For further information on the program please visit

http://tsunami.gov

or contact

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e-mail: *jeff.ladouce@noaa.gov*

For further information about specific elements of the program

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Tsunami Detectors

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Warning Centers

Richard H. Hagemeyer Pacific Tsunami Warning Center

Geophysicist in Charge (808) 689-8207
charles.mccreery@noaa.gov

West Coast/Alaska Tsunami Warning Center

Geophysicist in Charge (907) 745-4212
paul.whitmore@noaa.gov

National Weather Service
Pacific Region Headquarters
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Honolulu, HI 96813
phone (808) 532-6416
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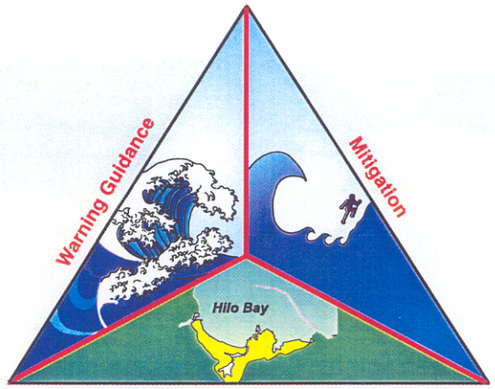
The National Tsunami Hazard Mitigation Program



A State/Federal Partnership created to reduce the impacts of tsunamis to U.S. Coastal areas by coordinating the state efforts of Alaska, California, Hawaii, Oregon, and Washington with the federal activities of the National Oceanic and Atmospheric Administration, the Federal Emergency Management Agency, the U.S. Geological Survey, and the National Science Foundation.

National Tsunami Hazard Mitigation Program Steering Group

Chairperson: Jeff LaDouce
NWS Pacific Region

NOAA

Eddie Bernard, Pacific Marine Environmental Laboratory
Frank González, Pacific Marine Environmental Laboratory
Landry Bernard, National Data Buoy Center
James Partain, NWS Alaska Region
Laura Kong, ITIC

DHS/FEMA

Chris Jonientz-Trisler, Region X
Michael Hornick, Region IX

USGS

Craig Weaver, National Earthquake Hazards Reduction Program
David Oppenheimer, Earthquake Hazards Team

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Juan M. Pestana
NSF Tsunami Program Manager

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R. Scott Simmons, Alaska Division of Emergency Services
Roger Hansen, University of Alaska

California

Richard Eisner, Governor's Office of Emergency Services
Don Hoirup, Jr., California Geological Survey

Hawaii

Brian Yanagi, Hawaii State Civil Defense
Glenn Bauer, State Dept. of Land & Natural Resources
Sterling Yong, State Dept. of Land & Natural Resources

Oregon

George Priest, Department of Geology and Mineral Industries
Jay Wilson, Oregon Emergency Management

Washington

George Crawford, Washington Emergency
Timothy Walsh, Division of Geology and Earth Resources

Develop State/NOAA Coordination and Technical Support

West Coast/Alaska Tsunami Warning Center

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Palmer, Alaska 99645-6552
(907) 745-4212

Richard H. Hagemeyer Pacific Tsunami Warning Center

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Ewa Beach, Hawaii 96706
(808) 689-8207

Warning Coordination Meteorologists (WCM)

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WFO Anchorage
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Hawaii

WFO Honolulu
(808) 973-5272

Oregon

WFO Portland
(503) 261-9247

WFO Medford
(541) 773-1067

California

WFO Eureka
(707) 443-6484

WFO Monterey
(831) 656-1725

WFO Los Angeles/ Oxnard
(805) 988-6610

WFO San Diego
(858) 297-2107

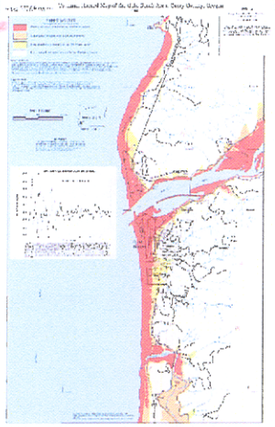
Washington

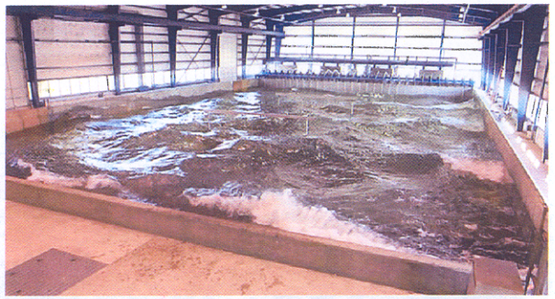
WFO Seattle
(206) 526-6095

National Tsunami Hazard Mitigation Program

Hazard Assessment

Maps identifying the areas of likely tsunami flooding for at-risk communities will be constructed to guide local tsunami hazard planning. The tsunami inundation map for Gold Beach, Oregon, shown here, was created using a combination of numerical models assuming possible tsunami scenarios.





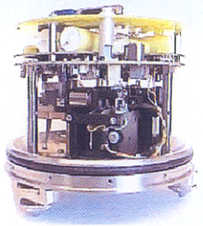
Oregon State University tsunami wave basin
World's largest facility supported by NSF

Results to Date

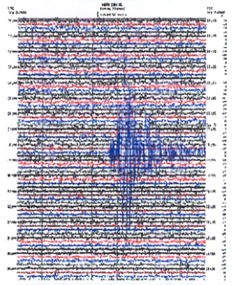
- Inundation maps for 122 communities
- > 1.3 million at-risk residents (30% of total population)
- Evacuation maps for 23 communities

Warning Guidance

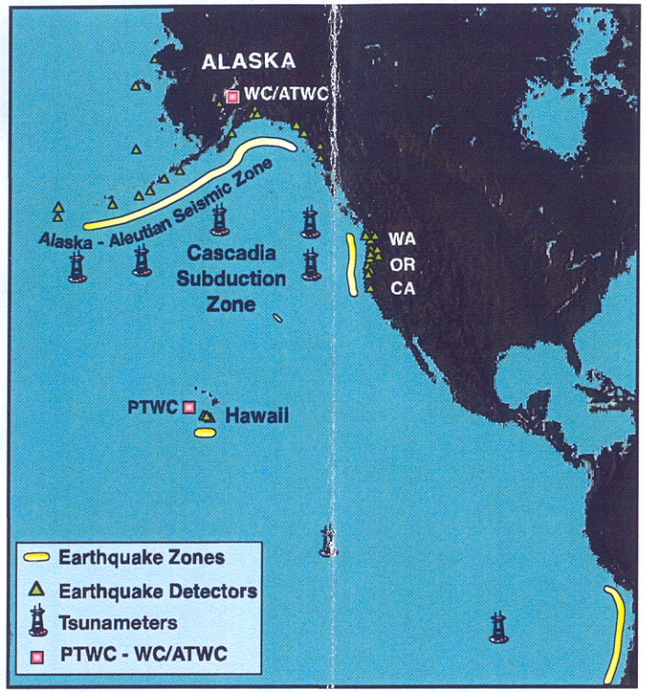
Earthquake Detection



Seismometer

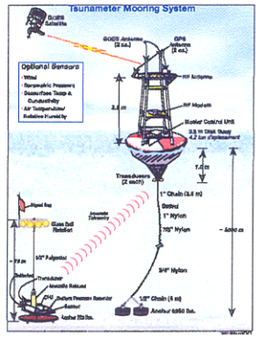


Real-time earthquake data

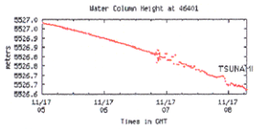


Real-time instruments to detect earthquakes and tsunamis

Tsunami Detection



Deep ocean tsunameters accurately measure tsunamis to forecast tsunami impacts



Real-time deep ocean tsunami data

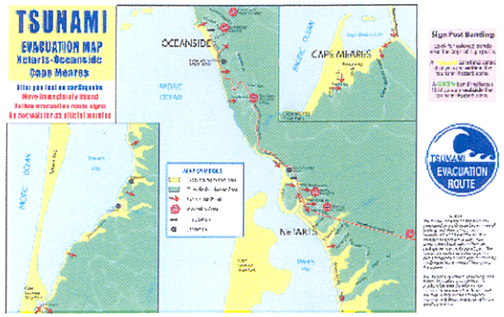
Results

- Early detection of November 17, 2003, non-destructive tsunami avoided an evacuation of Hawaii, saving $68 million in lost productivity
- Data from tsunameter used to forecast, for the first time, tsunami in Hilo harbor for November 17, 2003, tsunami

Results

- Earthquakes within U.S. - reduced time to determine location and magnitude from 8 to 2 minutes
- Earthquakes outside U.S. - reduced time to locate from 8-16 minutes to 1-12 minutes and time to determine magnitude from 5-55 minutes to 2-20 minutes
- Warning operations now use more appropriate magnitude scale for issuing warnings

Mitigation



Tsunami evacuation brochure for Netarts, Oregon, derived from inundation map

Tsunami evacuation road signs in Oregon

Results

- Warning messages: appropriate responder reaction increased from 4 in 10 to 8 in 10
- 7 in 10 indicate improvements since 1994 to their local warning plans
- 9 in 10 cited better planning and coordination as a factor for improvements