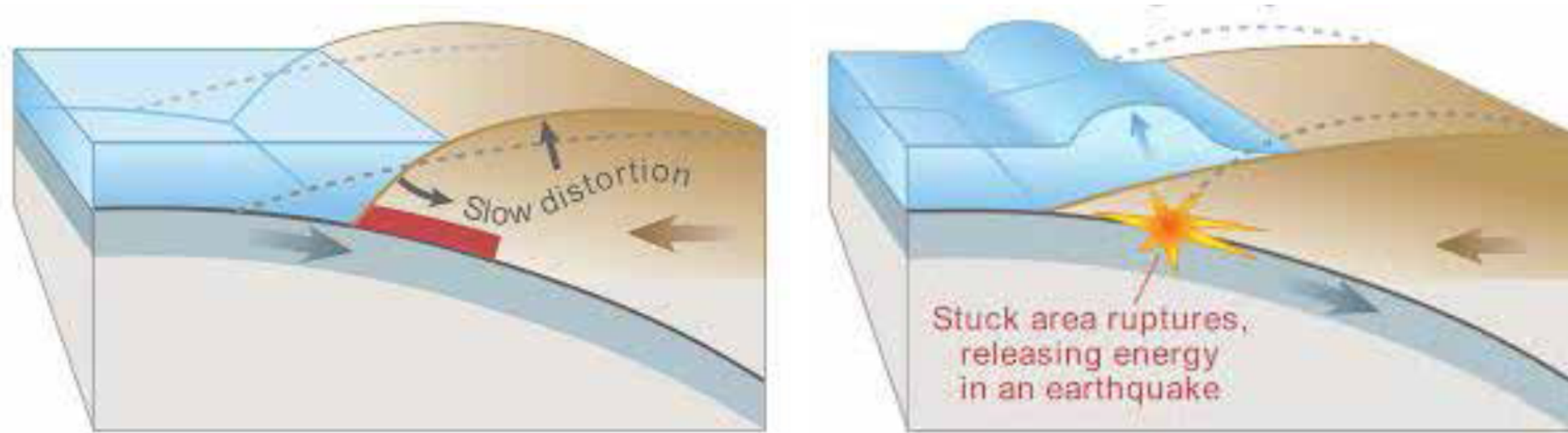


# THE JUAN DE FUCA PLATE PROBLEM



The Juan de Fuca plate is moving east at about the speed your fingernails grow. But it has been stuck against the much fatter and bigger North American Plate for a very long time.

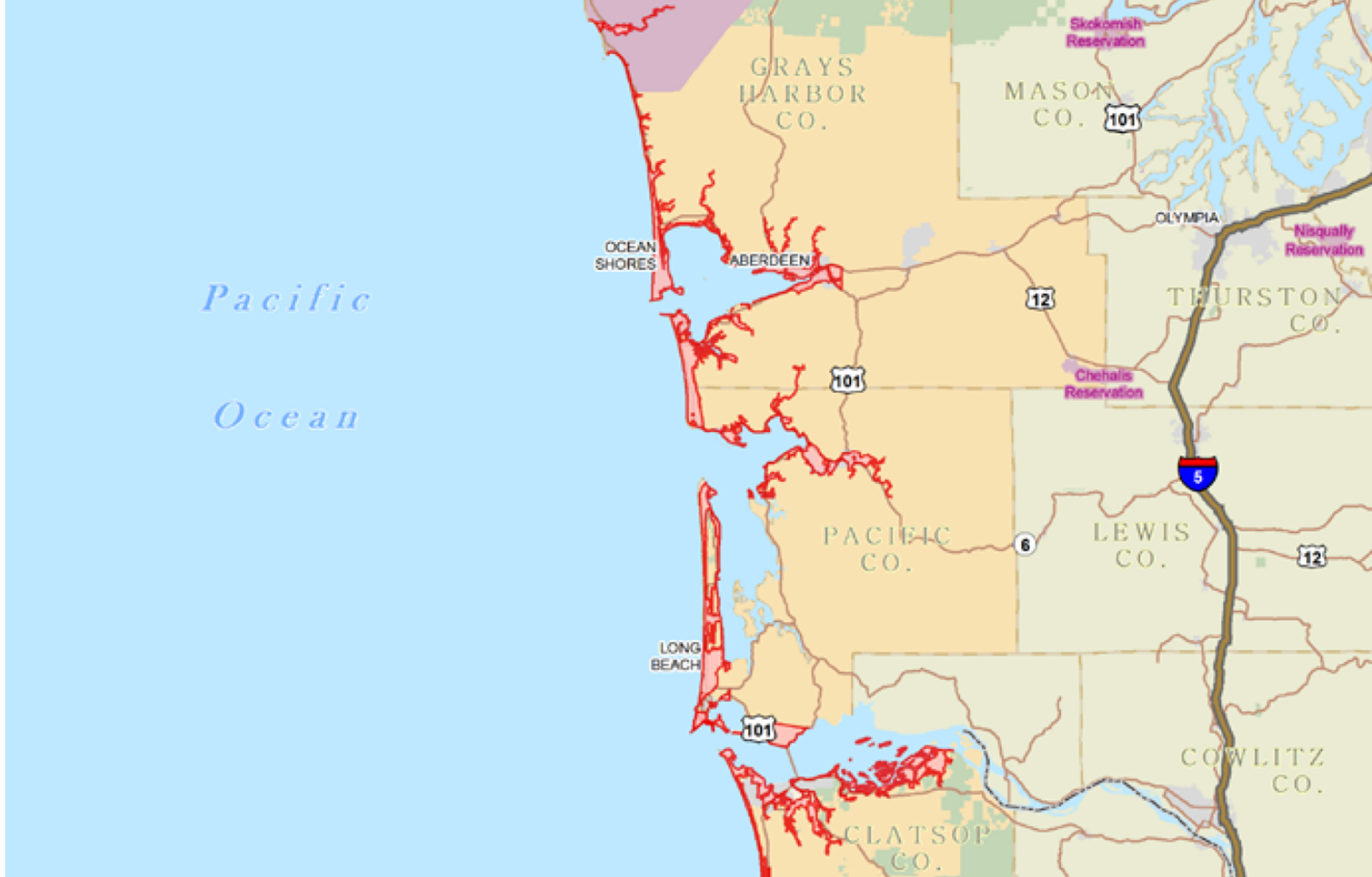
When it finally moves we will get a magnitude 9 earthquake, a 100ft to 200ft tsunami, a new National Park, and better skiing.

**Your chances of surviving this will depend on many, many things which all have to go right.**

Unfortunately if any one of them does not go right you may not survive.

**BEFORE WE GET TO THAT LETS LOOK AT THE OTHER MAGNITUDE 9 EARTHQUAKES.**

**IT'S A VERY SHORT LIST SO THIS WON'T TAKE LONG**



ONCE THE WATER RECEDES THE AREAS SHOWN IN RED COULD BECOME THE NEW  
**JUAN DE FUCA NATIONAL PARK**



The greatest earthquake of all time: Magnitude 9.5, 5/22/1960, Valdivia, Chile

Tremors were felt across the South American continent in Buenos Aires, Argentina

Extremely heavy tremors were recorded in Boston, San Francisco, Washington, Alaska and Tokyo

A 26 foot tsunami wave hit the shore taking most of the buildings and homes as it receded

A 35-foot tsunami wave followed taking 1,000 lives

The tsunami killed 65 in Hawaii and hundreds more in the Philippines and Japan

The earthquake caused the Cordon Caulle volcano to erupt



The 2<sup>nd</sup> greatest earthquake of all time: Magnitude 9.2, 3/27/1964, Anchorage, AK

Seattle's Space Needle wobbled some 1,200 miles away.

Downtown Anchorage had the most property damage due to immense landslides  
The town of Valdez was originally built on sand and gravel. Soil liquefaction dumped it into Port Valdez

The largest tsunami wave measured over 200 feet (14 stories) near Valdez Inlet

The tsunami caused massive property damage in Washington, Oregon, and California

Reports of seiches came from the U.S. Gulf Coast, and as far away as Australia.



12/26/2004 Sumatra-Andaman (Banda Ache) magnitude 9.1 to 9.3 earthquake

The 3<sup>rd</sup> largest earthquake ever recorded and the longest duration ever observed: 8 to 10 minutes

The tsunami was the deadliest in modern history, killing 228,000 people.

The tsunami arrived several hours after the earthquake and caught most people by surprise

A series of large tsunami waves grew to 100 feet high (7 stories) once they headed inland

# 2011 Tohoku Earthquake

It was the most powerful earthquake ever recorded in Japan

Khanh Ngyuen Dao Van | September 3, 2019



## **This is the costliest natural disaster in world history**

Residents are still recovering from this 9.1 Earthquake, 150,000 were still homeless evacuees in 2017  
120,000 buildings were destroyed, 272,017 buildings were damaged

There were 15,897 confirmed deaths, the tsunami killed over ten thousand people

A 44ft tsunami overtopped the Fukushima Daiichi sea walls disabling reactor core cooling equipment

The tsunami reached 133 feet high (10 stories) in Miyako

The total economic cost is \$360 billion

## SHORT TERM SURVIVAL DEPENDS ON

- **THE VERY FIRST THING YOU DO WHEN THE SHAKING STARTS**
- **THE VERY NEXT THINGS YOU DO WHEN THE SHAKING STOPS**
  - DON'T CALL YOUR KIDS, SPOUSE, ETC. TO BE SURE THEY ARE SAFE
  - DON'T GET IN YOUR CAR TO GET YOUR KIDS, OR SPOUSE, ETC.
- **THE TIME OF DAY**
  - SLEEPING
  - WORKING
  - WEEKDAY / WEEKEND
- **THE EARTHQUAKE MAGNITUDE**
  - FAULT LENGTH
  - LENGTH OF SHAKING
  - SOIL TYPE
- **THE EPICENTER LOCATION**
  - DEPTH
  - LAND OR WATER
  - HOW FAR AWAY
- **YOUR LOCATION**
  - HOME
  - WORK
  - DOWNTOWN
  - DRIVING
  - AT THE BEACH

## WHERE YOU ARE WHEN THE BIG ONE HITS MAKES A HUGE DIFFERENCE

- **A VERY GOOD PLACE TO BE:**

- AT CHERRY CREST VOLUNTEERING WHEN SCHOOL IS IN SESSION 🤗
- OUT TO SEA

- **A VERY GOOD PLACE TO BE (FOR THE MOMENT):**

- IN THE AIR
- CAMPING

- **A GOOD PLACE TO BE**

- IN BRIDLE TRAILS, AT HOME
- ON A NEW BRIDGE

- **THESE COULD BE GOOD OR BAD PLACES TO BE**

- ON AN OVERPASS
- ON AN OLD BRIDGE
- ON A FLOATING BRIDGE – EARTHQUAKES GENERATE SEICHE WAVES

- **A BAD PLACE TO BE**

- UNDER AN OVERPASS

- **A VERY BAD PLACE TO BE**

- IN PIONEER SQUARE – LAND FILL LIQUIFACTION, OLD MASONARY BUILDINGS

- **A VERY, VERY, BAD PLACE TO BE:**

- ON THE WASHINGTON OR OREGON COAST
- ON A BOAT IN A HARBOR
- ~~ON THE DOWNTOWN VIADUCT.~~      WHAT ABOUT THE TUNNEL?



## **MEDIUM TERM SURVIVAL DEPENDS ON**

- **URGENT MEDICAL NEEDS**
- **YOUR RESOURCES**
  - WATER FOR A WEEK
  - FOOD FOR A WEEK
  - SAFE SHELTER
    - HOUSE, CAR, TENT
  - MEDICINES AND PRESCRIPTIONS
- **YOUR RESOURCEFULNESS**
  - WHAT TOOLS DO YOU HAVE AVAILABLE
  - WHAT SKILLS DO YOU HAVE
- **YOUR NEIGHBORS**
  - WHAT TOOLS DO THEY HAVE AVAILABLE
  - WHAT SKILLS DO THEY HAVE
- **CAMPING EXPERIENCE AND SUPPLIES**
- **YOUR EMERGENCY PREPAREDNESS KIT**

## **LONGER TERM SURVIVAL DEPENDS ON**

- **GOVERNMENT RESOURCES AND SERVICES**
- **FINDING A SUSTAINABLE SOURCE OF WATER AND FOOD**
- **SURVIVING WITHOUT A JOB FOR 2 MONTHS**

**QUESTIONS?**