

Posted: Nov 23, 2005 - 08:58:45 PST

Archived Story

Reef repair expert issues warning for coastline protection *By Joel Gallob Of the News-Times*

As scientists joined humanitarians, doctors and relief experts around the Indian Ocean region after the deadly December 26 tsunami, reef biologist Deborah Brosnan went to Sri Lanka and Thailand with a mission somewhat different, though no less beneficial to humanity. She went to help with reef damage assessment, cleanup and repair after the terrible tidal wave - critical tasks, she said, if local fishing village economies are to recover. And she came back to the United States with a message for coastal communities: "Protect your coastal barriers - rocky reefs, sand dunes, rocky shores and native vegetation - and they will protect you."

Brosnan gave a PowerPoint presentation at the Oregon Coast Aquarium recently. She described what she felt was the worst tragedy she saw, on the southwest coast of Sri Lanka. A train had stopped in a site just inland from a coral reef that had been destroyed by coral mining. While the train was standing there, the tsunami struck the Sri Lankan coast. A 30-foot wave hit that section of the island, rushing inland and killing 1,700 people, including everyone on the train.

Two miles away, a much smaller wave arrived and killed no one. That portion of the tsunami had been reduced, its force broken by an offshore reef in a marine protected area set aside by the Sri Lanka government.

"That reef broke the tsunami," Brosnan said. "When it came ashore, it was seven to 10 feet high. The engineers and the geophysicist said the only difference between the two sites was the intact coral reef."

"We saw that kind of effect across the tsunami area," she said. "We saw it in areas that had mangrove forests depleted, in areas where sand dunes had been removed. And we saw it in places where offshore reefs had been damaged or destroyed."

Not all of her work, however, was unhappy. In one coastal town in Thailand, she worked with 60 volunteers from around the world, as well as with 25 local people who had lost their jobs to the tsunami. In Sri Lanka, (where, Brosnan said, she had "the only mattress in town and it smelled like seaweed"), she worked with 72 local volunteers. Many of them were fishermen.

Some of them had made a living by "dynamite fishing," blowing fish out of the water and catching them after they die, on the ocean surface - a practice she described as "very destructive." Those fishermen, Brosnan added, came to understand, after the tsunami, they had been damaging the reef that supported them and their families - and that could have protected their homes, boats and livelihood if it had been left intact.

Her work (and that of the others, including the volunteers) focused chiefly on rehabilitation of the coastal reefs and involved dragging up huge quantities of debris that had become lodged in the reefs off Thailand and Sri Lanka. The debris included everything from small home items to pieces of homes, and in one instance, literally, an entire home itself. It also included pulling huge fishing nets off reefs where they had become tangled. She recalls one gigantic net required 10 divers and three weeks to disentangle and remove.

"We also found a lot of paper IDs, and that provided identification for some of the people who died; it gave closure to a lot of families," she said.

Brosnan and other volunteers also worked to restore coral reefs damaged by the tsunami, or by human hands. She often engaged in what she called "seeding a reef" by taking bright, broad sea fans that had been ripped off their holdfasts, attaching them to concrete blocks and placing them in areas where the reef had been damaged. The technology used - hammers and nails and concrete - was simple, she said, but it worked.

Altogether, about 5 percent of the reefs off the coast of Thailand, and up to 50 percent of those around some of the most exposed islands, were damaged by the tsunami. Those coral reefs are not only among the most biologically rich and diverse regions on the earth, "they are the supermarket for these people," Brosnan said.

Brosnan is the president of the Sustainable Ecosystem Institute, in Portland, and its Tsunami Reef Action Fund. She received her doctorate from Oregon State University.

"Here in Oregon, we do not have coral reefs, but we have the rocky intertidal reefs and submerged reefs, and they are very diverse, very rich, too. And we have sand dunes and rocky shores and coastal wetlands. We need to keep these ecosystems intact," she said.

While Oregon does not have dynamite fishing or coral mining, Brosnan worries about overfishing, about global warming hastening coastal erosion and shrinking biological diversity, and about coastal development displacing wetlands, sand dunes and native vegetation. All of those natural coastal features, she says, may someday prove important to saving lives and property, if they are still there, if a tsunami hits the Northwest coast.