



# Seminar in Marine Science for Sustainable Management of Reef Systems between Myanmar and Thailand

7-8 November 2017

Phuket Marine Biological Center

Marine and Coastal Resources Research and Development Institute

From the 7<sup>th</sup> to 8<sup>th</sup> of November 2017, IUCN, in collaboration with the Thai Department of Marine and Coastal Resources (DMCR), and the Prince of Songkla University, hosted the Seminar in Marine Science for Sustainable Management of Reef Systems between Myanmar and Thailand. Focusing on the conservation of biodiversity at the maritime border between Thailand and Myanmar, the seminar was attended by representatives from both countries, which shared the results of biodiversity studies in the region, and proposed methods for moving forward on conserving this ecologically important region.

## **Biodiversity Survey Results**

Various groups have completed biodiversity surveys throughout the Myeik Archipelago, on a wide range of marine organisms. Professor Cherry Aung and colleagues from Patheingyi University, Myanmar, have found a total of 518 species of hard corals on reefs throughout the region. Zaw Myo Hein, from Myeik University in Myanmar reported 114 species in the vicinity of Thawthadangi Kyun Island, while Professor Narinratana Kongjandtre from Burapha University in Thailand reported 256 species of hard corals in the archipelago. The wide range of reported hard coral species is likely due to limitations on survey times and available dive equipment in the area.

Surveys of the coral reefs in Ranong Province, Thailand, by Naline Thongtham from DMCR, have shown that Ranong reefs often occur in shallow water and the area reefs vary from fair to very poor conditions due to tourism development and subsequent terrestrial sediment runoff, however reefs further south tend to be in better condition.

In a study of soft corals in the Myeik archipelago, Professor Thanongsak Chanmethakul, of Phuket Rajabhat University observed 27 genera of soft corals, and a crude estimate of 50 species of corals and sea fans, with future plans to identify all organisms to species level.

Fish biodiversity has also been surveyed in the region; a survey by Jirapong Jeewarongkukul found 314 species of fish throughout the Myeik Archipelago, while surveys from Flora and Fauna International (FFI) have observed 495 species. A survey of the Thai Surin and Similan and Ranong Islands by DMCR found 257 species of fish.

Professor Sumaitt Putchakarn, Burapha University, has identified 60 species of marine sponges in Myanmar, and more than 70 species in the Andaman Sea of Thailand. In addition, he found 63 different species of echinoderms in the Myeik Archipelago, and has identified over 400 species of echinoderms throughout Thai waters.

Robert Howard, from FFI Myanmar, noted the absence of sharks and large rays in the Myeik archipelago. This finding was supported by research from Sirachai Arunrugstichai, whose observations of Thai fish market shark landings have revealed a decrease from 41 species in 2004 to 15 species in 2014. He explained that the majority of sharks at markets in Thailand are fished in Myanmar and Indonesia, changing the diversity and abundance of sharks in the area.

Of the smaller organisms studied in the area, Jiraporn Charoenvattanaporn from DMCR has surveyed marine phytoplankton on Phra Thong Island in Thailand and found 67 different species, though no similar study has been conducted on the Myanmar side. Research by Sarawut Siriwong, which compared coral disease in Myanmar and Thailand found that sites near villages in Myanmar had a lower rate of disease than those further away because they were protected by local communities as Locally Managed Marine Areas (LMMAs). In Thailand, however, there was no discernible difference between disease rates in protected and non-protected areas, likely due to a lack of enforcement.

Coral bleaching has had a significant impact on the Thai/Myanmar region, making coral recruitment an important issue to consider in planning a conservation area. Watchara Sansuvan and colleagues from Ramkhamhaeng University found some reefs in Thailand, such as Pachumba Island, had only 3% coral cover after bleaching. The group's survey on coral recruitment found a higher density of coral recruits in Myeik than in the Surin and Similan Islands. Lalita Putchim from DMCR found that reefs in Ranong and Satun have higher coral cover than Surin and Similan Islands due to high water turbidity, likely protecting the corals from bleaching, and providing a source reef to replenish those that were damaged.

A presentation on the biogeography of the Andaman Sea, by Dr. James True, proposed that Thai reefs of the Andaman Sea depend on the upstream northern reefs of the Myeik archipelago for post-bleaching replenishment, highlighting the connectivity of the areas and the importance of transboundary conservation. This can be seen by the high rates of recovery in the northern Surin Islands, while there is significantly less recovery in the Similan Islands, due to their distance from the Myeik archipelago.

### **Transboundary Conservation**

During the second day of the seminar, participants discussed the best ways to move forward with creating a transboundary conservation area. It was determined that coral reefs, mangroves and seagrass ecosystems must all be considered in protected area zoning. Major threats to biodiversity include destructive and commercial fishing, climate change, tourism development, aquaculture and coastal wastewater runoff.

The group discussed the obstacle of jurisdiction of the area—whether local or national governments should be engaged in transboundary management. There is a vast number of agencies that need to be consulted in the formation of a Marine Protected Area (MPA), and there is a lack of clarity in terms of responsible agencies in each country. There was a suggestion of creating a transboundary committee, which would be endorsed by the government and given agency to make decisions on behalf of the central government, eliminating the need to send all approval requests to the national level. Establishing a contact person in each country is important to enable communication with government agencies. This person will act as a liaison between NGOs and various government groups.

Future plans include a seagrass biodiversity workshop in Ranong, hosted by DMCR, and a potential training workshop on how to preserve museum specimens, and techniques for marine surveys and monitoring. It was suggested that future meetings with government officials could be hosted by NGOs such as FFI and IUCN, who are responsible for inviting international guests.



Conference Participants. Thailand. ©Lalita Putchim, DMCR 2017.