Introduction

The Cascadia Subduction Zone (CSZ) is a region of the Pacific Ocean where the Juan de Fuca Plate is being subducted beneath the North American Plate. The largest earthquake that has occurred along the CSZ was the 1700 Cascadia earthquake, which is estimated to have had a magnitude of 9.0. This event caused significant damage in Oregon and Washington, with estimated losses of $400 million in 1995 dollars.

Map Exploration

The map shows the tsunami inundation areas for the Pistol River, Oregon, and the surrounding areas. The map includes information on the potential height of tsunami waves, the extent of inundation, and the locations of critical facilities such as hospitals, schools, and police stations.

Time Series Graphs and Wave Elevation Profiles

Time series graphs and wave elevation profiles are used to simulate the behavior of tsunami waves as they inundate the coastline. These profiles help to predict the extent of inundation and the potential impact on coastal communities.

Tsunami Inundation Scenarios

Five tsunami scenarios were simulated for the Pistol River area. The scenarios were based on historical earthquake occurrences and the potential for future events. The scenarios were designed to provide a range of potential outcomes, from low to high levels of inundation.

Acknowledgments

This project was funded by the National Oceanic and Atmospheric Administration (NOAA) through the Coastal Impact Assistance Program (CIA) and the State of Oregon. Additional funding was provided by the United States Geological Survey (USGS) and the Oregon Department of Geology and Geophysics (DOGAMI). The project was conducted in cooperation with the Oregon Department of Transportation (ODOT) and the Oregon Department of Environmental Quality (DOE).

References


