

Debris from Japanese tsunami steadily drifting toward California

Paul Rogers, Bay Area News Group, 7-4-11

Millions of tons of debris that washed into the ocean during Japan's catastrophic earthquake and tsunami in March -- everything from furniture to roofs to pieces of cars -- are now moving steadily toward the United States and raising concerns about a potential environmental headache.

Scientists using computer models say the wreckage, which is scattered across hundreds of miles of the Pacific Ocean, is expected to reach Midway and the Northwestern Hawaiian Islands by next spring and beaches in California, Oregon and Washington in 2013 or early 2014.

"Can you imagine San Francisco put through a shredder? A big grinder?" said Curtis Ebbesmeyer, a Seattle oceanographer who has studied marine debris for more than 20 years.

"The area north of Tokyo was basically shredded. We are going to see boats, parts of homes, lots of plastic bottles, chair cushions, kids' toys, everything."

The debris is moving east at roughly 10 miles a day, and is spread over an area about 350 miles wide and 1,300 miles long -- an area roughly the size of California -- Ebbesmeyer estimates, with the leading edge approaching the international date line.

While lots of the material will break up and sink, some will not, he said.

"I've seen pieces of wood float for 20 or 30 years," he said. "I have Jeep tires with wheels that floated for 30 years. Things float a lot longer than you think."

Complicating the issue, nobody knows for sure the exact area where the debris is spread or its density. And nobody knows what is still floating, what has sunk, or what may be lurking just below the surface. That's because estimates are based on computer models of currents and winds, rather than actual observations from scientists in boats and planes. After ships with the Navy's 7th Fleet reported and photographed the debris, researchers with the National Oceanic and Atmospheric Administration (NOAA) in Hawaii tracked the refuse with satellites for a month after the March 11 quake and tsunami.

Computer modeling

But by April 14, as it spread over a wider area, it could no longer be detected with the resolution of the satellites that NOAA uses.

"Right after the earthquake we saw huge amounts of wood and fishing gear and households in the water," said Kris McElwee, Pacific islands coordinator for NOAA's marine debris program in Honolulu. "And then we saw for a few weeks these kind of stringers of wood patches. But they are dispersed enough now that you can't see them on satellite images. So we don't know what has sunk and what's still floating out there."

McElwee noted that after other major disasters, including Hurricane Katrina in 2005 and the Indian Ocean tsunami in 2004, massive amounts of material that washed out to sea did not turn up on beaches in other

countries. Instead, the flotsam caused problems near the beaches where it originated, creating hazards for ships and disrupting commercial fishing.

Still, the currents in every part of the ocean are different, and federal officials are watching the Japanese debris with concern.

Last Monday, representatives from the Coast Guard, NOAA, the Environmental Protection Agency, the U.S. State Department and other agencies met for the first time in Honolulu to share information about the Japanese debris and begin to chart a strategy.

Among their plans: to notify the U.S. Navy and commercial shipping companies that regularly sail across the Pacific so they can begin to document what is floating. That could lead to expeditions to go map and study it.

Prevent, clean up

But the Pacific Ocean is vast. The area between Japan and Hawaii is roughly 3,800 miles of open ocean -- twice the distance from San Francisco to Chicago. Even more daunting, NOAA scientists have calculated that to survey 1 million square kilometers -- roughly 1 percent of the North Pacific Ocean -- would take 68 ships sailing 10 hours a day for one year.

"If this was an oil spill that was moving toward the coast, there would be a lot more attention," said Jared Blumenfeld, the EPA's regional administrator for California, Hawaii, the Pacific islands, Nevada and Arizona.

"We want to educate people on what is happening," he said. "We need to be prepared and work out what we can do to prevent it from coming ashore and then clean up as much as we can when it does come ashore."

McElwee said it is highly unlikely that the debris is radioactive because the tsunami swept it out to sea before the Fukushima nuclear plant melted down. Dead bodies in the refuse would decompose and sink, Ebbesmeyer said, but there is a possibility of some macabre discoveries, like feet in tennis shoes, which have washed up before on Northwest beaches and have been linked with DNA tests to missing persons who drowned.

In some cases, large objects floating near beaches or harbors could be fished out of the water. NOAA removes tons of fishing gear every year from coral reefs off the Northwestern Hawaiian Islands, for example. But most experts say the ocean is so vast that the best that can be done is to wait and watch, and clean up beaches if and when it hits California and other states.

University of Hawaii computer models show that after 2014, the debris will end up in the "North Pacific Garbage Patch," a vast area roughly 1,000 miles west of California where plastic debris accumulates and breaks into tiny pieces over time.

"We've got a marine debris problem," McElwee said. "This is a great opportunity to focus on it. But it is an ongoing problem. Whatever percent has been added by this tragedy, we need to all work together to solve it."