

# Tsunami debris threatens Monterey Bay shores

**Dave Nordstrand, Salinas Californian, 1-22-12**

Tons of debris that could kill wildlife, foul Pacific beaches and harm tourism floats toward California shores, including those along Monterey Bay.

It's unknown how soon the debris will arrive or how severe its impacts may be.

What is not in doubt is that some of the debris, swept into the Pacific by tsunami waves that struck Japan after the March 11 earthquake, is on its way.

"Right now, we're trying to understand the types and quantities of this debris, so we can start to estimate its dangers," Karen Grimmer said.

Grimmer is deputy superintendent with the National Oceanic and Atmospheric Administration's office in Monterey. NOAA oversees the Monterey Bay National Marine Sanctuary.

Driven by Pacific currents, pushed onward by salt-laced breezes, the broken remnants of thousands of lives were launched on an uncharted ocean journey. The magnitude 9.0 Great Tohoku earthquake triggered a series of massive waves that engulfed buildings, boats and automobiles and all their contents and appurtenances — along with thousands of people and animals.

Estimated time of arrival on West Coast shores ranges from one to three years.

As a harbinger, seven 3-foot yellow buoys freed by tsunami violence from their oyster farm moorings in Japan have already washed ashore in Kodiak, Alaska.

"We also have a lot of (homegrown) debris to deal with on a regular basis," said Laura Kasa, Save Our Shores executive director.

The nonprofit SOS, based in Santa Cruz, focuses on efforts to help protect the health of the Monterey Bay Marine Sanctuary. One of its primary tools is coastal cleanup.

The addition of any tsunami debris to the mix will, at the very least, demand more such cleanups, Kasa said.

Regular cleanups have another function. They can help establish a baseline against which to measure the arrival and amount of tsunami debris.

## **Agencies on alert**

Concern extends to other agencies, too, the California Coastal Commission and the U.S. Environmental Protection Agency Region 9 being among them.

On Sept. 13, those two agencies issued a joint news release. They called the debris threat to the U.S., "one of the untold stories of the tsunami."

They spoke of, "massive volumes of debris from Japan's devastated cities" reaching West Coast shores.

"Marine debris degrades ocean habitats, endangers marine and coastal wildlife, causes navigation hazards,

results in economic losses to industry and government, and threatens human health and safety," the release said.

Kasa and SOS know many of those consequences well.

For the past 30 years, SOS volunteers have engaged in beach cleanups of home-grown debris — from cigarette butts to random bits of Styrofoam to plastic bags and water bottles.

An endless stream of ruffraff, in other words, degrading a once-pristine shoreline.

"Animals become entangled in, suffocated by it, or they ingest these trash items," Kasa said.

Cigarette butts, for example, are like "little packages of toxic waste," a hazard to shorebirds and fish and even to dogs.

"Also syringes," Kasa said. "Think of that and your kids."

Arrival of the tsunami debris will, at the very least, exacerbate existing debris problems, she said.

### **Early warnings**

So tracking and planning proceed in earnest.

The University of Hawaii and others, for example, employ computer models to try to predict debris movement. The U.S. Fish and Wildlife Service is involved.

The NOAA is in the process of piecing together tools to better understand what the impacts will be, Grimmer said.

The NOAA already operates an ocean debris center in Seattle, which includes monitoring tsunami debris falls.

"Some debris could pass near or wash ashore in the Northwestern Hawaiian Islands this winter," a newsletter from the center says.

That's based, in part, on sightings by a Russian ship, STS Pallada. Other debris "could approach the West Coast of the United States in 2013," the NOAA says.

Another tool is real-time observations in Monterey Bay. The NOAA, for example, is partnering with the U.S. Coast Guard for over-flights in one of its aircraft.

Then there's NOAA's "Fulmar," a 67-foot aluminum catamaran. A research vessel, the Fulmar sits tied up in Monterey. Grimmer stepped aboard. She climbed to the boat's flying bridge above the pilothouse.

From there, any spotter has control of the craft and also a clear, 360-degree view of the water, the otters, the sea lions and the reddish jellies swimming in it and any debris bobbing around it.

The Fulmar is another tool to help monitor for tsunami debris, Grimmer said. It also carries equipment to recover debris.

A second NOAA boat, a 41-footer, could also be enlisted.

"We don't yet know the amount and make-up of the debris," Grimmer said. "That's the challenge in preparing. It

could be made of different things so you'd have to respond in different ways."

### **A teaching moment**

An environmental engineer, Anna-Marie Cook is also an Environmental Protection Agency marine debris coordinator based in San Francisco.

While focus and effort are on tsunami debris, Cook hopes the public takes time to focus long-range on marine debris of all types and on the harm it is causing to the oceans.

"Most marine debris is generated as trash on land," she said. "That's something we can all do something about."

Dan Meer is an assistant director of the EPA Superfund Division, also in the San Francisco office.

"We're also concerned about any contaminated debris, like a drum of an unknown chemical, that washes up," Meer said. "You'd want to make sure there are no adverse impacts in dealing with that."

Radioactivity, though, is not expected to be a problem.

The tsunami debris had washed far out to sea by the time radioactive water leaked from the Fukushima Nuclear Power Plant.

### **A vanishing field**

As the tsunami swirled back into the sea, it carried its crippled cargo of TV sets, bed frames and chairs, bottles and cans and, yes, bodies and body parts.

Some debris sank. Some drifted only to sink later.

Much of it, depending on its buoyancy, floats on.

The "debris field," visible early on in Navy and satellite photos as brownish tendrils on the ocean surface, has dispersed. Yet the volume was such that much remains afloat.

It's what remains that make Grimmer, Kasa and others uneasy.

"What we do know is that more debris is headed towards our shores, and we're right on the path of where it's going to show up," Kasa said.