METHOD OF PREPARATION

Tsunami inundation modeling was performed for the U.S. Geological Survey (USGS) Tsunami Research Center funded through the Office of Emergency Management Planning (CalEMA). A suite of tsunami source events was selected for modeling, representing realistic tsunami-producing mechanisms ranging from subduction to continental processes. This methodology was intended to identify the potential tsunami inundation region resulting from a credible source event. The methodology involved utilization of higher-resolution digital topographic data (3- to 10-meters resolution or higher), were adjusted to “Mean High Water” sea-level conditions, and processed to create a consistent tsunami inundation model. The bathymetric/topographic data that were used in the tsunami models consist of a combination of existing National Oceanic and Atmospheric Administration (NOAA) 1:24,000 scale (3- to 10-meter) data and 7.5-minute quadrangle data. In areas where higher-resolution data were not available, the 7.5-minute data were used. In order to enhance the result from the 75- to 90-meter inundation grid data, a method known as “interpolation” was utilized. This method involved the use of topographic grid data at a higher resolution to create a new grid at a lower resolution. The process utilized the MOST (Method of Splitting Tsunamis) computational program to generate the tsunami inundation map.

MAP EXPLANATION

Purpose of this Map

This tsunami inundation map was prepared to assist cities and counties in identifying their tsunami hazard. It is intended to be used as part of a comprehensive planning effort. This map was used to guide the decision to implement Tsunami Hazard Mitigation Plan requirements in the County of Del Norte. The map was derived utilizing higher-resolution digital topographic data (3- to 10-meter resolution or higher), were adjusted to “Mean High Water” sea-level conditions, and processed to create a consistent tsunami inundation model. The bathymetric/topographic data that were used in the tsunami models consist of a combination of existing National Oceanic and Atmospheric Administration (NOAA) 1:24,000 scale (3- to 10-meter) data and 7.5-minute quadrangle data. In areas where higher-resolution data were not available, the 7.5-minute data were used. In order to enhance the result from the 75- to 90-meter inundation grid data, a method known as “interpolation” was utilized. This method involved the use of topographic grid data at a higher resolution to create a new grid at a lower resolution. The process utilized the MOST (Method of Splitting Tsunamis) computational program to generate the tsunami inundation map.

Map Base


References:

University of Southern California
California Emergency Management Agency
California Geological Survey
State of California ~ County of Del Norte

Table 1: Tsunami sources modeled for the Del Norte County coastline.

<table>
<thead>
<tr>
<th>Source Description</th>
<th>Source Code</th>
<th>Source Region</th>
<th>Magnitude</th>
<th>Depth</th>
<th>Elevation</th>
<th>Inundation Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964 Alaska Earthquake (M9.2)</td>
<td>A</td>
<td>Cascadia Subduction Zone</td>
<td>9.2</td>
<td>200</td>
<td>50</td>
<td>High Divide</td>
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<tr>
<td>1952 Kamchatka Earthquake (M9.0)</td>
<td>B</td>
<td>Japan Subduction Zone</td>
<td>9.0</td>
<td>300</td>
<td>100</td>
<td>Cascade High Plateau</td>
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<tr>
<td>1960 Chile Earthquake (M9.3)</td>
<td>C</td>
<td>Marianas Subduction Zone</td>
<td>9.3</td>
<td>100</td>
<td>300</td>
<td>SISTER ROCKS</td>
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<td>1989 Oceanic Subduction Zone</td>
<td>D</td>
<td>Central Aleutians Subduction Zone</td>
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<td>200</td>
<td>100</td>
<td>CRESCENT CITY</td>
</tr>
</tbody>
</table>

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