

# Tsunami Hazard Worksheet/CGS

Instructions for online access to California Tsunami Maps

## Part 1: Tsunami Basics



Log onto: <http://conservation.ca.gov/cgs>

Welcome to the California Geological Survey (CGS) website!

Click on “*Geologic Hazards*” (the brown tab near the top of the page). Then on the green bar that appears below it, click on “*Tsunamis*” (on the far right).

This is the CGS Tsunami website.

Scroll down and click on “***\*\*New\*\*CGS Note – Tsunamis***”

The page that comes up should have “*TSUNAMIS Note 55*” across the top.

Read the first paragraph titled “*What is a tsunami?*”

1. What is one way a tsunami can be generated?

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2. What is one difference between a tsunami and a normal wave that breaks on the beach?

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Read the next two sections titled “*Tsunami Warning Signs*” and “*Tsunami Hero.*”

3. What should you do if you are at the beach and feel strong shaking from an earthquake?

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4. What did Tilly Smith see that warned her that a tsunami was coming?

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Scroll down until the top of page 2 appears. Read the section titled “*Tsunami Hazards in California.*”

5. Tsunamis can be caused by either local or distant earthquakes.

Of the five tsunamis that are described, circle the year of the one that you think was the worst and explain why on the space below:

1700    1812    1946    1964    2006

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Close the “*TSUNAMIS Note 55*” page, and return to the top of the “*CGS Tsunami Website*” page.

## Part 2: Tsunami Inundation Maps

Near the top of the “CGS Tsunami Web Site” page, click on “**USE NEW INTERACTIVE GOOGLE MAPS INTERFACE TO ACCESS OFFICIAL INUNDATION MAPS FOR EMERGENCY PLANNING.**” This takes you to the tsunami index map for the state.

Think of a place along the California coast that you and your family have visited or would like to visit.

Type the name of that city or beach in the search box.

Or, you can also click directly on the California map and zoom in until you see your area. Continue to zoom in until you can read the names of all the streets.

1. Record the name of the area you searched for:

\_\_\_\_\_

The blue area on the map is called the inundation zone, and represents the area that can be affected by a tsunami.

2. If you were visiting, working or living in this zone, name two ways you might be warned that a tsunami could be approaching:

(1) \_\_\_\_\_

(2) \_\_\_\_\_

3. If you are in a tsunami inundation zone and you receive a warning, what should you do?

\_\_\_\_\_

## Part 3: Tsunami Inundation and Elevation

While still on the interactive map webpage, in the upper right corner of the map, open the drop down menu labeled “*Map*” on the upper right, and click on the “*MyTopo*” option. This will change the underlying map to a USGS topographic base map.

The edge of the coastline represents sea-level. Sea-level has an elevation of zero feet. Contour lines represent where the elevation is the same. For example, if you walk along a 20-foot contour line, you will not go up or down hill; you will stay at the same elevation.

When scientists calculate the expected size of a tsunami along the California coastline, many things are taken into account: the cause of the tsunami, how far the wave travels from its source, the shape of the coastline, and the shape of the

sea floor near the coast. Scientists use the contour lines on topographic maps to show the limit of the inundation zone.

For an area that scientists expect a 15-foot tsunami, the tsunami inundation line would be drawn at an elevation of 15 feet. This would mean that everything from the shoreline to an elevation of 15 feet would be covered by that tsunami.

Tsunamis can be different sizes. The inundation line is drawn at an elevation that represents the largest tsunami that could be generated for that area.

Type “Seal Beach” into the “*Search Box*” and click search. Zoom in as far as you can. Make sure you still have the base map still set at “*MyTopo*.”

Find “*Zoeter School*” on the map. (Note “*School*” is abbreviated as “*Sch*”). Find “*McGaugh School*.”

1. Which school is inside the tsunami inundation area? \_\_\_\_\_

Zoeter School has an elevation of 13 ft.  
McGaugh School has an elevation of 22 feet.

2. If the town of Seal Beach received a tsunami warning, would both schools need to evacuate their students? \_\_\_\_\_

3. Explain why:  
\_\_\_\_\_

4. Share this website with your family! Comments: \_\_\_\_\_  
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The next time you visit the California coast, look for these blue and white signs:

