

**Letter with report from Dr. Sakanan Plathong** *Lecturer for Marine Ecology,*  
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After the Tsunami, I and my colleagues from the Coral Reef and Benthos Research Unit and the Seaweed and Seagrass Research Unit (Dr. Anchana Prathep) of the Prince of Songkla University surveyed along the Andaman coast to conduct a rapid assessment of the impacts on marine habitats, such as coral reefs and seagrass beds.

After the initial rapid survey we joined Mr. Niphon Phongsuwan, a coral biologist from the Phuket Marine Biological Center to survey the damage on the west coast of Phuket and Pi Pi islands, popular tourist destinations. We found little damage from the wave on the western coast of Phuket, but in Patong Bay, the famous tourist destination, there is a lot of debris littering the reef i.e. logs, chairs, towels, palm trees, boat engines, beach umbrellas etc. Unless these objects are removed they will continue to damage the reefs.

Pi Pi island, another famous tourist destination south of Phuket, has been similarly affected with a great deal of debris on the reef. One large shallow reef in particular has sustained substantial damage where many coral mounds and tabulated corals were found upside down. Pi Pi islands and Patong Bay areas require an urgent mission to clean up the coral reefs otherwise they will be destroyed by the debris. Now many group of organizations went there to remove the debris.

The coral reef of the southern Andaman (Tarutao Marine National Park, Adang Rawi islands), Petra Marine National Park, Chao Mai Marine National Park, Lanta Marine National Park) were not affected by the Tsunami. They were protected by the Sumatra peninsular.

Along the northern Andaman coast, many near shore reefs are severely damaged. Reef rehabilitation projects or artificial reefs are required to aid in their restoration. Many local fishermen who rely on subsistence fishery along the reefs and mangrove creek also need help to repair or replace boats and fishing equipment.

On January 5, 2005, a formal research team was formed from Thai universities and the Department of Marine and Coastal Resources. We have organized and agreed on the same method to survey the damage on coral reefs along the Andaman coast. We set up a rapid survey method and then the reefs along the Andaman coast were designated to staff from each university to survey. I and my colleagues from the Prince of Songkla University have the responsibility of the Similan islands, the best diving destination of Thailand. I have visited this marine national park every year for reef monitoring since 2000.

At the time I was offered assistance from volunteer divers to help in the rapid survey in the Similan islands. Since most Similan dive sites are very deep, 20 – 40 meters, we have very limited under water times. To do a complete survey and restore the reefs we needed more people to join the trip. On January 5, 60 volunteer divers and my staffs joined the survey trip to the Similan islands. We worked very closely with Similan Marine National Park officers. Most of the volunteers divers were diving instructors, who teach in the area, and dive masters who frequently visit the Similan islands. They know the dive sites very well. I have briefed them on how to evaluate damage to coral reefs and how to fill in the assessment form. Every team has a still camera and video camera providing excellent information on the reef status.

The rapid surveys showed the coral reefs on the eastern sides of all the islands were the worst affected since the coral on the eastern sides grow on deposited coral sand with very steep reef slopes. The reef slopes on the north eastern sites and south eastern sites of all islands showed substantial movement of sand down to 20 - 30 meters. We found many coral mounds turned over and table corals fallen from their normal position and some corals were covered by coral rubble and sand. The corals will quickly die if they are not exposed to sunlight. At that time we decided to return the coral to their normal position. We believe that if we replace

the coral as soon as we can, they will survive and continue to grow and reproduce. (Usually, the windward sites of the islands are on the western sides, also the direction the tsunami came from, where coral reefs are dominated by encrusting corals and sea fans and are more strongly attached, hence less damage).

Meanwhile, the sea fans at the northern and southern points of all islands face a different problem. We found many of them have had their attachments broken and have fallen from the rocks and lie flat on the floor at 20 – 40 meters.

After the end of rapid survey on January 10, a group of volunteer divers and I then asked for further help from the media, as you have seen on the internet. Most of them responded very quickly reporting our research. An initial group of forty volunteer divers then started a recovery project on January 13. We were then joined by another 136 volunteer divers for a trip on 19 – 23 of January to the Similan islands.

What we have done so far is to turn up corals to their normal upright position. Now nearly a month after the Tsunami, many surviving corals are starting to grow upright by themselves. Therefore, we decided to stop turning over the corals, but we must still collect much debris from the reef. Already we have collected quite a number of items, but some big debris and garbage still remain on the reef.

For sea fan restoration, we placed metal rods in the sand and tie the sea fan in an upright position. At the moment our priority is to help them to survive as they will quickly die. We still need to firmly attach them in an upright position for their long term survival. We need special marine cement or epoxy for sea fan attachment. Many of them are bigger than 1 meter wide and very heavy. I estimate nearly 60-100 sea fans in Similan islands have fallen down. This number is about 10 % of sea fans found in Similan islands.

So far, I know that there have been many offers of assistance from coral list members. I have been very busy in the field since the tsunami and haven't had time respond to everybody on the list and have had a very limited time to write a proposal for help. Furthermore, it is very difficult to tell who is the right person to contact. Therefore, I decided to ask for help from volunteer divers and the diving businesses since they are very eager to help and we can respond more rapidly than waiting for financial aid from the Government or other sources of funding. Now the most urgent objectives for the Similan islands are completed. But, there are still many things to be done, such as fix the sea fans to their upright position/ direction, coral reef rehabilitation, clearing of debris, proper management plan and research program.

On one particular reef area, called Snapper Alley, most of the corals on the reef flat and reef slope are gone. They were washed down to 30 – 40 meters and covered by rubble and sand. Presently we cannot do anything since this area is covered by sand and future coral recruitment will be very limited. For this particular area, artificial reef substrates are needed for rehabilitation. Reproduction and settlement studies are also required since this research has yet to be done in the Similan Islands.

In general, most Similan Islands dive sites are still in good condition. We estimated 10 – 20 % of reefs are severely damaged. Most diving destinations of the Similan Islands are under water rocks, which are full of sea fans, soft coral and big schools of fish. Two recent ship wrecks are also diving spots. Most sea fans are still in their original position. Some diving sites have more than 100 sea fans. For those who have never visited the Similan Islands, it is very difficult to tell it was affected by the Tsunami, but for frequent visitors the destruction is obvious.

I will submit recommendations for further actions at Similan Marine National Park.

1. Coral reef rehabilitation

Rehabilitation should be done for Snapper Alley. Artificial reefs, coral nursery unit may be necessary.

2. Dive site management and Tourists management.
  - 2.1. Zoning plans should be revised. Currently, three islands (island no. 1, 2 and 3) are designated as restricted nature reserve zones. These three islands were not damaged by the Tsunami and are very healthy reefs compare to other islands.

Three additional areas will be designated for temporary closure areas: Christmas point (West of island no. 9), Snapper Alley (Southeast of island no.9), Chinese wall (south of island no.4). Diving is not allowed on these temporary closure areas.
  - 2.2 Buoy installation

Suitable sites for boat mooring, diving spots should be defined and enough buoys installed for diving boat.
  - 2.3 A series of seminar should be done quickly
    - A presentation on current situation of Similan Islands coral reef to general public
    - An announcement of code of practice for diving in similan islands to diving business
    - A seminar among core researchers, Similan National Park officers
  - 2.4 Education program for tourists and diving business.

Outdoor and indoor exhibitions should be set up on two main islands. Leaflets, brochures, posters, videos, slide presentations, models, zoning maps, web sites, etc.
3. Long term monitoring and research

Long term monitoring should be conducted on the impact sites as well as un-impacted sites. Basic research should focus on recruitment, reproductive seasons, genetic connectivity, and survival of fragmented habitats and damaged coral colonies. Intensive biodiversity surveys of the Similan Islands are also needed.
4. Management plan revision

I am currently a project leader to revise the management plan for the Similan Marine National Park, Surin Marine National Park and Ao Phang Nga Marine National Park since these marine national parks are declared, last year, as the ASEAN Heritage Parks. During the last five years, I have completed 2 management plans for Chumphon Marine National Park (presented in Okinawa) and Sirinath Marine National Pak (Phuket).  
We need help to formulate a suitable management strategy for these marine national parks. The management plan will cover all aspects; site management plans, staff, equipment, facilities, research projects, local community involvement and budgeting.

Suitable training courses for management of marine protected areas are also needed for marine park officers. Most of the Thai national park officers' educational backgrounds are in forestry.

Should you have any further recommendations or help for Similan islands, please feel free to contact me.

Best regards,

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