



Japan Tsunami Marine Debris: From the disaster to now

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NOAA Marine Debris Program

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NOAA Marine Debris Program Overview

Established in **2006** by the United States Congress as the federal lead for marine debris

5 Program Pillars:

Research, Removal, Prevention, Regional Coordination, and Emergency Response

Mission:

To investigate and prevent the adverse impacts of marine debris

Vision:

The global ocean and its coasts are free from the impacts of marine debris



The Disaster

March 11, 2011



Photo: Reuters



The Great Tōhoku Earthquake & Tsunami

- 9.0 magnitude earthquake
- Tsunami arrived 30 minutes later
- 39 m max wave height
- 217 square miles inundation
- Nearly 16,000 people confirmed dead, Over 2,500 missing
- Hundreds of thousands remain displaced

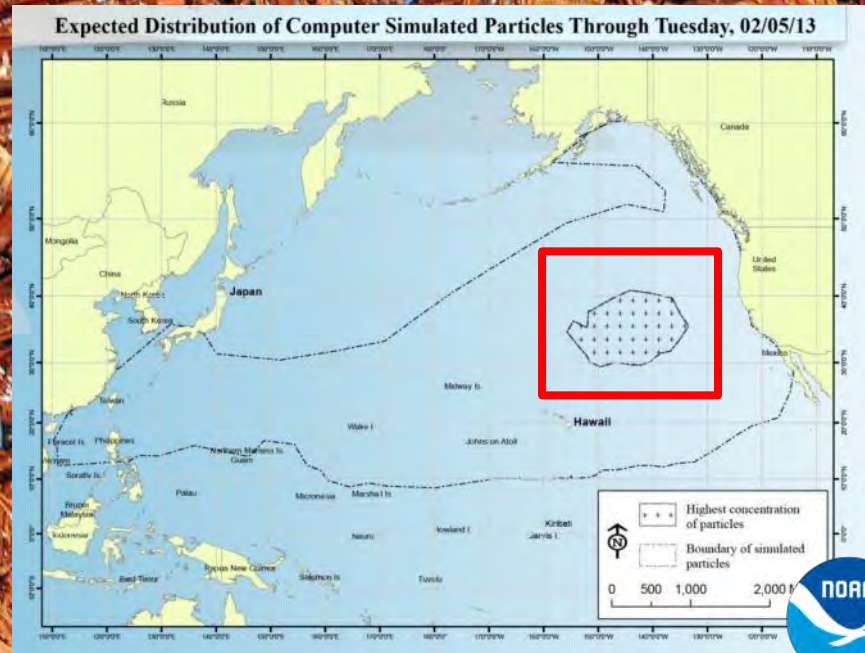


NOAA Marine Debris Program Response



Modeling

- Estimated **5 million tons** of debris, **70% sank** off the coast of Japan
- NOAA simulation of debris
- **8,000 particles** released from the East Coast of Japan
- High concentration Northeast of Hawaiian Archipelago
- Debris predicted to reach US shores by **winter 2011-2012**



Modeling



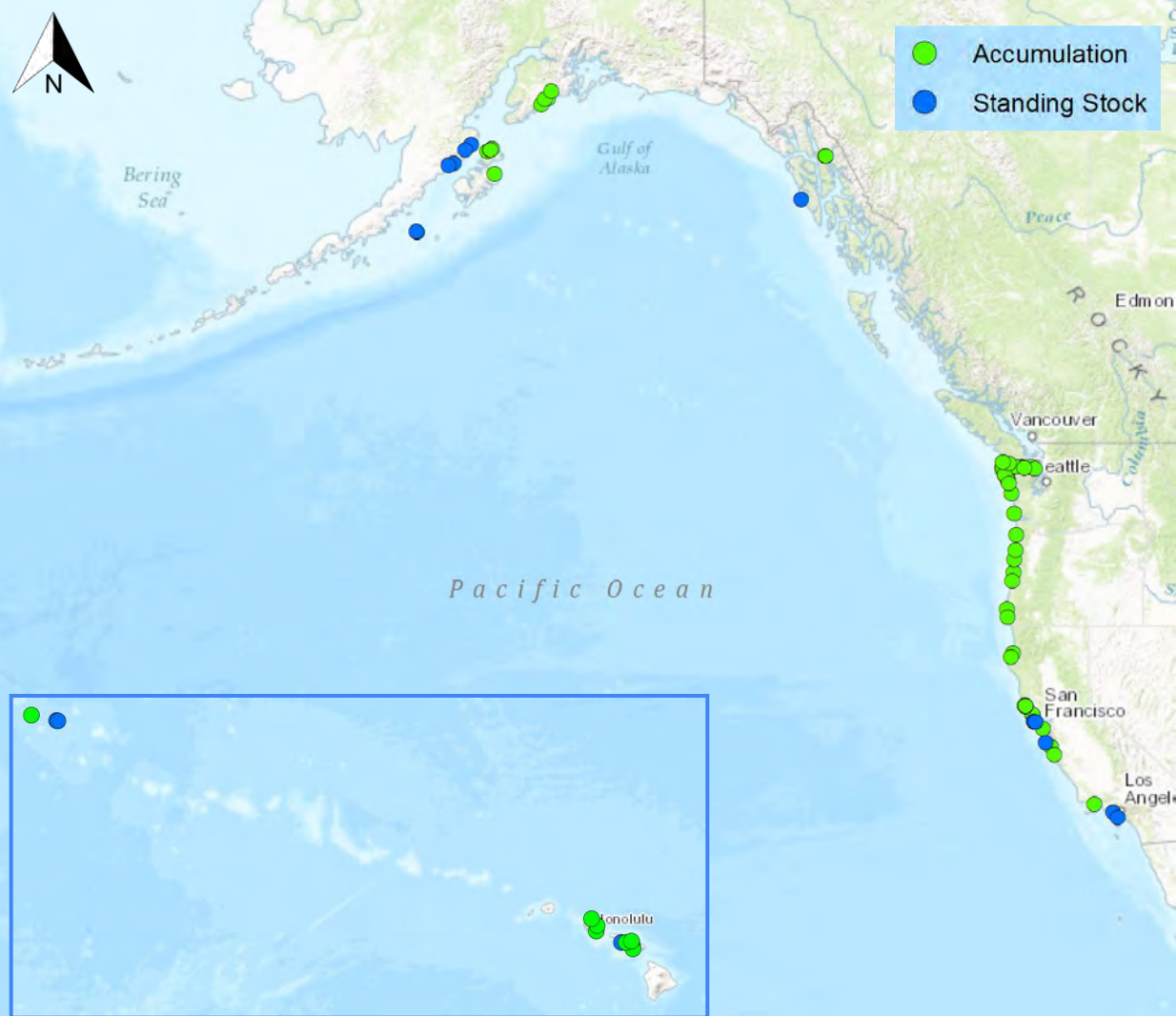
Misawa Docks

- June 2012 – Oregon
- September 2012 – Hawaii (at-sea)
- December 2012 - Washington



Monitoring

- Marine Debris Monitoring and Assessment Project
- **Volunteer citizen science initiative**
- NOAA **standardized** monitoring protocols
- Monthly site surveys



Detection

Opportunistic

- Existing vehicles
- Marine Debris Tracker App
- Disaster debris email

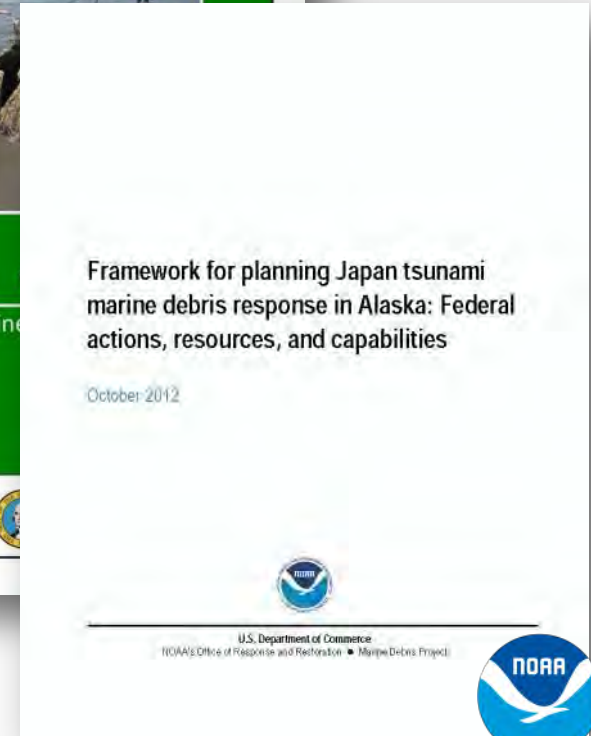
Targeted:

- Satellite
- Rapid Detection Requests
- Aerial Surveys
- Unmanned Aircraft System



State Collaboration

- Coordinated response within US states
- Response plans created in:
 - Alaska
 - Washington
 - Oregon
 - California
 - Hawai'i





International Collaboration

- \$5 million gift from Government of Japan
- Coordination with **Japanese Consulates**
- Connections made between scientists
- Coordination with Canada on debris types

Photos: David Baxter & DLNR, State of Hawaii



Removal

- NOAA distributed \$50,000 to **each impacted state**
- **Further support from Government of Japan**
- Funds used for:
 - Volunteer cleanups
 - Large scale removal
 - Tipping fees
 - Garbage bins
- Majority of removal in **Alaska**



Where are we now?

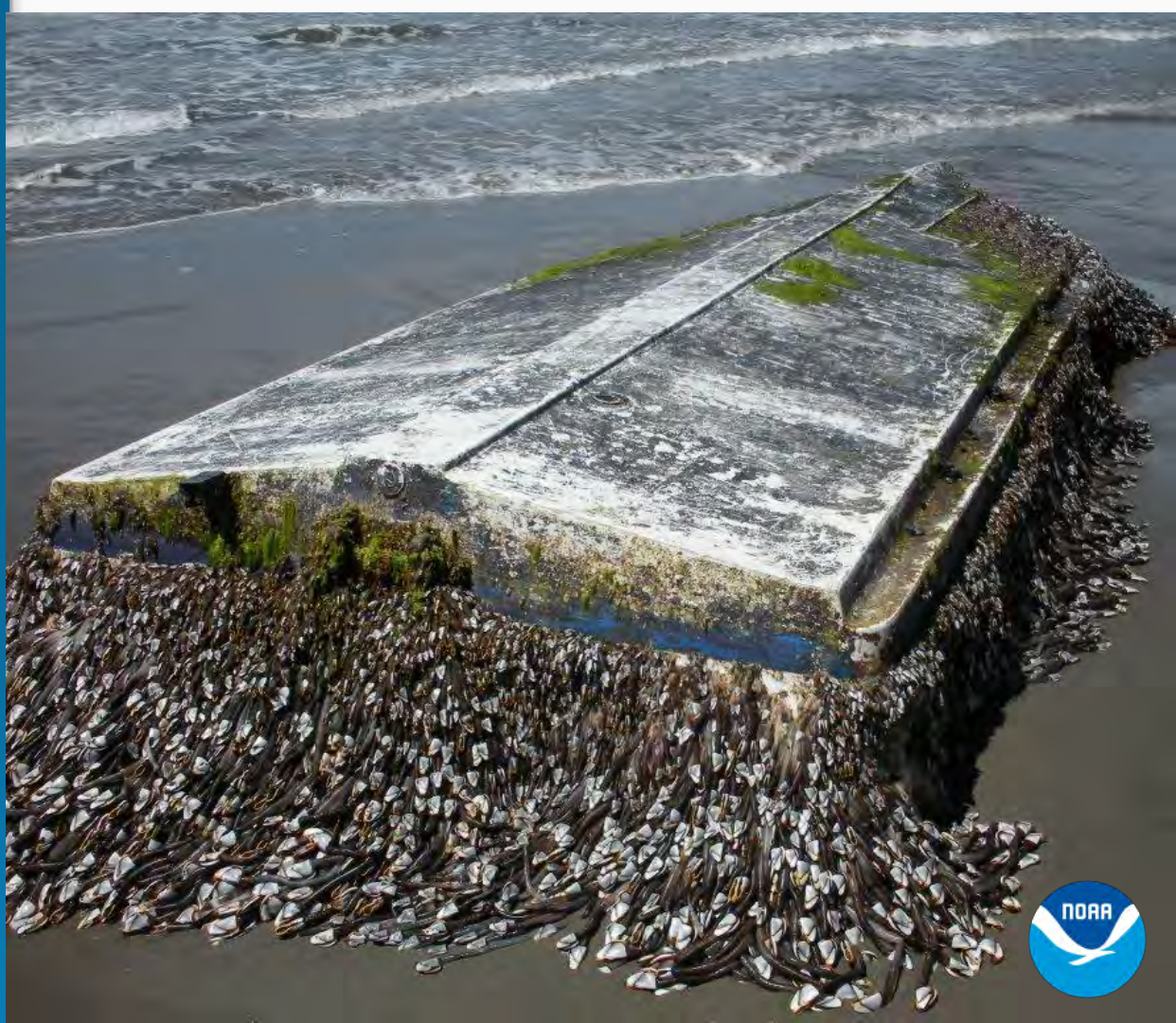
Project ADRIFT



Assessing the Debris-Related Impact from Tsunami

- 3 year project (2014-2017)
- Collaboration between **Canada, Japan, and the United States**
- Assess the impacts of tsunami debris on the **West Coast**

Photo: NOAA



A photograph of a white boat with red paint on its hull, lying on a sandy beach. The ocean is visible in the background under a blue sky with scattered clouds. The boat is the central focus of the image, and the text is overlaid on a semi-transparent blue box in the lower-left quadrant.

Thank You

Nancy Wallace, Director
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