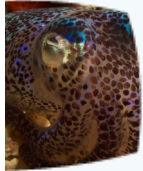


- CCC CARRIED OUT AN ASSESSMENT OF THE REEFS IN THE COASTAL WATERS OF BARANGAY NAPANTAO APRIL AND OCTOBER 2016



- THE REEF IS IN GOOD HEALTH BUT SHOWS SIGNS OF OVERFISHING. IT WOULD BENEFIT FROM THE PERMANENT RE-ESTABLISHMENT OF A BANTAY DAGAT TO PATROL THE MPA TO PREVENT ILLEGAL FISHING ACTIVITIES



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

Barangay Napantao MPA

The Napantao MPA was established in 1996 and covers a total of 5 hectares. Located in the Municipality of San Francisco, it is a premier dive site in Southern Leyte and home to a diverse coral reef community, with the effects of the MPA showing positive signs .

The Current Status of the Napantao MPA

Surveys conducted by CCC found that the diversity of fishes was higher inside the MPA than outside. Although their abundance was not.

The abundance of commercially important species surveyed was low whilst being classed as small in size inside the MPA (11-20cm) with smaller individuals recorded outside (0-10cm).

The average recorded total biomass inside the MPA (0.26kg) was significantly higher than that recorded outside the MPA (0.10kg).

No significant differences were observed in the abundance of invertebrates. One Crown of Thorns Seastars (CoTs) was recorded during the whole survey, posing no threat.

Hard coral was the dominant substrate both inside (44%) and outside (32%) the MPA. *Acropora* sp. held the greatest composition of hard coral with 27% of identified substrate. Rock was also prevalent inside the MPA (22%).

The Napantao MPA exhibited minimal signs of anthropogenic impacts.



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 the Napantao MPA

The coral reef across the whole survey site is in good health. However, the amount of small sized commercially important fish is a concern.

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 significantly higher abundance of *Acropora* sp. and other complex coral species may indicate that the MPA is achieving its goals by protecting these often fragile colonies from anthropogenic stressors, thus increasing complexity and driving biodiversity.

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

With a well-managed and attractive coral reef, the frequency of paying divers will increase, further

generating income for the Barangay of Napantao.

Key Recommendations:

- It is recommended that the local community start consultations to designate a permanent Bantay Dagat to be placed at the MPA to patrol against illegal fishing inside of the MPA.
- Constant efforts on behalf of CCC in educational and outreach activities are recommended to increase stakeholder buy-in and awareness and stimulate MPA well-being.
- Promotion of the MPA and its amazing wildlife, as well as the efforts by the local Napantao Barangay will be vital. This can be further achieved through permanent signage to be placed on Napantao beach.

Below: Lined Nembrotha (*Nembrotha lineolata*). A beautiful nudibranch species.



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

**CORAL CAY
CONSERVATION**



Expeditions

www.coralcay.org

Project Scientist email:

lrcp@coralcay.org

In Partnership With

The Provincial
Government of Southern
Leyte, Philippines



The Municipal
Government of San
Francisco