

SAN JUAN HARBOR, PUERTO RICO NAVIGATION IMPROVEMENTS STUDY

Final Integrated Feasibility Report & Environmental Assessment

APPENDIX G USFWS ESA FWCAR Consultation

June 2018



**US Army Corps
of Engineers**
Jacksonville District



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Caribbean Ecological Services

Field Office

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JUN 21 2018

In Reply Refer To:
FWS/R4/CESFO/72127-002

Colonel Jason A. Kirk
District Commander
US Army Corps of Engineers
Jacksonville District
701 San Marco Boulevard
Jacksonville, Florida 32207-8175

Re: Coordination Act Report for the San Juan
Harbor Navigation Project, San Juan, Puerto Rico

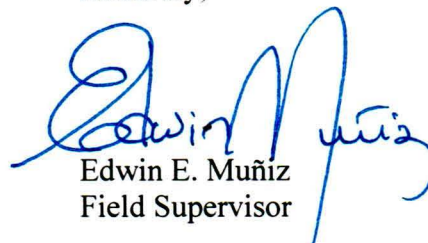
Dear Col. Kirk:

The Department of the Interior, U.S. Fish and Wildlife Service, has prepared the enclosed the final Fish and Wildlife Coordination Act (FWCA) report for the proposed San Juan Harbor Navigation Project. This project proposes deepening of entrance cut #6, the widening of the Army Terminal channel and turning basin and the 1,050 foot federal expansion of jurisdiction of the San Antonio channel. This report fulfills the requirements of section 2(b) of the FWCA (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*) and represents the Secretary of the Interior's report to Congress on the San Juan Harbor Navigation Study.

We ask that the Corps include the report as the findings of the Secretary of the Interior in the Chief on Engineers Report. We are providing the Corps a concurrence letter for the compliance of Section 7 of the Endangered Species Act on a separate correspondence.

If you have any questions feel free to contact Felix Lopez of our office at 787-581-7297 x210.

Sincerely,


Edwin E. Muñiz
Field Supervisor

fhl

Final FISH AND WILDLIFE COORDINATION ACT REPORT

For

San Juan Harbor Improvement Study San Juan, Puerto Rico



**U.S. Fish and Wildlife Service
Caribbean Ecological Services Field Office
June 2018**

Executive Summary

The U.S. Fish and Wildlife Service (Service) evaluated the potential natural resource impacts resulting from a proposed deepening and widening of the Federal navigation channels within San Juan Harbor located in San Juan, Puerto Rico. This evaluation includes habitats within the Federal navigation channel, potential dredged material placement sites, review of the affected areas and mitigation for expected impacts to jurisdictional wetlands and submerged aquatic vegetation, and additional natural resource recommendations.

The preliminary results of ecological modeling conducted by the U.S. Army Corps of Engineers (Corps) indicates that the project alternatives outlined in the Review Plan may result in additional impacts to submerged aquatic vegetation and marine habitats and only minor effects on mangrove wetlands, fish, and marine mammals. The Recommended Plan (RP) significantly reduces impacts but the Army Terminal channel and turning basin width expansion would still have some direct and indirect impacts to marine soft bottom habitats. The RP also includes a 1,050 foot federal jurisdiction expansion of the San Antonio channel. The proposed expansion of Anchorage F is the responsibility of the U.S. Coast Guard. It would entail 52 acres of new dredging in some areas previously undisturbed by harbor expansion. This would have the greatest impacts to marine habitats. The U.S. Coast Guard would have to secure the funding for this expansion and at the present time it is not included in the RP.

Threatened and endangered species under the Service jurisdiction occurring in the area include the Antillean manatee and possible nesting sea turtles. Endangered species avoidance and minimization measures are included in this Coordination Act Report as indicated in the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

The use of the San Juan ODMDS is currently the least cost alternative and preferred disposal method in the RP. Previously, there were various alternatives for the proposed placement of dredged material. The Service has reviewed information provided with the proposed project as well as other sources, and recommends the beneficial use of dredged material placement and/or proposed dredged material placement sites over ocean disposal.

The Service recommends that any future consideration given to hardened revetments in the project area be restricted to the refurbishment of existing revetments and that other methods, such as the creation or extension of a un-vegetated flats or mangrove fringe, be considered in other areas whenever practicable.

Within the project area, there are no designated units of the Coastal Barrier Resources System, as defined by the Coastal Barrier Resources Act of 1982, as amended (CBRA).

The Service recommends that the following are addressed during the planning process and incorporated into future Corps Analysis:

1. Engineering details regarding construction techniques, disposed material quality and quantities, and possible impacts from induced wake-erosion and potential of channel slumping should be provided to the Service and other natural resource agencies in a timely manner to ensure conservation measures can be fully developed and incorporated into the project design.

2. The Service recommends that completion of the previously authorized mitigation associated with past dredging activities should be pursued immediately in conjunction with any future construction/maintenance activities. The mitigation debt regarding previous COE dredging action in San Juan Bay needs to be calculated into the current Project cost/benefit analysis.
3. The Service recommends that mitigation be implemented at the Condado Lagoon Depressions and that the mitigation is implemented concurrent with project construction.
4. The Corps should coordinate with the Service and other natural resource agencies to develop mitigation monitoring and success criteria, reporting requirements, and an adaptive management plan for such mitigation.
5. We encourage the Corps to consider the opportunity to implement an ESA Section 7(a)(1) project to determine manatee usage in the project area to ensure future and ongoing construction and maintenance do not unintentionally result in unforeseen impacts to manatees.

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1.0 Introduction

The information contained in this document is based on the Corps August 2017 Draft Integrated Feasibility Report and Environmental Assessment (DIFR/EA) for San Juan Harbor and information submitted during the planning process and presentation of the Recommended Plan (RP). San Juan Harbor is located on the north coast of Puerto Rico and is the island's principal port. The majority of the Commonwealth's waterborne cargo and cruise ship traffic pass through the harbor, handling more than 75 percent of the Commonwealth's non-petroleum waterborne commerce. To meet increasing demands of the growing global economy, the shipping and cruise industry continues to progress to larger, more efficient vessels. The completion of the Panama Canal expansion in 2016 will allow mega cruise ships to transit the canal. The new Panama Canal will soon be able to handle vessels with a maximum length of 1,200 feet, width of 160 feet, and draft of 50 feet. The San Juan Harbor currently suffers from known shipping inefficiencies due to limited channel width and restrictions that don't allow two-way traffic. Certain sizes of container and cargo vessels cannot exit the port through the Graving Dock channel due to limited depth and width, and have to turn and transit near the Army Terminal channel, which creates delays with incoming ships using the same channels. Cruise ship docking has also reached its full capacity. This Final Coordination Act Report (FCAR) is prepared following the guidance contained in "Policy and Guidance on Fulfillment of the Fish and Wildlife Coordination Act Responsibilities in the Corps of Engineers Water Resources Development Program," dated November 2004 and the information contained in the DFS/EA, prepared by the Corps, as required by of the Fish and Wildlife Coordination Act.

2.0 Authorization

House Report 109-738, 109th Congress (2005-2006) December 29, 2006, as reported by the Transportation and Infrastructure Committee contains the authority for the San Juan Harbor Improvements Study. This FCAR presents updated evaluations of fish, wildlife, and habitat impacts from the proposed project, and discusses mitigation alternatives. The submission of this FCAR is presented in fulfillment of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). This report constitutes the official report of the Secretary of Interior as required by Section 2(b) of the Act. The Corps proposes additional SAV surveys of the Army Terminal Channel eastern flare during the project's Preconstruction, Engineering and Design (PED) phase. The best way to calculate impacts if SAV is found, is to complete a post dredge survey. These actions would occur during PED and the construction phase to attempt to calculate indirect impacts. The Condado Fill proposed in Section 4.3.3 of the Final IFR/EA and in Section 4.21 of the FCAR would compensate for these potential impacts.

3.0 Project Description

The San Juan Harbor study area encompasses the bar (entrance) channel, offshore and inland beneficial use dredged material disposal sites, inner harbor channels, and any extension of the water bodies and shorelines that could be impacted by proposed improvements (Figure 1). Navigation concerns include three main types of problems: difficult wind and wave conditions, limited channel and turning basin widths, and insufficient Federal channel depths. Alternative

plans combine multiple structural and nonstructural measures to improve the safety and efficiency of the existing navigation system.



Figure 1. Existing conditions San Juan Harbor Project.

Previously proposed harbor deepening and widening included all existing channels, designated anchorage areas, Puerto Nuevo turning basin, Army Terminal turning basin, the dredged material placement, and the dredged material placement sites. The work would be performed with various dredges, and the use of explosives may be required for some rock removal (Figure 2). If it is determined that the use of explosives is necessary for certain portions of the channel improvements, additional conservation and mitigation measures may be required to avoid impacts to listed species and sensitive habitats (e.g. manatee conservation measures).



Figure 2. Previously proposed alternatives to the San Juan Harbor improvements showing the widening of the various navigation channels and expansion of the various anchorages.



Figure 3. Tentatively Proposed Plan which became the Recommended Plan with reduction in dredging footprint. Only areas outlined in white will be dredged.

The RP has greatly reduced the proposed dredging. Dredging is now limited to the Anegado Channel, San Antonio Channel and Army Terminal Channel and turning basin. Entrance channel Cut #6 will also be deepened. Explosives would not be used; there is the possibility that a hopper dredge could be used instead of the traditional clamshell dredge. Estimates of the quantity of material to be remove are about 2,110,000 cubic yard not including the proposed expansion of Anchorage F. The Corps is considering 24 hour operations to expedite the work.

Several Dredge Material Management Areas (DMMA) within the San Juan Harbor were initially proposed along with offshore disposal at the San Juan Ocean Dredged Material Disposal Site (ODMDS) located a few miles north of the harbor. The U.S. Environmental Protection Agency (EPA) will have to be consulted for the use of the ODMDS site. The use of the San Juan ODMDS is currently the least cost alternative and preferred disposal method in the RP. The following DMMA locations are being considered and further evaluated in this FCAR:

- Condado Lagoon (fill depressions)
- Puerto Nuevo Mudflats

4.0 Description and Discussion of the Effected Environment

The proposed project is located in the San Juan Harbor, within the city limits of Municipalities of San Juan, Cataño, and Guaynabo. The Army Terminal navigation channel will be widened an additional 50 feet on either side along with Army Terminal Turning Basin. The Anegado channel will be deepened to 44 feet, and the San Antonio channel will be deepened to 36 feet and extended 1050 feet. This extension will be new dredging. The entrance channel Cut#6 will be also deepened to 46 feet. The Corps is proposing 24 hour operations to expedite the work.

4.1 Dredging Areas

The proposed dredging of the Federal channel extends from Cut#6, through the Anegado Channel, San Antonio Channel and down the Army Terminal channel and turning basin. It does not include the proposed Coast Guard extension of Anchorage F. Habitats associated with these segments include areas dominated by red algae, sea vine, some hard ground communities and mixed sand and shell shallows. Sand and silt comprise a substantial portion of the benthic sediments inside the channels. Based on the Corps' surveys, the Service believes that the proposed widening of the Army Terminal channels could impact new areas along the navigation channel which is being proposed to be widened 50 feet on either side of the channel. Indirect effects may include the intensification of wake-induced erosion along the shore in the Municipalities of Guaynabo and Cataño as the vessels will transit closer and there will be less wake attenuation to these because of the channel widening.

The information regarding wildlife resources in the existing channels is from the February 2016 National Marine Fishery Service report (Rivera, 2016). In the vicinity of the Bar Channel section 51 limestone crevices and ledges were reported along the channel sides. This provided habitat for marine invertebrates in addition, at depths of 53 to 54 feet algae over limestone was reported. Regarding Federally protected species, the endangered Antillean manatee (*Trichechus manatus manatus*) occurs within the San Juan Bay. There is also the potential for the threatened green (*Chelonia mydas*), and hawksbill (*Eretmochelys imbricata*) sea turtles to use portions of the bay and estuary. There are no known sea turtle nesting beach areas within the San Juan Bay, however the sand beach of the Esperanza peninsula could provide suitable nesting habitat for sea turtles.

4.1.1 Anegado Channel

There is no widening being proposed for this segment. However, deepening is being proposed from the current 40 foot depth to 41-45 feet. There is no information regarding the marine habitat currently found at these depths, but the constant ship traffic and sediment resuspension caused by vessels would rule out substantial habitat or habitat value.

This channel is a transit area for the Antillean manatee. The Corps has discounted the need for blasting in this channel segment. Work to be done in this area should follow the cautionary measures outlined in Appendix A “Standard Manatee Construction Conditions.

4.1.2 Army Terminal Channel and Turning Basin

The Army Terminal Turning Basin is being proposed for expansion and deepening to 40-45 feet. This is to accommodate larger ships and a proposed LNG vessel for the Puerto Nuevo power plant. Final design of the LNG berth is pending. The Sabana Approach will also be deepened from 34 to 45 feet. The Sabana Approach may be expanded by a private developer proposing to bring in compressed gas liquid (Guaynabo Gas Port). This project was presented in a San Juan COE October 2016 Interagency Meeting. While this is not part of the San Juan Harbor Project, the Corps should remain aware of this since it represents additional dredging and may conflict with the project dredging schedules. The Army Terminal Channel is being proposed to be expanded 50 feet on both sides of the channel for a total of 100 feet. The eastern side of the channel faces Punta Cataño, a shoal area known as Escollo Grande which is only 1-2 feet deep and was reported to have SAV by the Service (1993 CAR) for the previous San Juan Harbor project. According to the nautical chart this bottom is marked as “foul” with submerged obstacles. The proposed 50 foot expansion in this area may indirectly impact the Escollo Grande shoal due to dredging activities, slumping and increased erosion from ship wakes.

4.2 Proposed Dredged Material Placement Sites

The offshore disposal at the San Juan ODMDS located a few miles north of the harbor is the preferred disposal method. The U.S. Environmental Protection Agency (EPA) will have to be consulted for the use of the ODMDS site. Given the off shore nature and depths at the ODMDS, disposal at this site would not impact species under the purview of the Service. The use of the San Juan ODMDS is currently the least cost alternative and preferred disposal method. Of the previously proposed dredged material disposal areas, only the Condado Lagoon site has made it to the RP.

4.2.1 Condado Lagoon Depressions

According to the Corps, the restoration of dredged pits or holes in Condado Lagoon which is tied to previous Corps San Juan Harbor dredging works; it is still pending. We recommend that the pending mitigation be included in the upcoming San Juan Harbor project. The Condado Lagoon has about 32 acres below the depth of 15 feet, some areas reaching 35 feet in depth, the result of past dredging activities for the hotel development of the Condado area. The pending mitigation for the previous dredging project will not be able to restore the entire impacted area. However, if additional material is used from this current proposed San Juan Harbor dredging and expansion, there may be additional mitigation benefits to Condado Lagoon from an increase in shallow

water habitat. The widening of the Army Terminal channel may provide additional suitable material. Provided dredged material placement is appropriately monitored for migration and resuspension, impacts to marine organisms like crustaceans, mollusks, and other invertebrates that use these depressional areas are expected to be temporary. The Service continues to prefer the beneficial use of dredge spoil in this area over ocean disposal since it could result in a net environmental gain in habitat and compensate for past and proposed dredging impacts. Also should the project have indirect impacts to marine habitat due to sloughing, the Condado Fill proposed in Section 4.3.3 of the Final IFR/EA and in this Section of the FCAR would compensate for these impacts.

4.2.2 Puerto Nuevo Mudflats

The restoration of the Puerto Nuevo mudflats is being proposed by the Service as an additional dredge disposal location within SJB to create emergent wetland habitat with dredge spoil. These mudflats were a series of shoals created at the mouth of the Rio Puerto Nuevo as it discharged into San Juan Bay. This area was once considered a Critical Wildlife Area by DNER. However, navigation projects, flood control projects and port development have all but eliminated this tidal flat area. Prior efforts to partially restore the area resulted in the deposition of excess material, mangroves colonized the site and it is not available to wading birds. With the proposed deepening and expansion of the Army Terminal Turning Basin and Army Terminal Channel, there exists the possibility of using the dredge spoil to create shallow flat areas in front of the existing mangrove fringe. This could be an efficient way of disposing the soft sediments found in the dredging area while at the same time help to re-establish an important habitat for the bay's sea bird and wading bird population, provided that proper intertidal depths can be achieved. About 3-6 acres of tidal flats can be created in the area between the mouth of the Puerto Nuevo and the San Juan Maritime Center (Figure 5).



Figure 5. FWS proposed mudflat creation area. Looking south from the Puerto Nuevo Turning Basin the entrance of the Rio Puerto Nuevo is to the right. This quiet cove can be used to deposit dredge material from the nearby Graving dock and Puerto Nuevo Turning basin to create a tidal flat.

5.0 Natural Resource Impacts

The San Juan Bay has approximately 6.5 miles (10.5 km) of coastline and is highly developed. San Juan Bay was described by early settlers as one of the most magnificent harbors of the New World. Today, the area surrounding the harbor is highly urbanized, with office buildings, residential areas, parks and recreation areas, cargo and cruise line terminals, and an extensive and sophisticated transportation network. San Juan Bay is connected to the Atlantic Ocean by the Boca del Morro and to the Condado Lagoon by the San Antonio Channel. The San Antonio Channel is 1.2 miles (2 km) long and has a number of port-related facilities as well as two marinas on the eastern end. Centuries of development has severely altered the natural ecosystems of the bay. Most of the shoreline is now hardened and developed, but coastal mangrove wetland habitats are still found along the Esperanza peninsula, and mouth of the Puerto Nuevo River.

La Esperanza Peninsula: In 1963 the La Esperanza (Palo Seco) Peninsula was created using dredge spoil from a Corps navigation project in the bay. Over the past 54 years, this 30 acre sand spit has changed its shape and position, migrating and changing due to the prevailing winds, tides, wave action, and annual swells produced by northern cold fronts. Over the years it formed a semi open lagoon behind the peninsula. A small park was built on this unstable land by the Municipality of Cataño which has armored the shore in an effort to avoid further movement. During its 54 year existence, this area has been colonized and overgrown with red, black and white mangroves, Australian pine, maho, and a variety of other plants. Although intended to protect the Bay View residential area from coastal erosion, this peninsula rapidly became a primary wildlife area. Numerous gulls, terns, pelicans, and frigate birds use the peninsula and

sheltered waters behind it for roosting and feeding. Once considered a Primary Wildlife Area (DNER 1979, 1988) it was not included in the 2005 DNER revision because of perceived habitat degradation due to development, human access and the constant migration of sand towards the south. However, it remains an important green area in the heavily developed San Juan Bay and continues to be an important area for both resident and migratory birds. In 2005, the La Esperanza Peninsula was dredged by the Corps under the authority of Section 1135 of WRDA of 1986 as amended, to restore water quality of the Esperanza Cove and wildlife habitat on the Esperanza Peninsula. However, due to the littoral drift and wave action, the La Esperanza Peninsula is now in need of a maintenance dredging, the tip of the Peninsula is currently nearing the existing western shoreline and could meld into the shore, closing circulation in that area. The Corps has proposed additional dredging of the Peninsula to correct this drift along with the beneficial use and placement of suitable dredged material from La Esperanza Peninsula Section 1135 project footprint (Corps 2015) into an artificial depression of approximately 4 acres within the Condado Lagoon (See Section 4.2.1). With the passing of Hurricanes Irma and Maria, the loss of vegetation on the tip of the peninsula may increase erosion or migration of sand in that area.

The Puerto Rico Breeding Bird Atlas

(<http://www.aosbirds.org/prbba/Puerto%20Rico%20Status.html>), states that about 58 species of birds are found within the San Juan Bay area, 44 of which are sea birds, waterfowl or wading birds that still utilize the shallows, wetlands and open water of San Juan Bay. The brown pelican (*Pelecanus occidentalis*) is a permanent resident in the bay. Pelicans feed throughout the bay but prefer the calm waters behind the Esperanza Peninsula and mangrove lined shores. Antillean manatees and sea turtles also use the bay habitats. Manatees can be found as far into the bay as the Puerto Nuevo River.

In addition to direct impacts to the bay that will be caused by the widening of the navigation channels, there will be indirect impacts since the buoys and channel markers will also have to be moved to the new channel dimensions and alignments. These will have to be relocated and occupy new bay bottom in a permanent fashion. Excess turbidity due not only to the dredging but from some of the proposed mitigation actions also needs to be considered. While these impacts are temporary in nature, they should be taken into account when discussing water quality impacts in the project's NEPA Compliance.

Benthic Habitats

A preliminary survey of submerged aquatic resources was conducted by NMFS (Rivera, 2016). No stony corals were identified in this preliminary survey, but soft corals were found in the outer channel segments (51), which according to the Corps will not be dredged. Limestone hardgrounds was also found in the entrance channel area. Limestone hardgrounds have an association of sponges, soft corals, two species of seagrass were identified; *Halophila decipiens* and *Thalassia testudinum*. In addition to seagrass beds, several algae beds were also identified associated with the limestone hardgrounds. The areas where seagrasses were found coincide with Anchorage Area F expansion and the Puerto Nuevo Turning Basin.

The Corps conducted side scan sonar and underwater video surveys between May-December 2016 of the proposed expansion and dredge areas (Figures 6&7). The survey report (DeMarco and Staley, 2017) corroborates the previous NMFS survey for Anchorage Area F and Puerto Nuevo. An estimated 18 acres of SAV (*H. decipiens* and macro-algae) could be eliminated by

the proposed expansion of the Anchorage Area F. In addition, hardbottom habitat (rocks with SAV, sponges, colonial tunicates) was found along the proposed Cataño living shoreline site, which would occupy bay bottom. Finally, impacts to SAV from channel expansion in the other areas are not well quantified but the possibility exists for indirect impacts from sloughing in some areas. Based on these surveys, the only areas with definitive SAV impacts are the expansion of Anchorage F.



Figure 6. COE side scan sonar and underwater video tracks

Water Quality

Potential environmental changes due to channel deepening may include alteration of salinity and water circulation in San Juan Bay, including potential effects of the proposed action on four ecological communities; fishes, benthic macroinvertebrates, submerged aquatic vegetation (SAV), and wetlands.

The San Juan Bay Estuary Program (SJBEF) has several water quality monitoring stations within San Juan Bay. They have water quality data for the area starting in 2008. Over the years water quality in the bay has actually improved. The elimination of sewage discharges, stricter regulations regarding disposal of waste by ships, and increased regulations have resulted in that the overall water quality for the bay has been classified as good, with oil and grease being the one parameter that falls below the set standards (Bauzá-Ortega, J (Ed). 2013). The data from these water quality monitoring stations could serve as the background data for Corps' water quality monitoring program during and after the proposed San Juan Harbor Improvements. The existence of these water quality monitoring stations presents an opportunity for the Corps to partner with the SJBEF to assure that water quality standards are not being violated during the dredging operations. (Figure 7).

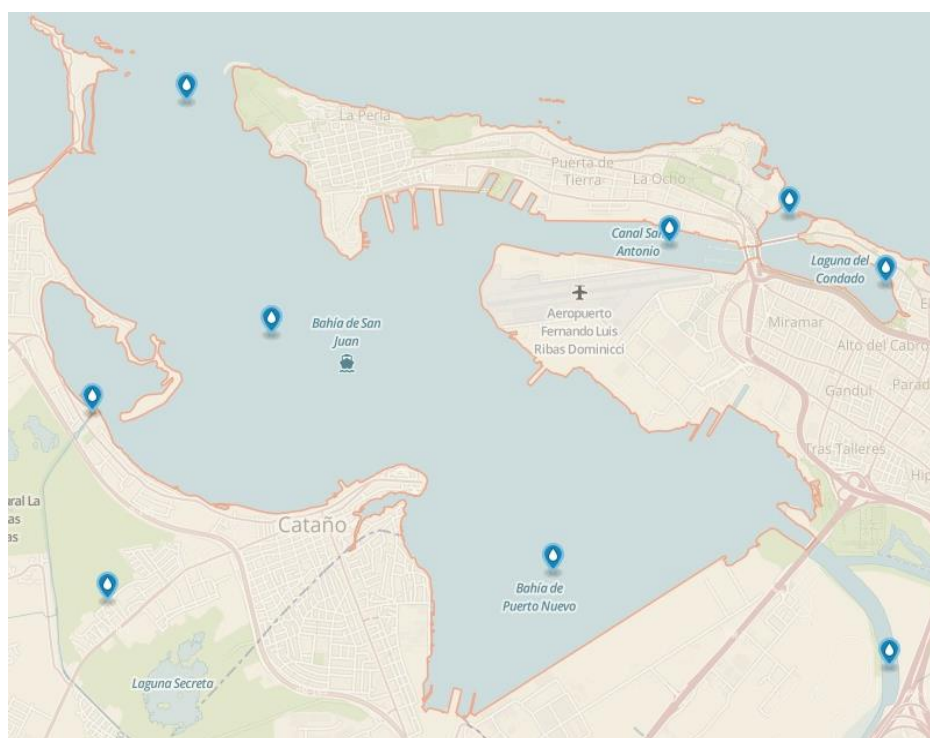


Figure 7: Location of water quality monitoring stations maintained by the SJBEF.

SJBEF has also conducted sea level rise modeling of San Juan Bay which may be of help to the Corps in their modeling efforts.

Fisheries Resources

Although highly developed and having lost much of its shoreline nursery habitat, fishery resources in the bay continue to be present. The bay, for purposes of local regulations, is considered to be “oceanic” and thus not restricted to recreational fishing. Recreational and subsistence fishing occurs in numerous areas around the bay. Licensed commercial fishing with nets and traps as well as spearfishing is also allowed. The following commercially important fish species were reported for San Juan Bay (Ojeda et al, 2007, Reef fish Spawning Aggregations of the Puerto Rican Shelf).

Species Name	Common Name
<i>Scomberomorus regalis</i>	Cero mackerel
<i>Epinephelus guttatus</i>	Red hind
<i>Lutjanus griseus</i>	Mangrove snapper
<i>Lutjanus synagris</i>	Lane snapper
<i>Caranx bartholomaei</i>	Yellow jack
<i>Caranx crysos</i>	Blue runner
<i>Centropomus undecimalis</i>	Common snook
<i>Cephalopholis fulva</i>	Coney
<i>Ocyurus chrysurus</i>	Yellowtail snapper
<i>Epinephelus itajara</i>	Goliath grouper

In addition, several fish spawning aggregation were reported by Ojeda et al 2007 at the Bar Channel entrance to San Juan Bay and in the vicinity of the Puerto Nuevo area. Fishermen catch bait fish in the Puerto Nuevo area and Esperanza Peninsula lagoon. (See Figure 8)

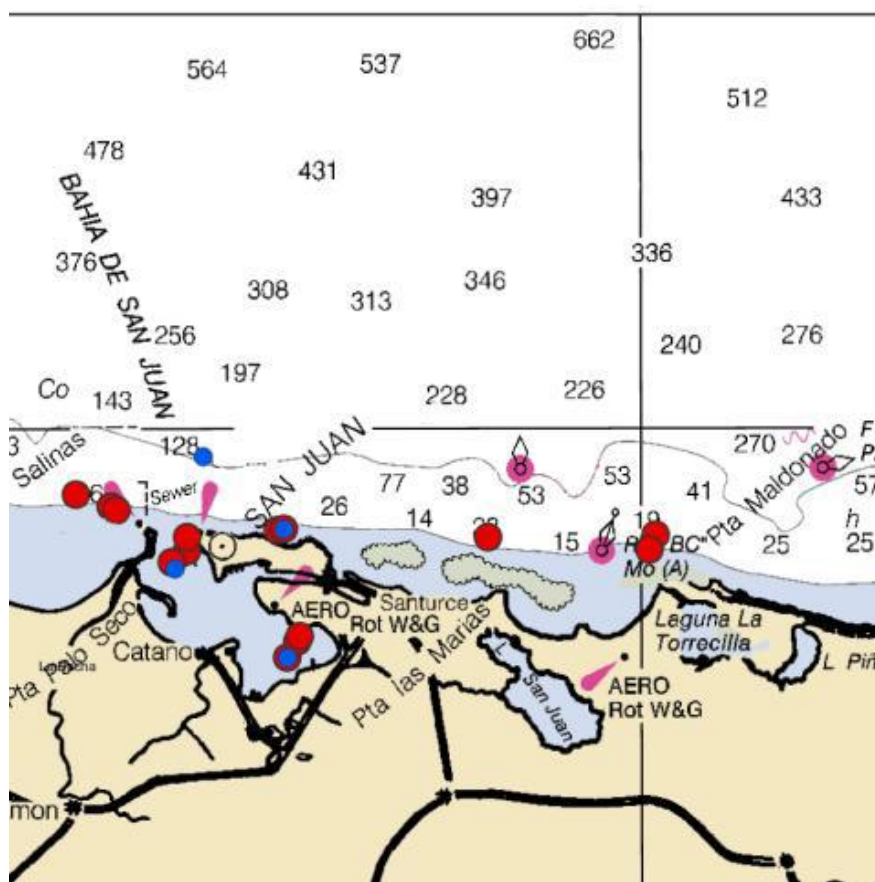


Figure 8: Ojeda et al 2007, the red dots identify reported spawning aggregations, and the blue dots represent past or historical areas.

Threatened and Endangered Species

Federally listed species that can be found within the San Juan Bay project area are:

Green sea turtle (<i>Chelonia mydas</i>) in the water	NOAA	Threatened
Hawksbill sea turtle (<i>Eretmochelys imbricata</i>) in the water	NOAA	Endangered
Antillean manatee (<i>Trichechus manatus manatus</i>)	USFWS	Endangered

Corals

There are 7 listed coral species for the Caribbean although Critical Habitat has been designated for only the two *Acropora* species. Some listed corals are found outside the project area, these areas will not be impacted by the proposed project. Dredging and widening will start beyond the Bar Channel where listed corals may be found. Critical habitat for *Acropora* corals is seaward of the project. Once inside the Anegado Channel, suitable substrate for corals is not found.

Although NOAA has designated Critical Habitat for *Acropora* coral species, pursuant to ESA section 3(5)(A)(i), all areas containing existing (already constructed) federally authorized or permitted man-made structures such as aids-to-navigation (ATONs), artificial reefs, boat ramps, docks, pilings, maintained channels, marinas and federally authorized channels and harbors, are not included in the Critical habitat designation. Any final determination regarding possible effects to listed species and designated critical habitat is under NOAA's jurisdiction needs to be coordinated by the Corps with NOAA-NMFS.

Listed Sea Turtles

Sea turtles enter into San Juan Bay and although there are not documented records of sea turtle nesting, hatchlings have been found in the bay, and there are several sand beach areas in Esperanza, Isla Cabra and other small pocket beaches that are suitable habitat for nesting. The sea turtle species most likely to be found in San Juan Bay are the hawksbill sea turtle (*Eretmochelys imbricata*) and the green sea turtle (*Chelonia mydas*).

Green Sea Turtle

The green sea turtle was federally listed on July 28, 1978 (43 FR 32800). Breeding populations of the green sea turtle in the Caribbean are listed as threatened. The green sea turtle has a worldwide distribution in tropical and subtropical waters.

The green sea turtle grows to a maximum size of about 4 feet and a weight of 440 pounds. It has a heart-shaped shell, small head, and single-clawed flippers. The carapace is smooth and colored gray, green, brown, and black. Hatchlings are black on top and white on the bottom (NMFS 2009b). Hatchling green sea turtles eat a variety of plants and animals, but adults feed almost exclusively on seagrasses and marine algae.

Within the U.S., green sea turtles nest in small numbers in the U.S. Virgin Islands and Puerto Rico. Green sea turtles are generally found in fairly shallow waters (except when migrating) inside reefs, bays, and inlets. The green sea turtle is attracted to lagoons and shoals with an abundance of marine grass and algae. Open beaches with a sloping platform and minimal disturbance are required for nesting.

Hawksbill Sea Turtle

The hawksbill sea turtle was federally listed as an endangered species on June 2, 1970 (35 FR 8491). The hawksbill is found in tropical and subtropical seas of the Atlantic, Pacific, and Indian Oceans. The species is widely distributed in the Caribbean Sea and western Atlantic Ocean. In the Wider Caribbean, adult hawksbills have been reported as typically weighing around 176 pounds or less; hatchlings average about 1.6 inches straight length and range in weight from 0.5 to 0.7 ounces. The carapace is heart shaped in young turtles, and becomes more elongated or egg-shaped with maturity. The top scutes are often richly patterned with irregularly radiating streaks of brown or black on an amber background. The head is elongated and tapers sharply to a point. In the U.S. Caribbean, hawksbill nesting occurs on beaches throughout Puerto Rico and the U.S. Virgin Islands.

Antillean Manatee

The Antillean manatee is currently considered as a threatened species (82 FR 16668). The Antillean manatee is also protected under the U.S. Marine Mammal Protection Act (16 USC § 1361 et seq. 1976 & supp. V 1981) and listed as endangered by the International Union for Conservation of Natural Resources (Self-Sullivan and Mignucci 2008). The species is also listed as endangered by the PRDNER (2004).

While the Antillean manatee has been reported to occur in Puerto Rico since Spanish exploration (Powel et al. 1981), except for anecdotal descriptions, the historical population size is unknown. Aerial surveys to estimate the population size have been completed and current preliminary results estimate a mean population size of 532 individuals with a 95% confidence interval of 342 to 802 (Pollock et al. 2013). The Antillean manatee population in Puerto Rico is considered stable (USFWS 2016).

Manatees are obligate herbivores (Bonde et al. 2004) and are efficient in the gathering and consumption of submerged aquatic vegetation (Marshall et al. 2000). Antillean manatees in Puerto Rico primarily feed on seagrass and require freshwater sources, neither of which is considered a limited resource in Puerto Rico (Drew et al. 2012). The Antillean manatee performs most activities (i.e., feeding, drinking, resting, calving) within shallow coves and bays characterized by low-energy waves (Lefebvre et al. 2000), but also travel through open, deep marine waters. Local movement patterns show alternating use between seagrass beds for feeding and freshwater sources for drinking (Slone et al. 2006). During a manatee expert elicitation process (Drew *et al.* 2012), manatees were described to regularly traverse deep water when moving between local sites or resources, do not feed or rest in waters deeper than 13 m (42.7 ft), and spend the majority of their time in waters less than 5 m (16.4 ft) deep (Drew et al. 2012).

The SJB is located within the range of the Antillean manatee in Puerto Rico. Drew et al. (2012) identified areas in Puerto Rico which include the three key ecological attributes (i.e. seagrass, freshwater, shelter) necessary to support manatee populations and identified areas where take can

be reduced from watercraft related threats. Waters within San Juan were described to provide a high shelter value for manatees and a high motorized watercraft threat. Waters within San Juan were not associated with having a significant source of seagrass, but have at least one or more freshwater sources for manatees to drink from. The SJB may also have other potential feeding sources besides seagrass, for example, certain algae or freshwater plants.

The number of manatees that transit or reside within the SJB is unknown. Due to the high turbidity waters of the SJB, manatee counts during aerial surveys are low. However, we know that manatees are found within the SJB from Isla de Cabras to the Rio Puerto Nuevo channel mostly from public reports, dredging and construction project monitoring reports, USCG anecdotal reports from their dock area, and mortality reports.

For example, from August 16 to August 18, 2006, four males and one female adult Antillean manatees were found dead in the SJB area. The cause of death for these animals was determined to be human related due to a large boat impact. Dead manatees showed signs of blunt trauma and large boat propeller scars. When a single female is associated to a group of males, they are forming a mating herd and the manatees are extremely active and thus making themselves more visible. This event, although unfortunate, serves as part of the evidence that manatees do use the San Juan Bay area. This accident may have been prevented by following idle speed zones within the San Juan Bay and/or by having an observer on board while transiting in that area.

The specific use of the SJB by manatees has not been studied in detail as opposed to other areas like Ceiba and Guayanilla, where manatees have been captured and released with radio tracking devices (Slone et al. 2006). Together with the PR-DNER and the PR Manatee Conservation Center, the Service has proposed to capture manatees in the SJB area, conduct health assessments tests, and release and follow them with the use of satellite tracking devices. There is current data on one rehabilitated and released sub-adult male manatee (Aramaná) that was using the SJB and was tracked with satellite technology, this data contributes to our understanding of manatee use within the SJB area (see Fig. 9).



Figure 9: Satellite and visual tracking of the manatee Aramaná, Data provided by the Puerto Rico Manatee Conservation Center.

During April 12, 2017 to July 4, 2017 the San Juan Harbor Maintenance Dredging Project took place. The End of Project Summary Report for the biological monitoring for sea turtles and Antillean manatee indicates a total of thirty-seven (37) sightings. A total of sixteen (16) Antillean manatees (*Trichechus manatus manatus*) were spotted and within the 100 feet perimeter, thirteen (13) individuals were observed. Also, seventy-three (73) dolphins were spotted and within 100 feet perimeter, forty-five (45) individuals were observed. No sea turtles or whales were observed during this period (Solá 2017).

Manatee Conservation Measures

Both the Service and the Corps have developed manatee conservation measures to avoid and minimize potential in-water project effects on the manatee. In-water project effects may include, but not limited to: vessel and construction equipment strikes with manatees; manatee harassment by construction activities; seagrass habitat impacts; possibility of a spill; post-construction increase in commercial boat traffic; blasting impacts and noise. These technical assistance measures can be used for the proposed project as appropriate. Some example measures include: minimize vessel speeds, minimize work in shallow areas close to the shore, manatee observers before and during construction, manatee awareness, appropriate signage, blasting exclusion zones, bubble curtains, among others. However, in the specific case of the SJB, water turbidity minimizes an observer's detection of a manatee. It is critical that the conservation measures account for this limitation. For example, conservation measures can be adjusted to increase the amount of observers, provide high observation points, and potentially use innovative measures such as drones. Because the Corps is considering 24 hour operations, dedicated day and night observers would be required in the work area.

We have developed the following project specific measures to address the potential adverse effects on the Antillean manatee and its habitat, especially since the project will include 24-hour operation:

- a. Before the initiation of the project, a pre-construction meeting should be held with the contractors to review the requirements for conservation measures that should be implemented during the proposed work. The Corps should contact the Federal and State Resource Agencies at least fifteen (15) days in advance of the preferred meeting date for potential participation.
- b. A protective species watch plan detailing the proposal for observing protected marine species should be developed. The plan should include the following:
 - i. a list of all observers associated with the project (names, credentials, qualifications, contact information and a description of their observation experience conducting nighttime and/or daytime marine monitoring work);
 - ii. the equipment used to aid in observation (e.g. polarized sunglasses, binoculars, etc.);
 - iii. the length of work shifts for the observers and proposed break times;
 - iv. the equipment used to communicate with the dredge operator; and
 - v. a description of where the observer will be located during work and how they will cover the areas required, including specifics on the position(s) of the nighttime observers and proximity to the dredging equipment.

In addition, the plan should note if observers are in elevated positions to maximize visibility or observing from land based position. The location description should include the position of tugboats and crew vessels if mooring to the dredge. All observers should have significant on-the job experience observing protected marine species during dredge operations. Manatee observers working at night-time should take a synchronized, 30 minute break immediately following four (4) consecutive and continuous hours of manatee observation. If the required number of observers is not available to observe in water work, then dredging will need to cease while observers are on break.

Appropriate experience should be demonstrated through documented experience as an observer that has monitored marine animals and their behaviors in association with in-water construction projects. After the agencies review the plan, observer's modifications or suggestions for improvements to the measures may be required.

- c. All on-site project personnel are responsible for observing water-related activities for the presence of manatees. If a manatee is sighted within 100 yards of the project area, all appropriate precautions should be implemented by the contractor to ensure protection of the manatees. All in-water activities, including vessel operation, must be shut down if a manatee comes within 50 feet of the active construction site during daytime hours. Activities will not resume until the manatee has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee has not reappeared within 50 feet of the operation. During nighttime dredging (nighttime should be defined as one half hour before sunset and one half hour after sunrise), all moving equipment and construction activities should cease if a manatee moves closer than 75 feet from such equipment or the project area. Activities will not resume until the manatee has moved beyond the 75-foot radius of the project operation, or until 30 minutes elapses if the manatee has not reappeared within 75 feet of the operation. Animals must not be herded away or harassed into leaving.
- d. During nighttime dredging operations, dredging equipment will use lights to illuminate the water surface sufficiently to permit observation of manatees within 75 to 100 feet of the operation hoist line (clam bucket cable). The lighting system should be assessed for compliance prior to commencement of nighttime dredging activities. Nighttime operations should not commence or continue if at any time lighting is not considered effective by the observer or if lighting does not comply with the above requirements.
- e. Observers: When in-water work is being performed or vessels are moving, all required dedicated observers must be on site during all in-water construction activities. For dredging operations, the observer(s) should be positioned to clearly observe the point of entry and exit of dredging equipment as well as the waters surrounding the operation to a radius of 100 feet around the entry/exit point. During nighttime hours (nighttime should be defined as one half hour before sunset and one half hour after sunrise), the contractor should provide at least three dedicated marine animal observers on site during all in-water construction activities. The protected marine animal observers must be on site during all in-water construction activities and should advise personnel to cease operation upon sighting a manatee within 50 feet of any in-water construction activity (75 feet for nighttime work). If dedicated observers determines that weather conditions will prevent detection of manatees during work, operations will cease until conditions improve.
- f. Observers should maintain daily logs detailing sightings, collisions, or injuries to protected marine animals, as well as project specific information as such when each observer took a break and maintain for how long, as work itinerary, weather and non-weather related work shutdowns, shift changes, etc. For manatee behavior, observers should log time of observance, estimated distance of the manatee related to the work area, type of behavior (passing through, pausing in the project vicinity, interaction with equipment or vessels, etc.), and construction activity during the observation. During the first week of dredging

operations, the contractor should ensure that copies of the daily logs are submitted after the first week of work to the Service (Marelisa Rivera email: marelisa_rivera@fws.gov) and to the appropriate Corps contact. After the first week, the contractor should ensure that copies of the daily logs are submitted on a monthly basis to the Service and appropriate Corps contact.

- g. All vessels associated with the project construction will operate at “no wake/idle” speed while in shallow waters (10 feet or less) and vessels will follow routes of deeper water whenever possible.
- h. Any collision with and/or injury to a manatee shall be reported immediately to the Department of Natural and Environmental Resources Law Enforcement (787-724-5700) and the USFWS Caribbean Ecological Services Field Office (787-851-7297).
- i. The permit holder and/or contractor shall have temporary manatee signs in all project related vessels as recommended by the following guidelines:
 - Signs must be placed in prominent locations within the vessels for maximum visibility, for example, in the vessel controls area. Permittee may also consider placing temporary signs in areas such as dock walkways, dock master offices, near restrooms or other high patron foot traffic areas.
 - Signs must be replaced when faded, damaged or outdated.
 - These signs must not face the water, must never be attached to pilings or navigational markers in the water. Some exceptions to signs facing the water exist for temporary signs during in-water work.
 - You may find a couple of sign examples at this link:
https://www.fws.gov/caribbean/es/documents/ManateeSigns_Letreros.pdf
- j. The preceding measures will be revised if adverse impacts to manatees occur during their proper implementation, or to reflect new information on the species or protective measures relevant to the continued adequacy of those measures during dredging operations.

In addition there exist opportunities under Section 7(a)(1) of the Endangered Species Act for the Corps to help further the conservation of the manatee. These measures can be offsite or even out of the project area as long as these measures increase or protect the population or threatened habitat.

- Develop and implement navigational aids (manatee speed buoys) for SJB focused on avoiding and minimizing watercraft threats to the manatees.
- Support ongoing efforts to study manatee use within the SJB. The Service has a project with the PR Manatee Conservation Center and the DNER to assess the health of manatees within the SJB and track manatees to study movement patterns and habitat use within the SJB.
- Develop a manatee specific education campaign using existing and new alternatives and media sources.

With the selection of the RP the consultation process under Section 7 of the Endangered Species Act has commenced. Recommendations made in this FCAR should be incorporated into the section 7 consultation for the project.

5.1 Mitigation for Environmental Effects

The various mitigation measures using dredge spoil were discussed above. A conceptual mitigation plan is included in the IFR/EA (Condado lagoon restoration). While preliminary findings indicate that the proposed expansion dredging will not result in impacts requiring mitigation. Additional benthic surveys are proposed during the PED and if SAV are found in the army terminal channel flare, additional mitigation would be proposed. The proposed Condado lagoon restoration would be able to incorporate those additional impacts.

Possible mitigation in the form of transplanting SAV from the expansion of the Army Terminal Channel to Condado Lagoon should also be considered. A transplant technique for *Halophila* has been developed in the U.S. Virgin Islands by a local consultant consisting of “raking” up the sea vine, placing it in netting and transporting it to a recipient site. This plus the removal of the upper six to 12 inches of sediment (possible seed bank) for a cap in the Condado Lagoon restoration should be considered since it will speed up the colonization of the material by SAV.

An Environmental Monitoring and Corrective Action Plan should be developed in conjunction with any proposed mitigation plan. This plan should be developed in coordination with other agencies, in order to determine whether the effects assessment has accurately predicted the effects. Monitoring data will be used to evaluate whether the proposed mitigation sufficiently offsets the predicted effects. The results of these monitoring and analyses will be available to agencies and stakeholders. The Corrective Action Plan would provide a methodology to evaluate whether project effects exceed those already mitigated for in the base mitigation plan. The Corrective Action Plan specifies the methodology for how additional compensatory mitigation will be determined and implemented.

6.0 No Action Alternative

Based on the Corps documentation, if no action is taken to deepen the San Juan Harbor, the most probable future condition is continued utilization of the harbor under present conditions. Deep draft vessel traffic in the harbor is likely to continue to increase. The ability of the San Juan Harbor to be used by the larger ships now able to pass through the Panama Canal will remain very limited if the harbor is not deepened. This in turn would have negative economic effects on the shipping and cruise ship industry and the San Juan area in general. Under this alternative fish and wildlife resources would not be impacted.

7.0 Summary of Fish and Wildlife Service Position

The Service carried out a site visit to the various areas within the harbor on September 26, 2016. Use of the Esperanza Peninsula by migratory birds was confirmed and one osprey was sighted

perched atop an Australian pine. The continued sand migration towards the shore was also noted. Impacts to the forested areas by sand extraction for mitigation of the peninsula should be avoided. The boat operators stated that brown pelicans regularly feed in the lagoon created behind the peninsula and that fisherman catch bait fish in the area. North of the Puerto Nuevo River mouth is a cove where fishermen also catch shrimp and baitfish with hand nets. This is the general area where the Service is proposing the creation of a tidal flat using dredged spoil.

There exists the possibility of additional restoration of the Condado Lagoon and transplant of SAV to the completed Condado Lagoon restoration from SJB dredging sites. This would greatly speed up the stabilization of deposited sediments and increase the habitat quality of the lagoon.

Other mitigation opportunities such as living shorelines would replace lost coastal mangrove habitat and provide shoreline protection to the Cataño shore. Although this type of shoreline protection is favored over traditional rip-rap, there exists the possibility of additional impacts to marine existing habitats from this alternative. Therefore a careful evaluation of the net environmental benefits needs to be made prior to implementing this mitigation option.

This Report is presented as a Final Coordination Act Report. The Corps will determine if mitigation will be required for this project based on additional benthic surveys conducted during the project's Preconstruction, Engineering and Design (PED) phase. Mitigation was considered during the Alternatives Evaluation and Analysis, but because the preliminary surveys indicate impacts are not likely, the dredged material placement option for Condado lagoon restoration represents the conceptual mitigation plan for the Revised Plan. Further coordination with the Service to review project specific mitigation will be needed in PED phase. At this stage of project planning the Service does not object to the project as proposed provided the recommendations in our report are addressed during the subsequent process and incorporated into the PED Analysis.

8.0 Coastal Barrier Resource Act

The Coastal Barrier Resources Act (CBRA), first enacted in 1982 (16 U.S.C. 3502 et seq.), was reauthorized and amended by the Coastal Barrier Improvement Act (CD3A) of 1990 (16 U.S.C. 3501). Its purpose, as stated in section 2(b), is "...to minimize the loss of human life, wasteful expenditure of Federal revenues, and the damage to fish, wildlife, and other natural resources associated with the coastal barriers..." CBRA established the Coastal Barrier Resources System, (CBRS) a mapped series of undeveloped coastal barriers on the Atlantic and Gulf coasts, including the Great Lakes Region, Virgin Islands, and Puerto Rico. Areas within the system are designated as either "units" or "otherwise protected areas" (OPA's). Section 5(a) prohibits all new Federal expenditures and financial assistance within unit boundaries, with some exceptions as determined through a process of consultation.

There are no designated CBRA units within the project area. The closest CBRA units are PR-86 Punta Salinas to the east and PR-87 Piñones to the west.

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United States Department of the Interior



FISH AND WILDLIFE SERVICE

Caribbean Ecological Services

Field Office

P.O. Box 491

Boqueron, PR 00622

JUN 21 2018

In Reply Refer to:

FWS/R4/CESFO/72127-002

Mr. Paul DeMarco
U.S. Army Corps of Engineers
Planning Division, Environmental Branch
701 San Marco Blvd.
Jacksonville, Florida 32207-8175

**Re: Biological Assessment San Juan Harbor
Dredging Project, San Juan**

Dear Mr. DeMarco:

We have reviewed the Biological Assessment (BA) for the San Juan Harbor (SJH) dredging project received on August 2, 2018. Our comments are provided under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), and the Marine Mammal Protection Act (86 Stat. 1027, as amended; 16 U.S.C. 1361 et seq.). The BA includes some measures to avoid and minimize potential effects on the Antillean manatee.

On June 21, 2018, the Service completed the Fish and Wildlife Coordination Act Report (CAR) for the proposed San Juan Harbor Dredging project. In that report, the Service identified that the potential effects of the widening and deepening of the San Juan Bay Harbor on the manatee and its habitat may include but are not limited to: vessel and construction equipment strikes with manatees; manatee harassment by construction activities; seagrass habitat impacts; possibility of a spill; post-construction increase in commercial boat traffic; blasting impacts and noise.

The final CAR for the San Juan Harbor Dredging project contains the following project specific measures to address the potential adverse effects on the Antillean manatee and its habitat, especially since the project will include 24-hour operation:

- a. Before the initiation of the project, a pre-construction meeting should be held with the contractors to review the requirements for conservation measures that should be implemented during the proposed work. The Corps should contact the Federal and State Resource Agencies at least fifteen (15) days in advance of the preferred meeting date for potential participation.

- b. A protective species watch plan detailing the proposal for observing protected marine species should be developed. The plan should include the following:
- a list of all observers associated with the project (names, credentials, qualifications, contact information and a description of their observation experience conducting nighttime and/or daytime marine monitoring work);
 - the equipment used to aid in observation (e.g. polarized sunglasses, binoculars, etc.);
 - the length of work shifts for the observers and proposed break times;
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 - a description of where the observer will be located during work and how they will cover the areas required, including specifics on the position(s) of the nighttime observers and proximity to the dredging equipment.

In addition, the plan should note if observers are in elevated positions to maximize visibility or observing from land based position. The location description should include the position of tugboats and crew vessels if mooring to the dredge. All observers should have significant on-the job experience observing protected marine species during dredge operations. Manatee observers working at night-time should take a synchronized, 30 minute break immediately following four (4) consecutive and continuous hours of manatee observation. If the required number of observers is not available to observe in water work, then dredging will need to cease while observers are on break.

Appropriate experience should be demonstrated through documented experience as an observer that has monitored marine animals and their behaviors in association with in-water construction projects. After the agencies review the plan, observer's modifications or suggestions for improvements to the measures may be required.

- c. All on-site project personnel are responsible for observing water-related activities for the presence of manatees. If a manatee is sighted within 100 yards of the project area, all appropriate precautions should be implemented by the contractor to ensure protection of the manatees. All in-water activities, including vessel operation, must be shut down if a manatee comes within 50 feet of the active construction site during daytime hours. Activities will not resume until the manatee has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee has not reappeared within 50 feet of the operation. During nighttime dredging (nighttime should be defined as one half hour before sunset and one half hour after sunrise), all moving equipment and construction activities should cease if a manatee moves closer than 75 feet from such equipment or the project area. Activities will not resume until the manatee has moved beyond the 75-foot radius of the project operation, or until 30 minutes elapses if the manatee has not reappeared within 75 feet of the operation. Animals must not be herded away or harassed into leaving.

- d. During nighttime dredging operations, dredging equipment will use lights to illuminate the water surface sufficiently to permit observation of manatees within 75 to 100 feet of the operation hoist line (clam bucket cable). The lighting system should be assessed for compliance prior to commencement of nighttime dredging activities. Nighttime operations should not commence or continue if at any time lighting is not considered effective by the observer or if lighting does not comply with the above requirements.
- e. Observers: When in-water work is being performed or vessels are moving, all required dedicated observers must be on site during all in-water construction activities. For dredging operations, the observer(s) should be positioned to clearly observe the point of entry and exit of dredging equipment as well as the waters surrounding the operation to a radius of 100 feet around the entry/exit point. During nighttime hours (nighttime should be defined as one half hour before sunset and one half hour after sunrise), the contractor should provide at least three dedicated marine animal observers on site during all in-water construction activities. The protected marine animal observers must be on site during all in-water construction activities and should advise personnel to cease operation upon sighting a manatee within 50 feet of any in-water construction activity (75 feet for nighttime work). If dedicated observers determines that weather conditions will prevent detection of manatees during work, operations will cease until conditions improve.
- f. Observers should maintain daily logs detailing sightings, collisions, or injuries to protected marine animals, as well as project specific information as such when each observer took a break and maintain for how long, as work itinerary, weather and non-weather related work shutdowns, shift changes, etc. For manatee behavior, observers should log time of observance, estimated distance of the manatee related to the work area, type of behavior (passing through, pausing in the project vicinity, interaction with equipment or vessels, etc.), and construction activity during the observation. During the first week of dredging operations, the contractor should ensure that copies of the daily logs are submitted after the first week of work to the Service (Marelisa Rivera email: marelisa_rivera@fws.gov) and to the appropriate Corps contact. After the first week, the contractor should ensure that copies of the daily logs are submitted on a monthly basis to the Service and appropriate Corps contact.
- g. All vessels associated with the project construction will operate at “no wake/idle” speed while in shallow waters (10 feet or less) and vessels will follow routes of deeper water whenever possible.
- h. Any collision with and/or injury to a manatee shall be reported immediately to the Department of Natural and Environmental Resources Law Enforcement (787-724-5700) and the USFWS Caribbean Ecological Services Field Office (787-851-7297).
- i. The permit holder and/or contractor shall have temporary manatee signs in all project related vessels as recommended by the following guidelines:

- Signs must be placed in prominent locations within the vessels for maximum visibility, for example, in the vessel controls area. Permittee may also consider placing temporary signs in areas such as dock walkways, dock master offices, near restrooms or other high patron foot traffic areas.
- Signs must be replaced when faded, damaged or outdated.
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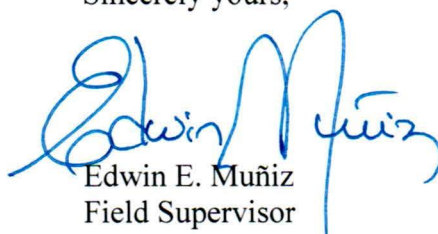
- j. The preceding measures will be revised if adverse impacts to manatees occur during their proper implementation, or to reflect new information on the species or protective measures relevant to the continued adequacy of those measures during dredging operations.

Provided that the all manatee conservation measures outlined in the CAR report, and replicated in this letter, are implemented, the Service concurs with the Corps determination that the proposed project may affect, but is not likely to adversely affect the Antillean manatee. If blasting would occur as part of the project, the Corps will need to re-initiate consultation with the Service in order to incorporate additional measures to avoid and minimize blasting effects on the manatee and its habitat.

Furthermore, the BA provided by the Corps did not include a determination for federally listed nesting sea turtles that may occur in the San Juan Bay. In the CAR report, the Service identified the Esperanza peninsula, Isla Cabra and other small pocket beaches that could provide suitable nesting habitat for sea turtles. Nevertheless, the proposed project action area is well outside these potential nesting areas and thus, we do not anticipate significant adverse effects on any of the potential nesting sea turtles or their nests from the proposed project.

If you have any questions or require additional information, please contact Marelisa Rivera at 787-851-7297 ext. 206, Félix López at 787-851-7297 ext. 210, or Jan P. Zegarra at 787-851-7297 ext. 220. You may also visit our website <http://www.fws.gov/caribbean/ES> for additional information on threatened and endangered species.

Sincerely yours,



Edwin E. Muñiz
Field Supervisor

jpz

cc:

COE, San Juan

USCG, San Juan

NMFS, San Juan

DNER, San Juan

Ports Authority, San Juan