



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
ANTILLES OFFICE
FUND. ANGEL RAMOS ANNEX BLDG., SUITE 202
383 F. D. ROOSEVELT AVE.
SAN JUAN, PUERTO RICO 00918

Regulatory Division
South Branch
Antilles Permits Section

October 1, 2019

PUBLIC NOTICE

Permit Application No. SAJ-2019-03166(SP-CGR)

TO WHOM IT MAY CONCERN: The Jacksonville District of the U.S. Army Corps of Engineers (Corps) has received an application for a Department of the Army permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. §1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403) as described below:

APPLICANT: Ms. Tania Vázquez
Secretary, Department of Natural and Environmental Resources
P.O. Box 366147
San Juan, Puerto Rico 00936

WATERWAY AND LOCATION: The project would affect waters of the United States associated with Arrecifes de la Cordillera Natural Reserve, Atlantic Ocean. The project site is located at the east of Palominos Island, near Bajo Blake, and to the east of the Municipality of Fajardo, Puerto Rico.

Directions to the site are as follows: From San Juan take the Baldorioty de Castro Avenue to Carolina, exit at expressway PR-66 to Fajardo, turn right at State Road PR-3, turn left at road PR-194 and turn left at road PR-195 toward the old Fajardo's Ferry Ports Terminal. The project site is located to the east of Palominos Island. The accessibility is only by boat.

APPROXIMATE CENTRAL COORDINATES: Latitude 18.34042°
Longitude -65.53912°

Coordinates of the four corners of the footprint of proposed artificial reefs:

	Latitude	Longitude
ID AC1	18.340552°	-65.539257°
ID AC2	18.340551°	-65.538973°
ID AC3	18.340281°	-65.539259°
ID AC4	18.340280°	-65.538975°

PROJECT PURPOSE:

Basic: Artificial Reefs

Overall: To enhance rugosity of the sea bottom, production and aggregation of sport fish species, and increase settlement of coral larvae and other marine biota.

EXISTING CONDITIONS: The proposed site is located within the Arrecifes de la Cordillera Natural Reserve. The sea bottom consists totally of sand substrate and the depth at the project site is - 60 feet. A 25 artificial reef ball (identified as Blake 3) on sandy bottom at a depth of - 60 feet, and covering an area of approximately 900 square meters is near the proposed site, between Isla Palominos and Bajo Blake, that was installed by the applicant in the past.

PROPOSED WORK: The applicant seeks authorization to install eighty (80) units of artificial reefs structures using a “pyramid shaped structure”. The 80 units will be arranged in ten (10) rows of eight (8) units each and will be placed at a distance of 1.7 meters between each unit structure. These artificial reefs modules are 1.82 meters long by 1.52 meters high and 1.82 meters wide, and will consist of a low ph and 5,000 psi with microsilica concrete layers, and interconnected holes with different diameters weighting approximately 5,200 pounds. All modules will have a hole not less than 36-inch diameter at the top to allow sea turtles to escape or exit easily. The artificial reefs structures will be assembled in single set and will be situated at 40 meters to the western part of the existing artificial reefs structures. The proposed artificial reef complex will cover an area of approximately 900 square meters (0.22 acres), and the total area of the clearance and bounding area is approximately 2,745 square meters (0.67 acres). The distance from the top of the artificial reefs structures to the water surface is 55 feet. This project is funded by a federal aid grant from the US Fish and Wildlife Service.

The proposed artificial reef structures will be placed on the sea bed using a crane, which will be located on a barge. The barge and applicant's guide boat (use to indicate exact location areas and to patrol the area) will not anchor at any time. The structures will be placed on the sea bed and will not be thrown from the surface to prevent it to fall into another area. If it is necessary to relocate any of the structures, compressed air lifting bags would be used to float the structure and complete the job. The areas selected to place the structures will have both bottom and surface markers to easily find their location and ensure the exact positioning of the structures on site in one working day. Once in the right location, the artificial reef structures will be anchored to the sandy bottom using Helix brand anchors. One Helix Jr. size anchors will be installed on each side of the 10 rows of artificial reefs for a total of 20 anchors. These anchors will be joined together at each reef set with a half-inch diameter galvanized chain. The 20 Helix Jr. Anchors will be screwed into sandy sea substrate. The installation of the proposed structures would take approximately two or three weeks.

AVOIDANCE AND MINIMIZATION INFORMATION – The applicant has provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment:

The artificial reefs structures will be constructed on land and transported to the shoreline of Fajardo where they will be placed on a barge for transportation to the project site. These structures will be placed always on seabed and will not be thrown from the surface to prevent its fall into another area. If there is a need to relocate any of the structures, compressed air lifting bags will be used to float the unit to avoid dragging of the structures on the seabed and preventing unwanted movement of sediments in the water column.

COMPENSATORY MITIGATION – The applicant has provided the following explanation why compensatory mitigation should not be required:

Due to the nature of the project, which is to provide new maritime habitat that enhance the aggregation and production patterns of marine fishes.

CULTURAL RESOURCES: The lead federal agency is the US Fish and Wildlife Service to ensure compliance with Section 106 of the National Historic Preservation Act (NHPA).

ENDANGERED SPECIES: The lead federal agency to determine compliance with Section 7 of the Endangered Species Act is the US Fish and Wildlife Service.

ESSENTIAL FISH HABITAT (EFH): The U.S. Fish and Wildlife Service is the lead federal agency to determine compliance with the essential fish habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

NOTE: This public notice is being issued based on information furnished by the applicant. This information has not been verified or evaluated to ensure compliance with laws and regulation governing the regulatory program.

AUTHORIZATION FROM OTHER AGENCIES: A Water Quality Certification is required from the Department of Natural and Environmental Resources. A Coastal Zone Federal Consistency Certificate with the Puerto Rico Coastal Zone Management Plan is required from the Puerto Rico Planning Board.

COMMENTS regarding the potential authorization of the work proposed should be submitted in writing to the attention of the District Engineer through the Antilles Permits Section, Fund. Angel Ramos Annex BLDG. Suite 202, 383 F.D. Roosevelt Ave. San Juan, Puerto Rico 00918 within 30 days from the date of this notice.

The decision whether to issue or deny this permit application will be based on the information received from this public notice and the evaluation of the probable impact to

the associated wetlands. This is based on an analysis of the applicant's avoidance and minimization efforts for the project, as well as the compensatory mitigation proposed.

QUESTIONS concerning this application should be directed to the project manager, Ms. Carmen G. Román, in writing at the Antilles Permits Section, Fund. Angel Ramos Annex BLDG. Suite 202, 383 F.D. Roosevelt Ave. San Juan, Puerto Rico 00918; by electronic mail at carmen.g.roman@usace.army.mil; by telephone at (787) 729-6637.

IMPACT ON NATURAL RESOURCES: Coordination with U.S. Fish and Wildlife Service, Environmental Protection Agency (EPA), the National Marine Fisheries Services, and other Federal, State, and local agencies, environmental groups, and concerned citizens generally yields pertinent environmental information that is instrumental in determining the impact the proposed action will have on the natural resources of the area.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including cumulative impacts thereof; among these are conservation, economics, esthetics, general environmental concerns, wetlands, historical properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food, and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people. Evaluation of the impact of the activity on the public interest will also include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act or the criteria established under authority of Section 102(a) of the Marine Protection Research and Sanctuaries Act of 1972. A permit will be granted unless its issuance is found to be contrary to the public interest.

The US Army Corps of Engineers (Corps) is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other Interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this determination, comments are used to assess impacts to endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

COASTAL ZONE MANAGEMENT CONSISTENCY: In Florida, the State approval constitutes compliance with the approved Coastal Zone Management Plan. In Puerto Rico, a Coastal Zone Management Consistency Concurrence is required from the Puerto Rico Planning Board. In the Virgin Islands, the Department of Planning and

Natural Resources permit constitutes compliance with the Coastal Zone Management Plan.

REQUEST FOR PUBLIC HEARING: Any person may request a public hearing. The request must be submitted in writing to the District Engineer within the designated comment period of the notice and must state the specific reasons for requesting the public hearing.

Figure 1: Proposed site for the project



Figure 4: Nautical Map showing the distance from the proposed area to Palomino Island & the East coast of Fajardo Puerto Rico.

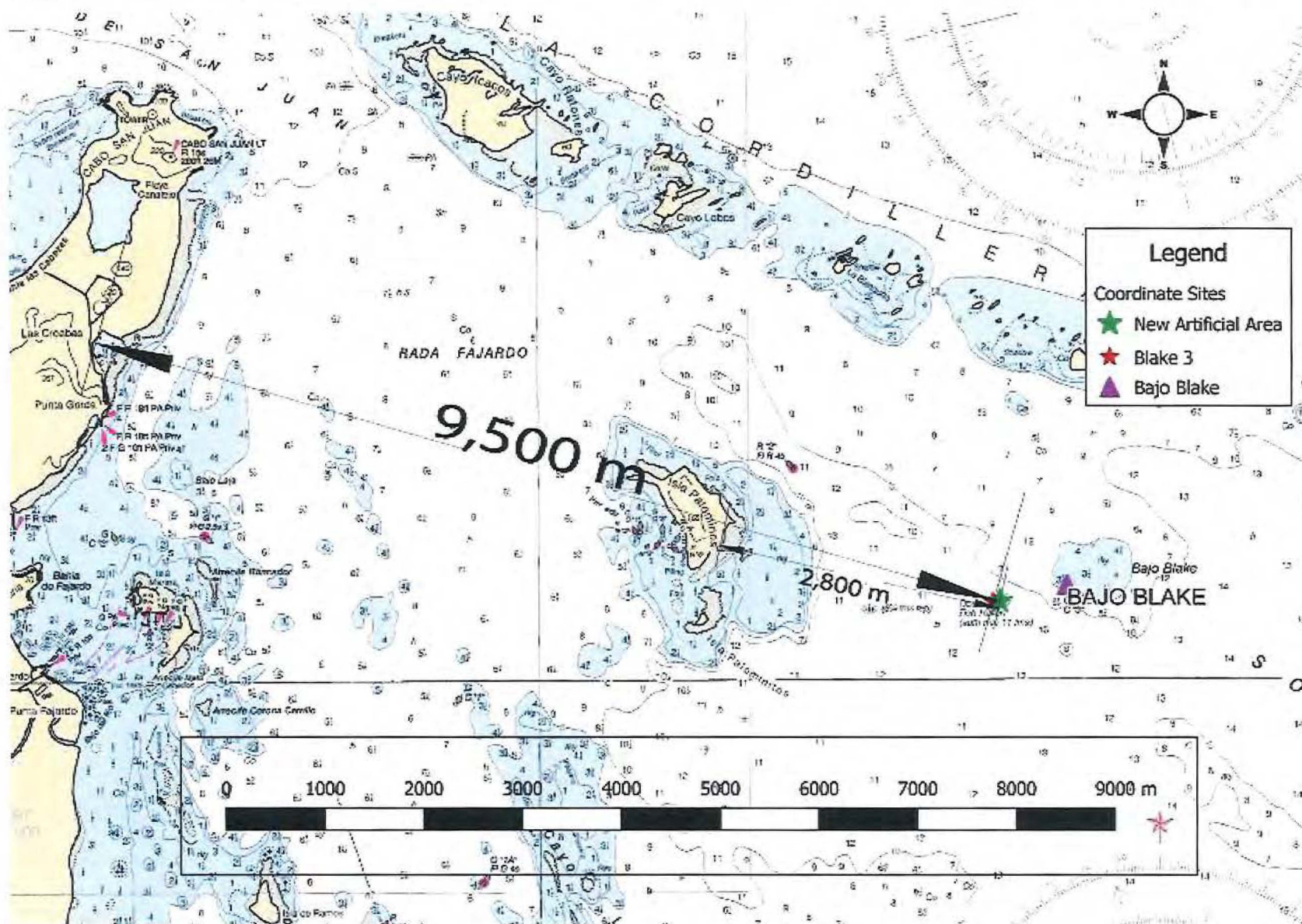


Figure 5: Aerial image showing the area with existing artificial reefs & the proposed area (WGS84)

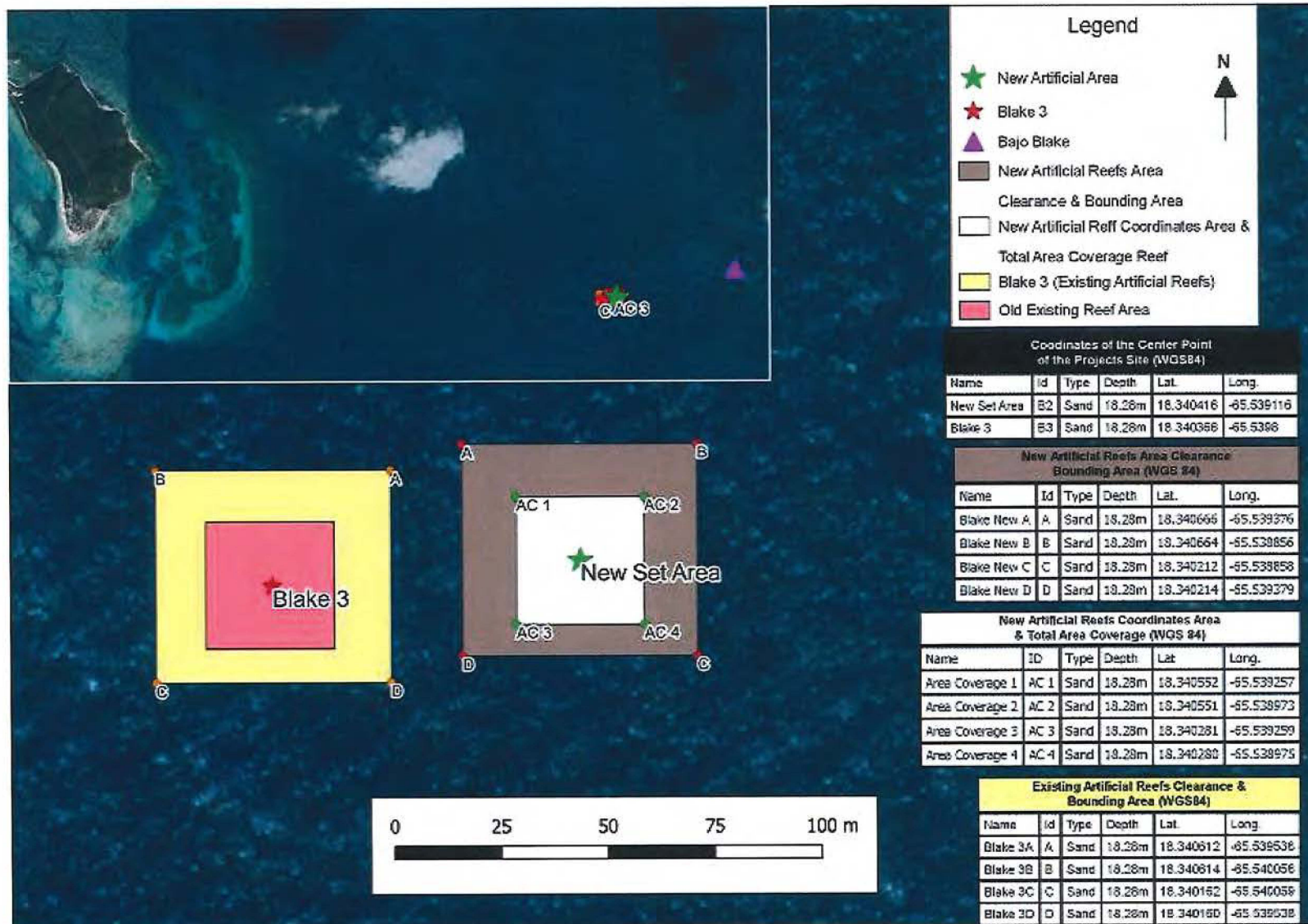


Figure 6: Nautical chart showing the area with existing artificial reefs & the proposed area (WGS84)

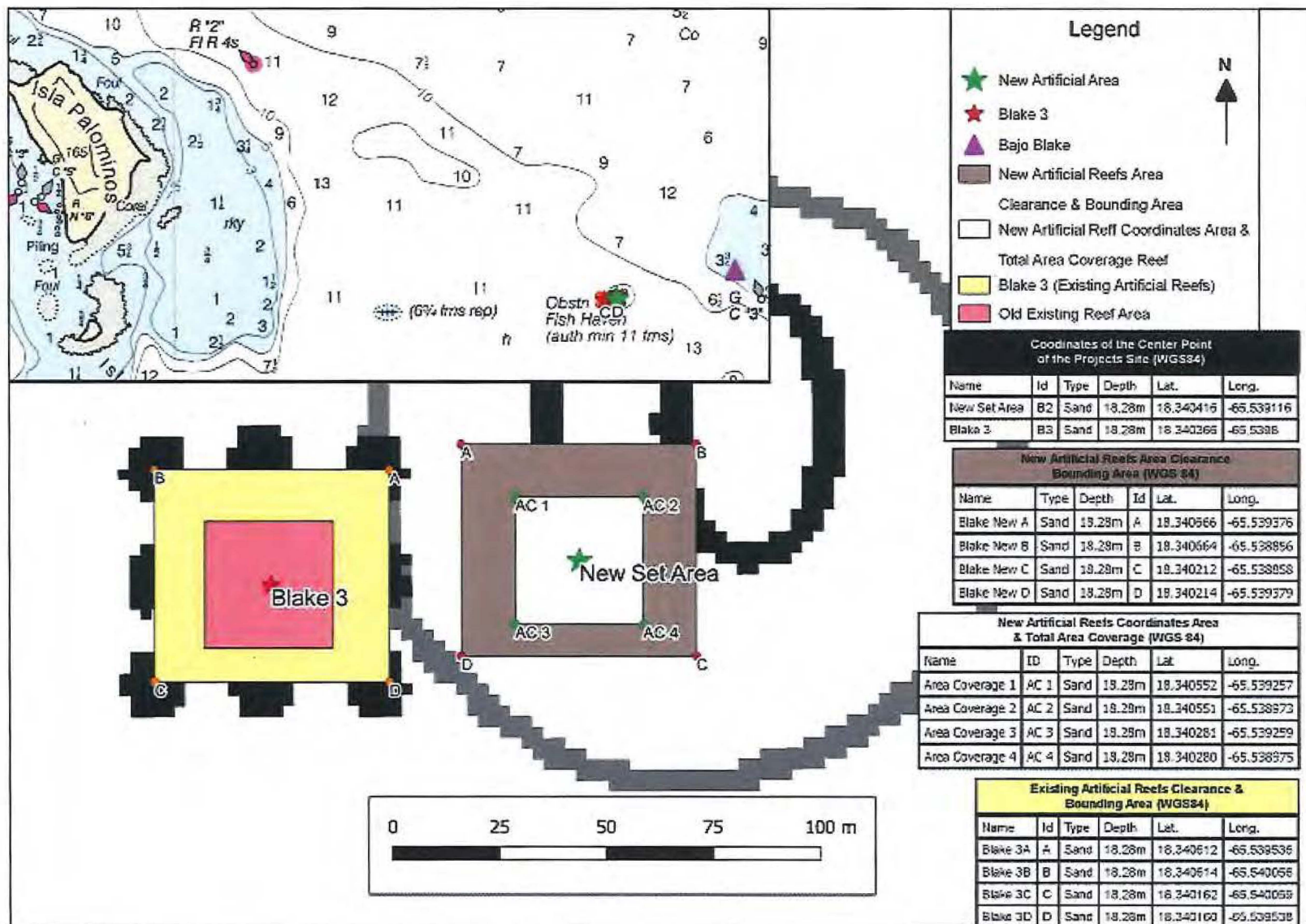


Figure 7: Nautical chart showing the area with existing artificial reefs & the proposed area (NAD83 (2011))

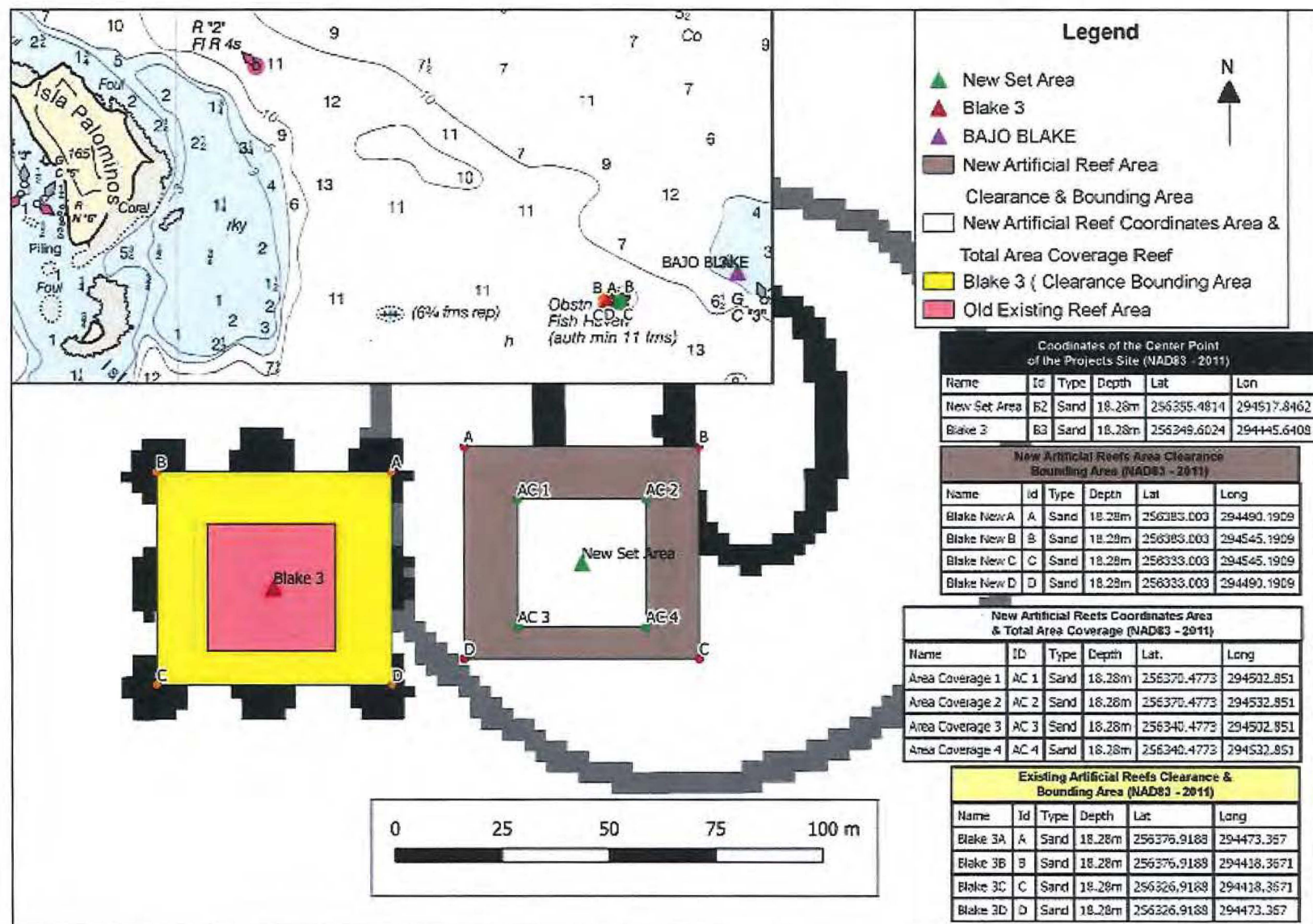


Figure 8: Image of the pyramid artificial reef

(Source: http://www.sagarpa.gob.mx/Delegaciones/colima/boletines/PublishingImages/20151211_123003_resized.jpg)



Figure 9: Schematic & design of the pyramid artificial reef

Artificial Reef Pyramid

2.76 m²

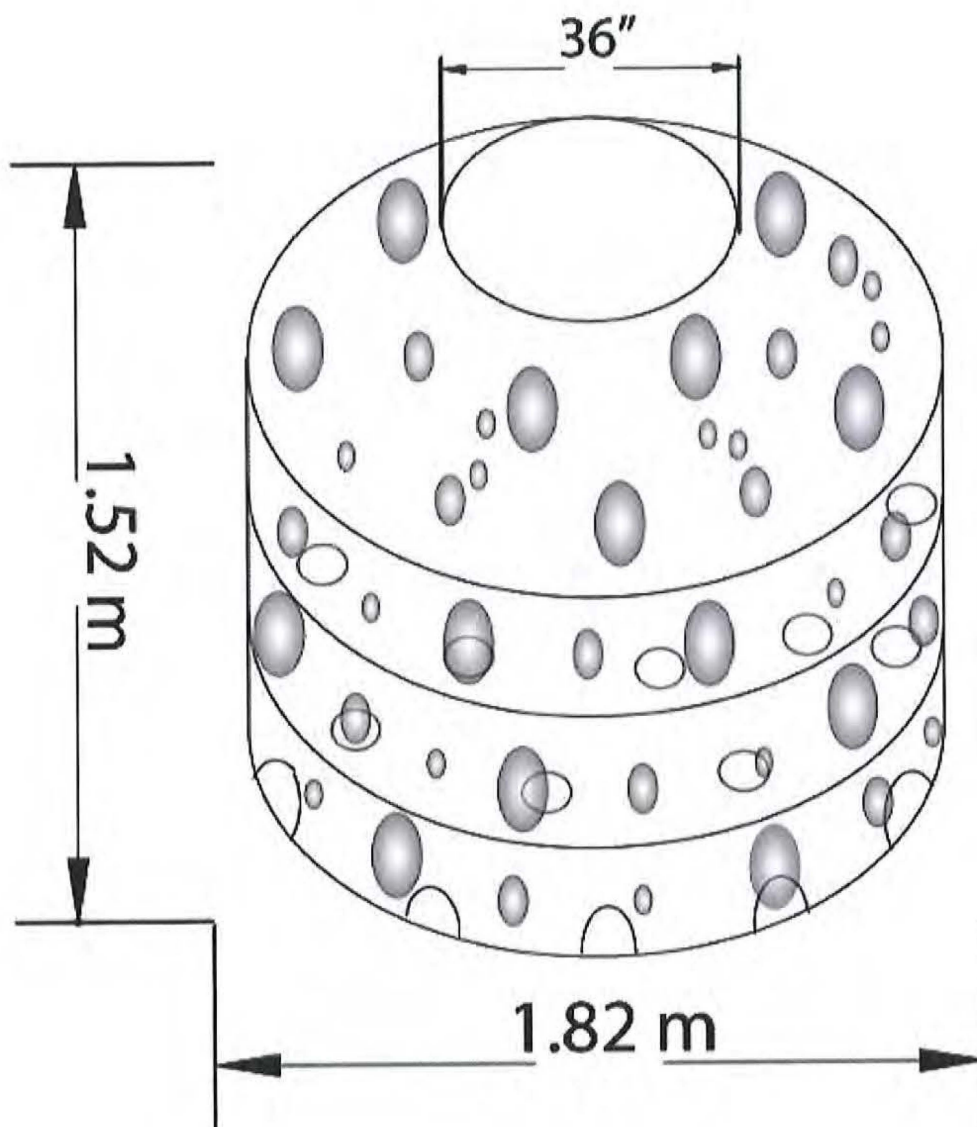


Figure 10: Desing For Artificial Benthic Habitat Deployment for East of Palomino Island in Arrecifes de la Cordillera Natural Reserve (Figure in colors)

Design for Artificial Benthic Habitat Deployment for East of Palomino Island in Arrecifes de la Cordillera Natural Reserve in Fajardo, Puerto Rico

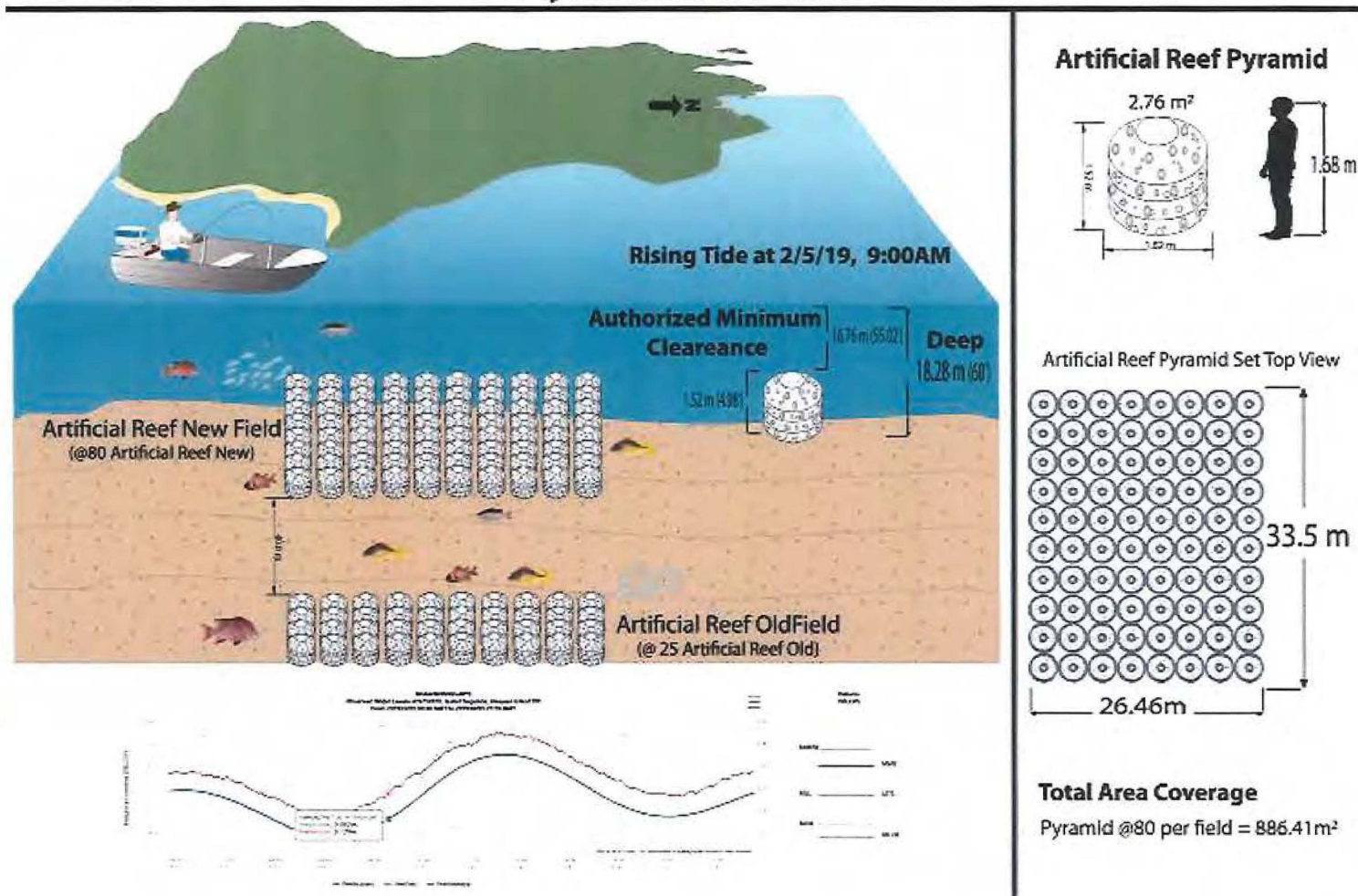


Table 1: Showing the coordinates of the four corners of the clearance or bounding area of the existing fish haven or artificial coral reefs (Blake 3)

Name	ID	Lat/Long WGS84	Lat/Long WGS84	Lat/Long NAD83	Type of bottom	Depth
Blake 3A	A	18 20.437N 65 32.372W	18.340612N -65.539536W	256376.9188N 294473.367W	Sand	18.28m
Blake 3B	B	18 20.437N 65 32.403W	18.340614N -65.540056W	256376.9188N 294418.3671W	Sand	18.28m
Blake 3C	C	18 20.410N 65 32.404W	18.340162N -65.540059W	256326.9188N 294418.3671W	Sand	18.28m
Blake 3D	D	18 20.410N 65 32.372W	18.340160N -65.539538W	256326.9188N 294473.367W	Sand	18.28m

Table 2: Showing the coordinates of the four corners of the clearance or bounding area of the proposed fish haven or artificial coral reefs.

Name	ID	Lat/Long WGS84	Lat/Long WGS84	Lat/Long NAD83	Type of bottom	Depth
Blake new A	A	18 20.440N 65 32.363W	18.340666N -65.539376W	256383.003N 294490.1909W	Sand	18.28m
Blake new B	B	18 20.440N 65 32.331W	18.340664N -65.538856W	256383.003N 294545.1909W	Sand	18.28m
Blake new C	C	18 20.413N 65 32.331W	18.340212N -65.538858W	256333.003N 294545.1909W	Sand	18.28m
Blake new D	D	18 20.413N 65 32.363W	18.340214N -65.539379W	256333.003N 294490.1909W	Sand	18.28m

Table 3: Showing the coordinates of the four corners of the coverage or footprint area of the proposed fish haven or artificial coral reefs.

Name	ID	Lat/Long WGS84	Lat/Long WGS84	Lat/Long NAD83	Type of bottom	Depth
Coverage Area or Footprint	AC 1	18 20.433N 65 32.355W	18.340552N -65.539257	256370.4773N 294502.851 W	Sand	18.28m
Coverage Area or Footprint	AC 2	18 20.433N 65 32.338W	18.340551N -65.538973W	256370.4773N 294532.851 W	Sand	18.28m
Coverage Area or Footprint	AC 3	18 20.417N 65 32.356W	18.340281N -65.539259W	256340.4773N 294502.851 W	Sand	18.28m
Coverage Area or Footprint	AC 4	18 20.417N 65 32.338W	18.340280N -65.538975W	256340.4773N 294532.851 W	Sand	18.28m

MOORING ANCHORS FOR BOATS & FLOATING DOCKS

HELIX JR.® MODELS AVAILABLE

- H0648 - 6" Helical Disk, on 3/4" Diameter Shaft, 48" Long
- H0848 - 8" Helical Disk, on 1" Diameter Shaft, 48" Long
- H0866 - 8" Helical Disk, on 1" Diameter Shaft, 66" Long
- H1066 - 10" Helical Disk, on 1 1/4" Diameter Shaft, 66" Long

All models have a solid forged eye to provide a secure connection point for mooring gear.

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HELIX JRS. are being used around the world for:

- Boat moorings
- Floating docks
- Aquaculture equipment



Installation is easiest using a large pipe wrench and/or turning bar to gain leverage. Place pipe wrench around anchor shaft and begin screwing mooring anchor into the soil. As resistance builds, a turning bar provides more leverage. Screw the mooring anchor into the soil until the forged eye is at or just below the soil surface.

***NOTE:** Softer soils provide less holding, up-size your anchor selection when installing in softer soil. These holding guidelines are based on actual load tests and measured break-out forces. They are intended to help you select the proper HELIX JR. model for your intended application, soil quality, and site conditions. Requirements can vary considerably depending on boat design, harbor, weather conditions, and soil type. Consider soil, exposure, and worst case weather when making your HELIX JR. model selection.

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Helix Mooring Systems Inc assumes no responsibility for property damage or personal injury related to the model selection or the use of the HELIX JR.

Figure 9. Helix Jr. Anchor System.