Distant Source (Alaska-Aleutian Subduction Zone) Tsunami Inundation Map
Del Rey Beach, Oregon

Introduction

The tsunami inundation map displays the output of computer models used to simulate the effects of hypothetical Cascadia and Alaska earthquake tsunamis. The map includes inundation data for coastal areas and inland regions, providing critical information for emergency planning and coastal management. The map also indicates the regulatory tsunami inundation line for Oregon, ensuring that new developments are not constructed in areas prone to tsunami inundation.

Map Explanation

The map is based on input from the Oregon Department of Geology and Geologic Survey (DOGAMI) and the U.S. Geological Survey (USGS). It uses various colors to represent different elevations above mean sea level. The map includes contour lines indicating the elevation at various points along the coast. The map also shows the location of urban growth boundaries, cities, and other important landmarks.

Tsunami Modeling

DOGAMI modeled two distant tsunami scenarios: Alaska M9.2 (1964) and Cascadia Subduction Zone (CASC) M9.0 (2016). These scenarios are used to assess the potential impact of tsunamis along the Oregon coast and to develop strategies for tsunami preparedness. The map shows the predicted tsunami inundation for each scenario, allowing communities to understand the risk and take proactive measures.

Historical Tsunamis

Historically, about 28 distant tsunamis have been documented by the National Geophysical Data Center / World Data Center C. These events, such as the 1964 Alaska tsunami and the 2016 CASC tsunami, have highlighted the need for robust tsunami preparedness and response strategies.

Figure 3

This figure shows the cumulative number of buildings affected by each tsunami scenario along the Oregon coast. It demonstrates the impact of tsunami inundation on coastal communities and highlights the importance of preparedness and resilience.

Figure 4

This chart depicts the tsunami waves as they arrive at the selected reference point (simulated gauge station). It shows the change in wave heights for each tsunami scenario, providing insight into the dynamics of tsunami propagation and the potential for coastal flooding.

Tsunami Inundation Map

This tsunami inundation map displays the output of computer models representing the two selected tsunami scenarios: Alaska M9.2 (1964) and Cascadia Subduction Zone M9.0 (2016). The map includes a legend indicating the regulatory tsunami inundation line for Oregon, along with contour lines showing the elevation above mean sea level.

Conclusion

The tsunami inundation map is a valuable tool for emergency management, coastal planning, and public education. It helps communities understand the potential impact of tsunamis and informs decisions on coastal development and emergency preparedness. By analyzing historical data and modeling future scenarios, we can better protect coastal communities and ensure public safety.

References

Andree V. Pollock, Assistant Director, Geologic Survey and Services.
Vicki S. McConnell, Director and State Geologist.
W. Lawrence Givens, Governing Board Chair.

STATE OF OREGON: DOGAMI modeled two distant tsunami scenarios, the Maximum Wave Elevation Profile, Overall Wave Height and Inundation Extent for the two scenarios at the selected reference point. This tsunami inundation map displays the output of computer models.

We recognize the importance of preparing for future tsunamis and the need to protect coastal communities from potential disasters. This map is a crucial resource for understanding the risks associated with distant tsunamis and developing strategies to mitigate their impact. The map also highlights the need for ongoing research and collaboration among agencies and stakeholders to ensure the safety and well-being of Oregon's coastal residents.