

- CCC CARRIED OUT AN ASSESSMENT OF THE REEFS IN COASTAL WATERS OF COGON FROM APRIL - MAY 2017.

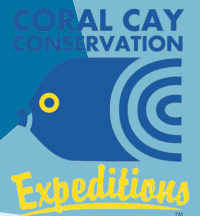


- HARD CORAL WAS THE DOMINATING SUBSTRATE IN THE SURVEYED AREA, FOLLOWED BY ROCK WHICH HAS THE POTENTIAL FOR NEW CORAL RECRUITS, WHICH WOULD IN TURN SUPPORT COMMERCIALY IMPORTANT REEF FISHES AND INVERTEBRATES IF PROTECTED.



- ELECTRONIC AND HARD COPIES OF THE FULL TECHNICAL REPORT ARE AVAILABLE FROM OUR PROJECT SCIENTIST: LRCP@CORALCAY.ORG

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Barangay Cogon Proposed MPA

The substrate community assemblage of Barangay Cogon's reef has shown to have a high grading of structural complexity that is capable of supporting a large diversity of reef fish and invertebrate species. However, a lack of large commercial species should prompt protective action to be taken to improve the associated fisheries.

The Current Status of the Cogon Reef

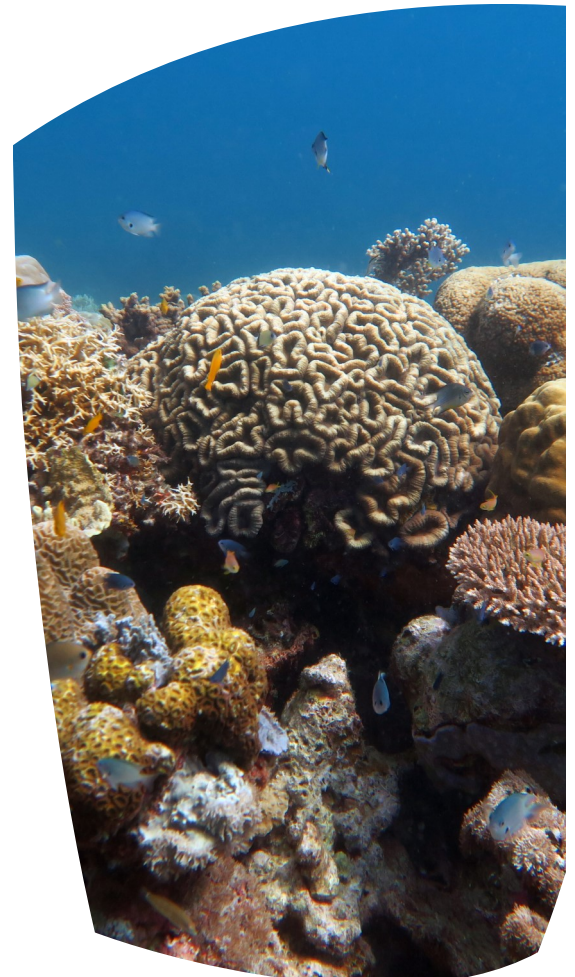
Following CCC surveys, it was found that the dominating substrate of Cogon reef was hard coral (27%); followed by rock (26%) and sand (11%). Whilst bleaching and coral disease was recorded as low within the survey, predation from *Acanthaster planci* (CoTS) and *Drupella* sp. accounted for high numbers of coral specific damage.

The average total fish abundance per transect was high, at $N = 260.33 \pm 47.79$ per $500m^3$, however the low abundance ($N = 1.90 \pm 0.16$ per $500m^3$) and small size (<30cm) of commercially important fishes indicates a highly overfished area, in need of protection.

Of the commercially important fishes such as Grouper, Snapper and Parrotfish, herbivorous fish (Parrotfish) displayed the greatest abundance (130) and biomass (13.41 kg) throughout the surveyed area.

Invertebrate populations displayed a mean abundance ($N = 86.21 \pm 13.97$ per $100m^2$) with additional measures of species richness, suggesting a diverse invertebrate population.

Direct anthropogenic reef damage was observed as a result of boat anchor. Indirect reef damage in the form of general trash was recorded 11 times, giving this site a high impact rating.



Why Are MPAs Important?

Marine Protected Areas (MPAs) protect areas of reef 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 Cogon's Coral Reef

The survey results suggest that Cogon's reef would benefit hugely from protection, as it has the capacity to support a higher assemblage of reef fish if overfishing is reduced and MPA status is assigned.

The prevalence of hard coral and rock within the Cogon survey area indicates that settlement potential of coral larvae is supported by stable substrate within the area. The presence of fast growing, competitor, and stress tolerant corals suggests a highly diverse reef ecosystem.

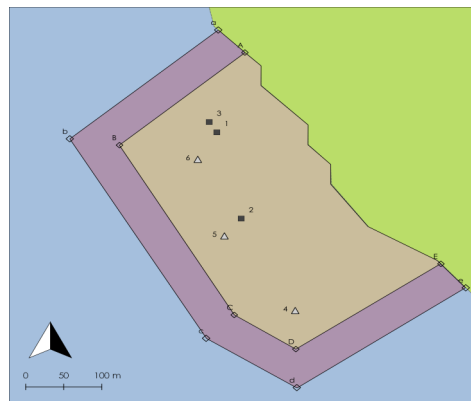
Although commercial fish numbers are low at Cogon reef, the abundance of herbivorous Parrotfish plays a profound role in exposing reef substrate for coral settlement, and limiting macro algal growth. It is important that herbivorous fish are given protection from unsustainable fishing practices and ensuring that these roles remain a functional part of ecosystem interaction.

Removing top-down stressors such as overfishing, CoTS outbreaks, and limiting recreational impacts by establishing an MPA status with associated conservation strategies, will provide the Cogon reef with a

greater chance of survival.

Key Recommendations:

- The marked Marine Protected Area boundary should include a NTA (no take area), surrounded by a 50m Marine Reserve buffer with restricted fishing activity.
- High MPA enforcement will be necessary to prevent illegal fishing or poaching within the site.
- Fishermen should be involved in the establishing and monitoring process in order to ensure continual success of the MPA.
- Coastal management regimes should be introduced to control anthropogenic induced reef damage.



A rare Triton's trumpet sighting



The Triton's trumpet (Charonia tritonis), spotted during the survey at Cogon reef, is one of the largest marine gastropods, reaching a size of up to 50cm. Widely collected for its unique patterned shell, over exploitation of this gastropod has resulted in a declining population.

In healthy reefs, the triton is a predator of the crown-of-thorns sea star (Acanthaster planci), which is a voracious coral predator and causes severe damage to reefs. Unfortunately, due to overfishing of the sea star's predators, mass crown-of-thorn outbreaks have occurred in reefs throughout the Indo Pacific.

The triton is immune to the sea star's toxin, which is extremely harmful to humans, and is able to devour the sea star entirely. The triton is faster than the sea star, and to prevent its escape, the triton over turns the sea star using its proboscis and shell, before completely swallowing the mass of spines. Not only does this gastropod gain a huge meal, but it protects coral reefs from hungry predators!



Coral Cay Conservation

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