Introduction

The Aleutian chain of islands is located in the central North Pacific Ocean and runs along the eastern boundary of the Pacific Plate. The Aleutian Islands, along with the nearby Kamchatka Peninsula and Kuril Islands, are part of the circum-Pacific belt of seismic activity known as the Ring of Fire. This region experiences frequent earthquakes and is prone to tsunamis due to the subduction of the Pacific Plate beneath the North American Plate.

When these events occur around the Ring of Fire but not directly off the Aleutian Islands of Alaska, and south along the coast of North and South America, they can generate tsunami inundation maps to help residents and visitors prepare for potential impacts. Using federal funding awarded by NOAA, DOGAMI has developed a new model to improve the spatial accuracy of tsunami inundation maps.

The National Oceanic and Atmospheric Administration (NOAA) since has been identifying and mapping the tsunami inundation hazard along the coast of Oregon. Tsunamis affected the Oregon coast: for example, offshore Alaska in 1964 and onshore in Oregon (Figure 2). Distant earthquake/tsunami events have been recorded on tide gauges in the region.

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In addition to the National Oceanic and Atmospheric Administration (NOAA), other agencies involved in mapping and modeling tsunami hazards include the United States Geological Survey (USGS), the National Geophysical Data Center (NGDC), and the U.S. Army Corps of Engineers.

The location on the Aleutian chain of islands also shows higher energy originating near the Gulf of Alaska. The first scenario attempts to determine wave height and inundation extent for the two scenarios at the Nehalem River, which was partly inundated by a 10 foot tsunami wave and was the hardest hit. Tsunami waves can pose a significant threat to coastal areas, reducing the potential for disastrous tsunami-related deaths in Alaska (NGDC/WDC). The USGS records of tsunami events can include data on tide stations and offshore structures.

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