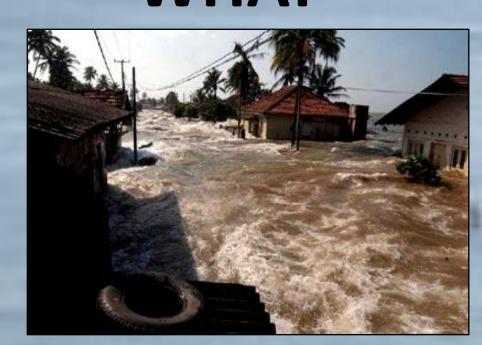
TSUNAMIS IN CALIFORNIA

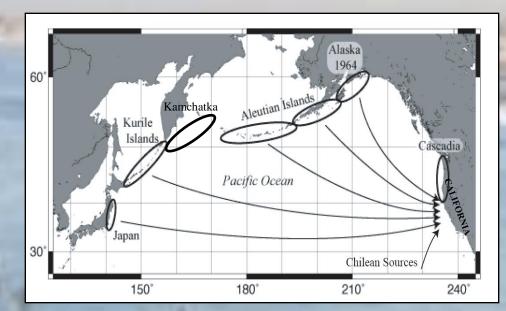
TSUNAMI BASICS

WHAT

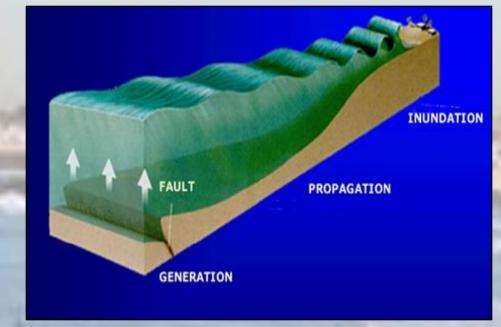


A tsunami is a series of waves or surges that can have enough force to destroy buildings and harm people. Tsunamis can last for hours, and the first wave is typically not the largest.

WHERE



Tsunamis most commonly originate from large earthquakes along subduction zones around the rim of the Pacific Ocean.



Tsunamis are typically generated by earthquakes along subduction zones and other submarine faults where significant vertical movement of the sea floor results in a rise of the ocean surface.



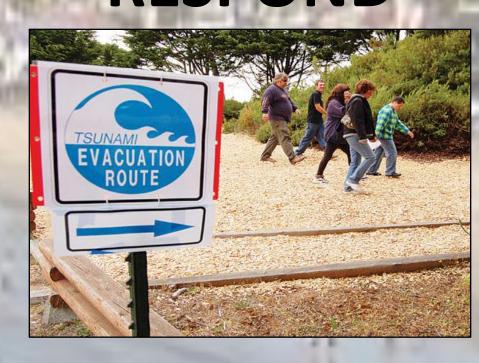
If you are at the beach or near the coast and you FEEL strong earthquake shaking that lasts for more than 20 seconds, or....

KNOW WHAT TO DO **SEE AND HEAR**



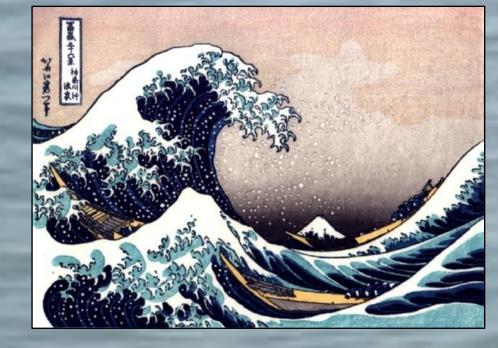
.... if you SEE the tide go out or a large frothy wave coming ashore, or you HEAR a roaring wave coming or a warning/siren sounding, you should....

RESPOND



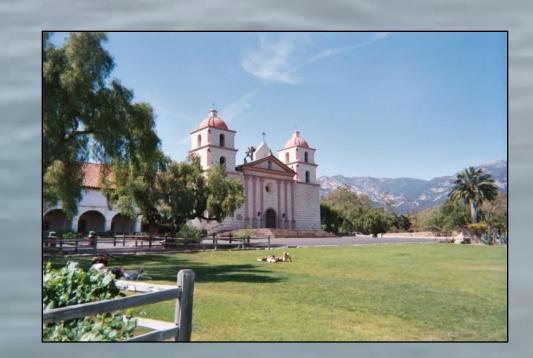
.... RESPOND by moving quickly to high ground or far enough inland to get away from a potential tsunami.

NOTABLE CALIFORNIA TSUNAMIS



1700

Supported by written records of a tsunami hitting Japan and geologic evidence in California, a magnitude 9 earthquake along the Cascadia Subduction Zone likely caused a 50-foot tsunami along California's north coast.



1812

A local earthquake triggered a tsunami near Santa Barbara that so frightened people in coastal villages that they retreated up the hill closer to the local mission.



1946

A tsunami generated in the Aleutian Islands caused tsunami flooding in parts of California, including a surge in Half Moon Bay that flooded over 1,000-feet inland.



1964

A magnitude 9.2 earthquake in Alaska caused a tsunami 20-feet high that flooded 29 city blocks in Crescent City and killed 12 people statewide.



2006

Strong water currents generated by a tsunami originating from the Kuril Islands caused \$20-million worth of damage in Crescent City's small boat harbor.

Image credits and information (from top left moving around clockwise)

- Flooding from 2004 Indian Ocean tsunami (National Oceanic and Atmospheric Administration, NOAA, library); • Potential tsunami sources for California (University of Southern California, Tsunami Research Center);
- Tsunami propagation illustration (International Tsunami Information Center and Russian Academy of Sciences);
- Orange County coast (Kevin Miller, California Emergency Management Agency);
- Ocean retreat and incoming surge from 2004 Indian Ocean tsunami (NOAA library); • Damage to Crescent City boat harbor during 2006 Kuril Island event (Lori Dengler, Humboldt State University);
- Damage to Crescent City during 1964 Alaska event (NOAA library) • Flooding/water line in Half Moon Bay during 1946 Aleutians event (Orville Magoon/Howard Anderson);
- Santa Barbara Mission, modern day (Rick Wilson, California Geological Survey, CGS):
- Japanese woodblock print by Katsushika Hokusai, titled: The Great Wave off Kanagawa. This image is commonly mistaken for a tsunami but more likely it was just a large breaking ocean wave (NOAA library); and, • Background photo from Orange County, and poster layout by Rick Wilson, CGS.





For more information about tsunamis in California (tsunami history, FAQs, education lesson plans, inundation maps, evacuation plans, etc.), visit: www.conservation.ca.gov/cgs or calema.myhazards.ca.gov