

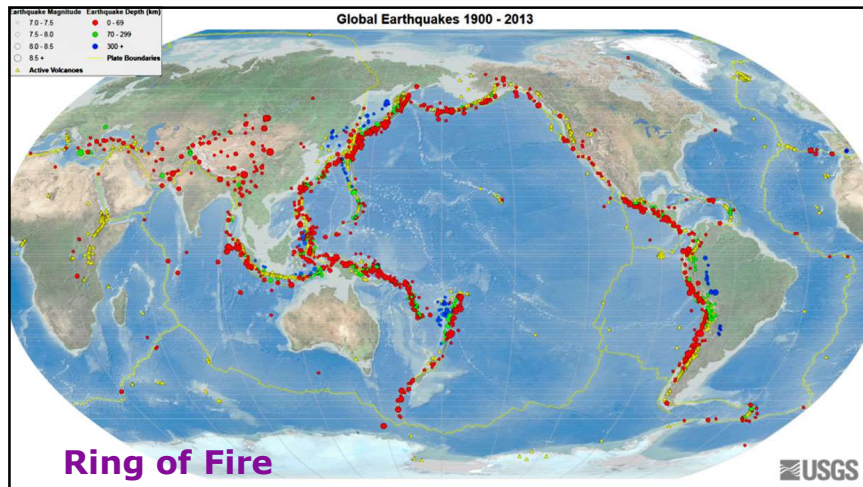
Mr. Aitken

Washington State History

- Natural Disasters in the Pacific Northwest.

Natural Disasters

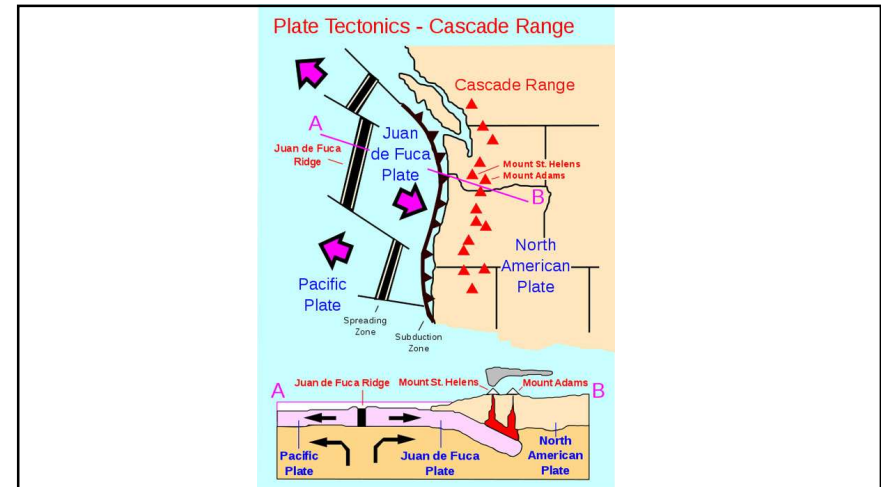
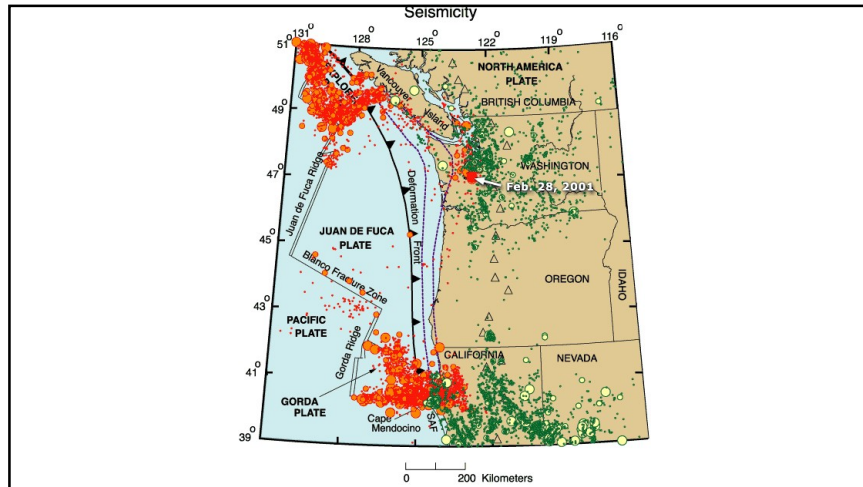
- *3 Types of Natural Disasters in the Pacific Northwest:*
 - Volcanoes (5 active)
 - Earthquakes
 - Tsunamis



Natural Disasters

“Ring of Fire”

- **Ring of Fire:** Large area around the Pacific Ocean where most earthquakes (90%) and volcanos (75%) on earth occur.
- Caused by plate tectonics.



Natural Disasters

Earthquakes

- Nisqually Earthquake, February 28, 2001.
<https://youtu.be/LQX6-kqriRY>
- Magnitude: 6.8
- Third similar earthquake in a 60 year timespan.





Natural Disasters

Tsunami

- Huge wave usually caused by an underwater landslide or earthquake.
- Can travel over 500 miles per hour.
- Wave can be over 100' high when it reaches shore, and can travel miles inland (depending on the shape of the land).

Natural Disasters

Tsunami

- Japan: March 11, 2011.
- Offshore earthquake, 9.1 magnitude.
- Caused a Tsunami more than 130' high.
- Pushed as far as 6 miles inland.



Natural Disasters

Tsunami

- How Tsunamis work (Ted-Ed, 3:36) <https://youtu.be/Wx9vPv-T51I>
- Japan Tsunami (Nat. Geo. 3:34) <https://youtu.be/oWzdgBNfhQU>

Natural Disasters

“Cascadia Earthquake”

- Pacific Northwest: 1700.
- Offshore earthquake, magnitude ~9 (estimated; no exact measurement).
- Caused a Tsunami that reached Japan.
- “Ghost” forests along Oregon & Washington coasts. Caused by land being lowered by the quake.

Natural Disasters

“Cascadia Earthquake”

- This Earthquake Drowned the Pacific Northwest (Nova/PBS 3:07) https://youtu.be/K_sJ0QJ31fc

Natural Disasters

Safety Measures

- Earthquake safety:
 - Building codes require new buildings that can withstand shaking.
 - Retrofit old structures to withstand shaking.
 - Sophisticated sensors to give brief warning.

Natural Disasters

Earthquake Safety

- Buildings swaying in Tokyo (1:40)
<https://youtu.be/HB2jgJJG2is>

Natural Disasters

Safety Measures

- Tsunami safety:
 - Sensors to detect underwater earthquakes, predict tsunami.
 - Early warning sirens.
 - Tsunami evacuation routes.
 - Japan tsunami proved ineffectiveness of seawalls.

