zones exist: for example, offshore Chile in 1960 and 2010, offshore Alaska in 1964, near Sumatra in 1927, and near the Japan Trench (the Japan Trench is a border between the Pacific and the Philippine Sea plates) in 2004. This rupture causes a vertical displacement of water that creates a tsunami (Figure 2).

The earthquake rupture, where the North American Plate suddenly slips westward over the Juan de Fuca Plate, triggered a tsunami that impacted the Oregon coast. The Oregon Department of Geology and Mineral Industries (DOGAMI) has been identifying and managing the National Tsunami Hazard Mitigation Program, which has been administered by the National Oceanic and Atmospheric Administration (NOAA).

Comprehensive research of the offshore geologic record indicates that at least 19 earthquake events have occurred in the Cascadia Subduction Zone since 800 AD, including the 1964 Alaska earthquake. These events result in the descending Juan de Fuca Plate at a rate of approximately 1.5 cm per year. This movement causes the land on the Oregon coast to subside, creating the potential for future tsunamis.

Figure 3 (profiles A-A' and B-B') depicts the overall wave height and inundation extent for all five tsunami simulations. These points are simulated gauge locations where the wave height is measured. The model produces time series data for these locations in the area. These data show the varying wave heights at different points along the coast.

The starting water elevation (0.0 hour) takes into account the local land subsidence or uplift caused by the earthquake. Wave heights vary through time, with the maximum wave height occurring approximately 20 minutes after the earthquake. The all-clear signal is given when the all-clear signal is given by the proper authorities.

Figure 4 shows the effects of the tsunami on the Oregon coast, with the darker shaded areas indicating the areas most affected by the tsunami. The map highlights the areas likely to be impacted by future tsunamis, based on historical data and current research.
Introduction

Tsunami activity surrounding the Pacific Ocean is an arc stretching from New Zealand, along the eastern edge of Asia, north across the Aleutian Islands of Alaska, and extending southward through the Tonga-Kermadec subduction zone. It is an area of increased earthquake and tsunami risk. The Oregon Department of Geology and Mineral Industries (DOGAMI) has been awarded by NOAA funding to develop a new generation of tsunami inundation maps for the state of Oregon. These maps are critical tools for emergency managers and residents for planning and preparing for future events.

The inundation extent for the two scenarios at select locations on this map. More detailed information on the tsunami models and methodologies used, time interval. It is especially noteworthy that the greatest wave height and distance from the coast is in the city of Coos Bay.

Earthquakes of magnitude 8 or greater are capable of generating destructive tsunamis, particularly if they occur near deep water. The 1964 Alaska earthquake, for example, was one of the largest ever recorded. It caused 125 deaths and $311 million in damage in British Columbia, Hawaii, and Oregon. This magnitude 9.2 earthquake. This magnitude 9.2 earthquake. This magnitude 9.2 earthquake. This magnitude 9.2 earthquake.

Wave heights vary through time, and the first wave will not necessarily be the largest as waves interfere and reflect off the coast. Mean Higher High Water (MHHW) high tide.

Maximum Wave Elevation Profile B-B': City of Coos Bay

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