Introduction

The Cascadia Subduction Zone (CSZ) is a convergent margin along the coast of the Pacific Northwest of North America. It is the place where the Juan de Fuca Plate is subducting beneath the North American Plate. This process is responsible for the buildup of pressure and strain in the crust, which can eventually lead to an earthquake. The slip associated with a Cascadia earthquake can cause a significant vertical displacement of the crust and the surrounding ocean, resulting in a tsunami.

How Tsunamis Occur

A great earthquake on the Cascadia Subduction Zone can cause a tsunami. The energy released during an earthquake is transferred to the ocean, causing it to bulge. In the case of the Cascadia Subduction Zone, the earthquake causes a vertical displacement of the crust, which in turn causes a horizontal displacement of the ocean. This horizontal displacement creates a tsunami wave that travels across the ocean and can reach land far from the earthquake. Tsunamis can cause significant damage to coastal areas, and it is important to understand the potential for a large earthquake in the Cascadia Subduction Zone.

Map Explanation

The map is an inundation map that shows the potential extent of tsunami inundation in the area affected by a Cascadia Subduction Zone earthquake. The map is based on computer models that simulate the effects of an earthquake and tsunami. The map is divided into different zones based on the height of the tsunami waves that are expected to occur. The map also shows the locations of buildings and other structures that are vulnerable to the effects of a tsunami.

References