



Tsunami debris off the coast of Yamada, Japan.
US Navy Pacific fleet

Japan Tsunami Marine Debris Overview and Status Update

PSMFC Annual Meeting

August 21, 2012

Nir Barnea
NOAA Marine Debris Program

Marine Debris

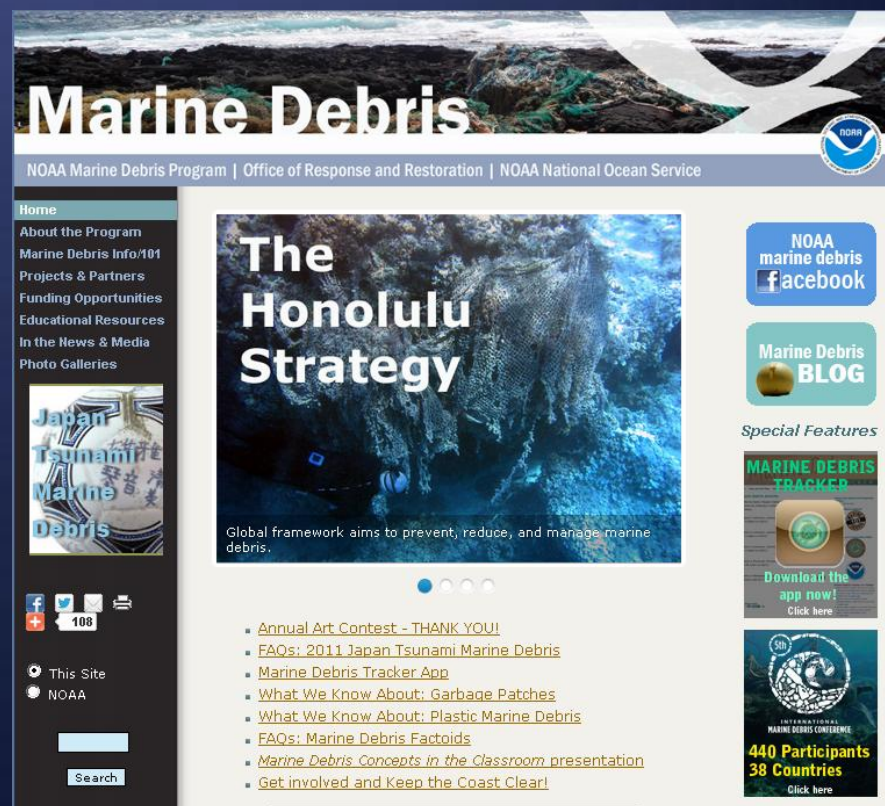
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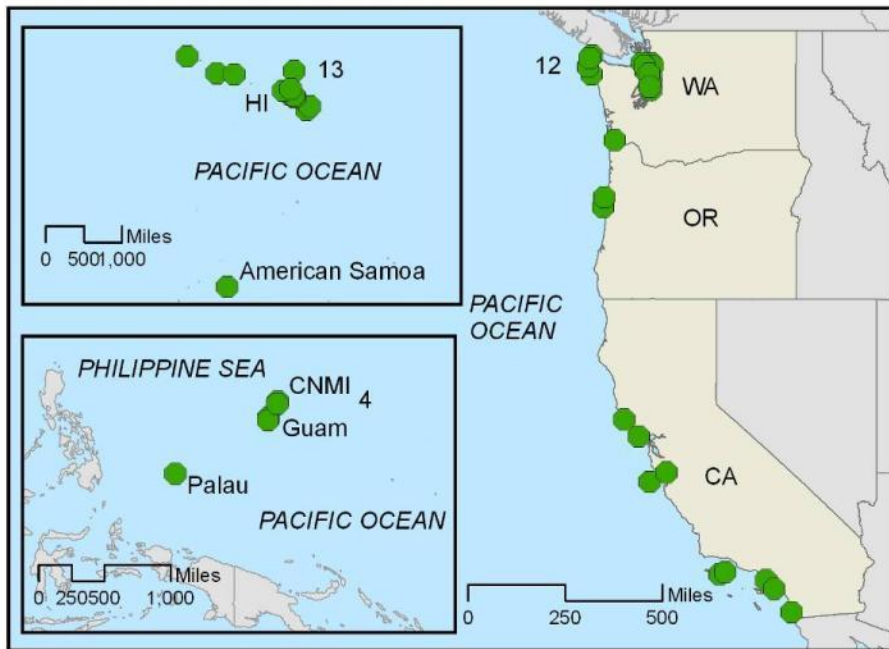
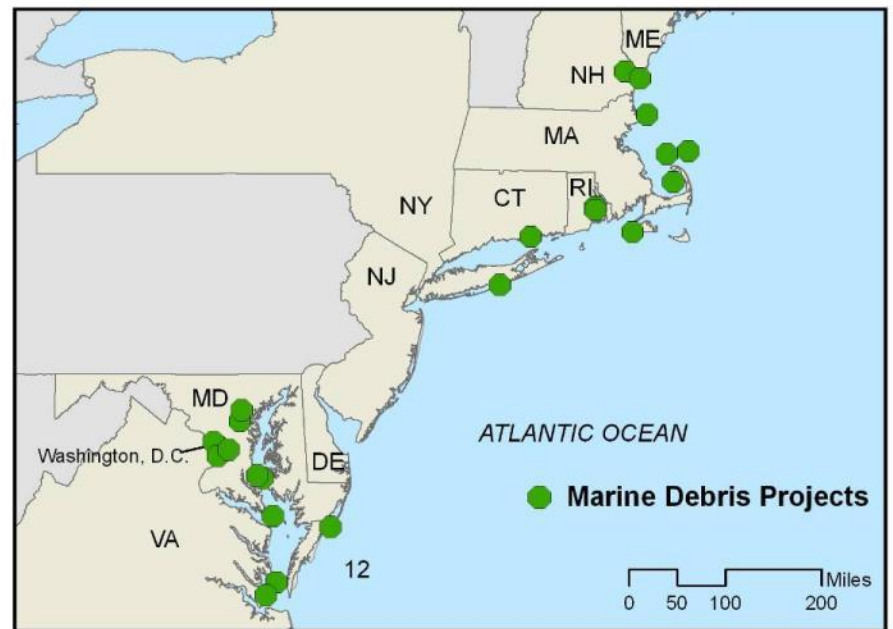
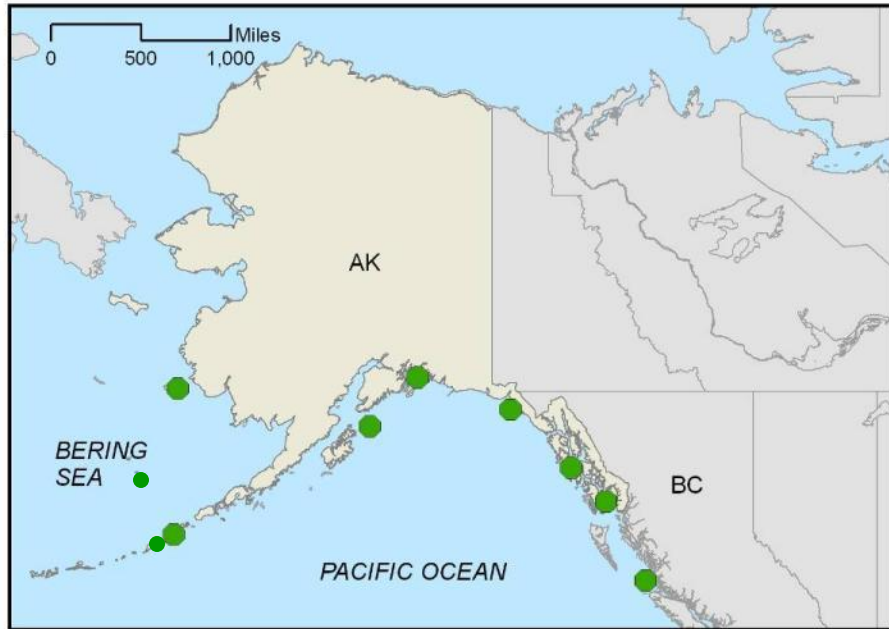
NOAA Marine Debris Program

- Established in 2005
- Mandated by the Marine Debris Research, Prevention, and Reduction Act, Dec. 2006
- Dedicated to promoting and leading research, prevention, and reduction activities nationwide
- MDP has regional coordinators for the East Coast, Gulf of Mexico & Caribbean, Great Lakes, West Coast, Alaska, and Hawaii
- Website:

www.marinedebris.noaa.gov



NOAA Marine Debris Projects



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Event Overview

- 9.0 magnitude earthquake
- Tsunami: 130 ft max wave height
- 217 square miles inundation
- 15,867 people confirmed dead, 2,904 missing (as of 7/27/12)
- Massive damage



(Keichi Nakane/Associated Press)

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Early Debris



Photos: US Navy Pacific Fleet

Debris on March 13 off the Sendai coast

- Patches and fields
- Wood, construction materials abundant
- The debris dispersed, some sunk



Photos: US Navy Pacific Fleet

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Safety First

- Maritime Advisory
- Guidelines for Debris Handling

Date: 2012/03/20 UTC: 23:21:54 Lat: 52°03.42N Lon: 135°07.25W



Drifting vessel

Photo: USCG



Syringe

Photo: NOAA



Floating dock

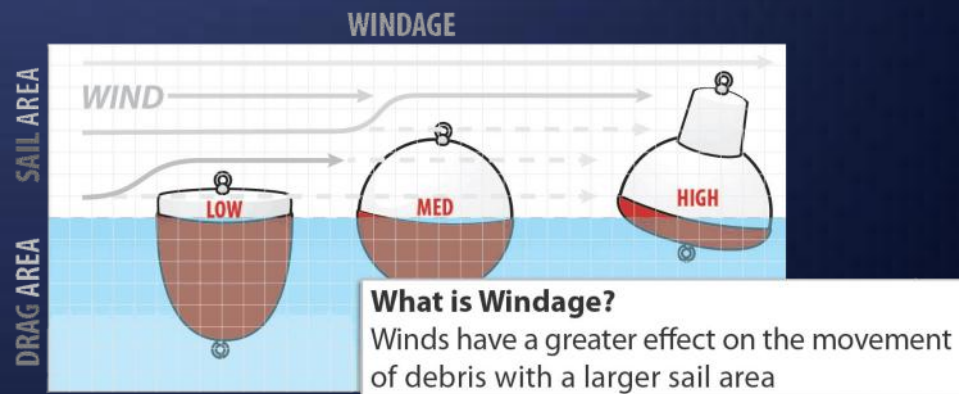
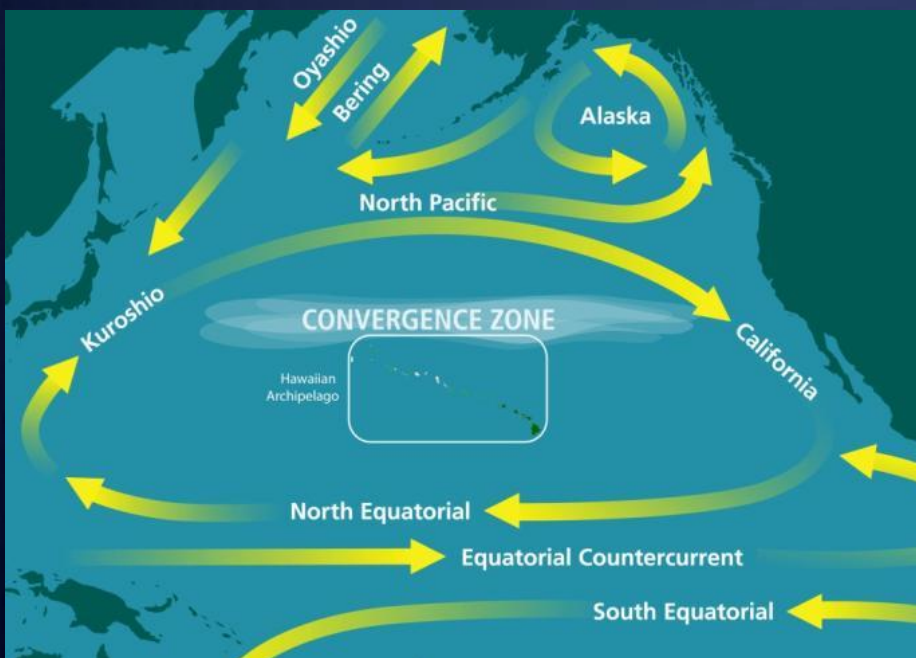
Photo: OPRD

Modeling: Where and When

Ocean currents

+

Winds



- Combination of sail area and drag
- **Low** = slow (e.g., wood, nets)
- **Medium** = moderate (e.g., fishing vessel)
- **High** = fast (e.g., unoccupied inflatable life raft, Styrofoam)

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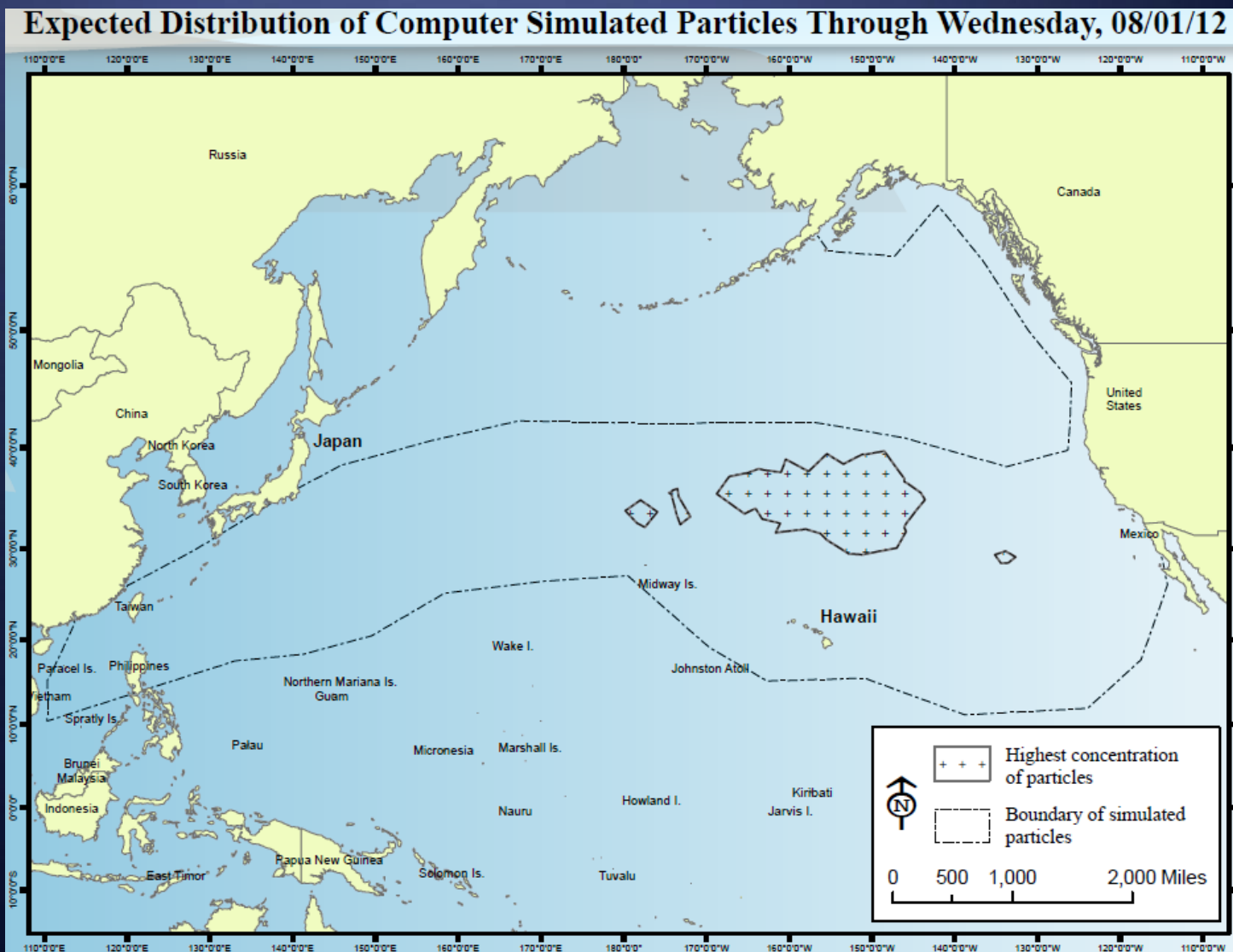
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Modeling Output

http://marinedebris.noaa.gov/tsunamidebris/debris_model.html

- 8,000 total particles from 8 locations
- Random windage: low to high
- Where debris may be NOW

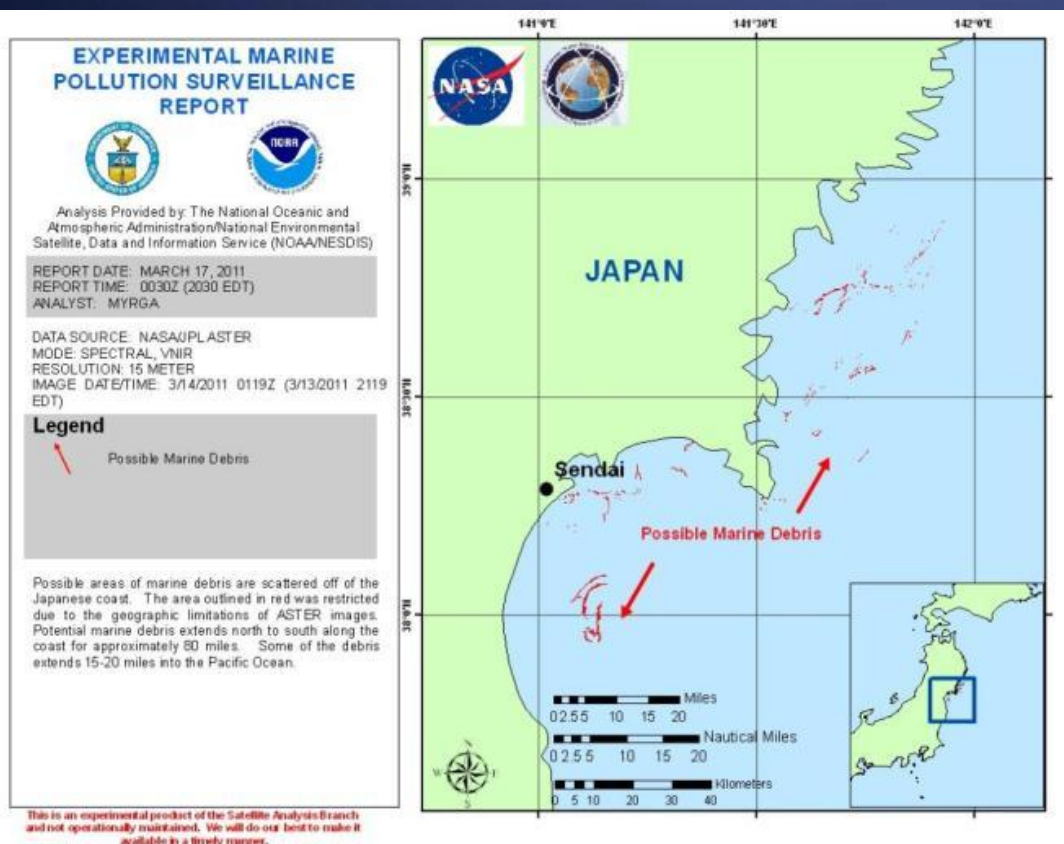


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Satellite and Aerial Detection



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At-sea Sightings

disasterdebris@noaa.gov



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disasterdebris@noaa.gov

Shoreline Sightings



Float, December 2011, Washington



Small boat, June 2012, Washington



Soccer ball, March 2012, Alaska



Floating dock, June 2012, Oregon



Kerosene can, March 2012
Oregon

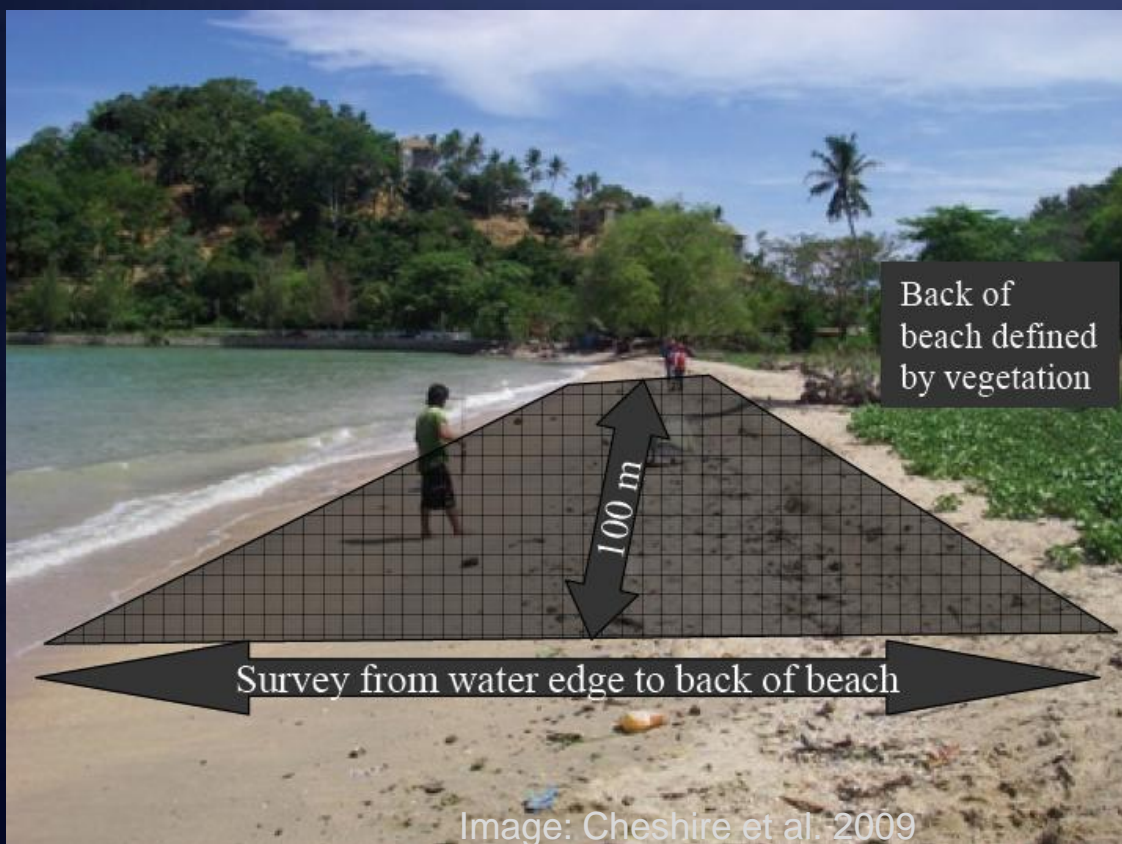
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Marine Debris Monitoring MD.monitoring@noaa.gov

- Survey a **defined** stretch of shoreline on a **regular** basis
- Follow **established protocols**
- Record **types** and **amounts** of marine debris present



NOAA Marine Debris Shoreline Survey Field Guide

Sarah Opfer, Courtney Arthur, and
Sherry Lippiatt



U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Response and Restoration
Marine Debris Program

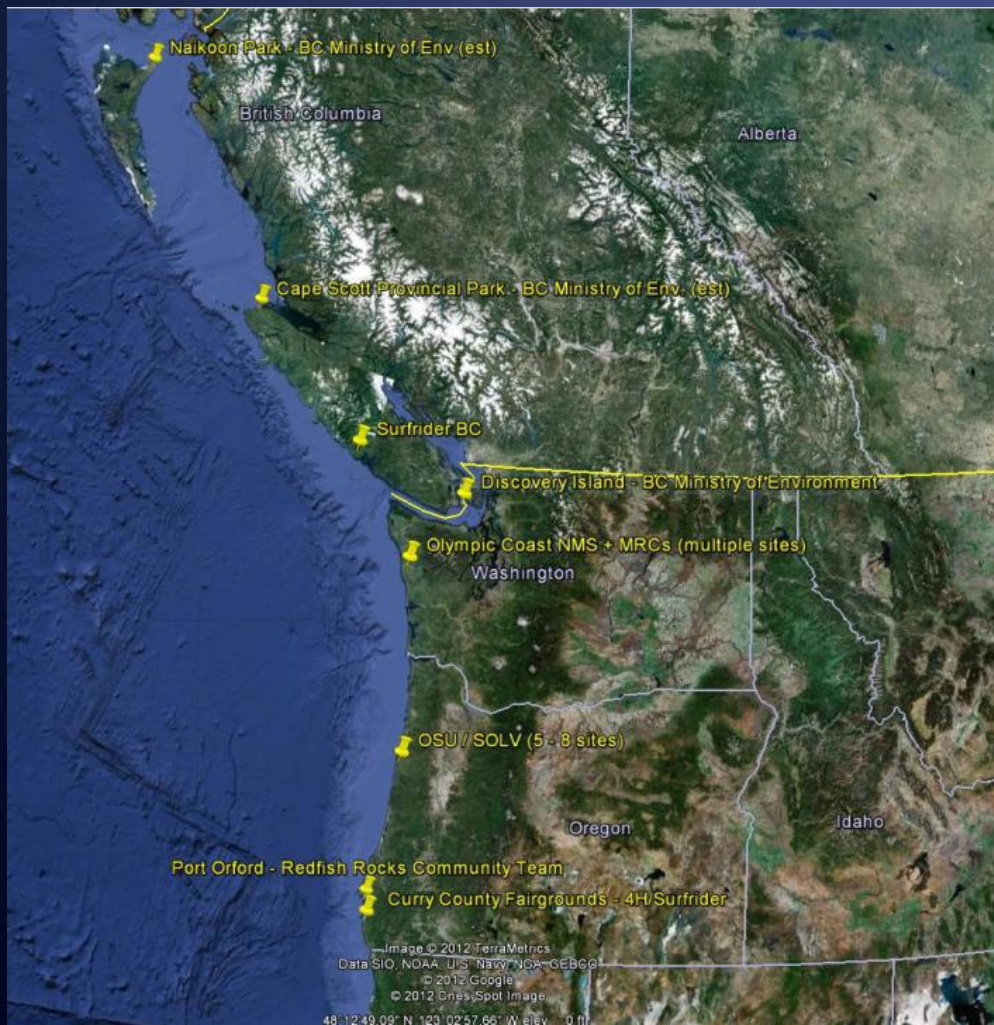
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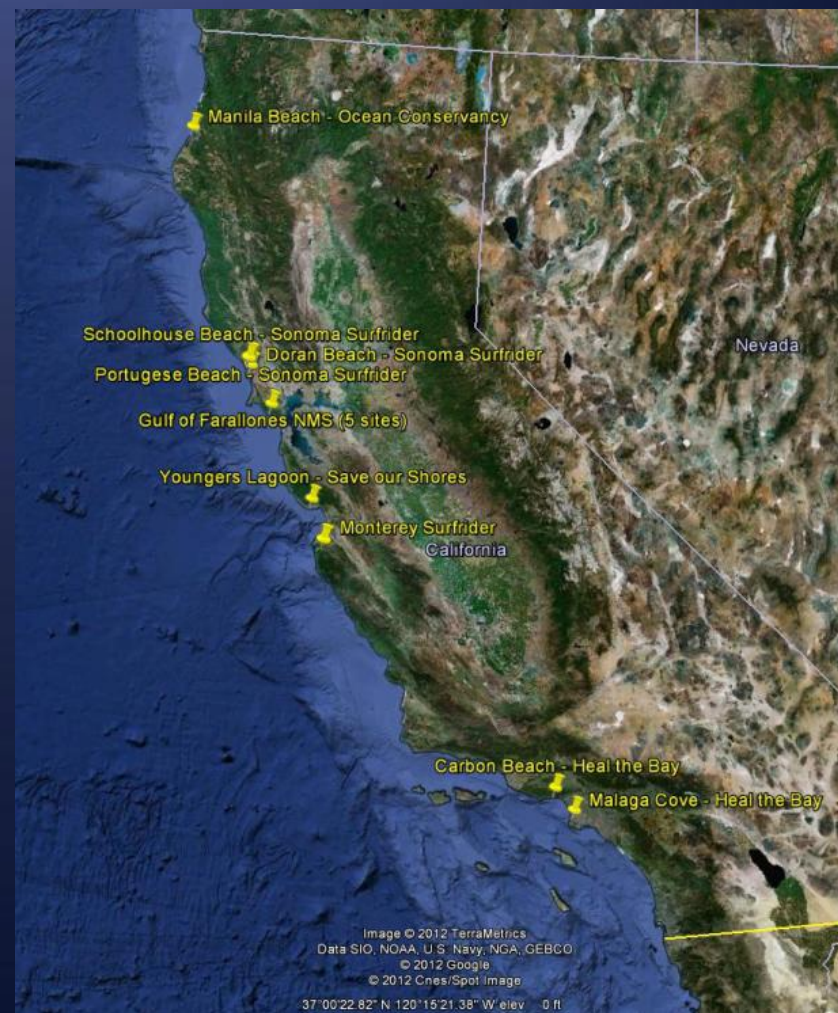


Monitoring Locations

Washington, Oregon and BC



California



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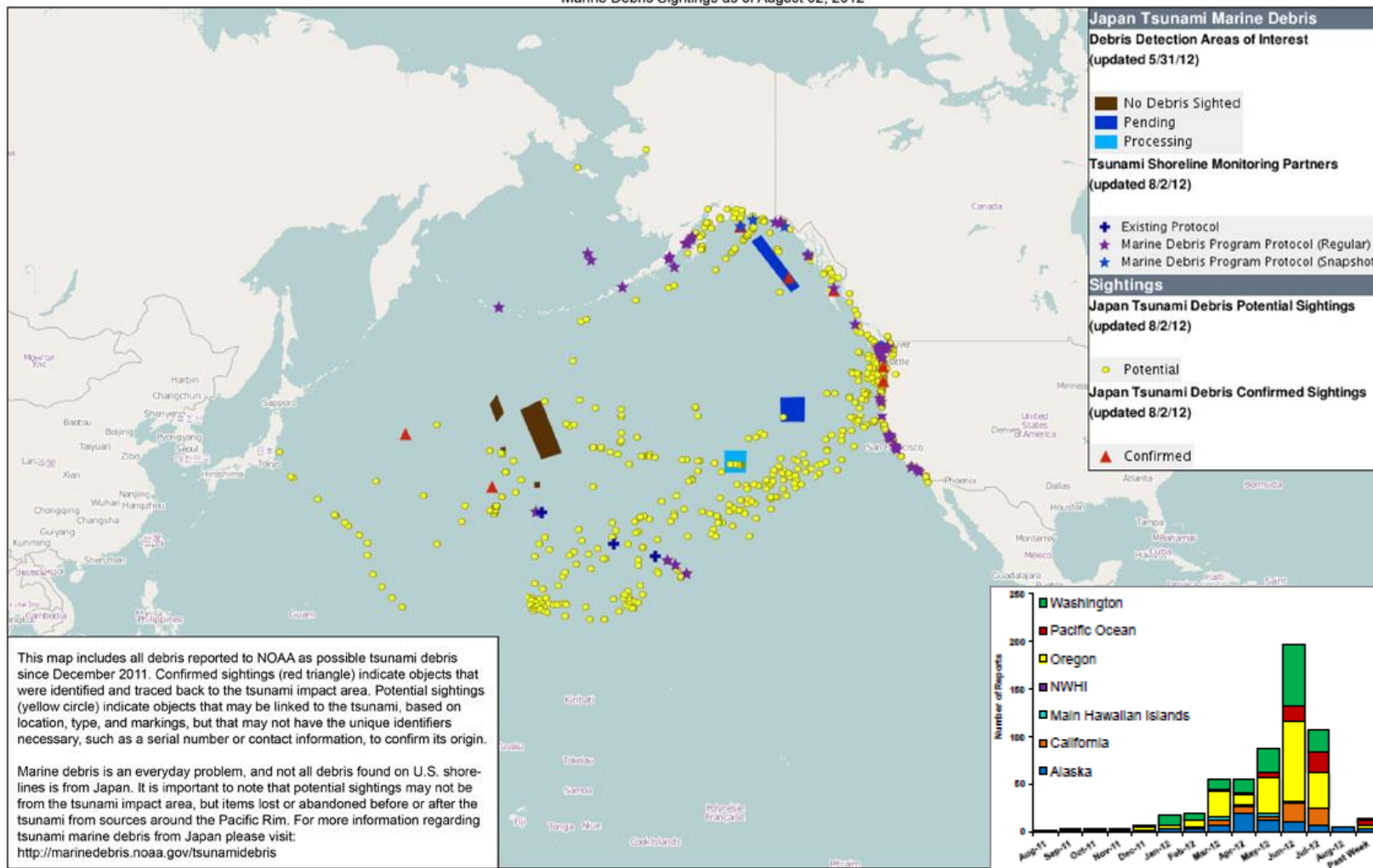
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ERMA

http://marinedebris.noaa.gov/tsunamidebris/debris_sightings.html

Marine Debris Sightings as of August 02, 2012



US DOC | NOAA | NOS | NOAA Office of Response & Restoration
Email Comments: or.erma@noaa.gov

Coastal Response Research Center
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Environmental Response Management Application
Pacific Islands

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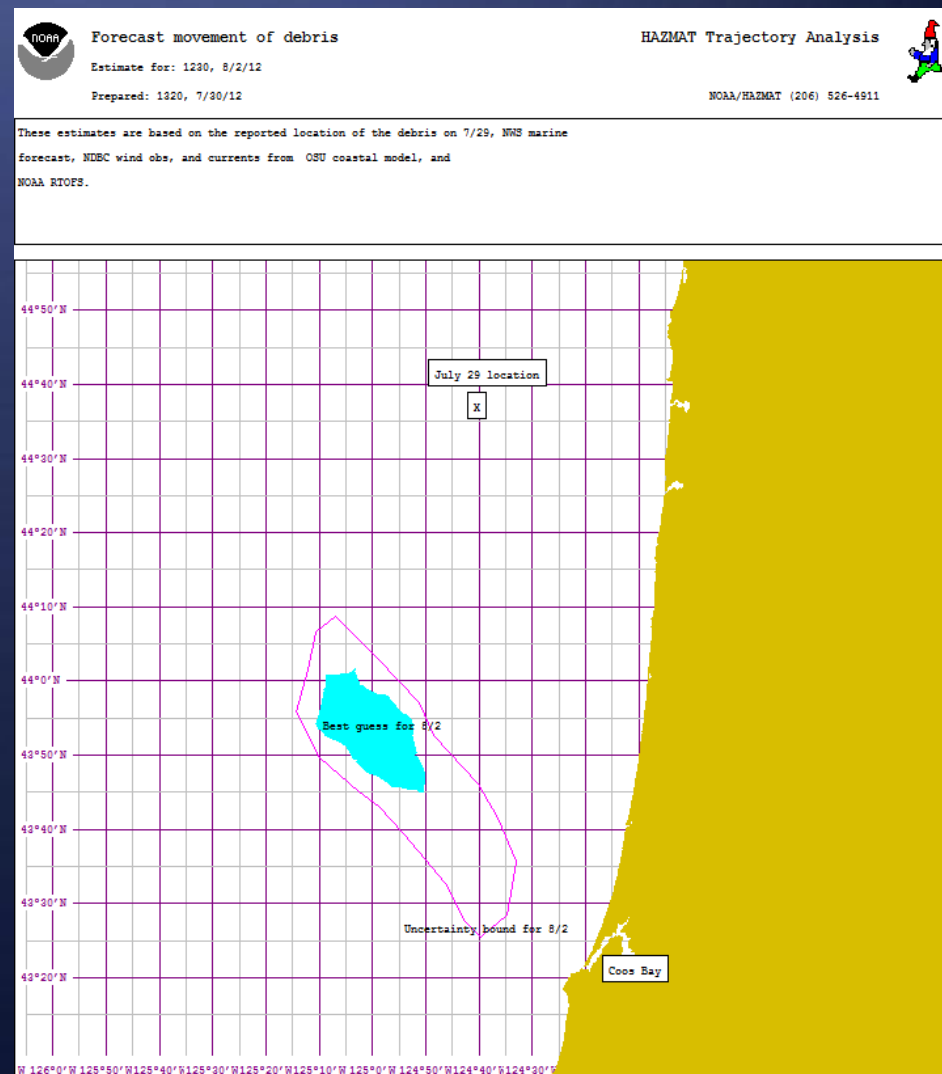


Trajectories

- NOAA Emergency Response Division, using GNOME model
- Hindcast or forecast
- Caveats, uncertainties, and limitations



Photo: USCG



Outreach and Communication

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

- Over 70 outreach events along **the** West Coast
- Provide information, address perception
- NOAA, JIC, and states Websites



Public meeting in Washington



Radiation detection

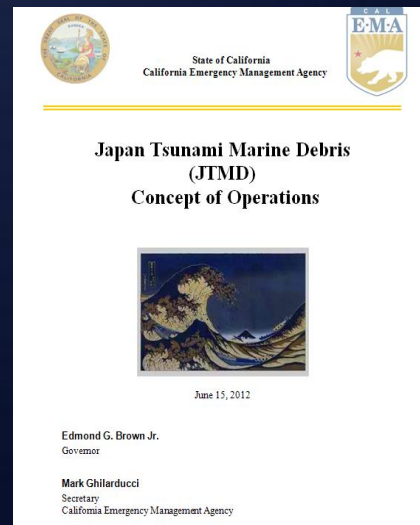
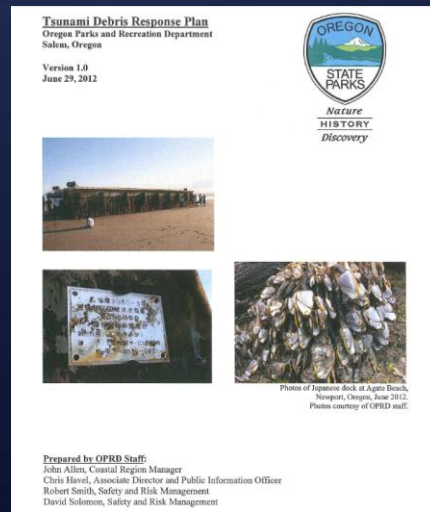
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Planning

- All five states
- Collaborative approach
- Plans address
 - Routine marine debris on land
 - Large debris on land
 - Offshore debris
 - Hazardous debris
 - Communication and outreach
- Unprecedented event, best addressed by a collaborative effort





Thank you

Get info: <http://marinedebris.noaa.gov/tsunamidebris/>

Report sightings: disasterdebris@noaa.gov

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