

## Clearing Up Misunderstandings about Tsunami Debris on Course to the North American West Coast

With the lack of satisfactory observations, some reports in the media have greatly exaggerated the amount and type of debris from the March 11, 2011, tsunami floating toward the North American West Coast. In what follows, we will try to clear up a few misunderstandings and misperceptions.

Only a fraction of the total estimated debris generated by the tsunami was washed into the ocean. Of this, much will have sunk and will continue to sink. Our models do not take this into account, and we have no way of knowing how an individual piece of debris will behave. We have, therefore, no scientific estimates of what is still floating.

The debris that is still floating is widely dispersed across the North Pacific Ocean.

Only a small percentage of the debris that is still afloat will wash up on the North American West Coast. Estimates from our model suggest that at least 95% of the debris that has not sunk will move into the North Pacific Garbage Patch, where it may stay for years, break up into smaller pieces, and mix with old marine debris that has accumulated there over the years.

In the long-term, a larger problem than the tsunami debris are the tons of marine debris generated every day from shores, ships, and fisheries. This debris harms and threatens marine life. Our model suggests that in about 4 years from now, after mixing with older debris in the Garbage Patch, some of the tsunami debris that has leaked out from the patch can be expected to wash up with other marine debris on east-facing shores of the Main Hawaiian Islands.

The unusual aspect of this debris is that it may contain large objects and possibly hazardous material. We want to stress, though, that it is the result of a tragedy of nature and comes from a coastline that does not typically produce much marine debris.

Our models are the best estimates of the spread (not density) of the tsunami debris cloud, but they are estimates only and not proven reality. We, as scientists, wish to collect as much data and information as we can about the tsunami debris in order to validate our assessments and to improve our models for future applications.

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Capsized boat found on 2011/11/21 at 34-05-00N, 175-08-00E  
Image courtesy  
<http://www.kantei.go.jp/jp/singi/kaiyou/hyouryuu/senpaku.html>