

# The Coral Reef Conservation and Management Program of the Department of Natural and Environmental Resources (DNER) CORAL REEF MANAGEMENT PRIORITIES 2017-2022

By:

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For:



# FINAL DRAFT

## Puerto Rico's Coral Reef Management Priorities

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## INTRODUCTION

The purpose of this priority setting document is to articulate a set of strategic coral reef management priorities developed with input and participation of local stakeholders in Puerto Rico. The Coral Reef Conservation and Management Program of the Department of Natural and Environmental Resources (DNER) will use this document to direct, promote and support investment in activities throughout Puerto Rico. The DNER will make the document available to the public to facilitate project development and encourage leveraging and new or expanded partnerships to build common coral reef conservation goals based on Puerto Rico's management priorities. The initial effort was funded by the NOAA Coral Reef Conservation Program (NOAA CRCP) NGO partnership cooperative agreement with The Nature Conservancy.

This priority setting process used the previous Puerto Rico Coral Reef Management Priorities 2010-2015 as a foundation for the update. The DNER recognizes the need to continually revisit these management priorities to reflect current needs, threats, impacts and opportunities for continuous proper coral reef management. The Coral Reef Conservation and Management Program of the Department of Natural and Environmental Resources invited local stakeholders to open meetings to conduct a dialogue on the development of strategies for conservation and management of coral reefs in Puerto Rico. In August 2016, the Puerto Rico Coastal Zone Management Program hosted the "Evaluation and Recommendations for Local Action Strategies of the Management Program Coral Reef 2016-2020 workshop" that allowed the DNER Coral Program to evaluate the past strategies and their current relevance. Three meetings were held throughout Puerto Rico on February 17, 2017 in Rio Grande, March 10, 2017 in Rincon, and March 24, 2017 in San Juan, to facilitate and maximize stakeholder participation. In addition a coral reef ecosystem experts meeting was held on January 2017 in Guanica, focused on technical and scientific aspects of updating Puerto Rico's coral reef management priorities.

The purpose of the meetings was to create a dialogue with participants to inform the current review of management priorities and strategies for the Puerto Rico Coral Reef Conservation Program in relation to the conservation, management and research of this marine ecosystem and resource.

The meeting objectives were:

- To continue evaluating and updating the DNER Coral Reef Conservation Program strategies as a follow-up to the effort already made during the Evaluation and Recommendations for Local Action Strategies of the Management Program Coral Reef 2016-2020 workshop.
- To discuss information needs, gaps and projects for the management of Puerto Rico's coral reefs and to guide the Program strategies to become more effective conservation implementation projects.

During each meeting, productive conversations and insights were provided and extensive notes were taken that will be reflected in the updated coral reef management priorities in this document.

# **PRIORITIZATION PROCESS:**

## PRIORITIZATION PROCESS

This document captures the set of priorities discussed with stakeholders at the priority setting meetings. In preparation for the workshop, previously identified goals and objectives were taken from current management documents and presented in the meetings. During the discussion on management priorities, the following core issues were raised as the focus:

- coral reef threats,
- condition and trends;
- key management issues;
- key agencies and
- funding opportunities.

During the process, challenges and deficiencies in achieving stated goals and objectives were identified, noting specifically that no metrics were identified and in many cases objectives were written as specific actions. Participants commented that a guiding priorities document should be clear and simple. Additionally, it was also identified by several stakeholders that many of the objectives overreached the DNER's authority, and thus was predetermining many of the objectives to failure. This information has served to improve the updated priorities in such a way that the new goals and objectives will be clear and their success measurable. For the purpose of this document goals and objectives will be defined by the following definitions:

**Goal:** an overarching principle that guides decision making.

**Objective:** specific, measurable, achievable, realistic actions that can be taken to meet the goal.

This document presents the set of goals and objectives for the Coral Reef Conservation and Management Program of the Department of Natural and Environmental Resources (DNER). **The priority goals identified have a five to seven-year time frame.**

The Coral Reef Conservation and Management Program of the DNER looks forward to these priority goals and objectives to guide funding allocations for management activities, actions and projects. The DNER understands and respects the flexibility required in implementing complex conservation and management programs and hope to draw a wide range of collaboration throughout the public and private sectors.

The top priority issue areas—as identified by the workshop participants—to address current needs are: 1. Water Quality Affecting Coral Reef Ecosystems/ Impacts from Land Based Sources; 2. Sustainable Fisheries/ Fisheries Impacts; 3. Other Human Impacts to Coral Reef Ecosystems; 4. Ecosystem Resilience/ Climate Adaptation; 5. Sustainable Finance Mechanisms; 6. Education and Outreach; 7. Emerging topics and Coral Reef Ecosystem Integrity.

# **STRATEGIC CORAL REEF MANAGEMENT PRIORITIES 2017-2022:**

**Strategic Coral Reef Management  
Priorities: This section presents the  
framework of goals and objectives**



## **DRAFT STRATEGIC CORAL REEF MANAGEMENT PRIORITIES**

This section presents the priorities for management action for the Coral Reef Conservation and Management Program of the Department of Natural and Environmental Resources (DNER). These priority goals and objectives will guide management activities. Goals are listed below Issue Areas, meant to provide the overall target for the particular goal and objective set.

### **Issue Area 1. Water Quality Affecting Coral Reef Ecosystems/ Impacts from Land Based Sources.**

**GOAL 1A.** Implement land-use planning at the watershed scale to minimize water quality impacts to the coral reef ecosystem.

Objective: Work with public and private landowners to increase participation in the forest stewardship program and develop management plans for land use and conservation.

Objective: Identify properties eligible for participation in the forest stewardship program in areas that have direct impacts on Coral Priority areas

Objective: Develop/update and implement watershed management action plans for areas impacting coral priority areas.

Objective: Identify, map and prioritize watersheds associated to reef ecosystems throughout Puerto Rico.

**GOAL 1B.** Control and reduce pollutants transport to the marine environment.

Objective: Identify and prioritize coastal and upland areas associated with priority coral reef areas for land acquisition, preservation, protection and restoration, and management actions such as important watershed areas or buffer areas adjacent to protected areas.

Objective: Identify and Prioritize degraded coastal natural areas with restoration potential, particularly mangrove habitat, coastal wetlands and estuaries.

Objective: Development and implement management actions to restore degraded coastal habitats that directly impact coral reefs.

Objective: Support the effective management of existing protected areas (such as natural reserves, state forests, and national park and wildlife refuges) within or adjacent to priority coastal areas, including the development and implementation of management plans.

Objective: Measure the effectiveness of management actions through baseline and performance monitoring to assess success and adapt management actions as needed.

Objective: Build partnerships with local and federal government agencies, community groups and non-governmental entities to decrease/minimize impacts from land-based sources and to implement coral reef program management priorities.

## **Issue Area 2. Sustainable Fisheries/ Fisheries Impacts**

### **GOAL 2A.** Reduce fisheries impacts on coral ecosystems.

Objective: Evaluate the impact of fishing gear used in commercial and recreational fisheries.

Objective: Evaluate, assess and establish catch limits for coral reef species that have critical ecosystem roles.

Objective: Identify and map areas of importance for commercial and recreational fisheries.

### **GOAL 2B.** Enhance the fisheries data collection programs.

Objective: Support the development and implementation of electronic reporting and monitoring technologies for commercial and recreational fisheries.

Objective: Support cooperative research programs between commercial and recreational fishers and Academia, NGO and other sectors.

Objective: Increase efforts to collect socioeconomic data from commercial and recreational fisheries sectors.

Objective: Identify commercial fisheries supply chains to improve local seafood traceability.

### **GOAL 3B.** Promote sustainability in Puerto Rico's commercial and recreational fisheries.

Objective: Address management gaps in key coral reef associated species or functional groups (e.g. herbivores, apex predators, etc.).

Objective: Measure fishing intensity, fishing mortality, frequency, area coverage, community dependence in coral reef ecosystems to inform management activities.

Objective: Facilitate stakeholder participation in fisheries management planning, decision-making, and monitoring activities.

Objective: Support socio-economic research in the commercial and recreational fishing sectors.

Objective: Strengthen communication between scientists, managers and policy makers to protect key coral reef ecosystem species.

Objective: Identify and promote sustainable, best fishing practices for commercial and recreational sectors.

Objective: Support the development of guidelines and regulations for aquaculture projects. Develop appropriate requirements for both placement and operations to develop responsible sustainable aquaculture in Puerto Rico.

Objective: Build partnerships with local and federal government agencies, community groups and non-governmental entities to improve fisheries management.

### **Issue Area 3. Other Human Impacts to Coral Reef Ecosystems.**

#### **GOAL 3A.** Reduce the Impacts of recreational uses on coral reefs.

Objective: Identify, map and categorize specific areas for recreational use.

Objective: Develop and establish regulations to implement Law 147 with regards to the impacts from human uses.

Objective: Support coastal and marine spatial planning activities.

#### **GOAL 3C.** Understand and Reduce the Impact of Invasive species and Nuisance species.

Objective: Inventory all Invasive and nuisance species in order to map impacted areas, document invasive species impacts and develop possible management actions needed.

#### **GOAL 3D.** Restore former Military areas

**GOAL 3E.** Reduce the impact of vessel anchoring and boat grounding on seagrass beds and coral reefs.

Objective: Establish vessel use zones in priority coral reef areas by installing navigation and mooring buoys that demarcate different use zones and establish clear no-anchor zones.

Objective: Identify and prioritize removal of derelict, abandoned and sunken vessels.

#### **Issue Area 4. Ecosystem Resilience/ Climate Adaptation**

**GOAL 4A.** Increase coral reef ecosystem resiliency and adaptation capacity

Objective: Work with Puerto Rico Climate Change Council's Coral Reef Working Group to develop and implement management actions that address specific climates threats, adaptation strategies and resilience planning.

Objective: Identify areas of high diversity and live coral coverage for monitoring and active management and protection.

Objective: Implement coastal planning that addresses sea level rise and facilitates possible new development away from the coastline.

#### **Issue Area 5. Sustainable Finance Mechanisms**

**GOAL 5A.** Create and support new sustainable finance streams and mechanisms to fund coral reef management actions.

#### **Issue Area 6. Education and Outreach**

The Education and Outreach issue area is a transversal throughout all the goals and objectives. Outreach actions need to be incorporated into every project or activity concerning coral reef ecosystems. Additionally, a formal structured educational program for each issue area is also considered a priority.

**GOAL 6A.** Maintain land managers up-to date with information on coral reef status and trends, and connectivity concerns that relate to ridge to reef issues.

**GOAL 7A.** Integrate academic programs/Academic Institutions to the Coral Reef Program, to address research needs.

Objective: Develop a comprehensive catalog of coral reef ecosystem research gaps and needs.

**GOAL 8A.** Strengthen decision makers' knowledge and understanding of coral reefs importance and threats

### **Issue Area 7. Emerging topics and Coral Reef Ecosystem Integrity**

The Emerging topics and Coral Reef Ecosystem Integrity issue area will address critical subjects that arise and cannot be foreseen but merit management actions. Coral Reef Management is dynamic and many times new threats arise unexpectedly and require immediate management actions.

# CORAL REEF PRIORITY SITES



## **CORAL REEF PRIORITY SITES**

In the previous coral reef management prioritization process, Coral Priority sites were selected based on the following selection criteria:

- **Biological Value:** critical function (habitat value), diversity, abundance of habitat, endangered species.
- **Degree of Risk and Threat:** land-based sources of pollution, water quality, fishing pressures, human activities and climate change (disease and bleaching). To capture both high and low areas of threat, the group created two scales as noted below. This allowed for scores indicating high areas of threat, places that were absent (or near) absent of threats, or some mix of the two.
- **Viability:** existing management capacity and management plans, capacity (staff and infrastructure), existing monitoring, community support/activity and support (NGO and academic).

All of the sites on this list have been previously identified as important sites for coral reef conservation in Puerto Rico. The efforts undertaken between 08/2016-03/2017 did not update nor prioritize sites in order of importance. Table 1, below list the coral priority sites previously identified in no particular order. During the discussion, a point was raised by several participants that coral reef associated ecosystems such like Coastal Mangrove forests and Seagrasses should also be considered in the future for priority site selection. A general consensus in all meetings was that a priority site selection process should take place in the future. A suggestion was made that the area known as Playuela in Aguadilla be considered as a potential priority site.

**Table 1. Priority Coastal Management Sites**

Coral Priority Site
Culebra
North East Reserves
Cabo Rojo
Guanica and Marine Extension
Vieques
Parguera - Pitahaya
Desecheo/ Rincon
Caja de Muerto/ Derrunbadero
Mona
Mayagüez
Jobos
Cibuco/Vega Baja/Manati
Maunabo
Guayama Reefs
Isabela
Isla Verde

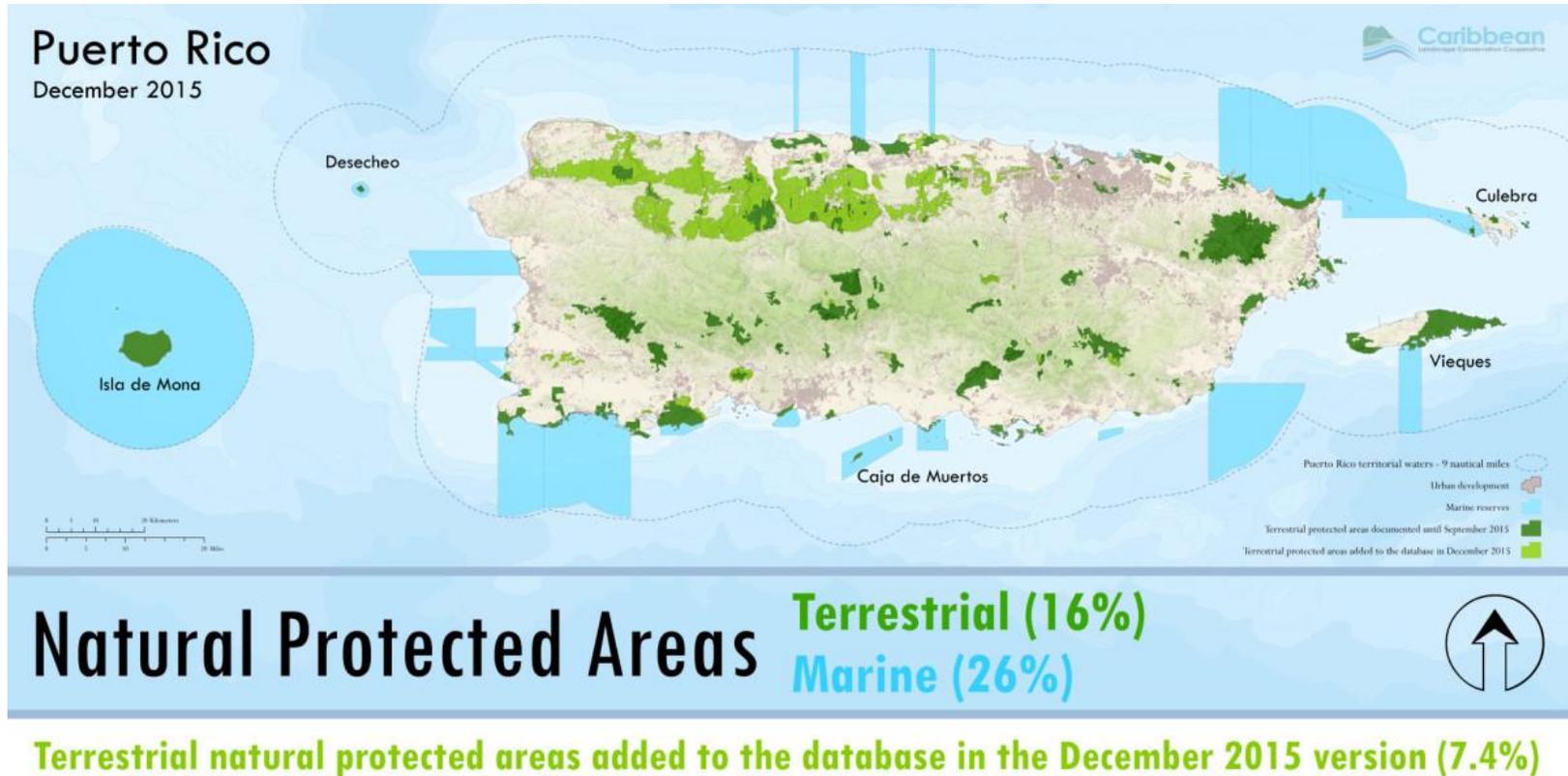


Fig. 1: Map of Puerto Rico identifying existing protected areas. (CLCC)

## References

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