60647

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$1,069,016	$1,010,509	$1,018,241	$863,670
+	Market Misc Value	$105,374	$108,619	$111,553	$114,798
+	Market Land Value	$7,359,141	$6,773,015	$5,633,325	$2,570,117
=	Just Market Value	**$8,533,531**	**$7,892,143**	**$6,763,119**	**$3,548,585**
=	Total Assessed Value	**$8,183,374**	**$7,439,431**	**$6,763,119**	**$3,541,288**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$8,533,531**	**$7,892,143**	**$6,763,119**	**$3,548,585**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$7,359,141	$1,069,016	$105,374	$8,533,531	$8,183,374	$0	$8,533,531	$0
2023	$6,773,015	$1,010,509	$108,619	$7,892,143	$7,439,431	$0	$7,892,143	$0
2022	$5,633,325	$1,018,241	$111,553	$6,763,119	$6,763,119	$0	$6,763,119	$0
2021	$2,570,117	$863,670	$114,798	$3,548,585	$3,541,288	$0	$3,548,585	$0
2020	$2,570,117	$559,330	$89,906	$3,219,353	$3,219,353	$0	$3,219,353	$0
2019	$2,103,558	$359,823	$99,730	$2,563,111	$2,563,111	$0	$2,563,111	$0
2018	$1,943,505	$360,438	$100,043	$2,403,986	$2,403,986	$0	$2,403,986	$0

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Land

Land Use	Number of Units	Unit Type	Frontage	Depth
RES WATERFRONT (010W)	78,844.00	Square Foot	245	0

Monroe County, FL

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Summary

Parcel ID	00095580-000100
Account#	8578091
Property ID	8578091
Millage Group	50VI
Location Address	402 GULF St, UPPER MATECUMBE KEY
Legal Description	32 63 37 PT LOT 3 ISLAND OF UPPER MATECUMBE BAY BTM ADJ PT LOT 3 (.92AC) PB1-41 G57-183 OR275-536/37 OR831-973/974 OR1015-2274/78 OR1053-1317/18 OR1043-942/44 OR1053-1315/16 OR1300-1674/76-A OR2468-306/13 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	
Sec/Twp/Rng	32/63/37
Affordable Housing	No

Owner

OWRE CAROLINE H
5000 Hammock Lake Dr
Coral Gables FL 33156

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$296,952	$288,944	$296,547	$237,803
+	Market Misc Value	$62,995	$64,643	$66,288	$67,936
+	Market Land Value	$4,551,637	$4,329,203	$4,625,781	$2,742,512
=	Just Market Value	**$4,911,584**	**$4,682,790**	**$4,988,616**	**$3,048,251**
=	Total Assessed Value	**$4,057,222**	**$3,688,384**	**$3,353,076**	**$3,048,251**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$4,911,584**	**$4,682,790**	**$4,988,616**	**$3,048,251**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$4,551,637	$296,952	$62,995	$4,911,584	$4,057,222	$0	$4,911,584	$0
2023	$4,329,203	$288,944	$64,643	$4,682,790	$3,688,384	$0	$4,682,790	$0
2022	$4,625,781	$296,547	$66,288	$4,988,616	$3,353,076	$0	$4,988,616	$0
2021	$2,742,512	$237,803	$67,936	$3,048,251	$3,048,251	$0	$3,048,251	$0
2020	$2,742,512	$241,106	$69,735	$3,053,353	$3,053,353	$0	$3,053,353	$0
2019	$2,742,420	$244,409	$41,198	$3,028,027	$2,941,804	$0	$3,028,027	$0
2018	$2,485,386	$145,985	$42,996	$2,674,367	$2,674,367	$0	$2,674,367	$0

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Monroe County, FL

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Summary

Parcel ID	00096150-000000
Account#	1111589
Property ID	1111589
Millage Group	50VI
Location Address	121 CARROLL St, UPPER MATECUMBE KEY
Legal Description	33 63 37 UPPER MATECUMBE PT SWLY 1/2 LT 3 SQR 10 AND BAY BOTTOM SLY AND ADJ TO PT LOT 3 BLK 10 STRATTONS SUBD PB 2-36 G24-94 G53-434 OR97-184 OR118-234(II DEED 21708) OR433-612/13 OR839-1776/77 OR850-2186/87 OR2683-421/24 OR2819-784/87 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	
Sec/Twp/Rng	33/63/37
Affordable Housing	No

Owner

GREER JR PEDRO J
1428 Alegriano Ave
Coral Gables FL 33146

GREER JANUS MUNLEY H/W
1428 Alegriano Ave
Coral Gables FL 33146

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$81,236	$197,348	$202,542	$186,272
+	Market Misc Value	$72,614	$74,888	$77,164	$79,547
+	Market Land Value	$1,784,844	$1,642,689	$1,366,277	$872,683
=	Just Market Value	**$1,938,694**	**$1,914,925**	**$1,645,983**	**$1,138,502**
=	Total Assessed Value	**$1,515,346**	**$1,377,587**	**$1,252,352**	**$1,138,502**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$1,938,694**	**$1,914,925**	**$1,645,983**	**$1,138,502**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$1,784,844	$81,236	$72,614	$1,938,694	$1,515,346	$0	$1,938,694	$0
2023	$1,642,689	$197,348	$74,888	$1,914,925	$1,377,587	$0	$1,914,925	$0
2022	$1,366,277	$202,542	$77,164	$1,645,983	$1,252,352	$0	$1,645,983	$0
2021	$872,683	$186,272	$79,547	$1,138,502	$1,138,502	$0	$1,138,502	$0
2020	$872,683	$163,125	$53,371	$1,089,179	$1,089,179	$0	$1,089,179	$0
2019	$720,369	$165,524	$55,343	$941,236	$941,236	$0	$941,236	$0
2018	$659,822	$108,520	$47,076	$815,418	$815,418	$0	$815,418	$0

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00096160-000000
Account#	1111597
Property ID	1111597
Millage Group	50VI
Location Address	117 CARROLL St, UPPER MATECUMBE KEY
Legal Description	33 63 37 BAY BOTTOM SOUTHERLY ADJ TO PT LOT 3 BLK 10 STRATTONS SUBD PB2-38 AND PART OF THE NORTH 1/2 LOT 3 SQR 10 STRATTONS SUBD PB2-38 UPPER MATECUMBE OR83-660 OR851-22 OR851-24 OR987-1270 OR1057-853 OR1491-590 OR1535-1141 OR2357-2093 (Note: Not to be used on legal documents.)
Neighborhood	10024
Property Class	HOTEL - MOTEL (3903)
Subdivision	
Sec/Twp/Rng	33/63/37
Affordable Housing	No

Owner

DLP INC
PO Box 1298
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$1,539,504	$1,245,248	$1,245,248	$594,225
+	Market Misc Value	$659,788	$177,893	$177,893	$66,025
+	Market Land Value	$2,199,292	$2,134,711	$2,134,711	$660,250
=	Just Market Value	**$4,398,584**	**$3,557,852**	**$3,557,852**	**$1,320,500**
=	Total Assessed Value	**$1,109,083**	**$1,008,258**	**$916,599**	**$833,272**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$4,398,584**	**$3,557,852**	**$3,557,852**	**$1,320,500**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$2,199,292	$1,539,504	$659,788	$4,398,584	$1,109,083	$0	$4,398,584	$0
2023	$2,134,711	$1,245,248	$177,893	$3,557,852	$1,008,258	$0	$3,557,852	$0
2022	$2,134,711	$1,245,248	$177,893	$3,557,852	$916,599	$0	$3,557,852	$0
2021	$660,250	$594,225	$66,025	$1,320,500	$833,272	$0	$1,320,500	$0
2020	$653,246	$725,829	$72,583	$1,451,658	$757,520	$0	$1,451,658	$0
2019	$676,717	$609,045	$67,672	$1,353,434	$688,655	$0	$1,353,434	$0
2018	$376,617	$338,955	$37,662	$753,234	$626,050	$0	$753,234	$0

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Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00400660-000000
Account#	1492957
Property ID	1492957
Millage Group	50VI
Location Address	101 CARROLL St, UPPER MATECUMBE KEY
Legal Description	LOT 1 AND PT LOT 2 SQR 10 AND BB SLY AND ADJ TO LOT 1 STRATTONS SUBD PB 2-38 UPPER MATECUMBE G24-94 G47-179 G59-286 G73-464 OR34-58E OR27-194 OR79-346(II DEED 21351) OR135-534(II DEED 21352) OR225-18/20 OR262-495 OR403-52/53 OR1288-1413D/C OR1288-1421/23 OR2842-1984-87 OR2863-308/09 OR2882-1178/80FJ OR2885-1698 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

JOHNSON INDUSTRIAL PARK LLC
PO Box 14250
Jackson WY 83002

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$1,800,606	$1,743,968	$1,746,942	$1,535,939
+	Market Misc Value	$346,889	$354,523	$179,626	$183,535
+	Market Land Value	$9,165,994	$8,435,967	$7,016,471	$4,481,655
=	Just Market Value	**$11,313,489**	**$10,534,458**	**$8,943,039**	**$6,201,129**
=	Total Assessed Value	**$7,910,108**	**$7,191,007**	**$6,537,279**	**$5,942,981**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$11,313,489**	**$10,534,458**	**$8,943,039**	**$6,201,129**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$9,165,994	$1,800,606	$346,889	$11,313,489	$7,910,108	$0	$11,313,489	$0
2023	$8,435,967	$1,743,968	$354,523	$10,534,458	$7,191,007	$0	$10,534,458	$0
2022	$7,016,471	$1,746,942	$179,626	$8,943,039	$6,537,279	$0	$8,943,039	$0
2021	$4,481,655	$1,535,939	$183,535	$6,201,129	$5,942,981	$0	$6,201,129	$0
2020	$4,481,655	$52,061	$14,162	$4,547,878	$4,084,222	$0	$4,547,878	$0
2019	$3,650,236	$21,606	$14,526	$3,686,368	$3,686,368	$0	$3,686,368	$0
2018	$3,372,508	$22,006	$4,334	$3,398,848	$3,398,848	$0	$3,398,848	$0

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Monroe County, FL

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Summary

Parcel ID	00400721-000700
Account#	9105135
Property ID	9105135
Millage Group	50VI
Location Address	105 CARROLL St 7, UPPER MATECUMBE KEY
Legal Description	UNIT 7 OCEANSIDE RESORT OR3219-1712 (Note: Not to be used on legal documents.)
Neighborhood	1506
Property Class	VACANT RES (0000)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

ST OCEANSIDE LLC
1223 White St
Ste 104
Key West FL 33040

Valuation

		2024 Certified Values	2023 Certified Values
+	Market Improvement Value	$0	$0
+	Market Misc Value	$0	$0
+	Market Land Value	$1,149,120	$630,000
=	Just Market Value	**$1,149,120**	**$630,000**
=	Total Assessed Value	**$693,000**	**$630,000**
-	School Exempt Value	$0	$0
=	School Taxable Value	**$1,149,120**	**$630,000**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$1,149,120	$0	$0	$1,149,120	$693,000	$0	$1,149,120	$0
2023	$630,000	$0	$0	$630,000	$630,000	$0	$630,000	$0

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Land

Land Use	Number of Units	Unit Type	Frontage	Depth
RESIDENTIAL VIEW (010V)	4,200.00	Square Foot	0	0

View Tax Info

View Taxes for this Parcel

Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00400780-000000
Account#	1493082
Property ID	1493082
Millage Group	50VI
Location Address	119 CARROLL St, UPPER MATECUMBE KEY
Legal Description	33 63 37 STRATTONS SUBD PB2-38 UPPER MATECUMBE PT SWLY 1/2 LOT 3 SQR 10 AND BAY BOTTOM SLY AND ADJ TO PT LOT 3 BK 10 G24-94 G53-434/35 OR96-179/86 OR1071-2414/19 OR1660-40/43 OR2614-2055/57 OR2629-1759/61 OR2636-610/13 OR2964-1222 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

SENA JR LOUIS T
PO Box 548
Islamorada FL 33036

SENA KRISTIN
PO Box 548
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$1,080,793	$1,038,321	$1,049,288	$927,832
+	Market Misc Value	$56,587	$57,790	$0	$0
+	Market Land Value	$1,884,288	$1,734,213	$1,442,401	$921,307
=	Just Market Value	**$3,021,668**	**$2,830,324**	**$2,491,689**	**$1,849,139**
=	Total Assessed Value	**$1,748,274**	**$1,589,340**	**$1,392,318**	**$1,265,744**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$3,021,668**	**$2,830,324**	**$2,491,689**	**$1,849,139**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$1,884,288	$1,080,793	$56,587	$3,021,668	$1,748,274	$0	$3,021,668	$0
2023	$1,734,213	$1,038,321	$57,790	$2,830,324	$1,589,340	$0	$2,830,324	$0
2022	$1,442,401	$1,049,288	$0	$2,491,689	$1,392,318	$0	$2,491,689	$0
2021	$921,307	$927,832	$0	$1,849,139	$1,265,744	$0	$1,849,139	$0
2020	$921,307	$937,204	$0	$1,858,511	$1,150,676	$0	$1,858,511	$0
2019	$393,750	$0	$0	$393,750	$282,860	$0	$393,750	$0
2018	$257,145	$0	$0	$257,145	$257,145	$0	$257,145	$0

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Monroe County, FL

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Summary

Parcel ID	00400800-000000
Account#	1493104
Property ID	1493104
Millage Group	50VI
Location Address	117 CARROLL St, UPPER MATECUMBE KEY
Legal Description	STRATTONS SUBD PB2-38 UPPER MATECUMBE SW 1/2 LOT 4 BLK 10 AND BB S'LY & ADJ SW1/2 LT 4 G24-94 G52-261/62 OR86-217(II DEED 21349) OR1139-2204D/C OR1397-222/23L/E OR1397-229/30AFF OR1397-231/33AG OR1526-498/504(PROB #98-20038-CP-10) (Note: Not to be used on legal documents.)
Neighborhood	10024
Property Class	HOTEL - MOTEL (3903)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

SENA PHILLIP
PO Box 1298
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$1,176,000	$1,176,000	$1,176,000	$1,444,151
+	Market Misc Value	$168,000	$168,000	$168,000	$160,461
+	Market Land Value	$2,016,001	$2,016,001	$2,016,001	$1,604,613
=	Just Market Value	**$3,360,001**	**$3,360,001**	**$3,360,001**	**$3,209,225**
=	Total Assessed Value	**$3,360,001**	**$3,360,001**	**$3,360,001**	**$3,209,225**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$3,360,001**	**$3,360,001**	**$3,360,001**	**$3,209,225**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$2,016,001	$1,176,000	$168,000	$3,360,001	$3,360,001	$0	$3,360,001	$0
2023	$2,016,001	$1,176,000	$168,000	$3,360,001	$3,360,001	$0	$3,360,001	$0
2022	$2,016,001	$1,176,000	$168,000	$3,360,001	$3,360,001	$0	$3,360,001	$0
2021	$1,604,613	$1,444,151	$160,461	$3,209,225	$3,209,225	$0	$3,209,225	$0
2020	$1,636,482	$1,818,313	$181,831	$3,636,626	$3,145,838	$0	$3,636,626	$0
2019	$1,429,926	$1,286,934	$142,993	$2,859,853	$2,859,853	$0	$2,859,853	$0
2018	$1,347,715	$1,212,944	$134,772	$2,695,431	$2,695,431	$0	$2,695,431	$0

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Monroe County, FL

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Summary

Parcel ID	00400810-000000
Account#	1493112
Property ID	1493112
Millage Group	50VI
Location Address	82100 OVERSEAS Hwy, UPPER MATECUMBE KEY
Legal Description	BK 8 LTS 10-12 BK9 LTS 11-12 BK 10 NE 1/2 LT 4 AND LTS 5-9 AND BAY BOTTOM SLY AND ADJ TO BK 10 NE 1/2 LT 4 AND LTS 5-9 BLK STRATTONS SUBD PB2-38 UPPER MATECUMBE G24-94 G45-384 G53-60 G53-227 G53-229 G53-250 G53-539 OR75-457(II DEED 21327) OR75-458(II DEED 21326) OR94-116(II DEED 21496) OR106-397(II DEED 21619) OR299-335/36 OR300-329/31 OR424-679/81 OR1607-23/27 OR1607-56/60 OR1909-2471/77 OR2081-1461/67DEC/REST OR2347-255 OR2465-1169/73 OR2686-1408 (RES NO.14-05-30) OR2703-225/28 OR3075-1032 OR3075-1038 (Note: Not to be used on legal documents.)
Neighborhood	10024
Property Class	HOTEL - PRIVATE (3902)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

LAH ISLANDER LLC
510 Walnut St
Fl 9
Philadelphia PA 19106

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$20,857,424	$18,284,495	$15,950,000	$8,684,930
+	Market Misc Value	$8,938,896	$2,826,027	$2,403,944	$964,992
+	Market Land Value	$29,796,320	$30,112,325	$28,200,000	$9,649,923
=	Just Market Value	**$59,592,640**	**$51,222,847**	**$46,553,944**	**$19,299,845**
=	Total Assessed Value	**$56,330,271**	**$51,209,338**	**$46,553,944**	**$16,871,482**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$59,592,640**	**$51,222,847**	**$46,553,944**	**$19,299,845**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$29,796,320	$20,857,424	$8,938,896	$59,592,640	$56,330,271	$0	$59,592,640	$0
2023	$30,112,325	$18,284,495	$2,826,027	$51,222,847	$51,209,338	$0	$51,222,847	$0
2022	$28,200,000	$15,950,000	$2,403,944	$46,553,944	$46,553,944	$0	$46,553,944	$0
2021	$9,649,923	$8,684,930	$964,992	$19,299,845	$16,871,482	$0	$19,299,845	$0
2020	$7,115,148	$8,015,373	$901,683	$16,032,204	$15,337,711	$0	$16,032,204	$0
2019	$13,040,581	$1,173,623	$1,304,058	$15,518,262	$13,943,374	$0	$15,518,262	$0
2018	$10,903,048	$9,812,743	$1,090,305	$21,806,096	$12,675,795	$0	$21,806,096	$0

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Monroe County, FL

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Summary

Parcel ID	00400860-000000
Account#	1493163
Property ID	1493163
Millage Group	50VI
Location Address	VACANT LAND, UPPER MATECUMBE KEY
Legal Description	STRATTONS SUBD PB2-38 UPPER MATECUMBE SW1/2 LOT 10 SQR 10 BK 10 OUT BAY BTM SELY AND ADJ PT LT 10 33 63 37 G24-94 G59-539 OR185-116 OR466-467/68 OR2012-2452/54 OR2542-2297/99 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	VACANT RES (0000)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

LOUNSBURY ROBERT A
21980 SW 154th Ave
Miami FL 33170

CUNIGAN ELYSE LOUNSBURY REV LIVING TR
11/11/11
21980 SW 154th Ave
Miami FL 33170

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$0	$0	$0	$0
+	Market Misc Value	$0	$0	$0	$0
+	Market Land Value	$7,258	$7,258	$7,258	$7,258
=	Just Market Value	**$7,258**	**$7,258**	**$7,258**	**$7,258**
=	Total Assessed Value	**$7,258**	**$7,258**	**$7,258**	**$7,258**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$7,258**	**$7,258**	**$7,258**	**$7,258**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$7,258	$0	$0	$7,258	$7,258	$0	$7,258	$0
2023	$7,258	$0	$0	$7,258	$7,258	$0	$7,258	$0
2022	$7,258	$0	$0	$7,258	$7,258	$0	$7,258	$0
2021	$7,258	$0	$0	$7,258	$7,258	$0	$7,258	$0
2020	$7,258	$0	$0	$7,258	$6,752	$0	$7,258	$0
2019	$6,138	$0	$0	$6,138	$6,138	$0	$6,138	$0
2018	$6,138	$0	$0	$6,138	$6,138	$0	$6,138	$0

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Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00400870-000000
Account#	1493171
Property ID	1493171
Millage Group	50VI
Location Address	177 CARROLL St, UPPER MATECUMBE KEY
Legal Description	BK 10 NE 1/2 LT 10 AND SW 1/2 LT 11 STRATTONS SUBD PB2-38 UPPER MATECUMBE AND ADJ BAY BTM G24-94 G61-451 OR46-435C OR178-361(II DEED 22391) OR778/1272/73 OR805-419 OR965-1784/92P/A OR1349-1603/05CT OR1833-1769AFF OR1833-1788/89 OR1836-137/38 OR2554-1926D/C OR2616-2014/15 OR2665-1765/67 OR2667-2190/92 OR3166-1529 OR3166-1659 OR3166-1949 OR3166-2107 OR3167-0034 OR3183-678CE (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

RICH BARNABY W
177 Carroll St
Islamorada FL 33036

RICH RENZEN DEKIY
177 Carroll St
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$1,470,409	$1,396,999	$1,411,110	$0
+	Market Misc Value	$265,972	$272,053	$208,603	$0
+	Market Land Value	$6,579,136	$6,055,141	$5,036,263	$1,528,410
=	Just Market Value	**$8,315,517**	**$7,724,193**	**$6,655,976**	**$1,528,410**
=	Total Assessed Value	**$7,850,246**	**$7,621,599**	**$6,655,976**	**$466,059**
-	School Exempt Value	($25,000)	($25,000)	$0	$0
=	School Taxable Value	**$7,825,246**	**$7,596,599**	**$6,655,976**	**$1,528,410**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$6,579,136	$1,470,409	$265,972	$8,315,517	$7,850,246	$25,000	$7,825,246	$465,271
2023	$6,055,141	$1,396,999	$272,053	$7,724,193	$7,621,599	$25,000	$7,596,599	$102,594
2022	$5,036,263	$1,411,110	$208,603	$6,655,976	$6,655,976	$0	$6,655,976	$0
2021	$1,528,410	$0	$0	$1,528,410	$466,059	$0	$1,528,410	$0
2020	$1,456,390	$0	$0	$1,456,390	$423,690	$0	$1,456,390	$0
2019	$1,038,960	$0	$0	$1,038,960	$194,073	$0	$1,038,960	$0
2018	$461,214	$0	$0	$461,214	$176,430	$0	$461,214	$0

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Monroe County, FL

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Summary

Parcel ID	00400890-000000
Account#	1493198
Property ID	1493198
Millage Group	50VI
Location Address	183 CARROLL St, UPPER MATECUMBE KEY
Legal Description	BK 10 NLY 1/2 LT 11 LESS NWLY 175FT OF NELY 90FT STRATTONS SUBD PB2-38 UPPER MATECUMBE G24-94 G63-52 OR632-403/04 OR805-913D/C OR892-2305/07 OR965-1784/92P/A OR1031-1569/70 OR1088-1814C OR1088-1816 OR1190-1088/90/TR OR1190-1091/93/TR OR1950-56/59AFF OR1950-60/63AFF OR1950-53/53-A OR1950-54/55 OR2377-2352/54PET OR2377-2360ORD OR2377-2361/66WILL OR2570-1025/26 OR2999-2363 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

HELLAND JENNIFER J
183 Carroll St
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$115,459	$108,783	$110,482	$94,782
+	Market Misc Value	$34,365	$35,452	$36,536	$37,622
+	Market Land Value	$3,172,814	$2,920,112	$2,428,747	$1,551,310
=	Just Market Value	**$3,322,638**	**$3,064,347**	**$2,575,765**	**$1,683,714**
=	Total Assessed Value	**$1,813,167**	**$1,760,357**	**$1,709,085**	**$1,659,306**
-	School Exempt Value	($25,000)	($25,000)	($25,000)	($25,000)
=	School Taxable Value	**$1,788,167**	**$1,735,357**	**$1,684,085**	**$1,634,306**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$3,172,814	$115,459	$34,365	$3,322,638	$1,813,167	$25,000	$1,788,167	$500,000
2023	$2,920,112	$108,783	$35,452	$3,064,347	$1,760,357	$25,000	$1,735,357	$500,000
2022	$2,428,747	$110,482	$36,536	$2,575,765	$1,709,085	$25,000	$1,684,085	$500,000
2021	$1,551,310	$94,782	$37,622	$1,683,714	$1,659,306	$25,000	$1,634,306	$24,408
2020	$1,551,310	$94,782	$38,759	$1,684,851	$1,636,397	$25,000	$1,611,397	$48,454
2019	$1,278,800	$129,330	$39,895	$1,448,025	$1,379,242	$0	$1,448,025	$0
2018	$1,169,685	$61,253	$22,918	$1,253,856	$1,253,856	$0	$1,253,856	$0

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Land

Land Use	Number of Units	Unit Type	Frontage	Depth
RES WATERFRONT (010W)	27,800.00	Square Foot	0	0

Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00400900-000000
Account#	1493201
Property ID	1493201
Millage Group	50VI
Location Address	199 CARROLL St, UPPER MATECUMBE KEY
Legal Description	STRATTONS SUBD PB2-38 UPPER MATECUMBE SW 50 FT OF PT LOT 12 & .25 AC BAY BOTTOM SQR 10 G24-94 G56-167 G66-426 G71-559E OR189-295(II DEED 22522) OR307-179 OR371-800 OR493-245 OR661-371E OR1010-2207 OR2199-1641 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	VACANT RES (0000)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

CORSINI KIM DARIA
PO Box 37
Wycombe PA 18980

JONES JR ROBERT F

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$0	$132,221	$135,327	$115,121
+	Market Misc Value	$21,767	$24,373	$25,000	$25,627
+	Market Land Value	$1,243,582	$2,155,524	$1,792,820	$1,000,052
=	Just Market Value	**$1,265,349**	**$2,312,118**	**$1,953,147**	**$1,140,800**
=	Total Assessed Value	**$1,265,349**	**$1,380,368**	**$1,254,880**	**$1,140,800**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$1,265,349**	**$2,312,118**	**$1,953,147**	**$1,140,800**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$1,243,582	$0	$21,767	$1,265,349	$1,265,349	$0	$1,265,349	$0
2023	$2,155,524	$132,221	$24,373	$2,312,118	$1,380,368	$0	$2,312,118	$0
2022	$1,792,820	$135,327	$25,000	$1,953,147	$1,254,880	$0	$1,953,147	$0
2021	$1,000,052	$115,121	$25,627	$1,140,800	$1,140,800	$0	$1,140,800	$0
2020	$1,089,269	$65,704	$2,096	$1,157,069	$1,157,069	$0	$1,157,069	$0
2019	$1,038,475	$65,704	$27,436	$1,131,615	$1,131,615	$0	$1,131,615	$0
2018	$950,325	$65,704	$26,197	$1,042,226	$1,042,226	$0	$1,042,226	$0

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Monroe County, FL

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Summary

Parcel ID	00400920-000000
Account#	1493228
Property ID	1493228
Millage Group	50VI
Location Address	198 CARROLL St, UPPER MATECUMBE KEY
Legal Description	STRATTONS SUBD PB2-38 UPPER MATECUMBE PT NE 50 FT OF SW 100 FT OF PT LOT 12 SQR 10 (WATER FRONT) G24-94 G56-167 G66-426 G70-284 OR28-70/71 OR661-371E OR690-863 OR696-112 OR696-113 OR854-453/455 OR1163-1849/51/TR OR1229-1596/98 OR1284-350/52 OR1425-1706/07CERT OR1971-1516/18 OR2499-460/63 OR3204-094 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

198 CARROLL STREET LLC
PO Box 1298
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$146,280	$99,570	$103,181	$89,351
+	Market Misc Value	$11,419	$16,417	$4,976	$5,192
+	Market Land Value	$1,132,048	$1,055,964	$878,278	$560,981
=	Just Market Value	**$1,289,747**	**$1,171,951**	**$986,435**	**$655,524**
=	Total Assessed Value	**$1,289,146**	**$1,171,951**	**$224,786**	**$218,239**
-	School Exempt Value	$0	$0	($25,000)	($25,000)
=	School Taxable Value	**$1,289,747**	**$1,171,951**	**$199,786**	**$193,239**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$1,132,048	$146,280	$11,419	$1,289,747	$1,289,146	$0	$1,289,747	$0
2023	$1,055,964	$99,570	$16,417	$1,171,951	$1,171,951	$0	$1,171,951	$0
2022	$878,278	$103,181	$4,976	$986,435	$224,786	$25,000	$199,786	$500,000
2021	$560,981	$89,351	$5,192	$655,524	$218,239	$25,000	$193,239	$437,285
2020	$560,981	$35,582	$5,409	$601,972	$198,030	$25,000	$173,030	$403,942
2019	$460,834	$25,269	$5,625	$491,728	$193,578	$25,000	$168,578	$298,150
2018	$420,016	$25,269	$5,841	$451,126	$189,969	$25,000	$164,969	$261,157

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Land

Land Use	Number of Units	Unit Type	Frontage	Depth
RES WATERFRONT (010W)	6,769.00	Square Foot	0	0

Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00400930-000000
Account#	1493244
Property ID	1493244
Millage Group	50VI
Location Address	207 CARROLL St, UPPER MATECUMBE KEY
Legal Description	BK 10 NE 1/2 LT 12 & ADJ BAY BOTTOM STRATTONS SUBD PB2-38 UPPER MATECUMBE (II DEED 22421) G24-94 G50-469 OR611-263 OR965-1784 OR1581-1043 OR1771-388 OR2616-1665 OR3255-143 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

207 CARRROLL STREET LLC
117 Carroll St
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$284,300	$293,776	$215,443	$175,647
+	Market Misc Value	$18,828	$15,502	$16,056	$0
+	Market Land Value	$2,202,439	$2,855,170	$2,793,803	$1,784,481
=	Just Market Value	**$2,505,567**	**$3,164,448**	**$3,025,302**	**$1,960,128**
=	Total Assessed Value	**$2,505,567**	**$2,360,491**	**$2,145,901**	**$1,950,819**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$2,505,567**	**$3,164,448**	**$3,025,302**	**$1,960,128**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$2,202,439	$284,300	$18,828	$2,505,567	$2,505,567	$0	$2,505,567	$0
2023	$2,855,170	$293,776	$15,502	$3,164,448	$2,360,491	$0	$3,164,448	$0
2022	$2,793,803	$215,443	$16,056	$3,025,302	$2,145,901	$0	$3,025,302	$0
2021	$1,784,481	$175,647	$0	$1,960,128	$1,950,819	$0	$1,960,128	$0
2020	$1,784,481	$178,086	$0	$1,962,567	$1,773,472	$0	$1,962,567	$0
2019	$1,450,764	$161,010	$0	$1,611,774	$1,509,786	$0	$1,611,774	$0
2018	$1,324,230	$48,303	$0	$1,372,533	$1,372,533	$0	$1,372,533	$0

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Monroe County, FL

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Summary

Parcel ID	00400940-000000
Account#	1493252
Property ID	1493252
Millage Group	50VI
Location Address	209 CARROLL St, UPPER MATECUMBE KEY
Legal Description	PT LOT 13 SQR 10 STRATTONS SUBD PB2-38 UPPER MATECUMBE G24-94 G51-368 OR556-71 OR785-162 OR1006-420 OR1102-1418 OR1509-410CT OR1515-1703C/CT OR1529-710 OR1771-388Q/C OR3255-0147 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

SENA HOPKINS NICHOLAS
209 Carroll St
Islamorada FL 33036

TURNER BRITTANY
209 Carroll St
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$1,023,678	$1,136,038	$986,211	$855,821
+	Market Misc Value	$49,734	$66,334	$64,053	$82,661
+	Market Land Value	$2,633,833	$3,374,360	$3,301,834	$2,108,975
=	Just Market Value	**$3,707,245**	**$4,576,732**	**$4,352,098**	**$3,047,457**
=	Total Assessed Value	**$3,707,245**	**$1,442,392**	**$1,400,381**	**$1,359,594**
-	School Exempt Value	($25,000)	($25,000)	($25,000)	($25,000)
=	School Taxable Value	**$3,682,245**	**$1,417,392**	**$1,375,381**	**$1,334,594**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$2,633,833	$1,023,678	$49,734	$3,707,245	$3,707,245	$25,000	$3,682,245	$0
2023	$3,374,360	$1,136,038	$66,334	$4,576,732	$1,442,392	$25,000	$1,417,392	$500,000
2022	$3,301,834	$986,211	$64,053	$4,352,098	$1,400,381	$25,000	$1,375,381	$500,000
2021	$2,108,975	$855,821	$82,661	$3,047,457	$1,359,594	$25,000	$1,334,594	$500,000
2020	$2,108,975	$874,839	$85,208	$3,069,022	$1,340,823	$25,000	$1,315,823	$500,000
2019	$1,730,441	$410,747	$87,758	$2,228,946	$1,131,183	$25,000	$1,106,183	$500,000
2018	$1,575,265	$420,412	$90,409	$2,086,086	$1,110,092	$25,000	$1,085,092	$500,000

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Land

Land Use	Number of Units	Unit Type	Frontage	Depth
RESIDENTIAL VIEW (010V)	55,321.00	Square Foot	0	0

Monroe County, FL

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Summary

Parcel ID	00400950-000000
Account#	1493261
Property ID	1493261
Millage Group	50VI
Location Address	212 DOGWOOD Ln, UPPER MATECUMBE KEY
Legal Description	PT LOT 13 SQR 10 STRATTONS SUBD PB2-38 UPPER MATECUMBE G24-94 G51-368 OR616-672 OR825-2123/24 OR1477-1564/65 OR1477-1566/67 OR2886-766/68 OR3048-1842 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

MARTIN HAROLD D AND MARCIA M REVOCABLE
LIVING ENTIRETIES TRUST
3630 SW 123rd Ct
Miami FL 33175

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$289,073	$259,609	$265,509	$236,081
+	Market Misc Value	$340	$340	$340	$340
+	Market Land Value	$1,780,089	$1,638,312	$1,362,635	$870,353
=	Just Market Value	**$2,069,502**	**$1,898,261**	**$1,628,484**	**$1,106,774**
=	Total Assessed Value	**$1,232,750**	**$1,120,682**	**$1,018,802**	**$926,184**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$2,069,502**	**$1,898,261**	**$1,628,484**	**$1,106,774**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$1,780,089	$289,073	$340	$2,069,502	$1,232,750	$0	$2,069,502	$0
2023	$1,638,312	$259,609	$340	$1,898,261	$1,120,682	$0	$1,898,261	$0
2022	$1,362,635	$265,509	$340	$1,628,484	$1,018,802	$0	$1,628,484	$0
2021	$870,353	$236,081	$340	$1,106,774	$926,184	$0	$1,106,774	$0
2020	$870,353	$213,593	$340	$1,084,286	$841,985	$0	$1,084,286	$0
2019	$718,497	$46,604	$340	$765,441	$765,441	$0	$765,441	$0
2018	$652,481	$46,604	$340	$699,425	$699,425	$0	$699,425	$0

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Land

Land Use	Number of Units	Unit Type	Frontage	Depth
RES WATERFRONT (010W)	13,350.00	Square Foot	0	0

Monroe County, FL

PROPERTY RECORD CARD

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Summary

Parcel ID	00401180-000000
Account#	1493511
Property ID	1493511
Millage Group	50VI
Location Address	216 DOGWOOD Ln, UPPER MATECUMBE KEY
Legal Description	BK 12 PT SELY LT 1 AND .46 AC BAY BTM STRATTONS SUBD PB 2-38 UPPER MATECUMBE G24-94 G49-45 OR136-142(II DEED 21629) OR372-769 OR381-939C OR534-59 OR875-2383/84 OR915-2337/38 OR1092-375/77 OR1250-1145F/J OR1395-238/45F/J OR1451-351/52 OR1753-2081/82 OR2338-428/29 OR2760-309/10 OR2769-614/617Q/C (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

BALL WILLIAM W
4011 Westlake Dr
Austin TX 78746

BALL TEENA O
4011 Westlake Dr
Austin TX 78746

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$658,618	$643,087	$645,904	$585,797
+	Market Misc Value	$54,166	$55,426	$56,686	$57,945
+	Market Land Value	$1,584,572	$1,458,374	$1,212,989	$774,802
=	Just Market Value	**$2,297,356**	**$2,156,887**	**$1,915,579**	**$1,418,544**
=	Total Assessed Value	**$1,888,082**	**$1,716,438**	**$1,560,398**	**$1,418,544**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$2,297,356**	**$2,156,887**	**$1,915,579**	**$1,418,544**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$1,584,572	$658,618	$54,166	$2,297,356	$1,888,082	$0	$2,297,356	$0
2023	$1,458,374	$643,087	$55,426	$2,156,887	$1,716,438	$0	$2,156,887	$0
2022	$1,212,989	$645,904	$56,686	$1,915,579	$1,560,398	$0	$1,915,579	$0
2021	$774,802	$585,797	$57,945	$1,418,544	$1,418,544	$0	$1,418,544	$0
2020	$774,802	$598,814	$59,205	$1,432,821	$1,432,821	$0	$1,432,821	$0
2019	$639,854	$423,726	$60,465	$1,124,045	$1,124,045	$0	$1,124,045	$0
2018	$586,331	$428,282	$59,137	$1,073,750	$1,056,348	$0	$1,073,750	$0

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Monroe County, FL

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Summary

Parcel ID	00401200-000000
Account#	1493546
Property ID	1493546
Millage Group	50VI
Location Address	82519 OLD STATE Hwy, UPPER MATECUMBE KEY
Legal Description	STRATTONS SUBD PB 2-38 UPPER MATECUMBE NE'LY 50 FT OF SW'LY 150 FT LOT 2 SQ 12 OR461-328 OR1024-498 OR1236-979 OR1381-196/98PET/CASE#95-20129-CP-10 OR1444-1470 OR1444-1472DC OR1578-2221/23 OR1690-2301 OR1770-1790Q/C OR2347-255Q/C OR2686-1408 (RES NO.14-05-30) (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

HAMMONDS THOMAS H
600 Industrial Dr
Tipton IN 46072

HAMMONDS MARY F
600 Industrial Dr
Tipton IN 46072

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$241,469	$229,727	$233,493	$207,325
+	Market Misc Value	$72,960	$74,868	$76,776	$75,720
+	Market Land Value	$2,691,208	$2,476,864	$2,060,084	$1,315,834
=	Just Market Value	**$3,005,637**	**$2,781,459**	**$2,370,353**	**$1,598,879**
=	Total Assessed Value	**$1,213,623**	**$1,178,275**	**$1,143,957**	**$1,110,638**
-	School Exempt Value	($25,000)	($25,000)	($25,000)	($25,000)
=	School Taxable Value	**$1,188,623**	**$1,153,275**	**$1,118,957**	**$1,085,638**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$2,691,208	$241,469	$72,960	$3,005,637	$1,213,623	$25,000	$1,188,623	$500,000
2023	$2,476,864	$229,727	$74,868	$2,781,459	$1,178,275	$25,000	$1,153,275	$500,000
2022	$2,060,084	$233,493	$76,776	$2,370,353	$1,143,957	$25,000	$1,118,957	$500,000
2021	$1,315,834	$207,325	$75,720	$1,598,879	$1,110,638	$25,000	$1,085,638	$488,241
2020	$1,315,834	$207,325	$77,629	$1,600,788	$1,095,304	$25,000	$1,070,304	$500,000
2019	$1,095,536	$210,616	$79,536	$1,385,688	$991,572	$25,000	$966,572	$394,116
2018	$1,002,448	$148,044	$51,869	$1,202,361	$973,084	$25,000	$948,084	$229,277

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Land

Land Use	Number of Units	Unit Type	Frontage	Depth
RES WATERFRONT (010W)	22,900.00	Square Foot	50	0

Monroe County, FL

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Summary

Parcel ID	00401210-000000
Account#	1493554
Property ID	1493554
Millage Group	50VI
Location Address	82509 OLD Hwy, UPPER MATECUMBE KEY
Legal Description	BLK 12 PT LTS 1 AND ADJ BAY BOTTOM 2 STRATTONS SUBD PB2-38 UPPER MATECUMBE G24-94 G45-51 G49-45 OR60-183 OR136-142(II DEED 21629) OR372-769 OR381-939 OR449-554 OR456-375 OR534-59 OR576-587 OR1114-852 OR1332-508 OR1332-525 OR1332-526 OR2338-58 OR2347-255 OR2686-1408 OR3245-1322 OR3245-1329 (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

BULDAS-ZINNER NANCY REVOCABLE LIVING TRUST
06/08/2023
PO Box 608
Islamorada FL 33036

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$834,329	$817,028	$838,529	$781,544
+	Market Misc Value	$155,205	$155,537	$159,550	$92,064
+	Market Land Value	$5,441,135	$5,069,087	$4,216,641	$2,542,048
=	Just Market Value	**$6,430,669**	**$6,041,652**	**$5,214,720**	**$3,415,656**
=	Total Assessed Value	**$2,272,088**	**$2,205,911**	**$2,141,662**	**$2,012,330**
-	School Exempt Value	($30,000)	($25,000)	($25,000)	($25,000)
=	School Taxable Value	**$2,242,088**	**$2,180,911**	**$2,116,662**	**$1,987,330**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$5,441,135	$834,329	$155,205	$6,430,669	$2,272,088	$30,000	$2,242,088	$500,000
2023	$5,069,087	$817,028	$155,537	$6,041,652	$2,205,911	$25,000	$2,180,911	$500,000
2022	$4,216,641	$838,529	$159,550	$5,214,720	$2,141,662	$25,000	$2,116,662	$500,000
2021	$2,542,048	$781,544	$92,064	$3,415,656	$2,012,330	$25,000	$1,987,330	$500,000
2020	$2,542,048	$800,606	$93,969	$3,436,623	$1,984,547	$25,000	$1,959,547	$500,000
2019	$2,115,358	$487,035	$95,873	$2,698,266	$1,791,437	$25,000	$1,766,437	$500,000
2018	$1,935,117	$493,707	$90,999	$2,519,823	$1,758,035	$25,000	$1,733,035	$500,000

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Monroe County, FL

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Summary

Parcel ID	00401230-000000
Account#	1493571
Property ID	1493571
Millage Group	50VI
Location Address	82500 OLD STATE Rd, UPPER MATECUMBE KEY
Legal Description	STRATTONS SUBD PB 2-38 UPPER MATECUMBE NELY 50FT OF LOT 2 , ALL LT 3 AND LOTS 7 AND 8 OCEANA PB2-123 G17-381/82 G24-94 G54-289 G54-291 G56-541 OR66-11/12 OR99-397/98 OR162-144/45 OR203-234/35 OR542-259 OR503-643 OR789-1446/47 OR793-854 OR808-57D/C OR847-720E OR840-22/24 OR3118-1879 OR1334-770 OR1336-1636DC OR1335-2147/49 OR1460-2298/2300PR OR1346-771 OR1352-2466/70WILL OR1360-1763/64 OR1360-1765/66 OR1360-1767/68 OR1360-1772/75AFF OR1360-1776/94TRUST OR1403-1554 OR1724-2139/40 OR1983-476/77 OR1983-478/81AFF OR2147-1913/15 OR2147-1916/18 OR2147-1919/21 OR2163-1990 OR2187-1312/15 OR2187-1302/11(TIITF RENEWAL 440004555) OR2347-255Q/C OR2402-1684/85 OR2431-86/88C OR2470-1656/57 OR2686-1408 (RES NO.14-05-30) (Note: Not to be used on legal documents.)
Neighborhood	4450
Property Class	SINGLE FAMILY RESID (0100)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

PEARL OCEAN LLC
PO Box 560
Edison NJ 08818

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$921,749	$921,134	$920,410	$829,605
+	Market Misc Value	$155,309	$136,727	$141,385	$144,688
+	Market Land Value	$6,589,599	$6,202,338	$5,165,463	$3,026,987
=	Just Market Value	**$7,666,657**	**$7,260,199**	**$6,227,258**	**$4,001,280**
=	Total Assessed Value	**$5,131,195**	**$4,664,723**	**$4,240,657**	**$3,855,143**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$7,666,657**	**$7,260,199**	**$6,227,258**	**$4,001,280**

Monroe County, FL

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Summary

Parcel ID	00401340-000000
Account#	1493678
Property ID	1493678
Millage Group	50VI
Location Address	81801 OVERSEAS Hwy, UPPER MATECUMBE KEY
Legal Description	STRATTONS SUBD PB2-38 UPPER MATECUMBE PT LT A AND LT B AND NE1/2 LT 1 AND ALL LTS 2-5-6 SQR 7 AND SEC 32 TWP 63 RG 37 ISLAND OF UPPER MATECUMBE PB1-41 PT GOV LOTS 1-2 AND BAY BOTTOM SELY OF ADJ TO LT A STRATTONS SUB PB2-38 G24-94 G26-196 G37-363 G38-59 G38-421 G43-378 OR77-492(II DEED 21342) OR330-591 OR530-415 OR581-959 OR601-745 OR638-243/50 OR640-856/63 OR688-217/18 OR895-549/52 OR932-1485 OR932-1489AFF OR983-1221/23 OR1014-523/25 OR1014-526/33E OR1014-534/35 OR1073-1347 OR1249-1790/92A OR1440-2243/49 OR1457-1485/93II LEASE OR1457-1494/1500C OR1893-1397/402 OR2391-179/185DEC/REST OR2528-1181/91 OR2535-1506/16C OR2347-255Q/C OR2686-1408 (RES NO.14-05-30) (Note: Not to be used on legal documents.)
Neighborhood	10024
Property Class	HOTEL - LUXURY (3900)
Subdivision	STRATTON'S SUBD
Sec/Twp/Rng	28/63/37
Affordable Housing	No

Owner

NWCL LLC
C/O NORTHWOOD ACQUISTIONS LLC
575 5th Ave Fl 23
New York NY 10017

Valuation

		2024 Certified Values	2023 Certified Values	2022 Certified Values	2021 Certified Values
+	Market Improvement Value	$19,125,351	$18,857,090	$18,857,090	$5,857,076
+	Market Misc Value	$8,196,579	$2,693,870	$2,693,870	$874,377
+	Market Land Value	$27,321,930	$32,326,440	$32,326,440	$9,972,638
=	Just Market Value	**$54,643,860**	**$53,877,400**	**$53,877,400**	**$16,704,091**
=	Total Assessed Value	**$54,643,860**	**$53,877,400**	**$18,954,218**	**$16,704,091**
-	School Exempt Value	$0	$0	$0	$0
=	School Taxable Value	**$54,643,860**	**$53,877,400**	**$53,877,400**	**$16,704,091**

Historical Assessments

Year	Land Value	Building Value	Yard Item Value	Just (Market) Value	Assessed Value	Exempt Value	Taxable Value	Maximum Portability
2024	$27,321,930	$19,125,351	$8,196,579	$54,643,860	$54,643,860	$0	$54,643,860	$0
2023	$32,326,440	$18,857,090	$2,693,870	$53,877,400	$53,877,400	$0	$53,877,400	$0
2022	$32,326,440	$18,857,090	$2,693,870	$53,877,400	$18,954,218	$0	$53,877,400	$0
2021	$9,972,638	$5,857,076	$874,377	$16,704,091	$16,704,091	$0	$16,704,091	$0
2020	$9,972,638	$5,857,076	$874,377	$16,704,091	$16,704,091	$0	$16,704,091	$0
2019	$13,972,638	$6,531,029	$874,377	$21,378,044	$21,378,044	$0	$21,378,044	$0
2018	$14,259,655	$7,172,408	$832,740	$22,264,803	$21,465,748	$0	$22,264,803	$0

The Maximum Portability is an estimate only and should not be relied upon as the actual portability amount. Contact our office to verify the actual portability amount.

Appendix B / Species Search

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Monroe County, Florida

Local office

Florida Ecological Services Field Office

(352) 448-9151
(772) 562-4288
fw4flesregs@fws.gov

777 37th St
Suite D-101
Vero Beach, FL 32960-3559

https://www.fws.gov/office/florida-ecological-services

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Florida Panther Puma (=Felis) concolor coryi Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1763	Endangered
Puma (=mountain Lion) Puma (=Felis) concolor (all subsp. except coryi) No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6049	SAT
West Indian Manatee Trichechus manatus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4469	Threatened Marine mammal

Birds

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10477	Threatened
Piping Plover *Charadrius melodus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened
Roseate Tern *Sterna dougallii dougallii* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2083	Threatened

Reptiles

NAME	STATUS
American Alligator *Alligator mississippiensis* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/776	SAT
American Crocodile *Crocodylus acutus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/6604	Threatened
Eastern Indigo Snake *Drymarchon couperi* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/646	Threatened
Florida Keys Mole Skink *Plestiodon egregius egregius* Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4480	Proposed Threatened
Green Sea Turtle *Chelonia mydas* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6199	Threatened
Hawksbill Sea Turtle *Eretmochelys imbricata* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3656	Endangered
Leatherback Sea Turtle *Dermochelys coriacea* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1493	Endangered

Loggerhead Sea Turtle Caretta caretta — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/1110

Fishes

NAME	STATUS
Gulf Sturgeon Acipenser oxyrinchus (=oxyrhynchus) desotoi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/651	Threatened

Insects

NAME	STATUS
Miami Blue Butterfly Cyclargus thomasi bethunebakeri Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3797	Endangered
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Schaus Swallowtail Butterfly Heraclides aristodemus ponceanus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1951	Endangered

Flowering Plants

NAME	STATUS
Big Pine Partridge Pea Chamaecrista lineata keyensis There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/8416	Endangered
Blodgett's Silverbush Argythamnia blodgettii There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/6823	Threatened
Cape Sable Thoroughwort Chromolaena frustrata There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4733	Endangered
Everglades Bully Sideroxylon reclinatum ssp. austrofloridense There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/4735	Threatened
Florida Pineland Crabgrass Digitaria pauciflora There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/3728	Threatened

Florida Prairie-clover Dalea carthagenensis floridana There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/2300	Endangered
Florida Semaphore Cactus Consolea corallicola There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4356	Endangered
Key Tree Cactus Pilosocereus robinii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2520	Endangered
Sand Flax Linum arenicola There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/4313	Endangered
Wedge Spurge Chamaesyce deltoidea serpyllum There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/949	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
American Crocodile Crocodylus acutus https://ecos.fws.gov/ecp/species/6604#crithab	Final

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

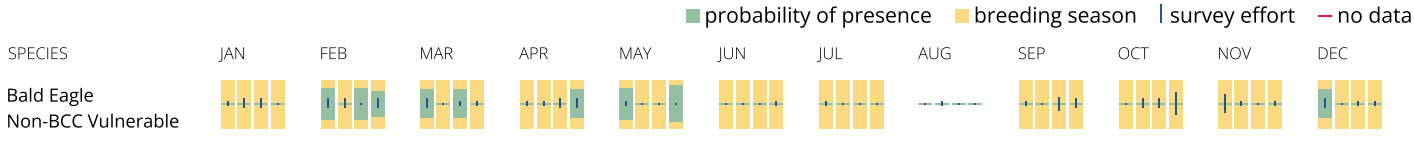
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON

American Kestrel Falco sparverius paulus — Breeds Apr 1 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9587

Bald Eagle Haliaeetus leucocephalus — Breeds Sep 1 to Jul 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Black Skimmer Rynchops niger — Breeds May 20 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Brown Pelican Pelecanus occidentalis — Breeds Jan 15 to Sep 30

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/6034

Chimney Swift Chaetura pelagica — Breeds Mar 15 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Loon gavia immer — Breeds Apr 15 to Oct 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/4464

Double-crested Cormorant phalacrocorax auritus — Breeds Apr 20 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/3478

Great Blue Heron Ardea herodias occidentalis — Breeds Jan 1 to Dec 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Gull-billed Tern Gelochelidon nilotica — Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9501

Least Tern Sternula antillarum antillarum — Breeds Apr 25 to Sep 5

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Lesser Yellowlegs Tringa flavipes — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9679

Magnificent Frigatebird Fregata magnificens — Breeds Oct 1 to Apr 30
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Mangrove Cuckoo Coccyzus minor — Breeds Apr 20 to Aug 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Painted Bunting Passerina ciris — Breeds Apr 25 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Prairie Warbler Setophaga discolor — Breeds May 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-breasted Merganser Mergus serrator — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Reddish Egret Egretta rufescens — Breeds Mar 1 to Sep 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/7617

Ring-billed Gull Larus delawarensis — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Royal Tern Thalasseus maximus — Breeds Apr 15 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Ruddy Turnstone Arenaria interpres morinella — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Semipalmated Sandpiper Calidris pusilla — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Swallow-tailed Kite Elanoides forficatus — Breeds Mar 10 to Jun 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8938

Whimbrel *Numenius phaeopus hudsonicus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
White-crowned Pigeon *Patagioenas leucocephala* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/4047	Breeds May 1 to Sep 30
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Wilson's Plover *Charadrius wilsonia* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Aug 20

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

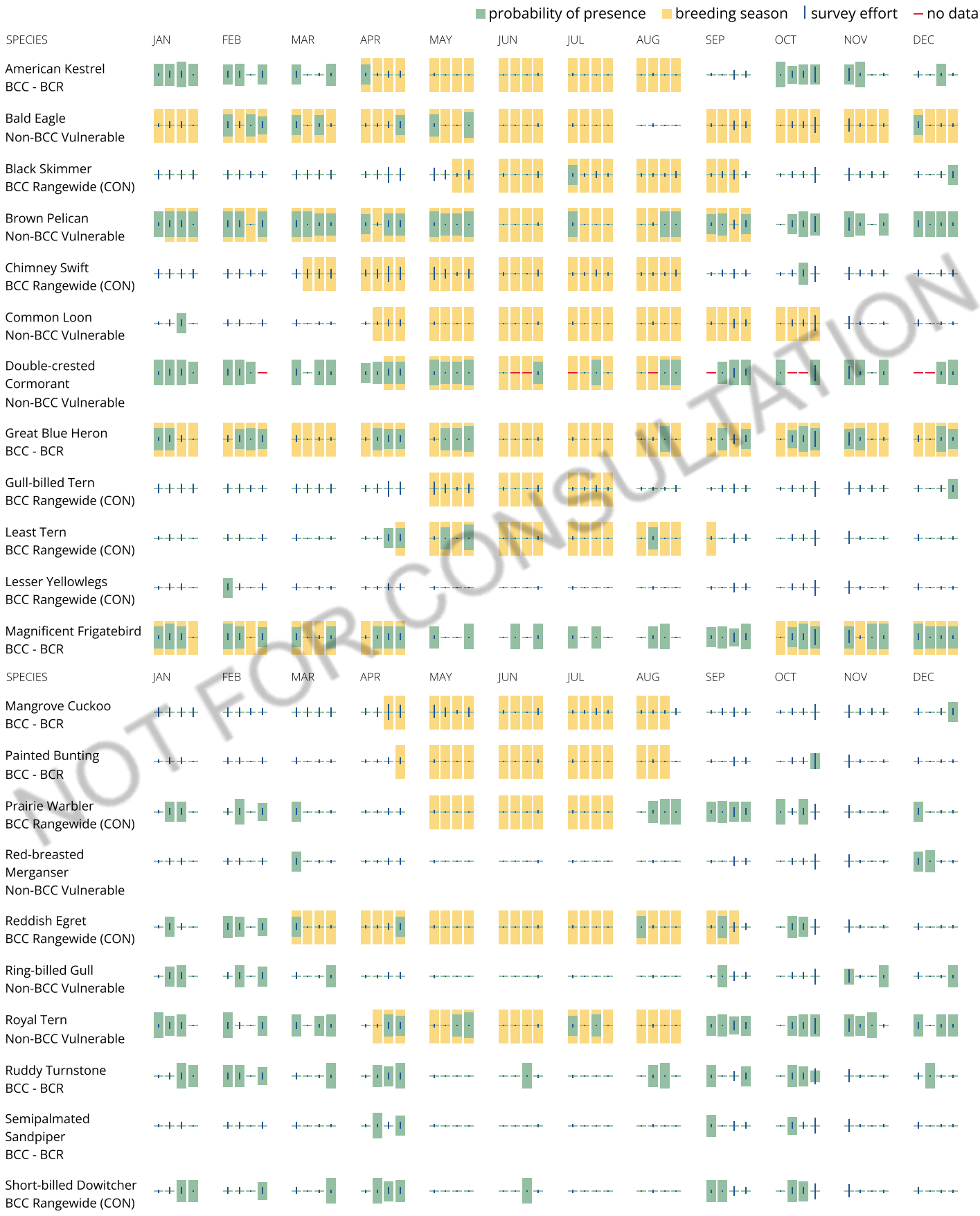
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

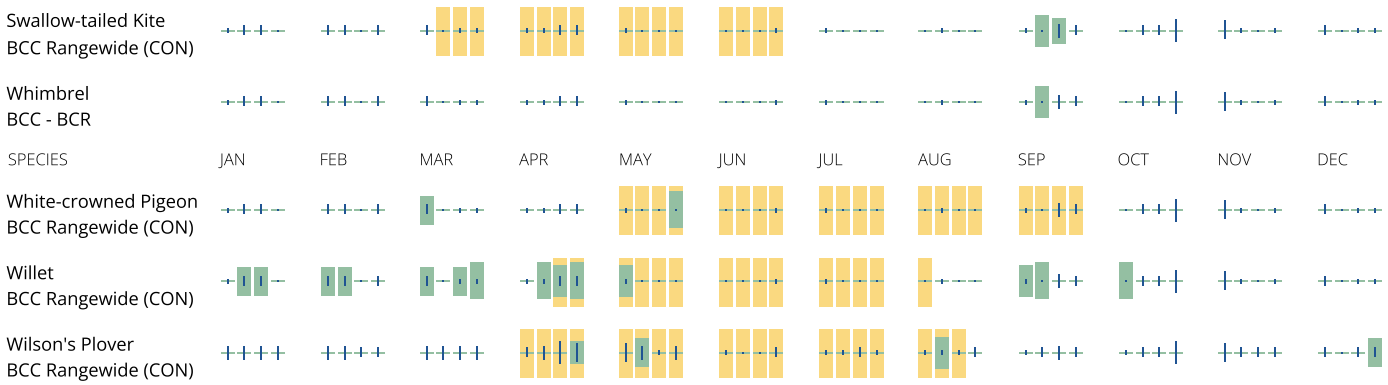
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Marine mammals

Marine mammals are protected under the Marine Mammal Protection Act. Some are also protected under the Endangered Species Act[1] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora[2].

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries[3] [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the Marine Mammals page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The Endangered Species Act (ESA) of 1973.
2. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

West Indian Manatee *Trichechus manatus*
https://ecos.fws.gov/ecp/species/4469

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

ESTUARINE AND MARINE DEEPWATER

M1ABL
E1UBLx

ESTUARINE AND MARINE WETLAND

M2USM

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Drawn Action Area & Overlapping S7 Consultation Areas

Area of Interest (AOI) Information

Area : 363.65 acres

Nov 26 2024 16:48:04 Eastern Standard Time

Summary

Name	Count	Area(acres)	Length(mi)
Atlantic Sturgeon	0	0	N/A
Shortnose Sturgeon	0	0	N/A
Atlantic Salmon	0	0	N/A
Sea Turtles	0	0	N/A
Atlantic Large Whales	0	0	N/A
In or Near Critical Habitat	0	0	N/A

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Tallahassee, FL 32303
850-224-8207
850-681-9364 fax
www.fnai.org

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

UNOFFICIAL REPORT

Created 11/26/2024

(Contact the FNAI Data Services Coordinator at 850.224.8207 or kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

Report for 4 Matrix Units: 61695 , 61696 , 61969 , 61970

Descriptions

DOCUMENTED - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.

DOCUMENTED-HISTORIC - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.

LIKELY - The species or community is *known* to occur in this vicinity, and is considered likely within this Matrix Unit because:

1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; *or*
2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.

POTENTIAL - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.

Matrix Unit ID: 61695

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Charadrius melodus Piping Plover	G3	S2	T	FT
Crocodylus acutus American Crocodile	G2	S2	T	FT
Ctenogobius stigmaturus Spottail Goby	G2	S2	N	N

Matrix Unit ID: 61696

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Crocodylus acutus American Crocodile	G2	S2	T	FT
Ctenogobius stigmaturus Spottail Goby	G2	S2	N	N

Matrix Unit ID: 61969

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

1 **Likely** Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Ctenogobius stigmaturus Spottail Goby	G2	S2	N	N

Matrix Unit ID: 61970

5 **Documented** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Appias drusilla Florida White	G4G5	S1	N	N
Byrsonima lucida locustberry	G4G5	S3	N	T
Strymon martialis Martial Scrub-Hairstreak	G3G4	S2S3	N	N
Swietenia mahagoni West Indies mahogany	G3G4	S3	N	T
Thrinax radiata Florida thatch palm	G4G5	S2	N	E

0 **Documented-Historic** Elements Found

11 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Acrostichum aureum golden leather fern	G5	S3	N	T
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Chamaesyce garberi Garber's spurge	G1	S1	T	E
Crocodylus acutus American Crocodile	G2	S2	T	FT
Crossopetalum rhacoma rhacoma	G5	S3	N	T
Ctenogobius stigmaturus Spottail Goby	G2	S2	N	N
Drypetes diversifolia milkbark	G4	S2	N	E
Gyminda latifolia false boxwood	G4	S2	N	E
Peromyscus gossypinus allapaticola Key Largo Cotton Mouse	G5T1Q	S1	E	FE
Rockland hammock	G2	S2	N	N
Schaefferia frutescens yellowwood	G5	S2	N	E

Matrix Unit IDs: 61695 , 61696 , 61969 , 61970

34 **Potential** Elements Common to Any of the 4 Matrix Units

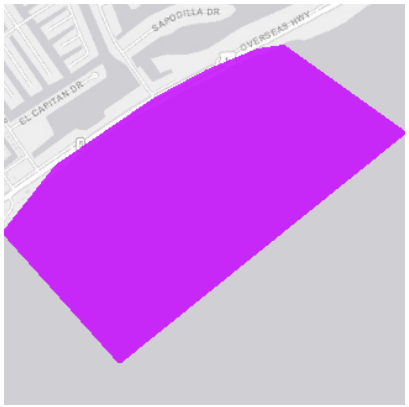
Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Ardea herodias occidentalis Great White Heron	G5T2	S2	N	N
Argythamnia argothamnoides Blodgett's silverbush	GNR	S2	T	E
Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	ST
Bourreria radula rough strongbark	G2?	S1	N	E
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Chamaesyce garberi Garber's spurge	G1	S1	T	E
Chamaesyce porteriana Porter's broad-leaved spurge	G2	S2	N	E
Chelonia mydas Green Sea Turtle	G3	S2S3	T	FT
Chondropoma dentatum Crenulate Horn	G2G3	S2?	N	N
Colubrina cubensis var. floridana Cuban snake-bark	G2G3T1	S1	N	E
Consolea corallicola semaphore pricklypear	G1	S1	E	E
Crossopetalum ilicifolium Christmas berry	G3	S3	N	T
Eretmochelys imbricata Hawksbill Sea Turtle	G3	S1	E	FE

Eunica tatila tatilista Florida Purplewing	G5T4T5	S1S2	N	N
Gambusia rhizophorae Mangrove Gambusia	G3	S3	N	N
Guaiacum sanctum lignum-vitae	G2G3	S1	N	E
Harrisia simpsonii Simpson's prickly apple	G2	S2	N	N
Indigofera trita ssp. scabra Florida Keys indigo	GNRTNR	S1	N	E
Liguus fasciatus matecumbensis Florida Tree Snail	G3T2	S2	N	N
Linum arenicola sand flax	G1G2	S1S2	E	E
Opuntia triacantha three-spined pricklypear	G2G4	S1	N	E
Pantherophis guttatus pop. 1 Red Rat Snake, Lower Keys Population	G5T2Q	S2	N	N
Papilio aristodemus ponceanus Schaus' Swallowtail	G3G4T1	S1	E	FE
Patagioenas leucocephala White-crowned Pigeon	G3	S3	N	ST
Pilosocereus robinii tree cactus	G1	S1	E	E
Plestiodon egregius egregius Florida Keys Mole Skink	G5T1	S1	N	ST
Poinsettia pinetorum pineland spurge	G2	S2	N	E
Rallus longirostris insularum Mangrove Clapper Rail	G5T3	S3	N	N
Rivulus marmoratus Mangrove Rivulus	G4G5	S3	SC	N
Rutela formosa Handsome Flower Scarab Beetle	G3G4	S1S2	N	N
Setophaga discolor paludicola Florida Prairie Warbler	G5T3	S3	N	N
Swietenia mahagoni West Indies mahogany	G3G4	S3	N	T
Tantilla oolitica Rim Rock Crowned Snake	G1G2	S1S2	N	ST
Trichechus manatus latirostris Florida Manatee	G2G3T2	S2S3	T	N

Sea Oats Beach Area of Interest

Description:
Project Type: Other Area of Interest (OAOI)
Expiration: This AOI will be available in the EST until 12/26/2024
Last updated: Jimmy Stroz @ FDOT District 4 on Tue Nov 26 14:16:55 EST 2024

Sea Oats Beach - Feature 1



Analysis Type	Date Run	*Features within AOI* Count
Protected Species and Habitat		
For the official list of fish and wildlife designated by the state of Florida as Endangered, Threatened or Species of Special Concern, please refer to sections 68A-27.003, .0031 and 005 in *Rules Relating to Endangered or Threatened Species*, Chapter 68A-27, Florida Administrative Code, https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68A-27. For general information on Florida imperiled species and species conservation programs, go to https://myfwc.com/wildlifehabitats/wildlife/		
AUDUBON Eagle Nests (Buffered by 330 and 660 Feet)	11/26/2024	0
Atlantic Coast Plants Consultation Area	11/26/2024	0
Crocodile Consultation Area	11/26/2024	1
FWC Black Bear Range	11/26/2024	1
FWC Critical Wildlife Area Boundaries	11/26/2024	0
	11/26/2024	1

Analysis Type	Date Run	Count
FWC Dark Sky Lighting Recommended Areas		
FWC State Manatee Protection Zones	11/26/2024	0
FWC Wildlife Sensitive Conventional Lighting	11/26/2024	1
Florida Bonneted Bat Consultation Area	11/26/2024	0
Mangroves	11/26/2024	0
NMFS Critical Habitat (Designated Species - Lines)	11/26/2024	0
NMFS Critical Habitat (Designated Species)	11/26/2024	9
NOAA Essential Fish Habitat (EFH)	11/26/2024	44
Okeechobee Gourd Consultation Area	11/26/2024	0
Panther Consultation Area	11/26/2024	0
Seagrass Beds (Showing Continuous/Discontinuous)	11/26/2024	4
Snail Kite Priority Management Zones	11/26/2024	0
USFWS Atlantic Salt Marsh Snake Consultation Area	11/26/2024	0
USFWS Bluetail Mole Skink Consultation Area	11/26/2024	0
USFWS Caracara Consultation Area	11/26/2024	0
USFWS Critical Habitat (Designated Species - Lines)	11/26/2024	0
USFWS Critical Habitat (Designated Species)	11/26/2024	2
USFWS Florida Grasshopper Sparrow Consultation Area	11/26/2024	0
USFWS Lake Wales Ridge Plants Consultation Area	11/26/2024	0
USFWS Manatee Consultation Area	11/26/2024	1
USFWS Piping Plover Consultation Area	11/26/2024	1

Analysis Type	Date Run	Count
USFWS Red Cockaded Woodpecker Consultation Area	11/26/2024	0
USFWS Sand Skink Consultation Area (Neoseps reynoldsi)	11/26/2024	0
USFWS Scrub Jay Consultation Area	11/26/2024	0
USFWS Snail Kite Consultation Area	11/26/2024	0
Woodstork Core Foraging Areas	11/26/2024	0
Woodstork Nests	11/26/2024	0
Wetlands and Surface Waters		
FWRI Saltwater Marshes	11/26/2024	0
Sole Source Aquifers	11/26/2024	0
USFWS National Wetlands Inventory Areas	11/26/2024	2
WMD Wetlands (FLUCCS Level 3)	11/26/2024	1

Crocodile Consultation Area

Metadata: https://etdmpub.fla-etat.org/meta/ca_crocodile.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
AMERICAN CROCODILE CONSULTATION AREA (SF ESO)	322.29	100%
Totals	322.29	-

FWC Black Bear Range

Metadata: https://etdmpub.fla-etat.org/meta/bear_range.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Name
RARE

Summary: 8.3 acres, 2.6 percent of analysis area.

FWC Dark Sky Lighting Recommended Areas

Metadata: https://etdmpub.fla-etat.org/meta/trtl_drksky_light.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
DARK SKY LIGHTING - MONROE	181.44	56.3%
Totals	181.44	-

FWC Wildlife Sensitive Conventional Lighting

Metadata: https://etdmpub.fla-etat.org/meta/trtl_sen_light.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
SENSITIVE CONVENTIONAL LIGHTING - MONROE	39.73	12.33%
Totals	39.73	-

NMFS Critical Habitat (Designated Species)

NMFS Critical Habitat (Proposed and Final)

Metadata: https://etdmpub.fla-etat.org/meta/ch_nmfs_poly.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Common Name, Status and Listing	Area of Interest	
	Acr	Pct
CORAL, STAGHORN - (FLORIDA AREA)(FINAL)(THREATENED)	313.72	97.34%
CORAL, ELKHORN - (FLORIDA AREA)(FINAL)(THREATENED)	313.72	97.34%
SEA TURTLE, LOGGERHEAD - (LOGG-N-19 CONSTRICTED MIGRATORY HABITAT)(FINAL)(THREATENED)	316.82	98.3%
SEA TURTLE, LOGGERHEAD - (LOGG-N-19 BREEDING HABITAT)(FINAL)(THREATENED)	316.82	98.3%
SEA TURTLE, GREEN - (FL01: FLORIDA)(PROPOSED)(THREATENED)	322.29	100%
CORAL, BOULDER STAR - (1 SOUTHEAST FLORIDA FROM LAKE WORTH INLET IN PALM BEACH COUNTY TO THE DRY TORTUGAS)(FINAL)(THREATENED)	313.72	97.34%
CORAL, LOBED STAR - (1 SOUTHEAST FLORIDA FROM LAKE WORTH INLET IN PALM BEACH COUNTY TO THE DRY TORTUGAS)(FINAL)(THREATENED)	313.72	97.34%
CORAL, MOUNTAINOUS STAR - (1 SOUTHEAST FLORIDA FROM ST. LUCIE INLET IN MARTIN COUNTY TO THE DRY TORTUGAS)(FINAL)(THREATENED)	313.72	97.34%
CORAL, PILLAR - (1 SOUTHEAST FLORIDA FROM LAKE WORTH INLET IN PALM BEACH COUNTY TO THE DRY TORTUGAS)(FINAL)(THREATENED)	313.72	97.34%
Totals	2,838.25	-

NOAA Essential Fish Habitat (EFH)

Metadata: https://etdmpub.fla-etat.org/meta/essential_fish_habitat.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Species Name and Life Stage	Area of Interest	
	Acr	Pct
SAILFISH [LIFESTAGE: ADULT]	288.03	89.37%
BULL SHARK [LIFESTAGE: ALL]	303.2	94.08%
BLUEFISH [LIFESTAGE: ALL]	303.94	94.31%
LEMON SHARK [LIFESTAGE: JUVENILE]	288.03	89.37%
NURSE SHARK [LIFESTAGE: ALL]	303.2	94.08%
REEF FISH [LIFESTAGE: ALL]	287.59	89.23%
ATLANTIC SHARPNOSE SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: ALL]	288.03	89.37%
BONNETHEAD SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: ADULT]	303.2	94.08%
TIGER SHARK [LIFESTAGE: ALL]	303.2	94.08%
SANDBAR SHARK [LIFESTAGE: ADULT]	287.95	89.34%
ATLANTIC SHARPNOSE SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: JUVENILE/ADULT]	288.03	89.37%
BLACKTIP SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: JUVENILE/ADULT]	274.15	85.06%
SCALLOPED HAMMERHEAD SHARK [LIFESTAGE: ALL]	14.26	4.42%
BLACKNOSE SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: ALL]	303.2	94.08%
SPINNER SHARK [LIFESTAGE: NEONATE]	303.2	94.08%
SAILFISH [LIFESTAGE: JUVENILE]	288.03	89.37%
CARIBBEAN REEF SHARK [LIFESTAGE: ALL]	288.03	89.37%
BONNETHEAD SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: JUVENILE]	303.2	94.08%
SPINY LOBSTER [LIFESTAGE: ALL]	306.39	95.07%
TIGER SHARK [LIFESTAGE: JUVENILE/ADULT]	303.2	94.08%
SPINNER SHARK [LIFESTAGE: ALL]	303.2	94.08%
WHALE SHARK [LIFESTAGE: ALL]	299.44	92.91%
LEMON SHARK [LIFESTAGE: ALL]	303.28	94.1%
BLACKTIP SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: ALL]	310.92	96.47%
CORALS [LIFESTAGE: ALL]	322.29	100%
LEMON SHARK [LIFESTAGE: NEONATE]	303.2	94.08%
BLUEFISH [LIFESTAGE: EGGS]	303.74	94.24%
BLUEFISH [LIFESTAGE: JUVENILE]	303.89	94.29%
LEMON SHARK [LIFESTAGE: ADULT]	287.95	89.34%
COASTAL MIGRATORY PELAGICS [LIFESTAGE: ALL]	287.59	89.23%
BULL SHARK [LIFESTAGE: JUVENILE/ADULT]	303.2	94.08%
BLACKNOSE SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: JUVENILE/ADULT]	303.2	94.08%
BONNETHEAD SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: ALL]	303.2	94.08%

Species Name and Life Stage	Acr	Pct
SAILFISH [LIFESTAGE: ALL]	288.03	89.37%
SANDBAR SHARK [LIFESTAGE: ALL]	287.95	89.34%
NURSE SHARK [LIFESTAGE: JUVENILE/ADULT]	303.2	94.08%
BLACKTIP SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: NEONATE]	310.92	96.47%
BLUEFISH [LIFESTAGE: LARVAE]	303.74	94.24%
TIGER SHARK [LIFESTAGE: NEONATE]	303.2	94.08%
SCALLOPED HAMMERHEAD SHARK [LIFESTAGE: JUVENILE/ADULT]	14.26	4.42%
GREAT HAMMERHEAD SHARK [LIFESTAGE: ALL]	303.2	94.08%
BONNETHEAD SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: NEONATE]	303.2	94.08%
SNAPPER GROUPER [LIFESTAGE: ALL]	306.39	95.07%
BLUEFISH [LIFESTAGE: ADULT]	303.89	94.29%
Totals	12,591.13	-

Seagrass Beds (Showing Continuous/Discontinuous)

Seagrass beds broken down by whether the bed is continuous or discontinuous

Metadata: https://etdmpub.fla-etat.org/meta/seagrs.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
CONTINUOUS	102.62	31.85%
Totals	102.62	-

USFWS Critical Habitat (Designated Species)

USFWS Critical Habitat (Proposed and Final)

Metadata: https://etdmpub.fla-etat.org/meta/ch_usfws_poly.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Common Name, Status and Listing	Area of Interest	
	Acr	Pct
PIPING PLOVER - (FINAL)(THREATENED)	2.23	0.69%
AMERICAN CROCODILE - (FINAL)(THREATENED)	8.45	2.62%
Totals	10.68	-

USFWS Manatee Consultation Area

Metadata: https://etdmpub.fla-etat.org/meta/ca_manatee.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
WEST INDIAN MANATEE CONSULTATION AREA (SF ESO)	322.29	100%
Totals	322.29	-

USFWS Piping Plover Consultation Area

Metadata: https://etdmpub.fla-etat.org/meta/ca_pip_plover.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
PIPING PLOVER CONSULTATION AREA (SF ESO)	322.29	100%
Totals	322.29	-

USFWS National Wetlands Inventory Areas

National Wetlands Inventory Areas

Metadata: https://etdmpub.fla-etat.org/meta/nwip.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

System and Wetland Type	Area of Interest	
	Acr	Pct
MARINE (ESTUARINE AND MARINE WETLAND)	5.45	1.69%
MARINE (ESTUARINE AND MARINE DEEPWATER)	311.06	96.52%
Totals	316.51	-

WMD Wetlands (FLUCCS Level 3)

Metadata: https://etdmpub.fla-etat.org/meta/lu_l3_state.xml

Sea Oats Beach - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Land Use Classification	Area of Interest	
	Acr	Pct
TIDAL FLATS	0.49	0.15%
Totals	0.49	-

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Monroe County, Florida

Local office

Florida Ecological Services Field Office

(352) 448-9151
(772) 562-4288
fw4flesregs@fws.gov

777 37th St
Suite D-101
Vero Beach, FL 32960-3559

https://www.fws.gov/office/florida-ecological-services

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Florida Panther Puma (=Felis) concolor coryi Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1763	Endangered
Puma (=mountain Lion) Puma (=Felis) concolor (all subsp. except coryi) No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6049	SAT
West Indian Manatee Trichechus manatus Wherever found There is **final** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/4469	Threatened Marine mammal

Birds

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10477	Threatened
Roseate Tern *Sterna dougallii dougallii* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2083	Threatened

Reptiles

NAME	STATUS
American Alligator *Alligator mississippiensis* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/776	SAT
American Crocodile *Crocodylus acutus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/6604	Threatened
Eastern Indigo Snake *Drymarchon couperi* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/646	Threatened
Florida Keys Mole Skink *Plestiodon egregius egregius* Wherever found There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/4480	Proposed Threatened
Green Sea Turtle *Chelonia mydas* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6199	Threatened
Hawksbill Sea Turtle *Eretmochelys imbricata* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3656	Endangered
Leatherback Sea Turtle *Dermochelys coriacea* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1493	Endangered
Loggerhead Sea Turtle *Caretta caretta* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1110	Threatened

Fishes

NAME	STATUS
Gulf Sturgeon Acipenser oxyrinchus (=oxyrhynchus) desotoi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/651	Threatened

Insects

NAME	STATUS
Miami Blue Butterfly Cyclargus thomasi bethunebakeri Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3797	Endangered
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Schaus Swallowtail Butterfly Heraclides aristodemus ponceanus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1951	Endangered

Flowering Plants

NAME	STATUS
Big Pine Partridge Pea Chamaecrista lineata keyensis There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/8416	Endangered
Blodgett's Silverbush Argythamnia blodgettii There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/6823	Threatened
Cape Sable Thoroughwort Chromolaena frustrata There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4733	Endangered
Everglades Bully Sideroxylon reclinatum ssp. austrofloridense There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/4735	Threatened
Florida Pineland Crabgrass Digitaria pauciflora There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/3728	Threatened
Florida Prairie-clover Dalea carthagenensis floridana There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/2300	Endangered

Florida Semaphore Cactus Consolea corallicola There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4356	Endangered
Garber's Spurge Chamaesyce garberi No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8229	Threatened
Key Tree Cactus Pilosocereus robinii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2520	Endangered
Sand Flax Linum arenicola There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/4313	Endangered
Wedge Spurge Chamaesyce deltoidea serpyllum There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/949	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
American Crocodile Crocodylus acutus https://ecos.fws.gov/ecp/species/6604#crithab	Final
Florida Keys Mole Skink Plestiodon egregius egregius https://ecos.fws.gov/ecp/species/4480#crithab	Proposed

You should contact the local field office to determine whether critical habitat for the following species should be considered:

NAME	TYPE
West Indian Manatee Trichechus manatus https://ecos.fws.gov/ecp/species/4469#crithab	Final

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds

- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

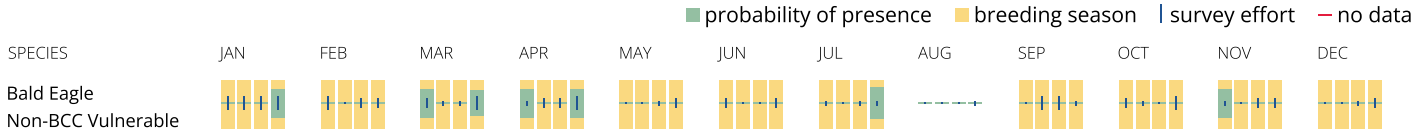
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor

a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel Falco sparverius paulus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
Black Skimmer Rynchops niger This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Brown Pelican Pelecanus occidentalis This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/6034	Breeds Jan 15 to Sep 30
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Common Loon gavia immer This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/4464	Breeds Apr 15 to Oct 31
Double-crested Cormorant phalacrocorax auritus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/3478	Breeds Apr 20 to Aug 31
Florida Burrowing Owl Athene cunicularia floridana This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 15 to Aug 31
Great Blue Heron Ardea herodias occidentalis This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Jan 1 to Dec 31

Gull-billed Tern Gelochelidon nilotica — Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9501

Least Tern Sternula antillarum antillarum — Breeds Apr 25 to Sep 5

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Lesser Yellowlegs Tringa flavipes — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9679

Magnificent Frigatebird Fregata magnificens — Breeds Oct 1 to Apr 30

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Mangrove Cuckoo Coccyzus minor — Breeds Apr 20 to Aug 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Painted Bunting Passerina ciris — Breeds Apr 25 to Aug 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Prairie Warbler Setophaga discolor — Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Razorbill Alca torda — Breeds Jun 15 to Sep 10

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Red-breasted Merganser Mergus serrator — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Reddish Egret Egretta rufescens — Breeds Mar 1 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/7617

Ring-billed Gull Larus delawarensis — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Roseate Tern Sterna dougallii — Breeds May 10 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Royal Tern Thalasseus maximus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Apr 15 to Aug 31
Ruddy Turnstone Arenaria interpres morinella This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Semipalmated Sandpiper Calidris pusilla This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Sooty Tern Onychoprion fuscatus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Mar 10 to Jul 31
Swallow-tailed Kite Elanoides forficatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
White-crowned Pigeon Patagioenas leucocephala This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/4047	Breeds May 1 to Sep 30
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Wilson's Plover Charadrius wilsonia This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Aug 20

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey

events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

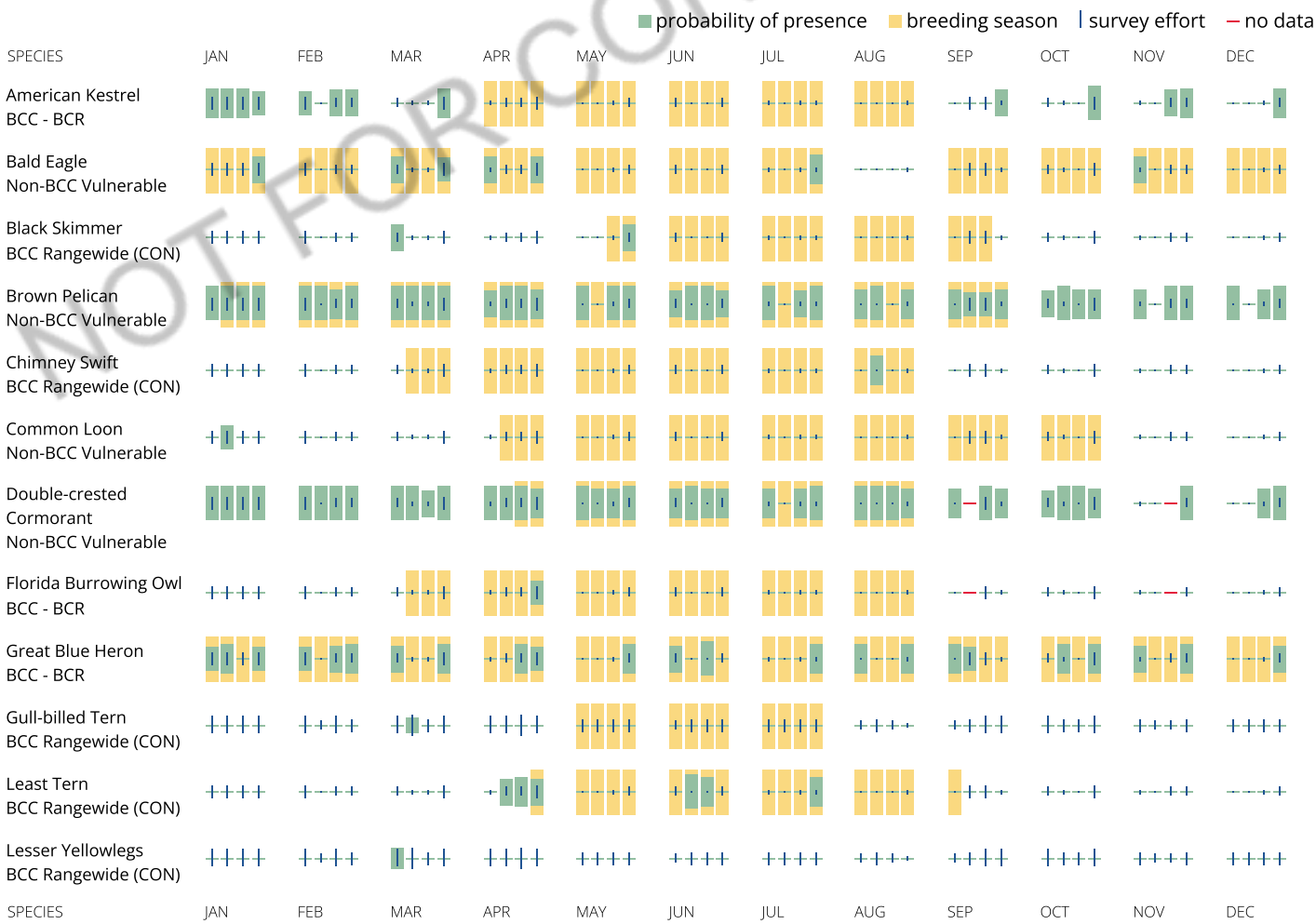
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

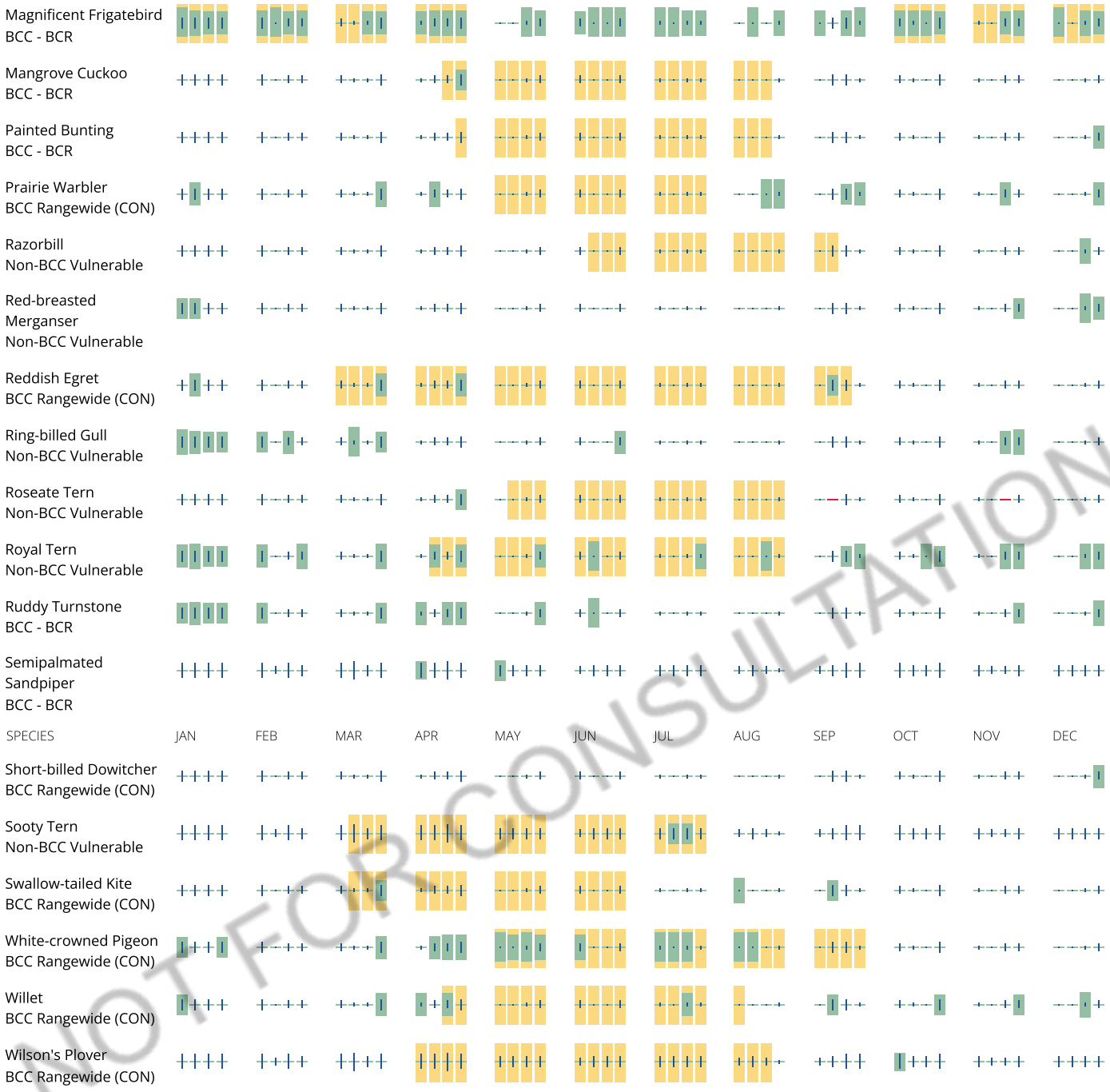
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Marine mammals

Marine mammals are protected under the Marine Mammal Protection Act. Some are also protected under the Endangered Species Act[1] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora[2].

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries[3] [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the Marine Mammals page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The Endangered Species Act (ESA) of 1973.
2. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

West Indian Manatee *Trichechus manatus*
https://ecos.fws.gov/ecp/species/4469

Facilities

Wildlife refuges and fish hatcheries

Refuge and fish hatchery information is not available at this time

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

ESTUARINE AND MARINE DEEPWATER
M1ABL
M1UBLx

ESTUARINE AND MARINE WETLAND
M2USM

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Drawn Action Area & Overlapping S7 Consultation Areas

Area of Interest (AOI) Information

Area : 688.13 acres

Nov 26 2024 15:17:38 Eastern Standard Time

1:18,056

0 0.13 0.25 0.5 mi

0 0.23 0.45 0.9 km

Summary

Name	Count	Area(acres)	Length(mi)
Atlantic Sturgeon	0	0	N/A
Shortnose Sturgeon	0	0	N/A
Atlantic Salmon	0	0	N/A
Sea Turtles	0	0	N/A
Atlantic Large Whales	0	0	N/A
In or Near Critical Habitat	0	0	N/A

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
850-681-9364 fax
www.fnai.org

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

UNOFFICIAL REPORT

Created 11/26/2024

(Contact the FNAI Data Services Coordinator at 850.224.8207 or kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

Report for 4 Matrix Units: 63056 , 63057 , 63321 , 63322

Descriptions

DOCUMENTED - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.

DOCUMENTED-HISTORIC - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.

LIKELY - The species or community is *known* to occur in this vicinity, and is considered likely within this Matrix Unit because:

1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; *or*
2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.

POTENTIAL - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.

Matrix Unit ID: 63056

8 **Documented** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Calyptranthes zuzygium myrtle-of-the-river	G4	S2	N	E
Eunica tatila tatilista Florida Purplewing	G5T4T5	S1S2	N	N
Heliotropium gnaphalodes sea rosemary	G4	S3	N	E
Pilosocereus robinii tree cactus	G1	S1	E	E
Rockland hammock	G2	S2	N	N
Schaefferia frutescens yellowwood	G5	S2	N	E
Thrinax radiata Florida thatch palm	G4G5	S2	N	E
Vireo altiloquus Black-whiskered Vireo	G5	S3	N	N

2 **Documented-Historic** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Chamaesyce garberi Garber's spurge	G1	S1	T	E
Tantilla oolitica Rim Rock Crowned Snake	G1G2	S1S2	N	ST

8 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Chondropoma dentatum Crenulate Horn	G2G3	S2?	N	N
Chromolaena frustrata Cape Sable thoroughwort	G1	S1	E	E

Cotinis aliena Keys Green June Beetle	G1	S1	N	N
Crocodylus acutus American Crocodile	G2	S2	T	FT
Ctenogobius stigmaturus Spottail Goby	G2	S2	N	N
Guaiacum sanctum lignum-vitae	G2G3	S1	N	E
Hojeda inaguensis Keys Mudcloak	G3G4	S2	N	N

Matrix Unit ID: 63057

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

7 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Chondropoma dentatum Crenulate Horn	G2G3	S2?	N	N
Cotinis aliena Keys Green June Beetle	G1	S1	N	N
Crocodylus acutus American Crocodile	G2	S2	T	FT
Ctenogobius stigmaturus Spottail Goby	G2	S2	N	N
Hojeda inaguensis Keys Mudcloak	G3G4	S2	N	N
Rockland hammock	G2	S2	N	N

Matrix Unit ID: 63321

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Ctenogobius stigmaturus Spottail Goby	G2	S2	N	N
Mussa angulosa Large Flower Coral	G3G4	S2S3	N	N
Orbicella annularis Boulder Star Coral	G2	S1S2	T	FT

Matrix Unit ID: 63322

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

6 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Caretta caretta Loggerhead Sea Turtle	G3	S3	T	FT
Cotinis aliena Keys Green June Beetle	G1	S1	N	N
Crocodylus acutus American Crocodile	G2	S2	T	FT
Ctenogobius stigmaturus Spottail Goby	G2	S2	N	N
Rockland hammock	G2	S2	N	N
Swietenia mahagoni West Indies mahogany	G3G4	S3	N	T

Matrix Unit IDs: 63056 , 63057 , 63321 , 63322

34 **Potential** Elements Common to Any of the 4 Matrix Units

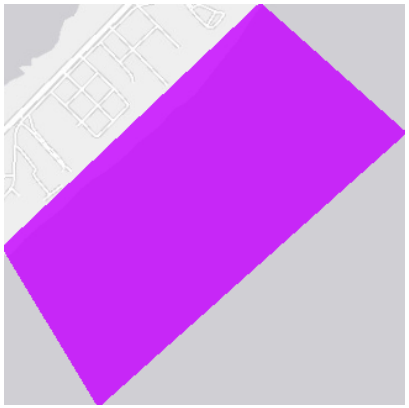
Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Ardea herodias occidentalis Great White Heron	G5T2	S2	N	N
Argythamnia argothamnoides Blodgett's silverbush	GNR	S2	T	E

Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	ST
Bourreria radula rough strongbark	G2?	S1	N	E
Chamaesyce garberi Garber's spurge	G1	S1	T	E
Chamaesyce porteriana Porter's broad-leaved spurge	G2	S2	N	E
Charadrius melodus Piping Plover	G3	S2	T	FT
Chelonia mydas Green Sea Turtle	G3	S2S3	T	FT
Colubrina cubensis var. floridana Cuban snake-bark	G2G3T1	S1	N	E
Consolea corallicola semaphore pricklypear	G1	S1	E	E
Crossopetalum ilicifolium Christmas berry	G3	S3	N	T
Drymarchon couperi Eastern Indigo Snake	G3	S2?	T	FT
Eretmochelys imbricata Hawksbill Sea Turtle	G3	S1	E	FE
Gambusia rhizophorae Mangrove Gambusia	G3	S3	N	N
Guaiacum sanctum lignum-vitae	G2G3	S1	N	E
Harrisia simpsonii Simpson's prickly apple	G2	S2	N	N
Heliotropium gnaphalodes sea rosemary	G4	S3	N	E
Indigofera trita ssp. scabra Florida Keys indigo	GNRTNR	S1	N	E
Linum arenicola sand flax	G1G2	S1S2	E	E
Neotoma floridana smalli Key Largo Woodrat	G5T1	S1	E	FE
Opuntia triacantha three-spined pricklypear	G2G4	S1	N	E
Pantherophis guttatus pop. 1 Red Rat Snake, Lower Keys Population	G5T2Q	S2	N	N
Papilio aristodemus ponceanus Schaus' Swallowtail	G3G4T1	S1	E	FE
Patagioenas leucocephala White-crowned Pigeon	G3	S3	N	ST
Peromyscus gossypinus allapaticola Key Largo Cotton Mouse	G5T1Q	S1	E	FE
Pilosocereus robinii tree cactus	G1	S1	E	E
Plestiodon egregius egregius Florida Keys Mole Skink	G5T1	S1	N	ST
Poinsettia pinetorum pineland spurge	G2	S2	N	E
Rallus longirostris insularum Mangrove Clapper Rail	G5T3	S3	N	N
Rivulus marmoratus Mangrove Rivulus	G4G5	S3	SC	N
Rutela formosa Handsome Flower Scarab Beetle	G3G4	S1S2	N	N
Setophaga discolor paludicola Florida Prairie Warbler	G5T3	S3	N	N
Tantilla oolitica Rim Rock Crowned Snake	G1G2	S1S2	N	ST
Trichechus manatus latirostris Florida Manatee	G2G3T2	S2S3	T	N

Site 3 - Upper Matecumbe Key Area of Interest

Description:
Project Type: Other Area of Interest (OAOI)
Expiration: This AOI will be available in the EST until 12/26/2024
Last updated: Jimmy Stroz @ FDOT District 4 on Tue Nov 26 14:36:46 EST 2024

Site 3 - Upper Matecumbe Key - Feature 1



Analysis Type	Date Run	*Features within AOI* Count
Protected Species and Habitat		
For the official list of fish and wildlife designated by the state of Florida as Endangered, Threatened or Species of Special Concern, please refer to sections 68A-27.003, .0031 and 005 in *Rules Relating to Endangered or Threatened Species*, Chapter 68A-27, Florida Administrative Code, https://www.flrules.org/gateway/ChapterHome.asp?Chapter=68A-27. For general information on Florida imperiled species and species conservation programs, go to https://myfwc.com/wildlifehabitats/wildlife/		
AUDUBON Eagle Nests (Buffered by 330 and 660 Feet)	11/26/2024	0
Atlantic Coast Plants Consultation Area	11/26/2024	0
Crocodile Consultation Area	11/26/2024	1
FWC Black Bear Range	11/26/2024	1
FWC Critical Wildlife Area Boundaries	11/26/2024	0
	11/26/2024	1

Analysis Type	Date Run	Count
FWC Dark Sky Lighting Recommended Areas		
FWC State Manatee Protection Zones	11/26/2024	0
FWC Wildlife Sensitive Conventional Lighting	11/26/2024	1
Florida Bonneted Bat Consultation Area	11/26/2024	0
Mangroves	11/26/2024	0
NMFS Critical Habitat (Designated Species - Lines)	11/26/2024	0
NMFS Critical Habitat (Designated Species)	11/26/2024	9
NOAA Essential Fish Habitat (EFH)	11/26/2024	43
Okeechobee Gourd Consultation Area	11/26/2024	0
Panther Consultation Area	11/26/2024	0
Seagrass Beds (Showing Continuous/Discontinuous)	11/26/2024	4
Snail Kite Priority Management Zones	11/26/2024	0
USFWS Atlantic Salt Marsh Snake Consultation Area	11/26/2024	0
USFWS Bluetail Mole Skink Consultation Area	11/26/2024	0
USFWS Caracara Consultation Area	11/26/2024	0
USFWS Critical Habitat (Designated Species - Lines)	11/26/2024	0
USFWS Critical Habitat (Designated Species)	11/26/2024	2
USFWS Florida Grasshopper Sparrow Consultation Area	11/26/2024	0
USFWS Lake Wales Ridge Plants Consultation Area	11/26/2024	0
USFWS Manatee Consultation Area	11/26/2024	1
USFWS Piping Plover Consultation Area	11/26/2024	1

Analysis Type	Date Run	Count
USFWS Red Cockaded Woodpecker Consultation Area	11/26/2024	0
USFWS Sand Skink Consultation Area (Neoseps reynoldsi)	11/26/2024	0
USFWS Scrub Jay Consultation Area	11/26/2024	0
USFWS Snail Kite Consultation Area	11/26/2024	0
Woodstork Core Foraging Areas	11/26/2024	0
Woodstork Nests	11/26/2024	0
Wetlands and Surface Waters		
FWRI Saltwater Marshes	11/26/2024	0
Sole Source Aquifers	11/26/2024	0
USFWS National Wetlands Inventory Areas	11/26/2024	2
WMD Wetlands (FLUCCS Level 3)	11/26/2024	0

Crocodile Consultation Area

Metadata: https://etdmpub.fla-etat.org/meta/ca_crocodile.xml

Site 3 - Upper Matecumbe Key - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
AMERICAN CROCODILE CONSULTATION AREA (SF ESO)	258.25	100%
Totals	258.25	-

FWC Black Bear Range

Metadata: https://etdmpub.fla-etat.org/meta/bear_range.xml

Site 3 - Upper Matecumbe Key - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Name
RARE

Summary: 8.28 acres, 3.2 percent of analysis area.

FWC Dark Sky Lighting Recommended Areas

Metadata: https://etdmpub.fla-etat.org/meta/trtl_drksky_light.xml

Site 3 - Upper Matecumbe Key - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
DARK SKY LIGHTING - MONROE	258.25	100%
Totals	258.25	-

FWC Wildlife Sensitive Conventional Lighting

Metadata: https://etdmpub.fla-etat.org/meta/trtl_sen_light.xml

Site 3 - Upper Matecumbe Key - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
SENSITIVE CONVENTIONAL LIGHTING - MONROE	114.57	44.36%
Totals	114.57	-

NMFS Critical Habitat (Designated Species)

NMFS Critical Habitat (Proposed and Final)

Metadata: https://etdmpub.fla-etat.org/meta/ch_nmfs_poly.xml

Site 3 - Upper Matecumbe Key - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Common Name, Status and Listing	Area of Interest	
	Acr	Pct
CORAL, STAGHORN - (FLORIDA AREA)(FINAL)(THREATENED)	249.79	96.72%
CORAL, ELKHORN - (FLORIDA AREA)(FINAL)(THREATENED)	249.79	96.72%
SEA TURTLE, LOGGERHEAD - (LOGG-N-19 CONSTRICTED MIGRATORY HABITAT)(FINAL)(THREATENED)	258.25	100%
SEA TURTLE, LOGGERHEAD - (LOGG-N-19 BREEDING HABITAT)(FINAL)(THREATENED)	258.25	100%
SEA TURTLE, GREEN - (FL01: FLORIDA)(PROPOSED)(THREATENED)	258.25	100%
CORAL, BOULDER STAR - (1 SOUTHEAST FLORIDA FROM LAKE WORTH INLET IN PALM BEACH COUNTY TO THE DRY TORTUGAS)(FINAL)(THREATENED)	249.79	96.72%
CORAL, LOBED STAR - (1 SOUTHEAST FLORIDA FROM LAKE WORTH INLET IN PALM BEACH COUNTY TO THE DRY TORTUGAS)(FINAL)(THREATENED)	249.79	96.72%
CORAL, MOUNTAINOUS STAR - (1 SOUTHEAST FLORIDA FROM ST. LUCIE INLET IN MARTIN COUNTY TO THE DRY TORTUGAS)(FINAL)(THREATENED)	249.79	96.72%
CORAL, PILLAR - (1 SOUTHEAST FLORIDA FROM LAKE WORTH INLET IN PALM BEACH COUNTY TO THE DRY TORTUGAS)(FINAL)(THREATENED)	249.79	96.72%
Totals	2,273.52	-

NOAA Essential Fish Habitat (EFH)

Metadata: https://etdmpub.fla-etat.org/meta/essential_fish_habitat.xml

Site 3 - Upper Matecumbe Key - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Species Name and Life Stage	Area of Interest	
	Acr	Pct
SAILFISH [LIFESTAGE: ADULT]	244.27	94.59%
BULL SHARK [LIFESTAGE: ALL]	253.49	98.16%
BLUEFISH [LIFESTAGE: ALL]	253.42	98.13%
LEMON SHARK [LIFESTAGE: JUVENILE]	244.27	94.59%
NURSE SHARK [LIFESTAGE: ALL]	253.49	98.16%
REEF FISH [LIFESTAGE: ALL]	167.08	64.7%
ATLANTIC SHARPNOSE SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: ALL]	244.27	94.59%
BONNETHEAD SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: ADULT]	253.49	98.16%
COASTAL MIGRATORY PELAGICS [LIFESTAGE: ALL]	167.39	64.82%
TIGER SHARK [LIFESTAGE: ALL]	253.49	98.16%
SANDBAR SHARK [LIFESTAGE: ADULT]	244.2	94.56%
ATLANTIC SHARPNOSE SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: JUVENILE/ADULT]	244.27	94.59%
BLACKTIP SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: JUVENILE/ADULT]	224.22	86.82%
BLACKNOSE SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: ALL]	253.49	98.16%
SPINNER SHARK [LIFESTAGE: NEONATE]	253.49	98.16%
SAILFISH [LIFESTAGE: JUVENILE]	244.27	94.59%
CARIBBEAN REEF SHARK [LIFESTAGE: ALL]	244.27	94.59%
BONNETHEAD SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: JUVENILE]	253.49	98.16%
SPINY LOBSTER [LIFESTAGE: ALL]	258.25	100%
TIGER SHARK [LIFESTAGE: JUVENILE/ADULT]	253.49	98.16%
SPINNER SHARK [LIFESTAGE: ALL]	253.49	98.16%
WHALE SHARK [LIFESTAGE: ALL]	253.49	98.16%
LEMON SHARK [LIFESTAGE: ALL]	253.56	98.18%
BLACKTIP SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: ALL]	257.09	99.55%
CORALS [LIFESTAGE: ALL]	258.25	100%
LEMON SHARK [LIFESTAGE: NEONATE]	253.49	98.16%
BLUEFISH [LIFESTAGE: EGGS]	253.33	98.09%
BLUEFISH [LIFESTAGE: JUVENILE]	253.42	98.13%
LEMON SHARK [LIFESTAGE: ADULT]	244.2	94.56%
BULL SHARK [LIFESTAGE: JUVENILE/ADULT]	253.49	98.16%
BLACKNOSE SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: JUVENILE/ADULT]	253.49	98.16%
BONNETHEAD SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: ALL]	253.49	98.16%
SAILFISH [LIFESTAGE: ALL]	244.27	94.59%

Species Name and Life Stage	Acr	Pct
SANDBAR SHARK [LIFESTAGE: ALL]	244.2	94.56%
NURSE SHARK [LIFESTAGE: JUVENILE/ADULT]	253.49	98.16%
BLACKTIP SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: NEONATE]	257.09	99.55%
BLUEFISH [LIFESTAGE: LARVAE]	253.33	98.09%
TIGER SHARK [LIFESTAGE: NEONATE]	253.49	98.16%
GREAT HAMMERHEAD SHARK [LIFESTAGE: ALL]	253.49	98.16%
BONNETHEAD SHARK (GULF OF MEXICO STOCK) [LIFESTAGE: NEONATE]	253.49	98.16%
SNAPPER GROUPER [LIFESTAGE: ALL]	258.25	100%
BLUEFISH [LIFESTAGE: ADULT]	253.42	98.13%
Totals	10,373.47	-

Seagrass Beds (Showing Continuous/Discontinuous)

Seagrass beds broken down by whether the bed is continuous or discontinuous

Metadata: https://etdmpub.fla-etat.org/meta/seagrs.xml

Site 3 - Upper Matecumbe Key - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
CONTINUOUS	146.7	56.81%
DISCONTINUOUS	21.53	8.33%
Totals	168.24	-

USFWS Critical Habitat (Designated Species)

USFWS Critical Habitat (Proposed and Final)

Metadata: https://etdmpub.fla-etat.org/meta/ch_usfws_poly.xml

Site 3 - Upper Matecumbe Key - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Common Name, Status and Listing	Area of Interest	
	Acr	Pct
FLORIDA KEYS MOLE SKINK - (PROPOSED)(PROPOSED THREATENED)	9.66	3.74%
AMERICAN CROCODILE - (FINAL)(THREATENED)	8.39	3.25%
Totals	18.05	-

USFWS Manatee Consultation Area

Metadata: https://etdmpub.fla-etat.org/meta/ca_manatee.xml

Site 3 - Upper Matecumbe Key - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
WEST INDIAN MANATEE CONSULTATION AREA (SF ESO)	220.66	85.44%
Totals	220.66	-

USFWS Piping Plover Consultation Area

Metadata: https://etdmpub.fla-etat.org/meta/ca_pip_plover.xml

Site 3 - Upper Matecumbe Key - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

Description	Area of Interest	
	Acr	Pct
PIPING PLOVER CONSULTATION AREA (SF ESO)	258.25	100%
Totals	258.25	-

USFWS National Wetlands Inventory Areas

National Wetlands Inventory Areas

Metadata: https://etdmpub.fla-etat.org/meta/nwip.xml

Site 3 - Upper Matecumbe Key - Feature 1, analyzed on 11/26/2024.

Footprint analyzed

System and Wetland Type	Area of Interest	
	Acr	Pct
MARINE (ESTUARINE AND MARINE WETLAND)	16.17	6.26%
MARINE (ESTUARINE AND MARINE DEEPWATER)	229.55	88.89%
Totals	245.71	-

Appendix C / Effect Determination Key for the Manatee in Florida

THE CORPS OF ENGINEERS, JACKSONVILLE DISTRICT, AND THE STATE OF FLORIDA EFFECT DETERMINATION KEY FOR THE MANATEE IN FLORIDA
April 2013

Purpose and background of the key

The purpose of this document is to provide guidance to improve the review of permit applications by U.S. Army Corps of Engineers' (Corps) Project Managers in the Regulatory Division regarding the potential effects of proposed projects on the endangered West Indian manatee (*Trichechus manatus*) in Florida, and by the Florida Department of Environmental Protection or its authorized designee or Water Management District, for evaluating projects under the State Programmatic General Permit (SPGP) or any other Programmatic General Permits that the Corps may issue for administration by the above agencies. Such guidance is contained in the following dichotomous key. The key applies to permit applications for in-water activities such as, but not limited to: (1) dredging [new or maintenance dredging of not more than 50,000 cubic yards], placement of fill material for shoreline stabilization, and construction/placement of other in-water structures as well as (2) construction of docks, marinas, boat ramps and associated trailer parking spaces, boat slips, dry storage or any other watercraft access structures or facilities.

At a certain step in the key, the user is referred to graphics depicting important manatee areas or areas with inadequate protection. The maps can be downloaded from the Corps' web page at http://www.saj.usace.army.mil/Missions/Regulatory/SourceBook.aspx. We intend to utilize the most recent depiction of these areas, so should these areas be modified by statute, rule, ordinance and/or other legal mandate or authorization, we will modify the graphical depictions accordingly. These areas may be shaded or otherwise differentiated for identification on the maps.

Explanatory footnotes are provided in the key and must be closely followed whenever encountered.

Scope of the key

This key should only be used in the review of permit applications for effect determinations on manatees and should not be used for other listed species or for other aquatic resources such as Essential Fish Habitat (EFH). Corps Project Managers should ensure that consideration of the project's effects on any other listed species and/or on EFH is performed independently. This key may be used to evaluate applications for all types of State of Florida (State Programmatic General Permits, noticed general permits, standard general permits, submerged lands leases, conceptual and individual permits) and Department of the Army (standard permits, letters of permission, nationwide permits, and regional general permits) permits and authorizations. The final effect determination will be based on the project location and description; the potential effects to manatees, manatee habitat, and/or manatee critical habitat; and any measures (such as project components, standard construction precautions, or special conditions included in the authorization) to avoid or minimize effects to manatees or manatee critical habitat. Projects that key to a "may affect" determination equate to "likely to adversely affect" situations, and those projects should not be processed under the SPGP or any other programmatic general permit. For

all “may affect” determinations, Corps Project Managers shall refer to the Manatee Programmatic Biological Opinion, dated March 21, 2011, for guidance on eliminating or minimizing potential adverse effects resulting from the proposed project. If unable to resolve the adverse effects, the Corps may refer the applicant to the U.S. Fish and Wildlife Service (Service) for further assistance in attempting to revise the proposed project to a “may affect, not likely to adversely affect” level. The Service will coordinate with the Florida Fish and Wildlife Conservation Commission (FWC) and the counties, as appropriate. Projects that provide new access for watercraft and key to “may affect, not likely to adversely affect” may or may not need to be reviewed individually by the Service.

MANATEE KEY
Florida[1]
April 2013

The key is not designed to be used by the Corps' Regulatory Division for making their effect determinations for dredging projects greater than 50,000 cubic yards, the Corps' Planning Division in making their effect determinations for civil works projects or by the Corps' Regulatory Division for making their effect determinations for projects of the same relative scope as civil works projects. These types of activities must be evaluated by the Corps independently of the key.

A. Project is not located in waters accessible to manatees and does not directly or indirectly affect manatees (see Glossary).....*No effect*

Project is located in waters accessible to manatees **or** directly or indirectly affects manatees ..... B

B. Project consists of one or more of the following activities, all of which are *May affect*:

1. blasting or other detonation activity for channel deepening and/or widening, geotechnical surveys or exploration, bridge removal, movies, military shows, special events, etc.;

2. installation of structures which could restrict or act as a barrier to manatees;

3. new or changes to existing warm or fresh water discharges from industrial sites, power plants, or natural springs or artesian wells (but only if the new or proposed change in discharge requires a Corps permit to accomplish the work);

4. installation of new culverts and/or maintenance or modification of existing culverts (where the culverts are 8 inches to 8 feet in diameter, ungrated and in waters accessible, or potentially accessible, to manatees)[2];

5. mechanical dredging from a floating platform, barge or structure[3] that restricts manatee access to less than half the width of the waterway;

6. creation of new slips or change in use of existing slips, even those located in a county with a State-approved Manatee Protection Plan (MPP) in place and the number of slips is less than the MPP threshold, to accommodate docking for repeat use vessels, (*e.g.*, water taxis, tour boats, gambling boats, etc; or slips or structures that are not civil works projects, but are frequently used to moor large vessels (>100') for shipping and/or freight purposes; does not include slips used for docking at boat sales or repair facilities or loading/unloading at dry stack storage facilities and boat ramps); [Note: For projects within Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County, the reviewer should proceed to Couplet C.]

7. any type of in-water activity in a Warm Water Aggregation Area (WWAA) or No Entry Area (see Glossary and accompanying Maps[4]); [Note: For residential docking facilities in a Warm Water Aggregation Area that is not a Federal manatee sanctuary or No Entry Area, the reviewer should proceed to couplet C.]

8. creation or expansion of canals, basins or other artificial shoreline and/or the connection of such features to navigable waters of the U.S.; [Note: For projects proposing a single residential dock, the reviewer should proceed to couplet C; otherwise, project is a *May Affect*.]

9. installation of temporary structures (docks, buoys, etc.) utilized for special events such as boat races, boat shows, military shows, etc., but only when consultation with the U.S. Coast Guard and FWS has not occurred; [Note: See programmatic consultation with the U.S. Coast Guard on manatees dated May 10, 2010.].

Project is other than the activities listed above C

C. Project is located in an Important Manatee Area (IMA) (see Glossary and accompanying Maps[4]) ..... D

Project is not located in an Important Manatee Area (IMA) (see Glossary and accompanying Maps[4]) ..... G

D. Project includes dredging of less than 50,000 cubic yards ..... E

Project does not include dredging ..... G

E. Project is for dredging a residential dock facility or is a land-based dredging operation ..... N

Project not as above ..... F

F. Project proponent **does not elect** to follow all dredging protocols described on the maps for the respective IMA in which the project is proposed ..... *May affect*

Project proponent **elects** to follow all dredging protocols described on the maps for the respective IMA in which the project is proposed ..... G

G. Project provides new[5] access for watercraft, *e.g.*, docks or piers, marinas, boat ramps and associated trailer parking spaces, new dredging, boat lifts, pilings, floats, floating docks, floating vessel platforms, boat slips, dry storage, mooring buoys, or other watercraft access (residential boat lifts, pilings, floating docks, and floating vessel platforms installed in existing slips are not considered new access) or improvements allowing increased watercraft usage ..... H

Project does not provide new[5] access for watercraft, *e.g.*, bulkheads, seawalls, riprap, maintenance dredging, boardwalks and/or the maintenance (repair or rehabilitation) of currently serviceable watercraft access structures provided all of the following are met: (1) the number of slips is not increased; (2) the number of existing slips is not in question; and (3) the improvements do not allow increased watercraft usage ..... N

H. Project is located in the Braden River Area of Inadequate Protection (Manatee County) (see Glossary and accompanying AIP Map[4])
..... *May affect*

Project is not located in the Braden River Area of Inadequate Protection (Manatee County) (see Glossary and accompanying AIP Map[4]) I

I. Project is for a multi-slip facility (see Glossary) ..... J

Project is for a residential dock facility or is for dredging (see Glossary) ..... N

J. Project is located in a county that currently has a State-approved MPP in place (BREVARD, BROWARD, CITRUS, CLAY, COLLIER, DUVAL, INDIAN RIVER, LEE, MARTIN, MIAMI-DADE, PALM BEACH, ST. LUCIE, SARASOTA, VOLUSIA) or shares contiguous waters with a county having a State-approved MPP in place (LAKE, MARION, SEMINOLE)[6] ..... K

Project is located in a county not required to have a State-approved MPP L

K. Project has been developed or modified to be consistent with the county's State-approved MPP **and** has been verified by a FWC review (or FWS review if project is exempt from State permitting) **or** the number of slips is below the MPP threshold ..... N

Project has not been reviewed by the FWC or FWS **or** has been reviewed by the FWC or FWS **and** determined that the project is not consistent with the county's State-approved MPP ..... *May affect*

L. Project is located in one of the following counties: CHARLOTTE, DESOTO[7], FLAGLER, GLADES, HENDRY, HILLSBOROUGH, LEVY, MANATEE, MONROE[7], PASCO[7], PINELLAS ..... M

Project is located in one of the following counties: BAY, DIXIE, ESCAMBIA, FRANKLIN, GILCHRIST, GULF, HERNANDO, JEFFERSON, LAFAYETTE, MONROE (south of Craig Key), NASSAU, OKALOOSA, OKEECHOBEE, PUTNAM, SANTA ROSA, ST. JOHNS, SUWANNEE, TAYLOR, WAKULLA, WALTON ..... N

M. The number of slips does not exceed the residential dock density threshold (see Glossary) ..... N

The number of slips exceeds the residential dock density threshold (see Glossary) ..... *May affect*

N. Project impacts to submerged aquatic vegetation[8], emergent vegetation or mangrove will have beneficial, insignificant, discountable[9] or no effects on the manatee[10] ..... O

Project impacts to submerged aquatic vegetation[8], emergent vegetation or mangrove may adversely affect the manatee[10] ..... *May affect*

O. Project proponent **elects** to follow standard manatee conditions for in-water work[11] and requirements, as appropriate for the proposed activity, prescribed on the maps[4] ..... P

Project proponent **does not elect** to follow standard manatee conditions for in-water work[11] and appropriate requirements prescribed on the maps[4] ..... *May affect*

P. If project is for a new or expanding[5] multi-slip facility and is located in a county with a State-approved MPP in place **or** in Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Putnam, St. Johns, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary.

If project is for a new or expanding[5] multi-slip facility and is located in Charlotte, Desoto, Flagler, Glades, Hendry, Hillsborough, Levy, Manatee, Monroe (north of Craig Key), Pasco, or Pinellas County, further consultation with the Service is necessary for "*May affect, not likely to adversely affect*" determinations.

If project is for repair or rehabilitation of a multi-slip facility and is located in an Important Manatee Area, further consultation with the Service is necessary for "*May affect, not likely to adversely affect*" determinations. If project is for repair or rehabilitation of a multi-slip facility and: (1) is not located in an Important Manatee Area; (2) the number of slips is not increased; (3) the number of existing slips is not in question; and (4) the improvements to the existing watercraft access structures do not allow increased watercraft usage, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary.

If project is a residential dock facility, shoreline stabilization, or dredging, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary. Note: For residential dock facilities located in a Warm Water Aggregation Area or in a No Entry area, seasonal restrictions may apply. See footnote 4 below for maps showing restrictions.

If project is other than repair or rehabilitation of a multi-slip facility, a new[5] multi-slip facility, residential dock facility, shoreline stabilization, or dredging, and does not provide new[5] access for watercraft or

improve an existing access to allow increased watercraft usage, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary.

[1] On the St. Mary's River, this key is only applicable to those areas that are within the geographical limits of the State of Florida.

[2] All culverts 8 inches to 8 feet in diameter must be grated to prevent manatee entrapment. To effectively prevent manatee access, grates must be permanently fixed, spaced a maximum of 8 inches apart (may be less for culverts smaller than 16 inches in diameter) and may be installed diagonally, horizontally or vertically. For new culverts, grates must be attached prior to installation of the culverts. Culverts less than 8 inches or greater than 8 feet in diameter are exempt from this requirement. If new culverts and/or the maintenance or modification of existing culverts are grated as described above, the determination of "*May affect, not likely to adversely affect*" is appropriate[11] and no further consultation with the Service is necessary.

[3] If the project proponent agrees to follow the standard manatee conditions for in-water work as well as any special conditions appropriate for the proposed activity, further consultation with the Service is necessary for "*May affect, not likely to adversely affect*" determinations. These special conditions may include, but are not limited to, the use of dedicated observers (see Glossary for definition of dedicated observers), dredging during specific months (warm weather months vs cold weather months), dredging during daylight hours only, adjusting the number of dredging days, does not preclude or discourage manatee egress/ingress with turbidity curtains or other barriers that span the width of the waterway, etc.

[4] Areas of Inadequate Protection (AIPs), Important Manatee Areas (IMAs), Warm Water Aggregation Areas (WWAAs) and No Entry Areas are identified on these maps and defined in the Glossary for the purposes of this key. These maps can be viewed on the Corps' web page. If projects are located in a No Entry Area, special permits may be required from FWC in order to access these areas (please refer to Chapter 68C-22 F.A.C. for boundaries; maps are also available at FWC's web page).

[5] New access for watercraft is the addition or improvement of structures such as, but not limited to, docks or piers, marinas, boat ramps and associated trailer parking spaces, boat lifts, pilings, floats, floating docks, floating vessel platforms, (maintenance dredging, residential boat lifts, pilings, floating docks, and floating vessel platforms installed in existing slips are not considered new access), boat slips, dry storage, mooring buoys, new dredging, etc., that facilitates the addition of watercraft to, and/or increases watercraft usage in, waters accessible to manatees. The repair or rehabilitation of any type of currently serviceable watercraft access structure is not considered new access provided all of the following are met: (1) the number of slips is not increased; (2) the number of existing slips is not in question; and (3) the improvements to the existing watercraft access structures do not result in increased watercraft usage.

[6] Projects proposed within the St. Johns River portion of Lake, Marion, and Seminole counties and contiguous with Volusia County shall be evaluated using the Volusia County MPP.

[7] For projects proposed within the following areas: the Peace River in DeSoto County; all areas north of Craig Key in Monroe County, and the Anclote and Pithlachascotee Rivers in Pasco County, proceed to Couplet M. For all other locations in DeSoto, Monroe (south of Craig Key) and Pasco Counties, proceed to couplet N.

[8] Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would not adversely affect the manatee or its critical habitat, proceed to couplet O.

Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would adversely affect the manatee or its critical habitat, the applicant can elect to avoid/minimize impacts to that vegetation. In that instance, where impacts are unavoidable and the applicant elects to abide by or employ construction techniques that exceed the criteria in the following documents, the reviewer should conclude that the impacts to SAV, marsh or mangroves would not adversely affect the manatee or its critical habitat and proceed to couplet O.

- "Construction Guidelines in Florida for Minor Piling-Supported Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat," prepared jointly by the U.S. Army Corps of Engineers and the National Marine Fisheries Service (August 2001) [refer to the Corps' web page], and

- "Key for Construction Conditions for Docks or Other Minor Structures Constructed in or over Johnson's seagrass (*Halophila johnsonii*)," prepared jointly by the National Marine Fisheries Service and U.S. Army Corps of Engineers (October 2002), for those projects within the known range of Johnson's seagrass occurrence (Sebastian Inlet to central Biscayne Bay in the lagoon systems on the east coast of Florida) [refer to the Corps' web page],

Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would adversely affect the manatee or its critical habitat, and the applicant does not elect to follow the above Guidelines, the Corps will need to request formal consultation on the manatee with the Service as *May affect*.

For activities other than docks and other piling-supported minor structures proposed in SAV, marsh, or mangroves (*e.g.*, new dredging, placement of riprap, bulkheads, etc.), if the reviewer determines the impacts to the SAV, marsh or mangroves will not adversely affect the manatee or its critical habitat, proceed to couplet O, otherwise the Corps will need to request formal consultation on the manatee with the Service as *May affect*.

[9] See Glossary, under "is not likely to adversely affect."

[10] Federal reviewers, when making your effects determination, consider effects to manatee designated critical habitat pursuant to section 7(a)(2) of the Endangered Species Act. State reviewers, when making your effects determination, consider effects to manatee habitat within the entire State of Florida, pursuant to Chapter 370.12(2)(b) Florida Statutes.

[11] See the Corps' web page for manatee construction conditions. At this time, manatee construction precautions c and f are not required in the following Florida counties: Bay, Escambia, Franklin, Gilchrist, Gulf, Jefferson, Lafayette, Okaloosa, Santa Rosa, Suwannee, and Walton.

[12] By letter dated April 25, 2013, the Corps received the Service's concurrence with "*May affect, not likely to adversely affect*" determinations made pursuant to this key for the following activities: (1) selected non-watercraft access projects; (2) watercraft-access projects that are residential dock facilities, excluding those located in the Braden River AIP; (3) launching facilities solely for kayaks and canoes, and (4) new or expanding multi-slip facilities located in Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County.

Additionally, in the same letter dated April 25, 2013, the Corps received the Service's concurrence for "*May affect, not likely to adversely affect*" determinations specifically made pursuant to Couplet G of the key for the repair or rehabilitation of currently serviceable multi-slip watercraft access structures provided all of the following are met: (1) the project is not located in an IMA, (2) the number of slips is not increased; (3) the number of existing slips is not in question; and (4) the improvements to the existing watercraft access structures do not allow increased watercraft usage. Upon receipt of such a programmatic concurrence, no further consultation with the Service for these projects is required.

GLOSSARY

Areas of inadequate protection (AIP) – Areas within counties as shown on the maps where the Service has determined that measures intended to protect manatees from the reasonable certainty of watercraft-related take are inadequate. Inadequate protection may be the result of the absence of manatee or other watercraft speed zones, insufficiency of existing speed zones, deficient speed zone signage, or the absence or insufficiency of speed zone enforcement.

Boat slip – A space on land or in or over the water, other than on residential land, that is intended and/or actively used to hold a stationary watercraft or its trailer, and for which intention and/or use is confirmed by legal authorization or other documentary evidence. Examples of boat slips include, but are not limited to, docks or piers, marinas, boat ramps and associated trailer parking spaces, boat lifts, floats, floating docks, pilings, boat davits, dry storage, etc.

Critical habitat – For listed species, this consists of: (1) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act (ESA), on which are found those physical or biological features (constituent elements) (a) essential to the conservation of the species and (b) which may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the ESA, upon a determination by the Secretary that such areas are essential for the conservation of the species. Designated critical habitats are described in 50 CFR 17 and 50 CFR 226.

Currently serviceable – Currently, serviceable means usable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects – The direct or immediate effects of the project on the species or its habitat.

Dredging – For the purposes of this key, the term dredging refers to all in-water work associated with dredging operations, including mobilization and demobilization activities that occur in water or require vessels.

Emergent vegetation – Rooted emergent vascular macrophytes such as, but not limited to, cordgrass (*Spartina alterniflora and S. patens*), needle rush (J*uncus roemerianus*), swamp sawgrass (*Cladium mariscoides*), saltwort (*Batis maritima*), saltgrass (*Distichlis spicata*), and glasswort (*Salicornia virginica*) found in coastal salt marsh-related habitats (tidal marsh, salt marsh, brackish marsh, coastal marsh, coastal wetlands, tidal wetlands).

Formal consultation – A process between the Services and a Federal agency or applicant that: (1) determines whether a proposed Federal action is likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat; (2) begins with a Federal agency's written request and submittal of a complete initiation package; and (3) concludes with the issuance of a biological opinion and incidental take statement by either of the Services. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed

action “is not likely to adversely affect” listed species or designated critical habitat). [50 CFR 402.02, 50 CFR 402.14]

Important manatee areas (IMA) – Areas within certain counties where increased densities of manatees occur due to the proximity of warm water discharges, freshwater discharges, natural springs and other habitat features that are attractive to manatees. These areas are heavily utilized for feeding, transiting, mating, calving, nursing or resting as indicated by aerial survey data, mortality data and telemetry data. Some of these areas may be federally-designated sanctuaries or state-designated “seasonal no entry” zones. Maps depicting important manatee areas and any accompanying text may contain a reference to these areas and their special requirements. Projects proposed within these areas must address their special requirements.

Indirect effects – Those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur. Examples of indirect effects include, but are not limited to, changes in water flow, water temperature, water quality (*e.g.*, salinity, pH, turbidity, nutrients, chemistry), prop dredging of seagrasses, and manatee watercraft injury and mortality. Indirect effects also include watercraft access developments in waters not currently accessible to manatees, but watercraft access can, is, or may be planned to waters accessible to manatees by the addition of a boat lift or the removal of a dike or plug.

Informal consultation – A process that includes all discussions and correspondence between the Services and a Federal agency or designated non-Federal representative, prior to formal consultation, to determine whether a proposed Federal action may affect listed species or critical habitat. This process allows the Federal agency to utilize the Services’ expertise to evaluate the agency’s assessment of potential effects or to suggest possible modifications to the proposed action which could avoid potentially adverse effects. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed action “is not likely to adversely affect” listed species or designated critical habitat). [50 CFR 402.02, 50 CFR 402.13]

In-water activity – Any type of activity used to construct/repair/replace any type of in-water structure or fill; the act of dredging.

In-water structures – watercraft access structures – Docks or piers, marinas, boat ramps, boat slips, boat lifts, floats, floating docks, pilings (depending on use), boat davits, etc.

In-water structures – other than watercraft access structures – Bulkheads, seawalls, riprap, groins, boardwalks, pilings (depending on use), etc.

Is likely to adversely affect – The appropriate finding in a biological assessment (or conclusion during informal consultation) if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions and the effect is not: discountable, insignificant, or beneficial (see definition of “is not likely to adversely affect”). An “is likely to adversely affect” determination requires the initiation of formal consultation under section 7 of the ESA.

Is not likely to adversely affect – The appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. **Discountable effects** are those extremely unlikely to occur. **Insignificant effects** relate to the size of the impact and should never reach the scale where take occurs. **Beneficial effects** are contemporaneous positive effects without any adverse effects to the species. Based on best judgment, a person would not (1) be able to meaningfully measure, detect, or evaluate insignificant effects or (2) expect discountable effects to occur.

Manatee Protection Plan (MPP) – A manatee protection plan (MPP) is a comprehensive planning document that addresses the long-term protection of the Florida manatee through law enforcement, education, boat facility siting, and habitat protection initiatives. Although MPPs are primarily developed by the counties, the plans are the product of extensive coordination and cooperation between the local governments, the FWC, the Service, and other interested parties.

Manatee Protection Plan thresholds – The smallest size of a multi-slip facility addressed under the purview of a Manatee Protection Plan (MPP). For most MPPs, this threshold is five slips or more. For Brevard, Clay, Citrus, and Volusia County MPPs, this threshold is three slips or more.

Mangroves – Rooted emergent trees along a shoreline that, for the purposes of this key, include red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*) and white mangrove (*Laguncularia racemosa*).

May affect – The appropriate conclusion when a proposed action may pose <u>any</u> effects on listed species or designated critical habitat. When the Federal agency proposing the action determines that a "may affect" situation exists, then they must either request the Services to initiate formal consultation or seek written concurrence from the Services that the action "is not likely to adversely affect" listed species. For the purpose of this key, all "may affect" determinations equate to "likely to adversely affect" and Corps Project Managers should request the Service to initiate formal consultation on the manatee or designated critical habitat. **No effect** – the appropriate conclusion when the action agency determines its proposed action will not affect a listed species or designated critical habitat.

Multi-slip facility – Multi-slip facilities include commercial marinas, private multi-family docks, boat ramps and associated trailer parking spaces, dry storage facilities and any other similar structures or activities that provide access to the water for multiple (five slips or more, except in Brevard, Clay, Citrus, and Volusia counties where it is three slips or more) watercraft. In some instances, the Corps and the Service may elect to review multiple residential dock facilities as a multi-slip facility.

New access for watercraft – New dredging and the addition, expansion or improvement of structures such as, but not limited to, docks or piers, marinas, boat ramps and associated trailer parking spaces, boat lifts, pilings, floats, floating docks, floating vessel platforms, (residential boat lifts, pilings, floats, and floating vessel platforms installed in existing slips are not considered new access), boat slips, dry storage, mooring buoys, etc., that facilitates the addition of watercraft to, and/or increases watercraft usage in, waters accessible to manatees.

Observers – During dredging and other in-water operations within manatee accessible waters, the standard manatee construction conditions require all on-site project personnel to watch for manatees to ensure that those standard manatee construction conditions are met. Within important manatee areas (IMA) and under special circumstances, heightened observation is needed. **Dedicated Observers** are those having some prior experience in manatee observation, are dedicated only for this task, and must be someone other than the dredge and equipment operators/mechanics. **Approved Observers** are dedicated observers who also must be approved by the Service (if Federal permits are involved) and the FWC (if state permits are involved), prior to work commencement. Approved observers typically have significant and often project-specific observational experience. Documentation on prior experience must be submitted to these agencies for approval and must be submitted a minimum of 30 days prior to work commencement. When dedicated or approved observers are required, observers must be on site during all in-water activities, and be equipped with polarized sunglasses to aid in manatee observation. For prolonged in-water operations, multiple observers may be needed to perform observation in shifts to reduce fatigue (recommended shift length is no longer than six hours). Additional information concerning observer approval can be found at FWC's web page.

Residential boat lift – A boat lift installed on a residential dock facility.

Residential dock density ratio threshold – The residential dock density ratio threshold is used in the evaluation of multi-slip projects in some counties without a State-approved Manatee Protection Plan and is consistent with 1 boat slip per 100 linear feet of shoreline (1:100) owned by the applicant.

Residential dock facility – A residential dock facility means a private residential dock which is used for private, recreational or leisure purposes for single-family or multi-family residences designed to moor no more than four vessels (except in Brevard, Clay, Citrus, and Volusia counties which allow only two vessels). This also includes normal appurtenances such as residential boat lifts, boat shelters with open sides, stairways, walkways, mooring pilings, dolphins, etc. In some instances, the Corps and the Service may elect to review multiple residential dock facilities as a multi-slip facility.

Submerged aquatic vegetation (SAV) – Rooted, submerged, aquatic plants such as, but not limited to, shoal grass (*Halodule wrightii*), paddle grass (*Halophila decipiens*), star grass (*Halophila engelmanni*), Johnson's seagrass (*Halophila johnsonii*), sago pondweed (*Potamogeton pectinatus*), clasping-leaved pondweed (*Potamogeton perfoliatus*), widgeon grass (*Ruppia maritima*), manatee grass (*Syringodium filiforme*), turtle grass (*Thalassia testudinum*), tapegrass (*Vallisneria americana*), and horned pondweed (*Zannichellia palustris*).

Warm Water Aggregation Areas (WWAAs) and **No Entry Areas** – Areas within certain counties where increased densities of manatees occur due to the proximity of artificial or natural warm water discharges or springs and are considered necessary for survival. Some of these areas may be federally-designated manatee sanctuaries or state-designated seasonal "no entry" manatee protection zones. Projects proposed within these areas may require consultation in order to offset expected adverse impacts. In addition, special permits may be required from the FWC in order to access these areas.

Watercraft access structures – Docks or piers, marinas, boat ramps and associated trailer parking spaces, boat slips, boat lifts, floats, floating docks, pilings, boat davits, dry storage, etc.

Waters accessible to manatees – Although most waters of the State of Florida are accessible to the manatee, there are some areas such as landlocked lakes that are not. There are also some weirs, salinity control structures and locks that may preclude manatees from accessing water bodies. If there is any question about accessibility, contact the Service or the FWC.

Appendix D / Rock Harbor Breakwater Document

South Florida Water Management District
Individual Environmental Resource Permit No. 44-106970-P
Date Issued: November 17, 2023

Permittee: Monroe County Board of County Commissioners
1100 Simonton Street
Key West, FL 33040

Project: Rock Harbor Breakwater Repair, Weed Barrier & Air Curtain

Application No. 220414-33990

Location: Monroe County, See Exhibit 1

Your application for an Individual Environmental Resource Permit is approved. This action is taken based on Chapter 373, Part IV, of Florida Statutes (F.S.) and the rules in Chapter 62-330, Florida Administrative Code (F.A.C.). Unless otherwise stated, this permit constitutes certification of compliance with state water quality standards under section 401 of the Clean Water Act, 33 U.S.C. 1341, and a finding of consistency with the Florida Coastal Management Program. Please read this entire agency action thoroughly and understand its contents.

This permit is subject to:

- Not receiving a filed request for a Chapter 120, F.S., administrative hearing.
- The attached General Conditions for Environmental Resource Permits.
- The attached General Conditions for Authorizations.
- The attached Special Conditions.
- All referenced Exhibits.

All documents are available online through the District's ePermitting site at www.sfwmd.gov/ePermitting.

If you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights", we will assume that you concur with the District's action.

The District does not publish notices of action. If you wish to limit the time within which a person may request an administrative hearing regarding this action, you are encouraged to publish, at your own expense, a notice of agency action in the legal advertisement section of a newspaper of general circulation in the county or counties where the activity will occur. Legal requirements and instructions for publishing a notice of agency action, as well as a noticing format that can be used, are available upon request. If you publish a notice of agency action, please send a copy of the affidavit of publication provided by the newspaper to the District's West Palm Beach office for retention in this file.

If you have any questions regarding your permit or need any other information, please call us at 1-800-432-2045 or email epermits@sfwmd.gov.

Natalie Cole
Administrator, Environmental Resource Bureau

South Florida Water Management District
Individual Environmental Resource Permit No. 44-106970-P

Date Issued: November 17, 2023	**Expiration Date:** November 17, 2028
Project Name:	Rock Harbor Breakwater Repair, Weed Barrier & Air Curtain
Permittee:	Monroe County Board of County Commissioners 1100 Simonton Street Key West, FL 33040
Operating Entity:	Monroe County Board of County Commissioners 1100 Simonton Street Key West, FL 33040
Location:	Monroe County
Permit Acres:	2.00 acres
Project Land Use:	Natural/Undeveloped
Special Drainage District:	N/A
Water Body Classification:	CLASS III
FDEP Water Body ID:	6006A
Wetland and Surface Water Impacts:	0.07 acres
Conservation Easement to District:	No
Sovereign Submerged Lands:	Yes **Type:** Public Easement Letter of Consent

Project Summary
This Environmental Resource Permit (ERP) authorizes repairs to the Rock Harbor Breakwater, and installation of an air bubble curtain and seaweed gate. This permit includes a Sovereignty Submerged Lands (SSL) public easement and letter of consent to authorize the activities on SSL.

The project proposes to repair a manmade coastal breakwater structure within the Sunrise Point neighborhood of Key Largo that was damaged during Hurricane Irma in 2017 by constructing a 460.0-foot long by 6.0-foot wide and 2.0-foot thick riprap breakwater along with an air curtain system and 110 linear feet of seaweed barrier.

Issuance of this permit constitutes certification of compliance with state water quality standards in accordance with Rule 62-330.062, F.A.C.

Site Description
The site consists of an existing, broken-down, rip rap breakwater that lies perpendicular between Cuda Lane and Bonito Lane on the Atlantic side of Key Largo, Monroe County. Please refer to Exhibit 1.0 for a location map.

For information on wetland and surface water impacts, please see the Wetlands and Other Surface Water (OSW) section of this permit.

Ownership, Operation and Maintenance
Prior to commencement of construction, authorization for works on Parcel ID 33483470-000000 must be submitted to the District's Environmental Resource Compliance staff.

Perpetual operation and maintenance of the project will be the responsibility of Monroe County Board of County Commissioner. Upon conveyance or division of ownership or control of the property or the system, the permittee must notify the Agency in writing within 30 days, and the new owner must request transfer of the permit.

Engineering Evaluation:

Water Quality
The project includes implementation of a Turbidity and Erosion Control Plan, (Exhibit No. 2.0), as additional reasonable assurance of compliance with water quality criteria during construction.

Water Quantity
N/A based on scope of the project.

Certification, Operation, and Maintenance
Pursuant to Chapter 62-330.310, F.A.C., Individual Permits will not be converted from the construction phase to the operation phase until construction completion certification of the project is submitted to and accepted by the District. This includes compliance with all permit conditions, except for any long term maintenance and monitoring requirements. It is suggested that the permittee retain the services of an appropriate professional registered in the State of Florida for periodic observation of construction of the project.

For projects permitted with an operating entity that is different from the permittee, it should be noted that until the construction completion certification is accepted by the District and the permit is transferred to an acceptable operating entity pursuant to Sections 12.1 - 12.3, ERP Applicant's Handbook (AH) Volume (Vol.) I and Section 62-330.310, F.A.C., the permittee is liable for operation and maintenance in compliance with the terms and conditions of this permit.

In accordance with Section 373.416(2), F.S., unless revoked or abandoned, all SWM systems and works permitted under Part IV of Chapter 373, F.S., must be operated and maintained in perpetuity.

The efficiency of SWM systems, dams, impoundments, and most other project components will decrease over time without periodic maintenance. The operation and maintenance entity must perform periodic inspections to identify if there are any deficiencies in structural integrity, degradation due to insufficient maintenance, or improper operation of projects that may endanger public health, safety, or welfare, or the water resources. If deficiencies are found, the operation and maintenance entity is responsible for correcting the deficiencies in a timely manner to prevent compromises to flood protection and water quality. See Section 12.4, ERP AH Vol. I for Minimum Operation and Maintenance Standards.

Environmental Evaluation:

Wetland and OSW Description
The 2-acre site is located entirely within OSW, specifically the Atlantic Ocean, except for the staging area. The project site consists of an existing breakwater that has eroded and failed over time due to large storm events.

A site visit conducted by District staff confirmed seagrasses are located in shallow waters to the south side of the existing breakwater. The north side of the existing breakwater bordering the canal did not contain seagrasses. A small cluster of mangroves is located on the eastern most side of the existing breakwater.

The proposed project will include work in OSW totaling 0.062 acre and impacts to seagrasses totaling 0.0084 acre. The mangroves will not be impacted during construction.

Please see the Exhibit No. 2.0 for wetland and OSW locations.

Elimination and Reduction of Impacts
The initial plans included 0.025 acre of seagrass impacts. After avoidance measures, the permit authorizes 0.0084 acre of unavoidable impacts to seagrass. There were no practicable design modifications to further reduce or eliminate seagrass impacts and have a viable project design for the new breakwater, thereby addressing the criteria in Section 10.2.1, ERP AH Vol. I.

The permittee has also proposed additional functional gain, which further addresses the provisions of the elimination and reduction of wetland impacts pursuant to Section 10.2.1.2, ERP AH Vol. I.

Mitigation Plan
To mitigate for the seagrass impacts, the permittee has proposed to remove two derelict vessels from approximately 0.036 acre of submerged bottom in seagrass habitat located off the coast of Key Largo, with the expectation that seagrass will naturally recruit from adjacent areas containing healthy seagrass beds into the scars exposed by removal of the vessels. Please see Exhibit No. 3.1 for the location of the derelict vessel removal. The amount of required mitigation was determined using the Uniform Mitigation Assessment Method (UMAM) in Chapter 62-345, F.A.C. The final scores can be found in Exhibit No. 3.1.

Cumulative Impact Analysis
The proposed mitigation is located within the same basin as the impacts, therefore pursuant to Section 10.2.8 of ERP AH Vol. I, the project will not result in unacceptable cumulative impacts to the Florida Keys Cumulative Impact Basin.

Monitoring and Maintenance
Monitoring will be conducted by the permittee for a period of five consecutive years or until District staff determines that mitigation success has been achieved. Success criteria/ maintenance criteria are found in the special conditions. Annual reports shall be submitted to the District in accordance with the work schedule included herein and as stipulated in the special conditions and Exhibit No. 3.1.

Turbidity
To ensure that the proposed construction activities do not degrade adjacent wetlands and OSWs and off-site areas, the permittee will install turbidity barriers in accordance with Exhibits No. 2.0 and 2.1 and as stipulated in the special conditions of this permit. In addition, a turbidity monitoring plan will be implemented to ensure the turbidity does not exceed 0 Nephalometric Turbidity Units (NTU) above background as depicted in Exhibit No. 2.1. No adverse water quality impacts are anticipated as a result of the proposed project.

The proposed construction will take place from a barge, which will maintain adequate clearance from the bottom to provide reasonable assurance there will be no additional adverse impacts to wetlands or other surface waters.

Fish, Wildlife, and Listed Species
The wetlands or OSWs to be impacted provide habitat for wetland-dependent species including Florida manatees, sea turtles, smalltooth sawfish, and other marine species. The proposed mitigation will provide or improve habitat for wetland-dependent and aquatic species.

The permittee will implement standard manatee, sea turtle and smalltooth sawfish protection provisions during all in-water project construction activities as stipulated in the special conditions of this permit. District staff does not anticipate any impacts to the manatee or its preferred habitat, or sea turtles and their preferred habitat, associated with the construction or operation of the project.

The District has received correspondence from the Florida Fish and Wildlife Conservation Commission on May 22, 2023 which includes recommendations for multiple measures to follow during construction. The correspondence can be found in Exhibit No. 3.4 and the recommendations are included in the special conditions of this permit.

It shall be the permittee's responsibility to coordinate with the Florida Fish and Wildlife Conservation Commission and/or the U.S. Fish and Wildlife Service for appropriate guidance, recommendations, and/or necessary permits to avoid impacts to listed species.

This permit does not relieve the permittee from complying with all applicable rules and any other agencies' requirements if, in the future, endangered or threatened species or species of special concern are discovered on the site.

Public Interest Test
The work is proposed within an Outstanding Florida Waterbody. Based on the public interest assessment, it is anticipated that the project will be clearly in the public interest. No net adverse effects to fish and wildlife, navigation, fishing or recreational values, historical and archeological resources, or the relative values of function will occur as a result of the proposed activity.

The permittee is proposing the removal of additional derelict vessels in order to demonstrate the project is clearly in the public interest.

Sovereignty Submerged Lands
The proposed breakwater, air curtain and seaweed gate are located on SSLs - lands owned by the State of Florida; therefore, it requires authorization from the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), pursuant to Article X, Section 11 of the Florida Constitution, and Section 253.77, F.S. The District is delegated the authority to take final agency action for this application on behalf of the Board of Trustees, pursuant to Rule 18-21.0051(2), F.A.C. The District has determined that the activity qualifies for and requires a public easement, as long as the work performed is located within the boundaries as described and is consistent with the exhibits and conditions herein. The final documents required to execute the public easement will be sent to the permittee by the Department of Environmental Protection’s Division of State Lands (DSL) for execution. Upon satisfactory execution of those documents, including payment of required fees and compliance with any conditions herein, the final document will be issued by DSL.

The derelict vessels are located on sovereignty submerged lands- lands owned by the State of Florida; therefore, it also requires authorization from the Board of Trustees. Pursuant to Rule 18-21.0051, F.A.C., the District is delegated the authority to take final agency action on behalf of the Board of Trustees. The District has determined that the activity qualifies for a Letter of Consent in accordance with Rule 18-21.0051 (1)(c)14, F.A.C., as long as the work performed is located within the boundaries as described and is consistent with the conditions herein.

Environmental Evaluation Tables:

Summary

Wetlands and Other Surface Waters:	0.0704	acres
Direct Impacts:	0.0704	acres
Secondary impacts:	0	acres
Net UMAM Functional Loss/ Gain:	0.004	units
Total Onsite Mitigation Area:	0	acres
Total Offsite Mitigation Area:	0.036	acres

Wetland and OSW

Activities in Wetlands or Other Surface Waters, Not Including Mitigation at a Bank

ID	Acres	Action	Community Description	Current Score	With Project Score	UMAM Loss
seagrass	0.0084	Direct Impact	Sea Grasses	0.7	0	-0.006
osw	0.062	Works in Surface Waters	Bays and Estuaries			0.000
Total:	**0.0704**					**-0.006**

UMAM Mitigation and Preservation

ID	Acres	Action	Existing Community Description	Proposed Community Description	Current or Without Preserve Score	With Project Score	Time Lag Years.	Risk	P. A. F.	UMAM Gain
derelictv	0.036	Restoration	Sea Grasses	Sea Grasses	0.2	0.8	3	2	1.0	0.010
Total:	**0.036**									**0.010**

Related Concerns:

Water Use Permit Status
Irrigation and dewatering are not required for the project.

This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation.

Water and Wastewater Service
N/A

Historical/ Archeological Resources
No information has been received that indicates the presence of archaeological or historical resources on the project site or indicating that the project will have any effect upon significant historic properties listed, or eligible for listing in the National Register of Historic Places.

This permit does not release the permittee from complying with any other agencies requirements in the event that historical and/or archaeological resources are found on the site.

General Conditions for Individual Environmental Resource Permits, 62-330.350, F.A.C.

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with rule 62-330.315, F.A.C. Any deviations that are not so authorized may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

2. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.

3. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Environmental Protection and Florida Department of Transportation, June 2007), and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), which are both incorporated by reference in subparagraph 62-330.050(9)(b)5., F.A.C., unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.

4. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice," (October 1, 2013), (http://www.flrules.org/Gateway/reference.asp?No=Ref-02505), incorporated by reference herein, indicating the expected start and completion dates. A copy of this form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C., and shall be submitted electronically or by mail to the Agency. However, for activities involving more than one acre of construction that also require a NPDES stormwater construction general permit, submittal of the Notice of Intent to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities, DEP Form 62-621.300(4)(b), shall also serve as notice of commencement of construction under this chapter and, in such a case, submittal of Form 62-330.350(1) is not required.

5. Unless the permit is transferred under rule 62-330.340, F.A.C., or transferred to an operating entity under rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms, and conditions of the permit for the life of the project or activity.

6. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:
   a. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex- "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit"[Form 62-330.310(3)]; or
   b. For all other activities- "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].
   c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.

7. If the final operation and maintenance entity is a third party:
   a. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as-built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru 12.3.4 of Volume I) as filed with the Florida Department of State, Division of Corporations, and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the

County in which the activity is located.
b. Within 30 days of submittal of the as-built certification, the permittee shall submit “Request for Transfer of Environmental Resource Permit to the Perpetual Operation and Maintenance Entity” [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.

8. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.

9. This permit does not:
   a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;
   b. Convey to the permittee or create in the permittee any interest in real property;
   c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
   d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.

10. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.

11. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.

12. The permittee shall notify the Agency in writing:
    a. Immediately if any previously submitted information is discovered to be inaccurate; and
    b. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.

13. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.

14. If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, stone tools, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section (DHR), at (850)245-6333, as well as the appropriate permitting agency office. Project activities shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and the proper authorities notified in accordance with section 872.05, F.S. For project activities subject to prior consultation with the DHR and as an alternative to the above requirements, the permittee may follow procedures for unanticipated discoveries as set forth within a cultural resources assessment survey determined complete and sufficient by DHR and included as a specific permit condition herein.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.

16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

17. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

18. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with Rule 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

General Conditions for Authorizations for Use of Sovereign Submerged Lands, Rule 18-21.004(7), F.A.C.

All authorizations granted by rule or in writing under Rule 18-21.005, F.A.C., except those for aquaculture activities and geophysical testing, shall be subject to the general conditions as set forth in paragraphs (a) through (i) below. The general conditions shall be part of all authorizations under this chapter, shall be binding upon the grantee, and shall be enforceable under Chapter 253 or Chapter 258, Part II, F.S.

(a) Authorizations are valid only for the specified activity or use. Any unauthorized deviation from the specified activity or use and the conditions for undertaking that activity or use shall constitute a violation. Violation of the authorization shall result in suspension or revocation of the grantee's use of the sovereignty submerged land unless cured to the satisfaction of the Board.

(b) Authorizations convey no title to sovereignty submerged land or water column, nor do they constitute recognition or acknowledgment of any other person's title to such land or water.

(c) Authorizations may be modified, suspended or revoked in accordance with their terms or the remedies provided in Sections 253.04 and 258.46, F.S., or Chapter 18-14, F.A.C.

(d) Structures or activities shall be constructed and used to avoid or minimize adverse impacts to sovereignty submerged lands and resources.

(e) Construction, use, or operation of the structure or activity shall not adversely affect any species which is endangered, threatened or of special concern, as listed in Rules 68A-27.003, 68A-27.004, and 68A-27.005, F.A.C.

(f) Structures or activities shall not unreasonably interfere with riparian rights. When a court of competent jurisdiction determines that riparian rights have been unlawfully affected, the structure or activity shall be modified in accordance with the court's decision.

(g) Structures or activities shall not create a navigational hazard.

(h) Structures shall be maintained in a functional condition and shall be repaired or removed if they become dilapidated to such an extent that they are no longer functional. This shall not be construed to prohibit the repair or replacement subject to the provisions of Rule 18-21.005, F.A.C., within one year, of a structure damaged in a discrete event such as a storm, flood, accident, or fire.

(i) Structures or activities shall be constructed, operated, and maintained solely for water dependent purposes, or for non-water dependent activities authorized under paragraph 18-21.004(1)(g), F.A.C., or any other applicable law.

Special Conditions for Individual Environmental Resource Permits, 62-330.350, F.A.C.

1. The construction authorization for this permit shall expire on the date shown on page 2.

2. Operation and maintenance of the project shall be the responsibility of Monroe County Board of County Commissioner. The permittee shall notify the Agency in writing within 30 days of any conveyance or division of ownership or control of the property of the system, and the new owner must request transfer of the permit in accordance with Rule 62-330.340, F.A.C.

3. Prior to the commencement of construction, authorization for works on Parcel ID 33483470-000000 must be submitted to the District's Environmental Resource Compliance staff.

4. Prior to any future construction, the permittee shall apply for and receive an Individual ERP. As part of the permit application, the applicant for that phase shall provide documentation verifying that the proposed construction is consistent with the design of the master stormwater management system, including the land use and site grading assumptions.

5. Prior to initiating construction activities associated with this ERP, the permittee is required to hold a pre-construction meeting with field representatives, consultants, contractors, District Environmental Resource Bureau (ERB) staff, and any other local government entities as necessary. The purpose of the pre-construction meeting is to discuss construction methods, sequencing, best management practices, identify work areas, staking and roping of preserves where applicable, and to facilitate coordination and assistance amongst relevant parties. To schedule a pre-construction meeting, please contact ERB staff from the West Palm Beach Office at (561) 686-8800 or via e-mail at: precon@sfwmd.gov. When sending a request for a pre-construction meeting, please include the application number, permit number, and contact name and phone number.

6. This permit does not authorize the permittee to cause any adverse impact to or “take” of state listed species and other regulated species of fish and wildlife. Compliance with state laws regulating the take of fish and wildlife is the responsibility of the owner or applicant associated with this project. Please refer to Chapter 68A-27, F.A.C. for definitions of “take” and a list of fish and wildlife species. If listed species are observed onsite, FWC staff are available to provide decision support information or assist in obtaining the appropriate FWC permits. Most marine endangered and threatened species are statutorily protected and a “take” permit cannot be issued. Requests for further information or review can be sent to: FWCConservationPlanningServices@MyFWC.com.

7. STANDARD MANATEE CONDITIONS FOR IN-WATER WORK (2011)
   The permittee shall comply with the following conditions intended to protect manatees from direct project effects:
   a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
   b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a 4.0 foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
   c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or

entrapment. Barriers must not impede manatee movement.
d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
e. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the USFWS in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com
f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads Caution: Boaters must be posted. A second sign measuring at least 8.5 inches by 11.0 inches explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

8. The permittee shall comply with the following protected species construction conditions:
a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/ rescue organization.

9. Barges or other work vessels used to conduct in-water activities shall be operated in a manner that prevents unauthorized dredging, water quality violations, and damage to submerged aquatic communities.

10. All barge activity shall occur only in areas where at least one-foot bottom clearance is maintained at all times.

11. A turbidity control plan shall be implemented in accordance with Exhibit No. 2.1. Prior to the

commencement of construction, floating turbidity curtains with weighted skirts that extend to the bottom of the water body shall be properly installed to isolate adjacent waters from the work area. The floating turbidity curtains shall be maintained and shall remain in place until all construction is complete and turbidity levels in the project area are within 0 NTU of background levels to meet Outstanding Florida Waters standards. The permittee shall be responsible for ensuring that turbidity control devices are inspected daily and maintained in good working order so that there are no violations of state water quality standards outside of the turbidity screens.

12. A water quality monitoring program shall be implemented as outlined below: Turbidity expressed in NTU. Background samples shall be taken 200 feet upstream of any construction activity within adjacent surface waters. Compliance samples shall be taken 200 feet downstream. Samples shall be taken twice daily, with at least a four-hour interval, during all work authorized by this permit. Monitoring shall begin on the first day of construction for all activities within or adjacent to surface waters. The monitoring data must demonstrate that turbidity 200 feet downstream of all proposed activities are equal to 0 NTU above natural background turbidity to meet Outstanding Florida Waters standards and 200 feet upstream of each proposed activity for a period of 7 consecutive days after completion of construction. If monitoring shows such levels to be exceeded, construction shall cease and District compliance staff shall be notified immediately. Work shall not resume until District staff is satisfied that adequate corrective measures have been taken and turbidity has returned to acceptable levels. All monitoring data shall be maintained on site and be available to District staff during regular business hours. The content of the data shall include:
    (1) permit and application number;
    (2) dates of sampling and analysis;
    (3) statement describing the methods used in collection, handling, storage and analysis of the samples;
    (4) a map indicating the sampling locations and
    (5) a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data. Monitoring reports shall also include the following information for each sample that is taken:
        (a) time of day samples taken;
        (b) depth of water body;
        (c) depth of samples;
        (d) antecedent weather conditions;
        (e) wind direction and velocity;
        (f) direction of tide.

13. A mitigation program to offset adverse impacts to 0.0084 acres of seagrasses shall be implemented in accordance with Exhibit No. 3.1. The permittee shall monitor and document successful recruitment of seagrasses into 0.096 acre of submerged bottom exposed by removal of derelict vessels.

14. Seagrass survey results for the mitigation area in which the derelict vessels have been removed shall be submitted to District Environmental Resource Compliance staff on an annual basis in accordance with Exhibit No. 3.1. If the survey results for the derelict vessel removal indicate that seagrass has not been successful in the mitigation area or that seagrass impacts in the area have occurred, the District may require the permittee to provide acceptable mitigation to offset those impacts.

15. A monitoring program shall be implemented in accordance with Exhibit No. 3.1. The monitoring program shall extend for a period of 5 years with annual reports submitted to District staff. At the end of the first monitoring period the mitigation area shall contain an 80% survival of planted vegetation. The 80% survival rate shall be maintained throughout the remainder of the monitoring program. At the end of the 5 year monitoring program the entire mitigation area shall contain an 80% survival and coverage of seagrass.

16. A time zero monitoring report documenting the conditions of the submerged bottom in the mitigation area immediately after the derelict vessels are removed shall be submitted in accordance with the work schedule in this permit. The time zero report shall identify the areal extent, distribution and relative abundance of seagrass, acreage and description of each area to be restored by seagrass recruitment and in the surrounding area, in narrative details and photographs.

17. The permittee shall ensure the installed float of the barrier and boom is a maximum of two (2) feet in total depth to allow enough clearance above the bottom of the seafloor to authorize passage of marine life underneath the barrier.

18. All vertical lines shall be made of material which manatees or marine turtles cannot become entangled. Lines that are not rigid in nature should be sleeved with PVC, hose, or other rigid material. Lines used in horizontal platforms must remain under tension or be sleeved to prevent entanglements. All lines shall be properly anchored or secured and shall be regularly monitored to avoid the entanglement of manatees or marine turtles.

19. All observations of marine turtles or manatees shall be included in the permittee's monitoring reports and the reports shall be provided to the FWC at ImperiledSpecies@MyFWC.com. All injuries or entanglements of manatees or marine turtles shall be reported immediately to the FWC at 888-404-3922.

20. The vertical anchor lines, seaweed barrier, and air curtain diffusers shall be regularly monitored after deployment. All loose or broken lines must be repaired or removed at the time of inspection.

21. The installation of the in-water markers will require a Florida Uniform Waterway Marker Permit from this office to ensure compliance with Chapter 68D-23, Florida Administrative Code, and Section 327.40, Florida Statutes. Contact should be directed to FWC's Division of Law Enforcement, Boating and Waterways Section Waterway Management Unit at (850) 488-5600, email Waterway.Management@MyFWC.com, or write to Florida Fish and Wildlife Conservation Commission, Division of Law Enforcement, Boating and Waterways, 620 South Meridian Street, Tallahassee, Florida 32399-1600.

22. A SSL public easement is required for the project. The District will forward documentation for the easement to the Florida Department of Environmental Protection (FDEP), Division of State Lands (DSL) for processing. The terms, conditions, and provisions of the required easement shall be met. Construction of activities shall not commence on SSL, title to which is held by the Board of Trustees of the Internal Improvement Trust Fund, until all required easement documents have been executed to the satisfaction of the FDEP. The permittee shall provide a copy of the fully executed easement to the District.

Project Work Schedule for Permit No. 44-106970-P

The following activities are requirements of this Permit and shall be completed in accordance with the Project Work Schedule below. Please refer to General Conditions, Special Conditions and/or Specific Conditions for more information. Any deviation from these time frames will require prior approval from the District's Environmental Resources Bureau and may require a modification to this permit. Such requests must be made in writing and shall include: (1) reason for the change, (2) proposed start/finish and/or completion dates, and (3) progress report on the status of the project.

Condition No.	Date Added	Description (Application Number)	Due Date	Date Satisfied
GC 4	11/17/2023	Construction Commencement Notice	Prior to Construction	
GC 6	11/17/2023	Submit Certification	30 Days After Construction Completion	
GC 7	11/17/2023	Submit Operation Transfer Request	Within 30 days of Certification	
SC 3	11/17/2023	Authorization Work on Parcel ID 33483470-000000	Prior to Construction	
SC 4	11/17/2023	Pre-Construction Meeting	Prior to Construction	
SC 14	11/17/2023	Submit Seagrass Monitoring Report 1	Within 60 days of Construction Commencement and then Annually for 5 years	
SC 14	11/17/2023	Submit Seagrass Monitoring Report 2	1 year after previous submission	
SC 14	11/17/2023	Submit Seagrass Monitoring Report 3	1 year after previous submission	
SC 14	11/17/2023	Submit Seagrass Monitoring Report 4	1 year after previous submission	
SC 14	11/17/2023	Submit Seagrass Monitoring Report 5	1 year after previous submission	
SC 16	11/17/2023	Submit Time Zero Report	Within 30 Days of Mitigation Construction Complete Date	
SC 22	11/17/2023	Submit Executed SSL Easement	Prior to Construction	

GC = General Condition

SC = Special Condition

Distribution List

Greg Corning, Wood Environmental and Infrastructure Solutions, Inc.

Department of Environment and Economic Opportunity

Div of Recreation and Park - District 5

US Army Corps of Engineers - Permit Section

Monroe County Engineer

FDEP - South District Branch Office

Exhibits

The following exhibits to this permit are incorporated by reference. The exhibits can be viewed by clicking on the links below or by visiting the District's ePermitting website at http://my.sfwmd.gov/ePermitting and searching under this application number 220414-33990.

Exhibit No. 1.0 Location Map

Exhibit No. 2.0 Construction Plans

Exhibit No. 2.1 Construction Methodology and Turbidity Plan

Exhibit No. 3.0 Ecological Report

Exhibit No. 3.1 Mitigation Plan

Exhibit No. 3.2 SSL Sketch

Exhibit No. 3.3 DOA

Exhibit No. 3.4 FWC Correspondence

NOTICE OF RIGHTS

As required by Chapter 120, Florida Statutes, the following provides notice of the opportunities which may be available for administrative hearing pursuant to Sections 120.569 and 120.57, Florida Statutes, or judicial review pursuant to Section 120.68, Florida Statutes, when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Some of the legal proceedings detailed below may not be applicable or appropriate for your situation. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Florida Statutes. Persons seeking a hearing on a District decision which affects or may affect their substantial interests shall file a petition for hearing in accordance with the filing instructions set forth herein within 21 days of receipt of written notice of the decision unless one of the following shorter time periods apply: (1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Florida Statutes; or (2) within 14 days of service of an Administrative Order pursuant to Section 373.119(1), Florida Statutes. "Receipt of written notice of agency decision" means receipt of written notice through mail, electronic mail, posting, or publication that the District has taken or intends to take final agency action. Any person who receives written notice of a District decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

If the District takes final agency action that materially differs from the noticed intended agency decision, persons who may be substantially affected shall, unless otherwise provided by law, have an additional point of entry pursuant to Rule 28-106.111, Florida Administrative Code.

Any person to whom an emergency order is directed pursuant to Section 373.119(2), Florida Statutes, shall comply therewith immediately, but on petition to the board shall be afforded a hearing as soon as possible.

A person may file a request for an extension of time for filing a petition. The District may grant the request for good cause. Requests for extension of time must be filed with the District prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and whether the District and any other parties agree to or oppose the extension. A timely request for an extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

FILING INSTRUCTIONS

A petition for administrative hearing must be filed with the Office of the District Clerk. Filings with the Office of the District Clerk may be made by mail, hand-delivery, or e-mail. Filings by facsimile will not be accepted. A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the Office of the District Clerk at the District's headquarters in West Palm Beach, Florida. The District's normal business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Any document received by the Office of the District Clerk after 5:00 p.m. shall be deemed filed as of 8:00 a.m. on the next regular business day.

Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, 3301 Gun Club Road, West Palm Beach, Florida 33406.

- Filings by hand-delivery must be delivered to the Office of the District Clerk. Delivery of a petition to the District's security desk does not constitute filing. It will be necessary to request that the District's security officer contact the Office of the District Clerk. An employee of the District's Clerk's office will receive and process the petition.
- Filings by e-mail must be transmitted to the Office of the District Clerk at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the Office of the District Clerk receives the complete document.

INITIATION OF ADMINISTRATIVE HEARING

Pursuant to Sections 120.54(5)(b)4. and 120.569(2)(c), Florida Statutes, and Rules 28-106.201 and 28-106.301, Florida Administrative Code, initiation of an administrative hearing shall be made by written petition to the District in legible form and on 8 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, District file number or any other District identification number, if known.
2. The name, address, any email address, any facsimile number, and telephone number of the petitioner, petitioner's attorney or qualified representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the District's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the District's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the District's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the District to take with respect to the District's proposed action.

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Florida Statutes, and Rules 28-106.111 and 28-106.401–.405, Florida Administrative Code. The District is not proposing mediation for this agency action under Section 120.573, Florida Statutes, at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Section 120.68, Florida Statutes, and in accordance with Florida Rule of Appellate Procedure 9.110, a party who is adversely affected by final District action may seek judicial review of the District's final decision by filing a notice of appeal with the Office of the District Clerk in accordance with the filing instructions set forth herein within 30 days of rendition of the order to be reviewed, and by filing a copy of the notice with the appropriate district court of appeals via the Florida Courts E-Filing Portal.

Appendix E / Photo Documentation Log

Photo Documentation Log (Photos Taken February 24th, 2025)

Photo 1 – View of the western portion of the survey area uplands at Site 1 – Sea Oats Beach, facing northwest.

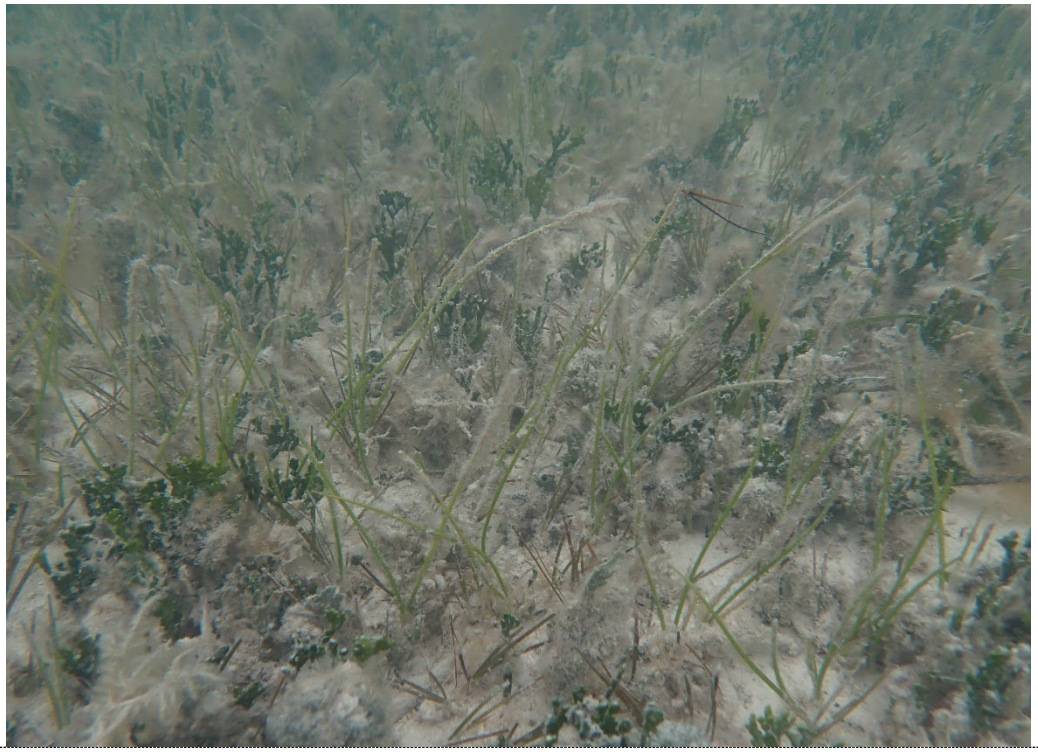


Photo 2 – Typical view of benthic composition in Bed 1 of the Site 1 survey area. Sparse density seagrass bed, shoal grass (Halodule wrightii) with a BB score of 2, and macroalgae including Halimeda spp.

Photo Documentation Log

Photo 3 – View of central portion of the survey area uplands at Site 1, facing northwest.

Photo 4 – Typical view of benthic composition in Bed 2 of the Site 1 survey area. High density seagrass bed, shoal grass with a BB score of 4.

Photo Documentation Log

Photo 5 – View of the eastern portion of the survey area uplands at Site 1, facing southwest.

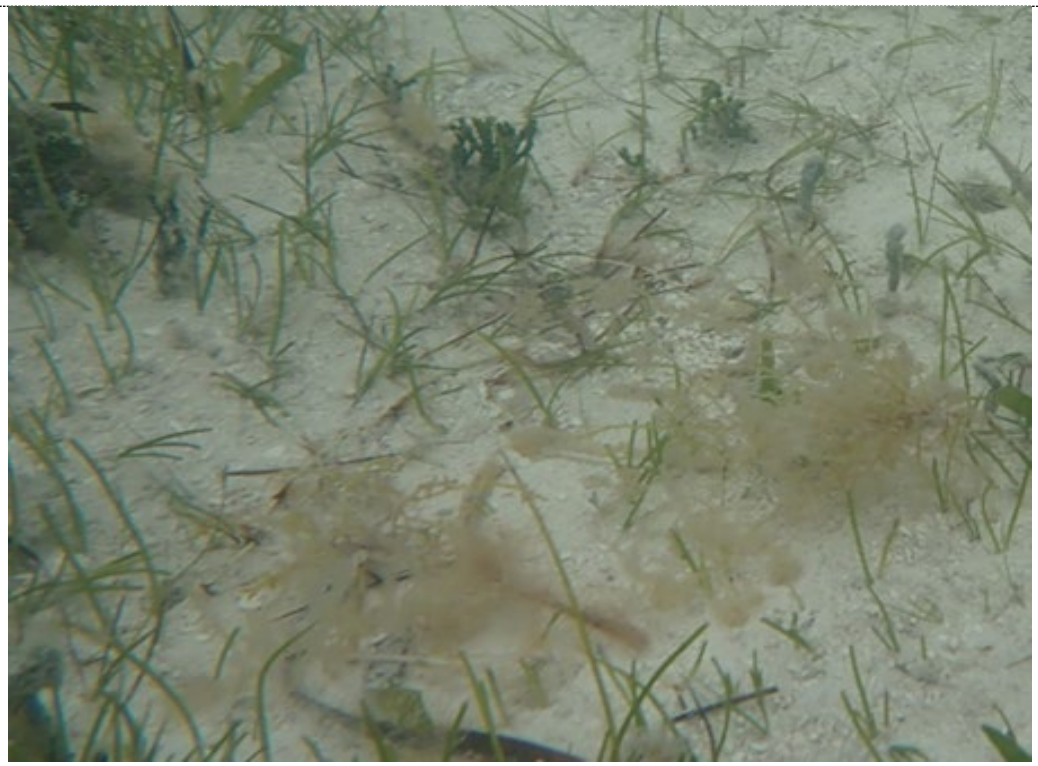


Photo 6 – Typical view of benthic composition in Bed 3 of the Site 1 survey area. Sparse density seagrass bed, shoal grass with a BB score of 2, and macroalgae including Halimeda spp. and Hypnea musciformis.

Photo Documentation Log

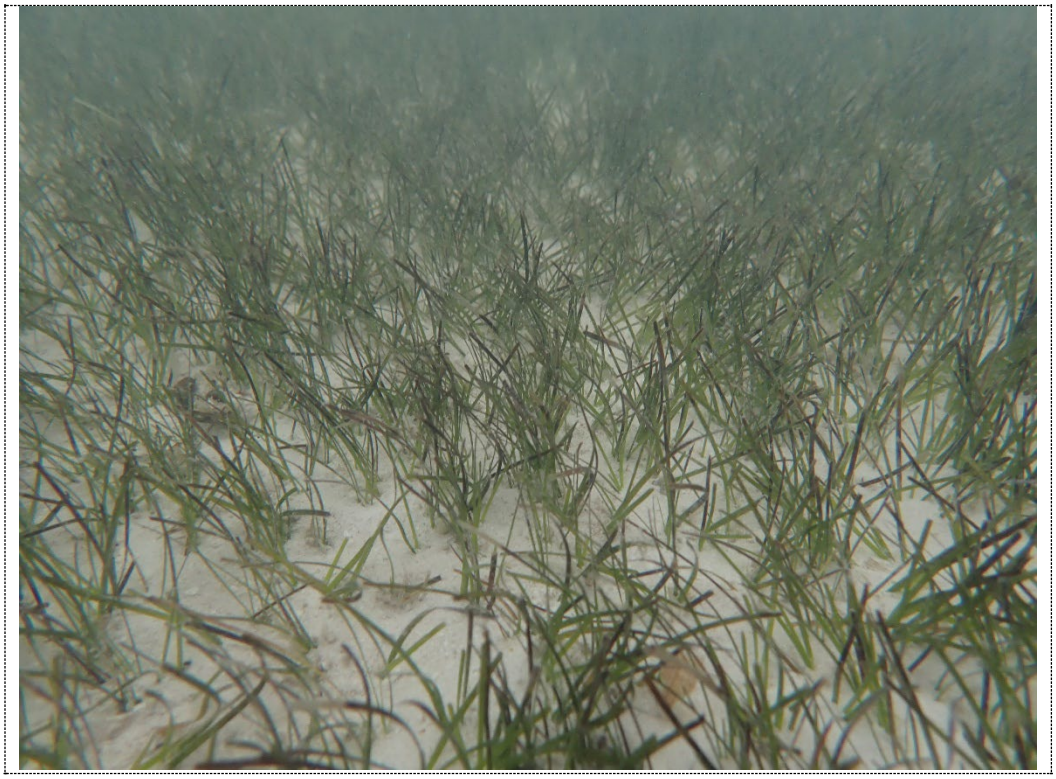


Photo 7 – Typical view of benthic composition in Bed 4 of the Site 1 survey area. High density seagrass bed, shoal grass with a BB score of 4.

Photo 8 – Typical view of benthic composition in Bed 5 of the Site 1 survey area. Sparse density seagrass bed, shoal grass with a BB score of 2.

Photo Documentation Log

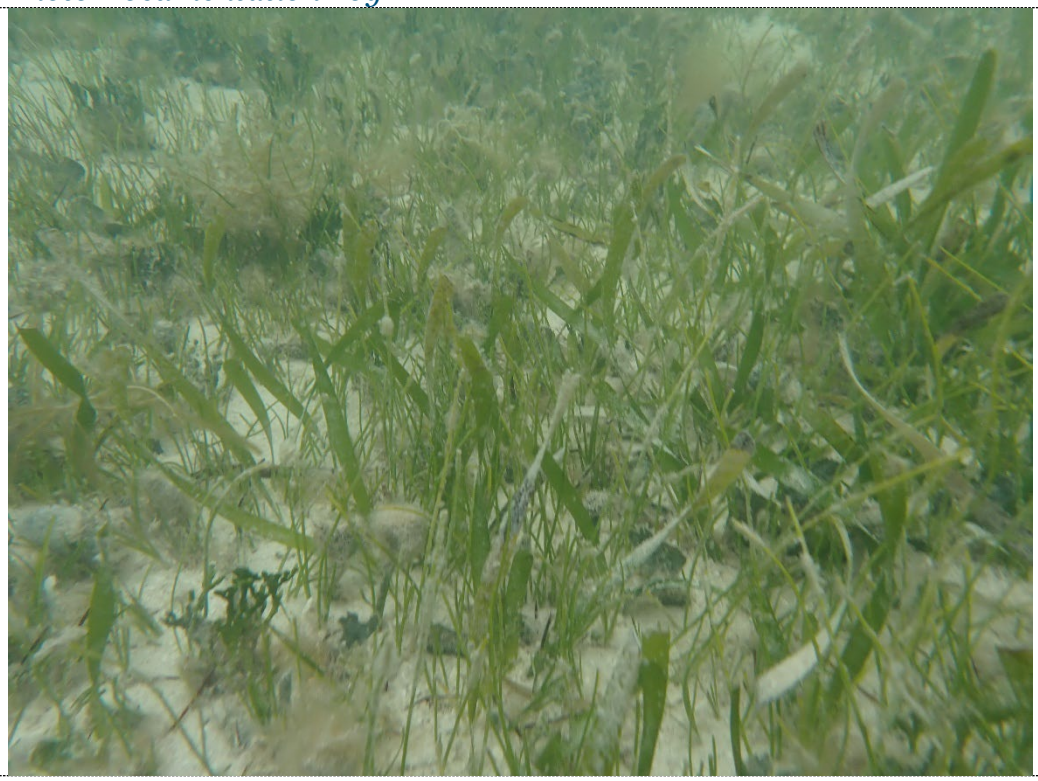


Photo 9 - Typical view of benthic composition in Bed 6 of the Site 1 survey area. Shoal grass with a BB score of 3 and turtle grass (Thalassia testudinum) with a BB score of 3.

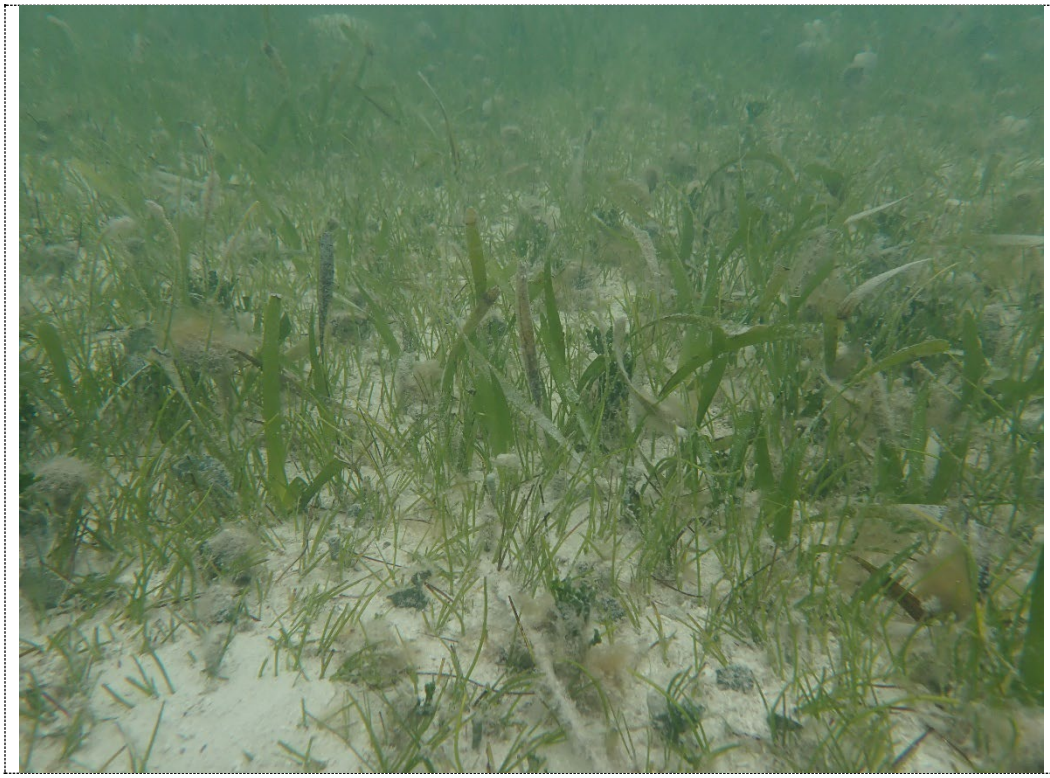


Photo 10 – Additional typical view of benthic composition in Bed 6 of the Site 1 survey area. Shoal grass with a BB score of 4 and turtle grass with a BB score of 3.

Photo Documentation Log

Photo 11 – View of the shoreline adjacent to Survey Area 1 of Site 2– Upper Matecumbe Key, facing west.

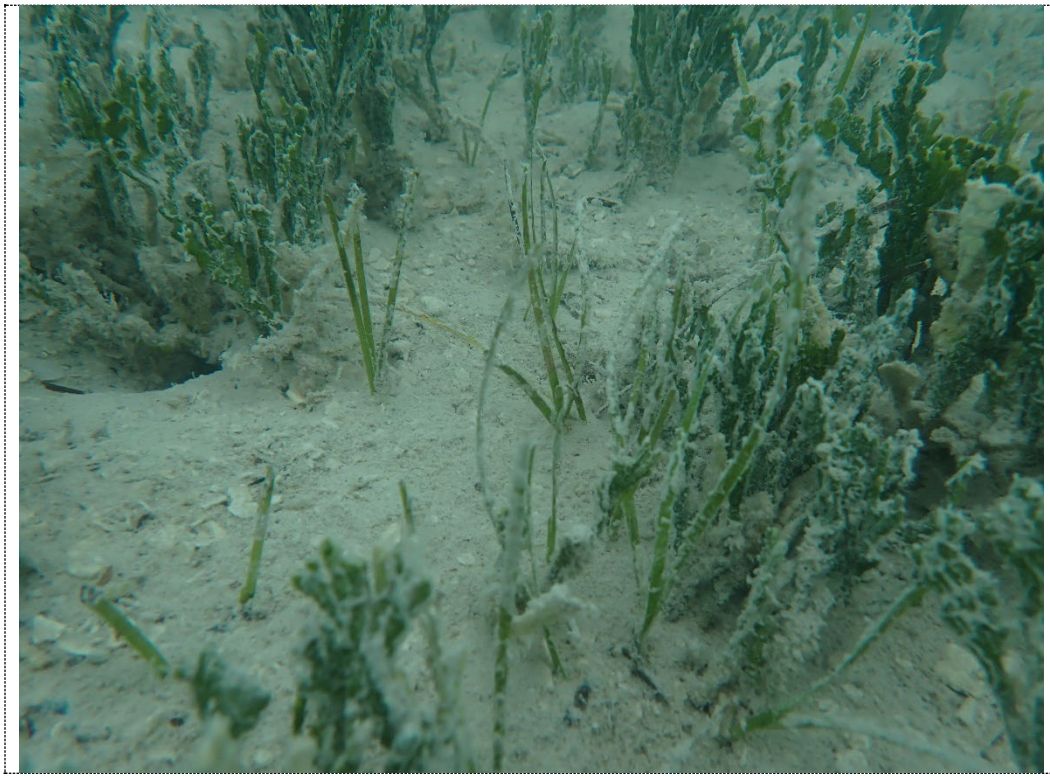


Photo 12 – Typical view of the benthic composition in Bed 1 of Survey Area 1 of Site 2. Shoal grass with a BB score of 2 and macroalgae Halimeda spp.

Photo Documentation Log

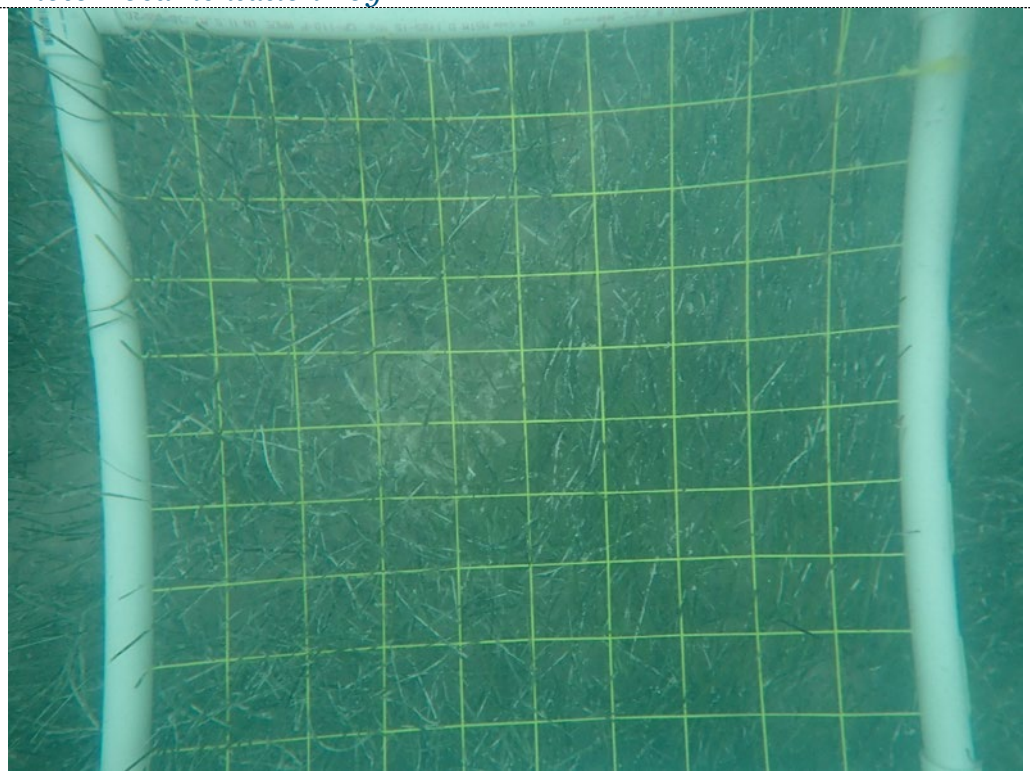


Photo 13 – Typical view of the benthic composition in Bed 2 of Survey Area 1 of Site 2. Shoal grass with a BB score of 4.

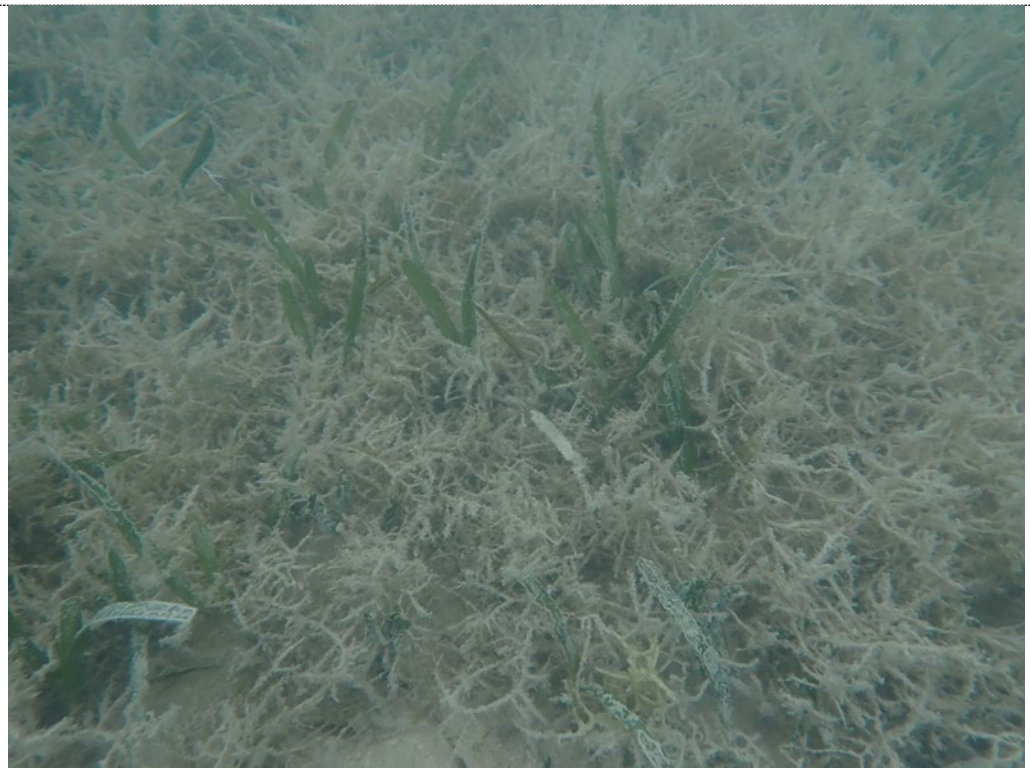


Photo 14 – Typical view of the benthic composition in Bed 3 of Survey Area 1 of Site 2. Turtle grass with a BB score of 2 and macroalgae Hypnea musciformis.

Photo Documentation Log

Photo 15 – View of the shoreline adjacent to Survey Area 2 of Site 2, facing west.

Photo 16 – Typical view of the benthic composition in Bed 1 of Survey Area 2 of Site 2. Turtle grass with BB score of 2 and macroalgae including Penicillus spp, Halimeda spp., and Hypnea musciformis.

Photo Documentation Log

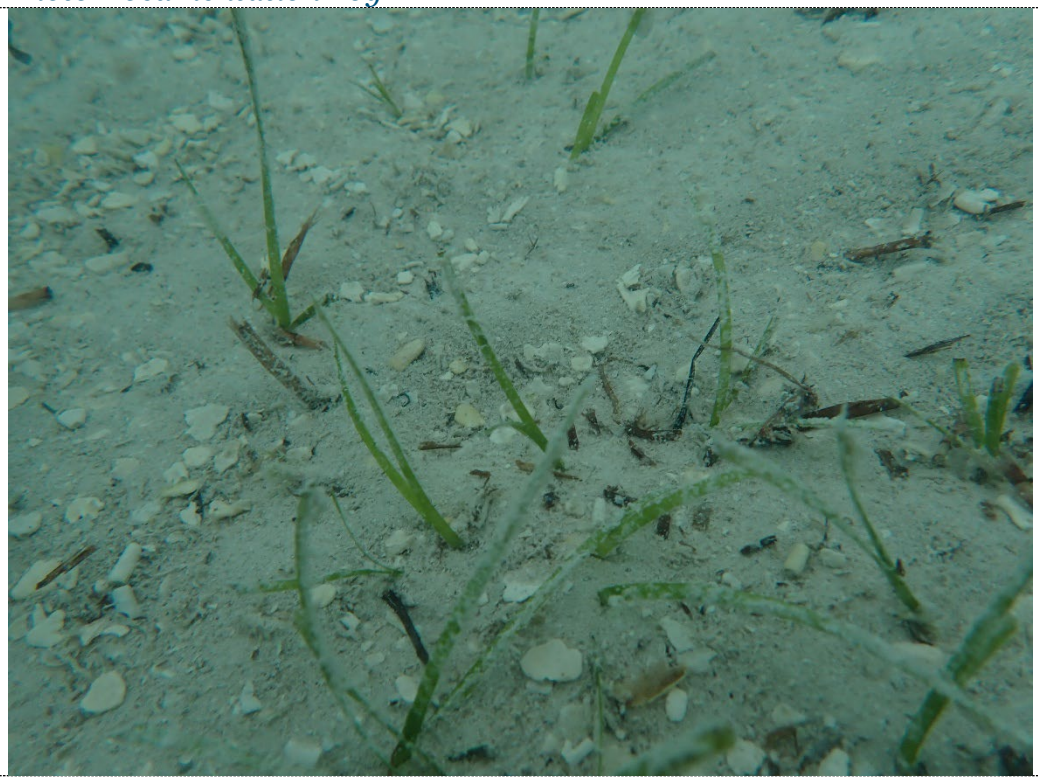


Photo 17 – Typical view of the benthic composition in Bed 2 of Survey Area 2 of Site 2. Shoal grass with a BB score of 0.5.

Photo 14 – Ball/spherical shaped sponge typical throughout all survey areas of Site 2. Note macroalgae including Halimeda spp. and Hypnea musciformis.

Photo Documentation Log (Photos Taken February 25, 2025)

Photo 15 – View of the shoreline adjacent to survey area 3 of Site 2, facing northeast.

Photo 16 – Typical view of the benthic composition in Bed 1 of Survey Area 3 of Site 2. Turtle grass with a BB score of 2.

Photo Documentation Log

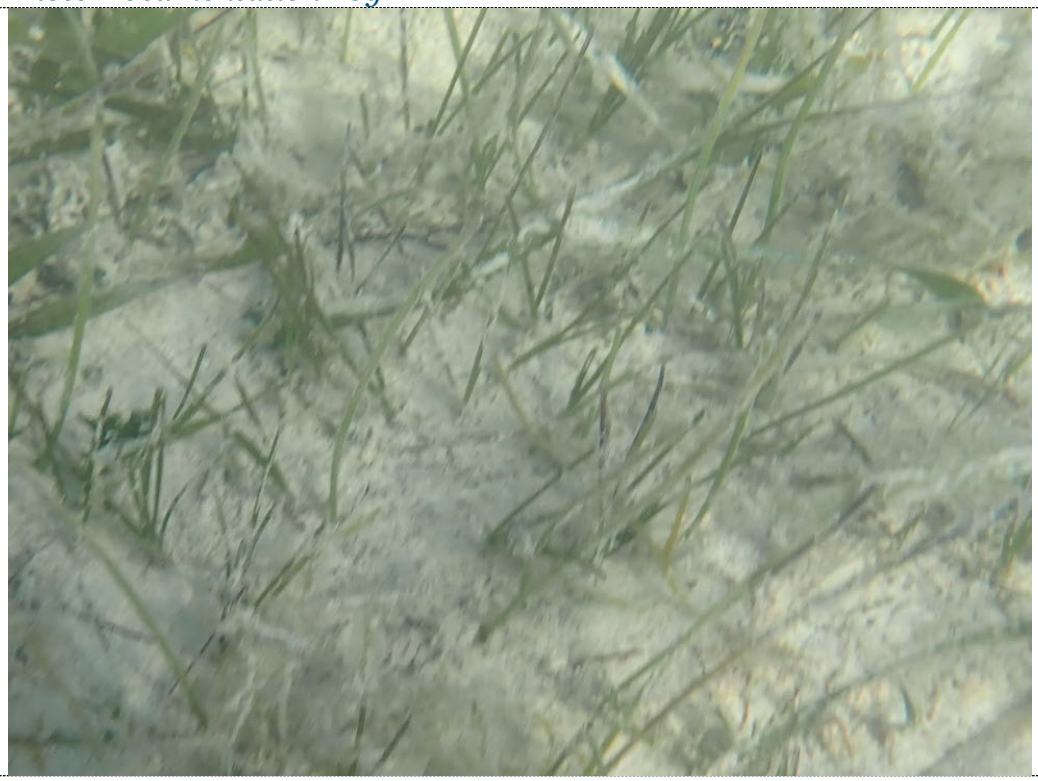


Photo 17 – Typical view of the benthic composition in Bed 2 of Survey Area 3 of Site 2. Shoal grass with a BB score of 2.

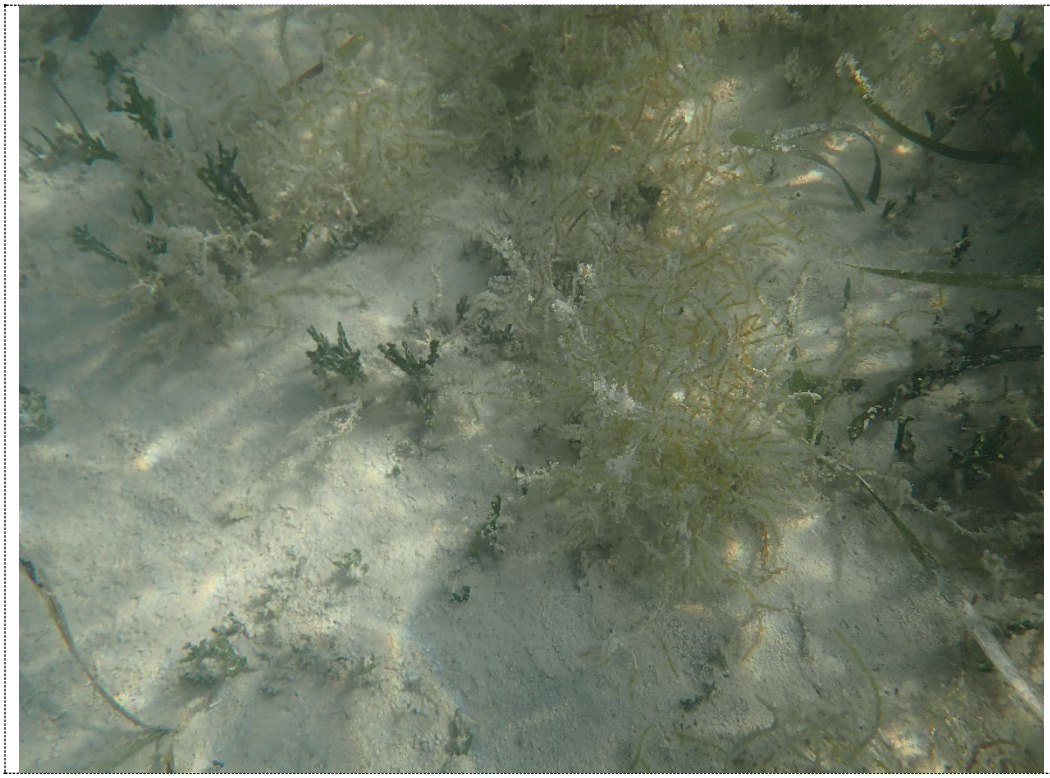


Photo 18 – Typical view of the benthic composition in Bed 3 of Survey Area 3 of Site 2. Turtle grass with a BB score of 1 and macroalgae Halimeda spp. and Hypnea musciformis.

Photo Documentation Log

Photo 19 – View of Survey Area 4 of Site 2, facing northeast.

Photo 20 – Typical view of the benthic composition in Bed 1 of Survey Area 4 of Site 2. Shoal grass with a BB score of of 2 and turtle grass with a BB score of 2.

Photo Documentation Log

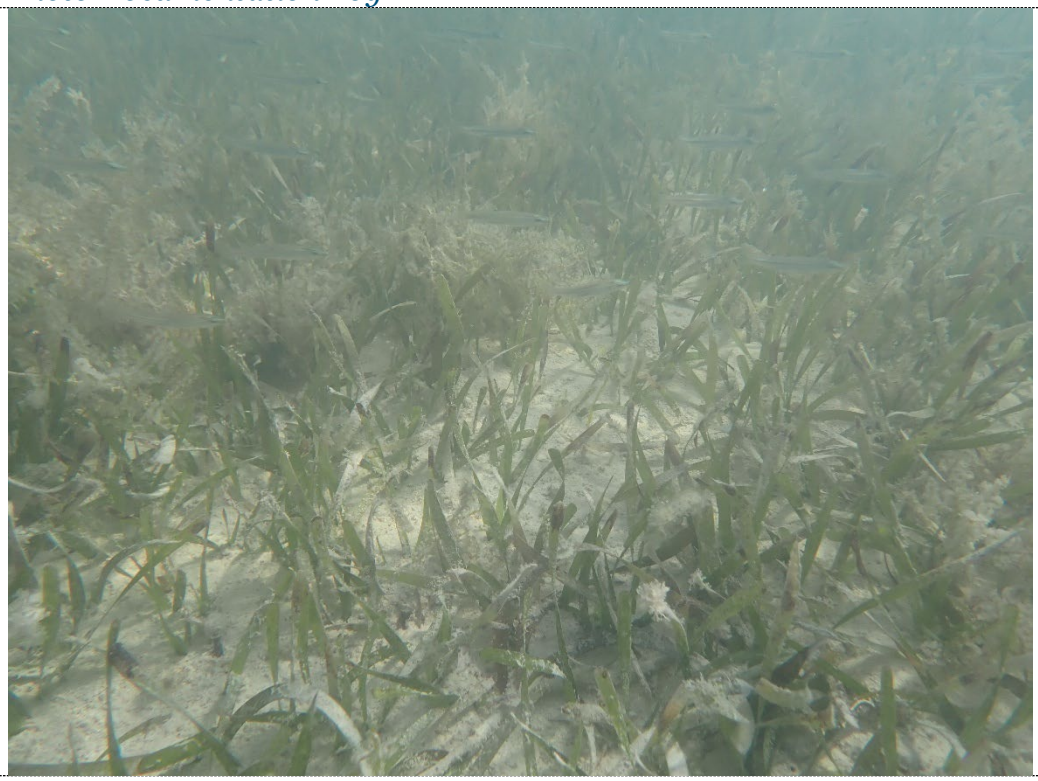


Photo 21 – Typical view of the benthic composition in Bed 2 of Survey Area 4 of Site 2. Turtle grass with a BB score of 3. Note school of baitfish.

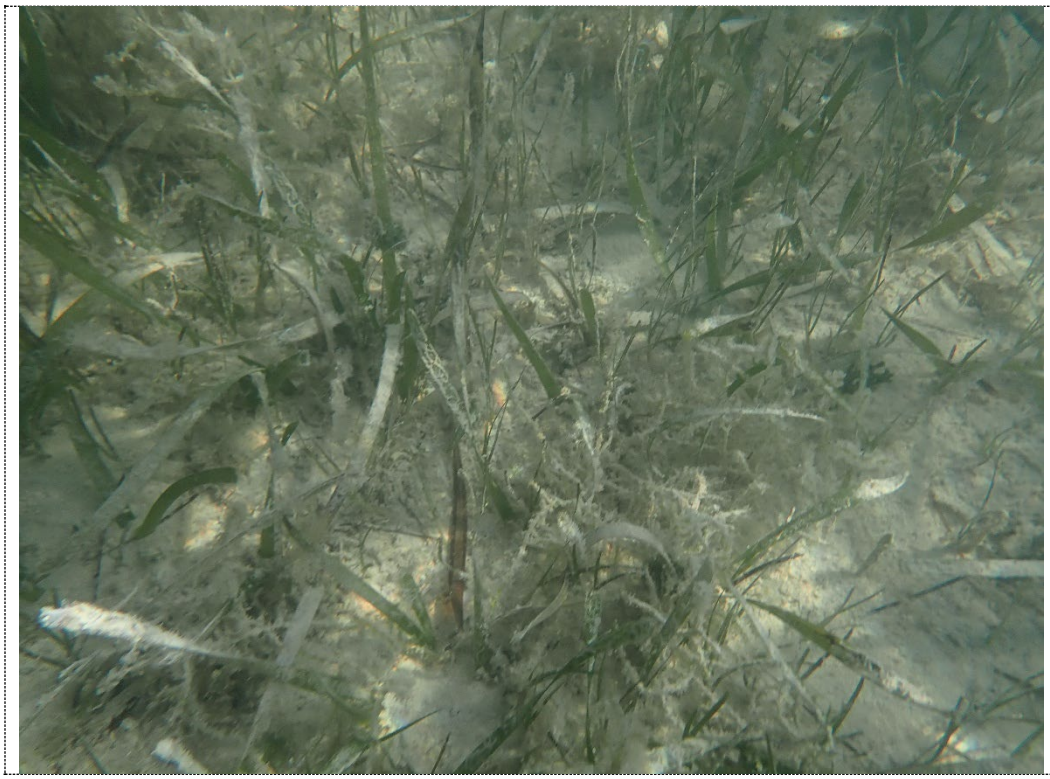
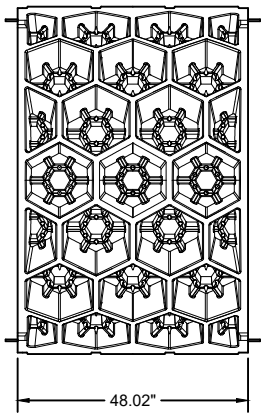


Photo 22 – Typical view of the benthic composition in Bed 3 of Survey Area 4 of Site 2. Shoal grass with a BB score of 3 and turtle grass with a BB score of 3.

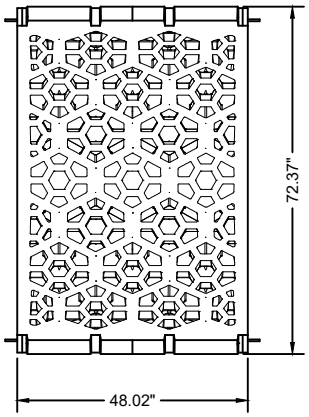
Appendix F / Vendor Matrix

Company Name	Location (Based Out Of)		Work Available in FL Keys?	Products Offered	Pricing (each)	Production Process	Benefits	Pre-Installation Process	Installation Process	Website	Contact
	City	State									
Natrx	Raleigh	NC	Yes	ExoForms™ (various shapes, customizable to project needs)	Email for quote	ExoForms™ come in standard shapes designed to perform in most environments and can be customized to best benefit the specific demands of any project's site and habitat characteristics. Digital design allows for rapid prototyping. Patented Dry Forming™ process is a breakthrough approach to providing sustainable, eco-positive coastal infrastructure resilience. Dry Forming allows for the rapid transition from digital design to physical ExoForm™ structure in as little as one day and enables the unprecedented ability to manufacture and cost-effectively install eco-positive, highly-functional coastal resilience modules tailored to site conditions.	Less material and environmental impact than traditional products Nature-based system, they promote new habitat growth immediately and grow stronger over time.	Assess: Remote sensing and artificial intelligence to pinpoint erosion issues across local or landscape-scale areas and create a plan for action without the need for manual inspection. Address: flexible, customizable solutions that are safer and faster to install than traditional methods. Appraise: combines remote sensing with advanced data science to provide ongoing monitoring, measurement, and reporting of project performance and value creation.	No information available	https://natrx.io/	matt@natrx.io
Reefmaker	Orange Beach	AL	Yes	Florida Limestone Reef	$2,695	Comprised of ancient clamshells that perfectly match a natural reef in PH and substrate. Patented process to embed the rock into the concrete reef surface. The Florida Limestone artificial reef is a 6,000 pound concrete structure built to withstand storm events. The 10-foot footprint was designed to prevent settling and scouring. The limestone rock provides a greater surface area and the complexity it needs to attract marine life.	Concrete by itself has a slightly different pH value than seawater providing a hostile environment for some marine life, and boring organisms that dwell on artificial reefs cannot survive on a concrete reef, but easily make the Florida Limestone reef their home.	No information available	No information available	https://reefmaker.com/	david@reefmaker.com
				Grouper Reef	$2,795	Designed to mimic a low ledge that the Grouper fish prefer. Grouper reef is 7.3 feet x 6.8 feet wide and 5.6 feet tall.	Has a special flanged base to help prevent subsidence. EcoSystem discs are added to the top which provides a complex reef for habitat and protection for juveniles and other animals found on the reef.	No information available	No information available		
				Snorkeling Reef	Email for quote	Has a complex design that allows small marine animals to seek shelter and protection from larger predators.	This reef mounted on a piling can withstand high-wave energy in the surf without damage from storm events. The Florida Limestone rock we use replicates natural reef substrate and PH levels. The EcoSystems create an environment for all the marine life including boring animals. The piling mount system allows the unit to remain upright and not sink into the bottom. EcoSystems can be configured for any depth, shape, size or complexity.	No information available	No information available		aconnelly@uesi.com
				Wave Attenuator	Email for quote	Can be utilized as a Living Wave Barrier to protect shoreline erosion.	Complex design destroys wave energy while allowing water to flow freely through. They have exceeded the U.S. Army Corps of Engineers requirements for permeable flushing while providing habitat for marine life. The piling mount supports the unit and prevents sinking, turning over, and moving during hurricane force winds and waves.	No information available	No information available		
UESI	Fort Pierce	FL	Yes	No information available	Email for quote	No information available	No information available	No information available	No information available	https://uesi.com/artificial-reef-restora	bbegano@uesi.com
Reef Innovations	Sarasota	FL	Yes	Reef Balls	$8 - $900	Ranging from 2 inches tall to over 6 feet tall, Reef Innovations offers various shapes and sizes of reef balls to meet specific project needs.	Provide habitat for fish and other marine life: reef balls provide a safe place for fish and other marine life to live and grow. Improve water quality: Algae and other marine life that colonize reef balls help to filter water and improve water quality. Protect shorelines from erosion: reef balls can help to protect shorelines from erosion by dissipating wave energy.	No information available	No information available	https://reefinnovations.com/	Larry@reefinnovations.com
				Layer Cakes	Email for quote	Ranging from 1.5 feet to over 9 feet tall, layer cakes are designed to to create new reef habitat, improve water quality, reduce erosion, and restore damaged reefs.		No information available	No information available		robbie@reefinnovations.com
				Reef Cubes	Email for quote	A type of artificial reef that is made up of a series of interlocking concrete cubes designed to be colonized by marine life.		No information available	No information available		
1Print	Fort Lauderdale	FL	Yes	SeaHives	Email for quote	Coastal Infrastructure using clean concrete, non corrosive rebar. 3D printer for manufacturing, and streamlined deployment methods. 1Print can produce 12x60x40ft max units (usually for real estate), and smaller. We can work with you on customization for design build, or we have off-the-shelf products to fit your needs.	University of Miami researchers have pioneered the development of SEAHIVE®, hexagonal- shaped, hollow structures designed to reduce wave energy and flooding, create marine habitats, and enhance coastal resilience. These units, 3D printed in honeycomb-like formations offshore, are a fusion of natural and manmade elements.	No information available	Streamlined during construction for deployment methods, by crane or barge.	https://1print.one/	adam@1print.one
ECOncrete	New York	NY	Yes	ECOncrete	Email for quote	ECOncrete materials include some of all of the following: Proprietary Admix, Liners, Texture Agents and Molds. Our admix is incorporated in the concrete mix design specified for the project to turn a traditional concrete into a bioenhanced concrete for marine and waterfront infrastructure. The liners and texture agents are added to the form work improves the design of the structure to enable the recruitment and growth of native marine species.	ECOncrete™'s technology addresses the chemical composition of the concrete, as well as its micro and macro surface, on a micro and macro level. This promotes the growth of organisms like oysters, corals, or barnacles, which act as biological glue, enhancing the strength and durability of structures, and adding to their stability and longevity (bioprotection)	No information available	Standard deployment equipment required for the concrete units in the project, but technology integrates into any standard construction practice and does not require special equipment or personnel for deployment or installation.	https://econcretetech.com/	danielle@econcrete.us
Kind Designs	Miami	FL	Yes	3D Printed Living Seawalls	$25-30/SF. Average slab costs $2,500-$3,000 (price competitive to traditional slabs)	Exterior shell is 5,000 psi mortor, with the interior comprised of rebar (steel or fiberglass) & 5,000 psi concrete (non-toxic). 3D printed exterior shell and rebar cage built by works, and interior concrete poured into seawall through truck and pump system on site. 100% customizable and can be made to any desired specifications.	Kind Designs' seawalls are designed to mimic the shape and texture of mangrove roots and coral reefs, providing stable surfaces for marine life to thrive and hide from predators. The seawalls also include embedded water quality sensors that allow people to track live data.	No information available	Living Seawalls have wire lifting hooks are the top (same as traditional seawalls) that can be used by a crane to lift and place in the water. Our panels can be inserted by waterside (barge required) or shoreside installation.	http://www.kinddesigns.com/	charlotte@kinddesigns.com
Mangrove Reef Walls, LLC	Lawrence	KS	Yes	Mangrove Reef Walls	Cost is project and site specific, but panels range between $150-350 per linear foot installed.	Custom blend of eco-friendly concrete with natural or synthetic fiber reinforcement; Larger panels have noncorrosive reinforcement bars. Poured in molds by hand on site or at nearby facility. Molds involve digital manufacturing to prepare. Panels range in size from 1' to 4' wide and 2' to 5' tall. Roots project outward between 8"-16" depending on the module. Can be customized.	Mangrove-inspired habitats that outperform conventional seawalls in every way: reduced wave energy and erosion, increased biodiversity, and visually-enhanced landscapes. Our unique blend of high-strength concrete and crushed oyster shell accelerate shellfish growth and ensure longevity.	No information available	Panels are bolted onto corrugated walls or anchored into concrete walls. If accessible by land, can be easily installed with mini backhoe, excavator or other similar equipment. Installation by skiff with a boom also possible.	http://www.reefwall.com/	info@reefwall.com
Native Shorelines	Raleigh	NC	Yes	QuickReef	Prices start at $125/LF, including design, permitting, materials and installation. Once installed, little to no maintenance is required.	Comprised primarily of native coastal materials such as limestone marl and oyster shells muanually constructed. Configuration is unique to project. Typical installation is intertidal. Minimum dimensions are 15" high (centerline) by 60" wide (sill) or 15" high by 30" wide (revetment). Current maximum dimensions are 48" high (centerline) by 144" wide. Weight per LF of shoreline varies with configuration. Units interlock to create one continuous structure for length of project.	QuickReef™living shorelines combine the aesthetics and ecological benefits of an oyster shell bag shoreline with the stability of heavier materials and eliminates the use of plastic. In areas with sufficient spat, oyster recruitment can be visible within 30 days of deployment.	No information available	Deployment is accomplished by trained installers by hand or excavator/crane and can be by land or water depending on product configuration and site logistics.	http://www.nativeshorelines.com/	mary-margaret@nativeshorelines.com
Printera	Stuart	FL	Yes	3D Printed Concrete Reefs	Email for quote	3d printed concrete robotically fabricated in facility, or on site with additional elements included like rebar when required. Some.finish elements can be done by hand. Modules can be made up to 12 ft tall, 10 ft wide and 30 ft long. Modules may weigh up to 50000lbs.	Shapes and textures mimic natural reef formations, promoting coral growth and aiding the recovery of damaged habitats. Additionally, their durable construction ensures longevity and resilience against environmental stressors, serving as a sustainable, costeffective alternative that supports the regeneration of fragile marine ecosystems.	No information available	Crane for lifting, and modules can be lowered with I hooks or on pallets. We can also allow for fasteners or various types in design.	https://printera3d.com/	jdangelo@printera3d.com
Reef Arches	West Palm Beach	FL	Yes	Reef Arches	Email for quote	Made from CSA Concrete for 50 pound oyster restoration untis, and CSA Concrete and marine safe stainless steel in 1,000 pound unit, both precast construction. Products are modular, scalable, and flexible for a wide range of deployments. 1,000 pound unit is 6' long, 4' wide, and 2.5' tall and 50 pound unit is 11 9/16 tall, 2'x3 1/8" long, and 1'x6 1/16" wide. The design is visually appealing as it as curves and honeycombs.	Constructed with CSA Concrete. A reliable material for oyster recruitment due to a low pH in the material. The honey-comb design is dual-purpose for the oysters, one is that the product design allows to slow down high wave energy and create turbulence within the structure. That turbulence stirs up nutrients for the oysters to eat.	No information available	Created a floatable method for the 1,000 pound unit that does not require use of barge or gas for specific deployments. Our 50 pounds units can be carried via boat and deployed by hand. Can use barges & cranes for large scale 1,000 deployment.	http://www.reefarches.org/	nbourdon@hedrickbrothers.com

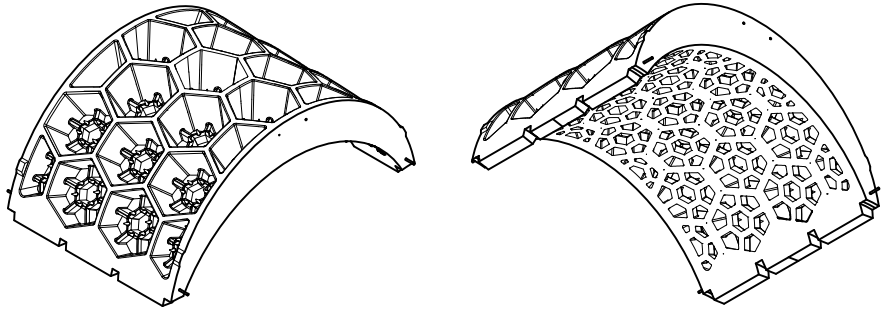
Appendix G / Reef Arch Product Sheets



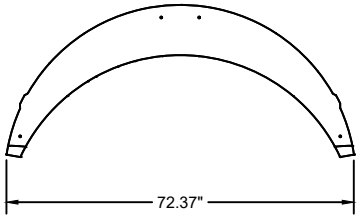
TOP VIEW



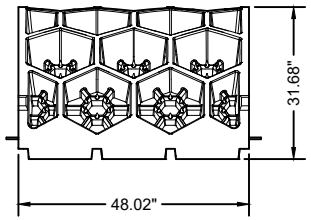
BOTTOM VIEW



ISOMETRIC VIEWS



FRONT VIEW



SIDE VIEW

REEF ARCHES

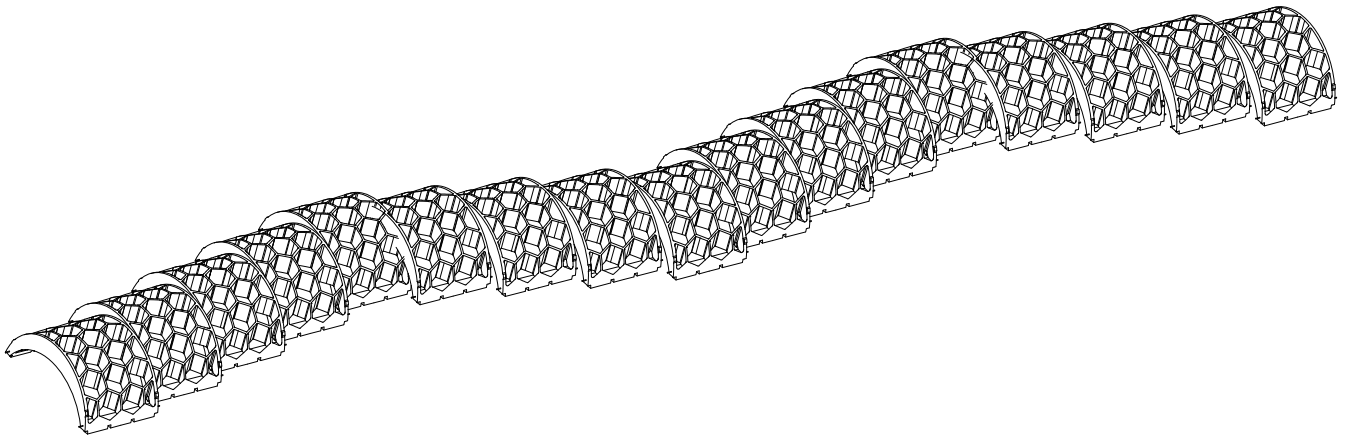
DISTRIBUTED BY:

FERGUSON WATERWORKS

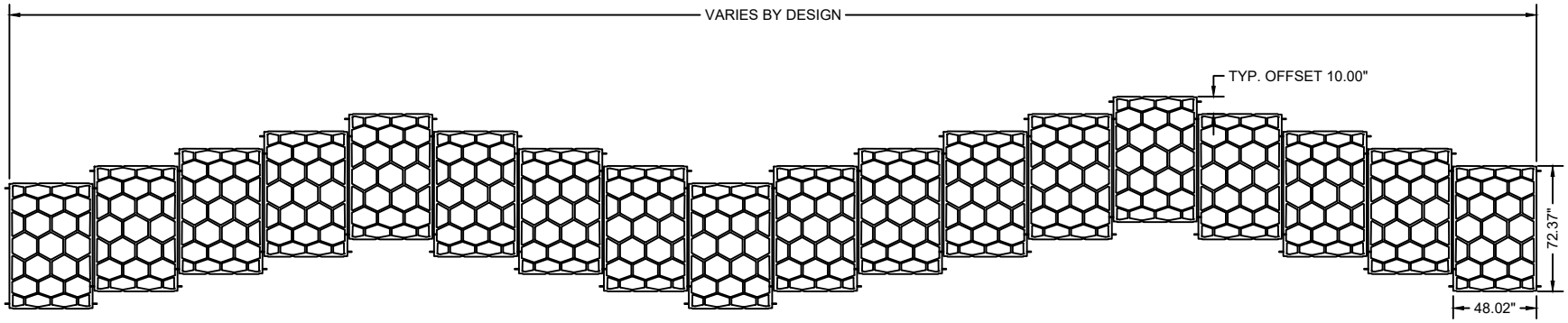
www.fergusongss.com

REEF ARCH - 1,200 LBS. UNIT

DRAWN BY JKB
DATE 2/4/2025
SHEET NO. 1 of 1



REPRESENTATIVE ISOMETRIC VIEW



INSTALLATION NOTE:

- THE FRONT AND REAR OF EACH UNIT CAN BE ATTACHED TO ITS ADJACENT UNIT WITH A 4“ X 16“ BY HALF INCH G 10 FIBERGLASS PLATE WITH NUTS AND WASHERS ON THE 3/8” ALLTHREAD THAT PASSES THROUGH EACH 1200LB UNIT.
- THE GATE IS AVAILABLE TO CLOSE OFF THE ENDS OF EACH RUN.

PLAN VIEW

REEF ARCHES

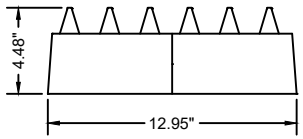
DISTRIBUTED BY:

FERGUSON WATERWORKS

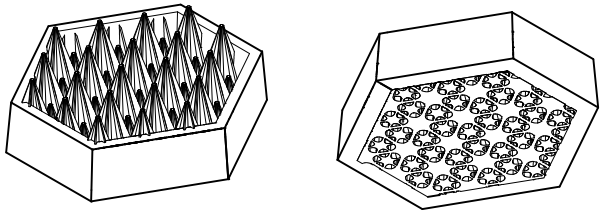
www.fergusongss.com

REEF ARCH - TYPICAL BREAKWATER SHORELINE DETAIL

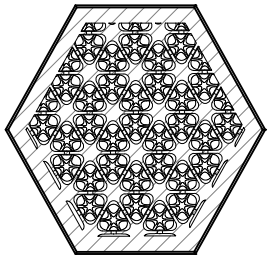
DRAWN BY	JKB
DATE	2/13/2025
SHEET NO.	1 of 1



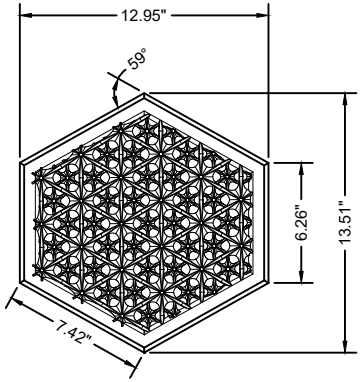
FRONT VIEW



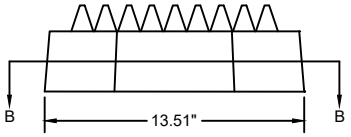
ISOMETRIC VIEWS



SECTION B-B



TOP VIEW



SIDE VIEW

REEF ARCHES

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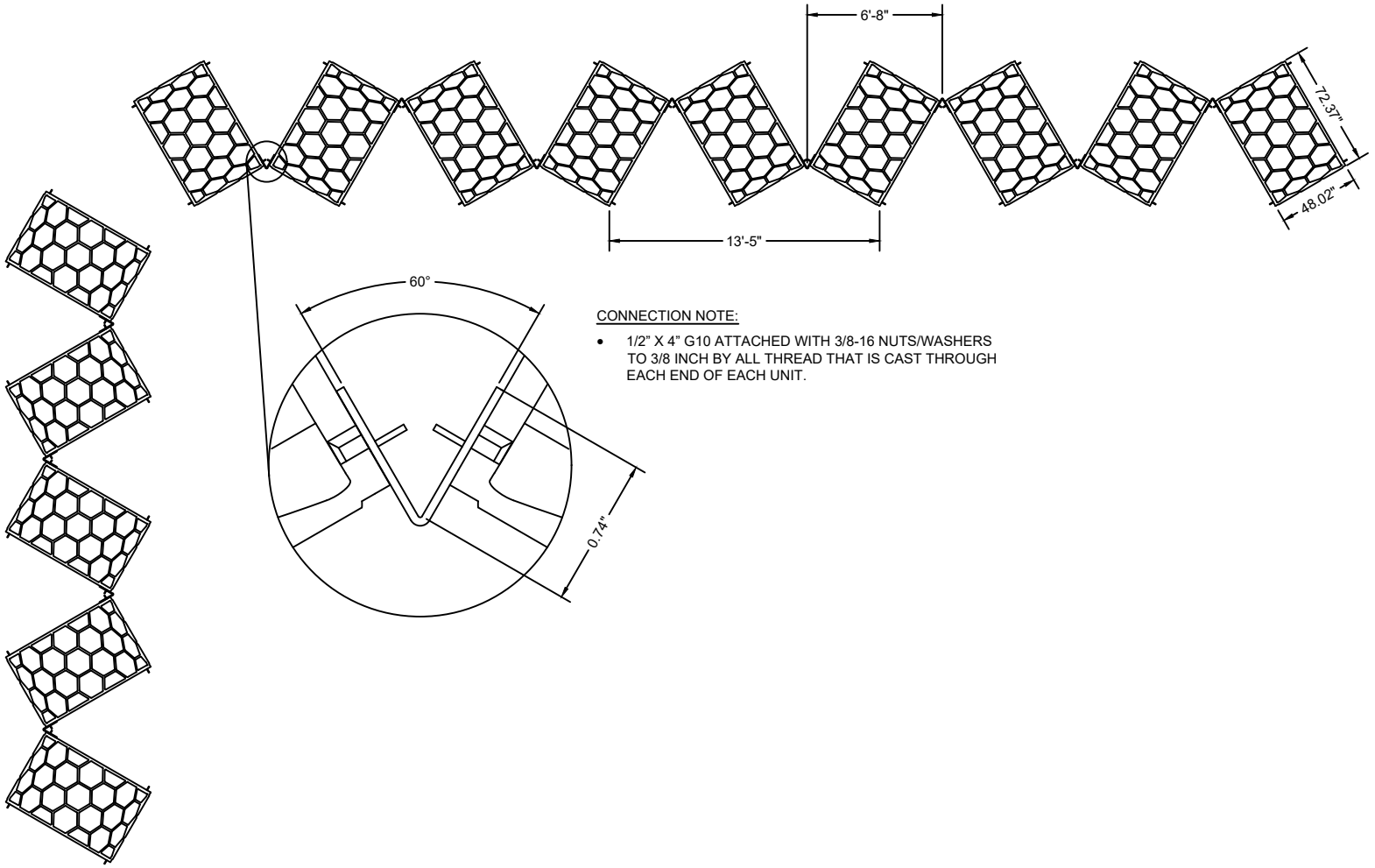
SEAWALL ATTACHMENT

(INSERT FOR 1200 LBS. UNIT)

DRAWN BY JKB
DATE 2/3/2025
SHEET NO. 1 of 1



CONNECTION NOTE:

- 1/2" X 4" G10 ATTACHED WITH 3/8-16 NUTS/WASHERS TO 3/8 INCH BY ALL THREAD THAT IS CAST THROUGH EACH END OF EACH UNIT.

PLAN VIEW

REEF ARCHES

DISTRIBUTED BY:

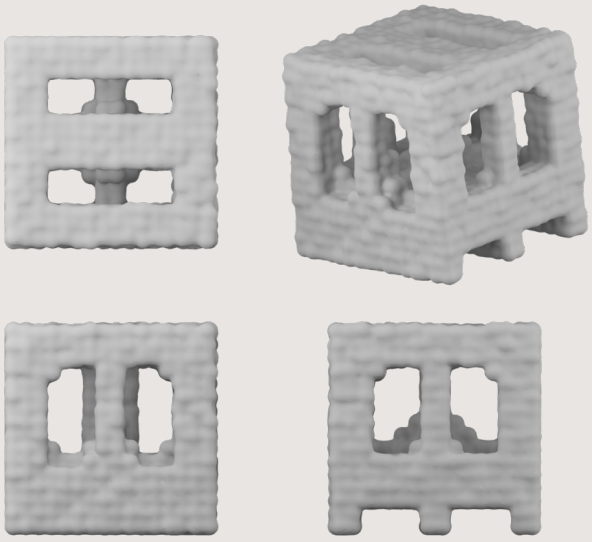
FERGUSON WATERWORKS

www.fergusongss.com

REEF ARCH - TYPICAL SEAWALL REVETMENT DETAIL

DRAWN BY	JKB
DATE	2/13/2025
SHEET NO.	1 of 1

Appendix H / Natrx Product Sheets



Fish House

Dimensions: 33” (L) x 33” (W) x 33” (H)
Weight: 1,600 lbs
Surface Area: 64ft² (7.5x net new)

KEY BENEFITS

A Natrx Fish House solution provides a range of practical benefits through planning, installation, and ongoing performance.

- Large surface area (75ft²) for less weight/material need
- Organic shape, and void spaces promote marine growth and provide ideal fish habitat
- Safer, faster, more cost-efficient installation compared with traditional solutions

APPLICATIONS

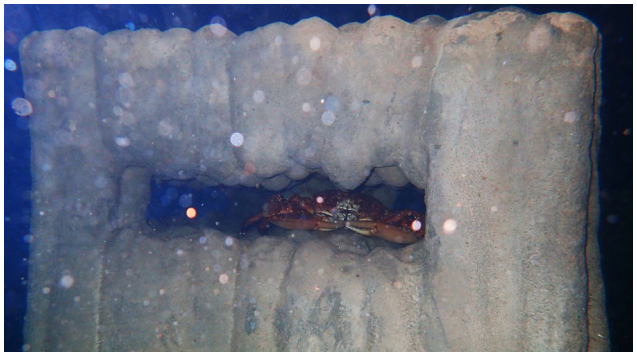
Fish House structures are most applicable for:

- Living shorelines, fisheries, artificial reefs
- Medium wave energy and larger tidal fluctuation environments
- Great habitat for fish or small organisms
- Ecological feature on breakwaters, jetties, seawalls

INSTALLATION

Fish House structures can be installed with minimal heavy equipment. Structures will need to be transported to the project site and placed in the water with a small crane or long reach excavator.

The equipment necessary for installing a Fish House structure will be lighter than the equipment needed to install a comparable rock solution.



"Natrx is a very good solution, especially in high wave energy areas. They've proven it again and again. It's just incredible. This new product from Natrx outperforms rock in big storms."

Wayne Savage
Senior Engineer
Bay Design Group

HOW TO PURCHASE

We pride ourselves on our ability to deliver high-quality solutions on-time and with transparent pricing. We can design a solution and develop a quote for your project with you directly or through your contractor.

PRICING

ExoForm solutions are engineered to achieve project goals while delivering an additional range of functional and ecological co-benefits at a cost that's comparable to traditional approaches. With ExoForms we can design the most cost-effective solution for addressing your challenges.

PROJECT INPUT:

Provide us with a general sense of the parameters of your project, your challenges, and your goals and we'll design and deliver the ExoForm solution that's best for your site.

PROJECT SITE SIZE: _____

PROJECT TIMELINE: _____

PROJECT GOAL(S): _____

_____

WHAT DOES SUCCESS LOOK LIKE? _____

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NOTES: _____

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Implementing an ExoForm Solution:

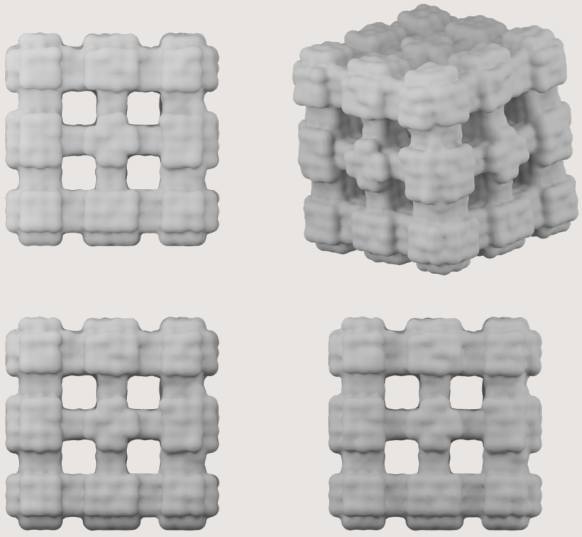
Natrx ExoForms solutions are designed for safe, fast, and efficient installation saving your project valuable time and cost. The process for using Natrx ExoForms is straightforward:

1. Get in touch with us to discuss the specifics of your project so we can determine the optimal ExoForm™ solution
2. Working from your input, we'll design the ExoForms for your project
3. Upon approval and initial payment, your order will enter our production queue and a delivery date and logistics is organized
4. Your ExoForms are delivered to your project site for quick and easy installation. That's it.

GET STARTED WITH NATRX

Our solutions are designed for straightforward implementation and we're here to answer any questions:

(919) 263-0667 info@natrx.io natrx.io



Natrx Lattice

Dimensions: 33” (L) x 33” (W) x 33” (H)
Weight: 1,800 lbs
Surface Area: 71ft² (9.3x net new)

KEY BENEFITS

A Natrx Lattice solution provides a range of practical benefits through planning, installation, and ongoing performance.

- Natrx Lattice solutions use up to 90% less material compared with rock solutions
- Reduced bottom impact by up to 80%
- Less bearing pressure on weak soils
- Straightforward planning and permitting
- Modularity allows for easy installation and adjustments
- Naturalistic appearance blends in seamlessly with surroundings
- Up to 50% increase in surface area compared with breakwaters and seawalls promotes biodiversity
- Designed to be hydro-dynamically stable

APPLICATIONS

- Ideal for medium wave energy environments
- Useful in riverine environments, artificial reefs, any site that requires asset protection
- Versatile marine and terrestrial applications
- Void spaces can be specifically tailored for desired water flow
- Ecological feature on breakwaters, jetties, seawalls

INSTALLATION

Lattice structures can be installed with minimal heavy equipment necessary—far less than equipment needed for a rock solution.

"I like the design of Natrx ExoForms. The beauty of them is that they're very safe to operate around and very easy to install. "

Ron Gorton
Golden Oyster Marine Services

HOW TO PURCHASE

We pride ourselves on our ability to deliver high-quality solutions on-time and with transparent pricing. We can design a solution and develop a quote for your project with you directly or through your contractor.

PRICING

ExoForm solutions are engineered to achieve project goals while delivering an additional range of functional and ecological co-benefits at a cost that's comparable to traditional approaches. With ExoForms we can design the most cost-effective solution for addressing your challenges.

PROJECT INPUT:

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PROJECT TIMELINE: _____

PROJECT GOAL(S): _____

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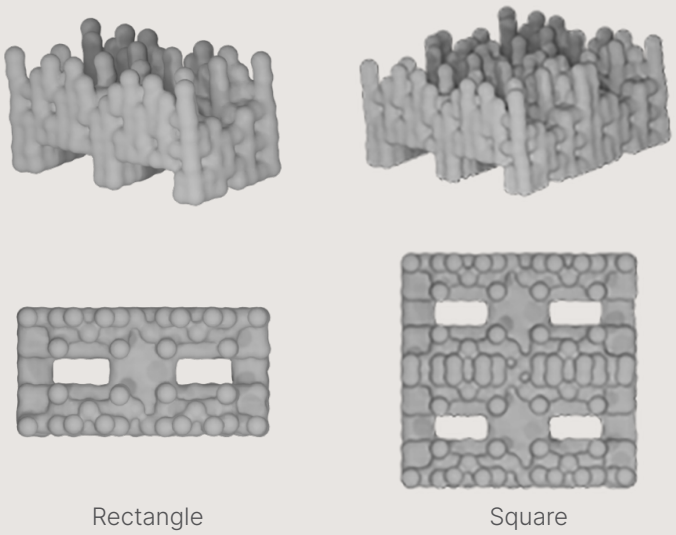

Rectangle Square

Wave Brush

Rectangle:
Size: 33” (L) x 18” (W) x 18”(H)
Weight: 500 lbs
Surface Area: 25ft² (7.5x net new)

Square:
Size: 33” (L) x 33” (W) x 18” (H)
Weight: 1,000 lbs
Surface Area: 42ft² (5.5x net new)

KEY BENEFITS

A Wave Brush solution provides a range of practical benefits through planning, installation, and ongoing performance.

- Wave Brush solutions use up to 90% less material compared with rock solutions
- Reduced bottom impact by up to 80%
- Less bearing pressure on weak soils
- Straightforward planning and permitting
- Modularity allows for easy installation and adjustments
- Naturalistic appearance blends in seamlessly with surroundings
- Up to 50% increase in surface area compared with breakwaters and seawalls promotes biodiversity
- Designed to be hydro-dynamically stable

APPLICATIONS

Wave Brush structures are an ideal solution for creating coastal resilience in small, hard-to-reach, or highly localized project sites. They can serve as a complete solution or as a focused part of a larger resilience project.

- Low to moderate wave energy environments
- Shallow waters
- Living shorelines
- Projects requiring low-relief solutions

INSTALLATION

Wave Brush structures can be installed by water or by land with minimal heavy equipment necessary. The equipment necessary for installation will be lighter than the equipment needed to install a comparable rock solution.

"We were moving reef modules and installing them safely in record time. Installation of Natrx's ExoForms is a straightforward process where everyone is able to work together quickly, safely, and efficiently."

Ron Gorton
Golden Oyster Marine Services

HOW TO PURCHASE

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PRICING

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PROJECT INPUT:

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PROJECT SITE SIZE: _____

PROJECT TIMELINE: _____

PROJECT GOAL(S): _____

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WHAT DOES SUCCESS LOOK LIKE? _____

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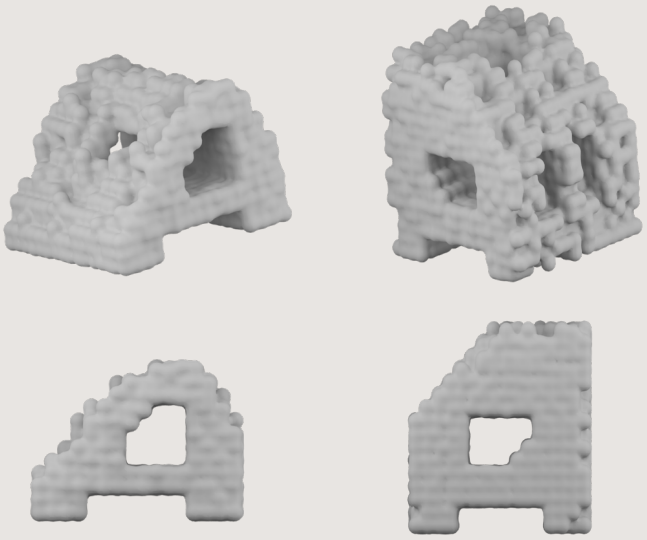


Short Tall

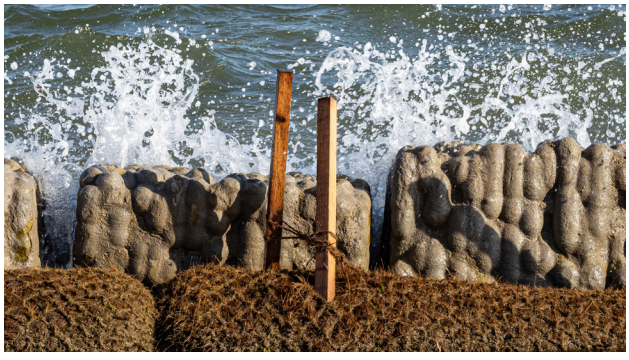
Wave Slope

Short: 33” (L) x 33” (W) x 24”(H), 1,000lbs
Tall: 33” (L) x 33” (W) x 33” (H), 1,600lbs
Surface Area - Short: 41ft² (5.4x net new)
Surface Area - Tall: 59ft² (7.8x net new)

KEY BENEFITS

A Wave Slope solution provides a range of practical benefits through planning, installation, and ongoing performance:

- Wave Slope solutions use up to 90% less material compared with rock solutions
- Reduced bottom impact by up to 80%
- Less bearing pressure on weak soils
- Straightforward planning and permitting
- Modularity allows for easy installation and adjustments
- Naturalistic appearance blends in seamlessly with surroundings
- Up to 50% increase in surface area compared with breakwaters and seawalls promotes biodiversity
- Designed to be hydro-dynamically stable



APPLICATIONS

Wave Slope structures are triangular in shape with a flat side and a sloped side that faces the incoming wave energy. Wave Slope solutions are most applicable for:

- Medium to high wave energy environments
- Sill for containment of sand/marsh fill
- Stabilization of wetland bank
- Support and grow fish, crab, oyster habitat

INSTALLATION

Wave Slope structures can be installed with minimal heavy equipment necessary. The equipment necessary for installation will be lighter than the equipment needed to install a comparable rock solution.

"The speed with which we can address coastal issues with Natrx ExoForms is a significant advantage. We were able to deploy 80 feet per day of Natrx ExoForms. It's unheard of to be able to protect that much shoreline that quickly."

Lewie Lawrence
Executive Director
Middle Peninsula Planning District Commission

HOW TO PURCHASE

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PRICING

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PROJECT INPUT:

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PROJECT SITE SIZE: _____

PROJECT TIMELINE: _____

PROJECT GOAL(S): _____

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WHAT DOES SUCCESS LOOK LIKE? _____

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NOTES: _____

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GET STARTED WITH NATRX

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(919) 263-0667 info@natrx.io natrx.io

Appendix I / KindDesign Product Sheets

KindDesigns

Materials & Testing

Confidentiality Notice

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01

Overview

OVERVIEW

At Kind Designs, we're rethinking coastal resilience. We use advanced 3D-printing technology to create customized shoreline infrastructure —designed to protect communities, restore marine habitats, and enhance waterfronts.

Headquartered in Miami, FL we've transformed the marine construction industry with scalable, eco-friendly solutions that can protect all coastal communities. Starting with Living Seawalls, and expanding our product line to Kind Tiles™, mangrove planters, and artificial reefs we bring our values of design, efficiency, and impact into all of our products.

Your protection is our priority!

CERTIFICATIONS

- WOB/WOSB
- EDWOSB

NAICS & CAGE CODES

327390 - Other Concrete Product Manufacturing (Precast Concrete)

237990 - Other Heavy and Civil Engineering Construction (Marine Construction)

CAGE: 9TPJ3

PARTNERS


NAVSEA
NAVAL SEA SYSTEMS COMMAND


U.S. AIR FORCE


FIU


MIAMI BEACH
INCORPORATED
MARCH 26TH 1915


BAY HARBOR ISLANDS


CITY OF MIAMI
FLORIDA


SARASOTA BAY
ESTUARY PROGRAM


LONGBOAT KEY
INCORPORATED
FLORIDA


CLIMATE
READY
TECH HUB


marine
research
HUB


SOUTH FLORIDA
TECH HUB

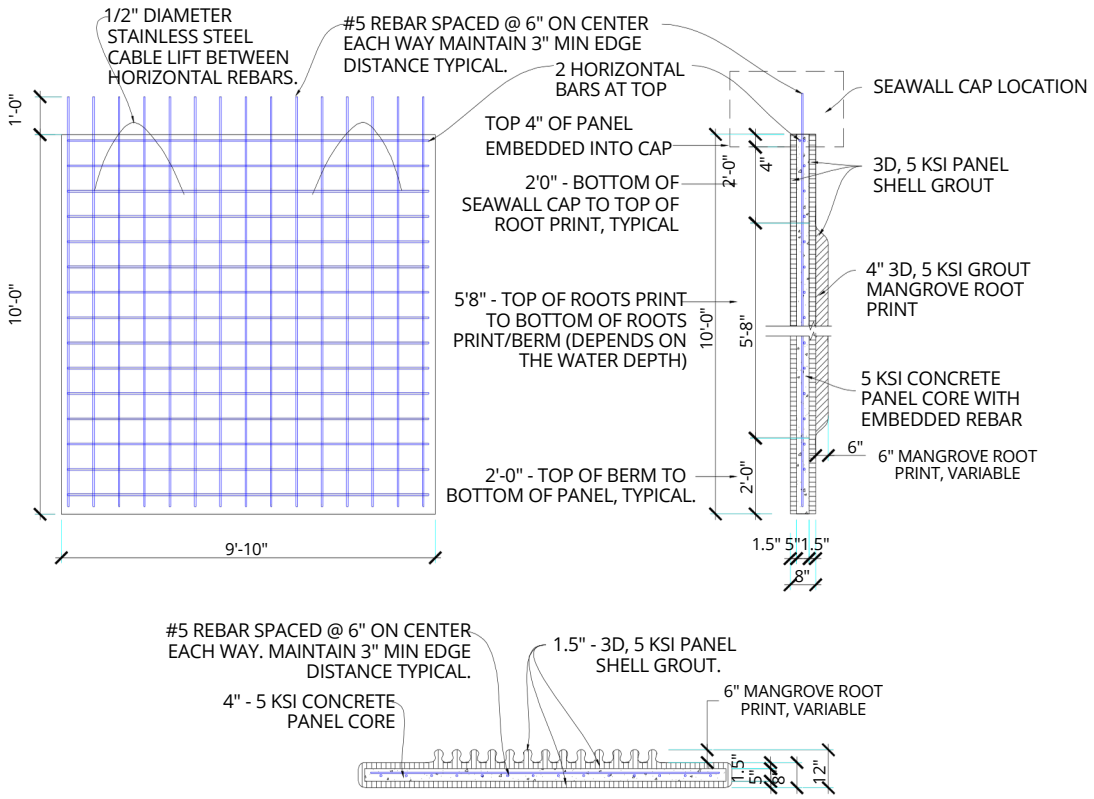
02

Shop Drawings

KindDesigns

KIND DESIGNS: 3D-PRINTED LIVING SEAWALLS

(DIMENSIONS VARY DEPENDING ON WATER DEPTH AND SEAWALL CAP ELEVATION)

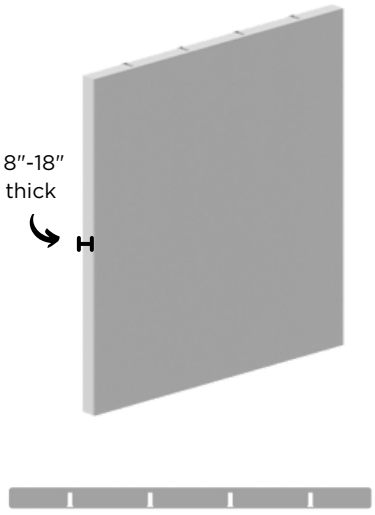


3DP LIVING SEAWALL - OVERALL 14" THICK WITH 6" MANGROVE ROOT PRINT SLAB DETAILS - VARIABLE

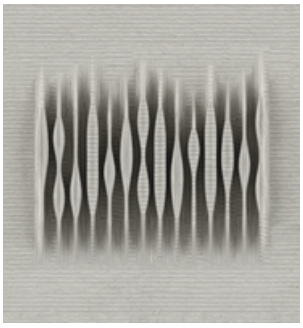
Disclaimer: This is an example shop drawing. Panel dimensions and rebar are adjusted based on project requirements

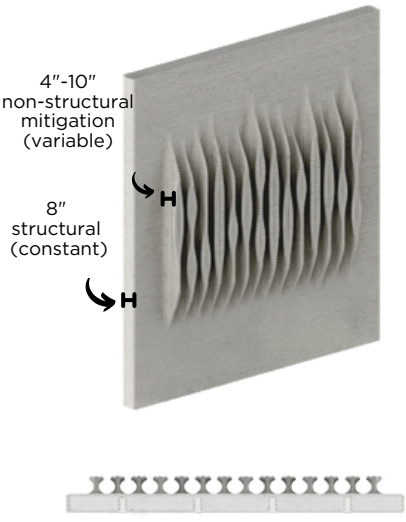
KindDesigns

Traditional Seawalls



Living Seawalls™



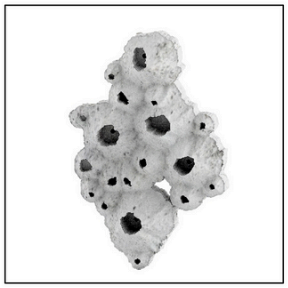


KindDesigns

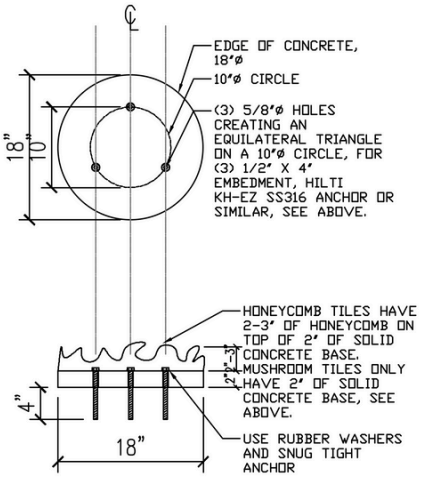
KIND TILES
SHOP DRAWINGS AND INSTALLATION PROCEDURE.

18"Ø HONEYCOMB TILE

18"Ø MUSHROOM TILE

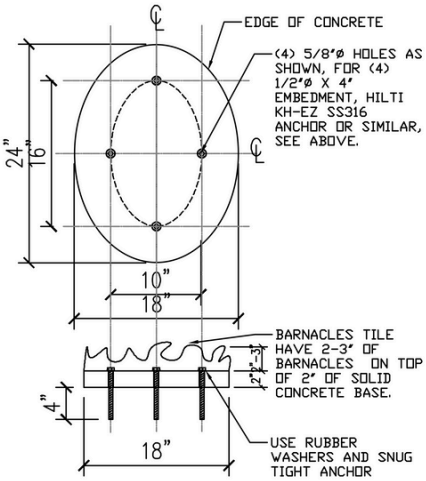


18"X24" BARNACLE TILE



HONEYCOMB & MUSHROOM TILES

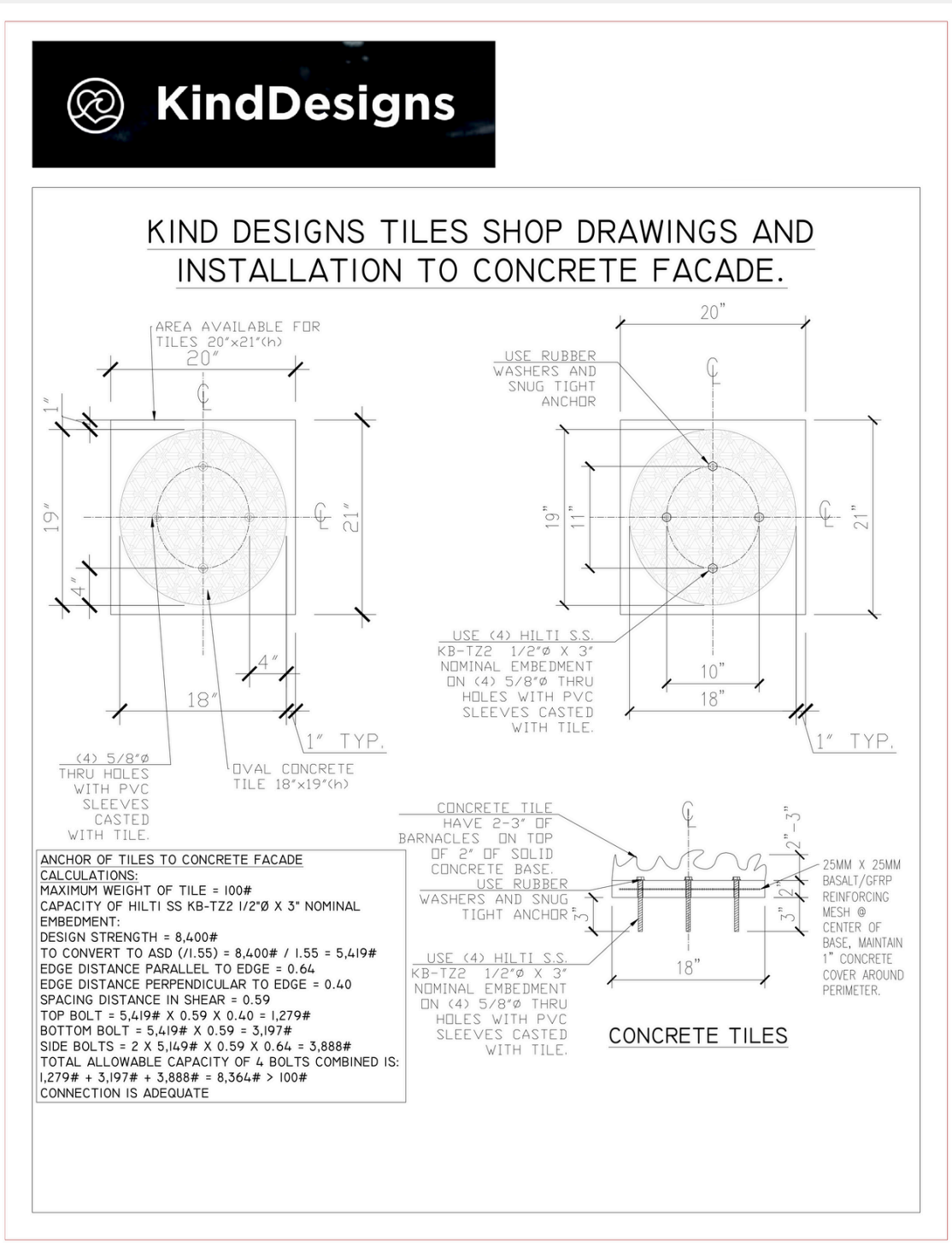
NOTE: TILE CASTED WITH 5,000 PSI GROUT



BARNACLE TILES

LEANDRO FERNANDEZ, PE. FL#71519

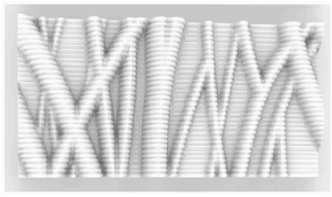
Disclaimer: This is an example shop drawing. Tile dimensions, rebar, and attachment mechanisms are adjusted based on project requirements



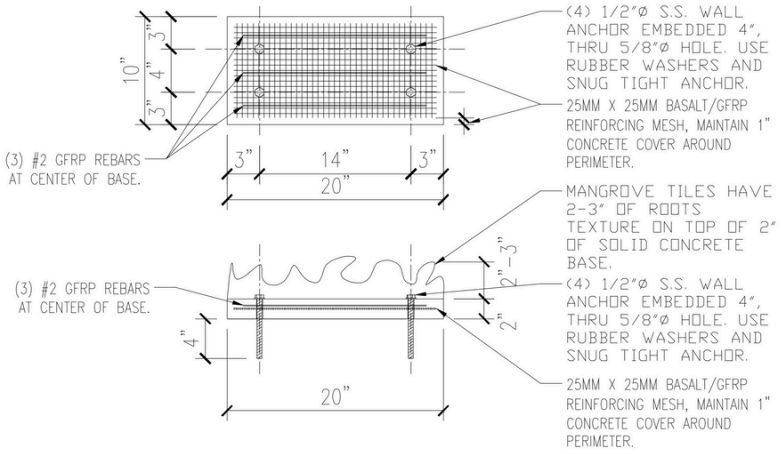
Disclaimer: This is an example shop drawing. Tile dimensions, rebar, and attachment mechanisms are adjusted based on project requirements

KindDesigns

KIND DESIGNS MANGROVE TILES SHOP DRAWINGS AND INSTALLATION TO CONCRETE PANELS.



10"X20" MANGROVE TILE



10"X20" MANGROVE TILE

NOTE: 3-D PRINTED TILES WITH 5,000 PSI GROUT

Disclaimer: This is an example shop drawing. Tile dimensions, rebar, and attachment mechanisms are adjusted based on project requirements

03

Materials

3DP Extrudable Concrete

The 3D-printed components of our coastal infrastructure products are made with a 5,000psi extrudable mortar. Our 3DP mortar has a “Declaration of Conformity for Products with Model EPD” - EPD-FEI-20160017-IBG1-EN

It is a proprietary mix design by CyBe and manufactured by Korodur. Kind Designs has an exclusive, international partnership with CyBe, (3D-printing robot manufacturer) to 3DP seawalls and related products.

Cybe Construction produces CyBe Mortar, which is used for structural, industrial, architectural, and design projects regarding 3D concrete printing applications.

It is a high-performance, single purpose material, and durable in all environments. Additionally, it is non-metallic, and contains trace amounts of chloride and sulphate. The material was specifically designed for 3DCP,.

The use of CyBe Mortar with their 3DCP technology produces high durability objects where low shrinkage is desired. Their material sets rapidly allowing a fast and efficient printing process, a reduction of costs, and sustainable results.

CyBe

CyBe Construction B.V.
Wethouder van Eschstraat 2
5342 AT Oss info@cybe.eu
+31 412 676 030
www.cybe.eu

PROFESSIONAL 3D CONCRETE PRINTING

PRODUCT NAME: CyBe MORTAR

DESCRIPTION: CyBe MORTAR is a high-performance, singlepurpose material. Durable in all environments, CyBe MORTAR is non- metallic with a very low chloride and sulphate content. Use CyBe MORTAR with a 3Dconcrete printer to produce high durability objects where low shrinkage is desired. CyBe MORTAR sets in 3 minutes and achieves structural strength in 1 hour.

3D CONCRETE PRINTING (3DCP): CyBe MORTAR enables to 3Dprint at speeds of max. 600 mm/s and layer heights up to 50 mm. Moreover, the timewindow to print on top of a 3Dprinted layer only takes 10 seconds.

APPLICATIONS: Use CyBe MORTAR with 3Dconcrete printing for architectural, structural, industrial and design purpose.

ENVIRONMENTAL ADVANTAGES: Use CyBe MORTAR to reduce your carbon footprint and lower your environmental impact. Production of CyBe MORTAR emits up to 32% less CO2 than portland cement.

HS-CODE: CyBe MORTAR bags

38245090000

CyBe

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www.cybe.eu

HIGHLIGHTS

3D PRINTABLE
Specially developed for 3D concrete printing applications.

DURABLE
Formulated for long life even in critical applications.

STRUCTURAL
For structural and non structural construction components and objects.

SINGLEPURPOSE
Usage only for 3D concrete printing with 3D concrete printers analyzed and approved by CyBe Construction.

Manufacturer's Statement – CyBe Mortar

As of 02/2024

CyBe Mortar is a high-performance material used for 3D concrete printing and is durable in all environments. It is only to be used with a 3D concrete printer to produce objects with high durability and low shrinkage. CyBe Mortar is a fast setting material. It sets in 3 minutes and achieves structural strength in 1 hour.

We hereby confirm:

CyBe Mortar is suitable for use underwater.

Contact with water has no effect on objects produced using CyBe Mortar.

CyBe Mortar does not contain any metallic elements, chlorides or sulfates.

A change in pH, if present at all, is to be evaluated like in normal concrete.

KORODUR International GmbH

Frank Sander
Technical Director

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92224 Amberg, Germany
Tel: +49 (0) 9621 4759-0
Fax: +49 (0) 9621 32341
Email: info@korodur.de
Website: www.korodur.de

Interior Concrete Fill

The core of our panels is filled with standard concrete used in marine applications throughout South Florida. A standard Ready-Mix concrete produced locally. Our design allows for the use of other mixes based on project requirements.

SUPERMIX

Required Strength: 5,000 PSI @ 28 DAYS
Mix Code: 5090540 5,000 PSI REGULAR 0.40WC

PROPOSED PLACEMENT

Ingredient	Weight	Spec's	Cubic ft
Cement	[redacted]	ASTM C-595 IL MS MH	[redacted]
SLAG	GGBFS	ASTM C-989 / FDOT: 929-1 & 929-5	
TOTAL CEMENTITIOUS			
4 STONE SSD		ASTM C-33	
57 STONE SSD		ASTM C-33	
89 STONE SSD		ASTM C-33	
SCREENINGS		ASTM C-33	
WATER LBS		ASTM C-94	
ENTRAPPED AIR			
Admix 1			
Admix 2	47.6 OZS/YD^3	SIKA PLASTOCRETE 250 TYPE A	
Admix 3			
COLOR			
Unit wt	142.44		27.00
Water Cement	0.40		
Design Slump	5.0" ± 1.0"		

Reinforcement

We can fabricate our product with any type of reinforcement bar (rebar) per customer request or as required to meet project specifications.

Rebar Types:

- steel
- galvanized
- fiberglass
- basalt

Fibers:

- steel

Steel #5

A615 SCH40 Mechanical Information

	Strength (psi)
Ultimate Tensile Strength	90,000
Yield Tensile Strength	60,000

Fiberglass

Physical & Mechanical Properties

NOMINAL DIAMETER			NOMINAL CROSS SECTIONAL AREA		UNIT WEIGHT/ LENGTH		GUARANTEED ULTIMATE TENSILE FORCE		GUARANTEED ULTIMATE TENSILE STRENGTH		ULTIMATE TENSILE STRAIN	MEAN TENSILE MODULUS OF ELASTICITY	
Bar Size	in	mm	in^2	mm^2	lb/ft	kg/m	kip	kN	ksi	MPa	%	Msi	GPa
#2	0.25	6	0.05	32	0.05	0.07	6.76	30.08	138.0	951	2.03%	6.80	46.88
#3	0.375	10	0.11	71	0.11	0.16	15.07	67.03	137.0	945	2.01%	6.80	46.88
#4	0.500	13	0.20	129	0.18	0.27	26.90	119.66	134.5	927	1.98%	6.80	46.88
#5	0.625	16	0.31	199	0.32	0.47	40.30	179.26	130.0	896	1.91%	6.80	46.88

MEAN TRANSVERSE SHEAR STRENGTH		BOND STRENGTH		FIBER MASS CONTENT	MOISTURE ABSORPTION IN 24 H AT 50°C (122°F)	MOISTURE ABSORPTION TO SATURATION AT 50°C (122°F)	MEAN GLASS TRANSITION TEMPERATURE (DSC)	
ksi	MPa	psi	MPa	%	%	%	°F	°C
≥19	≥131	≥1100	≥7.6	≥70	≤0.25	<1.0	≥212	≥100

04

Testing

We are committed to the performance of our products and ongoing testing. We conducted flexural tests on our 3DCP, steel reinforced concrete seawall slabs to demonstrate these panels are equivalent in flexural strength to conventional, precast concrete panels.

Kind Designs provided panels to the University of Miami, which is a Florida Department of Transportation (FDOT) certified lab. The lab conducted full scale, 3-point load testing of the panels to verify the structural performance.

UNIVERSITY OF MIAMI
COLLEGE of ENGINEERING

FDOT ISM028 | ilac-MRA | IAS ACCREDITED Testing Laboratory TL-478

CERTIFIED TEST REPORT

FLEXURAL TEST OF REINFORCED CONCRETE SPECIMENS

Report Number: R-5.10_24-05-27_MSE
Date: June 27, 2024

Document Number: R-5.10_24-05-27_MSE
Test Report

Controls:	
Superseded Report	New report
Reason for Revision	n/a
Effective Date	June 27, 2024

Test Report Approval Signatures:	
Prepared by	I indicate that I have prepared this Certified Test Report and agree with the contents it presents, and find it meets all applicable laboratory requirements and policies. Name: Juan Manuel Palacios Signature: Date: June 27, 2024
Approval by	I indicate that I have reviewed this Certified Test Report and agree with the contents it presents, and find it meets all applicable laboratory requirements and policies. I approve for its release to the customer. Name: Francisco De Caso Signature: Date: June 27, 2024

Document Number: R-5.10_24-05-27_MSE
Test Report

1. 3D PRINTED SLABS: FLEXURAL TESTS

1.1. TEST SUMMARY INFORMATION

Test Objective:	Evaluate the structural performance and failure mechanism of 3D printed reinforced concrete (RC) elements using steel rebars as indicated.
Sample Under Evaluation:	Five (5) RC slabs were tested in flexure. One (1) slab had four horizontal bars and a 3D concrete layer was not added to the system. Four (4) slabs were 3D printed. Two (2) RC slabs were with four horizontal bars and the remaining RC slabs were reinforced with six horizontal bars.
Test Standard Method/s:	Laboratory best practices for flexural tests of RC structural elements were implemented, as well as quality requirements under ISO 17025-17.
Test Set-up:	Test was performed under symmetric three-point bending loading using a universal test frame meeting ASTM E4-21 (Standard Practices for Force Verification of Testing Machines). Load was monotonically applied in a single cycle up to failure under displacement control at a rate of 3.5 mm/min (0.14 in./min). The static flexural test was instrumented with linear displacement transducers (LVDTs) to measure the deflections at the supports as well as the mid-span; while the applied force was measured with the internal load cell of the frame. LVDTs were verified based on ASTM E83-23 (Standard Practice for Verification and Classification of Extensometer Systems). The rotation at the supports was monitored by placing two inclinometers, one on each side of the specimen. The strain of the 3D material (herein referenced as the shell), and the strain of the infill concrete were measured by placing four strain gauges at midspan of the compressive block. Strain gauges were placed on both sides of the specimen. All data was recorded using an integrated integrated National Instruments data acquisition system. A grid pattern was placed on the side of the slab to monitor crack progression while the test was underway. The maximum load at failure was recorded. Refer to Figure 1.1. for the set-up of the specimen.
Test Location:	University of Miami Structures and Materials Laboratory (SML), 1251 Memorial Dr., MEB108 Coral Gables, FL, 33146.
Analyst/s:	Carlos Alfonso Perez, Rafael Cabrera, and Juan Manuel Palacios.
Technical Test Record:	TDS_3PointBending_MSE.

Document Number: R-5.10_24-05-27_MSE

Test Report

Specimen Dimensions:	3D printed and control RC slab specimens nominal dimensions are: 3048 mm (10 feet) length, 711 mm (28 inches) width, and 203 mm (8 inches) high. The effective test span length was 2438 mm (8 feet). The compressive (top) layer of the specimen was composed of the 3D printed concrete, i.e. shell.
Specimen Preparation:	Specimens were tested as received from the client.
Sampling Reference:	Provided by the client.
Specimen Conditioning:	As received, tested under standard laboratory test conditions.
Specimen ID:	Specimens are labeled and uniquely identified for quality and traceability using the format MM_RR_XX; where MM is the type of testing (SF for Slab Flexural); RR is the type of reinforcement (CC for Control, specimen reinforced with four [4] horizontal bars and no 3D concrete layer; S1 for specimens containing four [4] horizontal bars; S2 for specimens containing six [6] horizontal bars), and XX is specimen repetition number (01 to 02). Refer to Table 1.1.

Table 1.1 – Test matrix for flexural tests

Specimen ID	Material Identification	Test date (mm.dd.yy)
SF_CC_01	Slab reinforced with four horizontal bars. Slab did not have a 3D concrete layer	06.24.24
SF_S1_01 to 02	Slabs reinforced with four horizontal bars	06.25.24 to 06.27.24

1.2. TEST RESULTS

Table 1.2 – Tabulated results for flexural slab tests*

Specimen ID	Maximum Load		Average Inclination at Peak Load	Average Concrete Strain at Peak load	Average Shell Strain at Peak Load	Failure Mode
	kN	lbs	deg	με	με	
SF_CC_01	71.9	16164	1.53	300	-335	Flexural
SF_S1_01	70.1	15748	1.40	2227	-2024	Flexural
SF_S1_02	63.5	14275	0.83	207	-566	Top delamination
Average	**66.8**	**15012**				
S_{n-1}	4.6	1041				
CV (%)	6.9	6.9				

1.3. VISUAL DOCUMENTATION

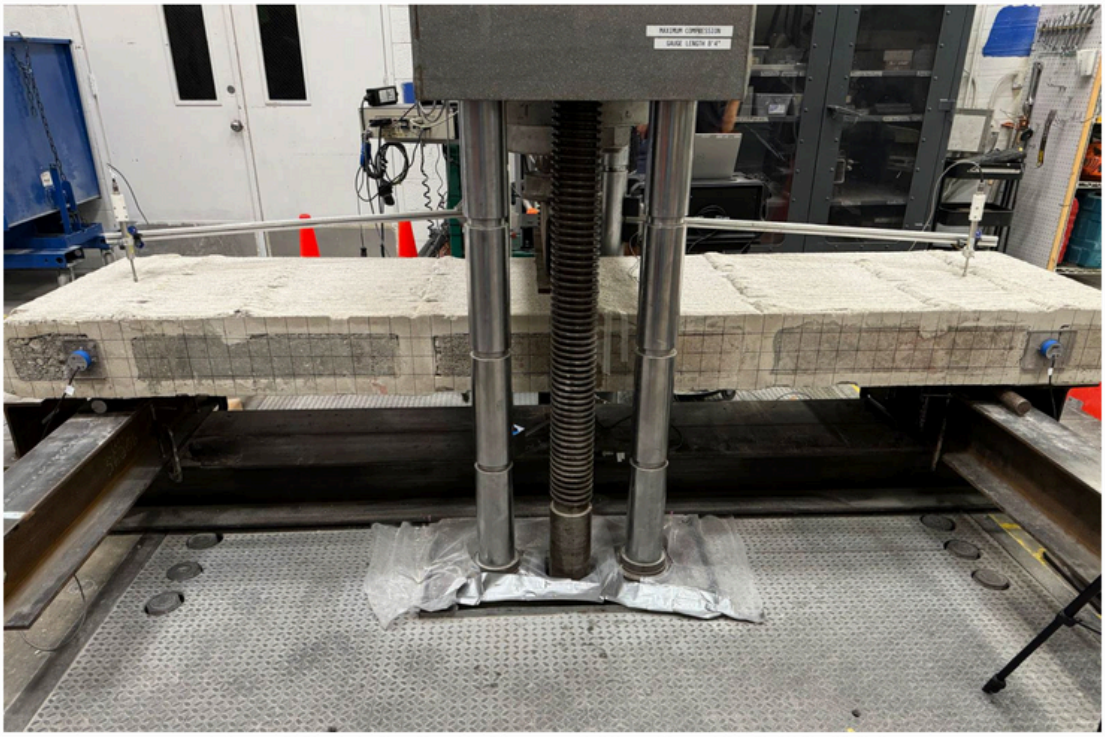

Figure 1.1 – Test setup for three-point bending of 3D Printed Slab

Document Number: R-5.10_24-05-27_MSE
Test Report

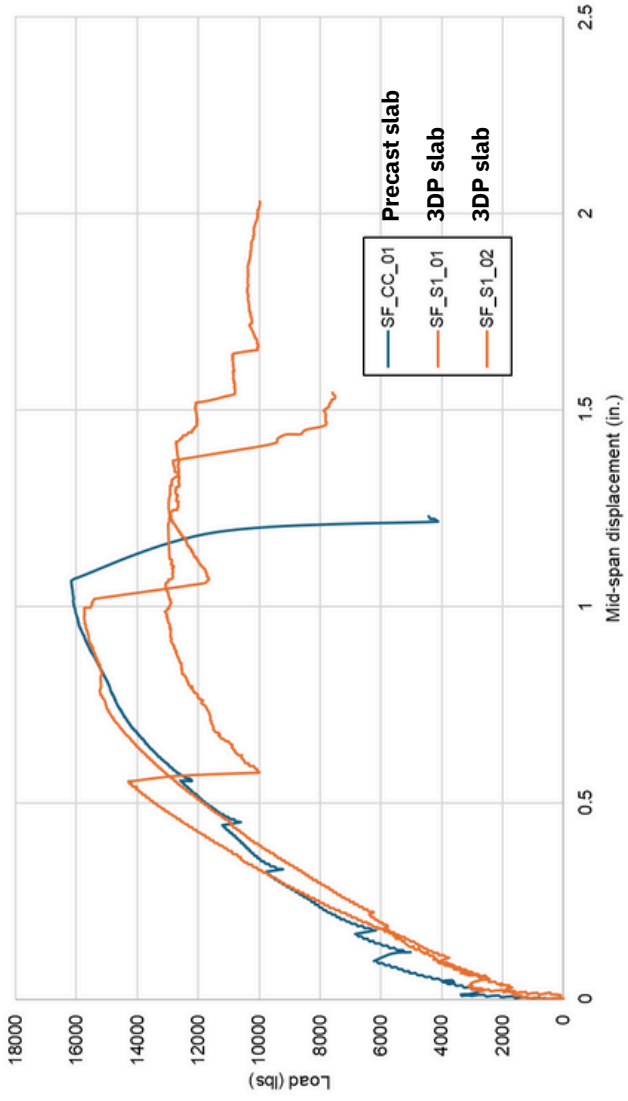

Figure 1. Load-displacement graphs for slab flexural test

Document Number: R-5.10_24-05-27_MSE

Test Report

KindDesigns x University of Miami

Test Results
Control: 1,010 psf / 4931 kg/m2

3DP: 938 psf. / 4580 kg/m2

Performance results of the 3DCP panel are comparable to that of a precast, concrete control panel, within 72psf.

Target Result
Using typical geotechnical engineering parameters, the requirements for a seawall panel of a height of 10-12' including a safety factor of 2 is between 600-1000 psf (2929- 4882 kg/m2).

What do these results mean?
Based on the samples tested by the University of Miami College of Engineering Laboratory, Kind Designs' 3DCP Living Seawalls™ are equivalent to traditional precast panels, and exceed the minimum structural requirements outlined above.

Through testing we show that innovative methods of manufacturing can be used to produce seawalls, while meeting and exceeding the structural performance of standard, precast seawall panels.

Full scale testing conducted by the University of Miami was performed in accordance with the standards and procedures detailed in the Building Safety Journal on building code compliance for 3DCP walls. These test results show that innovation in marine construction is possible, and open the doors for the use of marine infrastructure that is structurally sound, protective, and environmentally beneficial.

We are committed to ongoing research and development of innovative seawalls, for the creation of advanced products. More testing and R&D is currently in progress. Schedule a consultation with our technical team for more information. Additional documentation can be provided upon request.

UNIVERSITY OF MIAMI
COLLEGE of
ENGINEERING

Kind Designs Living Seawalls comply with implied one year warranty set forth in Chapter 553 of the Florida Statutes.

KindDesigns

Thank You

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@kinddesigns

V 03
3/11/25

@KINDDESIGNS

Product Specs

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TABLE OF CONTENTS

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01

Overview

CERTIFICATIONS

- WOB/WOSB
- EDWOSB

NAICS & CAGE CODES

327390 - Other Concrete Product Manufacturing (Precast Concrete)

237990 - Other Heavy and Civil Engineering Construction (Marine Construction)

CAGE: 9TPJ3

CONTACT

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3007 NW S River Dr
Miami FL, 33142

KIND DESIGNS

Kind Designs is a Miami-based climate-tech startup revolutionizing marine construction with eco-friendly tech solutions. Utilizing advanced robotics and 3D-printing, we create customized shoreline structures that are cost-effective and faster to produce while also rehabilitating marine habitats. As the first seawall company focused on design, technology, and sustainability, Kind Designs is committed to protecting coastal communities and creating sustainable coastal infrastructure.

PROTECT YOUR HOME.

RESTORE YOUR WATERS.

BEAUTIFY YOUR COASTLINE.

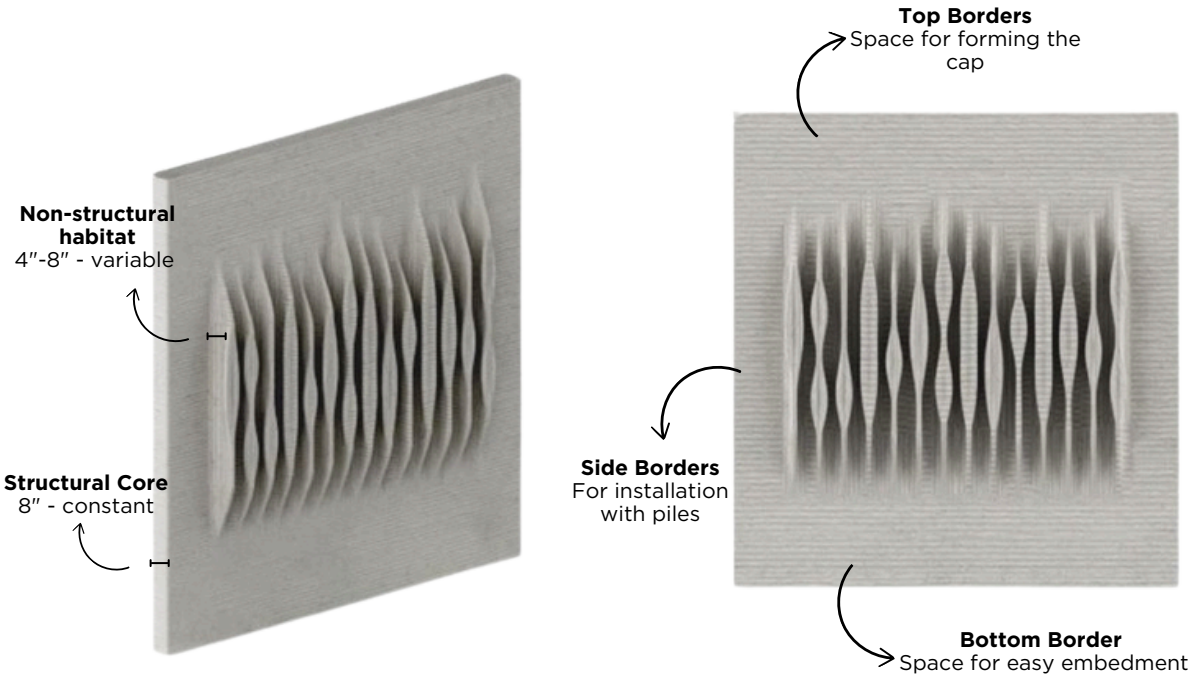
Living Seawalls™

Living Seawalls

OVERVIEW

Living Seawalls™ are the perfect synergy of coastal defense & environmental impact. By combining the structural integrity of precast concrete seawalls with biomimicry design, Living Seawalls™ provide habitat to create a thriving marine ecosystem, while improving property protection. Our 3D-printed Living Seawalls™ offer a seamless 1:1 swap for traditional precast concrete seawalls. They also qualify for mitigation efforts like riprap replacements, and can contribute to qualifying LEED and WEDG points. Panel dimensions are customizable and can match the exact specifications for any project needs.

PRODUCT



TECHNICAL SPECIFICATIONS

Dimensions & Weight

- Dimension & Weight: Customized per project
- Weight: 10′ x 10′ x 12″; ~10,000 lbs

Reinforcement

Reinforcement is customized based on project requirements for durability.

- Fiberglass
- Steel
- Galvanized
- Basalt

Composition

- Exterior: 3DCP exterior, 5,000 psi extrudable mortar
- Interior: 5,000 psi concrete fill

PROCESS

Permitting

- Process: Mirrors traditional seawall permitting requirements
- Benefits: Qualifies for environmental mitigation benefits in select counties.

Design

- Features: The wet-face habitat feature can extend continuously across the panel or a flat area can be left to accommodate pilings and embedment.

Installation

- **Process:** Follows the same installation approach as traditional concrete seawall panels. No special equipment or specific product “know-how” required.
- **Systems:** Compatible with multiple seawall systems. Options include king-and-batter piles or tie-backs.

ENVIRONMENTAL & ECOLOGICAL BENEFITS

Living Seawalls™ are designed to enhance marine ecosystems and support coastal resilience:

- **Surface Area**: Panels offer more than double the surface area of traditional concrete panels, providing space for biodiverse marine life.
- **Rugosity**: Textured 3D-printed layers create attachment sites for marine filter feeders & corals.
- **Biomimicry Design**: Customizable to reflect native coastal ecosystems, such as mimicking mangrove roots in South Florida
- **Ecosystem Resilience:** Restores damaged ecosystems and provides habitats for juvenile marine species

Sustainability

- 3DP Material: EPD-certified mortar, no Portland cement
- Carbon Footprint: 32% lower than Portland cement-based materials

PERFORMANCE & ECONOMIC VALUE

Living Seawalls™ improve structural performance and deliver economic advantages:

Impact

- **Wave Dissipation:** Reduces wave energy by 50% versus flat seawalls
- **Water Quality:** Supports filter feeder attachment, which improve water water.
- **Biodiversity:** Caves and increased surface area creates area support marine life.
- **Scour Reduction:** Wave dissipation minimizes seabed erosion.
- **Aesthetic Appeal:** Increases visual value of waterfront properties.

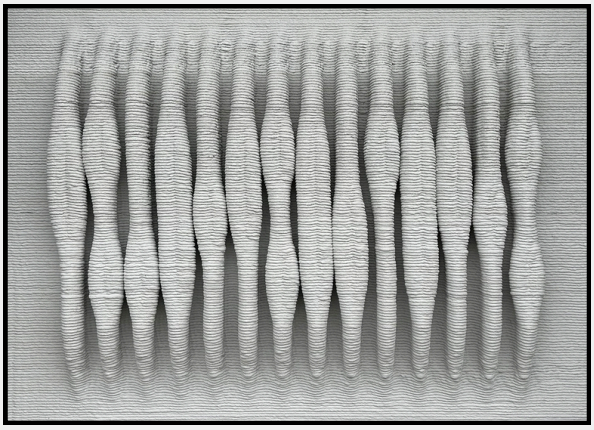
Research & Verification

- Verified by the University of Miami College of Engineering Laboratory (FDOT-certified lab) as structurally equivalent to traditional precast concrete panels.

Economic Benefits

- **Certifications:**
  - LEED: Qualifies for Innovation Credit
  - WEDG: Contributes to credits 3.1, 3.4, 4.2, and 4.3
- **Mitigation Qualification**
  - Miami-Dade County offers a 50% reduction in rip-rap requirements
  - Broward County permits a 50% reduction in rip-rap requirements
  - FDEP approves Living Seawalls for mitigation
- **Incentives**
  - City of North Bay Village offers a 40% permit discount for Living Seawalls™

Printing



Living Seawall™ panel

Panel lifted by crane

Panels during installation

Installed panels

6 months post installation

Kind Tiles™

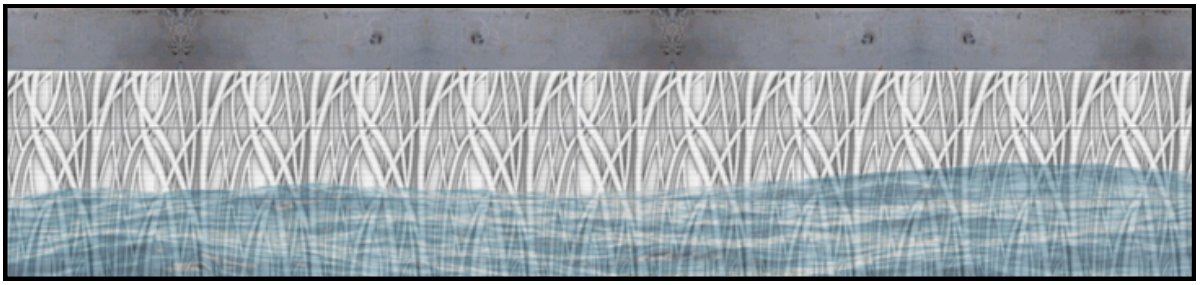
Kind Tiles™

OVERVIEW

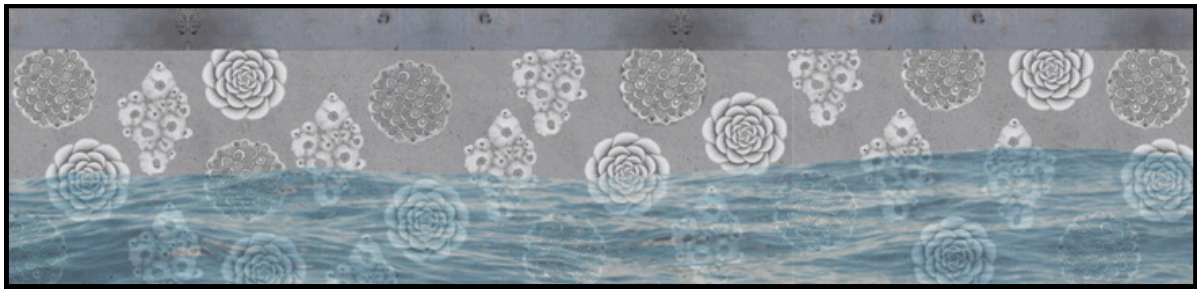
Kind Tiles™ transform any existing seawall—whether concrete, steel, or vinyl—into a thriving marine habitat. Designed using biomimicry principles, these 3D-printed tiles enhance biodiversity and improve water quality by fostering marine life attachment. Kind Tiles™ offer both ecological and aesthetic benefits, seamlessly blending coastal resilience with custom design options to complement waterfront properties. Featuring diverse textures, irregular ridges, and native ecosystem-inspired elements, Kind Tiles™ can be easily affixed to any seawall, providing an innovative solution for habitat restoration and shoreline protection.

PRODUCT

Kind Tiles™ attached to existing concrete seawalls.



CONTINUOUS DESIGN



ORGANIC LAYOUT

TECHNICAL SPECIFICATIONS

Dimensions & Weight
- 18″x18″; 35lbs
- 20″x10″; 50lbs
- Max Weight: 60lbs per tile for ease of install

Reinforcement
- Non- ferrous reinforcement: Fiberglass or basalt rebar, basalt reinforcing mesh

Composition
- 5,000 psi mortar

PROCESS

Permitting
- Kind Tiles™ do not extend further outward from the seawall than the cap.
- **Benefits:** Qualify for exemption from environmental review in most locations.
- **Regulations:** In Miami-Dade County, installation requires a written Expedited Administrative Authorization (EAA) permit, which takes 10 days to process.

Design
- Features: Kind Tiles™ are available in rectangular and circular shapes. They can create a continuous design covering the entire seawall or be artfully dispersed to enhance the aesthetic of waterfront properties.

Installation
- **Placement:** Kind Tiles™ are most effective when placed from the bottom of a seawall to the Mean High Water Line (MHWL), maximizing sea life attachment.
- **Attachment:** Installation methods vary based on project needs & seawall material. Options are as follows
  - Installation on Vinyl: Stainless steel bolts (3/8″ or 1/2″), wedge anchors, marine-grade epoxy, project specific.
  - Installation on Concrete Options: Stainless steel bolts (3/8″ or 1/2″), wedge anchors, marine-grade epoxy, project specific.
  - Installation on Steel Options: stud welding (stainless steel or galvanized threaded studs), wood whaler beam

ENVIRONMENTAL BENEFITS

Kind Tiles™ are designed to restore marine ecosystems and enhance coastal resilience:

- **Surface Area**: Increases available space for marine life attachment by tripling the surface area of existing seawalls.
- **Rugosity**: Textured feature create secure attachment sites for filter feeders & corals.
- **Biomimicry Design**: Customizable to mimic native coastal environments, fostering biodiversity and marine species colonization.
- **Ecosystem Resilience**: Restores habitats in areas where traditional flat seawalls have reduced biodiversity, and enhancing community resilience.

Sustainability

- Material: EPD-certified mortar, No portland cement
- Carbon Footprint: 32% lower than Portland cement-based materials.

PERFORMANCE & ECONOMIC BENEFITS

Kind Tiles™ improve the function of existing seawalls while delivering economic and ecological advantages:

Impact

- **Water Quality:** Enhances water clarity and filtration through the attachment of filter feeders like oysters, mussels, sponges, and corals
- **Aesthetic Appeal:** Offers a visually cohesive and natural look that integrates with waterfront properties.

Economic Benefits

May qualify for environmental mitigation credits in select locations, reducing permitting costs and regulatory burdens.

  - LEED: Qualifies for Innovation Credit.
  - WEDG: Contributes to credits 3.1, 3.4, 4.2, and 4.3.

GEOMETRIC TILES

Existing designs below. Our design team can create custom Kind Tile™ tiles for your project!

MANGROVE ROOTS

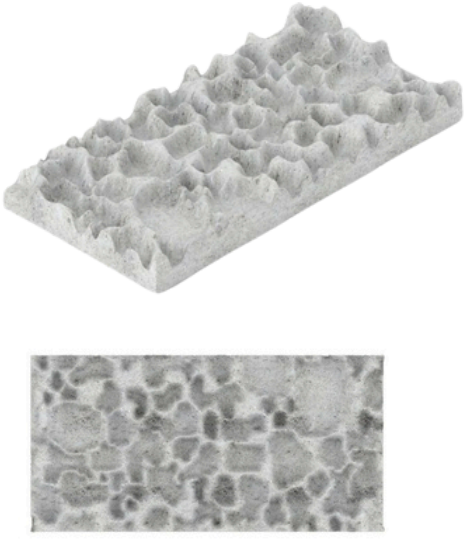
24 x 12″

SEASHELLS

24 x 12″

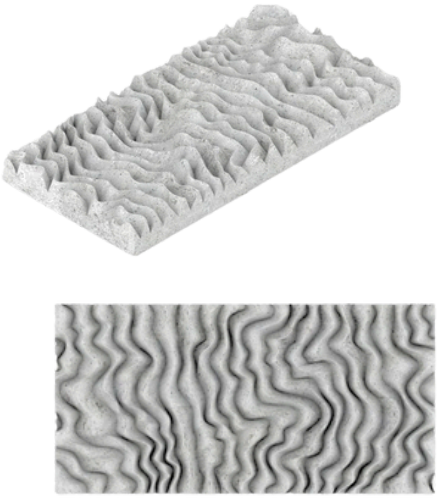
CRATER

24 x 12″



DUNES

24 x 12″



BIOMIMICRY TILES

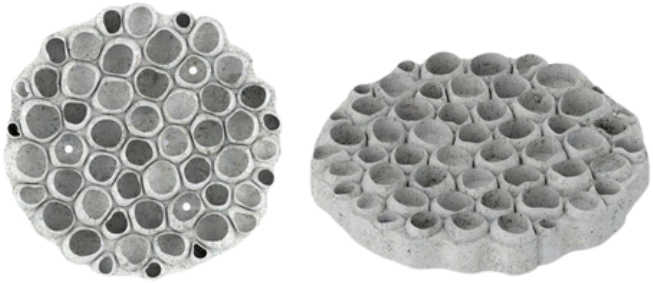
Existing designs below. Our design team can create custom Kind Tile™ tiles for your project!

SEASHELL FLOWER

18" Diameter

HONEYCOMB CORAL

18" Diameter



BARNACLE CLUSTER

24" x 18"

Mangrove Planters

V 03

Mangrove Planters

OVERVIEW

Kind Designs' 3D-printed Mangrove Planters provide an innovative solution for delivering the ecological benefits of mangroves without obstructing waterfront views. Designed for versatility, these planters can be mounted on seawalls, placed in water, or positioned upland. Their rugose, textured surfaces and eco-friendly materials foster marine growth on the exterior of the planter doubling their environmental impact.

PRODUCT

TECHNICAL SPECIFICATIONS

Dimensions & Weight

- **Custom Sizing:**
  - Mangrove planters dimensions are highly customizable.
- **Standard sizing:**
  - 3′ x 3′ x 2′, 700lbs
  - 4′ x 5′ x 3′, 1400lbs

Reinforcement Options

- Fiberglass
- Steel
- Galvanized
- Basalt
- Steel Fibers

Composition

- Exterior: 3DCP exterior, 5,000 psi extrudable mortar
- Interior: 5,000 psi concrete fill

PERMITTING

- **Exemptions & General Permits** (FDEP)
  - Restoration projects must be <500 linear feet.
  - Planting should extend no more than 10 feet waterward of the Mean High Water Line (MHWL).
  - All invasive or exotic species must be removed as part of the project.
- **Individual Permit Requirements**
  - The Florida Department of Environmental Protection (FDEP) considers mangrove planters in front of a seawall a new structure, requiring an Individual Permit.
  - FDEP recommends a pre-application meeting to present proposals for review with the Tallahassee District.
  - Regulatory agencies are generally supportive of living shoreline initiatives.
- **Mangrove Trimming Regulations** (Riparian Mangrove Fringes - RMF)
  - Homeowners may trim mangroves 6-10 feet tall without a permit.
  - Mangroves over 10 feet must be trimmed by a licensed professional.
  - Mangroves over 24 feet require FDEP authorization.
  - If the shoreline is >150 feet, up to 65% of mangroves may be trimmed.
  - Previously trimmed trees may be maintained at their prior height.

DESIGN

Our planters are designed to integrate seamlessly into both natural & built environments.

- Affixed to seawalls (concrete, steel, or vinyl) to enhance existing infrastructure.
- Standalone units positioned along the shoreline to foster natural mangrove growth.
- Customizable in shape & size to accommodate site-specific conditions and tidal variations.

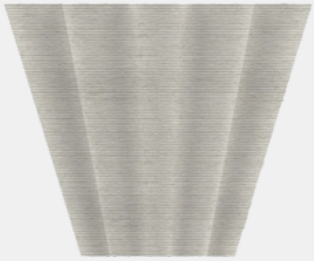
INSTALLATION

- Mangrove planters can be affixed to any seawall (concrete, steel, or vinyl) or stand alone.
- Installation is project-dependent, considering the size and shape of the planter as well as the substrate of the seawall.
- When installing mangrove planters on a seawall, it is critical to place the planters at an appropriate height based on local tidal patterns and water levels for optimal mangrove growth and long-term resilience.
- Secure attachment methods are tailored to project specifications and existing seawall conditions.

EXISTING DESIGNS

Our design team can create custom Mangrove Planters for your project!

FUNKY MANGROVES



CLAMSHELL

MANGROVE ROOTS

ENVIRONMENTAL BENEFITS

Mangrove Planters are designed to enhance coastal resilience, promote marine biodiversity, and provide natural storm protection:

- **Surface Area & Habitat Creation**: When affixed to seawalls, planters increase available habitat for marine life, supporting both mangrove roots and aquatic organisms.
- **Rugosity & Biodiversity**: The textured surface of the planters provides anchorage sites for filter feeders like oysters and mussels, improving water quality over time.
- **Biomimicry Design**: Customizable planters can support a variety of mangrove species, ensuring alignment with local ecosystems and restoration efforts.

Sustainability:

- Material: EPD-certified mortar, No portland cement
- Carbon Footprint: 32% lower than Portland cement-based materials.

PERFORMANCE & ECONOMIC BENEFITS

Impact

- **Root Control & Maintenance:** Planters can be designed to regulate mangrove root growth, minimizing required maintenance.
- **Wave Dissipation:** Mangrove roots naturally absorb wave energy, reducing shoreline erosion.
- **Water Quality Enhancement:** The attachment of filter feeders to the planters contributes to improved water clarity and overall ecosystem health. The mangroves filtering pollutants and nutrients from stormwater runoff.
- **Aesthetic Appeal:** Provides a natural, visually appealing addition to waterfront properties, integrating seamlessly with the surrounding environment.

Economic Benefits

Projects using Mangrove Planters may qualify for environmental mitigation credits, helping reduce regulatory costs.

- **Certifications:**
  - LEED: Qualifies for Innovation Credit.
  - WEDG: Contributes to credits 3.1, 3.4, 4.2, and 4.3.

Artificial Reefs

Artificial Reefs

OVERVIEW

Our 3D-printed artificial reefs redefine marine habitat restoration by combining advanced tech with ecological innovation. Utilizing an unprecedented half-inch layer size, our printers create intricate, tailored structures that enhance biodiversity and promote reef regeneration. Blending artificial reef science with artistic vision, our in-house team designs habitats that are as functional as they are beautiful—doubling as underwater sculpture parks. These one-of-a-kind reefs not only support marine ecosystems but also attract divers and ocean enthusiasts, fostering a deeper connection between people and the underwater world.

PRODUCT

Funky Lettuce Reefs

Commissioned by the City of Cape Canaveral, Kind Designs created modular artificial reefs, along with complementary park benches and planters.

Hideaway Reef

Designed for an RFP by Bay Harbor Islands, Kind Designs created a unique reef design to attract fish and other reef building organisms.

Reflections Under the Sea

Designed by renowned artist Carlos Betancourt as part of The Reef Line – an underwater public sculpture park and artificial reef spanning over seven miles.

TECHNICAL SPECIFICATIONS

Dimensions & Weight
- Customized per project

Reinforcement
Reinforcement is customized based on project requirements for durability.
- Fiberglass
- Steel
- Galvanized
- Basalt
- Steel Fibers

Composition
- 5,000 psi mortar

PERMITTING

Permitting an artificial reef in Florida requires approvals from both the U.S. Army Corps of Engineers (USACE) and the Florida Department of Environmental Protection (DEP), depending on the reef's location:

- **Federal Waters**: The USACE is solely responsible for permitting artificial reefs in federal waters.
- **State Waters**: Artificial reefs in state waters require permits from both the USACE and the DEP.

Florida offers a limited program in Escambia, Bay, and Okaloosa Counties, allowing private individuals to apply for permits to deploy unpublished reefs within existing county-held permitted areas.

INSTALLATION

Artificial reef deployment can very depending on the size of the reefs and project location. We work with any marine contractor equipped to deploy offshore structures to install our artificial reefs.

ENVIRONMENTAL BENEFITS

- **Surface Area:** The intricate, biomimicry-inspired designs significantly increase habitat space for marine life.
- **Rugosity & Biodiversity Enhancement:** Textured 3D-printed layers mimic natural reef structures, providing anchorage for corals, larvae, and juvenile marine species.
- **Ecosystem Resilience:** Artificial reefs support coral recruitment and growth, aiding in the restoration of damaged or degraded reef systems.

Sustainable Materials

- Material: EPD-certified mortar, No portland cement
- Carbon Footprint: 32% lower than Portland cement-based materials.

PERFORMANCE & ECONOMIC BENEFITS

Impact

- **Habitat Creation:** 3D-printed artificial reefs provide shelter and breeding grounds for a wide range of marine species, enhancing biodiversity.
- **Wave Dissipation:** Reduces wave energy, protecting coastal communities from storm surge.
- **Water Quality Improvement**: The textured reef surface fosters the attachment of filter feeders like oysters, mussels, sponges, and corals which help absorb toxins and pollutants from the water.
- **Aesthetic & Recreational Appeal:** Artificial reefs serve as both ecological habitats and underwater sculpture parks, attracting divers and ocean enthusiasts while supporting local tourism.

Economic Benefits

- **Fisheries & Tourism:** Artificial reefs enhance local fish populations, benefiting fisheries while promoting activities like boating, diving, and eco-tourism.

MEET THE TEAM

THE PEOPLE WHO MAKE UP KIND DESIGNS SHARE THE VISION AND VALUES OF OUR COMMUNITY

LEADERSHIP

ANYA FREEMAN
Founder & CEO

JEREMY MORRIS
COO

LEANDRO FERNANDEZ
Lead Engineer

BUSINESS & OPERATIONS

CHARLOTTE HOFFMAN
Strategy & Innovation Manager

IMRAN ADAMJEE
Production Supervisor

ARNOLD FLORES
Lead 3D-Print Technician

MADDIE RIEGER
Project Lead

DIEGO SARMIENTO
Lead Designer & 3D-Printing Technician

SEB CHIRIBOGA
3D-Printing Technician

We're a Miami-based team of passionate ocean enthusiasts - divers, surfers, environmental scientists & sailors - disrupting the marine construction industry with affordable, environmentally-friendly technology.

KIND DESIGNS

Thank You

hello@kinddesigns.com
www.kinddesigns.com
@kinddesignsofficial

KIND DESIGNS

KIND DESIGNS

Kind Designs is a Miami-based climate-tech startup revolutionizing marine construction with eco-friendly tech solutions. Utilizing advanced robotics and 3D-printing, we create customized shoreline structures that are cost-effective and faster to produce while also rehabilitating marine habitats. As the first seawall company focused on design, technology, and sustainability, Kind Designs is committed to protecting coastal communities and creating sustainable coastal infrastructure.

PROTECT YOUR CITY.

RESTORE YOUR WATERS.

BEAUTIFY YOUR COASTLINE.

CERTIFICATIONS

- WOB/WOSB
- EDWOSB

NAICS & CAGE CODES

327390 - Other Concrete Product Manufacturing (Precast Concrete)

237990 - Other Heavy and Civil Engineering Construction (Marine Construction)

CAGE: 9TPJ3

PARTNERS

NAVSEA
NAVAL SEA SYSTEMS COMMAND

U.S. AIR FORCE

FIU

CITY OF MIAMI FLORIDA

MIAMI BEACH INCORPORATED MARCH 26TH 1915

BAY HARBOR ISLANDS

LONGBOAT KEY INCORPORATED

SARASOTA BAY ESTUARY PROGRAM

CLIMATE READY TECH HUB

marine research HUB

SOUTH FLORIDA TECH HUB

REFERENCE PROJECT

Living Seawall Tiles x Town of Longboat Key, FL (2024)

Bayfront Park Seawall, Town of Longboat Key, FL (2024)
Contact: Ryan Gandy, Sarasota Bay Estuary Program (ryan@sarasotabay.org, 941-955-8085)
Leonard Barrera, Cummins Cederberg (lbarrera@cumminscederberg.com, 786-863-1109)

A collaborative project with the Sarasota Bay Estuary Program (SBEP) and The Town of Longboat Key to enhance their existing vinyl seawall to restore marine life at Bayfront Park. Kind Designs is manufacturing 600 tiles, to cover 300 linear feet of vinyl seawall with 3D-printed mangrove tiles that mimic the look and shape of red mangrove roots.

Ryan Gandy, Science and Restoration Manager for SBEP, has suggested the complexity of design, shape, and eco-friendly concrete material, will help the recruitment of marine organisms including oysters, barnacles, and other marine species.

In December 2024, Kind Designs finalized the design of the panels in collaboration with Cummins Cederberg and SBEP. With the design finalized the project team is moving into permitting and manufacturing. The mangrove tiles expect to be installed by the end of 2025 at Longboat Key's public park, Bayfront Park, where residents and visitors can view the panels actively restoring marine life!

REFERENCE PROJECT

Living Seawalls x Miami Beach, FL (2024)

Pine Tree Dr - Miami Beach, FL (2024)
Contact: Glen Larson, Dock & Marine (glarson@dockandmarine.net, 305-310-5288)

Present day photos of Living Seawall vs. precast concrete seawalls comparing species diversity & abundance with year of install.

6431 Pine Tree Dr Circle: Living Seawall - installed January 2024

6455 Pine Tree Dr Circle: Precast Seawall - installed 2022

6417 Pine Tree Dr Circle: Precast Seawall - installed 1993

REFERENCE PROJECT

Living Seawalls x Miami Beach, FL (2024)

Pine Tree Dr - Miami Beach, FL (2024)
Contact: Glen Larson, Dock & Marine (glarson@dockandmarine.net, 305-310-5288)

The first installation of a Living Seawall in the world installed January 2024. The Living Seawall panels have a 6″ mangrove root design creating deep caves that foster marine life.

Photo taken at 1 month post-installation

6 months post-installation*

- Flat Tree Oysters
- Algae (variety)

**anything below MLWL was not surveyed at this time including possible sponges, mussels, and fish.*

12 months post-installation

- Mussels
- Sponges (variety)
- Flat Tree Oysters
- Algae (variety)
- 8 fish species (juvenile porkfish, yellowfin mojarra, silversides, a goby, a juvenile grunt, gray snapper, a barracuda, and a snook)

REFERENCE PROJECT

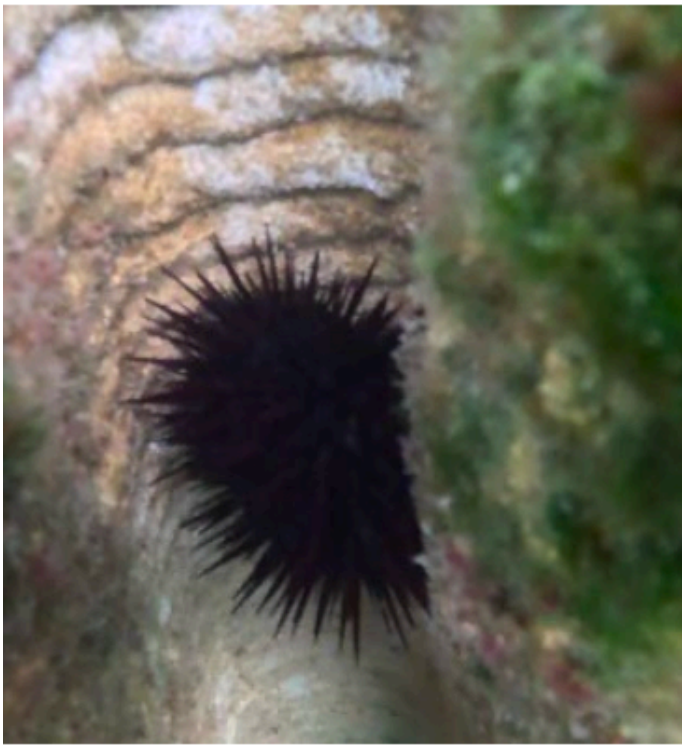
Living Seawalls x Miami Beach, FL (2025)

Venetian Islands Miami Beach, FL (2025)
Contact: Kirk Lofgren, Ocean Consulting (kirk@oceanconsultingfl.com, 305-457-5573)
Troy Wilson, Southeast Marine (troy@semarineconstruction.com, 954-295-4591)

The Living Seawall panels installed in this location have a 4" mangrove root design.

2 weeks post installation (cap not poured)

- Turf Algae (72.5% cover)
- Juvenile grey snappers (5-6cm) spending time inside the mangrove roots on the Living Seawall
- 9 fish species (Bluestriped grunt, Checkered puffer, French grunt, Grey snapper, Sergeant major, Stoplight parrotfish, White grunt, Yellowfin mojarra)



1 month post-installation

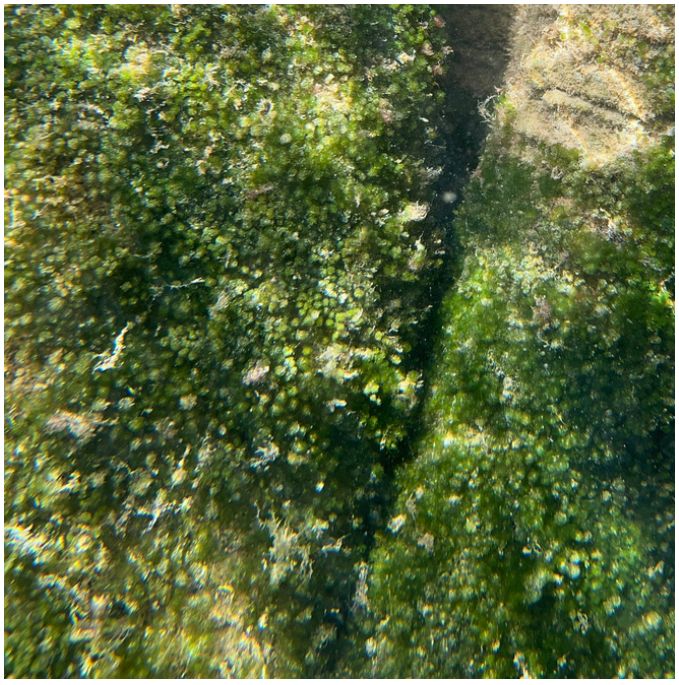
- Turf Algae (89.5% cover)
- Sea urchins (*Echinometra lucunter*)
- Juvenile grey snappers (5-6cm) spending time inside the mangrove roots on the Living Seawall
- 9 fish species (Bluestriped grunt, Checkered puffer, French grunt, Grey snapper, Sergeant major, Stoplight parrotfish, White grunt, Yellowfin mojarra, & an unidentified Blenny)

REFERENCE PROJECT

Living Seawalls x Key Largo, FL (2024)

Ocean Reef Club - Key Largo, FL (2024)
Contact: Christopher Nelson, Ocean Reef Club (cnelson@oceanreef.com, 305-501-5503)

The Living Seawall panels installed in this location have a 6" mangrove root design.



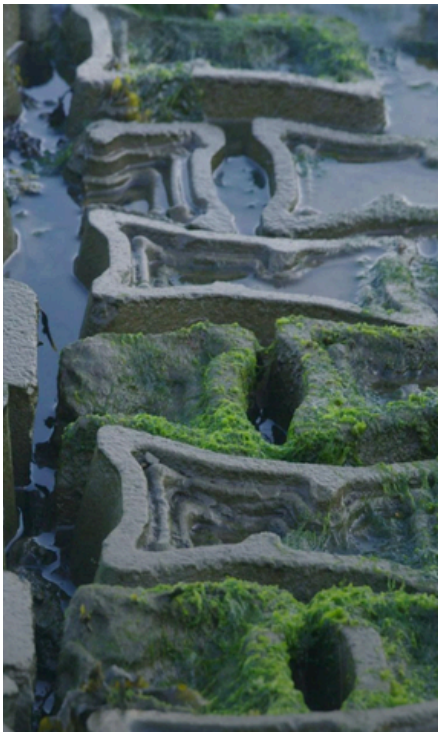
3 months post-installation*
Species:

- Algae (variety)
- Tube Worms
- Sergeant Majors
- Blue crabs

**doesn't capture entirety of potential species present as fish camera's were not set up*

Kind Designs x ECOncrete

Kind Designs' Kind Tiles™ are made in collaboration with E-Concrete, a global leader in concrete formulations that bring biodiversity, carbon storage, and superior structural performance to marine structures. It is the only nature-positive concrete technology that fully complies with marine construction standards while providing biodiversity at SCA.



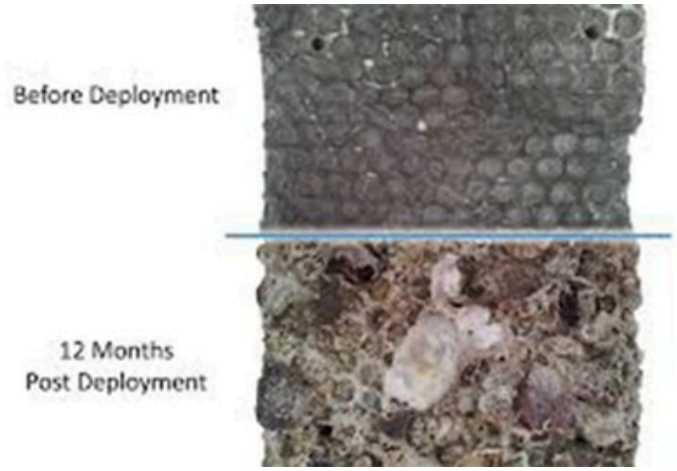
1 year post-installation
Port of Vigo, Spain

Post-installation
Brooklyn Bridge, NY

6 months post-installation
Port of Vigo, Spain

ECOncrete leverages over 12 years of case studies, 10 peer reviewed scientific papers, and is a leading company in applied science for maritime concrete construction globally.

Traditional concrete, composed of standard Portland Cement-based mixes, offers strength and cost-effectiveness but proves detrimental to marine ecosystems. 'Grey' concrete structures predominantly support invasive and opportunistic species. In contrast, Mangrove Tiles made with ECOncrete foster a rich and diverse marine habitat. The convergence of ECOncrete's modified concrete chemical composition and Kind's technology and biomimicry design unleash the growth of native marine organisms and enhance biodiversity.



Kind Designs x ECOncrete

ECOncrete deployed a pilot project with Articulated Concrete Block Mattresses (ACBMs) in Port Everglades in April 2017 on a degraded shoreline between the Port Navy station and NOVA University. The table below highlights a broad array of fish species identified over a period of two years on and around the ACBMs.

TABLE 3 Average abundance and standard errors of fish species identified on and around the ACBMs, between 3 and 6 MPD

Family	Genus	Species	Common name	Average	SE
Pomacentridae	*Abudefduf*	*saxatilis*	Sargeant major	79.25	4.78
Acanthuridae	*Acanthurus*	*chirurgus*	Doctorfish	12.13	1.82
Haemulidae	*Anisotremus*	*surinamensis*	Black morgate	6.50	1.47
Haemulidae	*Anisotremus*	*virginicus*	Porkfish	13.25	1.45
Tetraodontidae	*Canthigaster*	*rostrata*	Sharpnose puffer	0.75	0.27
Carangidae	*Caranx*	*hippos*	Crevalle jack	3.88	0.72
Carangidae	*Caranx*	*bartholomaei*	Yellow jack	1.00	0.24
Centropomidae	*Centropomus*	*undecimalis*	Common snook	1.88	0.44
Ephippidae	*Chaetodipterus*	*faber*	Atlantic spadefish	0.50	0.18
Haemulidae	*Haemulon*	*flavolineatum*	French grunt	68.75	6.54
Haemulidae	*Haemulon*	*aurolineatum*	Tomtate	82.88	8.06
Haemulidae	*Haemulon*	*plumierii*	White grunt	9.13	2.14
Kyphosidae	*Kyphosus*	*sectatrix*	Bermuda chub	9.50	1.14
Sparidae	*Lagodon*	*rhomboides*	Pinfish	3.63	0.55
Lutjanidae	*Lutjanus*	*cyanopterus*	Cubera snapper	0.13	0.04
Lutjanidae	*Lutjanus*	*synagris*	Lane snapper	0.75	0.11
Lutjanidae	*Lutjanus*	*griseus*	Mangrove snapper	7.50	2.45
Lutjanidae	*Lutjanus*	*apodus*	Schoolmaster snapper	31.63	1.45
Atherinopsidae	*Menidia*	*menidia*	Atlantic silverside	13.63	4.82
Pomacanthidae	*Pomacanthus*	*paru*	French angelfish	0.13	0.04
Blennidae	*Scartella*	*cristata*	Molly miller	1.38	0.49
Scaridae	*Scarus*	*vetula*	Queen parrotfish (IP)	0.63	0.22
Scorpaenidae	*Scorpaena*	*plumieri*	Spotted scorpionfish	0.63	0.15
Scaridae	*Sparisoma*	*viride*	Stoplight parrotfish (IP)	0.88	0.23
Scaridae	*Sparisoma*	*viride*	Stoplight parrotfish (TP)	0.50	0.13
Scaridae	*Sparisoma*	*viride*	Stoplight parrotfish IP	8.88	1.75
Pomacentridae	*Stegastes*	*adustus*	Dusky damselfish	14.25	0.90
Labridae	*Thalassoma*	*bifasciatum*	Bluehead wrasse	2.25	0.47
Labridae	*Halichoeres*	*bivittatus*	Slippery dick	5.75	0.71
Serranidae	*Cephalopholis*	*cruentata*	Graysby	0.13	0.04
Gerreidae	NA	NA	Mojarra	27.00	2.78
Clupeidae	NA	NA	UNID clupeidae	0.38	0.13
NA	NA	NA	"Mullet"	0.13	0.04
NA	NA	NA	"Occhiata"	0.50	0.13
NA	NA	NA	"Silversides"	5.25	1.86
NA	NA	NA	"Sheepshead"	0.75	0.19

KIND DESIGNS

THANK YOU

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