Maximum Wave Elevation Profiles

Distant Source (Alaska-Aleutian Subduction Zone) Tsunami Inundation Map
Tidewater, Oregon

For these reasons the hypothetical "Alaska Maximum" scenario is the most useful for tsunami hazard assessment of Seaside (TPSW, 2006). This model uses origin times for the 1964 M9.2 Prince William Sound earthquake in Alaska. Oregon was hit hard by the tsunami, which killed four people and caused an estimated $750,000 to 1 million dollars in damage to bridges, houses, cars, boats, and other property (Witter and Winter, 2006).

Tsunami inundation for each scenario. Only the Alaska Maximum Wet/Dry Zone is shown (Figure 3). The wet/dry transition lines that form the extent of inundation. The transition area between the wet and dry points is color mapped. The wet/dry transition area is defined as those points which record the time, in seconds, of the tsunami wave arrival and the wave height observed. It is especially noteworthy that the greatest wave height observed. The nearshore waves experienced in the Central Oregon coast range from 2 to 10 feet. The greatest wave height reached 10 to 11.5 feet in the Nehalem River, 10 to 11.5 feet at Depoe Bay, 11.5 feet at Newport, 10 to 11 feet at Florence, 11 feet at Reedsport, 11 feet at Brookings, and 14 feet at Coos Bay (Witter and Winter, 2006).

Wave heights are from the NOAA Water Model which established time and wave height at tide gauge stations in the Oregon coast (Figure 2). The locations of the tide gauge stations are indicated in Figure 4. The all-clear at the end of the evacuation. Figure 4 depicts the tsunami wave height and velocity observed are not necessarily associated with the first wave height observed. It is especially noteworthy that the greatest wave height reached 10 to 11.5 feet in the Nehalem River, 10 to 11.5 feet at Depoe Bay, 11.5 feet at Newport, 10 to 11 feet at Florence, 11 feet at Reedsport, 11 feet at Brookings, and 14 feet at Coos Bay (Witter and Winter, 2006).

Earthquakes that occur as a result of the subduction of oceanic tectonic plates beneath the continental margin are a significant geologic hazard, not only in Alaska, but also in Oregon. These events have occurred at the edges of the Pacific Plate and other major tectonic plates. The Pacific Plate is colliding with the North American Plate at the western end of the Cascadia Subduction Zone. This region is known as the "Ring of Fire", also called the Circum-Pacific belt, is the zone of tectonic activity located along the perimeter of the Pacific Plate.

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