

Sustainable Ecosystems Institute

TSUNAMI REEF ACTION FUND

Providing ecological and economic relief to tsunami-devastated SE Asia communities.

Update March 2005

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Corals and debris thrown on the beach in tsunami-devastated Andaman coast Thailand.

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Sustainable Ecosystems Institute

Tsunami Reef Action Fund: Providing Ecological and Economic Relief to tsunami-devastated SE Asia communities.

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Findings



The tsunami swept over a large swath of the Indian Ocean and devastated coastal communities. It is impossible to do justice to the scale and intensity of the damage. For once, the press reports and images do not come close to describing the destruction and impacts. Entire regions, villages, and resorts have been washed away in the worst hit areas. At times, during my visit, I slept in beds and on mattresses salvaged from the tsunami and was one of the lucky ones because I had a bed to sleep in. On all sides of

me people slept in refugee tents.

In all of the countries I visited I met with local scientists and local people. These included dive operators, fishermen and boatmen who had lost their homes and income in the tsunami. I was inspired by their spirit, kindness, and their overwhelming wish to rebuild. They do want help but not handouts. They want help in ways that allow them to contribute and rebuild their lives. Indeed it was always those who had lost the most who were ready to provide what little they could. There was Joe in Thailand who barely escaped the waves with his two daughters and lost everything he had in the world except his boat. Joe offered us use of his boat and his time saying that if the tsunami helps us take better care of our reefs, then at least something good is born from it. Claudio in Sri Lanka lost his two dive stores, boats, and belongings and yet dropped everything to come with us to restore the reefs because he saw the link between coral reefs and the well-being of his community. Local fishermen joined our efforts. We left Claudio on the ocean repairing corals, removing nets, and bringing others to participate.

I met local scientists who responded quickly to the tsunami by carrying out reef assessments and restoration. They have asked for help with expertise, equipment, and in developing sound conservation plans and we are trying to provide them with the help they need. In short as a result of my visit we are now implementing a strong relief program to respond to the requests and needs of local scientists and local communities.

Why is this a humanitarian effort?

The tsunami devastated the coastal communities which depended on their coral reefs. The reefs are their source of:

Protein: The reefs are the main source of productivity and provide habitat. Fisheries depend directly on them. In the rural areas there are no supermarkets with regular deliveries, instead fishermen go onto the reefs daily to fish for dinner.

Income: Communities made their living from selling fish, and/or from dive tourism. These reefs are among the most diverse and beautiful in the world, and they attracted divers from all over the world.

Protection: We know that coral reefs provide protection against swells and it seems that the reefs provided protection against the tsunamis force. Where the reefs were intact there may have been less damage and loss of life on land.

In short, people's lives and livelihoods were tied directly to the reefs. This makes it a humanitarian concern and our work a humanitarian effort. Of course, food, shelter, and safety must be the primary concern, but now the aid organizations have announced that they have sufficient funds to meet these basic needs. Restoring the natural resources and livelihoods tied to them is another matter. But it will be needed if these communities are to get back on their feet for the long term.

Are the reefs damaged?



The simple answer is that in some places the reefs are damaged and in other places they are not. To provide an analogy, if you go to Bangkok Thailand you won't see any signs of tsunami damage or suffering but if you go to Khao Lak along the Andaman coast that is all you will see. It's the same story with the reefs. I've dived on reefs that show no wave-impact and where the reefs are beautiful and thriving. I've been to reefs where the damage was mild to moderate, where coral heads

were overturned and less than 10% of the corals shattered. I swam the long length of a fishing net that was dragged onto the reefs by the tsunami and is now wrapped around a half mile of coral reef entangling and killing corals and sea creatures. I've been to areas where the reef was pulverized and to reefs that are now buried under meters of sediment. In short the damage is patchy and significant. Where there is damage and debris, it is great enough that we need to take action to clean up and restore the ecosystem. That is the focus of our work. By doing this work in a way that supports the local community we are helping them to rebuild their reefs and their lives. It's been pointed out that intact coral reefs, sand dunes, and mangroves moderated the impact of the tsunami resulting in less damage and loss of life on land. We observed this trend in some areas, as did other scientists.

Is debris a problem?

Yes, debris is a major problem. The waves swept debris from the land onto the reefs and seabed. Whole resorts and villages ended up in the ocean. Already in one small area of the Phi Phi islands, and on a project that we are supporting with funding and scientific expertise, volunteer divers removed 4 tons of debris in just 4 weeks. This is only the debris that is on top of or directly adjacent to the coral reefs. Tons more lies on the sand and buried in the seabed. And this is not the most badly damaged area. The debris consists of everything you can imagine from TVs, cars, bicycles, fridges, concrete posts, roofs, to trees and lumber. The debris is still moving around. In early March, six weeks after the tsunami, we found trees, fridges, and other debris that was beginning to wash ashore in abundance on certain atolls. Fishing nets are a significant problem in parts of Thailand and Sri Lanka. The Maldives does not allow fishing nets and are fortunate in not having to combat this ecological threat. Debris is not just a problem for the reefs, it also threatens turtles and other marine life. It is a safety issue for humans.



What is the situation in each country and what are we doing to provide ecological and economic relief?

While traveling in SE Asia I was able to support several local individuals and groups to carry out or assist with debris removal and coral restoration, including scientists, dive operators, fishermen, and boatmen. This visit also allowed me to identify the areas of greatest need. Since then SEI's tsunami reef action fund has become fully operational and we have been supporting several critical efforts since our visit (see below). The tsunami affected a large part of the Indian ocean, and many communities are totally devastated. Recovery will not happen overnight. We know that our work is only beginning. We are committed to helping communities rebuild their lives and the coral reefs on which they depend.

Our approach is to strengthen the local effort by providing financial and technical support to local people and existing groups. We are working with many local individuals and groups. We provide outside technical help where the community needs it for reef clean up and restoration, and where that help will provide new and necessary skills. We are focusing on the short term debris removal and coral reef restoration, and developing long term conservation actions that will sustain reefs and people.

Thailand



The Andaman Coast of Thailand suffered serious damage. Khao Lak (a stretch of coast c. 20 miles long) Phi Phi Islands, and parts of Phuket and areas in the Similan Islands were badly hit. Other areas on Phuket and the Similans escaped the waves impact. In the damaged areas, corals have been overturned, shattered, and sea fans ripped out. Debris and fishing nets are a serious problem. Reef clean up, restoration, repair and conservation planning is much needed in the

areas affected by the tsunami. During our visit we made an excellent start by carrying out assessments, clean up and supporting local individuals, and we are now strengthening our effort and providing more help:

We are supporting

- Local scientists in the restoration effort. We are providing expertise and marine epoxy to local scientists and helping them with coral restoration, including to Dr. Niphon Phongsuan and his colleagues at the Marine Research Center. Our scientific help has already saved many seafans and corals through restoration efforts.
- Scientists to travel to the area and subsistence for scientists in the area to provide much needed expertise. These experts include Dr. Dwayne Meadows (himself a survivor of the tsunami) Eko Lapp and others. We have directed tens of recreational divers to the various clean up efforts, and provided several with training and directions.
- Debris removal from coral reefs: We are supporting a major effort to remove debris from the coral reefs and seafloor, restore damaged reefs in Phi Phi Islands. We are providing funds, and scientific know how. This effort is run by a local dive operator (whose entire business was washed away) and other local divers and businessmen who were impacted and lost loved ones in the tsunami. In just 4 weeks we've removed 4tons of debris from the reefs. There's much more. Unless this work is completed soon the reefs will suffer even more damage in the monsoons.
- Scientific Expertise: While we were in Thailand and elsewhere we were able to teach skills on coral restoration, coral repair, and debris clean up. We continue to teach those skills through email communications, and have provided additional

advice and help on sand removal that minimizes damage to the reefs, role of mooring buoys, and conservation planning. In addition we are funding scientist to travel to the area to provide the needed scientific expertise. Through our partnership with PADI Project AWARE we have provided their dive operators with scientific input and advice.

Future Activities: We are doing a lot, yet it is the tip of the iceberg. We are not yet covering the damaged sites, and many of the above projects need additional support. Thousands of tons of debris was swept out to sea in Khao Lak, we have not yet begun to address this issue adequately. We are helping with planning and methods for this work, but a full effort involving scientific expertise, divers, and funding is badly needed. Without this work the reefs including those on the Similan islands are in jeopardy. We have been asked to help with conservation planning as this is an urgent task that has short and long term implications, and we want to advance this issue over the coming months. We will be working in the Similan Islands on a major reef recovery and conservation planning program aimed at strengthening the management of these coral reefs.



just
all
and

SRI LANKA

Damage is extensive in Sri Lanka. The waves swept ashore from Colombo on the west coast all the way through to Jaffna on the NE coast (about 2/3rd of the island), and left nothing but devastation in their wake. Because many areas are largely inaccessible, there



was a civil war, and the infrastructure is not well developed, the response to the disaster has been patchy and sometimes poor. We were the first to survey some of the east coast reefs. Overall damage on the east side is worse than on the west, probably because the waves were larger and more powerful. Some reefs on the east coast were pulverized. Debris and fishing nets are a significant problem on east coast reefs and to a lesser extent on the west coast.

Important turtle nesting beaches have been wiped out. We also understand that land mines from the civil war have been swept onto the reefs and seafloor in the NE, but while we agree that this is a strong possibility we did not visit these sites and so we could not confirm it (perhaps thankfully). A strong environmental response is needed but it is more of a challenge here. Nevertheless we can make a difference in Sri Lanka and are we doing so:

In Sri Lanka we are supporting coral reef assessment, debris removal, coastal assessment. Our funds are supporting:

- Pruthu Fernando and the Center for Conservation Research: A locally run non-profit organization that supports local scientists and research assistants. We are funding the CCR and local assistants in coastal assessment.
- Consortium of divers, scientists, and boatmen through Jerker Tamelander. This effort is to carry out debris clean up from the coral reefs and to foster a stronger ecotourism ethic. (This also supports the efforts of CONBIO, GCRMN, and IUCN Sri Lanka)
- Claudio Trentio. Claudio is a dive operator who had a dive store on the east and on the west coast, and employed local divemasters. He lost both stores, boats, and equipment in the tsunami. We provided him with an assessment and training in restoration. We are supporting his efforts to coordinate and lead a local clean up and restoration project on the east coast. He has since removed nets from the reefs and together with local fishermen he is now working with the Navy to advocate enforcing fishing policies that will allow the reefs to recover (i.e. stopping dynamite fishing).
- Equipment: we provided equipment to CCR for their coastal assessments, and marine epoxy to dive operators for coral restoration.
- Expertise: We are continuing to provide technical expertise to dive operators who are involved in the clean up and reef restoration. In addition working with PADI Project AWARE we have provided their dive operators with scientific input and advice. We have also helped local groups to develop grant proposals and get direct funding for their work.

Future Activities: There is a great need for a full assessment, a wider clean up and restoration effort, more scientific expertise, and better conservation planning that includes the local fishing, tourism and diving communities. The time is right for this, as divers and others have seen the importance of the reefs and the tragedy has created an opportunity for them to work on restoration and planning. But they need more resources to be able to carry out their work.

Other Countries affected by the tsunami

Currently we are evaluating our response to other areas affected by the tsunami. There are needs in the Maldives and elsewhere. Our next update will address how we are responding to these issues.

Next Steps

We are already we are getting feedback that our effort is making an important ecological and economic difference. We also know that we have much work to do and we are getting more requests for help. We are committed to this work and will continue to directly support the local communities, and send scientists and equipment where they are needed.

We will continue to help in Thailand, Sri Lanka and expand our efforts to other countries devastated by the tsunami. Our work will include, clean up, restoration and monitoring,

and conservation planning. We continue to seek additional funding from individuals and foundations in order to further support the work.

How you can help



Many of you have expressed your own desire to make a difference and generously donated to the Tsunami Reef Action fund. Thank you. Your support has made a great difference—just look at what we’ve already accomplished.

Our work is far from done and we need your support. You can help by sending a donation to SEI tsunami reef action fund. If there is a particular project that you want to adopt or an effort you wish to

support e.g. reef clean up, or getting scientists to the areas where they’re needed, that you want to support then let us know and we will ensure that your support goes directly to this effort. (See form at the end of this report)

Please send donations to SEI PO Box 80605 Portland Oregon 97280. Tel 503 246 5008 email: sei@sei.org Make any check out to SEI tsunami reef action fund. SEI is a 501 (c) (3) and deductions are tax deductible as allowed by law. If you want to support a particular effort or country please indicate this either on your check or in the form at the end of this report ALL funds go directly to support the relief effort, SEI staff and all scientists are donating their time and expertise. None of the funds go to support either SEI or its staff. If you need any further information, please contact me at SEI.

If you are scientist with skills that are needed consider donating your time to some of the projects to provide expertise and help. Contact us if you are interested in this work.

Image Captions

Cover Corals and debris thrown on the beach in tsunami-devastated Andaman coast Thailand.

Finding (page 2): sunami-destroyed homes line the highways and landscape

Are the Reefs Damaged? (page 3): Corals broken by the tsunami in Thailand Elkhorn was particularly vulnerable

Is debris a problem? (page 4): Removing a fishing net from the reef in Thailand

Thailand (page 5): Phi Phi reef clean up and restoration program. We are providing essential technical and financial to local groups. (Note the debris was removed from the adjacent reef)

Thailand Future Activities (page 6): We have literally removed everything including the kitchen sink off the coral reefs (Phi Phi Island Thailand)

Sri Lanka (page 6) We initiated reef clean up on the east coast, and are supporting this local group to remove nets and debris from the reefs

How you can help (page 8). Fishing and recreational fleet washed ashore in Sri Lanka
Images by Deborah Brosnan © apart from page 5 Phi Phi Island images by Andrew Hewett

Dear SEI,

I want to support economic and ecological assistance in the tsunami devastated region.

Please direct my funds to the most needed area(s) and project(s) on my behalf

or

I want to support ecological and economic relief in:

Thailand Sri Lanka

I want to support:

Debris removal from coral reefs and sea beds \$_____

Phi Phi Island, Thailand Similan Islands/Khoa Lak, Thailand Sri Lanka

Coral Reef Repair, Restoration, and Conservation Actions \$_____

Phi Phi Island, Thailand Similan Islands/Khoa Lak, Thailand Sri Lanka

Send the Knowledge and Know-how (Send a Scientific Expert) \$_____

Send Equipment and Supplies \$_____

I have enclosed a total of \$_____ for economic and ecological assistance in tsunami devastated areas.

Name: _____

Address: _____

City: _____ State/Province: _____

Postal Code: _____ Country: _____

Email (optional): _____

SEI is a 501 (c) (3) organization and donations are tax deductible as allowed by law.

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