OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES VICKI S. MCCONNELL, STATE GEOLOGIST



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Tsunami model data released for entire Oregon coast

Model output can assist in site-specific evaluations of tsunami risk

PORTLAND, Ore. – The Oregon Department of Geology and Mineral Industries (DOGAMI) has released seven technical publications of value to scientists, engineers, and emergency managers concerned with tsunami hazard mitigation. The general public may be interested in the graphs and video animations simulating tsunami wave arrival times for specific areas on the coast. These digital data were used to create the latest generation of tsunami inundation and evacuation maps for Oregon, released over the past few years.

The new publications contain model output files of maximum tsunami wave elevations, velocities, and flow depths at specific locations over the course of the entire simulation. They also include post-earthquake subsidence values, pre- and post-earthquake topography, and more. There are two booklets for each project area with charts depicting the modeled tsunami wave heights and velocities as they arrive at gauge stations simulated in the computer model. The charts reflect five local tsunami scenarios and two distant tsunami scenarios, over an 8-hour period, unless otherwise noted.

Simulated tsunami inundation data publications, numbered below, are organized by six coastal project areas and are authored by George R. Priest, Robert C. Witter, Y. Joseph Zhang, Kelin Wang, Chris Goldfinger, Laura L. Stimely, John T. English, Sean G. Pickner, Kaleena L.B. Hughes, Taylore E. Wille, and Rachel L. Smith.

• Open-File Report O-13-13, Tsunami animations, time histories, and digital point data for flow depth, elevation, and velocity for the South Coast project area, Curry County, Oregon. Project area extends from the Oregon/California state line to approx. 1 mile north of Port Orford in Curry County. Project area does not cover the entire Curry County extent.



Video animation (at left) simulating tsunami wave arrival at Lincoln City, Oregon. This freeze- frame image shows tsunami waves 25 minutes after an offshore Cascadia earthquake, reaching as high as 15 meters (50 feet) or more.

Animations for select coastal areas are included in the publications.

To preview these publications, visit: <u>http://www.oregongeology.org/pub</u> <u>s/ofr/p-O-13-13.htm</u> **DOGAMI's mission** is to provide earth science information and regulation to make Oregon safe and prosperous.

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- Open-File Report O-13-14, Tsunami animations, time histories, and digital point data for flow depth, elevation, and velocity for the Bandon project area, Coos and Curry Counties, Oregon, covering portions of Coos and Curry counties including the city of Bandon and the Langlois and Sixes communities.
- Open-File Report O-13-15, Tsunami animations, time histories, and digital point data for flow depth, elevation, and velocity for the Coos Bay project area, Coos County, Oregon. Project area extends from approximately 8 miles south of Coos Bay to approximately 5 miles north of Haynes Inlet in Coos County. This project area does not cover the entire Coos County extent.
- Open-File Report O-13-16, Tsunami animations, time histories, and digital point data for flow depth, elevation, and velocity for the Central Coast project area, Coos, Douglas, Lane, and Lincoln Counties, Oregon, covering the entire coastline of Lincoln, Lane, and Douglas Counties and extends into northern Coos County including the Lakeside community.
- Open-File Report O-13-17, Tsunami animations, time histories, and digital point data for flow depth, elevation, and velocity for the Tillamook project area, Tillamook County, Oregon, covering the entire extent of Tillamook County.
- Open-File Report O-13-18, Tsunami animations, time histories, and digital point data for flow depth, elevation, and velocity for the Clatsop project area, Clatsop County, Oregon. Project area covers the entire coastline of Clatsop County and extends up the Columbia River to include the City of Astoria. Does not include the Washington (north) side of the Columbia River.

Open-File Report O-13-19, Summary of Tsunami Hazard Data for Oregon – previously published on Oct. 2, 2013 and available separately – includes seamless, statewide tsunami inundation scenarios in the form of Esri® ArcGIS® shapefiles for seven scenarios selected for depiction on published DOGAMI tsunami inundation maps (<u>TIM series</u>). The data were also used to create the latest generation of <u>tsunami evacuation maps</u> for Oregon. A 14-page text report describes the numerical model used to create the scenarios and the assumptions and criteria used to make the inundation lines.

The publications above were funded under award #NA09NW54670014 by the National Oceanic and Atmospheric Administration (NOAA) through the National Tsunami Hazard Mitigation Program.

To see a preview of the publications, visit: <u>http://www.oregongeology.org/pubs/ofr/p-O-13-13.htm</u>

The report can be purchased on disc for \$30 each from Nature of the Northwest Information Center, 800 NE Oregon Street, Suite 965, Portland, Oregon, 97232. You may also call (971) 673-2331 or order online at http://www.NatureNW.org. There is a \$4.95 shipping and handling charge for all mailed items.

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The Oregon Department of Geology and Mineral Industries is an independent agency of the State and has a broad responsibility in developing an understanding of the state's geologic resources and natural hazards. The Department then makes this information available to communities and individuals to help inform and reduce the risks from natural hazards, such as earthquakes, tsunamis, landslides, floods and volcanic eruptions. The Department assists in the formulation of state policy where an understanding of geologic materials, geologic resources, processes, and hazards is key to decision-making. The Department is also the lead state regulatory agency for mining, oil, gas and geothermal exploration, production and reclamation. Learn more at www.OregonGeology.org.