



Marine Spatial Planning of Costa Rica's Pacific Exclusive Economic Zone



Introduction

This report summarizes the results of a quantitative analysis performed to identify the conservation-priority areas in Costa Rica's Pacific Exclusive Economic Zone (EEZ).

Currently, Costa Rica's Marine Protected Areas (MPAs) represent 2.7 % of its jurisdictional waters, a figure well below national and international conservation targets.

The identification of conservation-priority areas will serve as technical input for ordering the use and management of the waters surrounding Cocos Island National Park (CINP) and the Seamounts Marine Management Area (SMMA). The goal is to support decision making that benefits ecosystems, marine biodiversity, and all the ocean-using sectors: conservation, research, tourism, transportation and longline fishing.

1 The longline fishing data are from more than 10 years ago and are unrepresentative of the whole fleet.

Description of the planning proposal

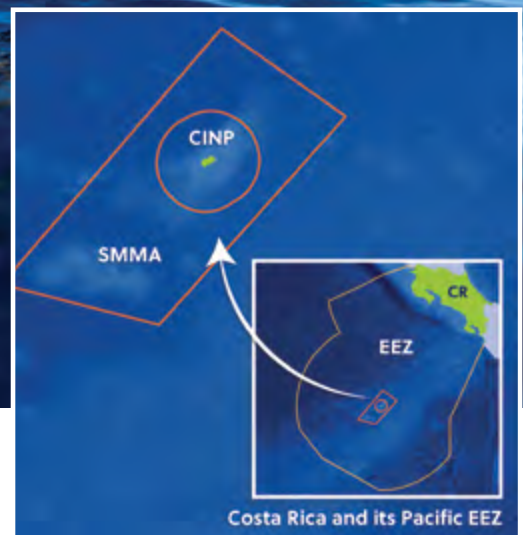
A systematic planning methodology for conservation was used to prioritize representative, complementary and efficient sites.

The tool that was used is called Marxan, and it finds optimal solutions to prioritizing important areas for conservation while 1) minimizing the socioeconomic costs that the conservation measures might have on ocean users and 2) achieving certain protection goals for each of the conservation objectives.

For this analysis, databases with information on Costa Rica's Pacific EEZ were researched, so data was compiled on biophysical habitats, presence of pelagic species (cetaceans, marine turtles, sharks, among others), purse-seine fishing, and longline fishing.¹

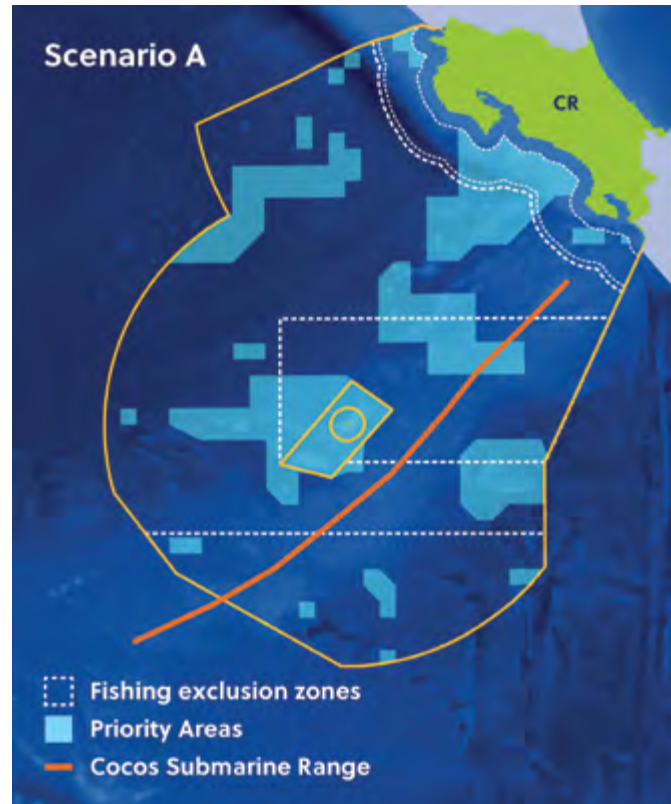


FAICO





DAVID GARCÍA/ ECODIVERS.COM



What results does the analysis show?

The program delivers at least 100 configurations that solve the conservation gap. Such solutions can be similar but also very different, depending on the spatial heterogeneity of the area. Therefore, the sum of all configurations indicates each area's importance to achieve efficient solutions.

In the initial proposal, several scenarios were analyzed with different conservation objects, representation goals, and costs. However, after presenting these findings to the Cocos Marine Conservation Area members and the Vice Ministry of Waters and Seas, the prioritized scenarios focused on tuna, shark, and seamount conservation.

Scenarios

A. Scenario A considers the following conservation targets:

- Decrease shark bycatch in purse-seine fishing by 30%.
- Decrease tuna catch in purse seine fishing by 30%.
- 100 % of seamounts taller than 3300 ft (1000 m).

The area covered in the A scenario priority area is 8 650 sq miles (126 000 km²), which corresponds to 23,8 % of the Costa Rican Pacific EEZ.

Other conservation targets included in these areas are:

- At least 12,5 % of all marine habitats in Costa Rica.
- 23 % of knolls (seamounts lower than 3300 ft/1000 m in height).
- 100 % of coral reefs.
- 100 % of hydrothermal vents.
- Reduce shark bycatch in purse-seine fisheries by approximately 40 %.
- Reduce manta ray and stingray bycatch in purse-seine fisheries by approximately 25 %.
- Protect at least 25 % of the habitats most used by cetaceans.
- Achieve representativeness of at least 20 % of suitable habitats for 14 pelagic species.
- Reduce the catch of sport fishing species (swordfish, sailfish, mahi-mahi, wahoo, and marlin) by 10 % to 35 %.

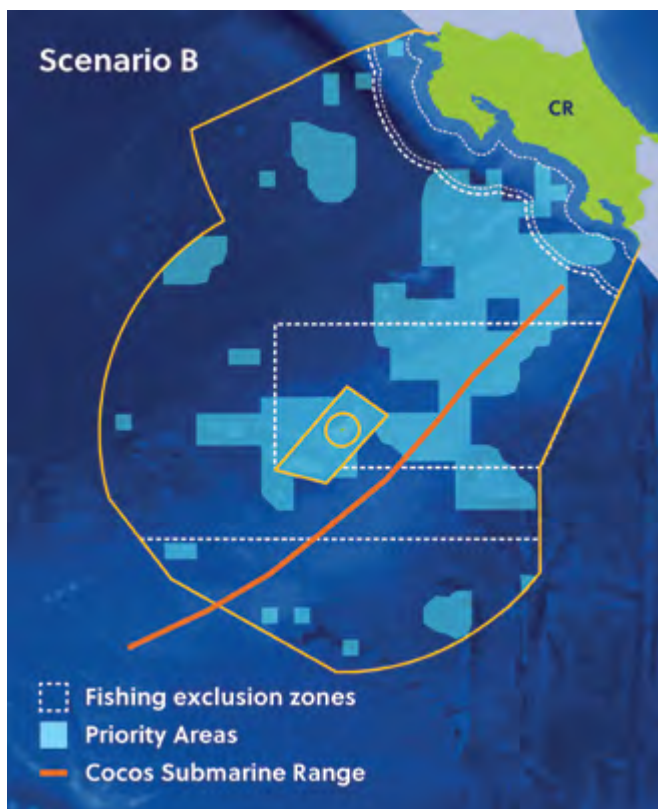
B. Scenario B considers the same conservation targets concerning tunas, sharks, and seamounts and the following target was added:

- 50 % of seamounts lower than 3300 ft (1000 m) in height (knolls).

The area covered in the B scenario priority area is 50965 sq miles (132 000 km²), which corresponds to 25 % of the Costa Rican Pacific EEZ.

Conclusions

- The conservation priority areas explored in the



different scenarios cover an area representing about 25% of the Costa Rican Pacific EEZ.

- The spatial distribution and dimension covered by the priority areas change in each scenario according to the representativeness targets of the different conservation goals.
- In most of the conservation scenarios, priority areas were identified around CINP and SMMA.

Recommendations

- For the conservation proposal to minimize any socioeconomic cost that the management measures may have for other ocean users (e.g., for the longline sector), it is necessary to have updated data on this fleet.
- This analysis can be complemented with more information, for example, longline fishing data and habitat connectivity data related to the movement of migratory species. For this, it is necessary to encourage the collection and analysis of data from national fishing fleets.
- These prioritization exercises should be integrated with other marine conservation and management initiatives like Migravías, Hopespots, and the Pelagic Platform.
- The sites identified as priority areas in this study are not linked to a specific management category. This should be decided in subsequent analyses, with the use of other types of information and methodologies.

FAICO benefits from the support of the Prince Albert II of Monaco Foundation. The Foundation's website address is: <http://www.fpa2.org>. This document was produced with the financial assistance of the Prince Albert II of Monaco Foundation. The contents of this document are solely the liability of FAICO/SINAC and under no circumstances may be considered as a reflection of the Prince Albert II of Monaco Foundation's position. The preparation of this summary is part of a cooperation agreement between Amigos Isla del Coco (FAICO), the National System of Conservation Areas (SINAC) and the Cocos Marine Conservation Area (ACMC). FAICO worked in coordination with the Government of the Republic of Costa Rica, through the Ministry of Environment and Energy (MINAE) and in conjunction with other environmental organizations for the benefit of the ACMC and the migratory species of the Eastern Tropical Pacific. This summary was based on the following study:

SINAC (Sistema Nacional de Áreas de Conservación). 2020. Priorización para zonificar la Zona Económica Exclusiva del Pacífico de Costa Rica con base en objetos de conservación y usos. Área de Conservación Marina Cocos. San José, Costa Rica. 64 p