A Year After the Tsunami: Surin Marine National Park, Thailand

Prior to the Indian Ocean tsunami in December 2004, Surin Marine National Park had a reputation for offering some of the best shallow-water reef diving in Thailand. Located northwest of Phuket, the 135-km² park attracted 30,000 visitors each year. Park management had a zoning plan that protected the park's area of highest biodiversity, and an information center that instructed visitors about the ecosystem they were experiencing.

The tsunami changed the park. The reef area with the strictest protection was heavily damaged, and the information center was washed away. One year later, park management is still working to respond to the disaster. Suchai (Yo) Worachananant, a lecturer in the Department of Marine Science, Kasetsart University, Thailand, who has studied Surin for seven years and advises on its management, addressed the First International Marine Protected Areas Congress in October 2005 on the status of this work. MPA News spoke with him afterward about lessons to be learned from Surin's experience, and what the future holds for the park:

**MPA News:** Prior to the tsunami, the zoning plan for Surin Marine National Park was primarily based on biodiversity: the most biodiverse area of the park was assigned the strictest protection zone. That reef area was heavily impacted by the tsunami, making the zoning plan largely irrelevant. How can park managers plan zoning schemes to anticipate such catastrophic events, including tsunamis or storms?

**Worachananant:** Reefs with high resilience should be given strict protection so that they may serve as re-spawning areas following such an event, even if such reefs might not have the highest diversity. Other criteria to consider include the direction of currents (upstream "source" reefs should be protected) and natural areas of shelter from strong currents, such as reefs in enclosed or semi-enclosed bays. Meanwhile, reefs that are dominated by "tolerant" coral types - massive (e.g., *Porites lutea*), submassive (e.g., *Pocillopora damicornis*) and encrusting (e.g., *Favia sp.*) - can be opened for general use to reduce pressure on places that have been selected for strict protection. It is about getting the right balance of protected sites and use sites to account for possible perturbations and user pressure.

**MPA News:** Following the tsunami, remaining dive tourism in Surin flocked to the less-affected areas, which increased the pressure on those sites. How has park management responded to this?

**Worachananant:** Management has applied a temporary zoning system based on several criteria, including damage level, coral types, tourist safety, accessibility level, and biodiversity. In zones that are open to users, mooring buoys are being used to reduce crowding. Dive organizations have responded positively to this system since we still provide opportunities for them to do business. There is also a proposal to create a man-made dive attraction outside the park - potentially involving the intentional sinking of Thai cultural statues - to draw diver activity there and reduce pressure inside the park. This attraction would still be within easy traveling distance for tourism operators. The decision now is what management strategies can and should be carried into the future.

**MPA News:** In light of the tsunami's impacts on the most biodiverse parts of the Surin marine ecosystem, some of the original rationale for protecting Surin has been lost. Do you believe the park should still exist?

**Worachananant:** Yes. Although my surveys in January 2005 showed extensive reef damage, the March 2005 survey revealed recovery was already occurring. I believe this recovery, or lower than expected impact, is partly the result of Surin's diversity: the park has inherent qualities to resist the perturbation and heal itself. In addition, there seems to be evidence that the macro scale of the tsunami affected the park's reefs on a macro scale as well. That is, rather than killing a lot of individual reef elements, the tsunami simply moved whole colonies of corals, which have managed to survive in their new locations. And shifts in substrate that covered large areas of reef have returned to pre-tsunami condition, minimizing long-term impact.

For more information

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