Introduction

The Cascadia Subduction Zone (CSZ) is a region along the western coast of the United States where the North American Plate and the Juan de Fuca Plate converge. The locked segments of these two plates are expected to release energy in the form of a devastating earthquake and subsequent tsunami. Historically, the CSZ has produced some of the most powerful earthquakes in the world, and it continues to pose a significant risk to the states along the west coast of the United States.

Map Exploration

This map provides insights into the potential tsunami inundation areas along the Oregon coast, particularly in the East Gardiner area. The map uses color gradients to indicate the extent of tsunami inundation, with darker colors representing greater inundation depths.

Data Sources and Methods

This map is based on comprehensive research of the offshore geologic record, which includes tsunami deposits carried onshore and left by past events. The data were collected using advanced computer models and real-time monitoring systems to predict tsunami behavior.

Results

The map shows the range of earthquake and tsunami sizes that take into account different scenarios, such as the frequency and magnitude of past events. The time range between these events varies from 110 to 1,150 years, with a median of 340 years.

Conclusion

The development of this local source (Cascadia Subduction Zone) tsunami inundation map is a step towards understanding and mitigating the geologic hazard posed by the CSZ. By providing a visual representation of the potential tsunami inundation areas, policymakers and communities can better prepare for the next Cascadia Subduction Zone earthquake and tsunami.