



Marine Debris



NOAA Marine Debris Program | Office of Response and Restoration | NOAA National Ocean Service

Frequently Asked Questions: Japan Tsunami Marine Debris

<http://marinedebris.noaa.gov/info/japanfaqs.html>



The mass of debris stretches for miles off the coast near Sendai soon after the tsunami.
Photo courtesy of Pacific Fleet, U.S. Navy.

Introduction

Of all Earth's natural hazards, tsunamis may be among the most infrequent, but they pose a major threat to coastal populations, particularly in the seismically active Pacific Ocean. The tragedy of the March 2011 tsunami in Japan had far-reaching effects that included the U.S. West Coast and Hawaii. As the tsunami receded from land, it washed much of what was in the inundation zone into the ocean. Heavier materials sank closer to shore while the buoyant materials went on to make up the debris fields we have seen in satellite imagery and aerial photos of the waters surrounding Japan. Below are information and answers to some frequently asked questions about the marine debris generated from the tsunami in Japan.

When will the debris from the tsunami in Japan reach the U.S.?

Many variables affect whether and how long it will take debris items from Japan to reach the U.S. For most areas it is a matter of years, not days or weeks. It is also impossible to accurately predict ocean currents and winds very far into the future, and thus an exact date of arrival for the debris cannot be given. It is safe to assume that debris will move across the Pacific, but exactly where, when, and how much it will potentially impact the continental U.S. and Hawaii are unknown.



NOAA has run a model using OSCURS (Ocean Surface Current Simulator). The results are shown here. **Year 1 = red; Year 2 = orange; Year 3 = yellow; Year 4 = light blue; Year 5 = violet** Courtesy of J. Churnside, NOAA; created using Google.

could pass near or wash ashore in the Northwestern Hawaiian Islands in spring 2012 approach the West Coast of the United States in 2013, and circle back to Hawaii in 2014 to 2016. **Contact James Churnside in NOAA's**

Office of Oceanic and Atmospheric Research (OAR) to discuss the NOAA Ocean Surface Current Simulator model. Contact University of Hawaii's Drs. Nikolai Maximenko and Jan Hafner to discuss their model.

How dense will the debris field be?

The initial debris fields will continue to disperse as they move with ocean currents and winds, essentially becoming scattered and unlike the large "mats" of debris seen initially. Also, some items may break apart into smaller pieces or sink, depending on what the item is made of.

Will Hawaii and the continental U.S. have to worry about radioactive debris?

Although EPA is monitoring for radioactivity, it is considered highly unlikely the tsunami-generated marine debris would be contaminated with radioactive material. Because the debris was washed out to sea before the release of radioactive water from the power plant, the contamination route is improbable. **Contact the U.S. Environmental Protection Agency for information on monitoring of radioactivity from the earthquake and tsunami.**

What about navigational safety hazards created by the tsunami debris?

If you have questions about navigation safety, please contact the U.S. Coast Guard and view the U.S. Department of Transportation's MARAD advisory at http://www.marad.dot.gov/news_room_landing_page/maritime_advisories/advisory/advisory2011-06.htm.

What is NOAA doing about the tsunami-generated marine debris?

- NOAA convened scientists to review available data, including modeling output, and provide insight on debris fate and transport.
- NOAA is one of the lead members on a Japan tsunami workgroup including the U.S. Environmental Protection Agency and University of Hawaii researchers.
- NOAA is gathering information on significant sightings of marine debris in the N. Pacific through NOAA Office of Marine and Aviation Operation's Pacific fleet of vessels, the NOAA Voluntary Observing Ship Program, and NOAA Pacific Islands Regional Observer Program and their work with the Hawaii longline fishing industry.
- NOAA is working with the U.S. Fish and Wildlife Service on shoreline debris monitoring in the Northwestern Hawaiian Islands.

How can I help?

At-sea marine debris (N. Pacific Ocean): Information on significant marine debris sightings in the North Pacific Ocean is greatly needed and can be reported to MDsightings@gmail.com (please indicate if the information can be displayed on a public website).

Shoreline marine debris monitoring: The NOAA Marine Debris Program is happy to provide information to individuals or groups interested in undertaking shoreline monitoring studies for Japan tsunami marine debris. Effective monitoring of changes in environmental conditions, such as the abundance of marine debris, requires a good deal of forethought. For tips and suggestions or to request a copy of the MDP's Shoreline Survey Field Guide and electronic data sheet visit <http://marinedebris.noaa.gov/info/japanfaqs.html>.

For more information visit

www.MarineDebris.noaa.gov/info/japanfaqs.html