

Coral Reef Areas in South Western Sri Lanka:

Status after the Tsunami and Recommendations on Management Action

Information and recommendations presented here are prepared by IUCN – The World Conservation Union, based on collaborative work with NARA (Natural Aquatic Resources and Research Agency), CORDIO (Coral Reef Degradation in the Indian Ocean), GCRMN (Global Coral Reef Monitoring Network) and SLSAC (Sri Lanka Sub Aqua Club).

Summary of Post-tsunami Status

The following information and recommendations are based on surveys conducted during January 2005 at Kapparatota/Weligama, Polhena, Unawatuna, Hikkaduwa and Rumassala (separate recommendations on the Protected Areas in Hikkaduwa and Rumassala has been provided to DWC). Surveys in the northern and eastern parts of Sri Lanka are underway, conclusions and recommendations of which will be reported at a later stage.

Damage caused by the tsunami to the inter- and sub-tidal areas can be classified into five main types:

1. Mechanical damage: The overall mechanical damage was moderate to high at all sites, except at Rumassala which sustained no damage from the tsunami. Damage was very patchy, with localized high impact particularly at Unawatuna and Hikkaduwa. Some live coral was destroyed, and large quantities of coral rubble formed after the coral mass mortality in 1998 has shifted, covering and killing reef biota as well as some sea grass.
2. Smothering by sediment: Only low levels of smothering was observed, caused by terrigenous sediment washed into the sea and resuspended marine sediment. Although not a major impact from the tsunami this is a potential concern at all sites.
3. Litter: Considerable amounts of debris, both plant material and man-made objects, was carried with receding water and deposited both on the reefs and/or on beaches in all areas. A reef cleanup has been carried out in Hikkaduwa by SLSAC.
4. Beach erosion: Some loss of beach width was observed, ranging between extreme at Unawatuna and none at Rumassala.
5. Impacts on Fish Community: Where habitat has been destroyed reduced fish abundance is observed, especially at Unawatuna and Polhena. It is noteworthy that Hikkaduwa has higher fish abundance than surrounding areas, a reflection of its management status. A major cause for concern is the signs of recent blast fishing.

Recommendations on Management Action

The compounded effects the tsunami 2004, the coral mortality 1998 and other stresses pose a coastal management challenge. The following key recommendations can improve coral reef survival and recovery prospects:

- i) Post-tsunami management should focus on stress relief rather than active restoration;
- ii) Physical damage to corals caused by resource use should be minimized. This includes e.g. destructive fish harvesting practices targeting ornamental fish;

- iii) Active restoration of coral reefs is at this stage not recommended. There is enough live biota at the sites for natural recovery to occur under sound management schemes;
- iv) In particular, effective prevention of illegal resource use such as blast fishing and coral mining, still rampant on coral reefs in the south and west of Sri Lanka, is absolutely essential as this seriously jeopardizes the existence of reefs and healthy coastal ecosystems;
- v) A cautious approach to reconstruction of the near-shore fishery must be taken to prevent a return to over-capacity while seeing to the needs of coastal populations. This will require quantifying near-shore and off-shore fishery potential as well as a placing considerable effort into development of realistic, sustainable supplemental livelihoods for coastal populations;
- vi) While the sand migration as a result of the tsunami in itself is not a major cause for concern, it must be noted that sand mining in rivers have starved beaches of sand supply and is (together with coral reef mining) partly responsible for the beach erosion seen in many areas in the southwest. Thus artificially supplying beaches with sand may not be needed, but the needs for sand in reconstruction must be met in a way that does not further threaten beach accretion. Options for sand mining need to be identified, including e.g. offshore sources.
- vii) There is a large albeit limited amount of litter on the coral reefs as an immediate result of the tsunami. However, the enormous quantities litter on shore can be blown or washed into the sea, further damaging the reefs. Thus shoreline cleanup and sound waste deposition and management are essential. Cleanup activities undertaken by e.g. conservation organizations, NGOs and the diving industry should be given full support, and the active participation of the CCD and other government departments is encouraged;
- viii) Appropriate clearing and deposition of rubble, i.e. not endangering natural ecosystems, is elemental. Deposition on beaches and in inter-tidal areas, which has been observed in some parts of the country, must be stopped;
- ix) Impacts of land-based activities (such as sedimentation, nutrient and other pollution through run-off) must be controlled, especially during the imminent intense reconstruction phase;
- x) Regular monitoring and review of effectiveness and impact of management actions and an adaptive management strategy are essential for ensuring reef health;
- xi) Lastly, strengthening and improving the efficiency of existing coastal management practices, and involving all relevant departments and other stakeholders in this process, will go a long way towards facilitating ecosystem recovery.

Additional information or further elaboration on management needs can be provided on request. Kindly contact IUCN or other institutions mentioned above.

Annexes

Rapid Assessment of Tsunami Damage to Coral Reefs in Sri Lanka, Interim Report No. 1, 20 January 2005 NARA, CORDIO/IUCN/GCRMN, SLSAC, <http://www.nara.ac.lk/RAP/>
 Report of the SLSAC Reef Clean-up Project at Hikkaduwa National Park on 29-30 January 2005, SLSAC