Introduction

Earthquakes are a major source of tsunamis in Oregon. The 1964 M9.2 Prince William Sound earthquake in Alaska produced a tsunami that caused 125 deaths and $311 million in damage to coastal communities along the Oregon coast. The 2011 M9.0 Tohoku-Oki earthquake off the coast of Japan produced a tsunami that devastated many towns in coastal Oregon, including Seaside, where four people died and an estimated $63 million in damage was caused.

Tsunami Hazard Mitigation Program

The Oregon Department of Geology and Mineral Industries (DOGAMI) manages the National Tsunami Hazard Mitigation Program in Oregon. This program aims to reduce the risk of tsunami damage by mapping tsunami inundation zones and developing guidelines for building codes and emergency preparedness.

Map Explanation

The Distant Source (Alaska-Aleutian Subduction Zone) Tsunami Inundation Map for Seal Rock, Oregon, shows the extent of inundation for each scenario. Only the Alaska Maximum Wet/Dry Zone lines that form the extent of inundation. The transition area between the overall wave height and inundation extent for the two scenarios at the time of the tsunami wave to arrive onshore. Therefore, evacuees should not assume heights and velocities observed are not necessarily associated with the first wave height observed. It is especially noteworthy that the greatest wave height observed. It is especially noteworthy that the greatest wave height and velocity observed are not necessarily associated with the first wave height observed. It is especially noteworthy that the greatest wave height and velocity observed are not necessarily associated with the first wave height observed.

Ring of Fire

The Ring of Fire is located at the borders of the Pacific Plate and other major tectonic plates. The Pacific Plate is colliding with and sliding underneath other plates, creating subduction zones that can trigger tsunamis. Earthquakes that occur as a result of subduction can trigger tsunamis. Tsunamis are ocean waves that are generated by earthquakes, volcanic eruptions, or landslides. In the case of the 1964 Alaska earthquake, a powerful earthquake along the Alaska-Aleutian subduction zone generated a tsunami that impacted the Oregon coast.

Volcanoes

Volcanoes along the Ring of Fire can also contribute to tsunami generation. During volcanic eruptions, magma can be forced into the ocean, creating a tsunami. In Oregon, the Cascade Range is home to some of the most active volcanoes in the United States, including Mount St. Helens and Mount Shasta.

Inundation Zones

The map shows the extent of inundation for each scenario at the time of the tsunami wave to arrive onshore. The transition area between the overall wave height and inundation extent for the two scenarios at the time of the tsunami wave to arrive onshore. Therefore, evacuees should not assume heights and velocities observed are not necessarily associated with the first wave height observed. It is especially noteworthy that the greatest wave height observed. It is especially noteworthy that the greatest wave height and velocity observed are not necessarily associated with the first wave height observed.

Time Series Graphs and Wave Elevation Profiles

These graphs show the change in wave heights for the tsunami waves as they arrive at the selected reference point (simulated gauge station). They also depict the tsunami waves as they arrive at the selected reference point (simulated gauge station). These graphs are useful for understanding the behavior of the tsunami waves as they travel through the ocean and into the coast.

Conclusion

In conclusion, tsunamis are a significant threat to coastal communities in Oregon. The 1964 M9.2 Prince William Sound earthquake in Alaska generated a tsunami that caused significant damage to coastal communities along the Oregon coast. The 2011 M9.0 Tohoku-Oki earthquake off the coast of Japan generated a tsunami that devastated many towns in coastal Oregon. The Oregon Department of Geology and Mineral Industries (DOGAMI) manages the National Tsunami Hazard Mitigation Program in Oregon, which aims to reduce the risk of tsunami damage by mapping tsunami inundation zones and developing guidelines for building codes and emergency preparedness.

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