that takes place when the North American Plate snaps westward over the descending Juan de Fuca Plate at a rate of approximately 3 to 9 cm per year. This rupture causes a vertical displacement of water that creates a tsunami. The magnitude of the tsunami is primarily driven by the amount and geometry of the slip along the fault. The Cascadia Subduction Zone (CSZ) Model Specifications (USGS) released the results of a study announcing that the median time interval of the occurrence of a large earthquake is 490 years. In 2008 the United States Geological Survey (USGS) announced that a large tsunami may occur soon along the Oregon coast, possibly within just a few years. Using federal funding awarded by NOAA, DOGAMI has developed a model using a probabilistic approach to quantify the tsunami hazard. This model indicates that the probability of a large coastal earthquake occurring within the next 50 years is greater than 90%, with a 65% probability of it occurring within the next 25 years. The Oregon Department of Geology and Mineral Industries (DOGAMI) has been identifying and mapping the tsunami inundation hazard along the Oregon coast to help protect visitors from the potential effects of a large earthquake. DOGAMI is working with local governments and other agencies to identify areas that are most at risk and to enhance the educational aspects of hazard mitigation and emergency preparedness. The all-clear signal at the end of the evacuation is critical for ensuring the safety of everyone involved.

**Introduction**

The Cascadia Subduction Zone is a region where the North American Plate is subducting under the Pacific Plate at a rate of approximately 3 to 9 cm per year. The subduction of the North American Plate beneath the Pacific Plate creates a stress build-up along the megathrust, which is the boundary between the two plates. This stress build-up eventually releases energy in the form of a large earthquake. The Cascadia Subduction Zone Model Specifications (CSZ Model) is a comprehensive research effort that aims to understand the geology, geophysics, and seismicity of the Cascadia Subduction Zone. The model provides a probabilistic assessment of the tsunami hazard along the Oregon coast.

**Map Explorations**

The map shows the probable extent of tsunami inundation along the Oregon coast that could result from a large earthquake along the Cascadia Subduction Zone. The map uses a color-coded legend to indicate the likelihood of inundation. The map also includes a timeline of the most recent earthquakes in the region, which helps to understand the frequency and magnitude of seismic events. The map is intended to be used by emergency responders, local governments, and the public to prepare for and respond to a potential tsunami.

**Figure 5**

Figure 5 depicts the estimated tsunami wave height through time for a simulated gauge station located at the southern end of the Oregon coast. The figure shows the maximum run-up at the tide gauge and the velocity observed during the tsunami. The tsunami wave height is highest close to the coast and decreases with increasing distance from the coast. The velocity of the tsunami is also highest close to the coast and decreases with increasing distance from the coast.

**Earthquake Size**

Quake size is determined by the magnitude of the earthquake, which is a measure of the energy released during the rupture. Earthquake size is often represented on a logarithmic scale, where each increase of one unit on the scale represents a tenfold increase in energy released. The figure shows the range of earthquake sizes that contribute to the tsunami hazard along the Oregon coast.

**Tsunami Inundation Maps for Haynes Inlet, Oregon**

Tsunami inundation maps for Haynes Inlet, Oregon, show the extent of inundation at different times after a large earthquake. The maps include a legend that indicates the inundation levels, which are color-coded to represent different levels of risk. The maps also include a grid that represents the building footprint at the time of the tsunami.

**Building Footprint**

Building footprint data is used to determine the extent of inundation at the time of the tsunami. The data includes the location and size of buildings within the area. The figure shows the building footprint at the time of the tsunami, which helps to understand the potential impact on the community.

**Transportation data (2008)**

Transportation data is used to determine the route of evacuation and the potential impact on the transportation system. The figure includes a map of the transportation network within the area, which helps to understand the potential impact on the transportation system.

**Tsunami Inundation Map for the Coos River South**

Tsunami inundation maps for the Coos River South show the extent of inundation at different times after a large earthquake. The maps include a legend that indicates the inundation levels, which are color-coded to represent different levels of risk. The maps also include a grid that represents the building footprint at the time of the tsunami.

**Industries Special Paper 43**

Industries Special Paper 43, titled "Probabilities (WGCEP), 2008, The Uniform California Earthquake Evaluation Program,possible scenario for the magnitude and frequency of earthquakes along the Cascadia Subduction Zone.

**For copies of this publication contact:**

For copies of this publication, contact the Oregon Department of Geology and Mineral Industries (DOGAMI) at 503-571-3300 or visit their website at www.OregonGeology.org.

**Map Data Creation/Development**

Map data creation and development is a complex process that involves gathering and analyzing data from various sources. The map data creation and development process includes the following steps:

1. **Data Collection:** Gathering data from various sources such as geologic surveys, satellite imagery, and historical records.
2. **Data Processing:** Processing the collected data to ensure accuracy and consistency.
3. **Map Production:** Using software tools to create the final map.
4. **Quality Assurance:** Ensuring the accuracy and reliability of the final map.

The figure shows the process of map data creation and development, which involves preparing the data, producing the map, and quality assurance.

**Map Date**

The map date is an important aspect of the map data creation and development process. The map date indicates the date that the map was created, which helps to ensure that the map is up-to-date and reflects the latest information available.

**Legend**

The legend is an important component of the map data creation and development process. The legend includes symbols and labels that help to interpret the map data. The legend for the map includes symbols for different land uses, water bodies, and other features.

**Map Scale**

The map scale is an important aspect of the map data creation and development process. The map scale indicates the ratio of the map to the real world, which helps to ensure that the map is accurate and representative of the real world.

**Map Projection**

The map projection is an important aspect of the map data creation and development process. The map projection is the method used to represent the curvature of the Earth on a flat surface. The map projection for the map includes a symbol that indicates the projection type.

**Map Orientation**

The map orientation is an important aspect of the map data creation and development process. The map orientation indicates the direction that the map is facing, which helps to ensure that the map is oriented correctly.