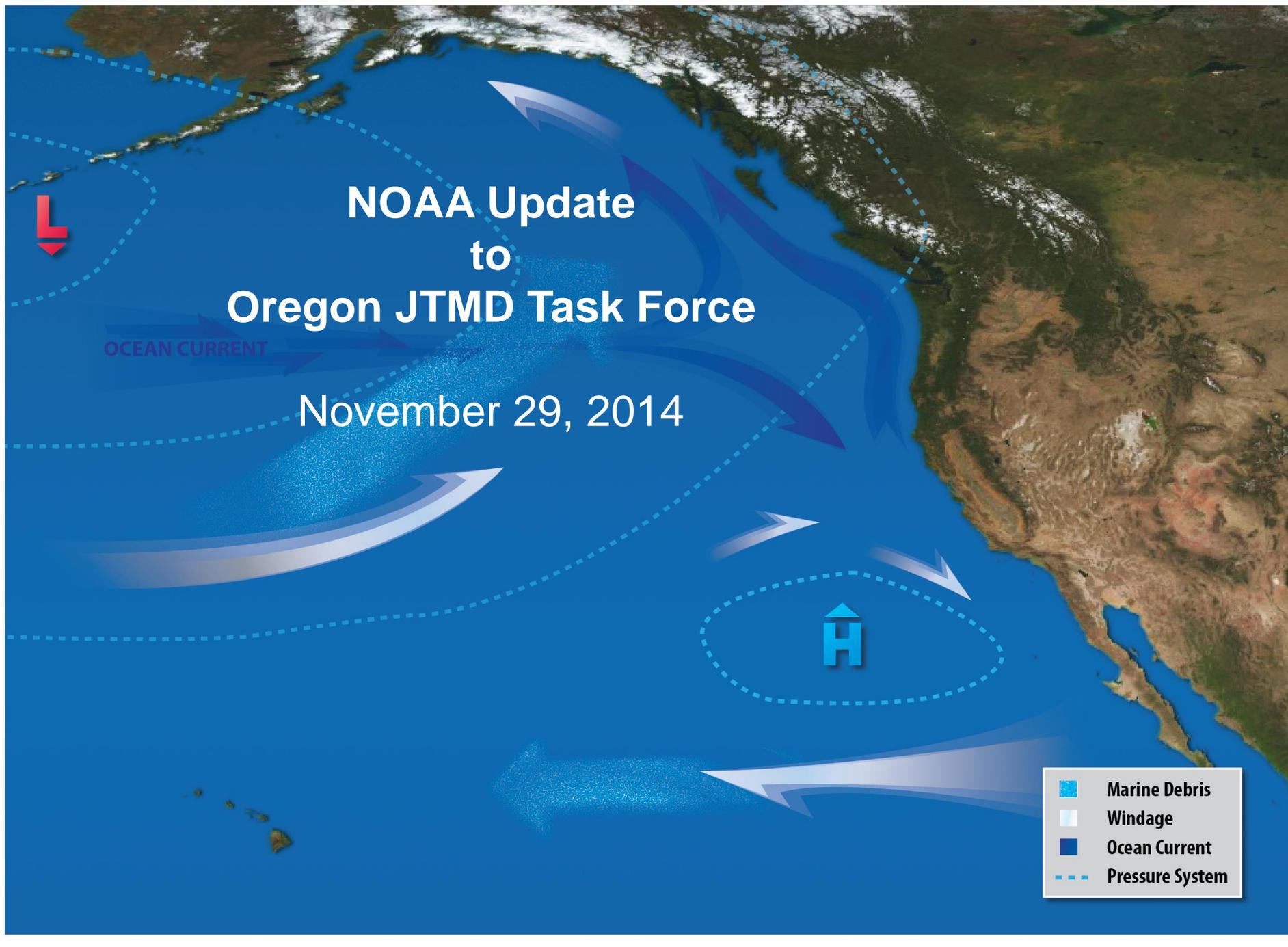


NOAA Update to Oregon JTMD Task Force

November 29, 2014

OCEAN CURRENT

- Marine Debris
- Windage
- Ocean Current
- Pressure System



Modeling

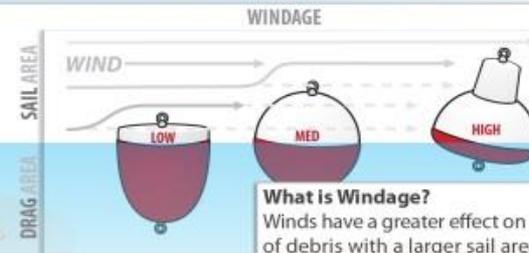
Modeled Movement of the Marine Debris Generated by the March 2011 Japan Tsunami



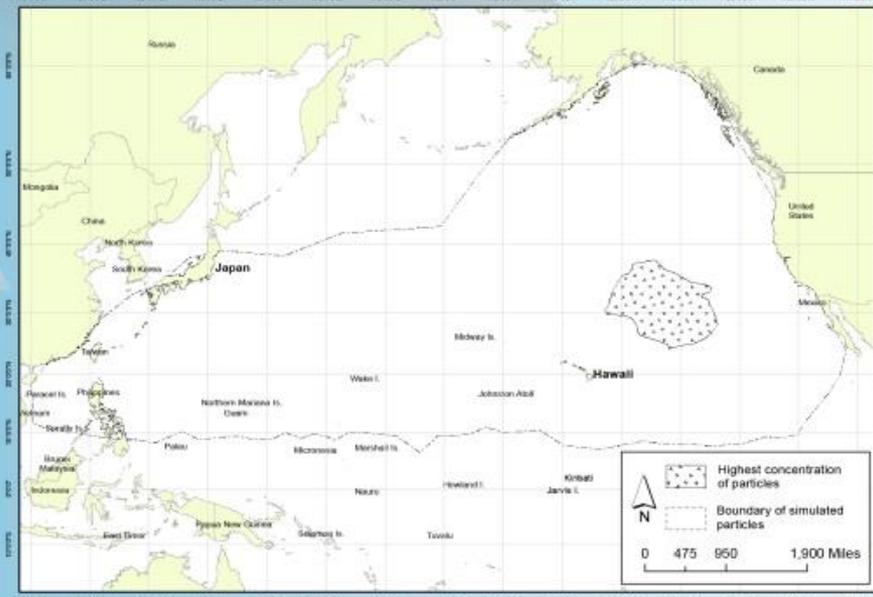
On March 11, 2011, an estimated 5 million tons of debris washed out by the tsunami

Estimated 30% floated away and dispersed

Estimated 70% sank near Japan



Expected Distribution of Computer Simulated Particles Through Thursday, 10/02/14 0700 PDT

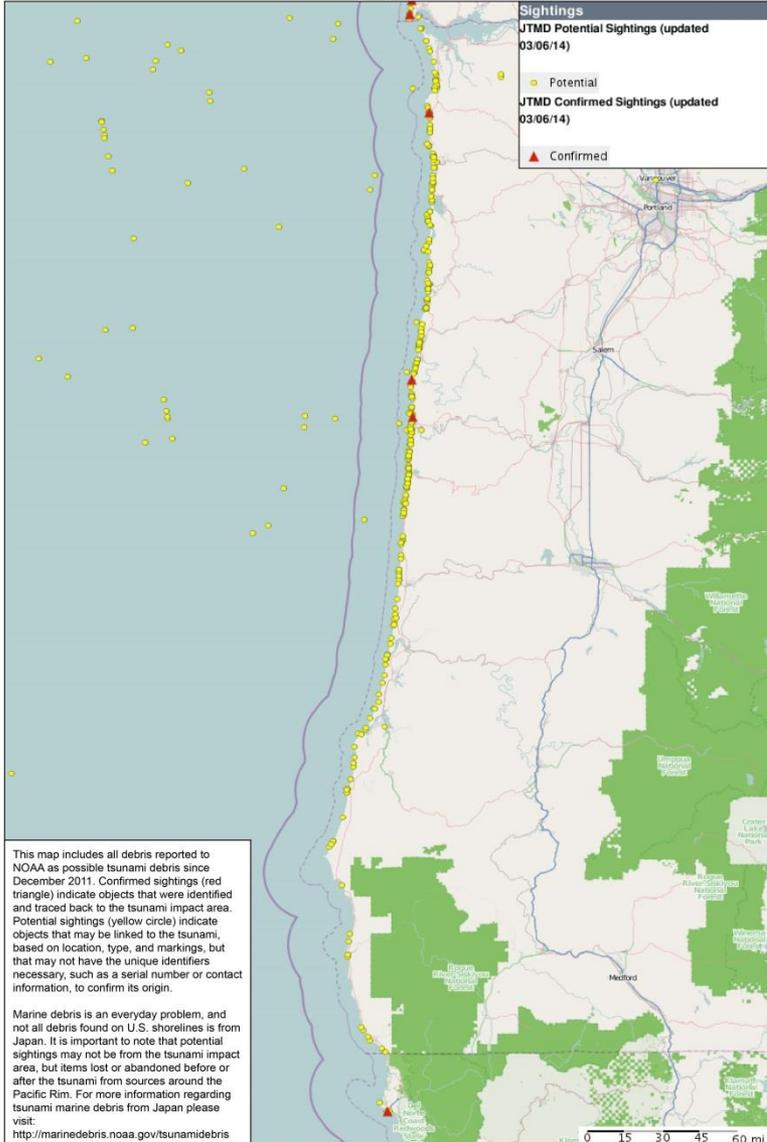


- High windage items, such as foam pieces and plastics, first reached the Pacific Northwest coast during the winter of 2011-2012 and Hawaii in the summer of 2012.
- Model Results: A majority of computer simulated low windage particles are dispersed across a wide area north and east of the Hawaiian Islands. The crosshatched portion in the center of the graphic does not represent a mass; rather, it shows the area where a higher number of low windage particles may be located.
- NOAA expects widely scattered tsunami debris to continue washing up along Pacific shorelines intermittently over the coming years, mixed in with non-tsunami marine debris.

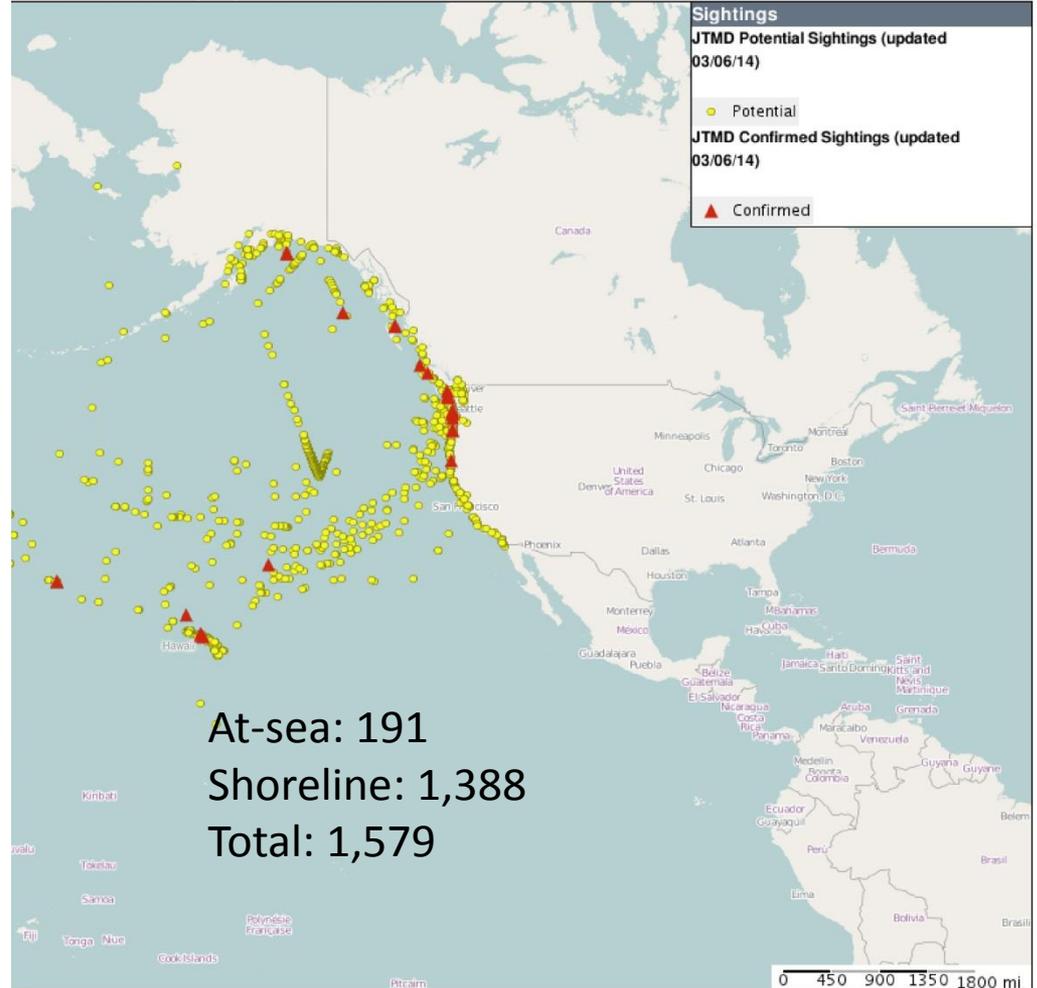
NOAA used a computer model to simulate the movement of tsunami debris from March 11, 2011, to the present day. This GNOME model (General NOAA Operational Modeling Environment) simulation is based on ocean surface currents from the US Navy (the Hybrid Coordinate Ocean Model) and winds from NOAA (the NOAA blended wind product). The computer model simultaneously released 1,000 simulated particles from each of 8 locations on the Japan coastline where tsunami wave heights were 3.5 meters or greater. Particles were randomly assigned windage values from 1-5%, meaning that they were moved not only by ocean currents, but were also moved by 1-5% of wind speed in the downwind direction. The dotted black line contains 95% of all simulated particles. The cross-hatched area indicates the region of the highest concentration of simulated debris with 1% windage at the end of the simulation. For more details on this model, please visit marinedebris.noaa.gov. Have you seen tsunami debris? Report it to: DisasterDebris@noaa.gov

Sightings

Marine Debris Sightings as of March 6, 2014



Marine Debris Sightings as of March 6, 2014



On-going Studies

Shoreline Survey

- Measureable increase in debris due to JTMD?
- Spatial and temporal variation



Tattori University Transponders

- JTMD-simulated drift study
- Report transponders found!



Long Term Outlook

JTMD will continue to arrive for some time...

- In winter 2014-2015 additional JTMD, mixed with other debris, will arrive along the West Coast
- Intermittent, widely scattered
- It is not possible to predict how much, or exactly where and when
- **JTMD is still a safety and an environmental concern**

Funding

- NOAA MDP \$250k grant is mostly spent
- Japan gift fund status:
 - Total funding: \$5 Million
 - Each of the five states received \$250,000
 - Alaska received an additional \$750,000
 - Oregon obligated and spent \$70,000
 - Special projects: \$478,000 were spent to remove the dock in Washington State.

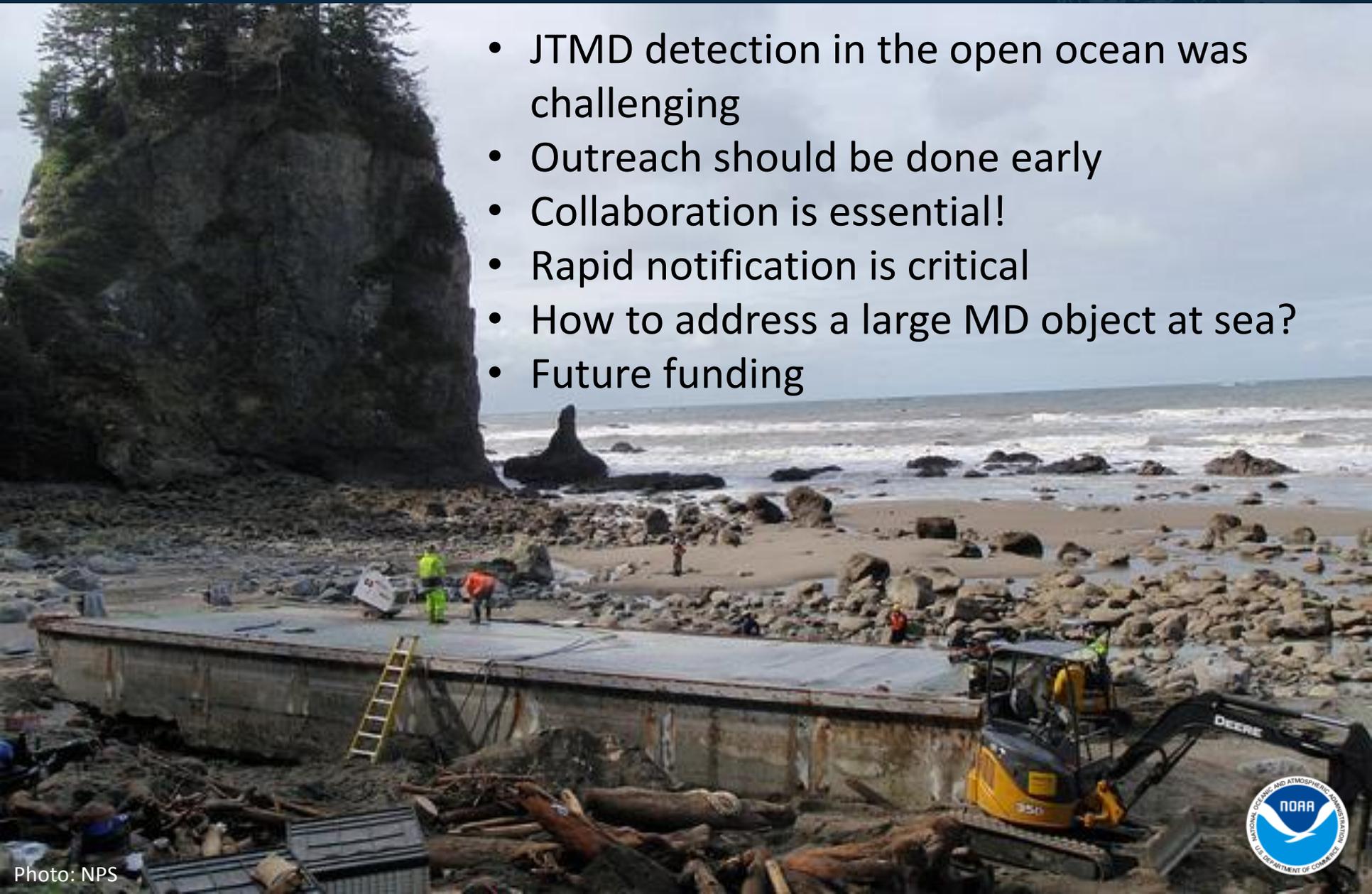
Lessons Learned

- JTMD arrival was intermittent and widely scattered
- Quantities were significant, but usually manageable
- Large JTMD items posed a hazard to navigation
- JTMD hazardous items arrived, and were usually handled well
- Debris composition is important. JTMD composition was 70-80% wood, most of it likely sank



Lessons Learned

- JTMD detection in the open ocean was challenging
- Outreach should be done early
- Collaboration is essential!
- Rapid notification is critical
- How to address a large MD object at sea?
- Future funding



Thank You!

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<http://marinedebris.noaa.gov/>

