



- ▶ CCC CARRIED OUT AN ASSESSMENT OF THE REEFS IN AND AROUND SANTA PAZ SUR MPA BETWEEN JANUARY AND MARCH 2013



- ▶ THE MPA IS IN GOOD HEALTH GENERALLY BUT IS SHOWING SIGNS OF OVERFISHING



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

A REPORT BY CORAL CAY CONSERVATION



Santa Paz Sur MPA

AMPINGAN TA ANG KABTANGAN SA KADAGATAN ALANG SA ATONG UMAABOT NGA PANGINABUHI

Santa Paz Sur MPA, also known as Anna's Garden, was established in 2009 and covers 4.4 hectares. Recently buoys were deployed to mark the boundaries of the MPA so that everyone can see where it is.

The current status of Santa Paz Sur MPA

Surveys conducted by CCC found that overall numbers of fish were not higher inside the MPA. However, there were higher numbers of invertebrates inside the MPA compared to outside.

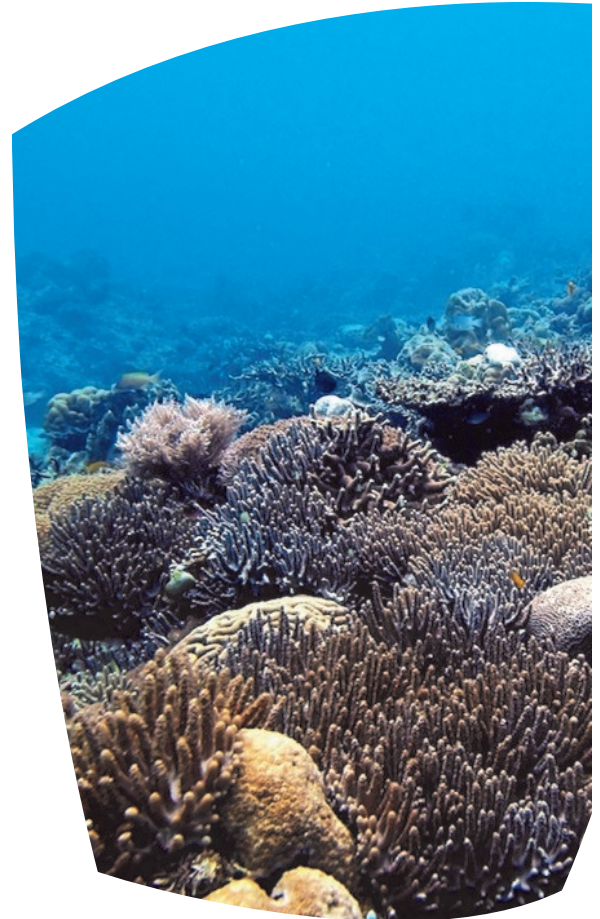
Crown of thorns sea stars (CoTs) were only present in low numbers except in one place, outside the MPA to the south.

Hard coral was more abundant outside the MPA and sand was more abundant inside the MPA.

Many species of fish including lapu-lapu and lipti were only seen in very low numbers. Other commercially important species such as giant clams and sea cucumbers were also uncommon.

Levels of trash and discarded fishing gear on the reef were low.

Overall the reef is in good health but showing signs of overfishing. Fishing continues to take place within the MPA, so more enforcement is needed.



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 from storms.



CCC's Assessment of Santa Paz Sur MPA

How does overfishing impact on the coral reef ecosystem?

Impacts from humans on the reef (such as anchor damage to coral and trash) are relatively low in Santa Paz MPA but many types of fish and invertebrate that are good to eat (such as lapu lapu, lipti, giant clams and sea cucumbers) are only present in very low numbers or not there at all.

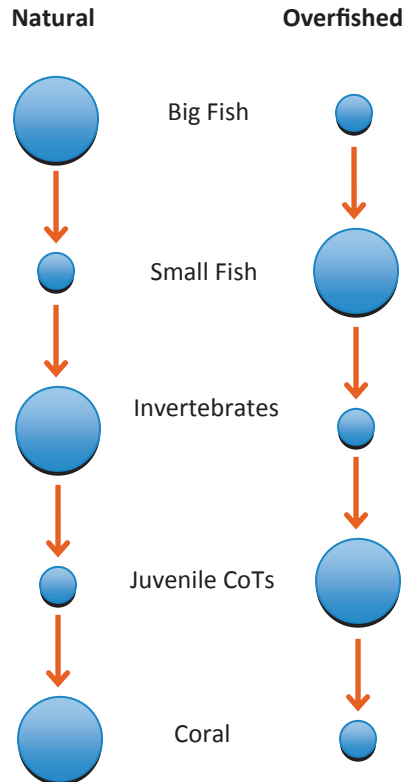
Many of these animals are what is known as 'keystone species'. This means that they play a vital role in the ecosystem as a whole and their loss can seriously affect the stability of the entire reef ecosystem.

The diagram on the right shows an example of this. The circles represent the relative abundance of each type of animal, so a big circle

means there are lots and a smaller circle means there are few.

When big fish, like lapu lapu, are removed the whole ecosystem is affected. This is because the big fish eat smaller fish which in turn eat small invertebrates and so on down the food chain. If the big fish are removed the smaller fish increase in number because they are not being eaten and the whole system becomes unbalanced.

There are lots of food chains like this which occur on the reef because there are lots of different animals living there. These individual chains are all connected into a complex web. This means that something that affects



one group of animals (like fishing) can have important and often unexpected effects on other, seemingly unrelated, groups.

CROWN OF THORNS:

Are they a problem in Santa Paz Sur MPA?



Crown of thorns sea stars (CoTs) are a natural part of the reef ecosystem. They feed on coral, just like many other of the creatures on the reef. Usually this is not a problem but sometimes CoTs can reproduce rapidly, and occur on the reef in very large numbers. When this happens there can be a serious impact on the reef as large amounts of coral is eaten.

In Santa Paz Sur MPA CoTs were not recorded in high numbers. However, at one site outside the MPA to the south, several CoTs were found in a small area. This may be due to changes to the local environment as a result of heavy rains increasing water input from a nearby river.

This outbreak is relatively small and localised and is unlikely to pose a threat to the reef. However, it should be monitored to make sure that it doesn't get worse. The site is relatively shallow at 6m and should therefore be easy to monitor while snorkeling.



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