



- CCC CARRIED OUT AN ASSESSMENT OF THE REEFS IN THE COASTAL WATERS OF BARANGAY DINAHUGAN JULY AND AUGUST 2016



- THE REEF IS DEMONSTRATING CLEAR SIGNS OF ANTHROPOGENIC IMPACTS WITH HIGH LEVELS OF DISCARDING FISHING TRASH BUT HARD SUBSTRATES WERE PRESENT SUGGESTIVE THAT OFFICIAL PROTECTION COULD RESULT IN CLEAR BENEFITS



- ELECTRONIC AND HARD COPIES OF THE FULL TECHNICAL REPORT ARE AVAILABLE FROM OUR PROJECT SCIENTIST

Barangay Dinahugan Proposed MPA

The Barangay Dinahugan is located on the western side of Sogod Bay within the Padre Burgos municipality. There is an approximate population of 800 within the Barangay and the coastal waters have experienced natural impacts, most notably in 1984 with Typhoon Nitang.

The Status of Barangay Dinahugan's Reef

Surveys conducted by CCC found that the abundance of fishes throughout the reef were relatively low in comparison to Napantao MPA.

The abundance and biomass (kg) of commercially important species surveyed was concerning whilst being classed as small in size (<30cm). Parrotfish were the most abundant however the majority were sexually immature.

No significant differences were observed in the abundance and diversity of invertebrates.

(CoTs) were recorded indicating possible outbreak densities requiring immediate action to re-survey the area and assess the severity.

Sand was the dominant substrate (66%), with hard coral found to compose 9% of the surveyed area. Rock and rubble followed at 8% each, respectively.

Human impacts were recorded to be high, with 63% of the area highly impacted by trash, and 21% of the area highly impacted by discarded fishing gear.



9 Crown-of-Thorns-Seastars



Why Are MPAs Important?

MPAs protect areas of reefs from human impacts. Within an MPA, fish are protected and can grow larger, producing more offspring. This leads to 'overspill', increasing fish numbers outside the MPA. In the Philippines many very successful MPAs have been created including the famous Apo Island MPA. Not only do these well managed MPAs help to enhance fish stocks, they also provide income from tourism and other benefits such as, protection of coastal habitats and communities from storms.

CCC's assessment of Barangay Dinahugan

The surveyed area would benefit greatly from the establishment of a protected area aiming to increase the coral cover which, in turn, will drive recovery of fish communities.

Many fish take a long time to grow in size and need to reach a certain length before they become sexually mature. In addition, larger fish produce more offspring. Therefore, fishing large, adult fish, and removing them from the coral reef means that less offspring are produced reducing their populations.

The higher abundance of fast growing corals may indicate that the area has the ability to recover through the presence of a complex reef structure, however, the low composition of coral within the area demonstrates a clear need for protection.

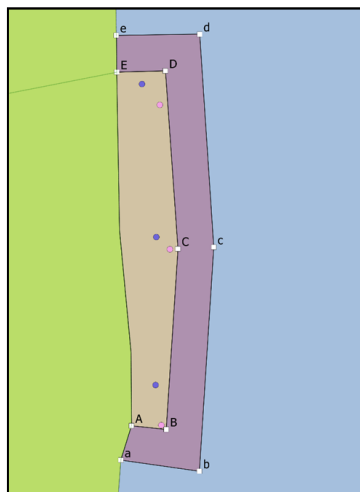
As the coral reef's health and the cover of hard coral increases, biodiversity of fishes increase, alongside the abundance and biomass of commercially important species.

With a well-managed protected area, the productivity of the coral reef fishery will increase as well in adjacent areas as individuals 'Spill-Over'

the protected area's boundary.

Key Recommendations:

- It is recommended that the local community start consultations to designate an MPA that practices a central No-Take Area with 50m buffer zones.
- CCC must return to the area to complete CoTs-focused surveys and take appropriate action if an outbreak is confirmed.
- Site-specific management policies and by-laws for the MPA should be developed between CCC, Barangay Officials, and fisherfolk as well as community members.



What is the 'Spill-over' effect?

Well-managed MPAs (or NTAs and MRs) often contain larger and more abundant fishes within their boundaries, with protected populations producing more offspring than can be exploited. Studies have attempted to quantify production rates and have found that an increased egg output by the organisms within the protected area supply adjacent fisheries, coral reefs and associated systems. Subsequently, as protected populations increase, export of offspring increases, supplying local fisheries through density-dependent 'Spill-Over' of juvenile and adult fishes, whilst also re-establishing natural food-webs and driving biodiversity.

The 'Spill-Over' effect is a commonly accepted concept within fisheries biology and marine resource management and is often a result of MPA establishment. Its concept is relatively simple, but is driven by varying biotic and abiotic factors. In well-managed MPAs, the results can be fruitful, thus supporting the success of the MPA



Coral Cay Conservation

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www.coralcay.org

Project Scientist email:

lrcp@coralcay.org

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