

# The 1700 Great Cascadia Earthquake

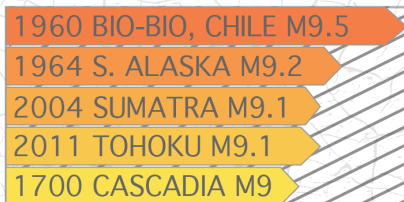
On January 26, 1700 at 21:00 PST a magnitude 9 earthquake occurred on the Cascadia Subduction Zone. The earthquake generated a tsunami that propagated across the Pacific Ocean, inundating the coast of Japan approximately nine hours later.

Strong ground motions would've occurred throughout Cascadia with extreme, violent shaking at coastal locations.



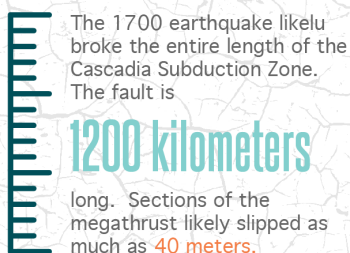
## The Earthquake

### Magnitude



If it occurred today the 1700 earthquake would be the **5th largest** earthquake recorded in instrumental times.

### Deformation



The Cascadia coastline experienced as much as

**2 Meters**

of vertical subsidence after the earthquake.



North America moved westward by up to

**4 Meters.**

The 1700 Earthquake caused coastal subsidence along most of the Cascadia margin.

### Ground Motions

**1-2 Minutes**

of strong shaking at distances up to **200 km**.

MMI **X**

Coastal locations experienced violent shaking with accelerations **greater than 1g**.

MMI **VI**

Strong shaking everywhere west of the Cascades.



Strong ground motions likely caused significant ground failures such as landslides in the coast ranges.

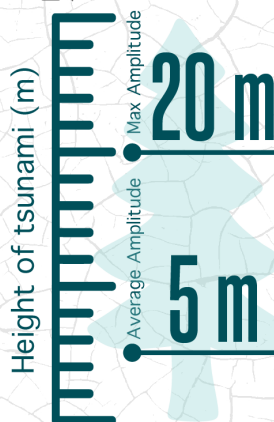
## The Tsunami

### Speed

**800 km/hr**

The tsunami originated offshore Cascadia and took between **10 and 30 minutes** to reach the Pacific Coast. It also traveled across the Pacific Ocean and arrived in Japan about 9 hours after the earthquake occurred.

### Height



### Inundation

The tsunami propagated as much as

**8 Kilometers**

inland along existing rivers and estuaries.

### Timeline

**5 hr** total tsunami duration.

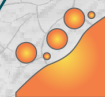
Additional wave action will continue for hours after the first arriving waves.

**30 min**

travel time to the Pacific Northwest Coast.

**10 min**

duration of water level rise during initial tsunami wave.



Widespread tsunami inundation all along the Pacific coast.