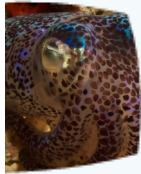




- CCC CARRIED OUT AN ASSESSMENT OF THE REEFS IN THE COASTAL WATERS OF BARANGAY HINDAG-AN FROM SEPTEMBER 2017.



- SILT WAS THE DOMINATING SUBSTRATE IN THE SURVEYED AREA AND THERE WAS A LOW ABUNDANCE OF COMMERCIALY IMPORTANT FISH. THIS IMPLIES THAT THE REEF IS NOT INDICATIVE OF AN AREA WITH HIGH CONSERVATION VALUE.



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

CREATED BY STUART ROSS -SCIENCE OFFICER



Barangay Hindag-an MPA Assessment

The MPA of Barangay Hindag-an is dominated by unsuitable reef substrate and has low levels of commercially important fish. These are signs that the MPA is placed in an area of little conservation value which cannot support diverse fish communities.

The Current Status of the Hindag-an Reef

Following CCC surveys, it was found that the dominating substrate of reef was silt (40%); followed by sand (31%) and Hard Coral (8%). This is indicative of a reef that is prone to frequent sedimentation, which is undesirable for most coral reef organisms.

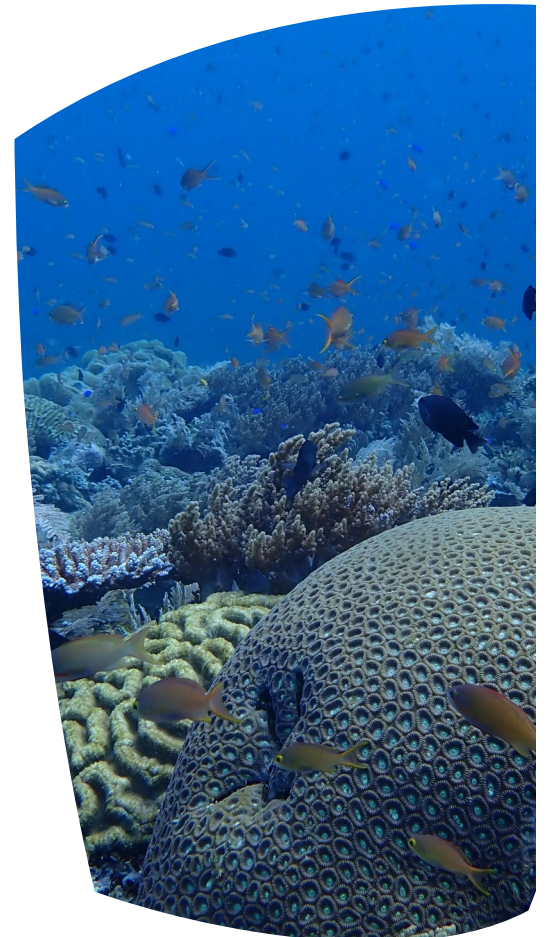
The average fish abundance per transect was relatively low, at 50.72 ± 15.12 per 500m³, however the low abundance ($.91 \pm 0.16$ per 500m³) of commercially important fishes indicates either an overfished area or more likely an area that does not encompass the correct habitat composition to support key commercial fish.

Invertebrate populations displayed a mean abundance of 98.21 ± 19.72 per 100m² with the majority of target species being of little

commercial interest once again reflecting either intensive historic harvesting or a lack of suitable substrate for key invertebrates.

Anthropogenic reef damage was low across the whole reef with no signs of boat, anchor or dynamite damage found. General waste was found at medium levels on 21.88% of the reef and medium levels of trash from fishing was found on 34.38% of transects surveyed.

Even if properly managed the surveyed reef cannot easily support a diverse community assemblage, so it is recommended that marine protection efforts are either increased to include a larger area of suitable habitat or focused in on a more productive and diverse reef.



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 Hindag-an's Coral Reef

The survey results suggest that Hindag-an's reefs would benefit from either larger scale efforts or refocused conservation. The current MPA does not have much capacity to support a higher assemblage of reef fish with the current silt levels, so it would be beneficial to increase the size of the MPA or reassess the MPA's efforts to more suitable locations along the reef.

The prevalence of silt and sand within the Hindag-an survey area indicates that there is little in terms of potential settlement of coral within the area. The nearby river is the probable source of high siltation levels on the reef which reduces viability for future coral recruitment and settlement. Conservation efforts should be focused away from the river where there is a higher diversity of substrates.

The commercially important fish found were generally of the smaller size classes which is an indication of overfishing. The small fish number and size coupled with presence of fishing trash within the MPA is a sign of illegal fishing practices. It is also possible that the low number of commercial fish is also caused by species leaving the MPA as the boundaries are not large enough to cover their entire home range.

Increasing law enforcement efforts within the MPA will help raise the abundance and size of

commercially important fish like Snapper, Grouper and Parrotfish. Expanding the MPA will allow for more suitable habitat types to support higher fish numbers. A larger MPA may also permit juvenile commercial fish to remain within MPA boundaries until they reach adulthood.

Key Recommendations:

- The marked Marine Protected Area boundary should be expanded significantly to include a diverse array of substrates and the full habitat range of small commercial fish.
- If MPA boundaries cannot be expanded then protection efforts should be relocated to a surveyed location with greater abundance of suitable coral substrate and fish diversity.
- Continue and encourage fishermen and enforcement of fishing and harvesting practises.
- Should be involved in the establishing and monitoring process in order to ensure continual success of the MPA.

Siltation



Silt is a collection of fine grain material that comes from agricultural run off from near by rivers, before settling as a sediment on the ocean floor. High levels of silt on coral reefs will result in lower rates of coral recruitment and survival, which can reduce levels of fish abundance and diversity. Siltation occurs when terrestrial minerals filter into and pollute a water source.

Silt on ocean reefs often comes from intensive agricultural practices that results in soil erosion into nearby rivers. The minerals from the eroded soil is carried downstream until it reaches an outlet into the ocean. Coral reefs frequently reside close to these outlets where the silt settles. Reefs can suffer from excessive siltation because the silt covers corals and blocks crucial sunlight.

Once the coral reefs are degraded there is little habitat for most fish and invertebrate species to take shelter. The best solution is to mitigate siltation runoff wherever and wherever possible.



Coral Cay Conservation

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Expeditions

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