4 years after tsunami: Corals stage comeback

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Four years after the tsunami, corals are thriving in this transplant site on Achech, Indonesia. Credit: Rizya Legawa

A team of scientists from the New York-based Wildlife Conservation Society (WCS) has reported a rapid recovery of coral reefs in areas of Indonesia, following the tsunami that devastated coastal regions throughout the Indian Ocean four years ago today.

The WCS team, working in conjunction with the Australian Research Council Centre of Excellence for Coral Reef Studies (ARCCoERS) along with government, community and non-government partners, has documented high densities of "baby corals" in areas that were severely impacted by the tsunami.

The team, which has surveyed the region's coral reefs since the

December 26, 2004 tsunami, looked at 60 sites along 800 kilometers (497 miles) of coastline in Aceh, Indonesia. The researchers attribute the recovery to natural colonization by resilient coral species, along with the reduction of destructive fishing practices by local communities.

"On the 4th anniversary of the tsunami, this is a great story of ecosystem resilience and recovery," said Dr, Stuart Campbell, coordinator of the Wildlife Conservation Society's Indonesia Marine Program. "Our scientific monitoring is showing rapid growth of young corals in areas where the tsunami caused damage, and also the return of new generations of corals in areas previously damaged by destructive fishing. These findings provide new insights into coral recovery processes that can help us manage coral reefs in the face of climate change."

While initial surveys immediately following the tsunami showed patchy (albeit devastating) damage to coral reefs in the region, surveys in 2005 indicated that many of the dead reefs in the study area had actually succumbed long ago to destructive fishing practices such as the use of dynamite and cyanide to catch fish. It is also possible that the crown of thorns starfish—a marine predator—had caused widespread coral mortality.

Since then, some communities have moved away from destructive fishing and have even begun transplanting corals to recover damaged areas.

For example, Dodent Mahyiddin, a dive operator on Weh Island, leads an effort to transplant corals onto hand-laid underwater structures to restore a badly damaged reef in front of the remains of his dive shop, which was also destroyed by the tsunami. Already he is seeing widespread colonization of young corals.

On a larger scale, the WCS team is working to establish community-

based coral reef protected areas based on customary marine laws that were first established in the 1600's and maintained throughout Dutch colonial rule. The laws empower local communities to manage their own local marine resources rather than adhere to nationalized protected areas.

Healthy coral reefs are economic engines for Acehnese communities, according to WCS, supplying commercially valuable food fish as well as tourism dollars from recreational diving.

"The recovery, which is in part due to improved management and the direct assistance of local people, gives enormous hope that coral reefs in this remote region can return to their previous condition and provide local communities with the resources they need to prosper," said Dr. Campbell. "The recovery process will be enhanced by management that encourages sustainable uses of these ecosystems and the protection of critical habitats and species to help this process."

The study area is adjacent to the "Coral Triangle," a massive region containing 75 percent of the world's coral species shared by Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands, and Timor-Leste.

The region is estimated to generate more than $2 billion per year in revenues and supports more than 120 million people dependent on its resources for food security and employment. The "Coral Triangle Initiative," an effort to save the region's reefs and contribute to sustainable livelihoods, has received global support. The U.S. State Department and the U.S. Agency for International Development (USAID) have together pledged over $32 million over a five-year period towards this initiative alongside contributions from other major donors, including the Global Environment Facility and twenty-one other Heads of State totaling over $400 million in pledges. WCS conducts conservation projects in this globally important region, and also works

on coral conservation in Belize, Papua New Guinea, Fiji, and Madagascar. The U.S. Department of State along with the International Coral Reef Initiative (ICRI) through recent commemorations of 2008 as the International Year of the Reef (IYOR) has engaged other leading nations by continuing to strengthen political will and commitment to conserving the resource-rich reefs of the world.

Source: Wildlife Conservation Society