

Exercise PACIFEX 12 Participant Handbook

A Pacific tsunami warning exercise:
March 28, 2012

National Tsunami Hazard Mitigation Program
Warning Coordination Subcommittee



NOTE: The contents of this handbook are patterned after the Exercise Pacific Wave 08 manual published by the Intergovernmental Oceanographic Commission. Citation: *Exercise Pacific Wave 08. A Pacific-wide Tsunami Warning and Communication Exercise, 28-30 October 2008*. IOC Technical Series No. 82. Paris, UNESCO, 2008 and the PACIFEX10/11 handbooks.

Exercise

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1. Background

This tsunami exercise is being conducted to assist tsunami preparedness efforts along the U.S. and Canadian Pacific coasts. Historical tsunami records from sources such as the National Oceanic and Atmospheric Administration's (NOAA) National Geophysical Data Center (NGDC) show that approximately 85% of the world's oceanic tsunamis occur in the Pacific Basin and surrounding seas. Tsunamis have impacted U.S. and Canadian Pacific coasts several times in the past century with devastating results. Preparing and exercising emergency response plans throughout this region is an important part of tsunami preparedness.

The PACIFEX12 exercise simulates an earthquake located 70 miles east of Kodiak City, Alaska which generates a major tsunami, similar in nature to Alaska's March 27, 1964 9.2 magnitude earthquake. The description below provides an overview of the impact of the 1964 earthquake to Alaska's south-central region and is based on information provided at <http://www.alaskageography.com/essays/earthquake.htm>.

On March 27, 1964 the world's second largest earthquake ever instrumentally recorded shook Southcentral Alaska for up to 5 minutes, an eternity for someone on the ground. At 9.2 on the Richter scale it released a million times more energy than a 5.2 earthquake, which occurs several times a year in this region.

The origin of the earthquake was underneath the east shore of Unakwik Inlet in northern Prince William Sound, about 40 miles west of Valdez, at a depth of about 12 miles. Dozens of aftershocks shook a 400-mile long region reaching from Cordova to Kodiak Island.

The most apparent effect of the earthquake was to shift the elevation of Southcentral Alaska as if it were on an enormous hinge. This hinge more or less followed the border between the Chugach Terrane and the Prince William Terrane (see Figure 1). Land to the northwest of this hinge subsided as much as 7.5 feet (Kodiak Island), while land to the southeast was uplifted as much as 33 feet (Montague Island). In addition to these vertical elevation changes, there were also horizontal ground displacements along the coastal areas. The maximum horizontal displacement occurred around Latouche Island in Prince William Sound where the ground moved about 60 feet to the southeast.

The earthquake damaged the region in several ways. Some of the most severe damage was from the tsunami which originated from two sources. One was the uplift of the sea floor along the coast. This uplift generated tsunamis that struck at Kodiak, Seward, and Cordova and rose to more than 30 feet high in some places, wiping out docks, boats and houses. The tsunami travelled throughout the Pacific Ocean, killing 12 people in California and 4 in Oregon. Undersea landslides generated other, more localized, waves. Waves of this origin destroyed the waterfronts of towns like Seward and Valdez.

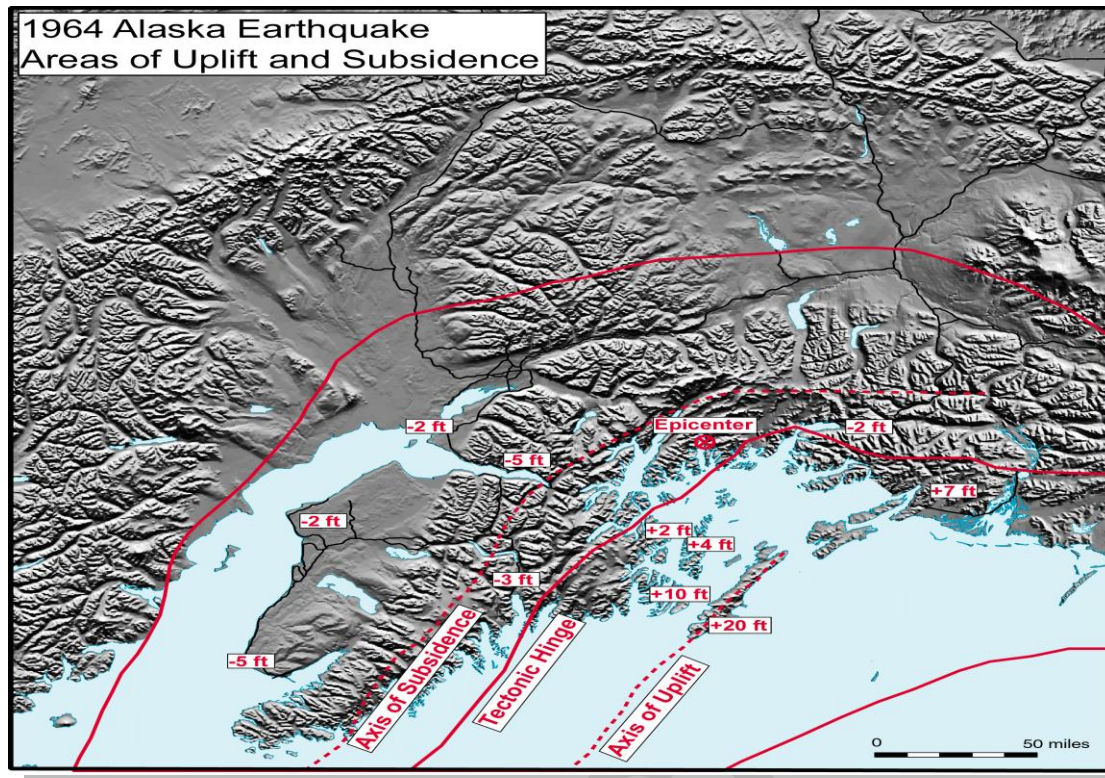


Figure 1: 1964 Alaska Earthquake Areas of Uplift and Subsidence

The Earthquake shifted Southcentral Alaska as if it were on a giant hinge. Those areas to the north and west of the Contact Fault (the tectonic hinge) subsided. Areas to the south and east were uplifted. Other parts of Alaska felt the shock waves from the earthquake, but the ground itself did not permanently shift.

The wave in Valdez Inlet reached a height of 220 feet on the shore while another 70-foot tsunami runup obliterated the Prince William Sound community of Chenega Bay, killing one-third of its residents.

Most destruction along Cook Inlet was caused by down warp of the region combined with settling of unconsolidated sediments such as silt, sand and gravel. The town of Portage sunk at least 6 feet, placing it within the tidal zone and it therefore had to be abandoned. Some ruined houses can still be seen today along the Seward Highway. The Homer Spit subsided 4 to 6 feet. The subsidence of the coast along Cook Inlet raised the high tide level in relation to the land and has caused increased bluff erosion over the years.

Anchorage was severely damaged due to the fact that much of its coastal land consists of gravel (of glacial and riverine origin) underlain by a saturated layer of fine sand and clay (deposited in a former marine or estuarine environment). The shaking of the earthquake caused the finer materials to liquefy. This created a relatively fluid layer that slid downhill, carrying the more stable above-lying layers with it. This destroyed many buildings along the Ship Creek bluffs, Knik Arm and carried off a significant part of the Turnagain Heights neighborhood down coastal bluffs toward the sea. Tilted trees and mounds of disrupted clay, which are remnants of this huge landslide, can still be observed in Earthquake Park today.

All told, this earthquake killed 131 people along the Pacific Rim, and the estimated damage was 300-400 million dollars (1964 dollars). Geologists have examined the past earthquake record in Turnagain Arm and on Middleton Island in the Gulf of Alaska and have tentatively concluded that an earthquake of this scale occurs in Southcentral Alaska on average about every 600 to 950 years.

To help communities respond to tsunami hazards, NOAA operates a tsunami warning system for U.S. Pacific coasts and western Canada through its West Coast/Alaska Tsunami Warning Center (WCATWC) in Palmer, Alaska and the Pacific Tsunami Warning Center (PTWC) in Ewa Beach, Hawaii. These Centers provide tsunami warning, advisory, watch, and information messages approximately five minutes after an earthquake's occurrence for earthquakes in the United States and Canada. Primary recipients of Tsunami Warning Center (TWC) messages include National Weather Service (NWS) coastal Weather Forecast Offices (WFOs), state/territory warning points, national Coast Guards, Canada's Provincial Emergency Program, national tsunami warning focal points, and military organizations. These agencies transmit the message to people potentially impacted by a tsunami.

NOAA and the National Tsunami Hazard Mitigation Program (NTHMP) are providing the framework for this exercise as a means for emergency responders along Pacific coasts to test and update tsunami response plans. High levels of vulnerability along the Pacific coast and the well known tsunami threat in the Pacific should provide a strong incentive for local jurisdictions to prepare for a tsunami.

This exercise will provide simulated tsunami warning messages from the WCATWC and PTWC triggered by a hypothetical earthquake located 70 miles east of Kodiak City, Alaska. Exercises like this will ensure that the U.S./Canadian Pacific coasts are ready to respond in case of a dangerous tsunami. Other recent tsunami exercises in the Pacific and Atlantic Basins have proven effective in strengthening preparedness levels of emergency management organizations.

2. Exercise Concept

2.1 Purpose

The purpose of this exercise is to improve the effectiveness of the tsunami warning system along the U.S. and Canadian Pacific coasts. The exercise provides an opportunity for emergency management organizations along these coasts to exercise their operational lines of communications, review their tsunami response procedures, and promote tsunami preparedness. Regular exercising of response plans is critical to maintain readiness for an emergency. This is particularly true for tsunamis which are infrequent, but high impact events. Every coastal U.S. and Canadian Pacific emergency management organization (EMO) is encouraged to participate.

2.2 Objectives

Each organization can develop their objectives for the exercise depending on their level of involvement in the scenario. The following are the exercise's overarching objectives.

- Ensure message transmission from the TWCs through primary contacts to coastal EMOs.
- Test tsunami response plans for those Pacific EMOs that have developed plans, and provide a catalyst for EMOs that have not developed one.
- Coastal EMOs review, discuss, and evaluate the various communication alternatives for receiving and disseminating tsunami messages.
- Coastal EMOs review, discuss, and evaluate potential response actions and challenges.
- Identify processes to issue local all-clear notices.
- Provide an opportunity for EMOs to conduct outreach on earthquake and tsunami response.

2.3 Type of Exercise

The exercise should be carried out such that communications and decision making at various organizational levels are exercised and conducted without disrupting or alarming the general public. Individual localities, however, may at their discretion elect to extend the exercise down to the level of testing local notification systems such as sirens or loudspeakers.

Exercises stimulate the development, training, testing, and evaluation of Disaster Plans and Standard Operating Procedures. Exercise participants may use their own past multi-hazard drills (e.g. flood, hurricane, earthquake, etc.) as a framework to conduct PACIFEX 12.

Exercises can be conducted at various scales of magnitude and sophistication. The following are examples of types of exercises conducted by EMOs.

1. **Orientation Exercise (Seminar):** An Orientation Exercise lays the groundwork for a comprehensive exercise program. It is a planned event, developed to bring together individuals and officials with a role or interest in multi-hazard response planning, problem solving, development of standard operational procedures (SOPs), and resource integration and coordination. An Orientation Exercise will have a specific goal and written objectives and result in an agreed upon Plan of Action.
2. **Drill:** The Drill is a planned activity that tests, develops, and/or maintains skills in a single or limited emergency response procedure. Drills generally

involve operational response of single departments or agencies. Drills can involve internal notifications and/or field activities.

3. **Tabletop Exercise:** The Tabletop Exercise is a planned activity in which local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal, in a conference room environment, and is designed to elicit constructive discussion from the participants. Participants will examine and attempt to resolve problems, based on plans and procedures, if they exist. Individuals are encouraged to discuss decisions in depth with emphasis on slow-paced problem solving, rather than rapid, real time decision-making. A Tabletop Exercise should have specific goals, objectives, and a scenario narrative (see Appendix A for a Sample Tabletop Exercise Outline).
4. **Functional Exercise:** A Functional Exercise is a planned activity designed to test and evaluate organizational capacities. It is also utilized to evaluate the capability of a community's emergency management system by testing the Emergency Operations Plan (EOP). It is based on a simulation of a realistic emergency situation that includes a description of the situation (narrative) with communications between players and simulators. The Functional Exercise gives the players (decision-makers) a fully simulated experience of being in a major disaster event. It should take place at the appropriate coordination location (i.e. emergency operations center, emergency command center, command post, master control center, etc.) and activate all the appropriate members designated by the plan. Both internal and external agencies (government, private sector, and volunteer agencies) should be involved. It requires players, controllers, simulators, and evaluators. Message traffic will be simulated and inserted by the control team for player response/actions, under real time constraints. It may or may not include public evacuations. A Functional Exercise should have specific goals, objectives, and scenario narrative.
5. **Full-scale Exercise:** A full-scale Exercise is the culmination of a progressive exercise program that has grown with the capacity of the community to conduct exercises. A Full-Scale exercise is a planned activity in a "challenging" environment that encompasses a majority of the emergency management functions. This type of exercise involves the actual mobilization and deployment of the appropriate personnel and resources needed to demonstrate operational capabilities. EOCs and other command centers are required to be activated. A Full-scale Exercise is the largest, costliest, and most complex exercise type. It may or may not include public evacuations.

Example Time Frames for Different Exercise Types

Style	Planning Period	Duration	Comments
Orientation Exercise	2 wks	1 day	Individual or mixed groups
Drill	2 days	1 day	Individual technical groups generally
Tabletop Exercise	2 weeks	1-3 days	Single or multiple agency
Functional Exercise	1-2 months	1-5 days	Multiple Agency participation
Full-scale Exercise	2-6 months	1 day/ week	Multiple Agency participation

3. Exercise Outline

3.1 General

The scenario will start with a magnitude 9.2 earthquake located 70 miles east of Kodiak City, Alaska at 58.0°N, 150.5°W. A large tsunami with runups exceeding 10 meters near the source zone impacts U.S. and Canadian Pacific coasts. The earthquake occurs at 1800 UTC on March 28, 2012. The tsunami inundates extensive sections of land in the epicentral region and also significantly impacts other U.S. and Canadian coasts in the Pacific. This is a realistic scenario for a major Alaskan earthquake which is discussed in greater detail in Appendix B.

The TWCs will not issue live messages during the exercise other than to issue an initial “dummy” message over standard communication routes to start the exercise at 1805 UTC on March 28, 2012. The content of the dummy messages is given in Appendix C. The dummy message will indicate that exercise participants should refer to the first message provided in this handbook. From then on, participants should follow the schedule in Table 1 to look at new messages. Table 1 is the timeline for when messages would be issued by the TWCs if this were a real event and should be used by EMOs to drive the exercise timing. The warning messages (as shown in Appendix D) cover a 9-hour period, though in an actual event they would likely continue longer. World Meteorological Organization (WMO) and Advanced Weather Interactive Processing System (AWIPS) headers used in the dummy message are listed in Table 2.

The WCATWC issues two official products each time a message is issued. The first, and the ones provided in Appendix D, are known as the standard message. This message is a segmented message which includes encoded

NWS zones and their level of threat in the lower section of the message. The segmentation is used for automated processing systems which parse NWS products. The standard product also lists expected arrival times. The second product is known as the public message. This message has no segmentation and is written in a non-tabular, easier-to-read format. The products contain the same basic information. EMOs generally use the standard product for warning response as it has more complete information. WCATWC also issues additional graphical and web-based products to its web site. Examples of these are shown in Appendix E.

During Pacific events, PTWC also issues two official products. The first is an international product that covers Hawaii, American Samoa, Guam, and all other countries in the Pacific except Canada. The second is a product specifically for the State of Hawaii. These products are designed and intended for EMOs. Both types of products for this exercise are provided in Appendix D.

Participants may elect to exercise using their own timelines in order to achieve their particular objectives. For example, a particular EMO's exercise control may choose to feed the TWC bulletins into the exercise at times of their own choosing, or alternatively put them in envelopes with the time they must be opened written on each, with each key participant agency having their own set of envelopes. The messages, provided in Appendix D, will facilitate this approach.

Estimated tsunami arrival times to several U.S. and Canadian Pacific locations are included in the TWC messages (Appendix E contains a list of arrival times to more Pacific locations which would be available over the web during an event as well as a travel time map). In addition, EMOs are welcome to modify estimated arrival times and/or wave amplitudes to suit their exercise – for example, to have the tsunami arrive sooner and with larger amplitude. Other exercise injects, such as tsunami damage reports, are also encouraged.

3.2 Master Schedule (Exercise Script)

Table 1: Scenario Timeline

Tsunami generated by a magnitude 9.2 earthquake with epicenter at 58.0°N, 150.5°W occurring on March 28, 2012 at 1800 UTC.

Date (UTC)	Time (UTC)	WCATWC Message			PTWC Pacific Product			PTWC Hawaii Product		
		#	Type	Dummy	#	Type	Dummy	#	Type	Dummy
03/28/2012	1800	----- Earthquake occurs -----								
03/28/2012	1805	01	WWA	Yes	01	EWW	No	01	WCH	Yes
03/28/2012	1840	02	WWA	No						
03/28/2012	1903	03	WWA	No	02	EWW	No	02	WCH	No
03/28/2012	1935	04	WWA	No						
03/28/2012	2004	05	WWA	No	03	EWW	No	03	WCH	No
03/28/2012	2035	06	WWA	No						

03/28/2012	2105	07	WWA	No	04	EWW	No	04	WRN	No
03/28/2012	2134	08	WWA	No						
03/28/2012	2204	09	WWA	No	05	EWW	No	05	WRN	No
03/28/2012	2234	10	WWA	No						
03/28/2012	2304	11	WWA	No	06	EWW	No	06	WRN	No
03/28/2012	2334	12	WWA	No						
03/29/2012	0005	13	WWA	No	07	EWW	No	07	WRN	No
03/29/2012	0035	14	WWA	No						
03/29/2012	0105	15	WWA	No	08	EWW	No	08	WRN	No
03/29/2012	0135	16	WWA	No						
03/29/2012	0204	17	WWA	No	09	EWW	No	09	WRN	No
03/29/2012	0234	18	WWA	No						
03/29/2012	0305	19	WWA	No	10	EWW	No	10	WRN	No

WCATWC Message Types:

WWA Warning/Watch/Advisory
 Can WWA Cancellation

PTWC Pacific Message Types:

EWW Expanding Warning/Watch
 Can Warning Cancellation

PTWC Hawaii Message Types:

WCH Tsunami Watch
 WRN Tsunami Warning
 Can Warning Cancellation

Dummy:

Yes Dummy Issued
 No Dummy Not Issued

Table 2: Product Types

Product Types Issued for Dummy Message with Transmission Methods

Center	WMO ID	AWIPS ID	NWWS	GTS	EMWIN	Fax	Email
WCATWC	WEPA41 PAAQ	TSUWCA	Yes	Yes	Yes	Yes	Yes
PTWC	WEHW40 PHEB	TSUHWX	Yes	Yes	Yes	No	No

NWWS NOAA Weather Wire Service
 GTS Global Telecommunications System
 EMWIN Emergency Manager's Weather Information Network

3.3 Actions in Case of a Real Event

In the case of a real event occurring during the exercise, TWCs will issue their normal message products for the event. Such messages will be given full priority and a decision will be made by the Centers whether to issue the dummy message and to continue providing telephone support for the exercise. Smaller earthquakes that only trigger a Tsunami Information Statement will not disrupt the exercise. All documentation and correspondence relating to this exercise is to be clearly identified as "PACIFEX 12" and "Exercise."

3.4 Procedure for False Alarm

Any time disaster response exercises are conducted, the potential exists for the public or media to interpret the event as real. Procedures should be set up by all participating entities to address public or media concerns involving this exercise in case of misinterpretation by media or the public.

3.5 Resources

Although EMOs will have advance notice of the exercise and may elect to stand up a special dedicated shift to allow normal core business to continue uninterrupted, it is suggested that realistic resource levels be deployed in order to reflect some of the issues that are likely to be faced in a real event.

Questions on the exercise can be addressed to:

Kevin Miller	CA EMA, Tsunami PM	510-286-0817	kevin.miller@calema.ca.gov
Althea Turner	OR OEM Tsunami PM	503-378-2911	Althea.Rizzo@state.or.us
John Schelling	WA EMD Tsunami PM	253-512-7084	j.schelling@emd.wa.gov
Teron Moore	BC PEP Tsunami PM	250-952-5834	teron.moore@gov.bc.ca
Erv Petty	AK DHS&EM Tsunami PM	907-428-7015	ervin.petty@alaska.gov
Kevin Richards	HI CD Tsunami PM	808-733-4301	krichards@scd.hawaii.gov
Paul Whitmore	WCATWC Director	907-745-4212	paul.whitmore@noaa.gov
Paul Huang	WCATWC TWSO	907-745-4212	paul.huang@noaa.gov
James Waddell	WCATWC Exercise Rep.	907-745-4212	james.waddell@noaa.gov
Chip McCreery	PTWC Director	808-689-8207	charles.mccreery@noaa.gov
Stuart Weinstein	PTWC TWSO	808-689-8207	stuart.weinstein@noaa.gov
Gerard Fryer	PTWC Exercise Rep.	808-689-8207	gerard.fryer@noaa.gov

3.6 Media Arrangements

One advantage in conducting exercises is that it provides a venue to promote awareness of the exercise topic. Many residents along the Pacific coast may not realize that a tsunami warning system exists for their region, let alone the proper response. Communities may wish to invite their local media to the exercise to promote local awareness of the tsunami hazard. Appendix F contains a sample press release which can be adapted as necessary.

4 Post-Exercise Evaluation

All participating agencies are requested to provide brief feedback on the exercise. This feedback will assist NTHMP and NOAA in the evaluation of PACIFEX 12 and the development of future exercises, and help response agencies document lessons learned.

Please provide feedback by April 1, 2012 at the NTHMP internet web site:

<http://nthmp.tsunami.gov/exercise2012.php>.

Appendix A. Example Table Top Exercise

Tabletop Exercise Development Steps

Source: California Emergency Management Agency

A Tabletop Exercise is a planned activity in which local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal and slow paced, in a conference room environment, and is designed to elicit constructive discussion from the participants to assess plans, policies, and procedures. Participants will examine and attempt to resolve problems, based on plans and procedures, if they exist. Individuals are encouraged to discuss decisions in depth based on their organization's Standard Operating Procedures (SOPs), with emphasis on slow-paced problem solving, rather than rapid, real time decision-making. An Exercise Controller (moderator) introduces a simulated tsunami scenario to participants via written message, simulated telephone or radio call, or by other means. Exercise problems and activities (injects) are further introduced. Participants conduct group discussions, and resolution is generally agreed upon, and then summarized by a group leader. A Tabletop Exercise should have specific goals, objectives, and a scenario narrative.

The following provides a Tabletop Exercise structure with sample text and example.

1. **Vulnerability Analysis: Problem Statement**

An example for a hurricane might be:

Due to the recent Hurricane incidents that the Southeast region of the United States, an awareness of the threat risk involved in these disasters has become more apparent, therefore the need for evacuation system is vital. The state of Louisiana continues its ongoing tasks of planning, preparing, and training for Hurricane preparedness.

2. **Purpose (Mission): Intent, what you plan to accomplish (Policy Statement)**

An example for a hurricane might be:

The State of Louisiana has realized and recognizes the need for a more efficient and effective evacuation system, and is responding with this Comprehensive Exercise Plan. These events will include seminars, workshops, tabletop exercise, functional and full-scale exercises within an 18-month time frame, under the State Homeland Security grant program.

3. **Scope:**

- Exercise Activities**
- Agencies Involved**
- Hazard Type**
- Geographic Impact Area**

An example might be:

Emergency Services coordinators at local levels of government will identify representative jurisdictions from each of the six mutual aid regions located throughout the State to participate as host jurisdictions in a series of disaster preparedness exercises. These host jurisdictions will develop a progressive series of exercises each type building upon the previous type of exercise. The process will begin with a vulnerability analysis for each jurisdiction and continue through a progression of exercise activities including; orientation seminars,

workshops, tabletop and functional exercises. The eventual objective of these activities will be to reduce disaster impacts to their populations and city infrastructure. All events will be evaluated utilizing US Homeland Security Exercise Evaluation Program (HSEEP) after action reporting (AAR) standards. Steps for corrective actions will be made a part of the after action process and report. Surrounding jurisdictions in the mutual aid area will act as exercise design team members, exercise evaluators, or exercise observers for the purpose of information transfer to increase their operational readiness. Jurisdictions will participate on a rotational basis every two years to provide the opportunity for multiple jurisdiction participation.

4. Goals and Objectives:

Criteria for good objectives: Think SMART

- Simple (concise)
- Measurable
- Achievable (can this be done during the exercise?)
- Realistic (and challenging)
- Task Oriented (oriented to functions)

An example might be:

Comprehensive Exercise Program (CEP) Objectives

- *To improve operational readiness*
- *To improve multi-agency coordination and response capabilities for effective disaster response*
- *To identify communication pathways and problem areas pre-event between local jurisdictions and operational area, regional and state emergency operations centers*
- *To establish uniform methods for resource ordering, tracking and supply for agencies involved at all levels of government.*

5. Narrative:

The Narrative should describe the following:

- Triggering emergency/disaster event
- Describe the environment at the time the exercise begins
- Provides necessary background information
- Prepares participants for the exercise
- Discovery, report: how do you find out?
- Advance notice?
- Time, location, extent or level of damage

6. Evaluation:

The Evaluation should describe the following:

- Objectives Based
- Train Evaluation Teams
- Develop Evaluation Forms

7. After Action Report (AAR): The AAR should be compiled using the evaluation reports

8. Improvement Plan (IP): The IP should reduce vulnerabilities.

Appendix B. Scenario Description

The Short-term Inundation and Forecasting for Tsunamis (SIFT) model as well as the Alaska Tsunami Forecast Model (ATFM) were used to simulate the tsunami generated by a magnitude 9.2 earthquake located 70 miles east of Kodiak City, Alaska with an epicenter at 58.0N and 150.5W. Other fault parameters are:

Length: 741km
 Width: 167km
 Depth: 8km
 Strike: 230°
 Dip: 15°
 Slip: 90°
 Moment: 7.08×10^{29} dyne-cm

The models were computed using a 4-minute resolution grid in the open ocean and additional finer resolution grids along the U.S./Canadian Pacific coasts. *KMZ-format overlays can be downloaded from the following location: <http://wcatwc.arh.noaa.gov/exercises/PACIFEX2012.kmz>. These include tsunami energy maps, inundation zones, and other overlays.*

The following figures display the maximum modeled tsunami amplitude throughout the Pacific and in various regions along the U.S. coast. The amplitude represents the highest level of the tsunami above normal sea level. **Tsunami model results are provided to better understand the scenario and are not intended for evacuation planning.**

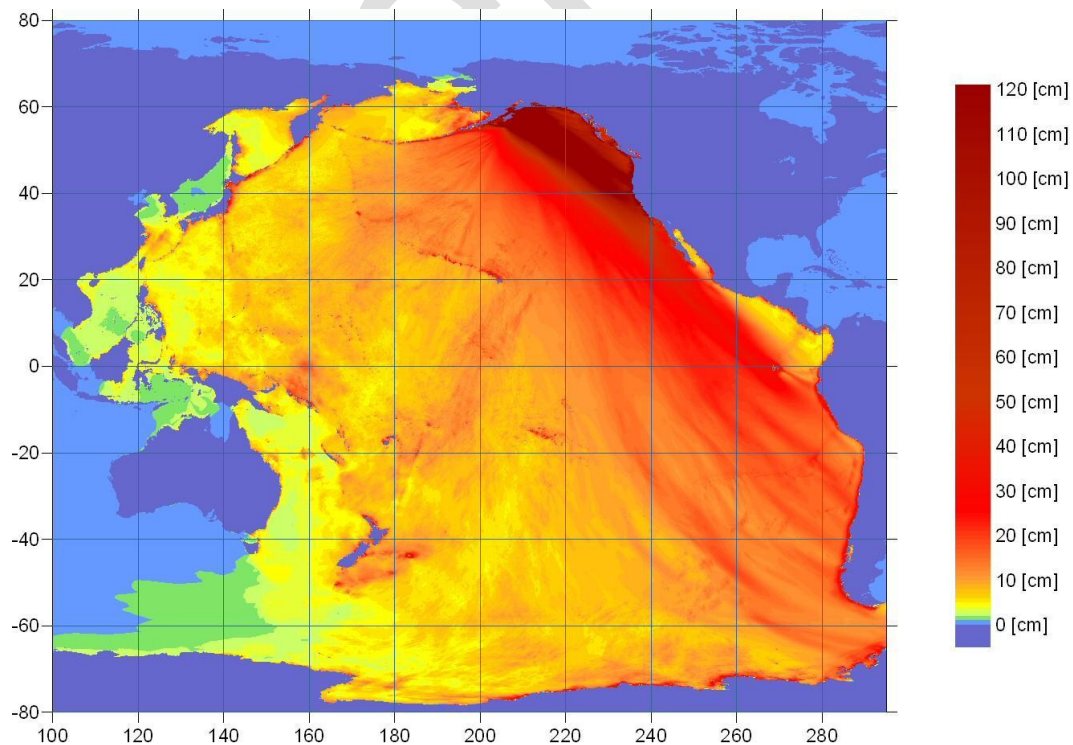


Figure B1: Maximum modeled tsunami amplitudes throughout the Pacific.

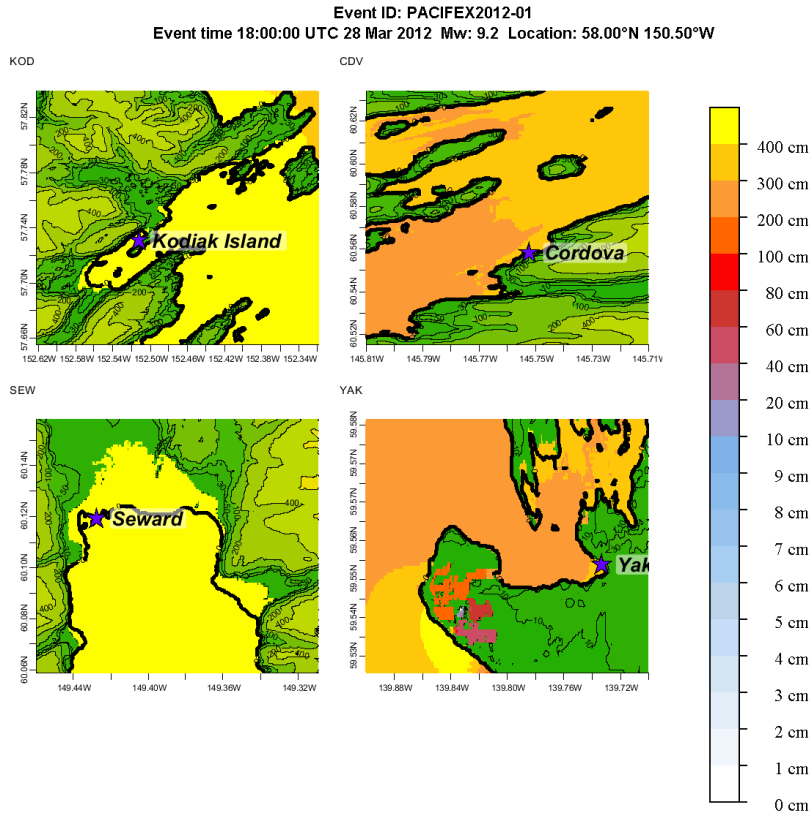


Figure B2. Maximum modeled tsunami amplitudes and inundation extent for Kodiak, Cordova, Seward, and Yakutat.

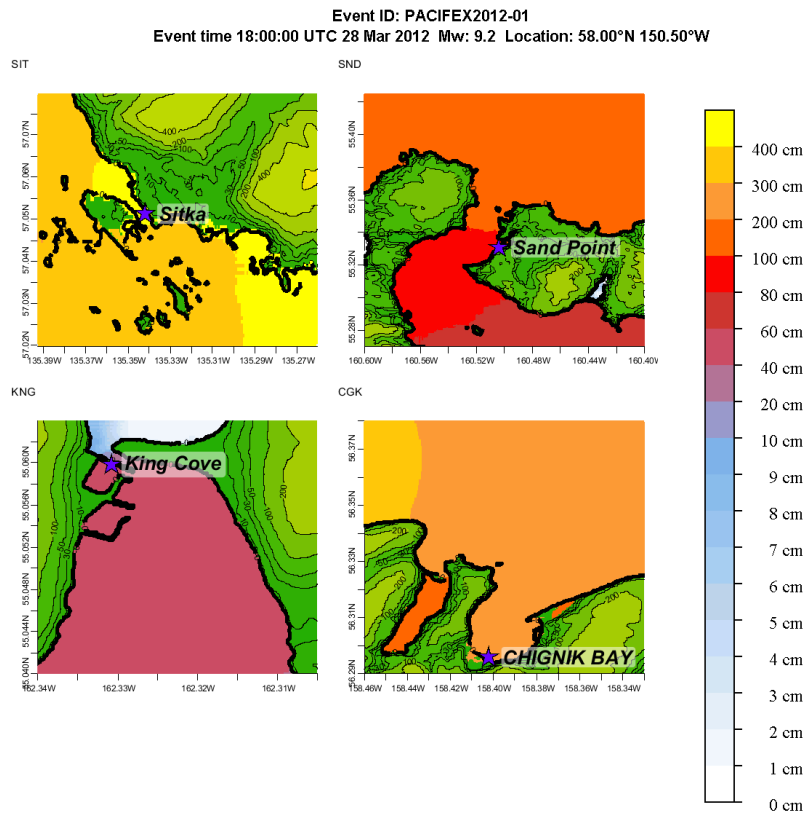


Figure B3. Maximum modeled tsunami amplitudes and inundation extent for Sitka, Sand Point, King Cove, and Chignik Bay.

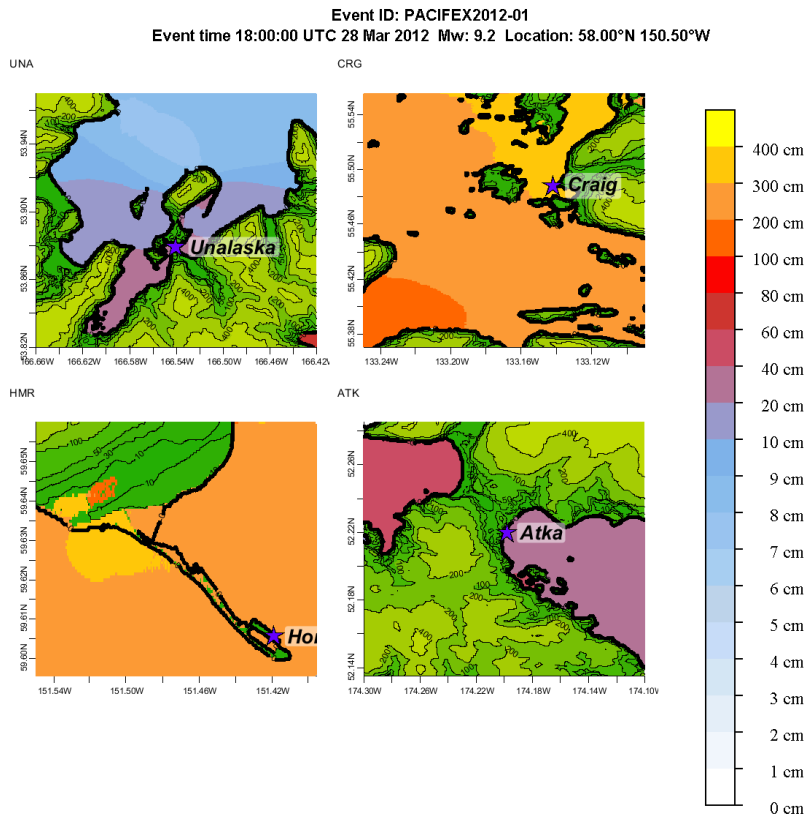


Figure B4. Maximum modeled tsunami amplitudes and inundation extent for Unalaska, Craig, Homer, and Atka.

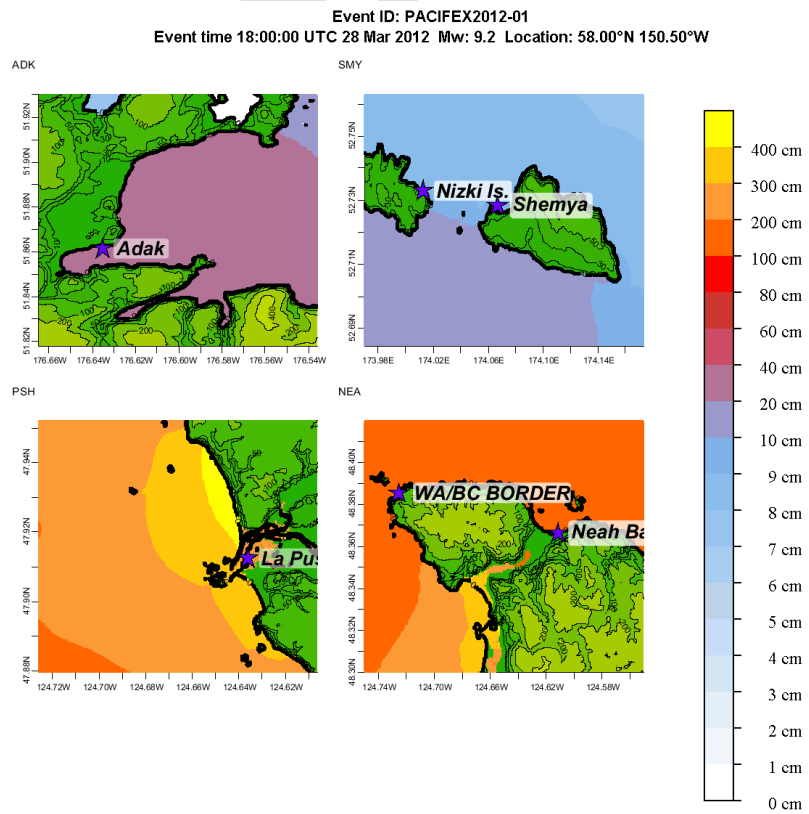


Figure B5. Maximum modeled tsunami amplitudes and inundation extent for Adak, Shemya, La Push, and Neah Bay.

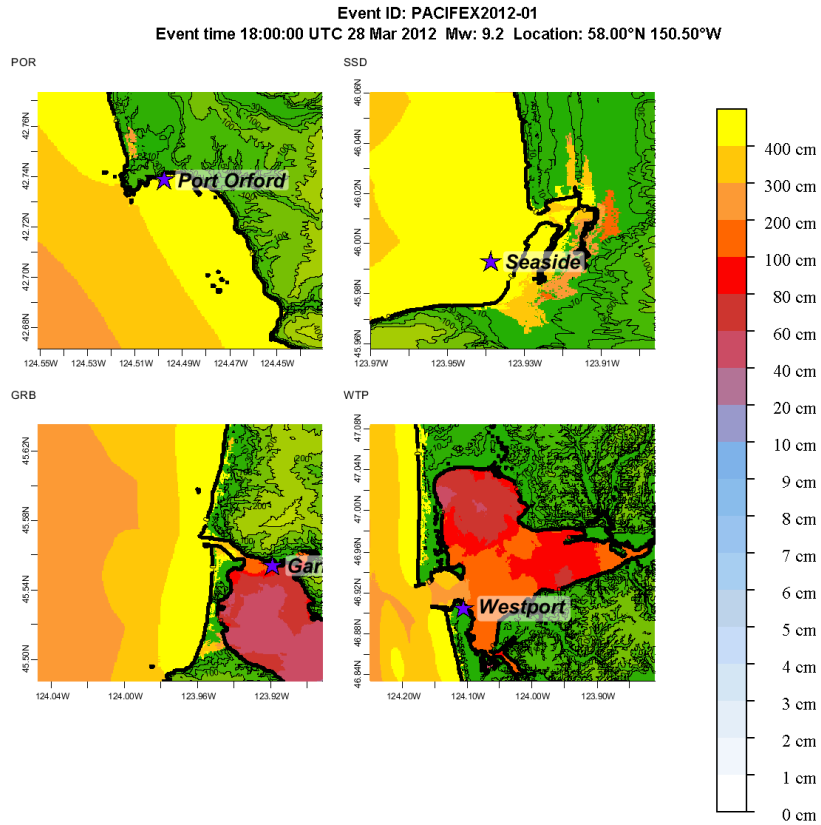


Figure B6. Maximum modeled tsunami amplitudes and inundation extent for Port Orford, Seaside, Garibaldi, and Westport.

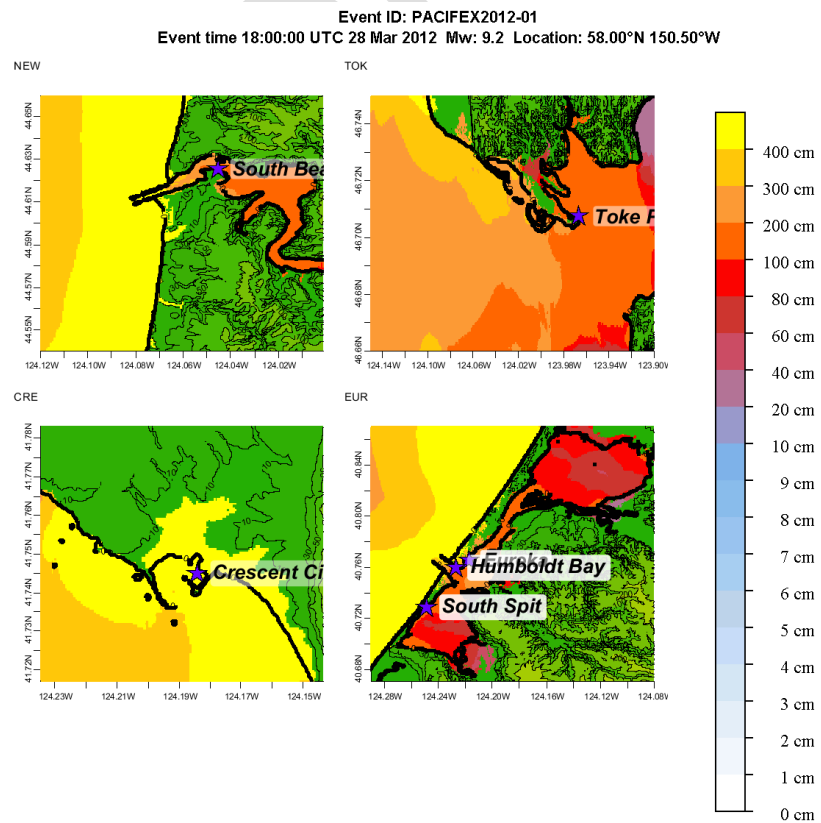


Figure B7. Maximum modeled tsunami amplitudes and inundation extent for South Beach, Toke Point, Crescent City, and South Spit.

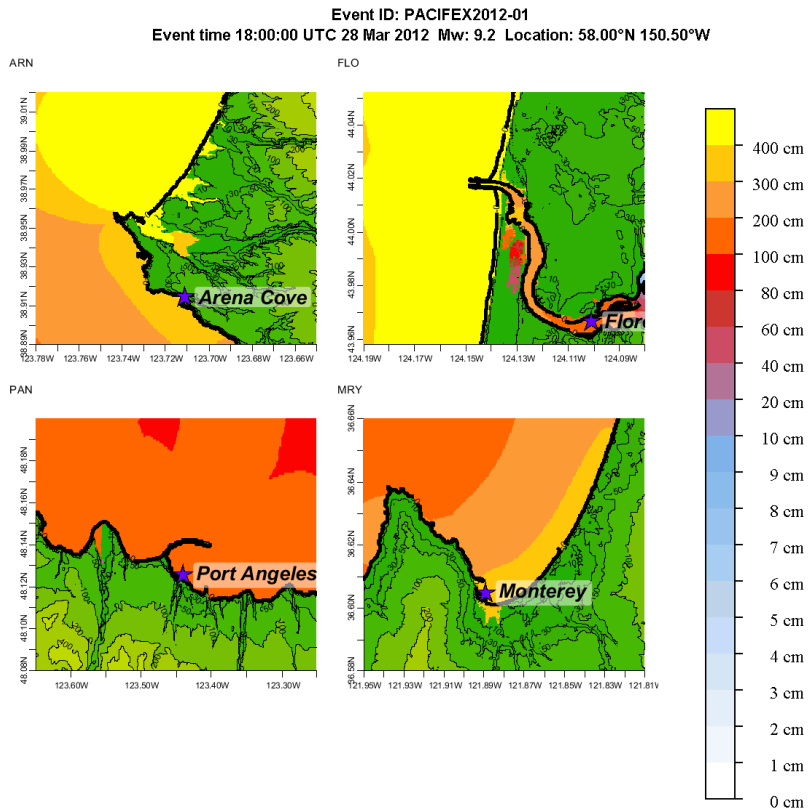


Figure B8. Maximum modeled tsunami amplitudes and inundation extent for Arena Cove, Florence, Port Angeles, and Monterey.

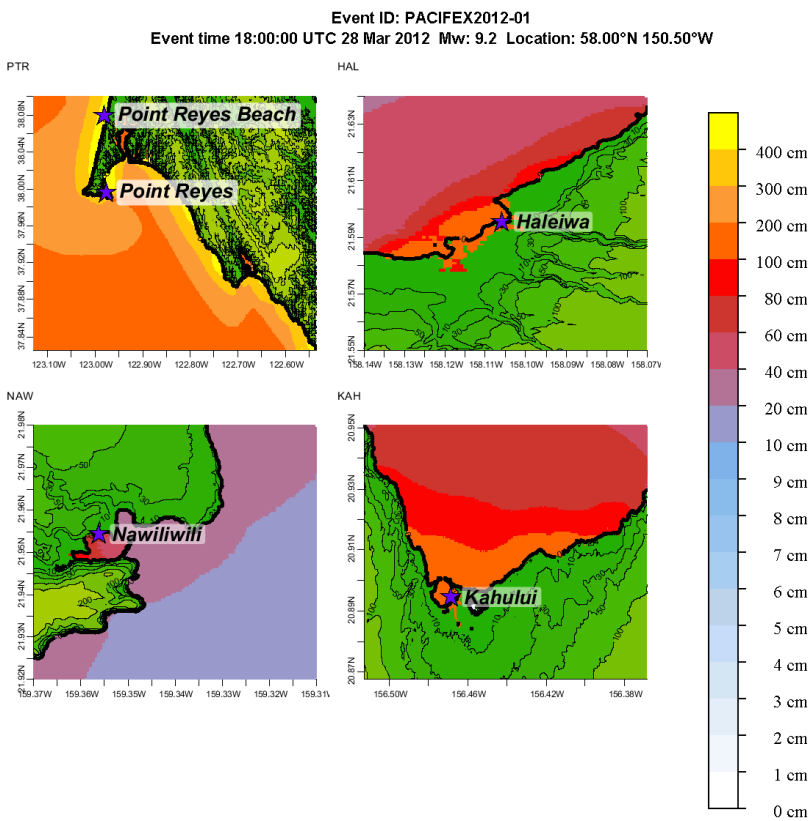


Figure B9. Maximum modeled tsunami and inundation extent for Point Reyes, Haleiwa, Nawiliwili, and Kahului.

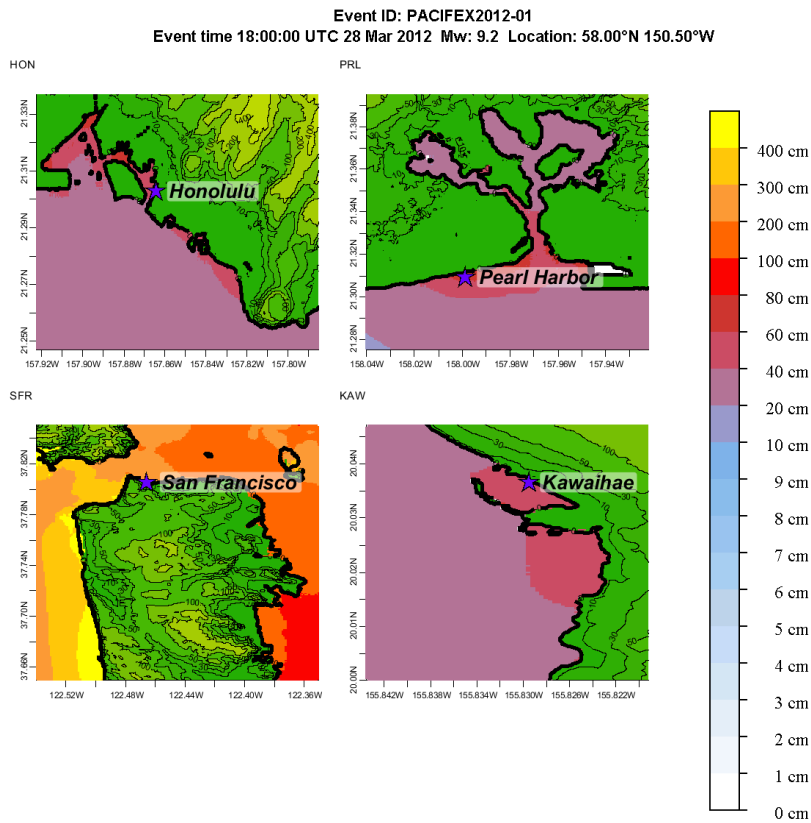


Figure B10. Maximum modeled tsunami amplitudes and inundation extent for Honolulu, Pearl Harbor, San Francisco, and Kawaihae.

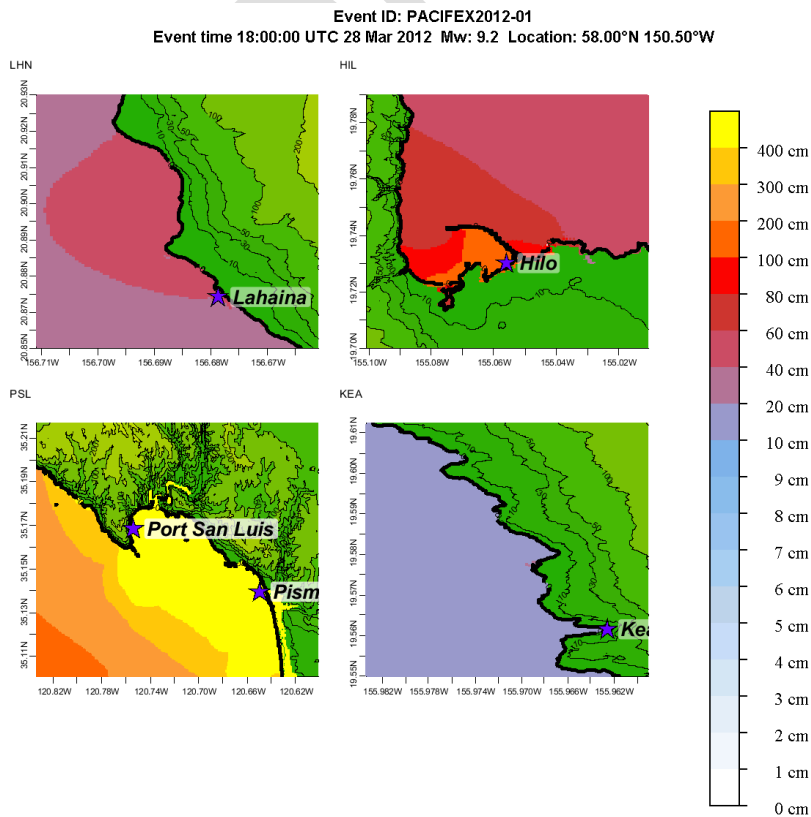


Figure B11. Maximum modeled tsunami amplitudes and inundation extent for Lahaina, Hilo, Port San Luis, and Keauhou.

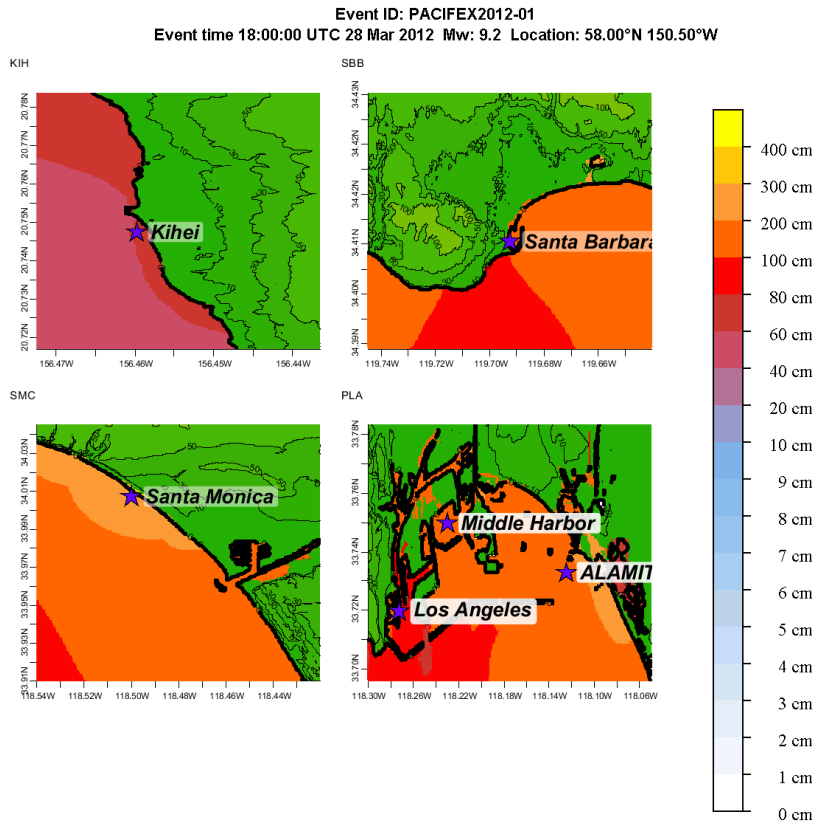


Figure B12. Maximum modeled tsunami amplitudes and inundation extent for Kihei, Santa Barbara, Santa Monica, and Los Angeles.

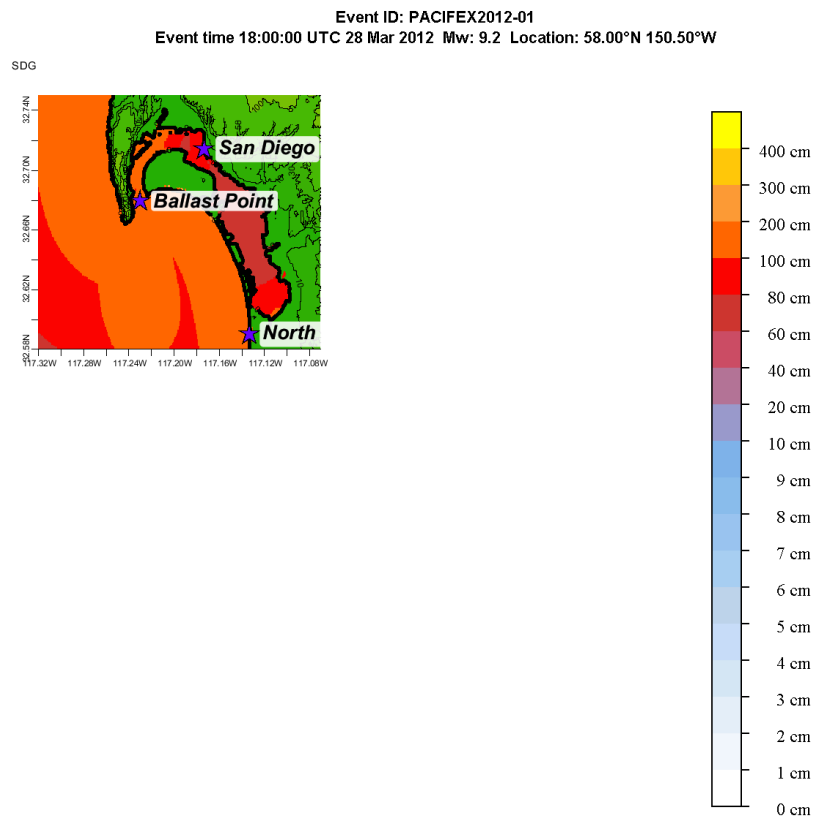
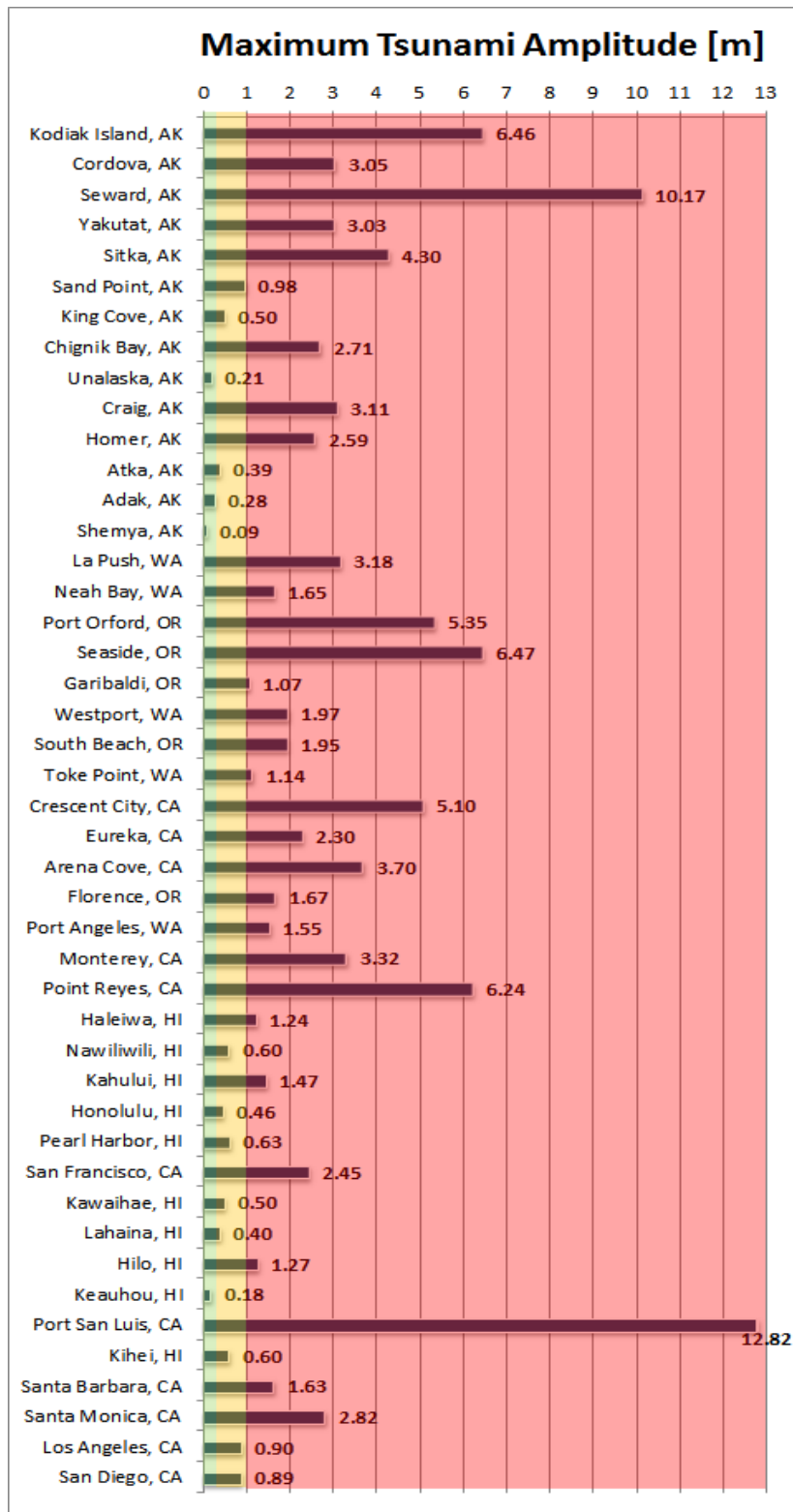


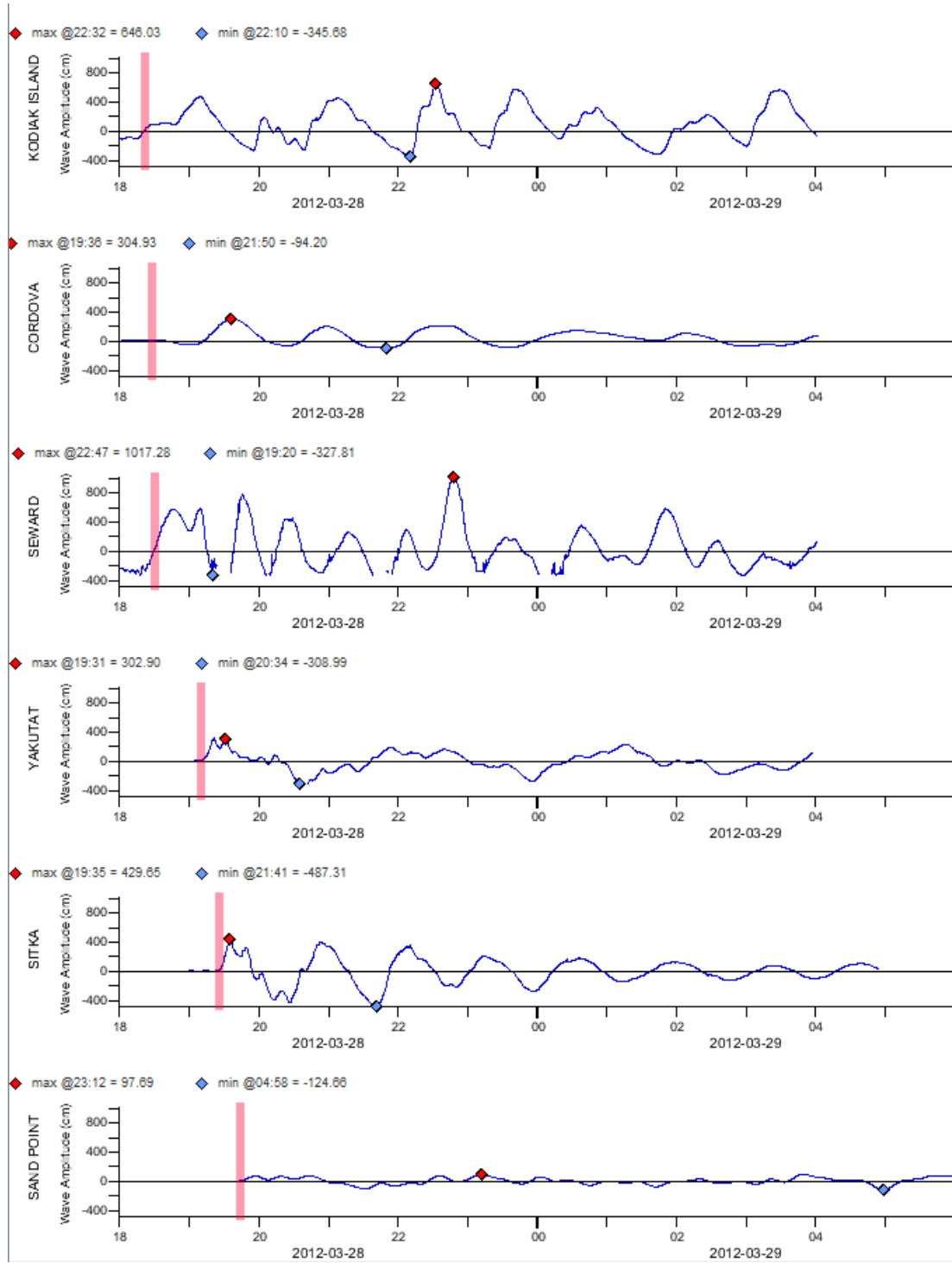
Figure B13. Maximum modeled tsunami amplitudes and inundation extent for Ballast Point and San Diego.

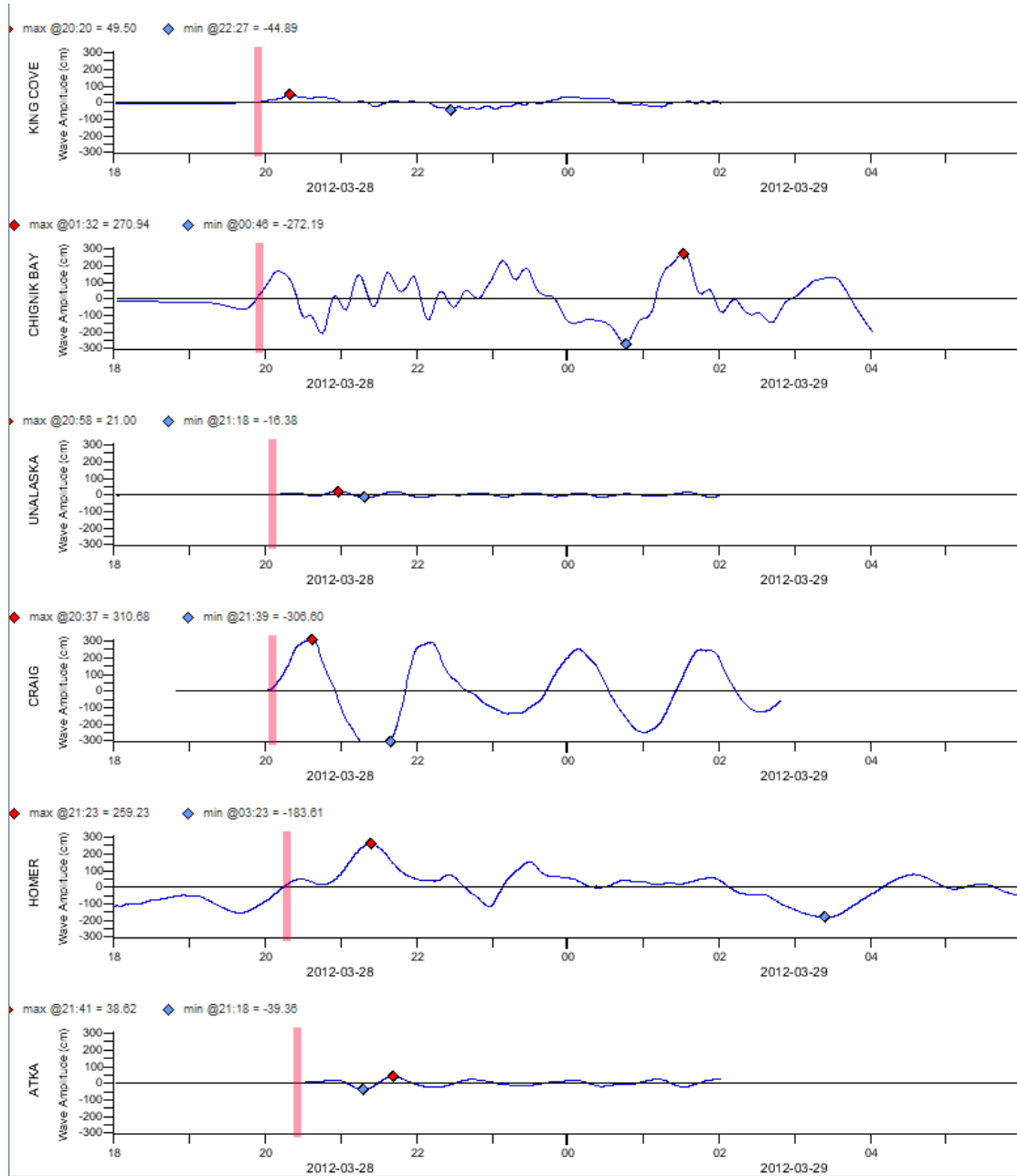
The following table summarizes forecasted maximum tsunami amplitudes at several tide gauge locations throughout the exercise area, ordered by their tsunami arrival times starting with Kodiak Island, the first location to be impacted by the tsunami. Amplitude indicates the level of the tsunami above normal sea level at the coast. Coastal amplitudes may induce vertical runups along shore that exceed the forecast amplitude by double or more due to the long period nature of tsunamis.

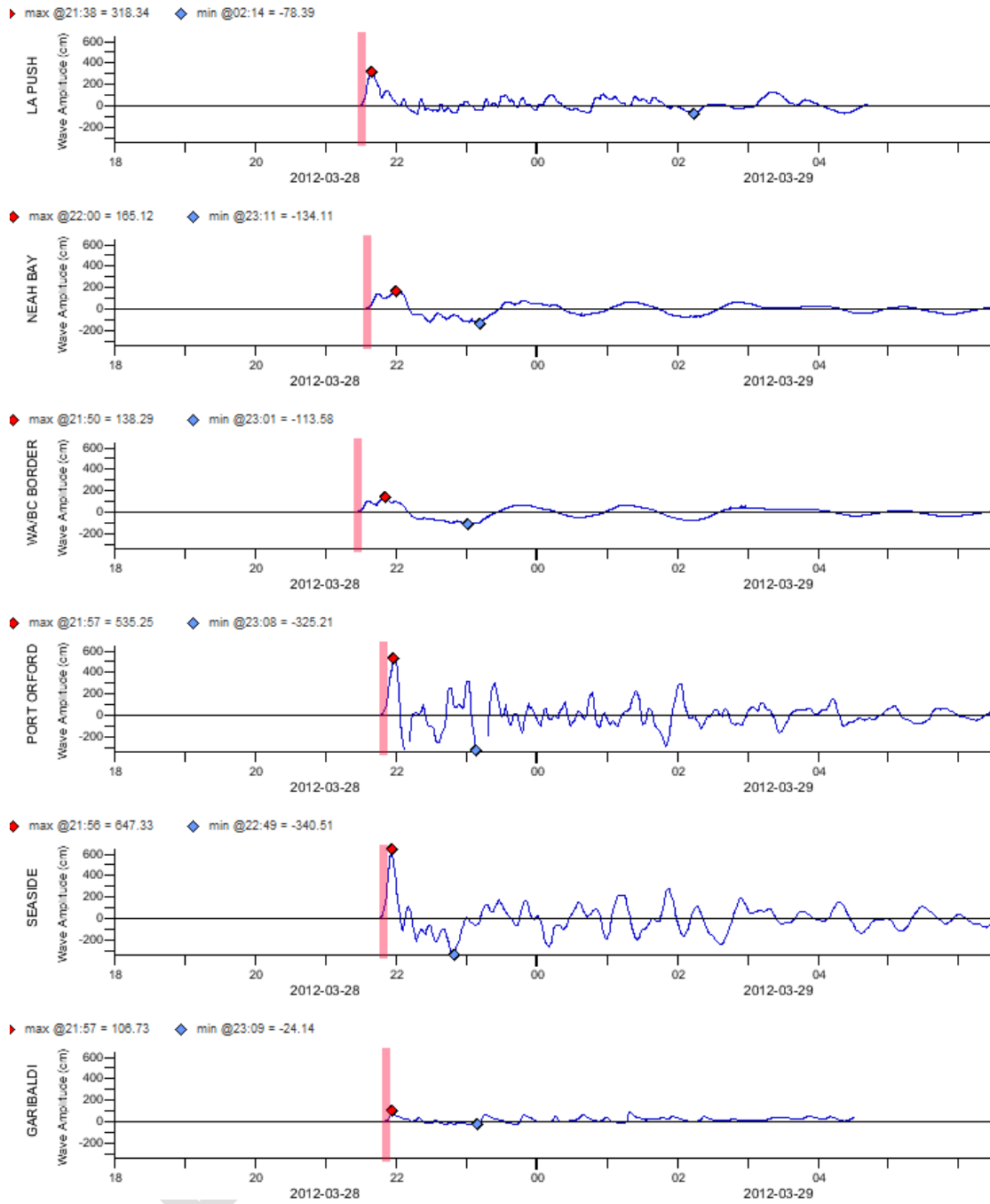
Exercise

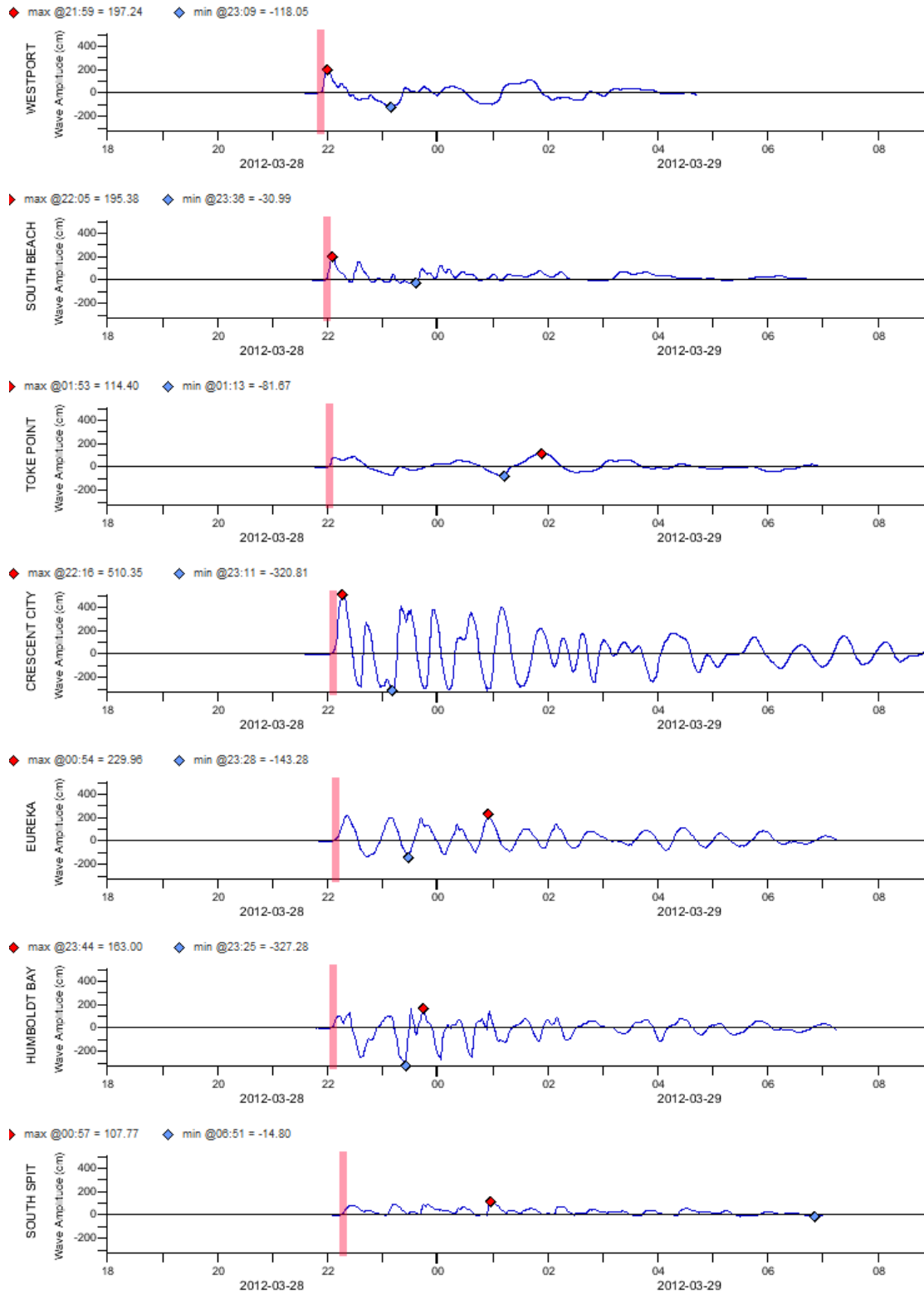


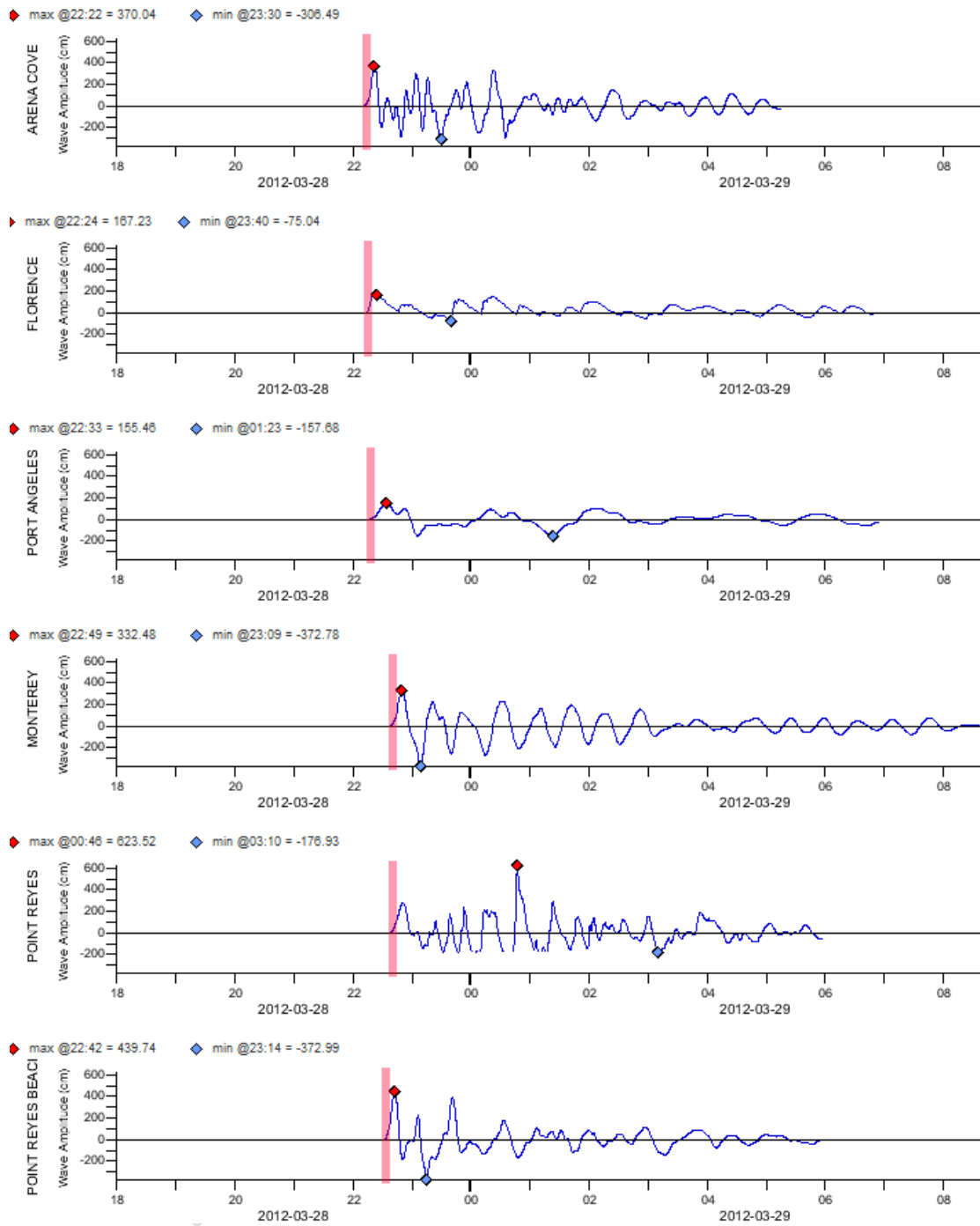
Graphs showing the tsunami variation over time (known as marigrams) are provided below for several tide gauge sites along the U.S. Pacific coast. The vertical red line indicates the estimated time of arrival, or ETA, and the maximum and minimum tsunami amplitudes are provided, [cm]. Note that the tsunami persists for many hours after initial arrival and that the maximum amplitude often occurs several hours after first arrival. Note also that the Port San Luis forecast is questionable.

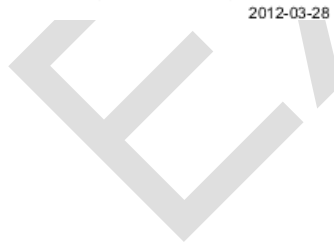
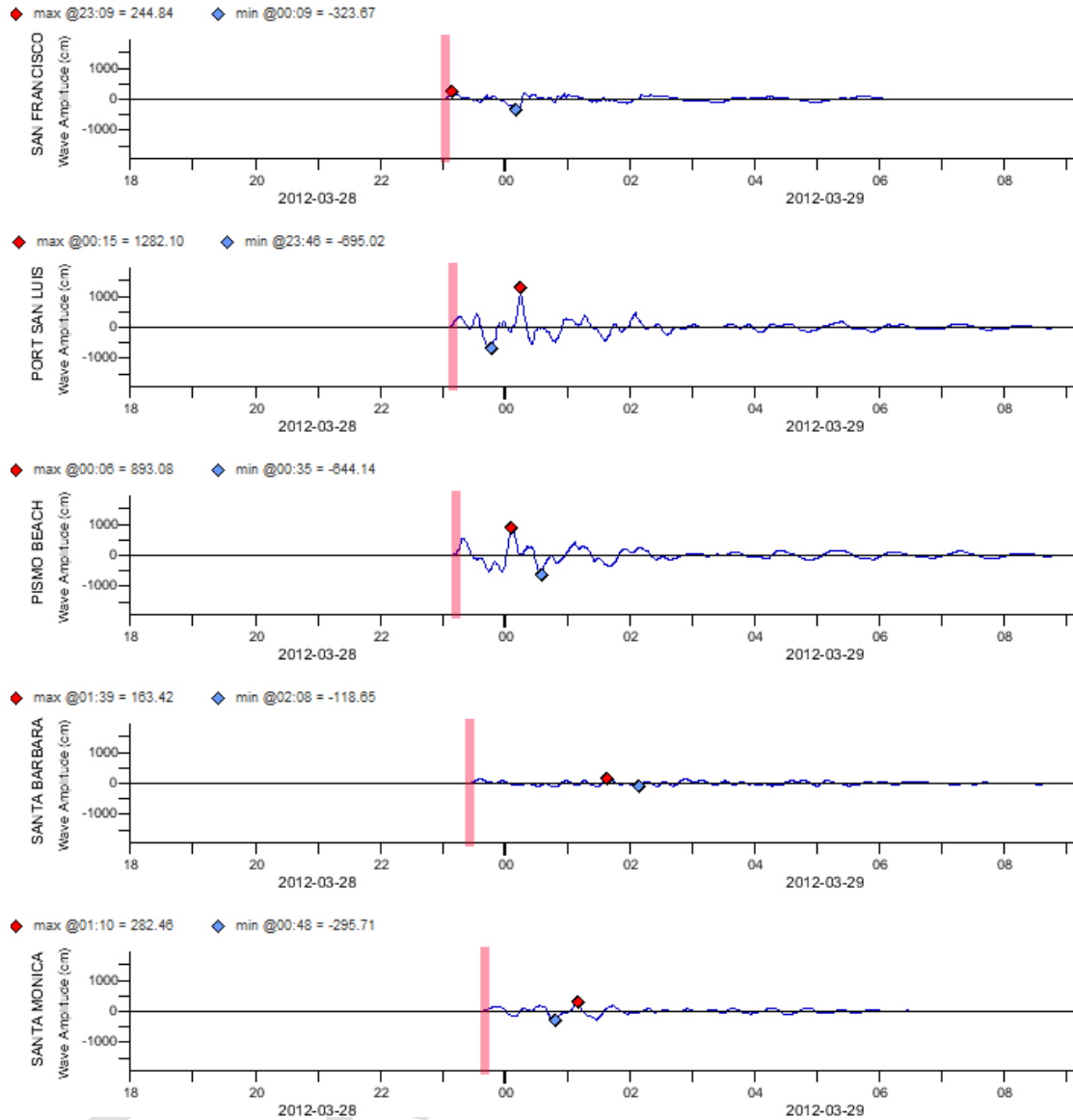


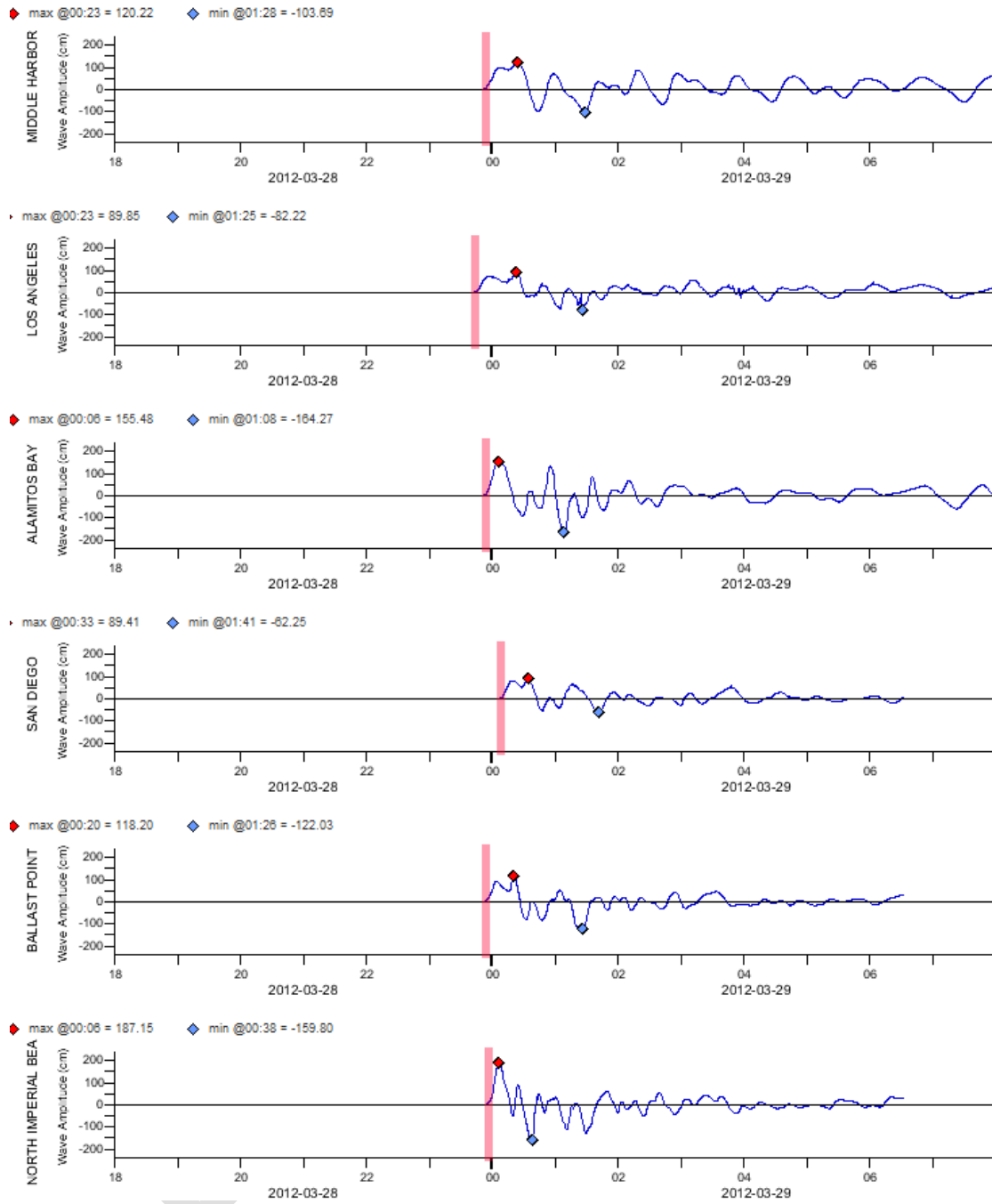












Appendix C. WCATWC and PTWC Dummy Messages

WCATWC Dummy Message

WEPA41 PAAQ 281805
TSUWCA

TEST...TSUNAMI MESSAGE NUMBER 1...TEST
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1105 AM PDT WED MAR 28 2012

...PACIFEX 12 TSUNAMI EXERCISE MESSAGE. REFER TO WCATWC MESSAGE 1 IN THE EXERCISE HANDBOOK. THIS IS AN EXERCISE ONLY...

THIS MESSAGE IS BEING USED TO START OFF THE PACIFEX 12 PACIFIC TSUNAMI EXERCISE. THIS WILL BE THE ONLY EXERCISE MESSAGE TRANSMITTED FROM THE WEST COAST/ALASKA TSUNAMI WARNING CENTER. EXERCISE PARTICIPANTS SHOULD REFER TO THE SCENARIO TIMELINE IN THE HANDBOOK FOR FUTURE MESSAGES. THE HANDBOOK IS AVAILABLE AT THE WEB SITE WCATWC.ARH.NOAA.GOV. THE EXERCISE PURPOSE IS TO PROVIDE EMERGENCY MANAGEMENT A REALISTIC SCENARIO TO TEST TSUNAMI RESPONSE PLANS.

THIS IS ONLY AN EXERCISE.

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PTWC Dummy Message

WEHW40 PHEB 281805
TSUHWX

TEST...TSUNAMI MESSAGE NUMBER 1...TEST
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
805 AM HST WED MAR 28 2012

...PACIFEX 12 TSUNAMI EXERCISE MESSAGE. REFER TO PTWC MESSAGE 1 IN THE EXERCISE HANDBOOK. THIS IS AN EXERCISE ONLY...

THIS MESSAGE IS BEING USED TO START OFF THE PACIFEX 12 PACIFIC TSUNAMI EXERCISE. THIS WILL BE THE ONLY EXERCISE MESSAGE TRANSMITTED FROM THE PACIFIC TSUNAMI WARNING CENTER. EXERCISE PARTICIPANTS SHOULD REFER TO THE SCENARIO TIMELINE IN THE HANDBOOK FOR FUTURE MESSAGES. THE HANDBOOK IS AVAILABLE AT THE WEB SITE WCATWC.ARH.NOAA.GOV. THE EXERCISE PURPOSE IS TO PROVIDE EMERGENCY MANAGEMENT A REALISTIC SCENARIO TO TEST TSUNAMI RESPONSE PLANS.

THIS IS ONLY AN EXERCISE.

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Appendix D. WCATWC and PTWC Exercise Messages

WCATWC Messages

The following messages, created for the PACIFEX 12 tsunami exercise, are representative of the official standard products issued by the West Coast and Alaska Tsunami Warning Center during a large magnitude 9.2 earthquake and tsunami originating at 58.0°N, 150.5°W. During a real event, the Center would also issue graphical and html-based products to its web site and via RSS.

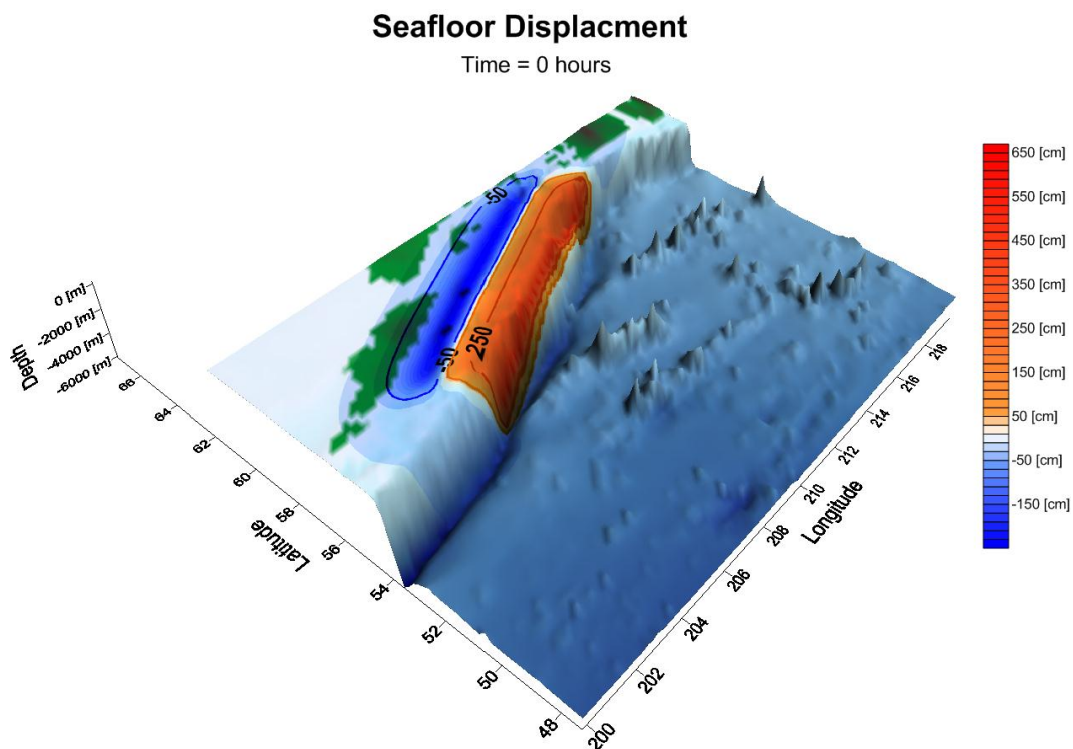


Figure D1. Earthquake at origin time (M=9.2), showing initial seafloor displacement.

WCATWC Message #1

WEPA41 PAAQ 281805
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 1

NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1005 AM AKDT WED MAR 28 2012

...A TSUNAMI WARNING IS NOW IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE
WASHINGTON-BRITISH COLUMBIA BORDER TO ATTU ALASKA...

...A TSUNAMI WATCH IS NOW IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF CALIFORNIA - OREGON AND WASHINGTON FROM
THE CALIFORNIA-MEXICO BORDER TO THE WASHINGTON-BRITISH
COLUMBIA BORDER...

RECOMMENDED ACTIONS

PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.
- IF IN A TSUNAMI WATCH COASTAL AREA STAY ALERT FOR SUPPLEMENTAL INFORMATION.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
 TIME - 1000 AKDT MAR 28 2012
 1100 PDT MAR 28 2012
 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

TSUNAMI WATCHES ARE AN ADVANCE NOTICE TO AREAS THAT COULD BE IMPACTED BY A TSUNAMI AT A LATER TIME. WATCH AREAS MAY BE UPGRADED TO WARNING OR ADVISORY STATUS - OR CANCELED - BASED ON NEW INFORMATION OR ANALYSIS. PEOPLE IN A WATCH AREA SHOULD CLOSELY FOLLOW SUBSEQUENT TSUNAMI MESSAGES.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-281905- /T.NEW.PAAQ.TS.W.0135.120328T1805Z-120328T1905Z/ COASTAL AREAS BETWEEN AND INCLUDING THE WASHINGTON-BRITISH COLUMBIA BORDER TO ATTU ALASKA
 1005 AM AKDT WED MAR 28 2012

...A TSUNAMI WARNING IS NOW IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE WASHINGTON-BRITISH COLUMBIA BORDER TO ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

KODIAK-AK	1110 AKDT MAR 28	HOMER-AK	1148 AKDT MAR 28
VALDEZ-AK	1113 AKDT MAR 28	LANGARA-BC	1249 PDT MAR 28
ELFIN COVE-AK	1118 AKDT MAR 28	DUTCH HARBOR-AK	1202 AKDT MAR 28
YAKUTAT-AK	1119 AKDT MAR 28	COLD BAY-AK	1225 AKDT MAR 28

CORDOVA-AK	1122	AKDT	MAR 28	ADAK-AK	1227	AKDT	MAR 28
SEWARD-AK	1125	AKDT	MAR 28	CRAIG-AK	1238	AKDT	MAR 28
SITKA-AK	1129	AKDT	MAR 28	SHEMYA-AK	1310	AKDT	MAR 28
SAND PT.-AK	1142	AKDT	MAR 28	TOFINO-BC	1429	PDT	MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
WCATWC.ARH.NOAA.GOV

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PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-
506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-
281905-
/T.NEW.PAAQ.TS.A.0135.120328T1805Z-120328T1905Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER
1005 AM AKDT WED MAR 28 2012

...A TSUNAMI WATCH IS NOW IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF CALIFORNIA - OREGON AND WASHINGTON FROM
THE CALIFORNIA-MEXICO BORDER TO THE WASHINGTON-BRITISH
COLUMBIA BORDER...

PEOPLE IN TSUNAMI WATCH COASTAL AREAS SHOULD STAY ALERT FOR
SUPPLEMENTAL INFORMATION.

TSUNAMI WATCHES ARE AN ADVANCE NOTICE TO AREAS THAT COULD BE
IMPACTED BY A TSUNAMI AT A LATER TIME. TSUNAMIS ARE A SERIES OF
WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL
TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED
SITES IN THE WATCH ARE PROVIDED BELOW.

NEAH BAY-WA	1443	PDT	MAR 28	SAN FRANCISCO-CA	1616	PDT	MAR 28
SEASIDE-OR	1459	PDT	MAR 28	SANTA BARBARA-CA	1634	PDT	MAR 28
WESTPORT-WA	1459	PDT	MAR 28	SAN PEDRO-CA	1651	PDT	MAR 28
CHARLESTON-OR	1503	PDT	MAR 28	LA JOLLA-CA	1702	PDT	MAR 28
CRESCENT CITY-CA	1518	PDT	MAR 28				

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
WCATWC.ARH.NOAA.GOV

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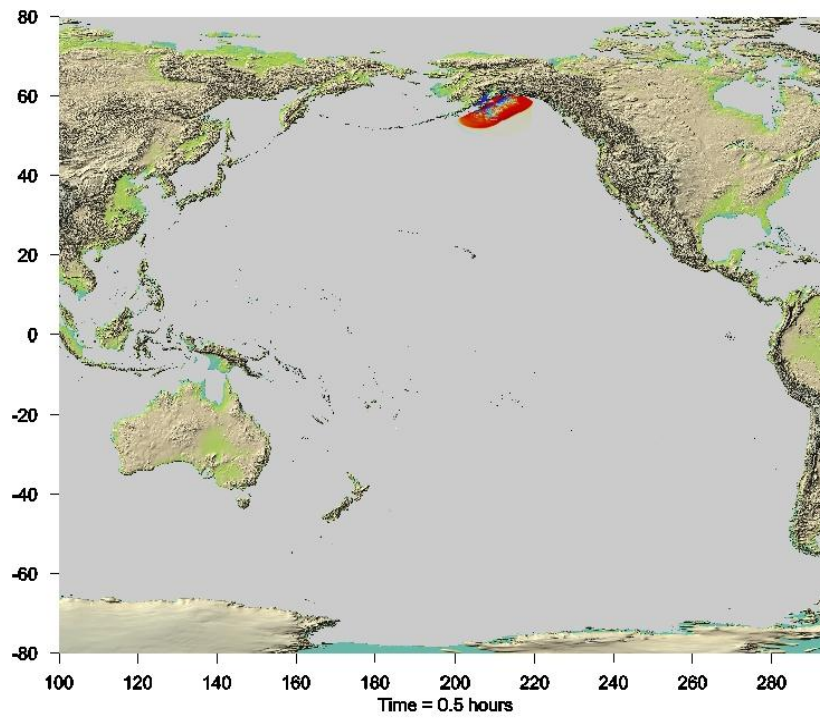


Figure D2. Snapshot of tsunami at time WCATWC bulletin 2 is issued.

Exercise

WCATWC Message #2

WEPA41 PAAQ 281840
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 2
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1040 AM AKDT WED MAR 28 2012

WARNING HAS BEEN EXTENDED FROM ATTU ALASKA TO THE CALIFORNIA-MEXICO BORDER.

...THE TSUNAMI WARNING IS MODIFIED TO INCLUDE THE COASTAL AREAS OF CALIFORNIA - OREGON AND WASHINGTON FROM THE CALIFORNIA-MEXICO BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER...

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE WASHINGTON-BRITISH COLUMBIA BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
SEWARD AK	60.1N	149.4W	1830UTC	2.40FT/0.73M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT. VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED. FORECAST MODELS PROJECT WAVES IN EXCESS OF 6.50FT/2.00M ALONG THE WEST COASTS OF BRITISH COLUMBIA - WASHINGTON - OREGON AND NORTHERN CALIFORNIA. MODELS FORECAST WAVES IN EXCESS OF 32.81FT/10.00M IN SEWARD AK. WAVES OF THIS SIZE CAN GENERATE EXTENSIVE INUNDATIONS EXTENDING TO MUCH GREATER ELEVATIONS. THE ENTIRE TSUNAMI HAZARD ZONE IS IN DANGER FOR THE COASTAL REGIONS OF BRITISH COLUMBIA - WASHINGTON - OREGON - AND CALIFORNIA. TSUNAMIS ARE EXPECTED TO REACH PEAK SIZE ONE TO THREE HOURS AFTER THE EXPECTED ARRIVAL TIME FOR AREAS OF THE OUTER COAST OF THE PACIFIC NORTHWEST AND UP TO SIX HOURS AFTER EXPECTED ARRIVAL TIME IN THE STRAIT OF JUAN DE FUCA AND PUGET SOUND. A 2.40FT/0.73M TSUNAMI HAS BEEN REPORTED AT SEWARD AK. THERE HAS BEEN NO REPORTED DAMAGE THUS FAR.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
TIME - 1000 AKDT MAR 28 2012
1100 PDT MAR 28 2012
1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL

CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-281940-
/T.CAN.PAAQ.TS.A.0135.120328T1840Z-120328T1940Z/
/T.EXA.PAAQ.TS.W.0135.120328T1840Z-120328T1940Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER
1040 AM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING IS MODIFIED TO INCLUDE THE COASTAL AREAS OF CALIFORNIA - OREGON AND WASHINGTON FROM THE CALIFORNIA-MEXICO BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

NEAH BAY-WA	1443	PDT MAR 28	SAN FRANCISCO-CA	1616	PDT MAR 28
SEASIDE-OR	1459	PDT MAR 28	SANTA BARBARA-CA	1634	PDT MAR 28
WESTPORT-WA	1459	PDT MAR 28	SAN PEDRO-CA	1651	PDT MAR 28
CHARLESTON-OR	1503	PDT MAR 28	LA JOLLA-CA	1702	PDT MAR 28
CRESCENT CITY-CA	1518	PDT MAR 28			

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-281940-
/T.CON.PAAQ.TS.W.0135.120328T1840Z-120328T1940Z/
COASTAL AREAS BETWEEN AND INCLUDING THE WASHINGTON-BRITISH COLUMBIA BORDER TO ATTU ALASKA
1040 AM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE WASHINGTON-BRITISH COLUMBIA BORDER TO ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

KODIAK-AK	1110 AKDT MAR 28	HOMER-AK	1148 AKDT MAR 28
VALDEZ-AK	1113 AKDT MAR 28	LANGARA-BC	1249 PDT MAR 28
ELFIN COVE-AK	1118 AKDT MAR 28	DUTCH HARBOR-AK	1202 AKDT MAR 28
YAKUTAT-AK	1119 AKDT MAR 28	COLD BAY-AK	1225 AKDT MAR 28
CORDOVA-AK	1122 AKDT MAR 28	ADAK-AK	1227 AKDT MAR 28
SEWARD-AK	1125 AKDT MAR 28	CRAIG-AK	1238 AKDT MAR 28
SITKA-AK	1129 AKDT MAR 28	SHEMYA-AK	1310 AKDT MAR 28
SAND PT.-AK	1142 AKDT MAR 28	TOFINO-BC	1429 PDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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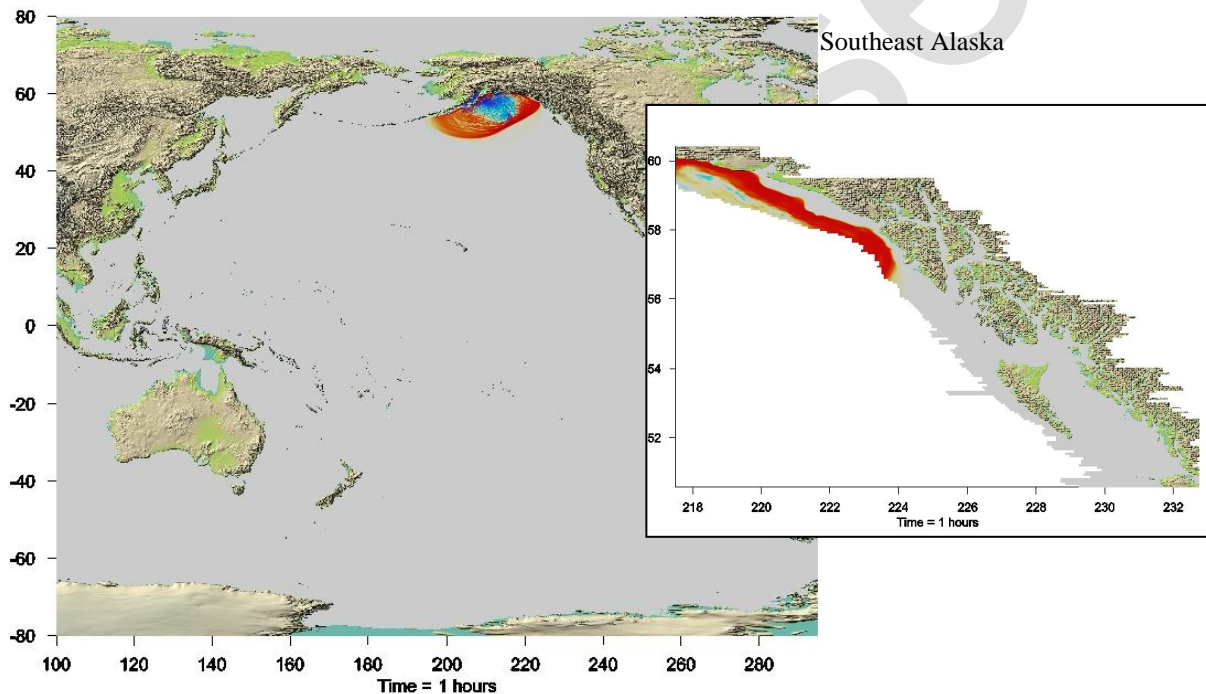


Figure D3. Snapshot of tsunami at time WCATWC bulletin 3 is issued.

WCATWC Message #3

WEPA41 PAAQ 281903
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 3
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1103 AM AKDT WED MAR 28 2012

SEWARD AK HAS JUST REPORTED A 18.80FT/5.73M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
SEWARD AK	60.1N	149.4W	1846UTC	18.80FT/5.73M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT. VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED. AN 18.80FT/5.73M WAVE HAS BEEN REPORTED IN SEWARD AK AND HAS SWEEPED FIVE RVs ALONG THE SEWARD WATERFRONT PARK INTO RESURRECTION BAY. IN ADDITION THREE ADULTS, WHO WERE CLIMBING ON THE RIP RAP IN FRONT OF THE ALASKA SEALIFE CENTER, WERE SWEEPED OUT TO SEA AND ARE PRESUMED DROWN. FORECAST MODELS CONTINUE PROJECTING WAVES IN EXCESS OF 6.50FT/2.00M ALONG THE WEST COASTS OF BRITISH COLUMBIA - WASHINGTON - OREGON AND NORTHERN CALIFORNIA.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
 TIME - 1000 AKDT MAR 28 2012
 1100 PDT MAR 28 2012
 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-282003- /T.CON.PAAQ.TS.W.0135.120328T1903Z-120328T2003Z/ COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA
 1103 AM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO

ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

KODIAK-AK	1110	AKDT	MAR 28	CRAIG-AK	1238	AKDT	MAR 28
VALDEZ-AK	1113	AKDT	MAR 28	SHEMYA-AK	1310	AKDT	MAR 28
ELFIN COVE-AK	1118	AKDT	MAR 28	TOFINO-BC	1429	PDT	MAR 28
YAKUTAT-AK	1119	AKDT	MAR 28	NEAH BAY-WA	1443	PDT	MAR 28
CORDOVA-AK	1122	AKDT	MAR 28	SEASIDE-OR	1459	PDT	MAR 28
SEWARD-AK	1125	AKDT	MAR 28	WESTPORT-WA	1459	PDT	MAR 28
SITKA-AK	1129	AKDT	MAR 28	CHARLESTON-OR	1503	PDT	MAR 28
SAND PT.-AK	1142	AKDT	MAR 28	CRESCENT CITY-CA	1518	PDT	MAR 28
HOMER-AK	1148	AKDT	MAR 28	SAN FRANCISCO-CA	1616	PDT	MAR 28
LANGARA-BC	1249	PDT	MAR 28	SANTA BARBARA-CA	1634	PDT	MAR 28
DUTCH HARBOR-AK	1202	AKDT	MAR 28	SAN PEDRO-CA	1651	PDT	MAR 28
COLD BAY-AK	1225	AKDT	MAR 28	LA JOLLA-CA	1702	PDT	MAR 28
ADAK-AK	1227	AKDT	MAR 28				

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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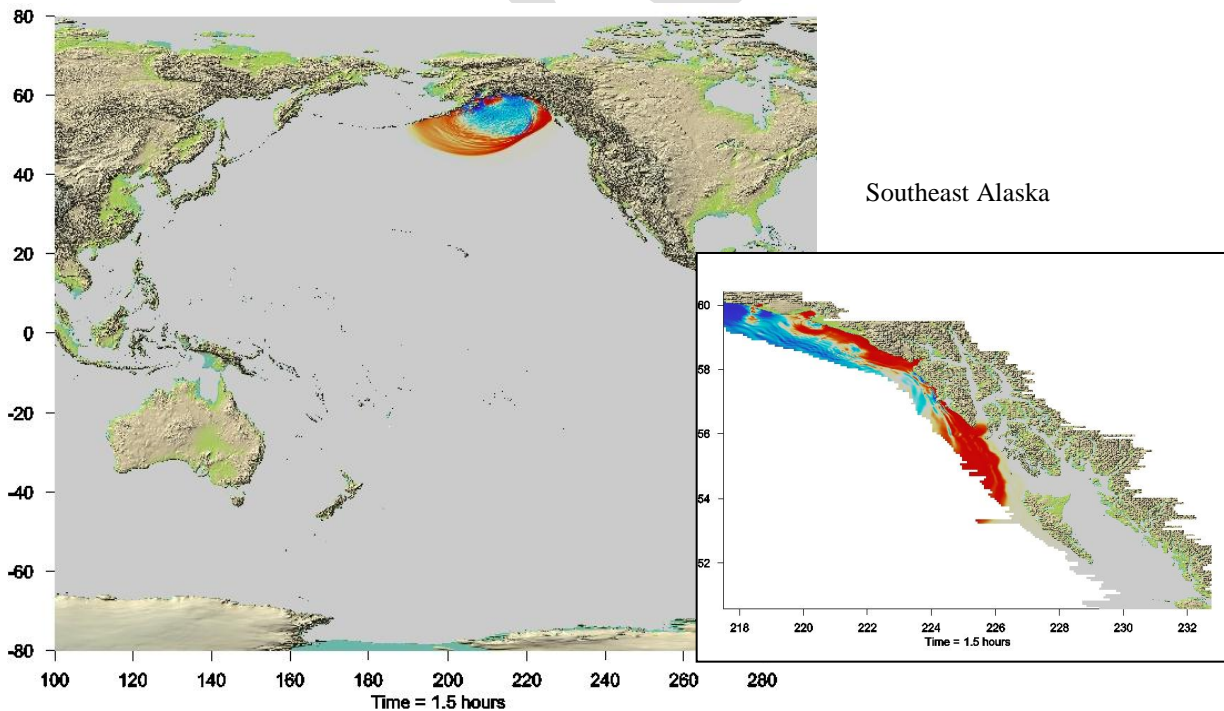


Figure D4. Snapshot of tsunami at time WCATWC bulletin 4 is issued.

WCATWC Message #4

WEPA41 PAAQ 281935
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 4
 NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
 1135 AM AKDT WED MAR 28 2012

SEWARD AK UPDATED ITS LARGEST WAVE TO 19.32FT/5.89M. KODIAK AK REPORTED A 15.45FT/4.71M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
SEWARD AK	60.1N	149.4W	1909UTC	19.32FT/5.89M
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
CORDOVA AK	60.5N	145.7W	1930UTC	8.76FT/2.67M
YAKUTAT AK	59.5N	139.7W	1930UTC	9.78FT/2.98M
SITKA AK	57.0N	135.3W	1930UTC	6.99FT/2.13M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL. IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT. VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED. KODIAK AK HAS REPORTED A 15.45FT/4.71M WAVE THAT INUNDATED ALL LAND SEAWARD OF MISSION ROAD. MANY HOMES HAVE BEEN DISLODGED FROM THEIR FOUNDATIONS AND SEVERAL PEOPLE ARE REPORTED MISSING. MANY SMALL BUSINESSES ALONG THE KODIAK SHORELINE HAVE BEEN REPORTED AS SEVERELY DAMAGED. YAKUTAT AK TIDE GAUGE NOTES A 9.78FT/2.98M WAVE, BUT NO REPORTS OF DAMAGE ARE CURRENTLY AVAILABLE.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
 TIME - 1000 AKDT MAR 28 2012
 1100 PDT MAR 28 2012
 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE

WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-
 506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-
 BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-
 912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-
 125-121-171-181-185-187-191-282035-
 /T.CON.PAAQ.TS.W.0135.120328T1935Z-120328T2035Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
 BORDER TO ATTU ALASKA
 1135 AM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
 AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
 COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
 ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
 HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
 INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A
 SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL
 ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED
 SITES IN THE WARNING ARE PROVIDED BELOW.

KODIAK-AK	1110 AKDT MAR 28	CRAIG-AK	1238 AKDT MAR 28
VALDEZ-AK	1113 AKDT MAR 28	SHEMYA-AK	1310 AKDT MAR 28
ELFIN COVE-AK	1118 AKDT MAR 28	TOFINO-BC	1429 PDT MAR 28
YAKUTAT-AK	1119 AKDT MAR 28	NEAH BAY-WA	1443 PDT MAR 28
CORDOVA-AK	1122 AKDT MAR 28	SEASIDE-OR	1459 PDT MAR 28
SEWARD-AK	1125 AKDT MAR 28	WESTPORT-WA	1459 PDT MAR 28
SITKA-AK	1129 AKDT MAR 28	CHARLESTON-OR	1503 PDT MAR 28
SAND PT.-AK	1142 AKDT MAR 28	CRESCENT CITY-CA	1518 PDT MAR 28
HOMER-AK	1148 AKDT MAR 28	SAN FRANCISCO-CA	1616 PDT MAR 28
LANGARA-BC	1249 PDT MAR 28	SANTA BARBARA-CA	1634 PDT MAR 28
DUTCH HARBOR-AK	1202 AKDT MAR 28	SAN PEDRO-CA	1651 PDT MAR 28
COLD BAY-AK	1225 AKDT MAR 28	LA JOLLA-CA	1702 PDT MAR 28
ADAK-AK	1227 AKDT MAR 28		

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
 WCATWC.ARH.NOAA.GOV

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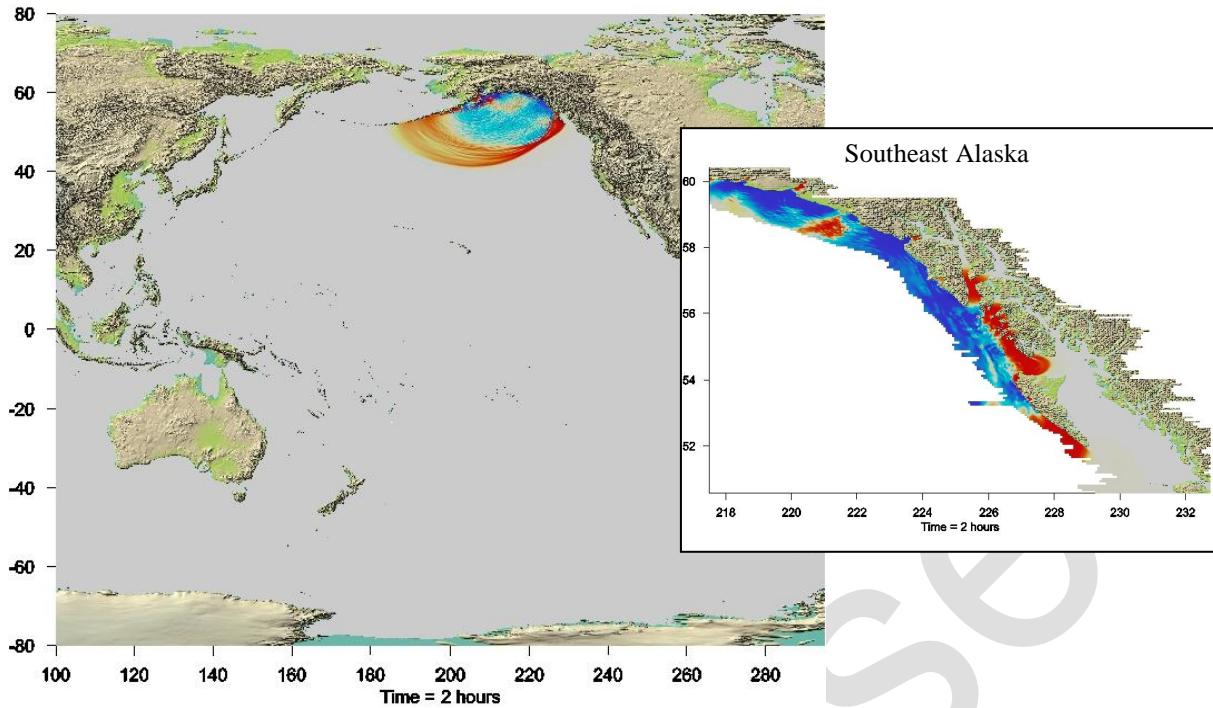


Figure D5. Snapshot of tsunami at time WCATWC bulletin 5 is issued.

WCATWC Message #5

WEPA41 PAAQ 282004
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 5
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1204 PM AKDT WED MAR 28 2012

SEWARD AK UPDATED ITS LARGEST WAVE TO 25.59FT/7.80M. SITKA AK REPORTED A 14.11FT/4.30M WAVE, YAKUTAT AK A 9.94FT/3.03M WAVE, AND CORDOVA AK A 10.00FT/3.05M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M

SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	1959UTC	2.00FT/0.61M
KING COVE AK	55.1N	162.3W	2000UTC	0.36FT/0.11M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED.
YAKUTAT AK REPORTS FLOODING AS FAR INLAND AS THE YAKUTAT LOST RIVER AIRPORT
AND ALL FLIGHTS ARE TEMPORARILY CANCELLED UNTIL FURTHER NOTICE. THE WAVE
SURGED INLAND OF BOAT HARBOR ROAD AND 10 PEOPLE ARE REPORTED MISSING AND
PRESUMED DROWN. SEWARD AK HAS REPORTED A WAVE OF 25.59FT/7.80M. THIS WAVE
HAS DONE MUCH DAMAGE AND HALTED FLIGHTS IN AND OUT OF THE SEWARD AIRPORT
UNTIL FURTHER NOTICE. WATER FROM THIS WAVE WAS SEEN AS FAR INLAND AS 3RD
AVENUE. NUMEROUS PEOPLE, CARS, AND RVS HAVE BEEN REPORTED AS SWEEPED OUT INTO
RESURRECTION BAY. CORDOVA AK WITNESSED A 10.00FT/3.05M WAVE COMING INTO
ORCA INLET. IT IS BELIEVED THAT THIS WAVE CAUSED MUCH DAMAGE TO THE PRINCE
WILLIAM SOUND SCIENCE CENTER. UPDATES ON DAMAGE IN CORDOVA WILL BE REPORTED
AS AVAILABLE. SITKA AK REPORTED A 14.11FT/4.30M WAVE COMING TO SHORE NEAR
HALIBUT POINT ROAD. DAMAGE HAS BEEN REPORTED AT ITS SITKA COMMUNITY
HOSPITAL. FLIGHTS AT THE SITKA ROCKY GUTIERREZ AIRPORT HAVE BEEN SUSPENDED
UNTIL FURTHER NOTICE DUE TO A FLOODED RUNWAY.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
TIME - 1000 AKDT MAR 28 2012
 1100 PDT MAR 28 2012
 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE
THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE
INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/
BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI
WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT
PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF
THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT
UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE
WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-
506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-
BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-
912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-
125-121-171-181-185-187-191-282104-
/T.CON.PAAQ.TS.W.0135.120328T2004Z-120328T2104Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
BORDER TO ATTU ALASKA
1204 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO

HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

KODIAK-AK	1110	AKDT	MAR 28	CRAIG-AK	1238	AKDT	MAR 28
VALDEZ-AK	1113	AKDT	MAR 28	SHEMYA-AK	1310	AKDT	MAR 28
ELFIN COVE-AK	1118	AKDT	MAR 28	TOFINO-BC	1429	PDT	MAR 28
YAKUTAT-AK	1119	AKDT	MAR 28	NEAH BAY-WA	1443	PDT	MAR 28
CORDOVA-AK	1122	AKDT	MAR 28	SEASIDE-OR	1459	PDT	MAR 28
SEWARD-AK	1125	AKDT	MAR 28	WESTPORT-WA	1459	PDT	MAR 28
SITKA-AK	1129	AKDT	MAR 28	CHARLESTON-OR	1503	PDT	MAR 28
SAND PT.-AK	1142	AKDT	MAR 28	CRESCENT CITY-CA	1518	PDT	MAR 28
HOMER-AK	1148	AKDT	MAR 28	SAN FRANCISCO-CA	1616	PDT	MAR 28
LANGARA-BC	1249	PDT	MAR 28	SANTA BARBARA-CA	1634	PDT	MAR 28
DUTCH HARBOR-AK	1202	AKDT	MAR 28	SAN PEDRO-CA	1651	PDT	MAR 28
COLD BAY-AK	1225	AKDT	MAR 28	LA JOLLA-CA	1702	PDT	MAR 28
ADAK-AK	1227	AKDT	MAR 28				

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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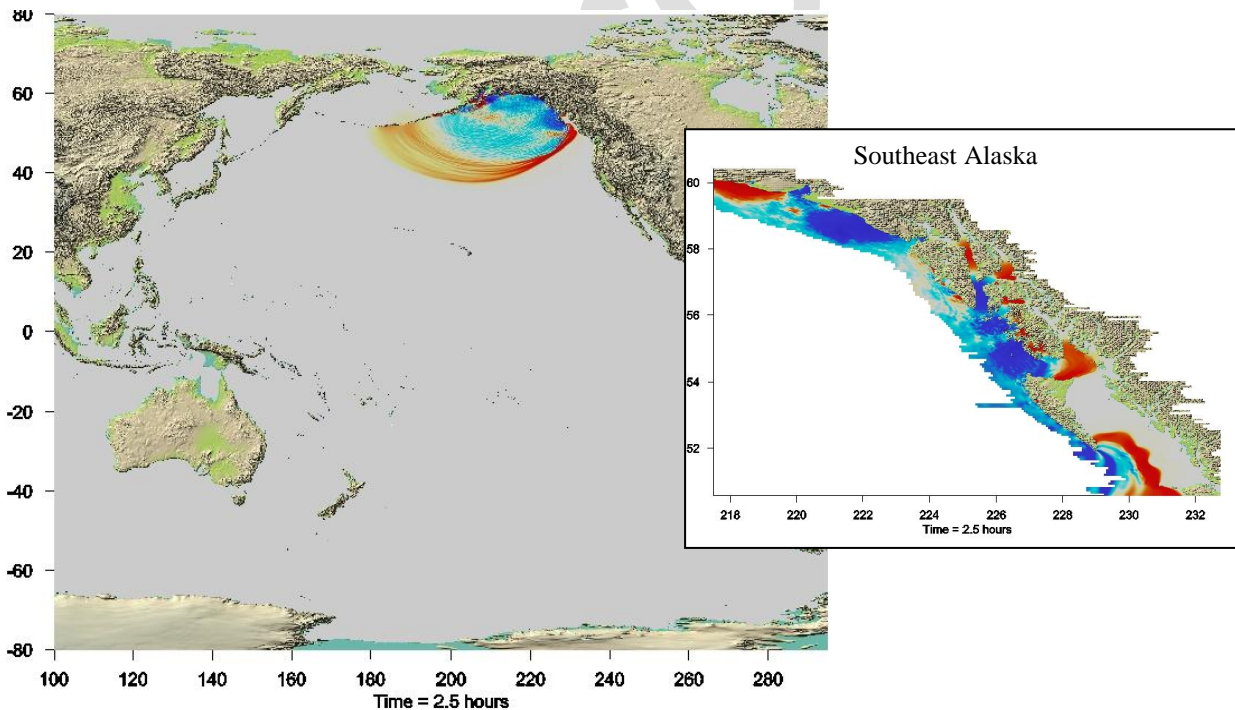


Figure D6. Snapshot of tsunami at time WCATWC bulletin 6 is issued.

WCATWC Message #6

WEPA41 PAAQ 282034
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 6
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1234 PM AKDT WED MAR 28 2012

UPDATED OBSERVATIONS INCLUDED.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE
WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING
COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL
EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY
RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO
HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M
SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
DUTCH HARBOR AK	53.9N	166.5W	2022UTC	0.39FT/0.12M
HOMER AK	59.6N	151.5W	2028UTC	1.61FT/0.49M
ATKA AK	52.2N	174.2W	2030UTC	0.16FT/0.05M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

NEW REPORTS FROM KODIAK AK REPORT 18 PEOPLE MISSING AND APPROXIMATELY 12
MILLION DOLLARS IN DAMAGE. YAKUTAT REPORTS ITS SMALL BOAT HARBOR HEAVILY
DAMAGED AND 13 PEOPLE MISSING. YAKUTAT ESTIMATES 21 MILLION IN DAMAGES.
SITKA AK REPORTS 11 PEOPLE MISSING AND APPROXIMATELY 9 MILLION IN DAMAGES.
CORDOVA AK REPORTS 5 PEOPLE MISSING AND 17 MILLION IN DAMAGES. SEWARD AK
REPORTS 45 PEOPLE MISSING AND 42 MILLION IN DAMAGES. SEWARD REPORTS THE
ALASKA SEALIFE CENTER HAS BEEN HEAILY DAMAGED AND MOST OF THE ANIMALS HAVE
BEEN KILLED. CHIGNIK BAY REPORTED A 5.48FT/1.67M WAVE THAT FLOODED PARTS OF
AIRPORT AND WOODY ROADS. ONE END OF THE CHIGNIK AIRPORT WAS FLOODED, BUT
THIS DID NOT CANCEL FLIGHTS IN AND OUT.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
TIME - 1000 AKDT MAR 28 2012
 1100 PDT MAR 28 2012
 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-282134- /T.CON.PAAQ.TS.W.0135.120328T2034Z-120328T2134Z/ COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA
1234 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

SAND PT.-AK	1142	AKDT	MAR 28	NEAH BAY-WA	1443	PDT	MAR 28
HOMER-AK	1148	AKDT	MAR 28	SEASIDE-OR	1459	PDT	MAR 28
LANGARA-BC	1249	PDT	MAR 28	WESTPORT-WA	1459	PDT	MAR 28
DUTCH HARBOR-AK	1202	AKDT	MAR 28	CHARLESTON-OR	1503	PDT	MAR 28
COLD BAY-AK	1225	AKDT	MAR 28	CRESCENT CITY-CA	1518	PDT	MAR 28
ADAK-AK	1227	AKDT	MAR 28	SAN FRANCISCO-CA	1616	PDT	MAR 28
CRAIG-AK	1238	AKDT	MAR 28	SANTA BARBARA-CA	1634	PDT	MAR 28
SHEMYA-AK	1310	AKDT	MAR 28	SAN PEDRO-CA	1651	PDT	MAR 28
TOFINO-BC	1429	PDT	MAR 28	LA JOLLA-CA	1702	PDT	MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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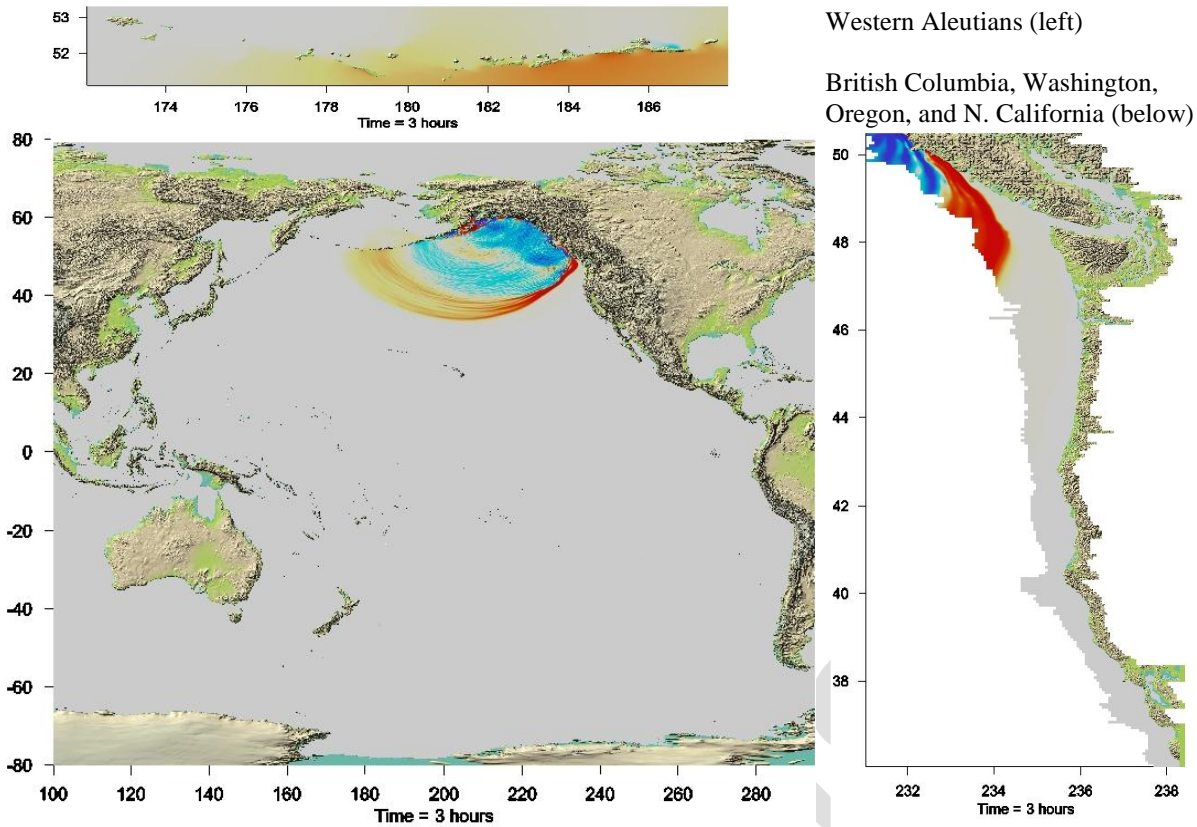


Figure D7. Snapshot of tsunami at time WCATWC bulletin 7 is issued.

WCATWC Message #7

WEPA41 PAAQ 282105
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 7
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
105 PM AKDT WED MAR 28 2012

CRAIG AK REPORTS A 10.20FT/3.11M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M

SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
ATKA AK	52.2N	174.2W	2053UTC	0.66FT/0.20M
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2059UTC	2.43FT/0.74M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

SAND POINT AK REPORTS THAT A 2.33FT/0.71M WAVE CAME ASHORE BUT THAT NO DAMAGE HAS BEEN REPORTED THUS FAR. CRAIG AK HAS REPORTED A 10.20FT/3.11M WAVE WHICH DAMAGED STRUCTURES JUST INLAND FROM BEACH ROAD. NO FURTHER DETAILS ARE AVAILABLE AT THIS TIME.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
TIME - 1000 AKDT MAR 28 2012
1100 PDT MAR 28 2012
1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-282205-
/T.CON.PAAQ.TS.W.0135.120328T2105Z-120328T2205Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA
105 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

COLD BAY-AK	1225	AKDT	MAR 28	WESTPORT-WA	1459	PDT	MAR 28
ADAK-AK	1227	AKDT	MAR 28	CHARLESTON-OR	1503	PDT	MAR 28
CRAIG-AK	1238	AKDT	MAR 28	CRESCENT CITY-CA	1518	PDT	MAR 28
SHEMYA-AK	1310	AKDT	MAR 28	SAN FRANCISCO-CA	1616	PDT	MAR 28
TOFINO-BC	1429	PDT	MAR 28	SANTA BARBARA-CA	1634	PDT	MAR 28
NEAH BAY-WA	1443	PDT	MAR 28	SAN PEDRO-CA	1651	PDT	MAR 28
SEASIDE-OR	1459	PDT	MAR 28	LA JOLLA-CA	1702	PDT	MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
WCATWC.ARH.NOAA.GOV

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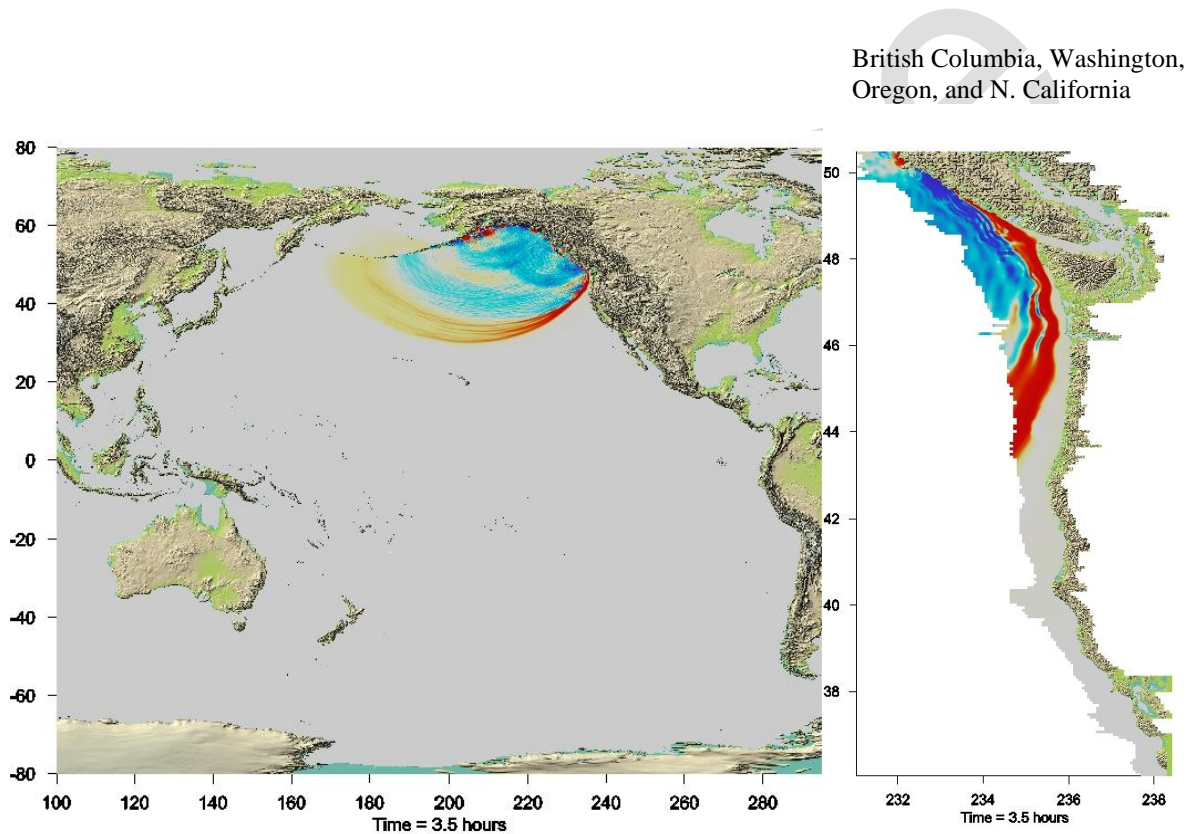


Figure D8. Snapshot of tsunami at time WCATWC bulletin 8 is issued.

WCATWC Message #8

WEPA41 PAAQ 282134
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 8
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
134 PM AKDT WED MAR 28 2012

HOMER AK REPORTS A 8.50FT/2.59M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M
SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
ATKA AK	52.2N	174.2W	2053UTC	0.66FT/0.20M
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

HOMER AK REPORTS AN 8.50FT/2.59M WAVE CAME ASHORE AND INNUMDATED A LARGE PORTION OF THE SPIT. THERE IS NO FURTHER NEWS FROM HOMER AT THIS TIME.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2

TIME - 1000 AKDT MAR 28 2012

1100 PDT MAR 28 2012

1800 UTC MAR 28 2012

LOCATION - 58.0 NORTH 150.5 WEST

70 MILES/113 KM E OF KODIAK CITY ALASKA

225 MILES/362 KM S OF ANCHORAGE ALASKA

DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

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PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-
 506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-
 BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-
 912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-
 125-121-171-181-185-187-191-282234-
 /T.CON.PAAQ.TS.W.0135.120328T2134Z-120328T2234Z/

COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
 BORDER TO ATTU ALASKA
 134 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
 AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
 COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
 ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
 HIGHER GROUND.

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 SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL
 ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED
 SITES IN THE WARNING ARE PROVIDED BELOW.

CRAIG-AK	1238	AKDT	MAR 28	CHARLESTON-OR	1503	PDT	MAR 28
SHEMYA-AK	1310	AKDT	MAR 28	CRESCENT CITY-CA	1518	PDT	MAR 28
TOFINO-BC	1429	PDT	MAR 28	SAN FRANCISCO-CA	1616	PDT	MAR 28
NEAH BAY-WA	1443	PDT	MAR 28	SANTA BARBARA-CA	1634	PDT	MAR 28
SEASIDE-OR	1459	PDT	MAR 28	SAN PEDRO-CA	1651	PDT	MAR 28
WESTPORT-WA	1459	PDT	MAR 28	LA JOLLA-CA	1702	PDT	MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
 WCATWC.ARH.NOAA.GOV

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British Columbia, Washington,
 Oregon, and N. California

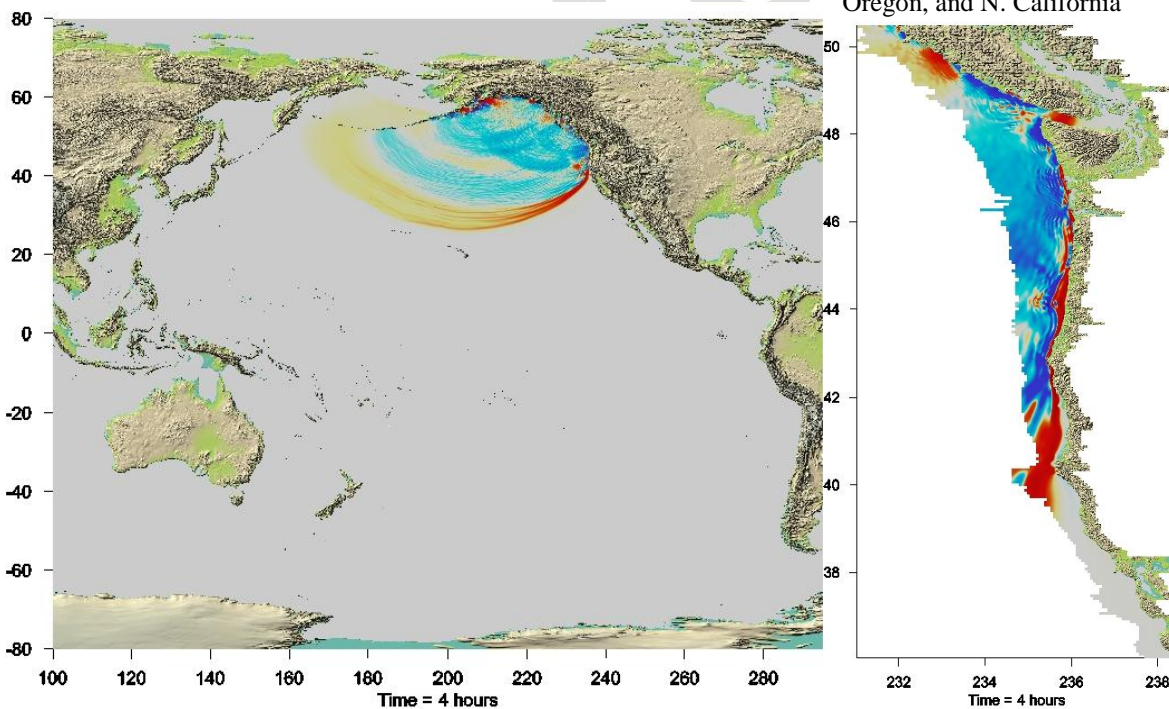


Figure D9. Snapshot of tsunami at time WCATWC bulletin 9 is issued.

WCATWC Message #9

WEPA41 PAAQ 282204
 TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 9
 NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
 204 PM AKDT WED MAR 28 2012

WESTPORT WA REPORTS A 6.46FT/1.97M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
 AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
 COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
 ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE
 WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING
 COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL
 EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY
 RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO
 HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	Lon	TIME	AMPL
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M
SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M
ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

HOMER AK HAS JUST REPORTED THAT MANY GIFT SHOPS AND FAMILIAR LANDMARKS, SUCH
 AS THE SALTY DOG SALOON AND LANDS END RESORT, HAVE BEEN SEVERALLY DAMAGED.
 THE ENTIRE SPIT HAS BEEN REPORTED AS FLOODED. SEWARD AK REPORTS AN UPDATE
 OF 53 PEOPLE MISSING AND PROPERTY DAMAGE IN EXCESS OF \$64 MILLION. KODIAK
 AK REPORTS EXTENSIVE DAMAGE TO ITS SMALL BOAT HARBOR, 23 PEOPLE MISSING, AND
 17 MILLION IN DAMAGE.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2

TIME - 1000 AKDT MAR 28 2012
 1100 PDT MAR 28 2012
 1800 UTC MAR 28 2012

LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA

DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
 INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE
 THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
 CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE
 INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/

BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

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PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-282304-
/T.CON.PAAQ.TS.W.0135.120328T2204Z-120328T2304Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA
204 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

SHEMYA-AK	1310	AKDT	MAR 28	CRESCENT CITY-CA	1518	PDT	MAR 28
TOFINO-BC	1429	PDT	MAR 28	SAN FRANCISCO-CA	1616	PDT	MAR 28
NEAH BAY-WA	1443	PDT	MAR 28	SANTA BARBARA-CA	1634	PDT	MAR 28
SEASIDE-OR	1459	PDT	MAR 28	SAN PEDRO-CA	1651	PDT	MAR 28
WESTPORT-WA	1459	PDT	MAR 28	LA JOLLA-CA	1702	PDT	MAR 28
CHARLESTON-OR	1503	PDT	MAR 28				

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

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British Columbia, Washington,
Oregon, and N. California

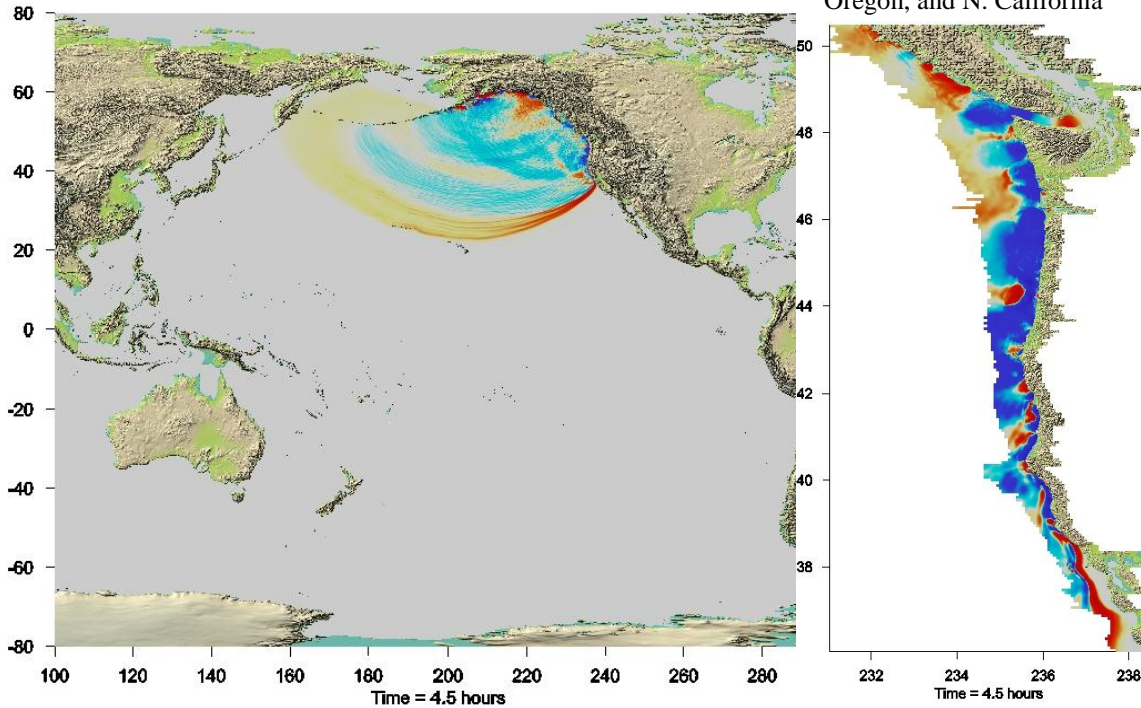


Figure D10. Snapshot of tsunami at time WCATWC bulletin 10 is issued.

WCATWC Message #10

WEPA41 PAAQ 282234
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 10
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
234 PM AKDT WED MAR 28 2012

PORT ORFORD OR REPORTS A 17.55FT/5.35M WAVE. CRESCENT CITY CA REPORTS A 16.73FT/5.10M WAVE. ARENA COVE CA REPORTS A 12.14FT/3.70M WAVE. KODIAK AK REPORTS A LARGER 17.59FT/5.36M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M

SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M
ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
PORT ORFORD OR	42.7N	124.5W	2157UTC	17.55FT/5.35M
WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY CA	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M
ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
HUMBOLT BAY OR	40.8N	124.2W	2224UTC	3.87FT/1.18M
SOUTH SPIT CA	40.7N	124.2W	2227UTC	2.76FT/0.84M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
KODIAK AK	57.8N	152.4W	2230UTC	17.59FT/5.36M
PORT ANGELES WA	48.1N	123.4W	2230UTC	4.17FT/1.27M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

PORT ORFORD OR REPORTED A 17.55FT/5.35M WAVE THAT HAS INUNDATED BATTLE ROCK WAYSIDE PARK UP TO HIGHWAY 101. THIS WAVE ALSO FLOODED LAND SEAWARD OF 5TH STREET AND PORT ORFORD HIGHWAY. SEVEN PEOPLE ARE REPORTED MISSING. CRESCENT CITY CA REPORTED A WAVE 16.73FT/5.10M THAT FLOODED MANY BUSINESSES AND HOMES LANDWARD OF SOUTH PEBBLE BEACH DRIVE. THE SOUTHWEST RUNWAY OF CRESCENT CITY'S JACK MCNAMARA FIELD IS CLOSED UNTIL FURTHER NOTICE DUE TO FLOODING. ARENA COVE CA REPORTED A 12.14FT/3.70M WAVE THAT FLOODED THE COVE COFFEE AND TACKLE SHOP. NO OTHER DAMAGE TO ARENA COVE HAS BEEN REPORTED AT THIS TIME.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2

TIME - 1000 AKDT MAR 28 2012
 1100 PDT MAR 28 2012
 1800 UTC MAR 28 2012

LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA

DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

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PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-282334- /T.CON.PAAQ.TS.W.0135.120328T2234Z-120328T2334Z/

COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
 BORDER TO ATTU ALASKA
 234 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
 AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
 COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
 ATTU ALASKA...

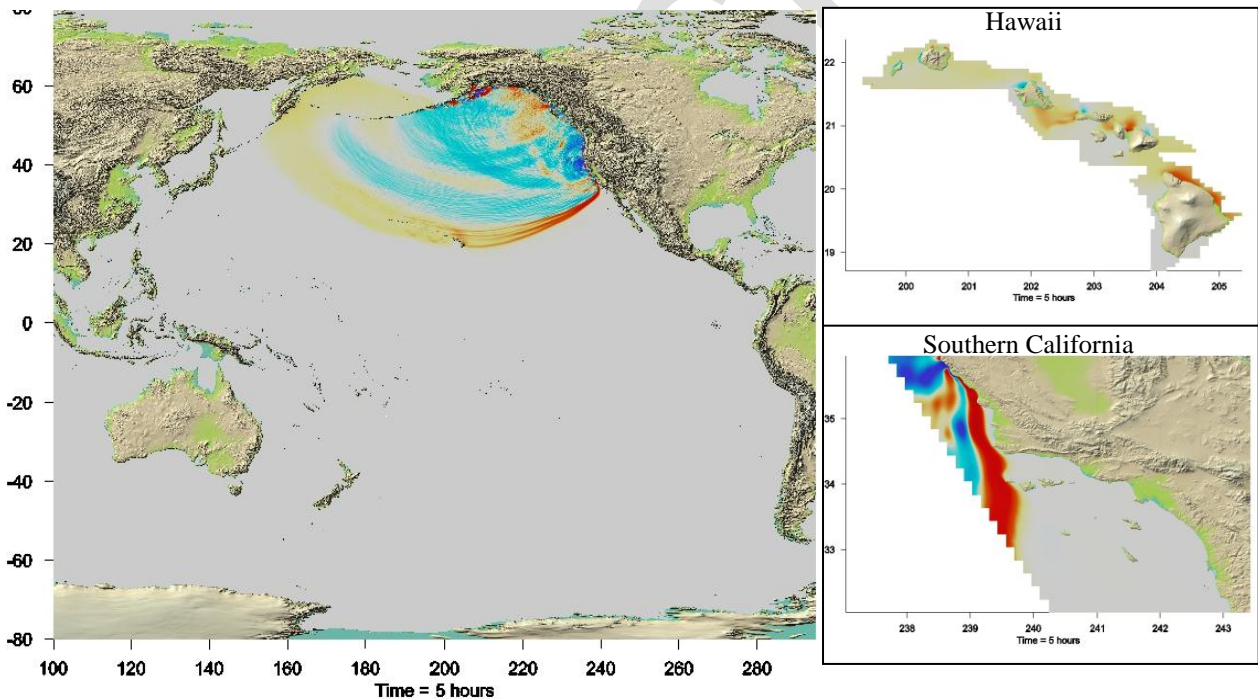
PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
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TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
 INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A
 SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL
 ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED
 SITES IN THE WARNING ARE PROVIDED BELOW.

NEAH BAY-WA	1443	PDT MAR 28	SAN FRANCISCO-CA	1616	PDT MAR 28
SEASIDE-OR	1459	PDT MAR 28	SANTA BARBARA-CA	1634	PDT MAR 28
WESTPORT-WA	1459	PDT MAR 28	SAN PEDRO-CA	1651	PDT MAR 28
CHARLESTON-OR	1503	PDT MAR 28	LA JOLLA-CA	1702	PDT MAR 28
CRESCENT CITY-CA	1518	PDT MAR 28			

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
 WCATWC.ARH.NOAA.GOV



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Figure D2. Snapshot of tsunami at time WCATWC bulletin 11 is issued.

WCATWC Message #11

WEPA41 PAAQ 282304
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 11
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
304 PM AKDT WED MAR 28 2012

KODIAK AK REPORTS A LARGER 21.19FT/6.46M WAVE. POINT REYES BEACH CA A 14.44FT/4.40M WAVE. SEWARD AK A 33.37FT/10.17M WAVE. MONTEREY CA A 10.89FT/3.32M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M
ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
PORT ORFORD OR	42.7N	124.5W	2157UTC	17.55FT/5.35M
WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY CA	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M
ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
HUMBOLT BAY OR	40.8N	124.2W	2224UTC	3.87FT/1.18M
SOUTH SPIT CA	40.7N	124.2W	2227UTC	2.76FT/0.84M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
SAND POINT AK	55.3N	160.5W	2235UTC	2.46FT/0.75M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
POINT REYES CA	38.0N	123.0W	2251UTC	8.96FT/2.73M
NAWILIWILI HI	22.0N	159.4W	2254UTC	1.31FT/0.40M
HALEIWA HI	21.6N	158.1W	2256UTC	2.23FT/0.68M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

KODIAK AK CONTINUES TO REPORT LARGE WAVES AND STRONG CURRENTS. A 21.19FT/6.46M WAVE WAS MEASURED ON THE COAST GUARD TIDE GAUGE AT 2232UTC. KODIAK REPORTS THAT DAMAGE TO THE SMALL BOAT HARBOR, HOMES, SHOPS, AND CITY STREETS CONTINUES. THIRTY-TWO PEOPLE IN KODIAK ARE KNOWN TO BE MISSING. WAVES AS HIGH AS 14.44FT/4.40M HAVE BEEN REPORTED AT POINT REYES BEACH CA.

THREE PEOPLE ARE REPORTED AS MISSING FROM THE BEACH. SEWARD AK REPORTS CONTINUED WAVE DAMAGE AND A NEW WAVE OF 33.37FT/10.17M BEING RECORDED AT THE SEWARD NOAA TIDE GAUGE. MONTEREY CA REPORTS A 10.89FT/3.32M WAVE. THERE HAS BEEN MUCH DAMAGE INLAND OF DEL MONTE AVE. MANY SMALL BOATS IN MONTEREYS SMALL BOAT HARBOR WERE DAMAGES.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
 TIME - 1000 AKDT MAR 28 2012
 1100 PDT MAR 28 2012
 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-290004-/T.CON.PAAQ.TS.W.0135.120328T2304Z-120329T0004Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA
 304 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

CRESCENT CITY-CA	1518	PDT MAR 28	SAN PEDRO-CA	1651	PDT MAR 28
SAN FRANCISCO-CA	1616	PDT MAR 28	LA JOLLA-CA	1702	PDT MAR 28
SANTA BARBARA-CA	1634	PDT MAR 28			

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE WCATWC.ARH.NOAA.GOV

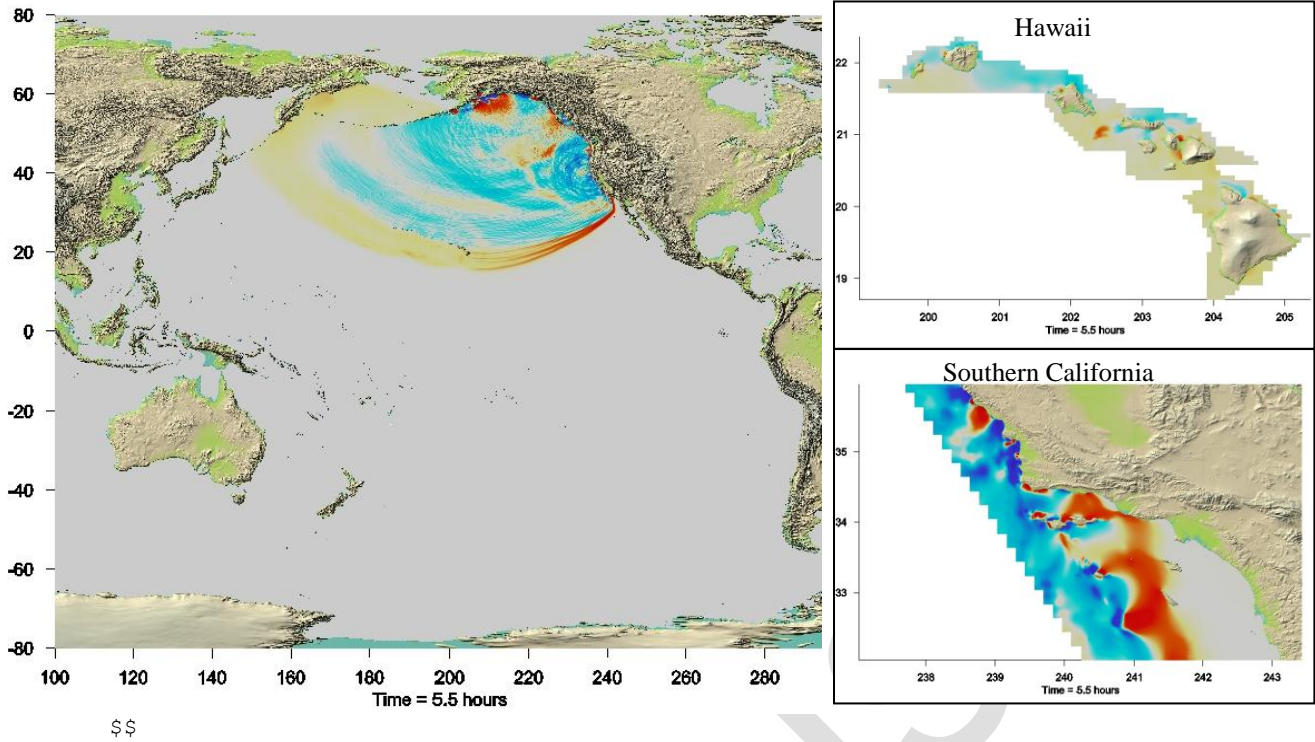


Figure D3. Snapshot of tsunami at time WCATWC bulletin 12 is issued.

WCATWC Message #12

WEPA41 PAAQ 282334
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 12
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
334 PM AKDT WED MAR 28 2012

SAN FRANCISCO CA REPORTS A 8.04FT/2.45M WAVE. PORT SAN LUIS CA A 10.76FT/3.28M WAVE. PISMO BEACH CA A 17.42FT/5.31M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M
ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
PORT ORFORD OR	42.7N	124.5W	2157UTC	17.55FT/5.35M

WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY CA	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M
ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
HUMBOLT BAY OR	40.8N	124.2W	2224UTC	3.87FT/1.18M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
POINT REYES CA	38.0N	123.0W	2251UTC	8.96FT/2.73M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M
SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
PEARL HARBOR HI	21.3N	157.9W	2311UTC	1.35FT/0.41M
SOUTH SPIT CA	40.7N	124.2W	2312UTC	2.85FT/0.87M
KAWAIHAE HI	20.0N	155.7W	2315UTC	0.98FT/0.30M
PORT SAN LUIS CA	35.1N	120.7W	2316UTC	10.76FT/3.28M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
PISMO BEACH CA	35.1N	120.6W	2320UTC	17.42FT/5.31M
LAHAINA HI	20.9N	156.7W	2326UTC	0.95FT/0.29M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
KIHEI HI	20.8N	156.5W	2330UTC	0.66FT/0.20M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

PORT SAN LUIS HAS REPORTED A 10.76FT/3.28M WAVE COMING TO SHORE. THEY REPORTED THAT THE WAVE FLOODED AVILA BEACH DRIVE AND FRONT STREET. PISMO BEACH CA REPORTS THAT A 17.42FT/5.31M WAVE CAME ASHORE, FLOODING ALL PROPERTY SEAWARD OF DOLLIVER STREET. SAN FRANCISCO CA HAS REPORTED A 8.04FT/2.45M WAVE THAT HAS FLOODED MUCH SHORELINE UP TO HIGHWAY 35. TWO SWIMMERS HAVE BEEN REPORTED AS MISSING.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2

TIME - 1000 AKDT MAR 28 2012

1100 PDT MAR 28 2012

1800 UTC MAR 28 2012

LOCATION - 58.0 NORTH 150.5 WEST

70 MILES/113 KM E OF KODIAK CITY ALASKA

225 MILES/362 KM S OF ANCHORAGE ALASKA

DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE

WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-
 506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-
 BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-
 912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-
 125-121-171-181-185-187-191-290034-
 /T.CON.PAAQ.TS.W.0135.120328T2334Z-120329T0034Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
 BORDER TO ATTU ALASKA
 334 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
 AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
 COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
 ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
 HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
 INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A
 SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL
 ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED
 SITES IN THE WARNING ARE PROVIDED BELOW.

SAN FRANCISCO-CA	1616	PDT MAR 28	SAN PEDRO-CA	1651	PDT MAR 28
SANTA BARBARA-CA	1634	PDT MAR 28	LA JOLLA-CA	1702	PDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
 WCATWC.ARH.NOAA.GOV

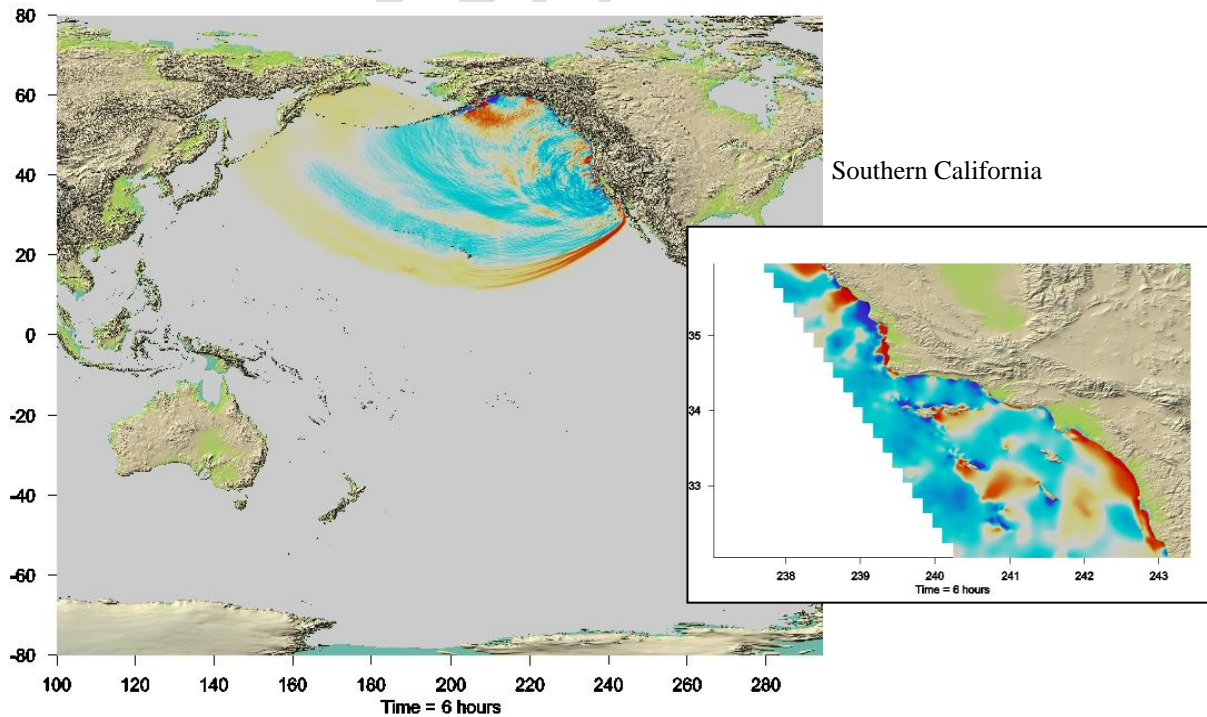


Figure D13. Snapshot of tsunami at time WCATWC bulletin 13 is issued.

WCATWC Message #13

WEPA41 PAAQ 290005
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 13
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
405 PM AKDT WED MAR 28 2012

PORT SAN LUIS CA REPORTS A LARGER WAVE OF 14.04FT/4.28M. LOS ANGELES A
2.42FT/0.74M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE
WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING
COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL
EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY
RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO
HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M
ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
PORT ORFORD OR	42.7N	124.5W	2157UTC	17.55FT/5.35M
WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY CA	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M
ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
POINT REYES CA	38.0N	123.0W	2251UTC	8.96FT/2.73M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M
SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
PEARL HARBOR HI	21.3N	157.9W	2311UTC	1.35FT/0.41M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
PISMO BEACH CA	35.1N	120.6W	2320UTC	17.42FT/5.31M
LAHAINA HI	20.9N	156.7W	2326UTC	0.95FT/0.29M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
PORT SAN LUIS CA	35.1N	120.7W	2333UTC	14.04FT/4.28M
SANTA BARBARA CA	34.4N	119.7W	2336UTC	4.56FT/1.39M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
SOUTH SPIT CA	40.7N	124.2W	2349UTC	3.05FT/0.93M
SANTA MONICA CA	34.0N	118.5W	2354UTC	5.28FT/1.61M
LOS ANGELES CA	34.1N	118.2W	2356UTC	2.42FT/0.74M
ALAMITOS BAY CA	33.7N	118.1W	2359UTC	2.66FT/0.81M

NORTH IMPERIAL BEACH CA 32.6N 117.1W 0000UTC 1.71FT/0.52M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

PISMO BEACH CA REPORTS EXTENSIVE DAMAGE UP TO HIGHWAY 101 AND PACIFIC BLVD. THE OCEANO COUNTY AIRPORT HAS CANCELLED ALL FLIGHTS UNTIL FURTHER NOTICE DUE TO FLOODING. PISMO BEACH OFFICIALS REPORT THAT 12 PEOPLE ARE CURRENTLY MISSING AND ESTIMATE DAMAGES SOMEWHERE AROUND \$9 MILLION. PORT SAN LUIS CA ALSO HAS REPORTED EXTENSIVE DAMAGE INLAND AS FAR AS AVILA BEACH DRIVE. FIVE PEOPLE ARE CURRENTLY MISSING AND OFFICIALS ESTIMATE \$7MILLION IN DAMAGES THUS FAR.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
TIME - 1000 AKDT MAR 28 2012
1100 PDT MAR 28 2012
1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-290105-
/T.CON.PAAQ.TS.W.0135.120329T0005Z-120329T0105Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA
405 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED SITES IN THE WARNING ARE PROVIDED BELOW.

SAN FRANCISCO-CA 1616 PDT MAR 28 SAN PEDRO-CA 1651 PDT MAR 28
 SANTA BARBARA-CA 1634 PDT MAR 28 LA JOLLA-CA 1702 PDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
 WCATWC.ARH.NOAA.GOV

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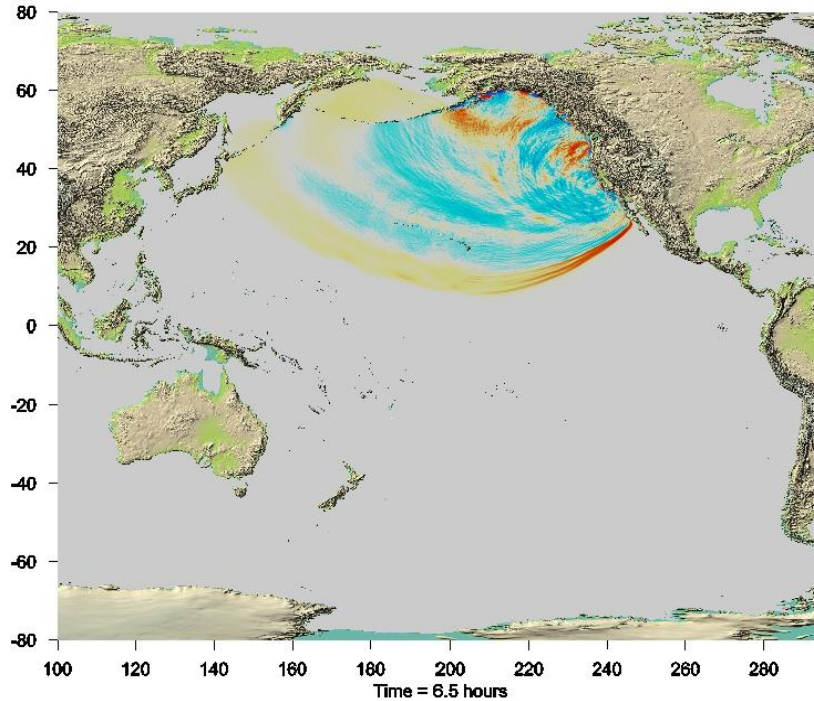


Figure D14. Snapshot of tsunami at time WCATWC bulletin 14 is issued.

WCATWC Message #14

WEPA41 PAAQ 290035
 TSUWCA

BULLETIN
 TSUNAMI MESSAGE NUMBER 14
 NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
 435 PM AKDT WED MAR 28 2012

PISMO BEACH CA REPORTS A LARGER WAVE OF 29.30FT/8.93M.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
 AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
 COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
 ATTU ALASKA...

RECOMMENDED ACTIONS

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 COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL
 EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY
 RESPONSE AGENCIES.
 - IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO
 HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LO	TIME	AMPL
-----	-----	-----	-----	-----

ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
PORT ORFORD OR	42.7N	124.5W	2157UTC	17.55FT/5.35M
WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY CA	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M
ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
POINT REYES CA	38.0N	123.0W	2251UTC	8.96FT/2.73M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M
SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
PEARL HARBOR HI	21.3N	157.9W	2311UTC	1.35FT/0.41M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
LAHAINA HI	20.9N	156.7W	2326UTC	0.95FT/0.29M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
SANTA BARBARA CA	34.4N	119.7W	2336UTC	4.56FT/1.39M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
SOUTH SPIT CA	40.7N	124.2W	2349UTC	3.05FT/0.93M
SANTA MONICA CA	34.0N	118.5W	2354UTC	5.28FT/1.61M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0006UTC	6.14FT/1.87M
ALAMITOS BAY CA	33.7N	118.1W	0006UTC	5.09FT/1.55M
PISMO BEACH CA	35.1N	120.6W	0006UTC	29.30FT/8.93M
SAN DIEGO CA	32.7N	117.2W	0019UTC	2.66FT/0.81M
LOS ANGELES CA	34.1N	118.2W	0023UTC	2.95FT/0.90M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

PISMO BEACH CA HAS REPORTED THAT A HIGHER WAVE OF 29.30FT/8.93M HAS COME ASHORE AND FLOODED AREA UP TO ONE MILES INLAND. PORT SAN LUIS CA HAS REPORTED THAT A LARGER WAVE CAME ASHORE DESTROYING ALL BUILDINGS UP TO THE AVILA BEACH GOLF RESORT. MANY PEOPLE ARE REPORTED DEAD OR MISSING. UPDATES WILL APPEAR IN THESE BULLETINS AS THEY BECOME AVAILABLE.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2

TIME - 1000 AKDT MAR 28 2012
 1100 PDT MAR 28 2012
 1800 UTC MAR 28 2012

LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA

DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI

WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT
PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF
THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT
UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE
WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-
506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-
BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-
912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-
125-121-171-181-185-187-191-290135-
/T.CON.PAAQ.TS.W.0135.120329T0035Z-120329T0135Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
BORDER TO ATTU ALASKA
435 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A
SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL
ARRIVAL TIME.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED
SITES IN THE WARNING ARE PROVIDED BELOW.

SAN PEDRO-CA 1651 PDT MAR 28 LA JOLLA-CA 1702 PDT MAR 28

FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
WCATWC.ARH.NOAA.GOV

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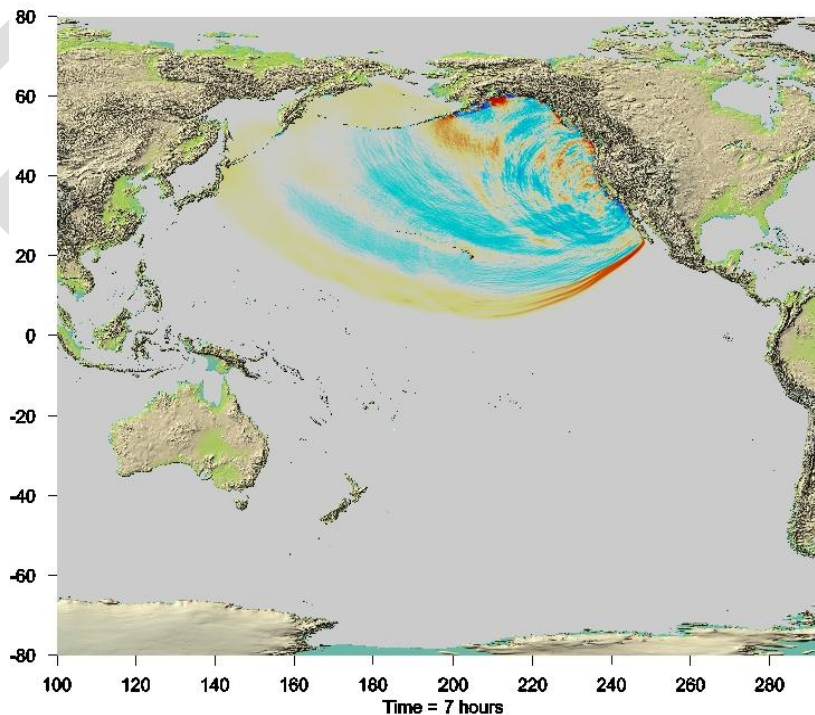


Figure D15. Snapshot of tsunami at time WCATWC bulletin 15 is issued.

WCATWC Message #15

WEPA41 PAAQ 290105
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 15
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
505 PM AKDT WED MAR 28 2012

POINT REYES CA REPORTS A LARGER 20.47FT/6.24M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE
WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING
COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL
EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY
RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO
HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY CA	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M
ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M
SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
PEARL HARBOR HI	21.3N	157.9W	2311UTC	1.35FT/0.41M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
LAHAINA HI	20.9N	156.7W	2326UTC	0.95FT/0.29M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
SANTA BARBARA CA	34.4N	119.7W	2336UTC	4.56FT/1.39M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0006UTC	6.14FT/1.87M
ALAMITOS BAY CA	33.7N	118.1W	0006UTC	5.09FT/1.55M
PISMO BEACH CA	35.1N	120.6W	0006UTC	29.30FT/8.93M
SAN DIEGO CA	32.7N	117.2W	0019UTC	2.66FT/0.81M
LOS ANGELES CA	34.1N	118.2W	0023UTC	2.95FT/0.90M
SANTA MONICA CA	34.0N	118.5W	0034UTC	5.61FT/1.71M
POINT REYES CA	38.0N	123.0W	0046UTC	20.47FT/6.24M
SOUTH SPIT CA	40.7N	124.2W	0057UTC	3.54FT/1.08M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

KODIAK AND SEWARD AK REPORT CONTINUED WAVES AND STRONG CURRENTS ALONG THEIR SHORES. SEWARD AK HAS UPDATED ITS MISSING TO 76 PEOPLE, THIS INCLUDES 8 PEOPLE THAT WERE SWEEPED OUT TO SEA WHILE WORKING ON THEIR BOAT AT THE MARINA ON THE NORTHEAST SIDE OF RESURRECTION BAY. SEWARD SMALL BOAT HARBOR REPORTS AN ESTIMATED \$9 MILLION IN DAMAGED BOATS. THIS INCLUDES THE LARGER SITESEEING VESSELS MOORED IN THE HARBOR. DAMAGE OUTSIDE THE HARBOR IS CURRENTLY ESTIMATED AT \$70 MILLION. KODIAK IS REPORTING SEVERE DAMAGE TO ITS SMALL BOAT HARBOR. FLOATING PIERS HAVE BEEN RIPPED FROM THE PILINGS, AND BOATS NOT TIED TO FLOATING PIERS HAVE EITHER HAD THEIR LINES SUDDENLY SNAPPED BECAUSE OF THE BUOYANCY OR BEEN SUMERGED BECAUSE OF NO SLACK IN THE LINES AS THE TIDE CAME IN. POINT REYES CA HAS REPORTED A 20.47FT/6.24M WAVE. THE HIGH BLUFFS IN THAT AREA HAS HELPED TO PROTECT IT, BUT THE STRONG CURRRENTS HAVE WRAPPED AROUND CHIMNEY ROCK AND DAMAGED THE DOCK AT THE HISTORIC POINT REYES LIFEBOAT STATION.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
 TIME - 1000 AKDT MAR 28 2012
 1100 PDT MAR 28 2012
 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-290205-/T.CON.PAAQ.TS.W.0135.120329T0105Z-120329T0205Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA
 505 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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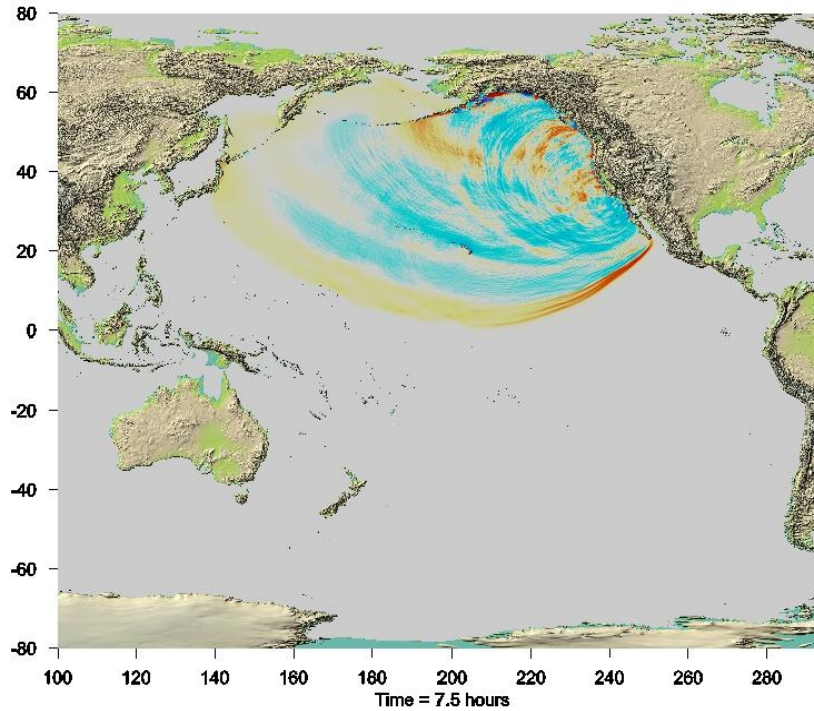


Figure D16. Snapshot of tsunami at time WCATWC bulletin 16 is issued.

WCATWC Message #16

WEPA41 PAAQ 290135
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 16
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
535 PM AKDT WED MAR 28 2012

SANTA MONICA CA REPORTS A 9.25FT/2.82M WAVE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE
WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING
COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL
EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY
RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO
HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LOX	TIME	AMPL
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M

SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
SANTA BARBARA CA	34.4N	119.7W	2336UTC	4.56FT/1.39M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0006UTC	6.14FT/1.87M
ALAMITOS BAY CA	33.7N	118.1W	0006UTC	5.09FT/1.55M
PISMO BEACH CA	35.1N	120.6W	0006UTC	29.30FT/8.93M
SAN DIEGO CA	32.7N	117.2W	0019UTC	2.66FT/0.81M
LOS ANGELES CA	34.1N	118.2W	0023UTC	2.95FT/0.90M
POINT REYES CA	38.0N	123.0W	0046UTC	20.47FT/6.24M
SOUTH SPIT CA	40.7N	124.2W	0057UTC	3.54FT/1.08M
SANTA MONICA CA	34.0N	118.5W	0110UTC	9.25FT/2.82M
PEARL HARBOR HI	21.3N	157.9W	0110UTC	1.54FT/0.47M
LAHAINA HI	20.9N	156.7W	0123UTC	0.98FT/0.30M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

SANTA MONICA HAS REPORTED THAT A LARGER 9.25FT/2.82M WAVE HAS COME ASHORE. IT DID NOT DAMAGE THE SANTA MONICA PIER, BUT IT DID SEVERLY DAMAGE SHOPS AND BUSINESSES ASSOCIATED WITH PACIFIC PARK. THE WAVE, IN SOME AREAS, WENT AS FAR INLAND AS THE PACIFIC COAST HIGHWAY, CAUSING WATER DAMAGE TO BUSINESSES ALONG THE BEACH. HAWAII REPORTS WAVES CLOSE TO, BUT NOT EXCEEDING, 5.00FT/1.52M IN HONOLULU, HALEIWA, AND HILO. STRONG CURRENTS HAVE BEEN REPORTED THROUGHOUT THE HAWAIIAN ISLANDS.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2

TIME - 1000 AKDT MAR 28 2012

1100 PDT MAR 28 2012

1800 UTC MAR 28 2012

LOCATION - 58.0 NORTH 150.5 WEST

70 MILES/113 KM E OF KODIAK CITY ALASKA

225 MILES/362 KM S OF ANCHORAGE ALASKA

DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-290235-/T.CON.PAAQ.TS.W.0135.120329T0135Z-120329T0235Z/

COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
 BORDER TO ATTU ALASKA
 535 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
 AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
 COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
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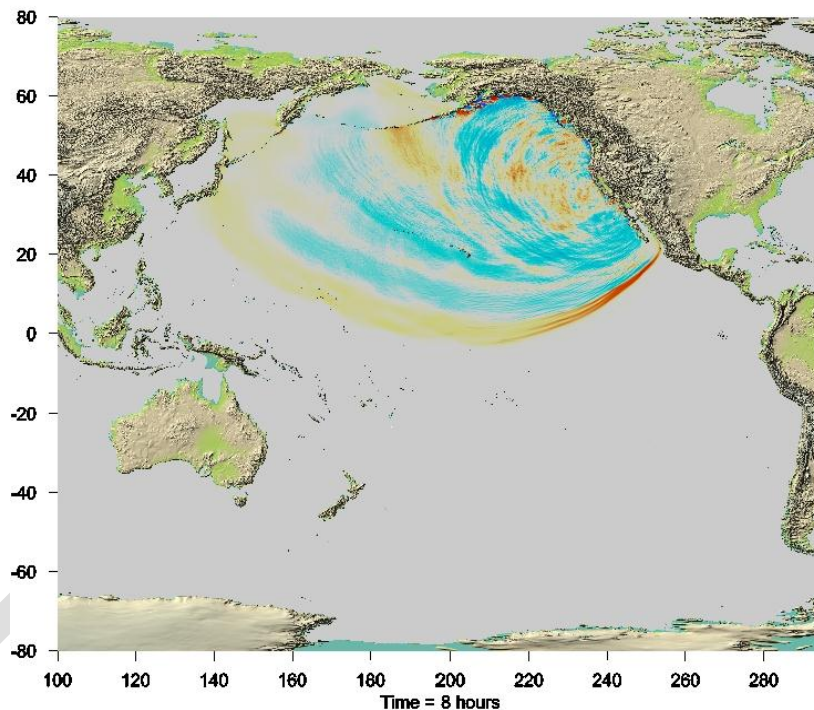


Figure D17. Snapshot of tsunami at time WCATWC bulletin 17 is issued.

WCATWC Message #17

WEPA41 PAAQ 290204
 TSUWCA

BULLETIN
 TSUNAMI MESSAGE NUMBER 17
 NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
 604 PM AKDT WED MAR 28 2012

CHIGNIK BAY AK REPORTS A LARGER 8.89FT/2.71M WAVE.

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 AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
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MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
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SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
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KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0006UTC	6.14FT/1.87M
ALAMITOS BAY CA	33.7N	118.1W	0006UTC	5.09FT/1.55M
PISMO BEACH CA	35.1N	120.6W	0006UTC	29.30FT/8.93M
SAN DIEGO CA	32.7N	117.2W	0019UTC	2.66FT/0.81M
LOS ANGELES CA	34.1N	118.2W	0023UTC	2.95FT/0.90M
POINT REYES CA	38.0N	123.0W	0046UTC	20.47FT/6.24M
SOUTH SPIT CA	40.7N	124.2W	0057UTC	3.54FT/1.08M
SANTA MONICA CA	34.0N	118.5W	0110UTC	9.25FT/2.82M
PEARL HARBOR HI	21.3N	157.9W	0110UTC	1.54FT/0.47M
LAHAINA HI	20.9N	156.7W	0123UTC	0.98FT/0.30M
SANTA BARBARA CA	34.4N	119.7W	0139UTC	5.35FT/1.63M
CHIGNIK BAY AK	56.4N	158.2W	0132UTC	8.89FT/2.71M
TOKE POINT WA	46.7N	123.9W	0153UTC	3.74FT/1.14M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

STRONG CURRENTS CONTINUE TO BE REPORTED ALONG ALL PARTS OF THE WEST COAST. CHIGNIK BAY AK HAS REPORTED A NEW LARGER WAVE OF 8.89FT/2.71M THAT HAS DAMAGED PORTION OF AIRPORT ROAD WHICH LEADS TO THE CHIGNIK BAY SEAPLANE BASE. TOKE POINT WA REPORTS A 3.74FT/1.14M WAVE CAME ASHORE AND DID SOME MINOR DAMAGE TO TOKELAND MARINA AND KINDRED AVENUE.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
TIME - 1000 AKDT MAR 28 2012
1100 PDT MAR 28 2012
1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

THIS MESSAGE WILL BE UPDATED IN 30 MINUTES OR SOONER IF THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-290304-
/T.CON.PAAQ.TS.W.0135.120329T0204Z-120329T0304Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA
604 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

\$\$

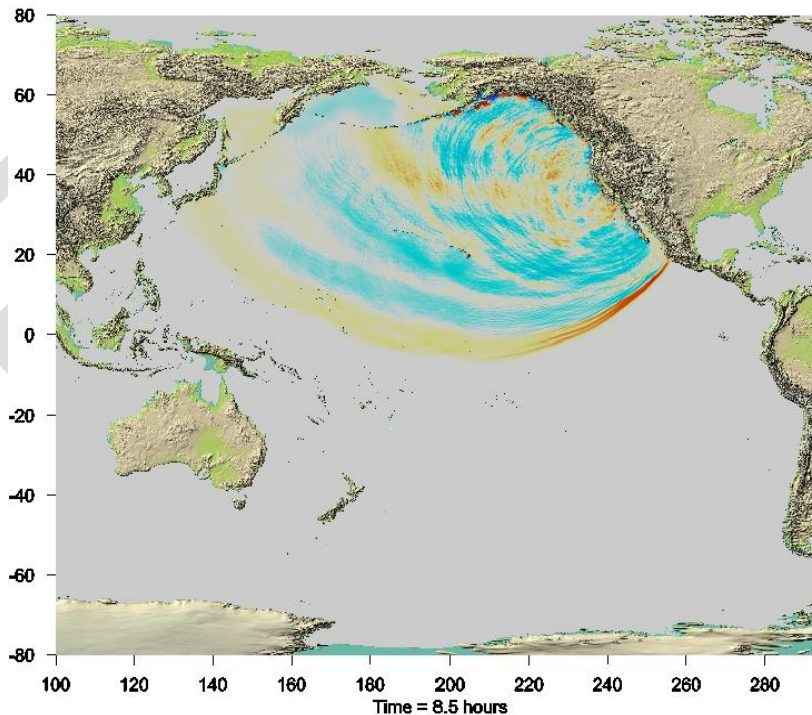


Figure D18. Snapshot of tsunami at time WCATWC bulletin 18 is issued.

WCATWC Message #18

WEPA41 PAAQ 290234

TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 18

NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK

634 PM AKDT WED MAR 28 2012

NO NEW UPDATES SINCE LAST MESSAGE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M
SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0006UTC	6.14FT/1.87M
ALAMITOS BAY CA	33.7N	118.1W	0006UTC	5.09FT/1.55M
PISMO BEACH CA	35.1N	120.6W	0006UTC	29.30FT/8.93M
SAN DIEGO CA	32.7N	117.2W	0019UTC	2.66FT/0.81M
LOS ANGELES CA	34.1N	118.2W	0023UTC	2.95FT/0.90M
POINT REYES CA	38.0N	123.0W	0046UTC	20.47FT/6.24M
SOUTH SPIT CA	40.7N	124.2W	0057UTC	3.54FT/1.08M
SANTA MONICA CA	34.0N	118.5W	0110UTC	9.25FT/2.82M
SANTA BARBARA CA	34.4N	119.7W	0139UTC	5.35FT/1.63M
CHIGNIK BAY AK	56.4N	158.2W	0132UTC	8.89FT/2.71M
TOKE POINT WA	46.7N	123.9W	0153UTC	3.74FT/1.14M
PEARL HARBOR HI	21.3N	157.9W	0204UTC	1.74FT/0.53M
LAHAINA HI	20.9N	156.7W	0229UTC	1.31FT/0.40M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

WAVES CONTINUE TO BE GREATER THAN 3.28FT/1.00M ALONG PARTS OF THE WEST COAST. STRONG CURRENTS HAVE ALSO BEEN REPORTED IN NUMEROUS AREAS. CHECK WITH YOUR EMERGENCY MANAGERS FOR UPDATES ON WHEN IT IS SAFE FOR YOU TO USE THE BEACH IN YOUR AREA.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
TIME - 1000 AKDT MAR 28 2012
 1100 PDT MAR 28 2012
 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

PACIFIC COASTAL REGIONS OUTSIDE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE PACIFIC TSUNAMI WARNING CENTER MESSAGES FOR INFORMATION ON THIS EVENT AT PTWC.WEATHER.GOV.

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PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-125-121-171-181-185-187-191-290334-
/T.CON.PAAQ.TS.W.0135.120329T0234Z-120329T0334Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA
634 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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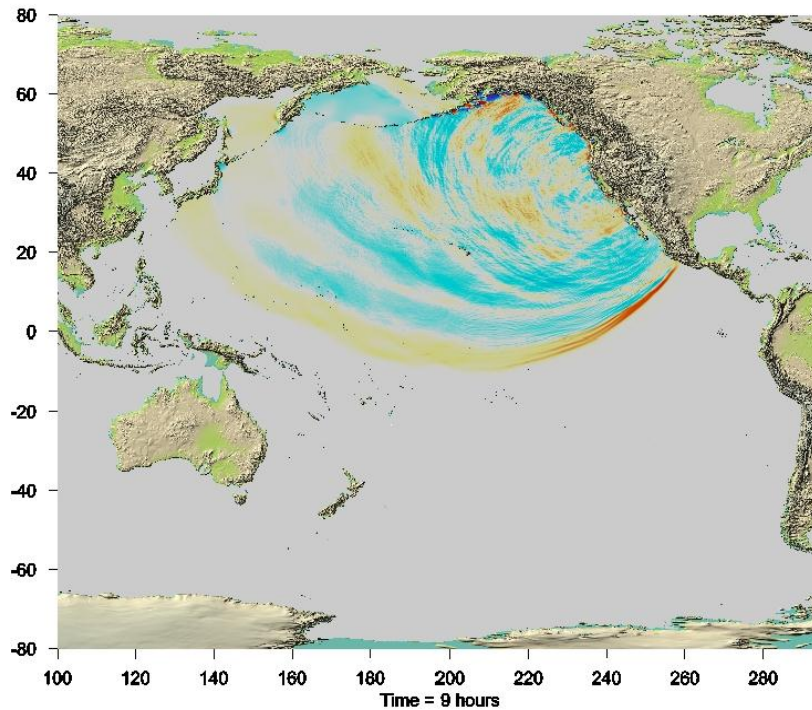


Figure D19. Snapshot of tsunami at time WCATWC bulletin 19 is issued.

WCATWC Message #19 – NOTE: A real warning with this location and magnitude would likely continue beyond this message for many additional hours. Message #19 will be the final bulletin so that this exercise can be completed in one work shift.

WEPA41 PAAQ 290305
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 19
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
705 PM AKDT WED MAR 28 2012

NO NEW UPDATES SINCE LAST MESSAGE.

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH IS EXPECTED TO DAMAGE THE WARNING REGIONS LISTED IN THE HEADLINE. PEOPLE IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- IF IN A TSUNAMI WARNING COASTAL AREA MOVE INLAND TO HIGHER GROUND.

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M

POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
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HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
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CHIGNIK BAY AK	56.4N	158.2W	0132UTC	8.89FT/2.71M
TOKE POINT WA	46.7N	123.9W	0153UTC	3.74FT/1.14M
PEARL HARBOR HI	21.3N	157.9W	0204UTC	1.74FT/0.53M
LAHAINA HI	20.9N	156.7W	0229UTC	1.31FT/0.40M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

WAVES CONTINUE TO BE GREATER THAN 3.28FT/1.00M ALONG PARTS OF THE WEST COAST. STRONG CURRENTS HAVE ALSO BEEN REPORTED IN NUMEROUS AREAS. CHECK WITH YOUR EMERGENCY MANAGERS FOR UPDATES ON WHEN IT IS SAFE FOR YOU TO USE THE BEACH IN YOUR AREA.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2

TIME - 1000 AKDT MAR 28 2012

1100 PDT MAR 28 2012

1800 UTC MAR 28 2012

LOCATION - 58.0 NORTH 150.5 WEST

70 MILES/113 KM E OF KODIAK CITY ALASKA

225 MILES/362 KM S OF ANCHORAGE ALASKA

DEPTH - 19 MILES/30 KM

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT... EXPECTED OR OCCURRING. WARNINGS INDICATE THAT WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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PZZ530-CAZ042-043-040-041-087-039-034-035-529-530-006-505-506-508-509-002-001-ORZ021-022-002-001-WAZ001-021-510-514>517-BCZ130-230-250-260-280-160-142-141-150-121-122-220-210-922-912-921-911-110-AKZ026>029-023-024-019>022-025-017-131-135-

125-121-171-181-185-187-191-290405-
/T.CON.PAAQ.TS.W.0135.120329T0305Z-120329T0405Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
BORDER TO ATTU ALASKA
705 PM AKDT WED MAR 28 2012

...THE TSUNAMI WARNING CONTINUES IN EFFECT FOR THE COASTAL
AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
ATTU ALASKA...

PEOPLE IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
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SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL
ARRIVAL TIME.

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Exercise

PTWC Pacific Messages

The following messages, created for the PACIFEX 12 tsunami exercise, are representative of the international Pacific products that would be issued by the Pacific Tsunami Warning Center in response to a magnitude 9.2 earthquake and tsunami originating at 58.0°N, 150.5°W.

PTWC Pacific Message #1

WEPA40 PHEB 281809
TSUPAC

TSUNAMI BULLETIN NUMBER 1
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 1809Z 28 MAR 2012

THIS BULLETIN APPLIES TO AREAS WITHIN AND BORDERING THE PACIFIC OCEAN AND ADJACENT SEAS... EXCEPT ALASKA... BRITISH COLUMBIA... WASHINGTON... OREGON AND CALIFORNIA.

...A TSUNAMI WATCH IS IN EFFECT...

A TSUNAMI WATCH IS IN EFFECT FOR
RUSSIA - MIDWAY IS. - HAWAII - JAPAN - JOHNSTON IS. AND
MEXICO.

FOR ALL OTHER PACIFIC AREAS, THIS MESSAGE IS FOR INFORMATION ONLY.

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND ANY ACTIONS TO BE TAKEN IN RESPONSE.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 9.2
TIME - 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

EVALUATION

IT IS NOT KNOWN THAT A TSUNAMI WAS GENERATED. THIS WARNING IS BASED ONLY ON THE EARTHQUAKE EVALUATION. AN EARTHQUAKE OF THIS SIZE HAS THE POTENTIAL TO GENERATE A DESTRUCTIVE TSUNAMI THAT CAN STRIKE COASTLINES NEAR THE EPICENTER WITHIN MINUTES AND MORE DISTANT COASTLINES WITHIN HOURS. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THIS CENTER WILL MONITOR SEA LEVEL DATA FROM GAGES NEAR THE EARTHQUAKE TO DETERMINE IF A TSUNAMI WAS GENERATED AND ESTIMATE THE SEVERITY OF THE THREAT.

ESTIMATED INITIAL TSUNAMI ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION		COORDINATES	ARRIVAL TIME
RUSSIA	MEDNNY IS	54.7N 167.4E	2130Z MAR28
	UST KAMCHATSK	56.1N 162.6E	2154Z MAR28
	PETROPAVLOVSK K	53.2N 159.6E	2210Z MAR28
	URUP IS	46.1N 150.5E	2259Z MAR28
	SEVERO KURILSK	50.8N 156.1E	2323Z MAR28

MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2234Z	MAR28
HAWAII	NAWILIWILI	22.0N 159.4W	2251Z	MAR28
	HONOLULU	21.3N 157.9W	2305Z	MAR28
	HILO	19.7N 155.1W	2315Z	MAR28
JAPAN	KUSHIRO	42.9N 144.3E	2347Z	MAR28
	HACHINOHE	40.5N 141.5E	0026Z	MAR29
	KATSUURA	35.1N 140.3E	0038Z	MAR29
	SHIMIZU	32.8N 133.0E	0156Z	MAR29
	OKINAWA	26.2N 127.8E	0328Z	MAR29
JOHNSTON IS.	JOHNSTON IS.	16.7N 169.5W	2354Z	MAR28
MEXICO	ENSENADA	31.8N 116.8W	0004Z	MAR29
	PUNTA ABREOJOS	26.7N 113.6W	0051Z	MAR29
	CABO SAN LUCAS	22.8N 110.0W	0131Z	MAR29
	SOCORRO	18.8N 111.0W	0146Z	MAR29
	MAZATLAN	23.2N 106.4W	0225Z	MAR29
	MANZANILLO	19.1N 104.3W	0246Z	MAR29
	ACAPULCO	16.9N 99.9W	0330Z	MAR29
	PUERTO MADERO	14.8N 92.5W	0456Z	MAR29

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT.
THIS ALERT WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

THE WEST COAST/ALASKA TSUNAMI WARNING CENTER WILL ISSUE MESSAGES
FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON/ CALIFORNIA.

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PTWC Pacific Message #2

WEPA40 PHEB 281908
TSUPAC

TSUNAMI BULLETIN NUMBER 2
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 1908Z 28 MAR 2012

A TSUNAMI WARNING AND WATCH ARE IN EFFECT.

THIS BULLETIN APPLIES TO AREAS WITHIN AND BORDERING THE PACIFIC
OCEAN AND ADJACENT SEAS... EXCEPT ALASKA... BRITISH COLUMBIA...
WASHINGTON... OREGON AND CALIFORNIA.

...A TSUNAMI WARNING AND WATCH ARE IN EFFECT...

A TSUNAMI WARNING IS IN EFFECT FOR
RUSSIA.

A TSUNAMI WATCH IS IN EFFECT FOR
MIDWAY IS. - HAWAII - JAPAN - JOHNSTON IS. - MEXICO - WAKE
IS. - MARCUS IS. AND PALMYRA IS..

FOR ALL OTHER PACIFIC AREAS, THIS MESSAGE IS FOR INFORMATION ONLY.

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY
NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE
DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND
ANY ACTIONS TO BE TAKEN IN RESPONSE.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 9.2
TIME - 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
SEWARD AK	60.1N	149.4W	1846UTC	18.80FT/5.73M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER AND COULD ALSO BE A THREAT TO MORE DISTANT COASTS. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THIS CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE THREAT.

FOR ALL AREAS - WHEN NO MAJOR WAVES ARE OBSERVED FOR TWO HOURS AFTER THE ESTIMATED TIME OF ARRIVAL OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION		COORDINATES	ARRIVAL TIME	
RUSSIA	MEDNNY IS	54.7N 167.4E	2130Z MAR28	
	UST KAMCHATSK	56.1N 162.6E	2154Z MAR28	
	PETROPAVLOVSK K	53.2N 159.6E	2210Z MAR28	
	URUP IS	46.1N 150.5E	2259Z MAR28	
	SEVERO KURILSK	50.8N 156.1E	2323Z MAR28	
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2234Z MAR28	
HAWAII	NAWILIWILI	22.0N 159.4W	2251Z MAR28	
	HONOLULU	21.3N 157.9W	2305Z MAR28	
JAPAN	HILO	19.7N 155.1W	2315Z MAR28	
	KUSHIRO	42.9N 144.3E	2347Z MAR28	
	HACHINOHE	40.5N 141.5E	0026Z MAR29	
	KATSUURA	35.1N 140.3E	0038Z MAR29	
	SHIMIZU	32.8N 133.0E	0156Z MAR29	
JOHNSTON IS.	OKINAWA	26.2N 127.8E	0328Z MAR29	
	JOHNSTON IS.	16.7N 169.5W	2354Z MAR28	
MEXICO	ENSENADA	31.8N 116.8W	0004Z MAR29	
	PUNTA ABREOJOS	26.7N 113.6W	0051Z MAR29	
	CABO SAN LUCAS	22.8N 110.0W	0131Z MAR29	
	SOCORRO	18.8N 111.0W	0146Z MAR29	
	MAZATLAN	23.2N 106.4W	0225Z MAR29	
	MANZANILLO	19.1N 104.3W	0246Z MAR29	
	ACAPULCO	16.9N 99.9W	0330Z MAR29	
	PUERTO MADERO	14.8N 92.5W	0456Z MAR29	
	WAKE IS.	WAKE IS.	19.3N 166.6E	0023Z MAR29
	MARCUS IS.	MARCUS IS.	24.3N 154.0E	0030Z MAR29
PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	0105Z MAR29	

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT.
THIS ALERT WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

THE WEST COAST/ALASKA TSUNAMI WARNING CENTER WILL ISSUE MESSAGES FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON/ CALIFORNIA.

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PTWC Pacific Message #3

WEPA40 PHEB 282006
 TSUPAC

TSUNAMI BULLETIN NUMBER 3
 PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
 ISSUED AT 2006Z 28 MAR 2012

THIS BULLETIN APPLIES TO AREAS WITHIN AND BORDERING THE PACIFIC OCEAN AND ADJACENT SEAS... EXCEPT ALASKA... BRITISH COLUMBIA... WASHINGTON... OREGON AND CALIFORNIA.

...A TSUNAMI WARNING AND WATCH ARE IN EFFECT...

A TSUNAMI WARNING IS IN EFFECT FOR
 RUSSIA - MIDWAY IS. AND HAWAII.

A TSUNAMI WATCH IS IN EFFECT FOR
 JAPAN - JOHNSTON IS. - MEXICO - WAKE IS. - MARCUS IS. -
 PALMYRA IS. - KIRIBATI - MARSHALL IS. AND JARVIS IS..

FOR ALL OTHER PACIFIC AREAS, THIS MESSAGE IS FOR INFORMATION ONLY.

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND ANY ACTIONS TO BE TAKEN IN RESPONSE.

PRELIMINARY EARTHQUAKE PARAMETERS
 MAGNITUDE - 9.2
 TIME - 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M
SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	1959UTC	2.00FT/0.61M
KING COVE AK	55.1N	162.3W	2000UTC	0.36FT/0.11M

TIME - TIME OF MEASUREMENT
 AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER AND COULD ALSO BE A THREAT TO MORE DISTANT COASTS. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THIS CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE THREAT.

FOR ALL AREAS - WHEN NO MAJOR WAVES ARE OBSERVED FOR TWO HOURS AFTER THE ESTIMATED TIME OF ARRIVAL OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME

THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION		COORDINATES	ARRIVAL TIME	
RUSSIA	MEDNNY IS	54.7N 167.4E	2130Z MAR28	
	UST KAMCHATSK	56.1N 162.6E	2154Z MAR28	
	PETROPAVLOVSK K	53.2N 159.6E	2210Z MAR28	
	URUP IS	46.1N 150.5E	2259Z MAR28	
	SEVERO KURILSK	50.8N 156.1E	2323Z MAR28	
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2234Z MAR28	
HAWAII	NAWILIWILI	22.0N 159.4W	2251Z MAR28	
	HONOLULU	21.3N 157.9W	2305Z MAR28	
	HILO	19.7N 155.1W	2315Z MAR28	
JAPAN	KUSHIRO	42.9N 144.3E	2347Z MAR28	
	HACHINOHE	40.5N 141.5E	0026Z MAR29	
	KATSUURA	35.1N 140.3E	0038Z MAR29	
	SHIMIZU	32.8N 133.0E	0156Z MAR29	
	OKINAWA	26.2N 127.8E	0328Z MAR29	
JOHNSTON IS.	JOHNSTON IS.	16.7N 169.5W	2354Z MAR28	
MEXICO	ENSENADA	31.8N 116.8W	0004Z MAR29	
	PUNTA ABREOJOS	26.7N 113.6W	0051Z MAR29	
	CABO SAN LUCAS	22.8N 110.0W	0131Z MAR29	
	SOCORRO	18.8N 111.0W	0146Z MAR29	
	MAZATLAN	23.2N 106.4W	0225Z MAR29	
	MANZANILLO	19.1N 104.3W	0246Z MAR29	
	ACAPULCO	16.9N 99.9W	0330Z MAR29	
	PUERTO MADERO	14.8N 92.5W	0456Z MAR29	
	WAKE IS.	WAKE IS.	19.3N 166.6E	0023Z MAR29
	MARCUS IS.	MARCUS IS.	24.3N 154.0E	0030Z MAR29
PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	0105Z MAR29	
KIRIBATI	CHRISTMAS IS.	2.0N 157.5W	0136Z MAR29	
	MALDEN IS.	3.9S 154.9W	0221Z MAR29	
	KANTON IS.	2.8S 171.7W	0229Z MAR29	
	TARAWA IS.	1.5N 173.0E	0230Z MAR29	
	FLINT IS.	11.4S 151.8W	0325Z MAR29	
MARSHALL IS.	ENIWETOK	11.4N 162.3E	0143Z MAR29	
	KWAJALEIN	8.7N 167.7E	0147Z MAR29	
	MAJURO	7.1N 171.4E	0148Z MAR29	
JARVIS IS.	JARVIS IS.	0.4S 160.1W	0200Z MAR29	

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT. THIS ALERT WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

THE WEST COAST/ALASKA TSUNAMI WARNING CENTER WILL ISSUE MESSAGES FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON/ CALIFORNIA.

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PTWC Pacific Message #4

WEPA40 PHEB 282107
TSUPAC

TSUNAMI BULLETIN NUMBER 4
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 2107Z 28 MAR 2012

THIS BULLETIN APPLIES TO AREAS WITHIN AND BORDERING THE PACIFIC OCEAN AND ADJACENT SEAS... EXCEPT ALASKA... BRITISH COLUMBIA...

WASHINGTON... OREGON AND CALIFORNIA.

...A TSUNAMI WARNING AND WATCH ARE IN EFFECT...

A TSUNAMI WARNING IS IN EFFECT FOR
RUSSIA - MIDWAY IS. - HAWAII - JAPAN - JOHNSTON IS. AND
MEXICO.

A TSUNAMI WATCH IS IN EFFECT FOR
WAKE IS. - MARCUS IS. - PALMYRA IS. - KIRIBATI - MARSHALL
IS. - JARVIS IS. - HOWLAND-BAKER - N. MARIANAS - POHNPEI -
KOSRAE - GUAM - COOK ISLANDS AND NAURU.

FOR ALL OTHER PACIFIC AREAS, THIS MESSAGE IS FOR INFORMATION ONLY.

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NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE
DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND
ANY ACTIONS TO BE TAKEN IN RESPONSE.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
TIME - 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M
SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
ATKA AK	52.2N	174.2W	2053UTC	0.66FT/0.20M
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2059UTC	2.43FT/0.74M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE
BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER AND
COULD ALSO BE A THREAT TO MORE DISTANT COASTS. AUTHORITIES SHOULD
TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THIS
CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE
EXTENT AND SEVERITY OF THE THREAT.

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AFTER THE ESTIMATED TIME OF ARRIVAL OR DAMAGING WAVES HAVE NOT
OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME
THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN
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CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI ACTION THE
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ESTIMATED INITIAL TSUNAMI ARRIVAL TIMES AT FORECAST POINTS
WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL

ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION		COORDINATES	ARRIVAL TIME	
RUSSIA	MEDNNY IS	54.7N 167.4E	2130Z MAR28	
	UST KAMCHATSK	56.1N 162.6E	2154Z MAR28	
	PETROPAVLOVSK K	53.2N 159.6E	2210Z MAR28	
	URUP IS	46.1N 150.5E	2259Z MAR28	
	SEVERO KURILSK	50.8N 156.1E	2323Z MAR28	
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2234Z MAR28	
HAWAII	NAWILIWILI	22.0N 159.4W	2251Z MAR28	
	HONOLULU	21.3N 157.9W	2305Z MAR28	
	HILO	19.7N 155.1W	2315Z MAR28	
JAPAN	KUSHIRO	42.9N 144.3E	2347Z MAR28	
	HACHINOHE	40.5N 141.5E	0026Z MAR29	
	KATSUURA	35.1N 140.3E	0038Z MAR29	
	SHIMIZU	32.8N 133.0E	0156Z MAR29	
	OKINAWA	26.2N 127.8E	0328Z MAR29	
JOHNSTON IS.	JOHNSTON IS.	16.7N 169.5W	2354Z MAR28	
MEXICO	ENSENADA	31.8N 116.8W	0004Z MAR29	
	PUNTA ABREOJOS	26.7N 113.6W	0051Z MAR29	
	CABO SAN LUCAS	22.8N 110.0W	0131Z MAR29	
	SOCORRO	18.8N 111.0W	0146Z MAR29	
	MAZATLAN	23.2N 106.4W	0225Z MAR29	
	MANZANILLO	19.1N 104.3W	0246Z MAR29	
	ACAPULCO	16.9N 99.9W	0330Z MAR29	
	PUERTO MADERO	14.8N 92.5W	0456Z MAR29	
	WAKE IS.	WAKE IS.	19.3N 166.6E	0023Z MAR29
	MARCUS IS.	MARCUS IS.	24.3N 154.0E	0030Z MAR29
PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	0105Z MAR29	
	KIRIBATI	CHRISTMAS IS.	2.0N 157.5W	0136Z MAR29
MARSHALL IS.	MALDEN IS.	3.9S 154.9W	0221Z MAR29	
	KANTON IS.	2.8S 171.7W	0229Z MAR29	
	TARAWA IS.	1.5N 173.0E	0230Z MAR29	
	FLINT IS.	11.4S 151.8W	0325Z MAR29	
	ENIWETOK	11.4N 162.3E	0143Z MAR29	
	KWAJALEIN	8.7N 167.7E	0147Z MAR29	
	MAJURO	7.1N 171.4E	0148Z MAR29	
JARVIS IS.	JARVIS IS.	0.4S 160.1W	0200Z MAR29	
HOWLAND-BAKER	HOWLAND IS.	0.6N 176.6W	0206Z MAR29	
N. MARIANAS	SAIPAN	15.3N 145.8E	0208Z MAR29	
POHNPEI	POHNPEI IS.	7.0N 158.2E	0221Z MAR29	
KOSRAE	KOSRAE IS.	5.5N 163.0E	0221Z MAR29	
GUAM	GUAM	13.4N 144.7E	0229Z MAR29	
COOK ISLANDS	PENRHYN IS.	8.9S 157.8W	0305Z MAR29	
	PUKAPUKA IS.	10.8S 165.9W	0329Z MAR29	
	RAROTONGA	21.2S 159.8W	0449Z MAR29	
NAURU	NAURU	0.5S 166.9E	0306Z MAR29	

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT. THIS ALERT WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

THE WEST COAST/ALASKA TSUNAMI WARNING CENTER WILL ISSUE MESSAGES FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON/ CALIFORNIA.

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PTWC Pacific Message #5

WEPA40 PHEB 282205
TSUPAC

TSUNAMI BULLETIN NUMBER 5
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 2205Z 28 MAR 2012

THIS BULLETIN APPLIES TO AREAS WITHIN AND BORDERING THE PACIFIC OCEAN AND ADJACENT SEAS... EXCEPT ALASKA... BRITISH COLUMBIA... WASHINGTON... OREGON AND CALIFORNIA.

...A TSUNAMI WARNING AND WATCH ARE IN EFFECT...

A TSUNAMI WARNING IS IN EFFECT FOR
RUSSIA - MIDWAY IS. - HAWAII - JAPAN - JOHNSTON IS. -
MEXICO - WAKE IS. - MARCUS IS. AND PALMYRA IS..

A TSUNAMI WATCH IS IN EFFECT FOR
KIRIBATI - MARSHALL IS. - JARVIS IS. - HOWLAND-BAKER - N.
MARIANAS - POHNPEI - KOSRAE - GUAM - COOK ISLANDS - NAURU -
CHUUK - TOKELAU - TUVALU - YAP - TAIWAN - FR. POLYNESIA -
PALAU - PHILIPPINES - SAMOA AND WALLIS-FUTUNA.

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PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
TIME - 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M
SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M
ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER AND COULD ALSO BE A THREAT TO MORE DISTANT COASTS. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THIS CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE THREAT.

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ESTIMATED INITIAL TSUNAMI ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION		COORDINATES	ARRIVAL TIME	
RUSSIA	MEDNNY IS	54.7N 167.4E	2130Z MAR28	
	UST KAMCHATSK	56.1N 162.6E	2154Z MAR28	
	PETROPAVLOVSK K	53.2N 159.6E	2210Z MAR28	
	URUP IS	46.1N 150.5E	2259Z MAR28	
	SEVERO KURILSK	50.8N 156.1E	2323Z MAR28	
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2234Z MAR28	
HAWAII	NAWILIWILI	22.0N 159.4W	2251Z MAR28	
	HONOLULU	21.3N 157.9W	2305Z MAR28	
JAPAN	HILO	19.7N 155.1W	2315Z MAR28	
	KUSHIRO	42.9N 144.3E	2347Z MAR28	
	HACHINOHE	40.5N 141.5E	0026Z MAR29	
	KATSUURA	35.1N 140.3E	0038Z MAR29	
	SHIMIZU	32.8N 133.0E	0156Z MAR29	
OKINAWA	26.2N 127.8E	0328Z MAR29		
JOHNSTON IS.	JOHNSTON IS.	16.7N 169.5W	2354Z MAR28	
MEXICO	ENSENADA	31.8N 116.8W	0004Z MAR29	
	PUNTA ABREOJOS	26.7N 113.6W	0051Z MAR29	
	CABO SAN LUCAS	22.8N 110.0W	0131Z MAR29	
	SOCORRO	18.8N 111.0W	0146Z MAR29	
	MAZATLAN	23.2N 106.4W	0225Z MAR29	
	MANZANILLO	19.1N 104.3W	0246Z MAR29	
	ACAPULCO	16.9N 99.9W	0330Z MAR29	
	PUERTO MADERO	14.8N 92.5W	0456Z MAR29	
	WAKE IS.	WAKE IS.	19.3N 166.6E	0023Z MAR29
	MARCUS IS.	MARCUS IS.	24.3N 154.0E	0030Z MAR29
PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	0105Z MAR29	
KIRIBATI	CHRISTMAS IS.	2.0N 157.5W	0136Z MAR29	
	MALDEN IS.	3.9S 154.9W	0221Z MAR29	
	KANTON IS.	2.8S 171.7W	0229Z MAR29	
	TARAWA IS.	1.5N 173.0E	0230Z MAR29	
	FLINT IS.	11.4S 151.8W	0325Z MAR29	
MARSHALL IS.	ENIWETOK	11.4N 162.3E	0143Z MAR29	
	KWAJALEIN	8.7N 167.7E	0147Z MAR29	
	MAJURO	7.1N 171.4E	0148Z MAR29	
JARVIS IS.	JARVIS IS.	0.4S 160.1W	0200Z MAR29	
HOWLAND-BAKER	HOWLAND IS.	0.6N 176.6W	0206Z MAR29	
N. MARIANAS	SAIPAN	15.3N 145.8E	0208Z MAR29	
POHNPEI	POHNPEI IS.	7.0N 158.2E	0221Z MAR29	
KOSRAE	KOSRAE IS.	5.5N 163.0E	0221Z MAR29	
GUAM	GUAM	13.4N 144.7E	0229Z MAR29	
COOK ISLANDS	PENRHYN IS.	8.9S 157.8W	0305Z MAR29	
	PUKAPUKA IS.	10.8S 165.9W	0329Z MAR29	
	RAROTONGA	21.2S 159.8W	0449Z MAR29	
NAURU	NAURU	0.5S 166.9E	0306Z MAR29	
CHUUK	CHUUK IS.	7.4N 151.8E	0308Z MAR29	
TOKELAU	NUKUNONU IS.	9.2S 171.8W	0315Z MAR29	
TUVALU	FUNAFUTI IS.	7.9S 178.5E	0317Z MAR29	
YAP	YAP IS.	9.5N 138.1E	0319Z MAR29	
TAIWAN	HUALIEN	24.0N 121.6E	0335Z MAR29	
FR. POLYNESIA	HIVA OA	10.0S 139.0W	0340Z MAR29	
	PAPEETE	17.5S 149.6W	0422Z MAR29	
	RIKITEA	23.1S 135.0W	0543Z MAR29	
PALAU	MALAKAL	7.3N 134.5E	0352Z MAR29	
PHILIPPINES	PALANAN	17.1N 122.6E	0353Z MAR29	
	LEGASPI	13.2N 123.8E	0429Z MAR29	
	DAVAO	6.8N 125.7E	0450Z MAR29	
SAMOA	APIA	13.8S 171.8W	0400Z MAR29	
AMERICAN SAMOA	PAGO PAGO	14.3S 170.7W	0401Z MAR29	

WALLIS-FUTUNA WALLIS IS. 13.3S 176.3W 0402Z MAR29

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT.
THIS ALERT WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

THE WEST COAST/ALASKA TSUNAMI WARNING CENTER WILL ISSUE MESSAGES
FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON/ CALIFORNIA.

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PTWC Pacific Message #6

WEPA40 PHEB 282306
TSUPAC

TSUNAMI BULLETIN NUMBER 6
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 2306Z 28 MAR 2012

THIS BULLETIN APPLIES TO AREAS WITHIN AND BORDERING THE PACIFIC
OCEAN AND ADJACENT SEAS... EXCEPT ALASKA... BRITISH COLUMBIA...
WASHINGTON... OREGON AND CALIFORNIA.

...A TSUNAMI WARNING AND WATCH ARE IN EFFECT...

A TSUNAMI WARNING IS IN EFFECT FOR
RUSSIA - MIDWAY IS. - HAWAII - JAPAN - JOHNSTON IS. -
MEXICO - WAKE IS. - MARCUS IS. - PALMYRA IS. - KIRIBATI -
MARSHALL IS. - JARVIS IS. AND HOWLAND-BAKER.

A TSUNAMI WATCH IS IN EFFECT FOR
N. MARIANAS - POHNPEI - KOSRAE - GUAM - COOK ISLANDS -
NAURU - CHUUK - TOKELAU - TUVALU - YAP - TAIWAN - FR.
POLYNESIA - PALAU - PHILIPPINES - SAMOA - WALLIS-FUTUNA -
PAPUA NEW GUINEA - NIUE - INDONESIA - SOLOMON IS. - VANUATU
AND GUATEMALA.

FOR ALL OTHER PACIFIC AREAS, THIS MESSAGE IS FOR INFORMATION ONLY.

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY
NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE
DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND
ANY ACTIONS TO BE TAKEN IN RESPONSE.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 9.2
TIME - 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M
ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
PORT ORFORD OR	42.7N	124.5W	2157UTC	17.55FT/5.35M
WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY OR	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M

ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
HUMBOLT BAY OR	40.8N	124.2W	2224UTC	3.87FT/1.18M
SOUTH SPIT CA	40.7N	124.2W	2227UTC	2.76FT/0.84M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
SAND POINT AK	55.3N	160.5W	2235UTC	2.46FT/0.75M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
POINT REYES CA	38.0N	123.0W	2251UTC	8.96FT/2.73M
NAWILIWILI HI	22.0N	159.4W	2254UTC	1.31FT/0.40M
HALEIWA HI	21.6N	158.1W	2256UTC	2.23FT/0.68M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER AND COULD ALSO BE A THREAT TO MORE DISTANT COASTS. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THIS CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE THREAT.

FOR ALL AREAS - WHEN NO MAJOR WAVES ARE OBSERVED FOR TWO HOURS AFTER THE ESTIMATED TIME OF ARRIVAL OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION		COORDINATES	ARRIVAL TIME
RUSSIA	MEDNNY IS	54.7N 167.4E	2130Z MAR28
	UST KAMCHATSK	56.1N 162.6E	2154Z MAR28
	PETROPAVLOVSK K	53.2N 159.6E	2210Z MAR28
	URUP IS	46.1N 150.5E	2259Z MAR28
	SEVERO KURILSK	50.8N 156.1E	2323Z MAR28
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2234Z MAR28
HAWAII	NAWILIWILI	22.0N 159.4W	2251Z MAR28
	HONOLULU	21.3N 157.9W	2305Z MAR28
	HILO	19.7N 155.1W	2315Z MAR28
JAPAN	KUSHIRO	42.9N 144.3E	2347Z MAR28
	HACHINOHE	40.5N 141.5E	0026Z MAR29
	KATSUURA	35.1N 140.3E	0038Z MAR29
	SHIMIZU	32.8N 133.0E	0156Z MAR29
	OKINAWA	26.2N 127.8E	0328Z MAR29
JOHNSTON IS.	JOHNSTON IS.	16.7N 169.5W	2354Z MAR28
MEXICO	ENSENADA	31.8N 116.8W	0004Z MAR29
	PUNTA ABREOJOS	26.7N 113.6W	0051Z MAR29
	CABO SAN LUCAS	22.8N 110.0W	0131Z MAR29
	SOCORRO	18.8N 111.0W	0146Z MAR29
	MAZATLAN	23.2N 106.4W	0225Z MAR29
	MANZANILLO	19.1N 104.3W	0246Z MAR29
	ACAPULCO	16.9N 99.9W	0330Z MAR29
	PUERTO MADERO	14.8N 92.5W	0456Z MAR29
WAKE IS.	WAKE IS.	19.3N 166.6E	0023Z MAR29

MARCUS IS.	MARCUS IS.	24.3N 154.0E	0030Z	MAR29
PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	0105Z	MAR29
KIRIBATI	CHRISTMAS IS.	2.0N 157.5W	0136Z	MAR29
	MALDEN IS.	3.9S 154.9W	0221Z	MAR29
	KANTON IS.	2.8S 171.7W	0229Z	MAR29
	TARAWA IS.	1.5N 173.0E	0230Z	MAR29
	FLINT IS.	11.4S 151.8W	0325Z	MAR29
MARSHALL IS.	ENIWETOK	11.4N 162.3E	0143Z	MAR29
	KWAJALEIN	8.7N 167.7E	0147Z	MAR29
	MAJURO	7.1N 171.4E	0148Z	MAR29
JARVIS IS.	JARVIS IS.	0.4S 160.1W	0200Z	MAR29
HOWLAND-BAKER	HOWLAND IS.	0.6N 176.6W	0206Z	MAR29
N. MARIANAS	SAIPAN	15.3N 145.8E	0208Z	MAR29
POHNPEI	POHNPEI IS.	7.0N 158.2E	0221Z	MAR29
KOSRAE	KOSRAE IS.	5.5N 163.0E	0221Z	MAR29
GUAM	GUAM	13.4N 144.7E	0229Z	MAR29
COOK ISLANDS	PENRHYN IS.	8.9S 157.8W	0305Z	MAR29
	PUKAPUKA IS.	10.8S 165.9W	0329Z	MAR29
	RAROTONGA	21.2S 159.8W	0449Z	MAR29
NAURU	NAURU	0.5S 166.9E	0306Z	MAR29
CHUUK	CHUUK IS.	7.4N 151.8E	0308Z	MAR29
TOKELAU	NUKUNONU IS.	9.2S 171.8W	0315Z	MAR29
TUVALU	FUNAFUTI IS.	7.9S 178.5E	0317Z	MAR29
YAP	YAP IS.	9.5N 138.1E	0319Z	MAR29
TAIWAN	HUALIEN	24.0N 121.6E	0335Z	MAR29
FR. POLYNESIA	HIVA OA	10.0S 139.0W	0340Z	MAR29
	PAPEETE	17.5S 149.6W	0422Z	MAR29
	RIKITEA	23.1S 135.0W	0543Z	MAR29
PALAU	MALAKAL	7.3N 134.5E	0352Z	MAR29
PHILIPPINES	PALANAN	17.1N 122.6E	0353Z	MAR29
	LEGASPI	13.2N 123.8E	0429Z	MAR29
	DAVAO	6.8N 125.7E	0450Z	MAR29
SAMOA	APIA	13.8S 171.8W	0400Z	MAR29
AMERICAN SAMOA	PAGO PAGO	14.3S 170.7W	0401Z	MAR29
WALLIS-FUTUNA	WALLIS IS.	13.3S 176.3W	0402Z	MAR29
PAPUA NEW GUINEA	KAVIENG	2.5S 150.7E	0407Z	MAR29
	MANUS IS.	2.0S 147.5E	0414Z	MAR29
	RABAU	4.2S 152.3E	0424Z	MAR29
	KIETA	6.1S 155.6E	0444Z	MAR29
	VANIMO	2.6S 141.3E	0445Z	MAR29
	AMUN	6.0S 154.7E	0448Z	MAR29
	WEWAK	3.5S 143.6E	0455Z	MAR29
	MADANG	5.2S 145.8E	0506Z	MAR29
	LAE	6.8S 147.0E	0529Z	MAR29
	PORT MORESBY	9.3S 146.9E	0702Z	MAR29
NIUE	NIUE IS.	19.0S 170.0W	0434Z	MAR29
INDONESIA	WARSA	0.6S 135.8E	0441Z	MAR29
	GEME	4.6N 126.8E	0445Z	MAR29
	MANOKWARI	0.8S 134.2E	0446Z	MAR29
	JAYAPURA	2.4S 140.8E	0448Z	MAR29
	BEREBERE	2.5N 128.7E	0456Z	MAR29
	SORONG	0.8S 131.1E	0503Z	MAR29
	PATANI	0.4N 128.8E	0525Z	MAR29
SOLOMON IS.	GHATERE	7.8S 159.2E	0448Z	MAR29
	PANGGOE	6.9S 157.2E	0448Z	MAR29
	AUKI	8.8S 160.6E	0453Z	MAR29
	KIRAKIRA	10.4S 161.9E	0455Z	MAR29
	FALAMAE	7.4S 155.6E	0458Z	MAR29
	HONIARA	9.3S 160.0E	0514Z	MAR29
	MUNDA	8.4S 157.2E	0515Z	MAR29
VANUATU	ESPERITU SANTO	15.1S 167.3E	0457Z	MAR29
	ANATOM IS.	20.2S 169.9E	0537Z	MAR29
GUATEMALA	SIPICATE	13.9N 91.2W	0505Z	MAR29

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT.
THIS ALERT WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

THE WEST COAST/ALASKA TSUNAMI WARNING CENTER WILL ISSUE MESSAGES

FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON/ CALIFORNIA.

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PTWC Pacific Message #7

WEPA40 PHEB 290008
TSUPAC

TSUNAMI BULLETIN NUMBER 7
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 0008Z 29 MAR 2012

THIS BULLETIN APPLIES TO AREAS WITHIN AND BORDERING THE PACIFIC OCEAN AND ADJACENT SEAS... EXCEPT ALASKA... BRITISH COLUMBIA... WASHINGTON... OREGON AND CALIFORNIA.

...A TSUNAMI WARNING AND WATCH ARE IN EFFECT...

A TSUNAMI WARNING IS IN EFFECT FOR
RUSSIA - MIDWAY IS. - HAWAII - JAPAN - JOHNSTON IS. -
MEXICO - WAKE IS. - MARCUS IS. - PALMYRA IS. - KIRIBATI -
MARSHALL IS. - JARVIS IS. - HOWLAND-BAKER - N. MARIANAS -
POHNPEI - KOSRAE - GUAM - COOK ISLANDS - NAURU AND CHUUK.

A TSUNAMI WATCH IS IN EFFECT FOR
TOKELAU - TUVALU - YAP - TAIWAN - FR. POLYNESIA - PALAU -
PHILIPPINES - SAMOA - WALLIS-FUTUNA - PAPUA NEW GUINEA -
NIUE - INDONESIA - SOLOMON IS. - VANUATU - GUATEMALA -
TONGA - EL SALVADOR - FIJI - COSTA RICA - NICARAGUA -
KERMADEC IS - PANAMA - HONDURAS AND PITCAIRN.

FOR ALL OTHER PACIFIC AREAS, THIS MESSAGE IS FOR INFORMATION ONLY.

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND ANY ACTIONS TO BE TAKEN IN RESPONSE.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 9.2
TIME - 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M
ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
PORT ORFORD OR	42.7N	124.5W	2157UTC	17.55FT/5.35M
WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY OR	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M
ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M

POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
POINT REYES CA	38.0N	123.0W	2251UTC	8.96FT/2.73M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M
SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
PEARL HARBOR HI	21.3N	157.9W	2311UTC	1.35FT/0.41M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
PISMO BEACH CA	35.1N	120.6W	2320UTC	17.42FT/5.31M
LAHAINA HI	20.9N	156.7W	2326UTC	0.95FT/0.29M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
PORT SAN LUIS CA	35.1N	120.7W	2333UTC	14.04FT/4.28M
SANTA BARBARA CA	34.4N	119.7W	2336UTC	4.56FT/1.39M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
SOUTH SPIT CA	40.7N	124.2W	2349UTC	3.05FT/0.93M
SANTA MONICA CA	34.0N	118.5W	2354UTC	5.28FT/1.61M
LOS ANGELES CA	34.1N	118.2W	2356UTC	2.42FT/0.74M
ALAMITOS BAY CA	33.7N	118.1W	2359UTC	2.66FT/0.81M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0000UTC	1.71FT/0.52M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER AND COULD ALSO BE A THREAT TO MORE DISTANT COASTS. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THIS CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE THREAT.

FOR ALL AREAS - WHEN NO MAJOR WAVES ARE OBSERVED FOR TWO HOURS AFTER THE ESTIMATED TIME OF ARRIVAL OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION		COORDINATES	ARRIVAL TIME
RUSSIA	MEDNNY IS	54.7N 167.4E	2130Z MAR28
	UST KAMCHATSK	56.1N 162.6E	2154Z MAR28
	PETROPAVLOVSK K	53.2N 159.6E	2210Z MAR28
	URUP IS	46.1N 150.5E	2259Z MAR28
	SEVERO KURILSK	50.8N 156.1E	2323Z MAR28
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2234Z MAR28
HAWAII	NAWILIWILI	22.0N 159.4W	2251Z MAR28
	HONOLULU	21.3N 157.9W	2305Z MAR28
	HILO	19.7N 155.1W	2315Z MAR28
JAPAN	KUSHIRO	42.9N 144.3E	2347Z MAR28
	HACHINOHE	40.5N 141.5E	0026Z MAR29
	KATSUURA	35.1N 140.3E	0038Z MAR29

	SHIMIZU	32.8N 133.0E	0156Z	MAR29
	OKINAWA	26.2N 127.8E	0328Z	MAR29
JOHNSTON IS.	JOHNSTON IS.	16.7N 169.5W	2354Z	MAR28
MEXICO	ENSENADA	31.8N 116.8W	0004Z	MAR29
	PUNTA ABREOJOS	26.7N 113.6W	0051Z	MAR29
	CABO SAN LUCAS	22.8N 110.0W	0131Z	MAR29
	SOCORRO	18.8N 111.0W	0146Z	MAR29
	MAZATLAN	23.2N 106.4W	0225Z	MAR29
	MANZANILLO	19.1N 104.3W	0246Z	MAR29
	ACAPULCO	16.9N 99.9W	0330Z	MAR29
	PUERTO MADERO	14.8N 92.5W	0456Z	MAR29
WAKE IS.	WAKE IS.	19.3N 166.6E	0023Z	MAR29
MARCUS IS.	MARCUS IS.	24.3N 154.0E	0030Z	MAR29
PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	0105Z	MAR29
KIRIBATI	CHRISTMAS IS.	2.0N 157.5W	0136Z	MAR29
	MALDEN IS.	3.9S 154.9W	0221Z	MAR29
	KANTON IS.	2.8S 171.7W	0229Z	MAR29
	TARAWA IS.	1.5N 173.0E	0230Z	MAR29
	FLINT IS.	11.4S 151.8W	0325Z	MAR29
MARSHALL IS.	ENIWETOK	11.4N 162.3E	0143Z	MAR29
	KWAJALEIN	8.7N 167.7E	0147Z	MAR29
	MAJURO	7.1N 171.4E	0148Z	MAR29
JARVIS IS.	JARVIS IS.	0.4S 160.1W	0200Z	MAR29
HOWLAND-BAKER	HOWLAND IS.	0.6N 176.6W	0206Z	MAR29
N. MARIANAS	SAIPAN	15.3N 145.8E	0208Z	MAR29
POHNPEI	POHNPEI IS.	7.0N 158.2E	0221Z	MAR29
KOSRAE	KOSRAE IS.	5.5N 163.0E	0221Z	MAR29
GUAM	GUAM	13.4N 144.7E	0229Z	MAR29
COOK ISLANDS	PENRHYN IS.	8.9S 157.8W	0305Z	MAR29
	PUKAPUKA IS.	10.8S 165.9W	0329Z	MAR29
	RAROTONGA	21.2S 159.8W	0449Z	MAR29
NAURU	NAURU	0.5S 166.9E	0306Z	MAR29
CHUUK	CHUUK IS.	7.4N 151.8E	0308Z	MAR29
TOKELAU	NUKUNONU IS.	9.2S 171.8W	0315Z	MAR29
TUVALU	FUNAFUTI IS.	7.9S 178.5E	0317Z	MAR29
YAP	YAP IS.	9.5N 138.1E	0319Z	MAR29
TAIWAN	HUALIEN	24.0N 121.6E	0335Z	MAR29
FR. POLYNESIA	HIVA OA	10.0S 139.0W	0340Z	MAR29
	PAPEETE	17.5S 149.6W	0422Z	MAR29
	RIKITEA	23.1S 135.0W	0543Z	MAR29
PALAU	MALAKAL	7.3N 134.5E	0352Z	MAR29
PHILIPPINES	PALANAN	17.1N 122.6E	0353Z	MAR29
	LEGASPI	13.2N 123.8E	0429Z	MAR29
	DAVAO	6.8N 125.7E	0450Z	MAR29
SAMOA	APIA	13.8S 171.8W	0400Z	MAR29
AMERICAN SAMOA	PAGO PAGO	14.3S 170.7W	0401Z	MAR29
WALLIS-FUTUNA	WALLIS IS.	13.3S 176.3W	0402Z	MAR29
PAPUA NEW GUINEA	KAVIENG	2.5S 150.7E	0407Z	MAR29
	MANUS IS.	2.0S 147.5E	0414Z	MAR29
	RABAUL	4.2S 152.3E	0424Z	MAR29
	KIETA	6.1S 155.6E	0444Z	MAR29
	VANIMO	2.6S 141.3E	0445Z	MAR29
	AMUN	6.0S 154.7E	0448Z	MAR29
	WEWAK	3.5S 143.6E	0455Z	MAR29
	MADANG	5.2S 145.8E	0506Z	MAR29
	LAE	6.8S 147.0E	0529Z	MAR29
	PORT MORESBY	9.3S 146.9E	0702Z	MAR29
NIUE	NIUE IS.	19.0S 170.0W	0434Z	MAR29
INDONESIA	WARSA	0.6S 135.8E	0441Z	MAR29
	GEME	4.6N 126.8E	0445Z	MAR29
	MANOKWARI	0.8S 134.2E	0446Z	MAR29
	JAYAPURA	2.4S 140.8E	0448Z	MAR29
	BEREBERE	2.5N 128.7E	0456Z	MAR29
	SORONG	0.8S 131.1E	0503Z	MAR29
	PATANI	0.4N 128.8E	0525Z	MAR29
SOLOMON IS.	GHATERE	7.8S 159.2E	0448Z	MAR29
	PANGGOE	6.9S 157.2E	0448Z	MAR29
	AUKI	8.8S 160.6E	0453Z	MAR29

	KIRAKIRA	10.4S 161.9E	0455Z MAR29
	FALAMAE	7.4S 155.6E	0458Z MAR29
	HONIARA	9.3S 160.0E	0514Z MAR29
	MUNDA	8.4S 157.2E	0515Z MAR29
VANUATU	ESPERITU SANTO	15.1S 167.3E	0457Z MAR29
	ANATOM IS.	20.2S 169.9E	0537Z MAR29
GUATEMALA	SIPICATE	13.9N 91.2W	0505Z MAR29
TONGA	NUKUALOFA	21.0S 175.2W	0515Z MAR29
EL SALVADOR	ACAJUTLA	13.6N 89.8W	0516Z MAR29
FIJI	SUVA	18.1S 178.4E	0530Z MAR29
COSTA RICA	CABO SAN ELENA	10.9N 86.0W	0530Z MAR29
	CABO MATAPALO	8.4N 83.3W	0553Z MAR29
	PUERTO QUEPOS	9.4N 84.2W	0601Z MAR29
NICARAGUA	SAN JUAN DL SUR	11.2N 85.9W	0546Z MAR29
	PUERTO SANDINO	12.2N 86.8W	0618Z MAR29
	CORINTO	12.5N 87.2W	0621Z MAR29
KERMADEC IS	RAOUL IS.	29.2S 177.9W	0557Z MAR29
PANAMA	PUNTA BURICA	8.0N 82.9W	0603Z MAR29
	PUNTA MALA	7.5N 80.0W	0651Z MAR29
	PUERTO PINA	7.4N 78.0W	0704Z MAR29
	BALBOA HTS.	9.0N 79.6W	0813Z MAR29
HONDURAS	AMAPALA	13.2N 87.6W	0607Z MAR29
PITCAIRN	PITCAIRN IS.	25.1S 130.1W	0608Z MAR29

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT.
THIS ALERT WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

THE WEST COAST/ALASKA TSUNAMI WARNING CENTER WILL ISSUE MESSAGES
FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON/ CALIFORNIA.

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PTWC Pacific Message #8

WEPA40 PHEB 290107
TSUPAC

TSUNAMI BULLETIN NUMBER 8
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 0107Z 29 MAR 2012

THIS BULLETIN APPLIES TO AREAS WITHIN AND BORDERING THE PACIFIC
OCEAN AND ADJACENT SEAS... EXCEPT ALASKA... BRITISH COLUMBIA...
WASHINGTON... OREGON AND CALIFORNIA.

...A TSUNAMI WARNING AND WATCH ARE IN EFFECT...

A TSUNAMI WARNING IS IN EFFECT FOR
RUSSIA - MIDWAY IS. - HAWAII - JAPAN - JOHNSTON IS. -
MEXICO - WAKE IS. - MARCUS IS. - PALMYRA IS. - KIRIBATI -
MARSHALL IS. - JARVIS IS. - HOWLAND-BAKER - N. MARIANAS -
POHNPEI - KOSRAE - GUAM - COOK ISLANDS - NAURU - CHUUK -
TOKELAU - TUVALU - YAP - TAIWAN - FR. POLYNESIA - PALAU -
PHILIPPINES - SAMOA - WALLIS-FUTUNA AND PAPUA NEW GUINEA.

A TSUNAMI WATCH IS IN EFFECT FOR
NIUE - INDONESIA - SOLOMON IS. - VANUATU - GUATEMALA -
TONGA - EL SALVADOR - FIJI - COSTA RICA - NICARAGUA -
KERMADEC IS - PANAMA - HONDURAS - PITCAIRN - ECUADOR - HONG
KONG AND NEW ZEALAND.

FOR ALL OTHER PACIFIC AREAS, THIS MESSAGE IS FOR INFORMATION ONLY.

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY
NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE
DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND

ANY ACTIONS TO BE TAKEN IN RESPONSE.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
 TIME - 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY OR	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M
ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M
SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
PEARL HARBOR HI	21.3N	157.9W	2311UTC	1.35FT/0.41M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
LAHAINA HI	20.9N	156.7W	2326UTC	0.95FT/0.29M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
SANTA BARBARA CA	34.4N	119.7W	2336UTC	4.56FT/1.39M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0006UTC	6.14FT/1.87M
ALAMITOS BAY CA	33.7N	118.1W	0006UTC	5.09FT/1.55M
PISMO BEACH CA	35.1N	120.6W	0006UTC	29.30FT/8.93M
SAN DIEGO CA	32.7N	117.2W	0019UTC	2.66FT/0.81M
LOS ANGELES CA	34.1N	118.2W	0023UTC	2.95FT/0.90M
SANTA MONICA CA	34.0N	118.5W	0034UTC	5.61FT/1.71M
POINT REYES CA	38.0N	123.0W	0046UTC	20.47FT/6.24M
SOUTH SPIT CA	40.7N	124.2W	0057UTC	3.54FT/1.08M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER AND COULD ALSO BE A THREAT TO MORE DISTANT COASTS. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THIS CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE THREAT.

FOR ALL AREAS - WHEN NO MAJOR WAVES ARE OBSERVED FOR TWO HOURS AFTER THE ESTIMATED TIME OF ARRIVAL OR DAMAGING WAVES HAVE NOT OCCURRED FOR AT LEAST TWO HOURS THEN LOCAL AUTHORITIES CAN ASSUME THE THREAT IS PASSED. DANGER TO BOATS AND COASTAL STRUCTURES CAN CONTINUE FOR SEVERAL HOURS DUE TO RAPID CURRENTS. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI ACTION THE

ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WARNING AND WATCH AREAS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION		COORDINATES	ARRIVAL TIME	
RUSSIA	MEDNNY IS	54.7N 167.4E	2130Z MAR28	
	UST KAMCHATSK	56.1N 162.6E	2154Z MAR28	
	PETROPAVLOVSK K	53.2N 159.6E	2210Z MAR28	
	URUP IS	46.1N 150.5E	2259Z MAR28	
	SEVERO KURILSK	50.8N 156.1E	2323Z MAR28	
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2234Z MAR28	
HAWAII	NAWILIWILI	22.0N 159.4W	2251Z MAR28	
	HONOLULU	21.3N 157.9W	2305Z MAR28	
JAPAN	HILO	19.7N 155.1W	2315Z MAR28	
	KUSHIRO	42.9N 144.3E	2347Z MAR28	
	HACHINOHE	40.5N 141.5E	0026Z MAR29	
	KATSUURA	35.1N 140.3E	0038Z MAR29	
	SHIMIZU	32.8N 133.0E	0156Z MAR29	
OKINAWA	26.2N 127.8E	0328Z MAR29		
JOHNSTON IS.	JOHNSTON IS.	16.7N 169.5W	2354Z MAR28	
MEXICO	ENSENADA	31.8N 116.8W	0004Z MAR29	
	PUNTA ABREOJOS	26.7N 113.6W	0051Z MAR29	
	CABO SAN LUCAS	22.8N 110.0W	0131Z MAR29	
	SOCORRO	18.8N 111.0W	0146Z MAR29	
	MAZATLAN	23.2N 106.4W	0225Z MAR29	
	MANZANILLO	19.1N 104.3W	0246Z MAR29	
	ACAPULCO	16.9N 99.9W	0330Z MAR29	
	PUERTO MADERO	14.8N 92.5W	0456Z MAR29	
	WAKE IS.	WAKE IS.	19.3N 166.6E	0023Z MAR29
	MARCUS IS.	MARCUS IS.	24.3N 154.0E	0030Z MAR29
PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	0105Z MAR29	
KIRIBATI	CHRISTMAS IS.	2.0N 157.5W	0136Z MAR29	
	MALDEN IS.	3.9S 154.9W	0221Z MAR29	
	KANTON IS.	2.8S 171.7W	0229Z MAR29	
	TARAWA IS.	1.5N 173.0E	0230Z MAR29	
	FLINT IS.	11.4S 151.8W	0325Z MAR29	
MARSHALL IS.	ENIWETOK	11.4N 162.3E	0143Z MAR29	
	KWAJALEIN	8.7N 167.7E	0147Z MAR29	
	MAJURO	7.1N 171.4E	0148Z MAR29	
JARVIS IS.	JARVIS IS.	0.4S 160.1W	0200Z MAR29	
HOWLAND-BAKER	HOWLAND IS.	0.6N 176.6W	0206Z MAR29	
N. MARIANAS	SAIPAN	15.3N 145.8E	0208Z MAR29	
POHNPEI	POHNPEI IS.	7.0N 158.2E	0221Z MAR29	
KOSRAE	KOSRAE IS.	5.5N 163.0E	0221Z MAR29	
GUAM	GUAM	13.4N 144.7E	0229Z MAR29	
COOK ISLANDS	PENRHYN IS.	8.9S 157.8W	0305Z MAR29	
	PUKAPUKA IS.	10.8S 165.9W	0329Z MAR29	
	RAROTONGA	21.2S 159.8W	0449Z MAR29	
NAURU	NAURU	0.5S 166.9E	0306Z MAR29	
CHUUK	CHUUK IS.	7.4N 151.8E	0308Z MAR29	
TOKELAU	NUKUNONU IS.	9.2S 171.8W	0315Z MAR29	
TUVALU	FUNAFUTI IS.	7.9S 178.5E	0317Z MAR29	
YAP	YAP IS.	9.5N 138.1E	0319Z MAR29	
TAIWAN	HUALIEN	24.0N 121.6E	0335Z MAR29	
FR. POLYNESIA	HIVA OA	10.0S 139.0W	0340Z MAR29	
	PAPEETE	17.5S 149.6W	0422Z MAR29	
	RIKITEA	23.1S 135.0W	0543Z MAR29	
PALAU	MALAKAL	7.3N 134.5E	0352Z MAR29	
PHILIPPINES	PALANAN	17.1N 122.6E	0353Z MAR29	
	LEGASPI	13.2N 123.8E	0429Z MAR29	
	DAVAO	6.8N 125.7E	0450Z MAR29	
SAMOA	APIA	13.8S 171.8W	0400Z MAR29	
AMERICAN SAMOA	PAGO PAGO	14.3S 170.7W	0401Z MAR29	

WALLIS-FUTUNA	WALLIS IS.	13.3S	176.3W	0402Z	MAR29	
PAPUA NEW GUINEA	KAVIENG	2.5S	150.7E	0407Z	MAR29	
	MANUS IS.	2.0S	147.5E	0414Z	MAR29	
	RABAU	4.2S	152.3E	0424Z	MAR29	
	KIETA	6.1S	155.6E	0444Z	MAR29	
	VANIMO	2.6S	141.3E	0445Z	MAR29	
	AMUN	6.0S	154.7E	0448Z	MAR29	
	WEWAK	3.5S	143.6E	0455Z	MAR29	
	MADANG	5.2S	145.8E	0506Z	MAR29	
	LAE	6.8S	147.0E	0529Z	MAR29	
	PORT MORESBY	9.3S	146.9E	0702Z	MAR29	
NIUE	NIUE IS.	19.0S	170.0W	0434Z	MAR29	
INDONESIA	WARSA	0.6S	135.8E	0441Z	MAR29	
	GEME	4.6N	126.8E	0445Z	MAR29	
	MANOKWARI	0.8S	134.2E	0446Z	MAR29	
	JAYAPURA	2.4S	140.8E	0448Z	MAR29	
	BEREBERE	2.5N	128.7E	0456Z	MAR29	
	SORONG	0.8S	131.1E	0503Z	MAR29	
	PATANI	0.4N	128.8E	0525Z	MAR29	
	SOLOMON IS.	GHATERE	7.8S	159.2E	0448Z	MAR29
		PANGGOE	6.9S	157.2E	0448Z	MAR29
		AUKI	8.8S	160.6E	0453Z	MAR29
KIRAKIRA		10.4S	161.9E	0455Z	MAR29	
FALAMAE		7.4S	155.6E	0458Z	MAR29	
HONIARA		9.3S	160.0E	0514Z	MAR29	
MUNDA		8.4S	157.2E	0515Z	MAR29	
VANUATU		ESPERITU SANTO	15.1S	167.3E	0457Z	MAR29
		ANATOM IS.	20.2S	169.9E	0537Z	MAR29
GUATEMALA		SIPICATE	13.9N	91.2W	0505Z	MAR29
TONGA	NUKUALOFA	21.0S	175.2W	0515Z	MAR29	
EL SALVADOR	ACAJUTLA	13.6N	89.8W	0516Z	MAR29	
FIJI	SUVA	18.1S	178.4E	0530Z	MAR29	
COSTA RICA	CABO SAN ELENA	10.9N	86.0W	0530Z	MAR29	
	CABO MATAPALO	8.4N	83.3W	0553Z	MAR29	
	PUERTO QUEPOS	9.4N	84.2W	0601Z	MAR29	
NICARAGUA	SAN JUAN DL SUR	11.2N	85.9W	0546Z	MAR29	
	PUERTO SANDINO	12.2N	86.8W	0618Z	MAR29	
	CORINTO	12.5N	87.2W	0621Z	MAR29	
KERMADEC IS	RAOUL IS.	29.2S	177.9W	0557Z	MAR29	
	PANAMA	PUNTA BURICA	8.0N	82.9W	0603Z	MAR29
		PUNTA MALA	7.5N	80.0W	0651Z	MAR29
		PUERTO PINA	7.4N	78.0W	0704Z	MAR29
	BALBOA HTS.	9.0N	79.6W	0813Z	MAR29	
HONDURAS	AMAPALA	13.2N	87.6W	0607Z	MAR29	
PITCAIRN	PITCAIRN IS.	25.1S	130.1W	0608Z	MAR29	
ECUADOR	BALTRA IS.	0.5S	90.3W	0640Z	MAR29	
	ESMERELDAS	1.2N	79.8W	0720Z	MAR29	
	LA LIBERTAD	2.2S	81.2W	0741Z	MAR29	
	HONG KONG	HONG KONG	22.3N	114.2E	0705Z	MAR29
NEW ZEALAND	EAST CAPE	37.7S	178.5E	0707Z	MAR29	
	NORTH CAPE	34.4S	173.3E	0730Z	MAR29	
	GISBORNE	38.7S	178.0E	0734Z	MAR29	
	NAPIER	39.5S	176.9E	0805Z	MAR29	
	AUCKLAND-W	37.1S	174.2E	0813Z	MAR29	
	WELLINGTON	41.3S	174.8E	0826Z	MAR29	
	AUCKLAND-E	36.7S	175.0E	0829Z	MAR29	
	LYTTELTON	43.6S	172.7E	0936Z	MAR29	
	NEW PLYMOUTH	39.1S	174.1E	0947Z	MAR29	
	DUNEDIN	45.9S	170.5E	0947Z	MAR29	
	NELSON	41.3S	173.3E	1000Z	MAR29	
	MILFORD SOUND	44.6S	167.9E	1010Z	MAR29	
	WESTPORT	41.8S	171.6E	1029Z	MAR29	
	BLUFF	46.6S	168.3E	1107Z	MAR29	

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THE WEST COAST/ALASKA TSUNAMI WARNING CENTER WILL ISSUE MESSAGES

FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON/ CALIFORNIA.

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PTWC Pacific Message #9

WEPA40 PHEB 290206
TSUPAC

TSUNAMI BULLETIN NUMBER 9
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 0206Z 29 MAR 2012

THIS BULLETIN APPLIES TO AREAS WITHIN AND BORDERING THE PACIFIC OCEAN AND ADJACENT SEAS... EXCEPT ALASKA... BRITISH COLUMBIA... WASHINGTON... OREGON AND CALIFORNIA.

...A TSUNAMI WARNING AND WATCH ARE IN EFFECT...

A TSUNAMI WARNING IS IN EFFECT FOR
RUSSIA - MIDWAY IS. - HAWAII - JAPAN - JOHNSTON IS. -
MEXICO - WAKE IS. - MARCUS IS. - PALMYRA IS. - KIRIBATI -
MARSHALL IS. - JARVIS IS. - HOWLAND-BAKER - N. MARIANAS -
POHNPEI - KOSRAE - GUAM - COOK ISLANDS - NAURU - CHUUK -
TOKELAU - TUVALU - YAP - TAIWAN - FR. POLYNESIA - PALAU -
PHILIPPINES - SAMOA - WALLIS-FUTUNA - PAPUA NEW GUINEA -
NIUE - INDONESIA - SOLOMON IS. - VANUATU AND GUATEMALA.

A TSUNAMI WATCH IS IN EFFECT FOR
TONGA - EL SALVADOR - FIJI - COSTA RICA - NICARAGUA -
KERMADEC IS - PANAMA - HONDURAS - PITCAIRN - ECUADOR - HONG
KONG - NEW ZEALAND - COLOMBIA - NEW CALEDONIA - CHILE AND
PERU.

FOR ALL OTHER PACIFIC AREAS, THIS MESSAGE IS FOR INFORMATION ONLY.

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PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 9.2
TIME - 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M

SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0006UTC	6.14FT/1.87M
ALAMITOS BAY CA	33.7N	118.1W	0006UTC	5.09FT/1.55M
PISMO BEACH CA	35.1N	120.6W	0006UTC	29.30FT/8.93M
SAN DIEGO CA	32.7N	117.2W	0019UTC	2.66FT/0.81M
LOS ANGELES CA	34.1N	118.2W	0023UTC	2.95FT/0.90M
POINT REYES CA	38.0N	123.0W	0046UTC	20.47FT/6.24M
SOUTH SPIT CA	40.7N	124.2W	0057UTC	3.54FT/1.08M
SANTA MONICA CA	34.0N	118.5W	0110UTC	9.25FT/2.82M
PEARL HARBOR HI	21.3N	157.9W	0110UTC	1.54FT/0.47M
LAHAINA HI	20.9N	156.7W	0123UTC	0.98FT/0.30M
SANTA BARBARA CA	34.4N	119.7W	0139UTC	5.35FT/1.63M
CHIGNIK BAY AK	56.4N	158.2W	0132UTC	8.89FT/2.71M
TOKE POINT WA	46.7N	123.9W	0153UTC	3.74FT/1.14M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED. IT MAY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER AND COULD ALSO BE A THREAT TO MORE DISTANT COASTS. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THIS CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE THREAT.

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LOCATION		COORDINATES	ARRIVAL TIME
RUSSIA	MEDNNY IS	54.7N 167.4E	2130Z MAR28
	UST KAMCHATSK	56.1N 162.6E	2154Z MAR28
	PETROPAVLOVSK K	53.2N 159.6E	2210Z MAR28
	URUP IS	46.1N 150.5E	2259Z MAR28
	SEVERO KURILSK	50.8N 156.1E	2323Z MAR28
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2234Z MAR28
HAWAII	NAWILIWILI	22.0N 159.4W	2251Z MAR28
	HONOLULU	21.3N 157.9W	2305Z MAR28
	HILO	19.7N 155.1W	2315Z MAR28
JAPAN	KUSHIRO	42.9N 144.3E	2347Z MAR28
	HACHINOHE	40.5N 141.5E	0026Z MAR29
	KATSUURA	35.1N 140.3E	0038Z MAR29
	SHIMIZU	32.8N 133.0E	0156Z MAR29
	OKINAWA	26.2N 127.8E	0328Z MAR29

JOHNSTON IS.	JOHNSTON IS.	16.7N	169.5W	2354Z	MAR28
MEXICO	ENSENADA	31.8N	116.8W	0004Z	MAR29
	PUNTA ABREOJOS	26.7N	113.6W	0051Z	MAR29
	CABO SAN LUCAS	22.8N	110.0W	0131Z	MAR29
	SOCORRO	18.8N	111.0W	0146Z	MAR29
	MAZATLAN	23.2N	106.4W	0225Z	MAR29
	MANZANILLO	19.1N	104.3W	0246Z	MAR29
	ACAPULCO	16.9N	99.9W	0330Z	MAR29
	PUERTO MADERO	14.8N	92.5W	0456Z	MAR29
WAKE IS.	WAKE IS.	19.3N	166.6E	0023Z	MAR29
MARCUS IS.	MARCUS IS.	24.3N	154.0E	0030Z	MAR29
PALMYRA IS.	PALMYRA IS.	6.3N	162.4W	0105Z	MAR29
KIRIBATI	CHRISTMAS IS.	2.0N	157.5W	0136Z	MAR29
	MALDEN IS.	3.9S	154.9W	0221Z	MAR29
	KANTON IS.	2.8S	171.7W	0229Z	MAR29
	TARAWA IS.	1.5N	173.0E	0230Z	MAR29
	FLINT IS.	11.4S	151.8W	0325Z	MAR29
MARSHALL IS.	ENIWETOK	11.4N	162.3E	0143Z	MAR29
	KWAJALEIN	8.7N	167.7E	0147Z	MAR29
	MAJURO	7.1N	171.4E	0148Z	MAR29
JARVIS IS.	JARVIS IS.	0.4S	160.1W	0200Z	MAR29
HOWLAND-BAKER	HOWLAND IS.	0.6N	176.6W	0206Z	MAR29
N. MARIANAS	SAIPAN	15.3N	145.8E	0208Z	MAR29
POHNPEI	POHNPEI IS.	7.0N	158.2E	0221Z	MAR29
KOSRAE	KOSRAE IS.	5.5N	163.0E	0221Z	MAR29
GUAM	GUAM	13.4N	144.7E	0229Z	MAR29
COOK ISLANDS	PENRHYN IS.	8.9S	157.8W	0305Z	MAR29
	PUKAPUKA IS.	10.8S	165.9W	0329Z	MAR29
	RAROTONGA	21.2S	159.8W	0449Z	MAR29
NAURU	NAURU	0.5S	166.9E	0306Z	MAR29
CHUUK	CHUUK IS.	7.4N	151.8E	0308Z	MAR29
TOKELAU	NUKUNONU IS.	9.2S	171.8W	0315Z	MAR29
TUVALU	FUNAFUTI IS.	7.9S	178.5E	0317Z	MAR29
YAP	YAP IS.	9.5N	138.1E	0319Z	MAR29
TAIWAN	HUALIEN	24.0N	121.6E	0335Z	MAR29
FR. POLYNESIA	HIVA OA	10.0S	139.0W	0340Z	MAR29
	PAPEETE	17.5S	149.6W	0422Z	MAR29
	RIKITEA	23.1S	135.0W	0543Z	MAR29
PALAU	MALAKAL	7.3N	134.5E	0352Z	MAR29
PHILIPPINES	PALANAN	17.1N	122.6E	0353Z	MAR29
	LEGASPI	13.2N	123.8E	0429Z	MAR29
	DAVAO	6.8N	125.7E	0450Z	MAR29
SAMOA	APIA	13.8S	171.8W	0400Z	MAR29
AMERICAN SAMOA	PAGO PAGO	14.3S	170.7W	0401Z	MAR29
WALLIS-FUTUNA	WALLIS IS.	13.3S	176.3W	0402Z	MAR29
PAPUA NEW GUINEA	KAVIENG	2.5S	150.7E	0407Z	MAR29
	MANUS IS.	2.0S	147.5E	0414Z	MAR29
	RABAU	4.2S	152.3E	0424Z	MAR29
	KIETA	6.1S	155.6E	0444Z	MAR29
	VANIMO	2.6S	141.3E	0445Z	MAR29
	AMUN	6.0S	154.7E	0448Z	MAR29
	WEWAK	3.5S	143.6E	0455Z	MAR29
	MADANG	5.2S	145.8E	0506Z	MAR29
	LAE	6.8S	147.0E	0529Z	MAR29
	PORT MORESBY	9.3S	146.9E	0702Z	MAR29
NIUE	NIUE IS.	19.0S	170.0W	0434Z	MAR29
INDONESIA	WARSA	0.6S	135.8E	0441Z	MAR29
	GEME	4.6N	126.8E	0445Z	MAR29
	MANOKWARI	0.8S	134.2E	0446Z	MAR29
	JAYAPURA	2.4S	140.8E	0448Z	MAR29
	BEREBERE	2.5N	128.7E	0456Z	MAR29
	SORONG	0.8S	131.1E	0503Z	MAR29
	PATANI	0.4N	128.8E	0525Z	MAR29
SOLOMON IS.	GHATERE	7.8S	159.2E	0448Z	MAR29
	PANGGOE	6.9S	157.2E	0448Z	MAR29
	AUKI	8.8S	160.6E	0453Z	MAR29
	KIRAKIRA	10.4S	161.9E	0455Z	MAR29
	FALAMAE	7.4S	155.6E	0458Z	MAR29

	HONIARA	9.3S	160.0E	0514Z	MAR29
	MUNDA	8.4S	157.2E	0515Z	MAR29
VANUATU	ESPERITU SANTO	15.1S	167.3E	0457Z	MAR29
	ANATOM IS.	20.2S	169.9E	0537Z	MAR29
GUATEMALA	SIPICATE	13.9N	91.2W	0505Z	MAR29
TONGA	NUKUALOFA	21.0S	175.2W	0515Z	MAR29
EL SALVADOR	ACAJUTLA	13.6N	89.8W	0516Z	MAR29
FIJI	SUVA	18.1S	178.4E	0530Z	MAR29
COSTA RICA	CABO SAN ELENA	10.9N	86.0W	0530Z	MAR29
	CABO MATAPALO	8.4N	83.3W	0553Z	MAR29
	PUERTO QUEPOS	9.4N	84.2W	0601Z	MAR29
NICARAGUA	SAN JUAN DL SUR	11.2N	85.9W	0546Z	MAR29
	PUERTO SANDINO	12.2N	86.8W	0618Z	MAR29
	CORINTO	12.5N	87.2W	0621Z	MAR29
KERMADEC IS	RAOUL IS.	29.2S	177.9W	0557Z	MAR29
PANAMA	PUNTA BURICA	8.0N	82.9W	0603Z	MAR29
	PUNTA MALA	7.5N	80.0W	0651Z	MAR29
	PUERTO PINA	7.4N	78.0W	0704Z	MAR29
	BALBOA HTS.	9.0N	79.6W	0813Z	MAR29
HONDURAS	AMAPALA	13.2N	87.6W	0607Z	MAR29
PITCAIRN	PITCAIRN IS.	25.1S	130.1W	0608Z	MAR29
ECUADOR	BALTRA IS.	0.5S	90.3W	0640Z	MAR29
	ESMERELDAS	1.2N	79.8W	0720Z	MAR29
	LA LIBERTAD	2.2S	81.2W	0741Z	MAR29
HONG KONG	HONG KONG	22.3N	114.2E	0705Z	MAR29
NEW ZEALAND	EAST CAPE	37.7S	178.5E	0707Z	MAR29
	NORTH CAPE	34.4S	173.3E	0730Z	MAR29
	GISBORNE	38.7S	178.0E	0734Z	MAR29
	NAPIER	39.5S	176.9E	0805Z	MAR29
	AUCKLAND-W	37.1S	174.2E	0813Z	MAR29
	WELLINGTON	41.3S	174.8E	0826Z	MAR29
	AUCKLAND-E	36.7S	175.0E	0829Z	MAR29
	LYTTELTON	43.6S	172.7E	0936Z	MAR29
	NEW PLYMOUTH	39.1S	174.1E	0947Z	MAR29
	DUNEDIN	45.9S	170.5E	0947Z	MAR29
	NELSON	41.3S	173.3E	1000Z	MAR29
	MILFORD SOUND	44.6S	167.9E	1010Z	MAR29
	WESTPORT	41.8S	171.6E	1029Z	MAR29
	BLUFF	46.6S	168.3E	1107Z	MAR29

COLOMBIA	BAHIA SOLANO	6.3N	77.4W	0711Z	MAR29
	TUMACO	1.8N	78.9W	0731Z	MAR29
	BUENAVENTURA	3.8N	77.2W	0813Z	MAR29
NEW CALEDONIA	NOUMEA	22.3S	166.5E	0719Z	MAR29
PERU	TALARA	4.6S	81.5W	0803Z	MAR29
	PIMENTEL	6.9S	80.0W	0918Z	MAR29
	CHIMBOTE	9.0S	78.8W	0925Z	MAR29
	LA PUNTA	12.1S	77.2W	0928Z	MAR29
	SAN JUAN	15.3S	75.2W	0943Z	MAR29
	MOLLENDO	17.1S	72.0W	1014Z	MAR29
CHILE	EASTER IS.	27.1S	109.4W	0745Z	MAR29
	IQUIQUE	20.2S	70.1W	1032Z	MAR29
	ARICA	18.5S	70.3W	1037Z	MAR29
	ANTOFAGASTA	23.3S	70.4W	1055Z	MAR29
	CALDERA	27.1S	70.8W	1111Z	MAR29
	COQUIMBO	29.9S	71.4W	1127Z	MAR29
	VALPARAISO	33.0S	71.6W	1146Z	MAR29
	TALCAHUANO	36.7S	73.1W	1229Z	MAR29
	CORRAL	39.8S	73.5W	1233Z	MAR29
	GOLFO DE PENAS	47.1S	74.9W	1324Z	MAR29
	PUERTO MONTT	41.5S	73.0W	1538Z	MAR29
	PUERTO WILLIAMS	54.8S	68.2W	1550Z	MAR29
	PUNTA ARENAS	53.2S	70.9W	1611Z	MAR29

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT.
THIS ALERT WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

THE WEST COAST/ALASKA TSUNAMI WARNING CENTER WILL ISSUE MESSAGES
FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON/ CALIFORNIA.

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PTWC Pacific Message #10

WEPA40 PHEB 290307
 TSUPAC

TSUNAMI BULLETIN NUMBER 10
 PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
 ISSUED AT 0307Z 29 MAR 2012

THIS BULLETIN APPLIES TO AREAS WITHIN AND BORDERING THE PACIFIC OCEAN AND ADJACENT SEAS... EXCEPT ALASKA... BRITISH COLUMBIA... WASHINGTON... OREGON AND CALIFORNIA.

...A TSUNAMI WARNING AND WATCH ARE IN EFFECT...

A TSUNAMI WARNING IS IN EFFECT FOR
 RUSSIA - MIDWAY IS. - HAWAII - JAPAN - JOHNSTON IS. -
 MEXICO - WAKE IS. - MARCUS IS. - PALMYRA IS. - KIRIBATI -
 MARSHALL IS. - JARVIS IS. - HOWLAND-BAKER - N. MARIANAS -
 POHNPEI - KOSRAE - GUAM - COOK ISLANDS - NAURU - CHUUK -
 TOKELAU - TUVALU - YAP - TAIWAN - FR. POLYNESIA - PALAU -
 PHILIPPINES - SAMOA - WALLIS-FUTUNA - PAPUA NEW GUINEA -
 NIUE - INDONESIA - SOLOMON IS. - VANUATU - GUATEMALA -
 TONGA - EL SALVADOR - FIJI - COSTA RICA - NICARAGUA -
 KERMADEC IS - PANAMA AND HONDURAS.

A TSUNAMI WATCH IS IN EFFECT FOR
 PITCAIRN - ECUADOR - HONG KONG - NEW ZEALAND - COLOMBIA -
 NEW CALEDONIA - CHILE - PERU AND AUSTRALIA.

FOR ALL OTHER PACIFIC AREAS, THIS MESSAGE IS FOR INFORMATION ONLY.

THIS BULLETIN IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND ANY ACTIONS TO BE TAKEN IN RESPONSE.

PRELIMINARY EARTHQUAKE PARAMETERS
 MAGNITUDE - 9.2
 TIME - 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
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SANTA MONICA CA	34.0N	118.5W	0110UTC	9.25FT/2.82M
SANTA BARBARA CA	34.4N	119.7W	0139UTC	5.35FT/1.63M
CHIGNIK BAY AK	56.4N	158.2W	0132UTC	8.89FT/2.71M
TOKE POINT WA	46.7N	123.9W	0153UTC	3.74FT/1.14M
PEARL HARBOR HI	21.3N	157.9W	0204UTC	1.74FT/0.53M
LAHAINA HI	20.9N	156.7W	0229UTC	1.31FT/0.40M

TIME - TIME OF MEASUREMENT

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VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

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RUSSIA	MEDNNY IS	54.7N 167.4E	2130Z MAR28
	UST KAMCHATSK	56.1N 162.6E	2154Z MAR28
	PETROPAVLOVSK K	53.2N 159.6E	2210Z MAR28
	URUP IS	46.1N 150.5E	2259Z MAR28
	SEVERO KURILSK	50.8N 156.1E	2323Z MAR28
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2234Z MAR28
HAWAII	NAWILIWILI	22.0N 159.4W	2251Z MAR28
	HONOLULU	21.3N 157.9W	2305Z MAR28
	HILO	19.7N 155.1W	2315Z MAR28
JAPAN	KUSHIRO	42.9N 144.3E	2347Z MAR28
	HACHINOHE	40.5N 141.5E	0026Z MAR29
	KATSUURA	35.1N 140.3E	0038Z MAR29
	SHIMIZU	32.8N 133.0E	0156Z MAR29
	OKINAWA	26.2N 127.8E	0328Z MAR29
JOHNSTON IS.	JOHNSTON IS.	16.7N 169.5W	2354Z MAR28
MEXICO	ENSENADA	31.8N 116.8W	0004Z MAR29
	PUNTA ABREOJOS	26.7N 113.6W	0051Z MAR29
	CABO SAN LUCAS	22.8N 110.0W	0131Z MAR29
	SOCORRO	18.8N 111.0W	0146Z MAR29
	MAZATLAN	23.2N 106.4W	0225Z MAR29
	MANZANILLO	19.1N 104.3W	0246Z MAR29
	ACAPULCO	16.9N 99.9W	0330Z MAR29
	PUERTO MADERO	14.8N 92.5W	0456Z MAR29
WAKE IS.	WAKE IS.	19.3N 166.6E	0023Z MAR29
MARCUS IS.	MARCUS IS.	24.3N 154.0E	0030Z MAR29
PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	0105Z MAR29
KIRIBATI	CHRISTMAS IS.	2.0N 157.5W	0136Z MAR29
	MALDEN IS.	3.9S 154.9W	0221Z MAR29

	KANTON IS.	2.8S	171.7W	0229Z	MAR29
	TARAWA IS.	1.5N	173.0E	0230Z	MAR29
	FLINT IS.	11.4S	151.8W	0325Z	MAR29
MARSHALL IS.	ENIWETOK	11.4N	162.3E	0143Z	MAR29
	KWAJALEIN	8.7N	167.7E	0147Z	MAR29
	MAJURO	7.1N	171.4E	0148Z	MAR29
JARVIS IS.	JARVIS IS.	0.4S	160.1W	0200Z	MAR29
HOWLAND-BAKER	HOWLAND IS.	0.6N	176.6W	0206Z	MAR29
N. MARIANAS	SAIPAN	15.3N	145.8E	0208Z	MAR29
POHNPEI	POHNPEI IS.	7.0N	158.2E	0221Z	MAR29
KOSRAE	KOSRAE IS.	5.5N	163.0E	0221Z	MAR29
GUAM	GUAM	13.4N	144.7E	0229Z	MAR29
COOK ISLANDS	PENRHYN IS.	8.9S	157.8W	0305Z	MAR29
	PUKAPUKA IS.	10.8S	165.9W	0329Z	MAR29
	RAROTONGA	21.2S	159.8W	0449Z	MAR29
NAURU	NAURU	0.5S	166.9E	0306Z	MAR29
CHUUK	CHUUK IS.	7.4N	151.8E	0308Z	MAR29
TOKELAU	NUKUNONU IS.	9.2S	171.8W	0315Z	MAR29
TUVALU	FUNAFUTI IS.	7.9S	178.5E	0317Z	MAR29
YAP	YAP IS.	9.5N	138.1E	0319Z	MAR29
TAIWAN	HUALIEN	24.0N	121.6E	0335Z	MAR29
FR. POLYNESIA	HIVA OA	10.0S	139.0W	0340Z	MAR29
	PAPEETE	17.5S	149.6W	0422Z	MAR29
	RIKITEA	23.1S	135.0W	0543Z	MAR29
PALAU	MALAKAL	7.3N	134.5E	0352Z	MAR29
PHILIPPINES	PALANAN	17.1N	122.6E	0353Z	MAR29
	LEGASPI	13.2N	123.8E	0429Z	MAR29
	DAVAO	6.8N	125.7E	0450Z	MAR29
SAMOA	APIA	13.8S	171.8W	0400Z	MAR29
AMERICAN SAMOA	PAGO PAGO	14.3S	170.7W	0401Z	MAR29
WALLIS-FUTUNA	WALLIS IS.	13.3S	176.3W	0402Z	MAR29
PAPUA NEW GUINEA	KAVIENG	2.5S	150.7E	0407Z	MAR29
	MANUS IS.	2.0S	147.5E	0414Z	MAR29
	RABAU	4.2S	152.3E	0424Z	MAR29
	KIETA	6.1S	155.6E	0444Z	MAR29
	VANIMO	2.6S	141.3E	0445Z	MAR29
	AMUN	6.0S	154.7E	0448Z	MAR29
	WEWAK	3.5S	143.6E	0455Z	MAR29
	MADANG	5.2S	145.8E	0506Z	MAR29
	LAE	6.8S	147.0E	0529Z	MAR29
	PORT MORESBY	9.3S	146.9E	0702Z	MAR29
NIUE	NIUE IS.	19.0S	170.0W	0434Z	MAR29
INDONESIA	WARSA	0.6S	135.8E	0441Z	MAR29
	GEME	4.6N	126.8E	0445Z	MAR29
	MANOKWARI	0.8S	134.2E	0446Z	MAR29
	JAYAPURA	2.4S	140.8E	0448Z	MAR29
	BEREBERE	2.5N	128.7E	0456Z	MAR29
	SORONG	0.8S	131.1E	0503Z	MAR29
	PATANI	0.4N	128.8E	0525Z	MAR29
SOLOMON IS.	GHATERE	7.8S	159.2E	0448Z	MAR29
	PANGGOE	6.9S	157.2E	0448Z	MAR29
	AUKI	8.8S	160.6E	0453Z	MAR29
	KIRAKIRA	10.4S	161.9E	0455Z	MAR29
	FALAMAE	7.4S	155.6E	0458Z	MAR29
	HONIARA	9.3S	160.0E	0514Z	MAR29
	MUNDA	8.4S	157.2E	0515Z	MAR29
VANUATU	ESPERITU SANTO	15.1S	167.3E	0457Z	MAR29
	ANATOM IS.	20.2S	169.9E	0537Z	MAR29
GUATEMALA	SIPICATE	13.9N	91.2W	0505Z	MAR29
TONGA	NUKUALOFA	21.0S	175.2W	0515Z	MAR29
EL SALVADOR	ACAJUTLA	13.6N	89.8W	0516Z	MAR29
FIJI	SUVA	18.1S	178.4E	0530Z	MAR29
COSTA RICA	CABO SAN ELENA	10.9N	86.0W	0530Z	MAR29
	CABO MATAPALO	8.4N	83.3W	053Z	MAR29
	PUERTO QUEPOS	9.4N	84.2W	0601Z	MAR29
NICARAGUA	SAN JUAN DL SUR	11.2N	85.9W	0546Z	MAR29
	PUERTO SANDINO	12.2N	86.8W	0618Z	MAR29
	CORINTO	12.5N	87.2W	0621Z	MAR29

KERMADEC IS	RAOUL IS.	29.2S	177.9W	0557Z	MAR29
PANAMA	PUNTA BURICA	8.0N	82.9W	0603Z	MAR29
	PUNTA MALA	7.5N	80.0W	0651Z	MAR29
	PUERTO PINA	7.4N	78.0W	0704Z	MAR29
	BALBOA HTS.	9.0N	79.6W	0813Z	MAR29
HONDURAS	AMAPALA	13.2N	87.6W	0607Z	MAR29
PITCAIRN	PITCAIRN IS.	25.1S	130.1W	0608Z	MAR29
ECUADOR	BALTRA IS.	0.5S	90.3W	0640Z	MAR29
	ESMERELDAS	1.2N	79.8W	0720Z	MAR29
	LA LIBERTAD	2.2S	81.2W	0741Z	MAR29
HONG KONG	HONG KONG	22.3N	114.2E	0705Z	MAR29
NEW ZEALAND	EAST CAPE	37.7S	178.5E	0707Z	MAR29
	NORTH CAPE	34.4S	173.3E	0730Z	MAR29
	GISBORNE	38.7S	178.0E	0734Z	MAR29
	NAPIER	39.5S	176.9E	0805Z	MAR29
	AUCKLAND-W	37.1S	174.2E	0813Z	MAR29
	WELLINGTON	41.3S	174.8E	0826Z	MAR29
	AUCKLAND-E	36.7S	175.0E	0829Z	MAR29
	LYTTELTON	43.6S	172.7E	0936Z	MAR29
	NEW PLYMOUTH	39.1S	174.1E	0947Z	MAR29
	DUNEDIN	45.9S	170.5E	0947Z	MAR29
	NELSON	41.3S	173.3E	1000Z	MAR29
	MILFORD SOUND	44.6S	167.9E	1010Z	MAR29
	WESTPORT	41.8S	171.6E	1029Z	MAR29
	BLUFF	46.6S	168.3E	1107Z	MAR29
COLOMBIA	BAHIA SOLANO	6.3N	77.4W	0711Z	MAR29
	TUMACO	1.8N	78.9W	0731Z	MAR29
	BUENAVENTURA	3.8N	77.2W	0813Z	MAR29
NEW CALEDONIA	NOUMEA	22.3S	166.5E	0719Z	MAR29
PERU	TALARA	4.6S	81.5W	0803Z	MAR29
	PIMENTEL	6.9S	80.0W	0918Z	MAR29
	CHIMBOTE	9.0S	78.8W	0925Z	MAR29
	LA PUNTA	12.1S	77.2W	0928Z	MAR29
	SAN JUAN	15.3S	75.2W	0943Z	MAR29
	MOLLENDO	17.1S	72.0W	1014Z	MAR29
CHILE	EASTER IS.	27.1S	109.4W	0745Z	MAR29
	IQUIQUE	20.2S	70.1W	1032Z	MAR29
	ARICA	18.5S	70.3W	1037Z	MAR29
	ANTOFAGASTA	23.3S	70.4W	1055Z	MAR29
	CALDERA	27.1S	70.8W	1111Z	MAR29
	COQUIMBO	29.9S	71.4W	1127Z	MAR29
	VALPARAISO	33.0S	71.6W	1146Z	MAR29
	TALCAHUANO	36.7S	73.1W	1229Z	MAR29
	CORRAL	39.8S	73.5W	1233Z	MAR29
	GOLFO DE PENAS	47.1S	74.9W	1324Z	MAR29
	PUERTO MONTT	41.5S	73.0W	1538Z	MAR29
	PUERTO WILLIAMS	54.8S	68.2W	1550Z	MAR29
	PUNTA ARENAS	53.2S	70.9W	1611Z	MAR29
AUSTRALIA	CAIRNS	16.7S	145.8E	0808Z	MAR29
	BRISBANE	27.2S	153.3E	0840Z	MAR29
	SYDNEY	33.9S	151.4E	0910Z	MAR29
	GLADSTONE	23.8S	151.4E	0945Z	MAR29
	HOBART	43.3S	147.6E	1043Z	MAR29
	MACKAY	21.1S	149.3E	1158Z	MAR29

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT.
THIS ALERT WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

THE WEST COAST/ALASKA TSUNAMI WARNING CENTER WILL ISSUE MESSAGES
FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON/ CALIFORNIA.

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PTWC Hawaii Messages

The following messages, created for the PACIFEX 12 tsunami exercise, are representative of the Hawaii products that would be issued by the Pacific Tsunami Warning Center in response to a magnitude 9.2 earthquake and tsunami originating at 58.0°N, 150.5°W.

PTWC Hawaii Message #1

WEHW40 PHEB 281810
 TSUHWX
 HIZ001>003-005>009-012>014-016>021-023>026-281910-
 /T.NEW.PHEB.TS.A.0135.120328T1810Z-120328T1910Z/

BULLETIN
 TSUNAMI MESSAGE NUMBER 1
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 810 AM HST WED MAR 28 2012

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

TSUNAMI WATCH.

A TSUNAMI WATCH IS IN EFFECT FOR THE STATE OF HAWAII.

PRELIMINARY EARTHQUAKE PARAMETERS
 MAGNITUDE - 9.2
 TIME - 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

EVALUATION
 BASED ON ALL AVAILABLE DATA A TSUNAMI MAY HAVE BEEN GENERATED BY
 THIS EARTHQUAKE THAT COULD BE DESTRUCTIVE ON COASTAL AREAS EVEN
 FAR FROM THE EPICENTER. AN INVESTIGATION IS UNDERWAY TO DETERMINE
 IF THERE IS A TSUNAMI THREAT TO HAWAII.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL IN HAWAII FOLLOW.
 TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS
 SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

NAWILIWILI	1251 HST MAR 28	HILO	1315 HST MAR 28
HONOLULU	1305 HST MAR 28		

BULLETINS WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

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PTWC Hawaii Message #2

WEHW40 PHEB 281909
 TSUHWX
 HIZ001>003-005>009-012>014-016>021-023>026-282009-
 /T.CON.PHEB.TS.A.0135.120328T1909Z-120328T2009Z/

BULLETIN
 TSUNAMI MESSAGE NUMBER 2
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 909 AM HST WED MAR 28 2012

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

TSUNAMI WATCH SUPPLEMENT.

A TSUNAMI WATCH CONTINUES IN EFFECT FOR THE STATE OF HAWAII.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
 TIME - 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
SEWARD AK	60.1N	149.4W	1846UTC	18.80FT/5.73M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

BASED ON ALL AVAILABLE DATA A TSUNAMI MAY HAVE BEEN GENERATED BY THIS EARTHQUAKE THAT COULD BE DESTRUCTIVE ON COASTAL AREAS EVEN FAR FROM THE EPICENTER. AN INVESTIGATION IS UNDERWAY TO DETERMINE IF THERE IS A TSUNAMI THREAT TO HAWAII.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL IN HAWAII FOLLOW.

TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.
 NAWILIWILI 1251 HST MAR 28 HILO 1315 HST MAR 28
 HONOLULU 1305 HST MAR 28

BULLETINS WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

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PTWC Hawaii Message #3

WEHW40 PHEB 282007
 TSUHWX
 HIZ001>003-005>009-012>014-016>021-023>026-282107-
 /T.CON.PHEB.TS.A.0135.120328T2007Z-120328T2107Z/

BULLETIN

TSUNAMI MESSAGE NUMBER 3
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 1007 AM HST WED MAR 28 2012

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

TSUNAMI WATCH SUPPLEMENT.

A TSUNAMI WATCH CONTINUES IN EFFECT FOR THE STATE OF HAWAII.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
 TIME - 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
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LOCATION	LAT	LONG	TIME	AMPL
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M
SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	1959UTC	2.00FT/0.61M
KING COVE AK	55.1N	162.3W	2000UTC	0.36FT/0.11M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

BASED ON ALL AVAILABLE DATA A TSUNAMI MAY HAVE BEEN GENERATED BY THIS EARTHQUAKE THAT COULD BE DESTRUCTIVE ON COASTAL AREAS EVEN FAR FROM THE EPICENTER. AN INVESTIGATION IS UNDERWAY TO DETERMINE IF THERE IS A TSUNAMI THREAT TO HAWAII.

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL IN HAWAII FOLLOW.
TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

NAWILIWILI 1251 HST MAR 28 HILO 1315 HST MAR 28
HONOLULU 1305 HST MAR 28

BULLETINS WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

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PTWC Hawaii Message #4

WEHW40 PHEB 282109
TSUHWX
HIZ001>003-005>009-012>014-016>021-023>026-282209-
/T.NEW.PHEB.TS.W.0135.120328T2109Z-120328T2209Z/

BULLETIN - EAS ACTIVATION REQUESTED
TSUNAMI MESSAGE NUMBER 4
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1109 AM HST WED MAR 28 2012

A TSUNAMI WARNING IS IN EFFECT.

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

...TSUNAMI WARNING SUPPLEMENT...

A TSUNAMI WARNING IS IN EFFECT FOR THE STATE OF HAWAII.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
TIME - 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LONG	TIME	AMPL
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M

SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
ATKA AK	52.2N	174.2W	2053UTC	0.66FT/0.20M
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2059UTC	2.43FT/0.74M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE ALONG COASTLINES OF ALL ISLANDS IN THE STATE OF HAWAII. URGENT ACTION SHOULD BE TAKEN TO PROTECT LIVES AND PROPERTY.

A TSUNAMI IS A SERIES OF LONG OCEAN WAVES. EACH INDIVIDUAL WAVE CREST CAN LAST 5 TO 15 MINUTES OR MORE AND EXTENSIVELY FLOOD COASTAL AREAS. THE DANGER CAN CONTINUE FOR MANY HOURS AFTER THE INITIAL WAVE AS SUBSEQUENT WAVES ARRIVE. TSUNAMI WAVE HEIGHTS CANNOT BE FORECASTED AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMIS EFFECTIVELY WRAP AROUND ISLANDS. ALL SHORES ARE AT RISK NO MATTER WHICH DIRECTION THEY FACE. THE TROUGH OF A TSUNAMI MAY TEMPORARILY EXPOSE THE SEAFLOOR BUT THE AREA WILL QUICKLY FLOOD AGAIN. EXTREMELY STRONG AND UNUSUAL NEARSHORE CURRENTS CAN ACCOMPANY A TSUNAMI. DEBRIS PICKED UP AND CARRIED BY A TSUNAMI AMPLIFIES ITS DESTRUCTIVE POWER. SIMULTANEOUS HIGH TIDES OR HIGH SURF CAN SIGNIFICANTLY INCREASE THE TSUNAMI HAZARD

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL IN HAWAII FOLLOW.
TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS
SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

NAWILIWILI	1251 HST MAR 28	HILO	1315 HST MAR 28
HONOLULU	1305 HST MAR 28		

BULLETINS WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

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PTWC Hawaii Message #5

WEHW40 PHEB 282207
TSUHWX
HIZ001>003-005>009-012>014-016>021-023>026-282307-
/T.CON.PHEB.TS.W.0135.120328T2207Z-120328T2307Z/

BULLETIN - EAS ACTIVATION REQUESTED
TSUNAMI MESSAGE NUMBER 5
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1207 PM HST WED MAR 28 2012

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

...TSUNAMI WARNING SUPPLEMENT...

A TSUNAMI WARNING CONTINUES IN EFFECT FOR THE STATE OF HAWAII.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
TIME - 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
70 MILES/113 KM E OF KODIAK CITY ALASKA
225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
KODIAK AK	57.8N	152.4W	1909UTC	15.45FT/4.71M
YAKUTAT AK	59.5N	139.7W	1931UTC	9.94FT/3.03M
SITKA AK	57.0N	135.3W	1935UTC	14.11FT/4.30M
CORDOVA AK	60.5N	145.7W	1936UTC	10.00FT/3.05M
SEWARD AK	60.1N	149.4W	1945UTC	25.59FT/7.80M
SAND POINT AK	55.3N	160.5W	1957UTC	2.33FT/0.71M
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M
ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE ALONG COASTLINES OF ALL ISLANDS IN THE STATE OF HAWAII. URGENT ACTION SHOULD BE TAKEN TO PROTECT LIVES AND PROPERTY.

A TSUNAMI IS A SERIES OF LONG OCEAN WAVES. EACH INDIVIDUAL WAVE CREST CAN LAST 5 TO 15 MINUTES OR MORE AND EXTENSIVELY FLOOD COASTAL AREAS. THE DANGER CAN CONTINUE FOR MANY HOURS AFTER THE INITIAL WAVE AS SUBSEQUENT WAVES ARRIVE. TSUNAMI WAVE HEIGHTS CANNOT BE FORECASTED AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMIS EFFECTIVELY WRAP AROUND ISLANDS. ALL SHORES ARE AT RISK NO MATTER WHICH DIRECTION THEY FACE. THE TROUGH OF A TSUNAMI MAY TEMPORARILY EXPOSE THE SEAFLOOR BUT THE AREA WILL QUICKLY FLOOD AGAIN. EXTREMELY STRONG AND UNUSUAL NEARSHORE CURRENTS CAN ACCOMPANY A TSUNAMI. DEBRIS PICKED UP AND CARRIED BY A TSUNAMI AMPLIFIES ITS DESTRUCTIVE POWER. SIMULTANEOUS HIGH TIDES OR HIGH SURF CAN SIGNIFICANTLY INCREASE THE TSUNAMI HAZARD

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL IN HAWAII FOLLOW.
TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

NAWILIWILI 1251 HST MAR 28 HILO 1315 HST MAR 28
HONOLULU 1305 HST MAR 28

BULLETINS WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

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PTWC Hawaii Message #6

WEHW40 PHEB 282308
TSUHWX
HIZ001>003-005>009-012>014-016>021-023>026-290008-
/T.CON.PHEB.TS.W.0135.120328T2308Z-120329T0008Z/

BULLETIN - EAS ACTIVATION REQUESTED
TSUNAMI MESSAGE NUMBER 6
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
108 PM HST WED MAR 28 2012

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

...TSUNAMI WARNING SUPPLEMENT...

A TSUNAMI WARNING CONTINUES IN EFFECT FOR THE STATE OF HAWAII.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
 TIME - 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
CHIGNIK BAY AK	56.4N	158.2W	2009UTC	5.48FT/1.67M
KING COVE AK	55.1N	162.3W	2020UTC	1.64FT/0.50M
DUTCH HARBOR AK	53.9N	166.5W	2058UTC	0.69FT/0.21M
CRAIG AK	55.5N	133.1W	2037UTC	10.20FT/3.11M
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M
ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
PORT ORFORD OR	42.7N	124.5W	2157UTC	17.55FT/5.35M
WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY OR	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M
ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
HUMBOLT BAY OR	40.8N	124.2W	2224UTC	3.87FT/1.18M
SOUTH SPIT CA	40.7N	124.2W	2227UTC	2.76FT/0.84M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
SAND POINT AK	55.3N	160.5W	2235UTC	2.46FT/0.75M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
POINT REYES CA	38.0N	123.0W	2251UTC	8.96FT/2.73M
NAWILIWILI HI	22.0N	159.4W	2254UTC	1.31FT/0.40M
HALEIWA HI	21.6N	158.1W	2256UTC	2.23FT/0.68M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE ALONG COASTLINES OF ALL ISLANDS IN THE STATE OF HAWAII. URGENT ACTION SHOULD BE TAKEN TO PROTECT LIVES AND PROPERTY.

A TSUNAMI IS A SERIES OF LONG OCEAN WAVES. EACH INDIVIDUAL WAVE CREST CAN LAST 5 TO 15 MINUTES OR MORE AND EXTENSIVELY FLOOD COASTAL AREAS. THE DANGER CAN CONTINUE FOR MANY HOURS AFTER THE INITIAL WAVE AS SUBSEQUENT WAVES ARRIVE. TSUNAMI WAVE HEIGHTS CANNOT BE FORECASTED AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMIS EFFECTIVELY WRAP AROUND ISLANDS. ALL SHORES ARE AT RISK NO MATTER WHICH DIRECTION THEY FACE. THE TROUGH OF A TSUNAMI MAY TEMPORARILY EXPOSE THE SEAFLOOR BUT THE AREA WILL QUICKLY FLOOD AGAIN. EXTREMELY STRONG AND UNUSUAL NEARSHORE CURRENTS CAN ACCOMPANY A TSUNAMI. DEBRIS PICKED UP AND CARRIED BY A TSUNAMI AMPLIFIES ITS DESTRUCTIVE POWER. SIMULTANEOUS HIGH TIDES OR HIGH SURF CAN SIGNIFICANTLY INCREASE THE TSUNAMI HAZARD

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL IN HAWAII FOLLOW.

TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

NAWILIWILI 1251 HST MAR 28 HILO 1315 HST MAR 28
 HONOLULU 1305 HST MAR 28

BULLETINS WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

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PTWC Hawaii Message #7

WEHW40 PHEB 290009
 TSUHWX
 HIZ001>003-005>009-012>014-016>021-023>026-290109-
 /T.CON.PHEB.TS.W.0135.120329T0009Z-120329T0109Z/

BULLETIN - EAS ACTIVATION REQUESTED
 TSUNAMI MESSAGE NUMBER 7
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 209 PM HST WED MAR 28 2012

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

...TSUNAMI WARNING SUPPLEMENT...

A TSUNAMI WARNING CONTINUES IN EFFECT FOR THE STATE OF HAWAII.

PRELIMINARY EARTHQUAKE PARAMETERS
 MAGNITUDE - 9.2
 TIME - 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
HOMER AK	59.6N	151.5W	2123UTC	8.50FT/2.59M
ATKA AK	52.2N	174.2W	2141UTC	1.28FT/0.39M
PORT ORFORD OR	42.7N	124.5W	2157UTC	17.55FT/5.35M
WESTPORT WA	46.9N	124.1W	2159UTC	6.46FT/1.97M
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY OR	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M
ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
POINT REYES CA	38.0N	123.0W	2251UTC	8.96FT/2.73M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M

SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
PEARL HARBOR HI	21.3N	157.9W	2311UTC	1.35FT/0.41M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
PISMO BEACH CA	35.1N	120.6W	2320UTC	17.42FT/5.31M
LAHAINA HI	20.9N	156.7W	2326UTC	0.95FT/0.29M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
PORT SAN LUIS CA	35.1N	120.7W	2333UTC	14.04FT/4.28M
SANTA BARBARA CA	34.4N	119.7W	2336UTC	4.56FT/1.39M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
SOUTH SPIT CA	40.7N	124.2W	2349UTC	3.05FT/0.93M
SANTA MONICA CA	34.0N	118.5W	2354UTC	5.28FT/1.61M
LOS ANGELES CA	34.1N	118.2W	2356UTC	2.42FT/0.74M
ALAMITOS BAY CA	33.7N	118.1W	2359UTC	2.66FT/0.81M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0000UTC	1.71FT/0.52M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE ALONG COASTLINES OF ALL ISLANDS IN THE STATE OF HAWAII. URGENT ACTION SHOULD BE TAKEN TO PROTECT LIVES AND PROPERTY.

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ESTIMATED TIMES OF INITIAL WAVE ARRIVAL IN HAWAII FOLLOW.

TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS

SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

NAWILIWILI 1251 HST MAR 28 HILO 1315 HST MAR 28

HONOLULU 1305 HST MAR 28

BULLETINS WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

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PTWC Hawaii Message #8

WEHW40 PHEB 290108

TSUHWX

HIZ001>003-005>009-012>014-016>021-023>026-290208-
/T.CON.PHEB.TS.W.0135.120329T0108Z-120329T0208Z/

BULLETIN - EAS ACTIVATION REQUESTED

TSUNAMI MESSAGE NUMBER 8

NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI

308 PM HST WED MAR 28 2012

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

...TSUNAMI WARNING SUPPLEMENT...

A TSUNAMI WARNING CONTINUES IN EFFECT FOR THE STATE OF HAWAII.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.2
 TIME - 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
-----	---	---	---	-----
SOUTH BEACH OR	44.6N	124.0W	2205UTC	6.40FT/1.95M
CRESCENT CITY OR	41.8N	124.2W	2216UTC	16.73FT/5.10M
EUREKA CA	40.8N	124.2W	2221UTC	7.05FT/2.15M
ARENA COVE CA	38.9N	123.7W	2222UTC	12.14FT/3.70M
FLORENCE CA	34.0N	118.2W	2224UTC	5.48FT/1.67M
TOKE POINT WA	46.7N	123.9W	2228UTC	2.95FT/0.90M
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M
SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
PEARL HARBOR HI	21.3N	157.9W	2311UTC	1.35FT/0.41M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
LAHAINA HI	20.9N	156.7W	2326UTC	0.95FT/0.29M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
SANTA BARBARA CA	34.4N	119.7W	2336UTC	4.56FT/1.39M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0006UTC	6.14FT/1.87M
ALAMITOS BAY CA	33.7N	118.1W	0006UTC	5.09FT/1.55M
PISMO BEACH CA	35.1N	120.6W	0006UTC	29.30FT/8.93M
SAN DIEGO CA	32.7N	117.2W	0019UTC	2.66FT/0.81M
LOS ANGELES CA	34.1N	118.2W	0023UTC	2.95FT/0.90M
SANTA MONICA CA	34.0N	118.5W	0034UTC	5.61FT/1.71M
POINT REYES CA	38.0N	123.0W	0046UTC	20.47FT/6.24M
SOUTH SPIT CA	40.7N	124.2W	0057UTC	3.54FT/1.08M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE ALONG COASTLINES OF ALL ISLANDS IN THE STATE OF HAWAII. URGENT ACTION SHOULD BE TAKEN TO PROTECT LIVES AND PROPERTY.

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ESTIMATED TIMES OF INITIAL WAVE ARRIVAL IN HAWAII FOLLOW.
TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS
SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

NAWILIWILI 1251 HST MAR 28 HILO 1315 HST MAR 28
HONOLULU 1305 HST MAR 28

BULLETINS WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

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PTWC Hawaii Message #9

WEHW40 PHEB 290208
TSUHWX
HIZ001>003-005>009-012>014-016>021-023>026-290308-
/T.CON.PHEB.TS.W.0135.120329T0208Z-120329T0308Z/

BULLETIN - EAS ACTIVATION REQUESTED
TSUNAMI MESSAGE NUMBER 9
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
408 PM HST WED MAR 28 2012

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

...TSUNAMI WARNING SUPPLEMENT...

A TSUNAMI WARNING CONTINUES IN EFFECT FOR THE STATE OF HAWAII.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 9.2
TIME - 1800 UTC MAR 28 2012
LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
CHIGNIK BAY AK	56.4N	158.2W	2308UTC	7.55FT/2.30M
SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0006UTC	6.14FT/1.87M
ALAMITOS BAY CA	33.7N	118.1W	0006UTC	5.09FT/1.55M

PISMO BEACH CA	35.1N	120.6W	0006UTC	29.30FT/8.93M
SAN DIEGO CA	32.7N	117.2W	0019UTC	2.66FT/0.81M
LOS ANGELES CA	34.1N	118.2W	0023UTC	2.95FT/0.90M
POINT REYES CA	38.0N	123.0W	0046UTC	20.47FT/6.24M
SOUTH SPIT CA	40.7N	124.2W	0057UTC	3.54FT/1.08M
SANTA MONICA CA	34.0N	118.5W	0110UTC	9.25FT/2.82M
PEARL HARBOR HI	21.3N	157.9W	0110UTC	1.54FT/0.47M
LAHAINA HI	20.9N	156.7W	0123UTC	0.98FT/0.30M
SANTA BARBARA CA	34.4N	119.7W	0139UTC	5.35FT/1.63M
CHIGNIK BAY AK	56.4N	158.2W	0132UTC	8.89FT/2.71M
TOKE POINT WA	46.7N	123.9W	0153UTC	3.74FT/1.14M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.

VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE ALONG COASTLINES OF ALL ISLANDS IN THE STATE OF HAWAII. URGENT ACTION SHOULD BE TAKEN TO PROTECT LIVES AND PROPERTY.

A TSUNAMI IS A SERIES OF LONG OCEAN WAVES. EACH INDIVIDUAL WAVE CREST CAN LAST 5 TO 15 MINUTES OR MORE AND EXTENSIVELY FLOOD COASTAL AREAS. THE DANGER CAN CONTINUE FOR MANY HOURS AFTER THE INITIAL WAVE AS SUBSEQUENT WAVES ARRIVE. TSUNAMI WAVE HEIGHTS CANNOT BE FORECASTED AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMIS EFFECTIVELY WRAP AROUND ISLANDS. ALL SHORES ARE AT RISK NO MATTER WHICH DIRECTION THEY FACE. THE TROUGH OF A TSUNAMI MAY TEMPORARILY EXPOSE THE SEAFLOOR BUT THE AREA WILL QUICKLY FLOOD AGAIN. EXTREMELY STRONG AND UNUSUAL NEARSHORE CURRENTS CAN ACCOMPANY A TSUNAMI. DEBRIS PICKED UP AND CARRIED BY A TSUNAMI AMPLIFIES ITS DESTRUCTIVE POWER. SIMULTANEOUS HIGH TIDES OR HIGH SURF CAN SIGNIFICANTLY INCREASE THE TSUNAMI HAZARD

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL IN HAWAII FOLLOW.

TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS

SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

NAWILIWILI	1251 HST MAR 28	HILO	1315 HST MAR 28
HONOLULU	1305 HST MAR 28		

BULLETINS WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

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PTWC Hawaii Message #10

WEHW40 PHEB 290308

TSUHWX
 HIZ001>003-005>009-012>014-016>021-023>026-290408-
 /T.CON.PHEB.TS.W.0135.120329T0308Z-120329T0408Z/

BULLETIN - EAS ACTIVATION REQUESTED
 TSUNAMI MESSAGE NUMBER 10
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 508 PM HST WED MAR 28 2012

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

...TSUNAMI WARNING SUPPLEMENT...

A TSUNAMI WARNING CONTINUES IN EFFECT FOR THE STATE OF HAWAII.

PRELIMINARY EARTHQUAKE PARAMETERS
 MAGNITUDE - 9.2
 TIME - 1800 UTC MAR 28 2012
 LOCATION - 58.0 NORTH 150.5 WEST
 70 MILES/113 KM E OF KODIAK CITY ALASKA
 225 MILES/362 KM S OF ANCHORAGE ALASKA
 DEPTH - 19 MILES/30 KM

MEASUREMENTS OR REPORTS OF TSUNAMI ACTIVITY

LOCATION	LAT	LON	TIME	AMPL
PORT ANGELES WA	48.1N	123.4W	2234UTC	5.09FT/1.55M
KODIAK AK	57.8N	152.4W	2232UTC	21.19FT/6.46M
POINT REYES BEACH CA	38.1N	122.9W	2242UTC	14.44FT/4.40M
SEWARD AK	60.1N	149.4W	2247UTC	33.37FT/10.17M
MONTEREY CA	36.6N	121.9W	2249UTC	10.89FT/3.32M
NAWILIWILI HI	22.0N	159.4W	2327UTC	1.97FT/0.60M
SAN FRANCISCO CA	37.8N	122.4W	2309UTC	8.04FT/2.45M
SAND POINT AK	55.3N	160.5W	2311UTC	3.22FT/0.98M
HONOLULU HI	21.3N	157.9W	2311UTC	1.51FT/0.46M
KAHULUI HI	20.9N	156.5W	2311UTC	4.82FT/1.47M
HALEIWA HI	21.6N	158.1W	2311UTC	4.07FT/1.24M
HILO HI	19.7N	155.1W	2318UTC	4.17FT/1.27M
KEAUHOU HI	19.5N	155.9W	2329UTC	0.59FT/0.18M
KIHEI HI	20.8N	156.5W	2336UTC	1.97FT/0.60M
HUMBOLT BAY OR	40.8N	124.2W	2344UTC	5.35FT/1.63M
KAWAIHAE HI	20.0N	155.7W	2344UTC	1.64FT/0.50M
NORTH IMPERIAL BEACH CA	32.6N	117.1W	0006UTC	6.14FT/1.87M
ALAMITOS BAY CA	33.7N	118.1W	0006UTC	5.09FT/1.55M
PISMO BEACH CA	35.1N	120.6W	0006UTC	29.30FT/8.93M
SAN DIEGO CA	32.7N	117.2W	0019UTC	2.66FT/0.81M
LOS ANGELES CA	34.1N	118.2W	0023UTC	2.95FT/0.90M
POINT REYES CA	38.0N	123.0W	0046UTC	20.47FT/6.24M
SOUTH SPIT CA	40.7N	124.2W	0057UTC	3.54FT/1.08M
SANTA MONICA CA	34.0N	118.5W	0110UTC	9.25FT/2.82M
SANTA BARBARA CA	34.4N	119.7W	0139UTC	5.35FT/1.63M
CHIGNIK BAY AK	56.4N	158.2W	0132UTC	8.89FT/2.71M
TOKE POINT WA	46.7N	123.9W	0153UTC	3.74FT/1.14M
PEARL HARBOR HI	21.3N	157.9W	0204UTC	1.74FT/0.53M
LAHAINA HI	20.9N	156.7W	0229UTC	1.31FT/0.40M

TIME - TIME OF MEASUREMENT

AMPL - TSUNAMI AMPLITUDES ARE MEASURED RELATIVE TO NORMAL SEA LEVEL.
IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
VALUES ARE GIVEN IN BOTH METERS/M/ AND FEET/FT/.

EVALUATION

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE ALONG
COASTLINES OF ALL ISLANDS IN THE STATE OF HAWAII. URGENT ACTION
SHOULD BE TAKEN TO PROTECT LIVES AND PROPERTY.

A TSUNAMI IS A SERIES OF LONG OCEAN WAVES. EACH INDIVIDUAL WAVE
CREST CAN LAST 5 TO 15 MINUTES OR MORE AND EXTENSIVELY FLOOD
COASTAL AREAS. THE DANGER CAN CONTINUE FOR MANY HOURS AFTER THE
INITIAL WAVE AS SUBSEQUENT WAVES ARRIVE. TSUNAMI WAVE HEIGHTS
CANNOT BE FORECASTED AND THE FIRST WAVE MAY NOT BE THE LARGEST.
TSUNAMIS EFFECTIVELY WRAP AROUND ISLANDS. ALL SHORES ARE AT
RISK NO MATTER WHICH DIRECTION THEY FACE. THE TROUGH OF A TSUNAMI
MAY TEMPORARILY EXPOSE THE SEAFLOOR BUT THE AREA WILL QUICKLY
FLOOD AGAIN. EXTREMELY STRONG AND UNUSUAL NEARSHORE CURRENTS
CAN ACCOMPANY A TSUNAMI. DEBRIS PICKED UP AND CARRIED BY A
TSUNAMI AMPLIFIES ITS DESTRUCTIVE POWER. SIMULTANEOUS HIGH
TIDES OR HIGH SURF CAN SIGNIFICANTLY INCREASE THE TSUNAMI HAZARD

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL IN HAWAII FOLLOW.

TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS
SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

NAWILIWILI	1251 HST MAR 28	HILO	1315 HST MAR 28
HONOLULU	1305 HST MAR 28		

BULLETINS WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

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Appendix E. Web-based WCATWC Products

[Link to Standard Warning Message](#)

[Link to Public Warning Message](#)

[Link to XML/CAP Message](#)

[Link to Printable Message](#)

To: U.S. West Coast, Alaska, and British Columbia coastal regions

From: [NOAA/NWS/West Coast and Alaska Tsunami Warning Center](#)

Subject: [Tsunami Warning and Watch](#) #1 issued 03/28/2012 at 10:04AM AKDT

A **[Tsunami Warning](#)** is now in effect which includes the coastal areas of British Columbia and Alaska from the Washington-British Columbia border to Attu, Alaska.

A **[Tsunami Watch](#)** is now in effect which includes the coastal areas of California, Oregon and Washington from the California-Mexico border to the Washington-British Columbia border.

A **Tsunami Warning** means that all coastal residents in the [warning area](#) who are near the beach or in low-lying regions should move immediately inland to higher ground and away from all harbors and inlets including those sheltered directly from the sea. Those feeling the earth shake, seeing unusual wave action, or the water level rising or receding may have only a few minutes before the tsunami arrival and should move immediately. Homes and small buildings are not designed to withstand tsunami impacts. Do not stay in these structures.

All residents within the warned area should be alert for instructions broadcast from their local civil authorities. Earthquakes of this magnitude are known to generate tsunamis.

A **Tsunami Watch** means that all coastal residents in the [watch area](#) should prepare for possible evacuation. A tsunami watch is issued to areas which will not be immediately impacted by the tsunami. Watch areas will either be upgraded to warning or advisory status, or canceled.

At 10:00 AM Alaskan Daylight Time on March 28, an [earthquake](#) with preliminary magnitude 9.2 [occurred 70 miles/113 Km east of Kodiak City, Alaska](#). (Refer to the [United States Geological Survey](#) for official earthquake parameters.) Earthquakes of this size are known to generate tsunamis. If a tsunami has been generated, the waves will first reach Kodiak, Alaska at 11:10 AM AKDT on March 28. Estimated [tsunami arrival times](#) and [maps](#) along with [safety rules](#) and [other information](#) can be found on the [WCATWC](#) web site.

[Tsunamis](#) can be dangerous waves that are not survivable. Wave heights are amplified by irregular shoreline and are difficult to forecast. Tsunamis often appear as a strong surge and may be preceded by a receding water level. Mariners in water deeper than 600 feet should not be affected by a tsunami.

Wave heights will increase rapidly as water shallows. Tsunamis are a series of ocean waves which can be dangerous for several hours after the initial wave arrival. DO NOT return to evacuated areas until an all clear is given by local civil authorities.

Pacific coastal regions outside California, Oregon, Washington, British Columbia, and Alaska should refer to the [Pacific Tsunami Warning Center](#) messages for information on the event.

This message will be updated in 30 minutes or sooner if the situation warrants. The tsunami message will remain in effect until further notice. For further information stay tuned to NOAA Weather Radio, your local TV or radio stations, or see the [WCATWC](#) web site.

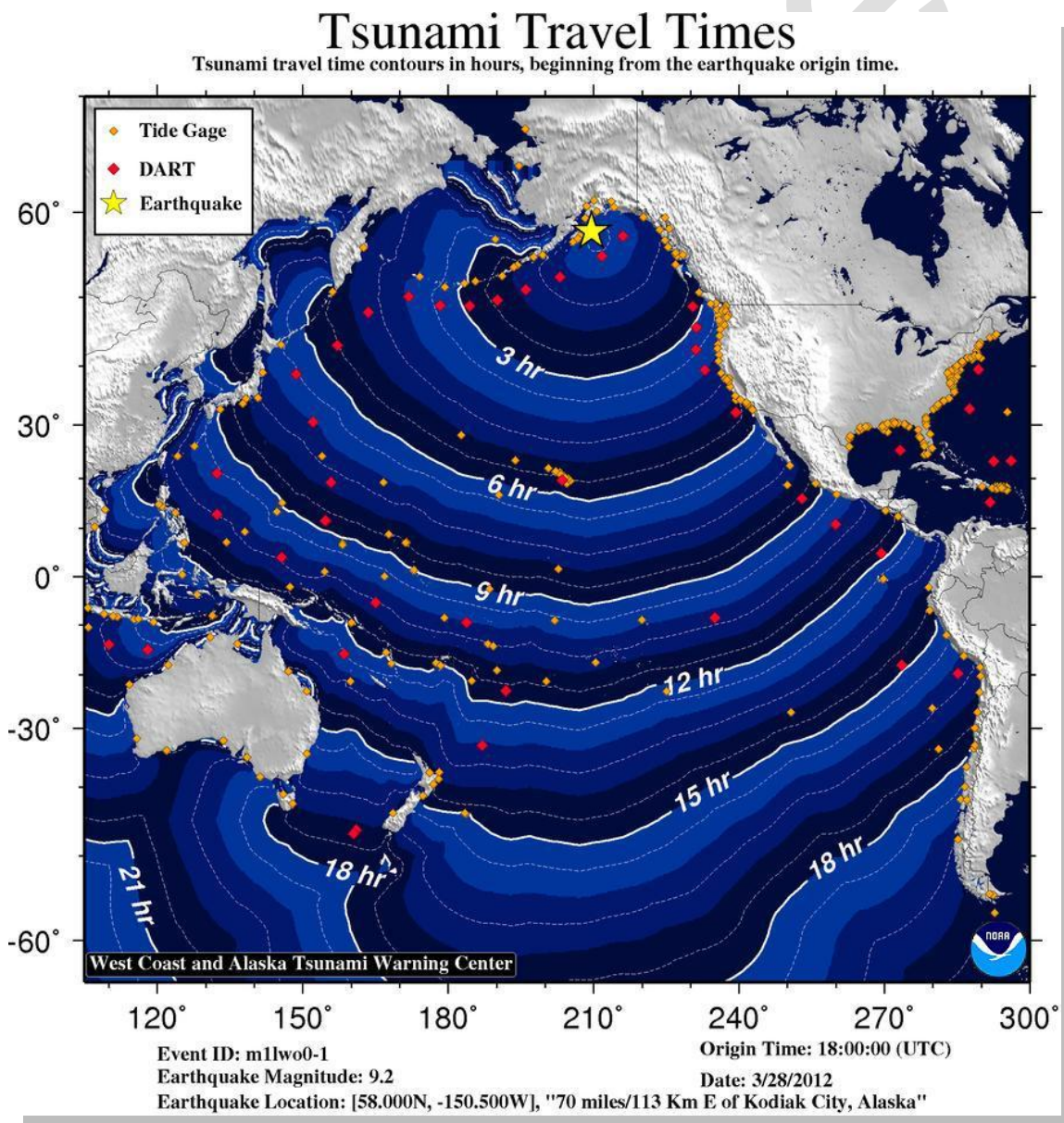


Figure E1: Tsunami Travel Time Map generated after issuing Bulletin 1.

Tsunami travel time list example below.

The following list gives estimated times of arrival for locations along the North American Pacific coast from a tsunami generated at the given source location.

THE LISTING OF A TSUNAMI ARRIVAL TIME BELOW DOES NOT INDICATE A WAVE IS IMMINENT. REFER TO THE WARNING BULLETIN TO DETERMINE WHICH AREAS ARE THREATENED.

The listed arrival time is the initial wave arrival. Tsunamis can be dangerous for many hours after arrival, and the initial wave is not necessarily the largest. The list is ordered by arrival time starting with the earliest.

Source:
 Lat: 58.0N
 Lng: 150.5W
 Mag: 9.2
 O-time: 1800UTC
 Date: MAR 28

Estimated times of initial tsunami arrival:

DART 46410	1029	AKDT	MAR 28	1829	UTC	MAR 28
DART 46409	1036	AKDT	MAR 28	1836	UTC	MAR 28
DART 46403	1037	AKDT	MAR 28	1837	UTC	MAR 28
Hinchinbrook Entrance, Alaska (90 miles E of Se	1038	AKDT	MAR 28	1838	UTC	MAR 28
Kennedy Entrance, Alaska (40 miles SW of Homer)	1059	AKDT	MAR 28	1859	UTC	MAR 28
Kodiak, Alaska	1110	AKDT	MAR 28	1910	UTC	MAR 28
DART 46402	1110	AKDT	MAR 28	1910	UTC	MAR 28
Valdez, Alaska	1113	AKDT	MAR 28	1913	UTC	MAR 28
Cape Suckling, Alaska (75 miles SE of Cordova)	1116	AKDT	MAR 28	1916	UTC	MAR 28
Elfin Cove, Alaska	1118	AKDT	MAR 28	1918	UTC	MAR 28
Yakutat, Alaska	1119	AKDT	MAR 28	1919	UTC	MAR 28
Cordova, Alaska	1122	AKDT	MAR 28	1922	UTC	MAR 28
Seward, Alaska	1125	AKDT	MAR 28	1925	UTC	MAR 28
Cape Fairweather, Alaska (80 miles SE of Yakuta	1125	AKDT	MAR 28	1925	UTC	MAR 28
Salisbury Sound, Alaska (25 miles NW of Sitka)	1128	AKDT	MAR 28	1928	UTC	MAR 28
Sitka, Alaska	1129	AKDT	MAR 28	1929	UTC	MAR 28
Port Alexander, Alaska	1134	AKDT	MAR 28	1934	UTC	MAR 28
Chignik Bay, Alaska	1135	AKDT	MAR 28	1935	UTC	MAR 28
DART 46408	1137	AKDT	MAR 28	1937	UTC	MAR 28
Sand Point, Alaska	1142	AKDT	MAR 28	1942	UTC	MAR 28
Perryville, Alaska	1144	AKDT	MAR 28	1944	UTC	MAR 28
the Alaska/British Columbia border	1244	PDT	MAR 28	1944	UTC	MAR 28
Akutan, Alaska	1148	AKDT	MAR 28	1948	UTC	MAR 28
Old Harbor, Alaska	1148	AKDT	MAR 28	1948	UTC	MAR 28
Homer, Alaska	1148	AKDT	MAR 28	1948	UTC	MAR 28
Langara Island, British Columbia	1249	PDT	MAR 28	1949	UTC	MAR 28
King Cove, Alaska	1150	AKDT	MAR 28	1950	UTC	MAR 28
Unimak Pass, Alaska (80 miles NE of Dutch Harbo	1151	AKDT	MAR 28	1951	UTC	MAR 28
Cape Decision, Alaska (85 miles SE of Sitka)	1155	AKDT	MAR 28	1955	UTC	MAR 28
Nikolski, Alaska	1156	AKDT	MAR 28	1956	UTC	MAR 28
DART 46413	1159	AKDT	MAR 28	1959	UTC	MAR 28
Dutch Harbor, Alaska	1202	AKDT	MAR 28	2002	UTC	MAR 28
Alitak, Alaska	1205	AKDT	MAR 28	2005	UTC	MAR 28
Atka, Alaska	1205	AKDT	MAR 28	2005	UTC	MAR 28
Amchitka Pass, Alaska (125 miles W of Adak)	1217	AKDT	MAR 28	2017	UTC	MAR 28
Cold Bay, Alaska	1225	AKDT	MAR 28	2025	UTC	MAR 28
DART 21414	1227	AKDT	MAR 28	2027	UTC	MAR 28
Adak, Alaska	1227	AKDT	MAR 28	2027	UTC	MAR 28
Amchitka, Alaska	1228	AKDT	MAR 28	2028	UTC	MAR 28
DART 46419	1333	PDT	MAR 28	2033	UTC	MAR 28
Juneau, Alaska	1235	AKDT	MAR 28	2035	UTC	MAR 28
Craig, Alaska	1238	AKDT	MAR 28	2038	UTC	MAR 28
the north tip of Vancouver Island, British Colu	1346	PDT	MAR 28	2046	UTC	MAR 28
Ketchikan, Alaska	1247	AKDT	MAR 28	2047	UTC	MAR 28
DART 21415	1255	AKDT	MAR 28	2055	UTC	MAR 28
DART 46404	1400	PDT	MAR 28	2100	UTC	MAR 28
Shemya, Alaska	1310	AKDT	MAR 28	2110	UTC	MAR 28
Attu, Alaska	1316	AKDT	MAR 28	2116	UTC	MAR 28
Prince Rupert, British Columbia	1418	PDT	MAR 28	2118	UTC	MAR 28
DART 46407	1422	PDT	MAR 28	2122	UTC	MAR 28
St. Paul, Alaska	1323	AKDT	MAR 28	2123	UTC	MAR 28
Tofino, British Columbia	1429	PDT	MAR 28	2129	UTC	MAR 28

the Washington-British Columbia border	1437	PDT	MAR 28	2137	UTC	MAR 28
Neah Bay, Washington	1443	PDT	MAR 28	2143	UTC	MAR 28
La Push, Washington	1444	PDT	MAR 28	2144	UTC	MAR 28
Point Grenville, Washington	1447	PDT	MAR 28	2147	UTC	MAR 28
Clatsop Spit, Oregon	1447	PDT	MAR 28	2147	UTC	MAR 28
the Oregon-Washington border	1448	PDT	MAR 28	2148	UTC	MAR 28
Cascade Head, Oregon (70 miles SW of Portland)	1455	PDT	MAR 28	2155	UTC	MAR 28
DART 46411	1456	PDT	MAR 28	2156	UTC	MAR 28
Tillamook Bay, Oregon	1456	PDT	MAR 28	2156	UTC	MAR 28
Seaside, Oregon	1459	PDT	MAR 28	2159	UTC	MAR 28
Westport, Washington	1459	PDT	MAR 28	2159	UTC	MAR 28
Douglas/Lane County Line, Oregon (10 miles SW o	1502	PDT	MAR 28	2202	UTC	MAR 28
Charleston, Oregon	1503	PDT	MAR 28	2203	UTC	MAR 28
Cape Blanco, Oregon	1503	PDT	MAR 28	2203	UTC	MAR 28
Newport, Oregon	1506	PDT	MAR 28	2206	UTC	MAR 28
Cape Mendocino, California	1513	PDT	MAR 28	2213	UTC	MAR 28
the Oregon-California border	1518	PDT	MAR 28	2218	UTC	MAR 28
Humboldt Bay, California	1518	PDT	MAR 28	2218	UTC	MAR 28
Crescent City, California	1518	PDT	MAR 28	2218	UTC	MAR 28
Astoria, Oregon	1520	PDT	MAR 28	2220	UTC	MAR 28
Port Angeles, Washington	1520	PDT	MAR 28	2220	UTC	MAR 28
Horse Mountain, California (50 miles SW of Eure	1521	PDT	MAR 28	2221	UTC	MAR 28
Fort Bragg, California	1523	PDT	MAR 28	2223	UTC	MAR 28
Bella Bella, British Columbia	1529	PDT	MAR 28	2229	UTC	MAR 28
Point Arena, California	1529	PDT	MAR 28	2229	UTC	MAR 28
Gualala Point, California (80 miles NW of San F	1531	PDT	MAR 28	2231	UTC	MAR 28
Point Reyes, California	1546	PDT	MAR 28	2246	UTC	MAR 28
Davenport, California (10 miles NW of Santa Cru	1549	PDT	MAR 28	2249	UTC	MAR 28
Point Sur, California	1553	PDT	MAR 28	2253	UTC	MAR 28
Monterey, California	1555	PDT	MAR 28	2255	UTC	MAR 28
Ragged Point, California (45 miles NW of San Lu	1603	PDT	MAR 28	2303	UTC	MAR 28
DART 46412	1613	PDT	MAR 28	2313	UTC	MAR 28
Point Conception, California	1614	PDT	MAR 28	2314	UTC	MAR 28
Seattle, Washington	1616	PDT	MAR 28	2316	UTC	MAR 28
San Francisco, California	1616	PDT	MAR 28	2316	UTC	MAR 28
Port Moller, Alaska	1518	AKDT	MAR 28	2318	UTC	MAR 28
Port San Luis, California	1620	PDT	MAR 28	2320	UTC	MAR 28
Santa Barbara, California	1634	PDT	MAR 28	2334	UTC	MAR 28
Rincon Point, California (15 miles SE of Santa	1645	PDT	MAR 28	2345	UTC	MAR 28
Santa Monica, California	1650	PDT	MAR 28	2350	UTC	MAR 28
San Pedro, California	1651	PDT	MAR 28	2351	UTC	MAR 28
Newport Beach, California	1657	PDT	MAR 28	2357	UTC	MAR 28
La Jolla, California	1702	PDT	MAR 28	0002	UTC	MAR 29
Saint Matthew Island, Alaska	1602	AKDT	MAR 28	0002	UTC	MAR 29
Alamitos Bay, California (20 miles SE of L.A.)	1706	PDT	MAR 28	0006	UTC	MAR 29
the California-Mexico border	1708	PDT	MAR 28	0008	UTC	MAR 29
Cape Newenham, Alaska	1652	AKDT	MAR 28	0052	UTC	MAR 29
Gambell, Alaska	1823	AKDT	MAR 28	0223	UTC	MAR 29
Dillingham, Alaska	1842	AKDT	MAR 28	0242	UTC	MAR 29
Hooper Bay, Alaska	2016	AKDT	MAR 28	0416	UTC	MAR 29
Little Diomed Island, Alaska	2119	AKDT	MAR 28	0519	UTC	MAR 29
Nome, Alaska	2314	AKDT	MAR 28	0714	UTC	MAR 29
Unalakleet, Alaska	0203	AKDT	MAR 29	1003	UTC	MAR 29

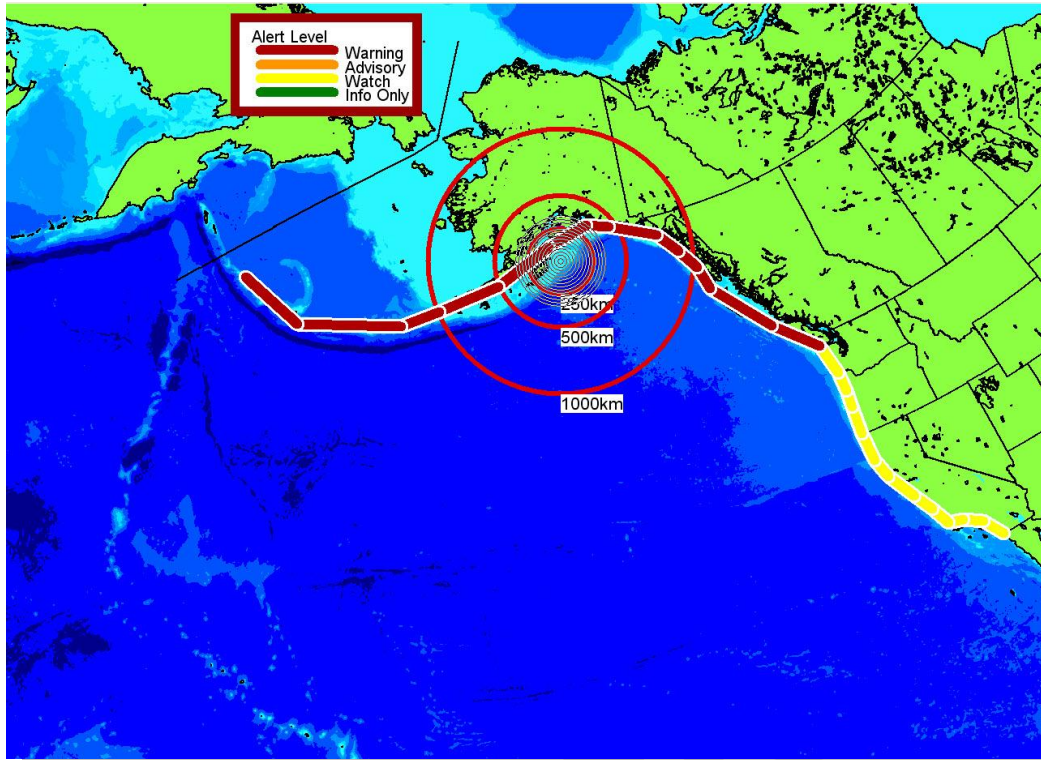


Figure E2: Small-scale map issued with Bulletin 1.

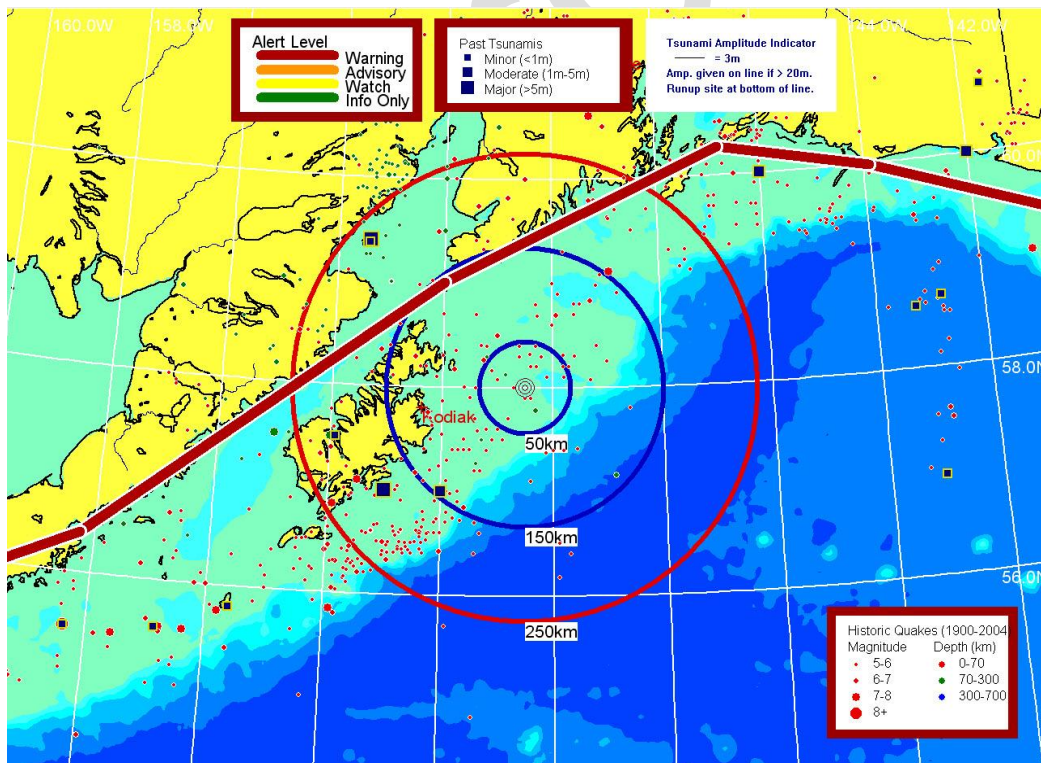


Figure E3: Large-scale map issued with Bulletin 1.

Appendix F. Sample Press Release for Local Media

TEMPLATE FOR NEWS RELEASE

USE AGENCY MASTHEAD

Contact: (insert name)
(insert phone number)
(insert email address)

FOR IMMEDIATE RELEASE
(insert date)

NORTH PACIFIC TSUNAMI EXERCISE TO BE CONDUCTED MARCH 28, 2012

(insert community/county/state name) will join other localities in the north Pacific as a participant in a tsunami response exercise on March 28, 2012. The purpose of this exercise is to evaluate local tsunami response plans, increase tsunami preparedness, and improve coordination throughout the region.

(insert a promotional comment from a local official, such as “The 2011 Japan earthquake and tsunami reminded the world again of the urgent need to be more prepared for such events,” said (insert name of appropriate official). “This important exercise will test the current procedures of the Tsunami Warning System and help identify operational strengths and weaknesses in each community.” (Please modify for uniqueness.)

The exercise, titled PACIFEX 12, will simulate a widespread Tsunami Warning, Watch, and Advisory situation along U.S. and Canadian west coasts requiring implementation of local tsunami response plans. It is the third such exercise including all Pacific states, provinces, territories, and commonwealths. The exercise will *(insert “include” or “not include”)* public notification.

The exercise will simulate a major earthquake and tsunami generated 70 miles east of Kodiak City, Alaska at 11:00 am Pacific Daylight Time *(or appropriate local time)* on March 28, 2012. Exercise participants will be provided with a handbook which describes the scenario and contains tsunami messages from both the West Coast/Alaska Tsunami Warning Center (WCATWC) and the Pacific Tsunami Warning Center (PTWC). .

Insert paragraph tailored for specific community. Could identify participating agencies and specific plans. Could describe current early warning program, past tsunami exercises (if any), ongoing mitigation and public education programs, etc. Could describe tsunami threat, history of tsunami hazards, if any.

If any real tsunami threat occurs during the time period of the exercise, the exercise will be terminated.

The exercise is sponsored by the U.S. National Oceanic and Atmospheric Administration (NOAA) and by the U.S. National Tsunami Hazard Mitigation Program (NTHMP – a partnership of 28 states and territories and three federal agencies). For more information on the U.S. tsunami warning system, see www.tsunami.gov. For more information on the NTHMP, see nthmp.tsunami.gov.

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On the Web:

West Coast/Alaska Tsunami Warning Center

<http://wcatwc.arh.noaa.gov>

Pacific Tsunami Warning Center

<http://www.weather.gov/ptwc>

NOAA Tsunami Program

<http://www.tsunami.gov>

NTHMP:

<http://nthmp.tsunami.gov>

Insert state/local emergency response URLs

Exercise