

Exercise PACIFEX 10 Participant Handbook

A Pacific tsunami warning exercise:
March 24, 2010

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 LANTEX09 tsunami exercise handbook.

Exercise

Table of Contents

1.	Background	1
2.	Exercise Concept	3
	2.1 Purpose	3
	2.2 Objectives	3
	2.3 Type of Exercise	3
3.	Exercise Outline	5
	3.1 General	5
	3.2 Master Schedule (Exercise Script)	7
	3.3 Actions in Case of a Real Event	8
	3.4 Resources	8
	3.5 Media Arrangements	8
4.	Post-Exercise Evaluation	9
	Appendix A: Example Tabletop Exercise	10
	Appendix B: Scenario Description	12
	Appendix C: WCATWC and PTWC Dummy Messages	15
	Appendix D: WCATWC and PTWC Exercise Messages	16
	WCATWC Messages	16
	PTWC Pacific Messages	52
	PTWC Hawaii Messages	74
	Appendix E: WCATWC Web-based Products	84
	Appendix F: Sample Press Release for Local Media	89
	Appendix G: Post-Exercise Evaluation	91

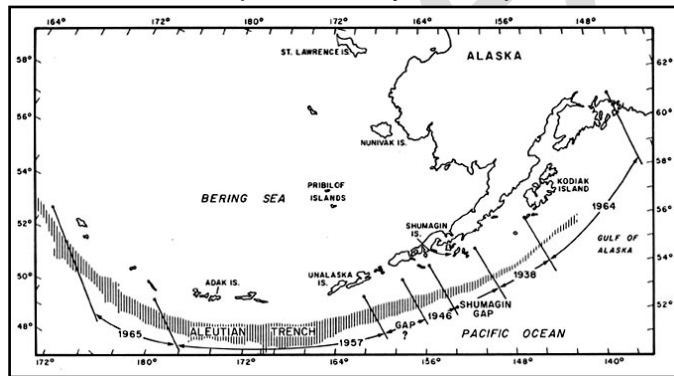
Exercise

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. Exercising emergency response plans in this region is an important part of tsunami preparedness.

The Pacifex 10 exercise simulates an earthquake located south of the Alaska Peninsula which generates a major tsunami. This earthquake occurs in the Aleutian trench which is a product of the Pacific "plate" to the south being gradually forced beneath the North American plate. Many earthquakes result as a consequence, including some of the largest that have ever been recorded.

Typically, great earthquakes of magnitude 8.0 or more occur on an average of about 70 years' interval within different segments of the Aleutian arc. During each of these large earthquakes, the accumulated strain is released along a certain length of the arc system, generally on the order of a few hundred miles (the 1964 Prince William Sound earthquake of magnitude 9.2 released strain along a total distance of over 400 miles, from near Valdez to Kodiak Island). It is believed that, over the centuries, the pattern of strain should fill in more-or-less uniformly along the entire system.



One segment of the arc that has inspired much debate is the area of the Shumagin Islands, off the tip of the Alaska Peninsula. The last great earthquake known to have occurred there was a magnitude 8.2 on November 10, 1938. This seismic quiescence along a 200-mile-long zone has for years caused scientists to predict a strong earthquake there "in the foreseeable future."

Survey data indicate that future rupture in a major earthquake is not certain. Strain accumulation during the 1980-85 intervals has been measured by means of trilateration surveys around the Shumagin Islands. No significant strain accumulation was detected, but experience at similar subduction zones and simple models of the subduction process suggest that a measureable amount of strain should have accumulated. The most likely explanation of the observation is that subduction there is either aseismic (slip without strain accumulation and resulting earthquakes) or episodic.

Because the Alaska Peninsula is so sparsely populated, the primary hazard to population centers would probably be from tsunamis that could be damaging throughout the Pacific basin. In previous major earthquakes throughout southern Alaska, most casualties have been inflicted by the tsunami as opposed to earthquake shaking and building collapse.

Contributing articles for the above summary can be found at

<http://www.gi.alaska.edu/ScienceForum/ASF6/628.html>,

<http://lib.bioinfo.pl/pmid:17750970>, and

http://earthquake.usgs.gov/earthquakes/states/events/1938_11_10.php.

NOAA operates a tsunami warning system for the U.S. Pacific coasts and western Canada through its West Coast/Alaska Tsunami Warning Center (WCATWC) in Palmer, Alaska and for Hawaii, American Samoa, Guam and most Pacific countries through the Pacific Tsunami Warning Center (PTWC) in Ewa Beach, Hawaii. These Centers provide tsunami warning, watch, advisory, and information messages in approximately five to fifteen minutes after an earthquake's occurrence. Primary recipients of WCATWC Pacific messages include National Weather Service (NWS) coastal Weather Forecast Offices (WFO), state/territory warning points/emergency operation centers, the U.S. Coast Guard, Canada's Provincial Emergency Program, and the U.S. military. Primary recipients of PTWC Pacific messages include the NWS Weather Offices in Hawaii, American Samoa and Guam as well as designated Tsunami Warning Forecast Points in the countries of the Pacific. These agencies in turn transmit the appropriate messages 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 the Pacific coast 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 near Alaska's Shumagin Islands. Exercises like this help ensure that the U.S./Canadian Pacific coasts are ready to respond in the unlikely case of a dangerous tsunami. The exercise does not include other countries covered by the PTWC. 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 the exercise is to improve the effectiveness of the tsunami warning system along the U.S./Canadian Pacific coasts. The exercise provides an opportunity for emergency management organizations along the Pacific coast 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 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 WCATWC and PTWC 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.

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 10.

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 filed 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 9.0 earthquake located near Alaska's Shumagin Islands at 55.0N 157.0W. A large tsunami with coastal amplitudes exceeding 3.0 meters in places occurs along the U.S. and Canadian Pacific coasts. The earthquake occurs at 1700 UTC on March 24, 2010. The tsunami inundates large sections of land in the epicentral region and also significantly impacts U.S. and Canadian regions to the south including Hawaii. This is a realistic scenario for a major Alaskan earthquake which is discussed in greater detail in Appendix B.

WCATWC and PTWC 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 1705 UTC on March 24, 2010. The content of the dummy message for each Center 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 WCATWC and PTWC 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.

During real events, 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 WCATWC and/or PTWC 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.

EMOs are encouraged to participate to ensure response plans are in order. Estimated tsunami arrival times to several U.S. and Canadian Pacific locations are included in the WCATWC and PTWC 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.

This exercise provides an excellent opportunity for local jurisdictions to consider other tsunami and/or earthquake preparedness activities including:

- Testing local warning/siren systems,
- Conducting outreach and education on tsunami and/or earthquakes, and
- Practicing “drop, cover, and hold” drills and/or tsunami evacuations with schools, citizen groups, or agencies.

On the morning of March 24, 2010, the states of Alaska and California (Del Norte, Humboldt, and Mendocino counties only) will also be conducting live code tsunami warning emergency alert system (EAS) testing. These EAS tests will include extensive media preparation prior to the test to prepare and educate the public. The EAS tests will be conducted only once and will be limited to the transmission of a pre-scripted text message and audio override on local broadcast channels to ensure that transmission devices are properly configured for delivery of a tsunami warning.

3.2 Master Schedule (Exercise Script)

Table 1: Scenario Timeline

Tsunami generated by a magnitude 9.0 earthquake with epicenter at 55.0°N, 157.00°W occurring on March 24, 2010 at 1700 UTC.

Date (UTC)	Time (UTC)	WCATWC Message			PTWC Pacific Product			PTWC Hawaii Product		
		#	Type	Dummy	#	Type	Dummy	#	Type	Dummy
03/24/2010	1700	----- E A R T H Q U A K E O C C U R S -----								
03/24/2010	1705	01	WWA	Yes	01	EWW	No	01	WCH	Yes
03/24/2010	1735	02	WWA	No						
03/24/2010	1805	03	WWA	No	02	PWW	No	02	WRN	No
03/24/2010	1835	04	WWA	No						
03/24/2010	1905	05	WWA	No	03	PWW	No	03	WRN	No
03/24/2010	1935	06	WWA	No						
03/24/2010	2005	07	WWA	No	04	PWW	No	04	WRN	No
03/24/2010	2035	08	WWA	No						
03/24/2010	2105	09	WWA	No	05	PWW	No	05	WRN	No
03/24/2010	2135	10	WWA	No						
03/24/2010	2205	11	WWA	No	06	PWW	No	06	WRN	No
03/24/2010	2235	12	WWA	No						
03/24/2010	2305	13	WWA	No	07	PWW	No	07	WRN	No
03/24/2010	2335	14	WWA	No						
03/25/2010	0005	15	WWA	No	08	PWW	No	08	WRN	No
03/25/2010	0035	16	WWA	No						
03/25/2010	0105	17	WWA	No	09	PWW	No	09	WRN	No
03/25/2010	0135	18	WWA	No						
03/25/2010	0205	19	Can	No	10	PWW	No	10	CAN	No

WCATWC Message Types:

- WWA Warning/Watch/Advisory
- Can WWA Cancellation

PTWC Pacific Message Types:

- EWW Expanding Warning/Watch
- PWW Pacific-Wide Warning

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 just prior to or during the exercise, WCATWC and PTWC will issue their normal message products for the real event. Such messages will be given full priority and a decision will be made by each Center whether to issue the initial dummy message and to continue providing any other support for the exercise. All documentation and correspondence relating to this exercise is to be clearly identified as "PACIFEX 10" and "Exercise."

3.4 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:

Jim Goltz	CA EMA, Tsunami PM	626-356-3810	jim.goltz@oes.ca.gov
Paul Whitmore	WCATWC Director	907-745-4212	paul.whitmore@noaa.gov
Bill Knight	WCATWC TWSO	907-745-4212	william.knight@noaa.gov
James Waddell	WCATWC Exercise Rep.	907-745-4212	james.waddell@noaa.gov
Chip McCreery	PTWC Director	808-689-6655	charles.mccreery@noaa.gov
Stuart Weinstein	PTWC TWSO	808-689-6655	stuart.weinstein@noaa.gov
Gerard Fryer	PTWC Exercise Rep.	808-689-6655	gerard.fryer@noaa.gov

or to your state Emergency Management Organization tsunami mitigation specialist.

3.5 Media Arrangements

One advantage in conducting exercises is that it provides a venue to promote awareness of the exercise topic. Many coastal residents 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.

NOAA will issue a press release several days before the exercise describing the exercise and its purpose.

4 Post-Exercise Evaluation

All participating agencies are requested to provide brief feedback on the exercise. This feedback will assist the NTHMP and NOAA in the evaluation of PACIFEX 10 and the development of subsequent exercises, and help response agencies document lessons learned.

Exercise Evaluation Forms are included in Appendix G. Forms should be filled out by Friday, April 9, 2010 and returned to:

For Alaska, the U.S. West Coast, and the west coast of Canada

WCATWC Director
NOAA/West Coast/Alaska Tsunami Warning Center
910 South Felton Street
Palmer, Alaska 99645

FAX: 907-745-6071

Or scanned and emailed to paul.whitmore@noaa.gov.

For Hawaii

PTWC Director
NOAA Pacific Tsunami Warning Center
91-270 Fort Weaver Road
Ewa Beach, HI 96706

Fax: 808-689-4543

Or scanned and emailed to charles.mccreery@noaa.gov

Exercise Evaluation Forms are designated as "For Official Use Only" and will not be further distributed by NOAA or the NTHMP.

Appendix A. Example Table Top Exercise

Tabletop Exercise Development Steps

Source: California Office of Emergency Services

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 Alaska tsunami forecast model was used to simulate the tsunami generated by a magnitude 9.0 earthquake 105 miles SE of Chignik, Alaska near the Shumagin Islands with an epicenter at 55.0N and 157.0W. Other fault parameters are:

Length: 575km
Width: 145km
Depth: 5km
Strike: 244°
Dip: 15°
Slip: 90°
Moment: 3.55×10^{29} dyne-cm

The model was computed using a 4-minute resolution grid in the open ocean and additional 15-second resolution grids along the U.S./Canadian Pacific coasts region.

The following figure displays the maximum modeled deep-ocean tsunami amplitude throughout the Pacific. Coastal amplitudes would be significantly larger and are provided for the North American and Hawaiian coasts below.

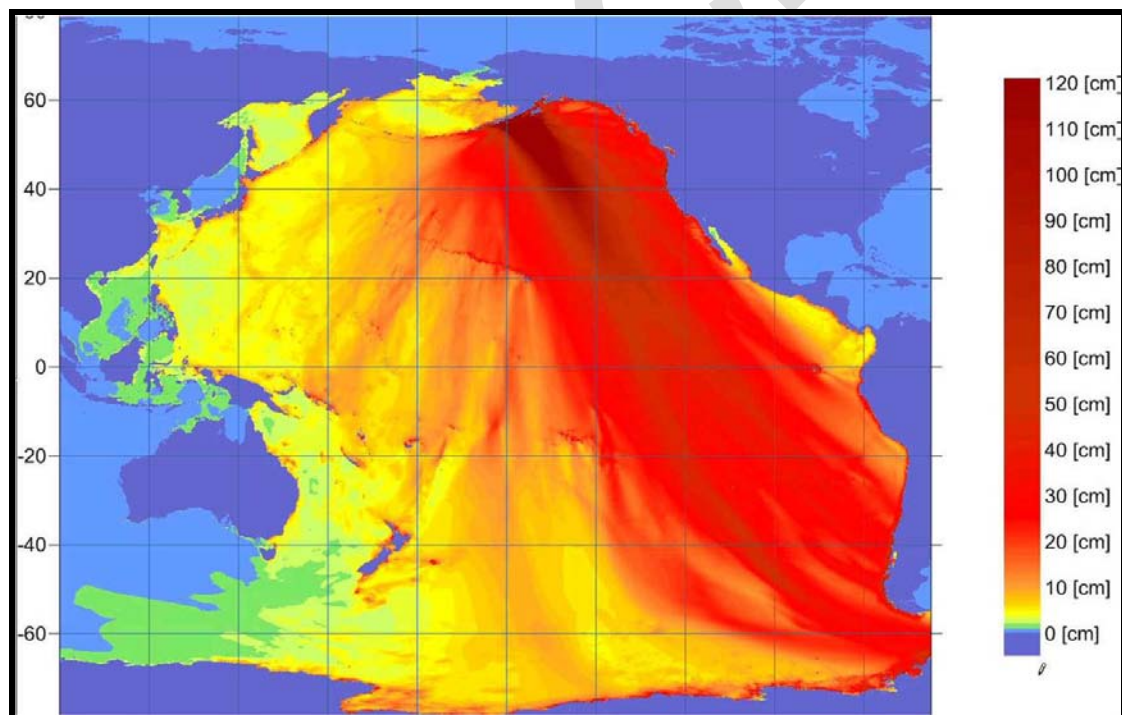


Figure B1: Maximum modeled tsunami amplitude throughout the Pacific

The following table provides maximum modeled amplitudes at several points throughout the WCATWC exercise area and Hawaii. Amplitude indicates the level of the tsunami above normal sea level at the coast. Coastal amplitudes may induce vertical runups along shore that are approximately double the forecast amplitude.

Location	Amplitude (m)	Location	Amplitude (m)
Attu, AK	0.38	Empire, OR	0.39
Shemya, AK	0.07	Charleston, OR	0.83
Adak Dock, AK	0.35	Bastendorf Beach, OR	2.29
St. Paul, AK	0.15	Port Orford, OR	1.44
Nikolski, AK	0.34	Crescent City TG, OR	1.65
Unalaska TG, AK	0.80	Trinidad, CA	1.85
Akutan, AK	0.37	South Spit, CA	1.54
False Pass, AK	0.60	Humboldt Bay, CA	1.15
Sanak, AK	1.31	Eureka, CA	0.52
Cold Bay, AK	0.73	Ten Mile River, CA	1.73
King Cove, AK	1.71	Elk, CA	1.76
Belkofski, AK	1.91	Arena Cove, CA	1.48
Sand Point, AK	3.02	Bodega Bay, CA	1.48
Ivanof Bay, AK	4.32	Fort Point, CA	1.02
Perryville, AK	2.90	Sausalito, CA	0.52
Kodiak USCG TG, AK	0.96	Alameda, CA	0.35
Port Lions, AK	1.25	Pacifica, CA	1.52
Ouzinkie, AK	0.90	Half Moon Bay, CA	2.03
English Bay, AK	0.80	Rio Del Mar, CA	2.83
Seldovia, AK	0.90	Santa Cruz, CA	1.75
Homer Spit, AK	0.79	Monterey, CA	0.94
Halibut Cove, AK	0.86	Morro Bay, CA	2.49
Seward, AK	0.75	Point San Luis, CA	1.57
Whittier, AK	0.28	Pismo Beach, CA	2.45
Tatitlek, AK	0.23	Surf, CA	1.60
Valdez, AK	0.29	Naples, CA	0.64
Cordova, AK	0.20	Santa Barbara, CA	0.76
Icy Bay, AK	1.29	Malibu, CA	0.44
Yakutat dock, AK	0.57	Santa Monica, CA	0.71
Elfin Cove, AK	0.64	Los Angeles, CA	0.49
Gustavus, AK	0.50	Laguna Beach, CA	0.64
Auke Bay, AK	0.42	La Jolla, CA	1.03
Sitka dock, AK	1.56	Ballast Point, CA	0.77
Langara, BC	0.53	San Diego Navy Pier TG, CA	0.40
Cape Scott, BC	0.74	Midway Island	0.42
Tofino, BC	0.85	Hanalei, HI	0.83
Neah Bay, WA	0.50	Nawiliwili TG, HI	0.67
Port Angeles, WA	0.38	Haleiwa, HI	0.83
Bellingham, WA	0.40	Moku O Loe Is. TG, HI	0.75
Everett, WA	0.14	Honolulu TG, HI	0.51
Seattle – Pier 48, WA	0.16	Kalaupapa, HI	0.60
Moclips, WA	1.26	Kahului TG, HI	1.89
Westport, WA	0.57	Kihei, HI	1.13
Long Beach, WA	1.19	Kawaihae TG, HI	0.63

East Astoria, OR	0.31	Hilo TG, HI	1.20
Cannon Beach, OR	1.58		
Newport TG, OR	1.95		
Yachats, OR	1.45		

Exercise

Appendix C. WCATWC and PTWC Dummy Messages

WCATWC Dummy Message

WEPA41 PAAQ 241705
TSUWCA

TEST...TSUNAMI EXERCISE MESSAGE NUMBER 1...TEST
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1005 AM PDT WED MAR 24 2010

...PACIFEX 10 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 10 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.

\$\$

PTWC Dummy Message

WEHW40 PHEB 241705
TSUHWX

TEST...TSUNAMI EXERCISE MESSAGE NUMBER 1...TEST
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
705 AM HST WED MAR 24 2010

...PACIFEX 10 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 10 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 10 tsunami exercise, are representative of the official standard products issued by the West Coast and Alaska Tsunami Warning Center during a large magnitude 9.0 earthquake and tsunami originating at 55.0°N, 157.0°W. During a real event, the Center would also issue graphical and html-based products to its web site and via RSS.

WCATWC Message #1

WEPA41 PAAQ 241705
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 1

NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
905 AM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE NORTH
TIP OF VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU ALASKA...

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

RECOMMENDED ACTIONS

IT IS NOT KNOWN - REPEAT NOT KNOWN - IF A TSUNAMI EXISTS BUT A
TSUNAMI MAY HAVE BEEN GENERATED. PERSONS IN LOW-LYING COASTAL
AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY
OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE
AGENCIES.

- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
HIGHER GROUND.
- PERSONS IN TSUNAMI WATCH AREAS SHOULD STAY ALERT FOR
SUPPLEMENTAL INFORMATION.

THIS MESSAGE IS BASED MAINLY ON EARTHQUAKE DATA. AS MORE
INFORMATION BECOMES AVAILABLE THE WARNING AND WATCH AREAS WILL
BE REFINED.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
TIME - 0900 AKDT MAR 24 2010
1000 PDT MAR 24 2010
1700 UTC MAR 24 2010
LOCATION - 55.0 NORTH 157.0 WEST
105 MILES/169 KM SE OF CHIGNIK ALASKA
500 MILES/805 KM SW OF ANCHORAGE ALASKA
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL
ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC
OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT OR EXPECTED. 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. PERSONS IN A WATCH AREA SHOULD CLOSELY

FOLLOW SUBSEQUENT TSUNAMI MESSAGES.

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.

PKZ310-041-031>036-042-043-011>013-021-022-051-052-053-125>129-121-120-130-140-141-136>138-132-150-155-170-171-172-175-176-AKZ023-024-026>029-018>022-025-017-135-131-125-121-145-171-181-185-187-191-241805-
/T.NEW.PAAQ.TS.W.0011.100324T1705Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU ALASKA
905 AM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU ALASKA...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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	1025	AKDT	MAR 24	VALDEZ-AK	1130	AKDT	MAR 24
DUTCH HARBOR-AK	1045	AKDT	MAR 24	LANGARA-BC	1230	PDT	MAR 24
KODIAK-AK	1046	AKDT	MAR 24	CORDOVA-AK	1140	AKDT	MAR 24
COLD BAY-AK	1108	AKDT	MAR 24	SHEMYA-AK	1153	AKDT	MAR 24
ADAK-AK	1110	AKDT	MAR 24	HOMER-AK	1204	AKDT	MAR 24
SEWARD-AK	1111	AKDT	MAR 24	KETCHIKAN-AK	1228	AKDT	MAR 24
YAKUTAT-AK	1120	AKDT	MAR 24	JUNEAU-AK	1230	AKDT	MAR 24
SITKA-AK	1121	AKDT	MAR 24				

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

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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-356-310-350-255-250-210-110-156-153-150-130>135-170-CAZ039>043-087-034-035-530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-WAZ503-506>511-001-514>517-021-241805-
/T.NEW.PAAQ.TS.A.0011.100324T1705Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA
905 AM AKDT WED MAR 24 2010

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

PERSONS IN TSUNAMI WATCH 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.

TOFINO-BC	1356	PDT	MAR 24	CRESCENT CITY-CA	1425	PDT	MAR 24
NEAH BAY-WA	1408	PDT	MAR 24	SAN FRANCISCO-CA	1517	PDT	MAR 24
CHARLESTON-OR	1416	PDT	MAR 24	SANTA BARBARA-CA	1532	PDT	MAR 24
SEASIDE-OR	1421	PDT	MAR 24	LA JOLLA-CA	1559	PDT	MAR 24
WESTPORT-WA	1422	PDT	MAR 24				

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

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WCATWC Message #2

WEPA41 PAAQ 241735
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 2
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
935 AM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU ALASKA...

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

RECOMMENDED ACTIONS

- A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE WARNING REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.
 - PERSONS IN TSUNAMI WATCH AREAS SHOULD STAY ALERT FOR SUPPLEMENTAL INFORMATION.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES - DEEP-WATER PRESSURE SENSORS INDICATE THAT A TSUNAMI HAS BEEN GENERATE APPROXIMATELY 105MI/170KM SOUTHEAST OF CHIGNIK AK.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
TIME - 0900 AKDT MAR 24 2010
 1000 PDT MAR 24 2010
 1700 UTC MAR 24 2010
LOCATION - 55.0 NORTH 157.0 WEST
 105 MILES/169 KM SE OF CHIGNIK ALASKA
 500 MILES/805 KM SW OF ANCHORAGE ALASKA
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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. PERSONS IN A WATCH AREA SHOULD CLOSELY FOLLOW SUBSEQUENT TSUNAMI MESSAGES.

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.

PKZ310-041-031>036-042-043-011>013-021-022-051-052-053-125>129-121-120-130-140-141-136>138-132-150-155-170-171-172-175-176-AKZ023-024-026>029-018>022-025-017-135-131-125-121-145-171-181-185-187-191-241835-
/T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU ALASKA
935 AM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU ALASKA...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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	1025 AKDT MAR 24	VALDEZ-AK	1130 AKDT MAR 24
DUTCH HARBOR-AK	1045 AKDT MAR 24	LANGARA-BC	1230 PDT MAR 24
KODIAK-AK	1046 AKDT MAR 24	CORDOVA-AK	1140 AKDT MAR 24
COLD BAY-AK	1108 AKDT MAR 24	SHEMYA-AK	1153 AKDT MAR 24
ADAK-AK	1110 AKDT MAR 24	HOMER-AK	1204 AKDT MAR 24
SEWARD-AK	1111 AKDT MAR 24	KETCHIKAN-AK	1228 AKDT MAR 24
YAKUTAT-AK	1120 AKDT MAR 24	JUNEAU-AK	1230 AKDT MAR 24
SITKA-AK	1121 AKDT MAR 24		

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

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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-356-310-350-255-250-210-110-156-153-150-130>135-170-CAZ039>043-087-034-035-530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-WAZ503-506>511-001-514>517-021-241835-/T.CON.PAAQ.TS.A.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA
935 AM AKDT WED MAR 24 2010

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

PERSONS IN TSUNAMI WATCH 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.

TOFINO-BC	1356	PDT MAR 24	CRESCENT CITY-CA	1425	PDT MAR 24
NEAH BAY-WA	1408	PDT MAR 24	SAN FRANCISCO-CA	1517	PDT MAR 24
CHARLESTON-OR	1416	PDT MAR 24	SANTA BARBARA-CA	1532	PDT MAR 24
SEASIDE-OR	1421	PDT MAR 24	LA JOLLA-CA	1559	PDT MAR 24
WESTPORT-WA	1422	PDT MAR 24			

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

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WCATWC Message #3

WEPA41 PAAQ 241805
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 3
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1005 AM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF WASHINGTON AND BRITISH COLUMBIA FROM THE OREGON-WASHINGTON BORDER TO THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA...

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU ALASKA...

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

RECOMMENDED ACTIONS

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

- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.
- PERSONS IN TSUNAMI WATCH AREAS SHOULD STAY ALERT FOR SUPPLEMENTAL INFORMATION.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES - DEEP-WATER PRESSURE SENSORS INDICATE THAT A TSUNAMI HAS BEEN GENERATE APPROXIMATELY 105MI/170KM SOUTHEAST OF CHIGNIK AK. FORECAST MODELS PROJECT THAT 3.2-9.6 FOOT/1-3 METER WAVES COULD DEVELOP ALONG THE WEST COASTS OF ALASKA - CANADA - WASHINGTON - OREGON AND CALIFORNIA. WAVES OF THIS SIZE ARE KNOWN TO CAUSE INUNDATION AND DAMAGE TO COASTAL STRUCTURES. TSUNAMIS ARE EXPECTED TO REACH PEAK SIZE ONE TO TWO HOURS AFTER THE EXPECTED ARRIVAL TIME.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
TIME - 0900 AKDT MAR 24 2010
1000 PDT MAR 24 2010
1700 UTC MAR 24 2010
LOCATION - 55.0 NORTH 157.0 WEST
105 MILES/169 KM SE OF CHIGNIK ALASKA
500 MILES/805 KM SW OF ANCHORAGE ALASKA
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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. PERSONS IN A WATCH AREA SHOULD CLOSELY FOLLOW SUBSEQUENT TSUNAMI MESSAGES.

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.

PZZ110-156-153-150-130>135-170-WAZ503-506>511-001-514>517-021-241905-
/T.CAN.PAAQ.TS.A.0011.000000T0000Z-000000T0000Z/
/T.EXA.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE OREGON-WASHINGTON BORDER TO THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA
1005 AM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF WASHINGTON AND BRITISH COLUMBIA FROM THE OREGON-WASHINGTON BORDER TO THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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.

TOFINO-BC 1356 PDT MAR 24 WESTPORT-WA 1422 PDT MAR 24
 NEAH BAY-WA 1408 PDT MAR 24
 FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
 WCATWC.ARH.NOAA.GOV

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PKZ310-041-031>036-042-043-011>013-021-022-051-052-053-125>129-
 121-120-130-140-141-136>138-132-150-155-170-171-172-175-176-
 AKZ023-024-026>029-018>022-025-017-135-131-125-121-145-171-
 181-185-187-191-241905-
 /T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE NORTH TIP OF
 VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU ALASKA
 1005 AM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU ALASKA...

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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 1025 AKDT MAR 24 VALDEZ-AK 1130 AKDT MAR 24
 DUTCH HARBOR-AK 1045 AKDT MAR 24 LANGARA-BC 1230 PDT MAR 24
 KODIAK-AK 1046 AKDT MAR 24 CORDOVA-AK 1140 AKDT MAR 24
 COLD BAY-AK 1108 AKDT MAR 24 SHEMYA-AK 1153 AKDT MAR 24
 ADAK-AK 1110 AKDT MAR 24 HOMER-AK 1204 AKDT MAR 24
 SEWARD-AK 1111 AKDT MAR 24 KETCHIKAN-AK 1228 AKDT MAR 24
 YAKUTAT-AK 1120 AKDT MAR 24 JUNEAU-AK 1230 AKDT MAR 24
 SITKA-AK 1121 AKDT MAR 24
 FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
 WCATWC.ARH.NOAA.GOV

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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-
 356-310-350-255-250-210-CAZ039>043-087-034-035-530-006-506-
 508-509-529-505-002-001-ORZ022-002-021-001-241905-
 /T.CON.PAAQ.TS.A.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
 BORDER TO THE OREGON-WASHINGTON BORDER
 1005 AM AKDT WED MAR 24 2010

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

PERSONS IN TSUNAMI WATCH 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.

CHARLESTON-OR 1416 PDT MAR 24 SAN FRANCISCO-CA 1517 PDT MAR 24
 SEASIDE-OR 1421 PDT MAR 24 SANTA BARBARA-CA 1532 PDT MAR 24
 CRESCENT CITY-CA 1425 PDT MAR 24 LA JOLLA-CA 1559 PDT MAR 24
 FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
 WCATWC.ARH.NOAA.GOV

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WCATWC Message #4

WEPA41 PAAQ 241835
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 4
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1035 AM AKDT WED MAR 24 2010

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

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF ALASKA FROM DUTCH HARBOR ALASKA TO ATTU ALASKA...

RECOMMENDED ACTIONS

- A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.
 - PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -

LOCATION	LAT	LON	TIME	AMPL
SAND POINT AK	55.3 N	160.5 W	1825	9.66 FT/3.02 M

FORECAST MODELS PROJECT THAT 3.2-9.6 FOOT/1-3 METER WAVES COULD DEVELOP ALONG THE WEST COASTS OF ALASKA - CANADA - WASHINGTON - OREGON AND CALIFORNIA. WAVES OF THIS SIZE ARE KNOWN TO CAUSE INUNDATION AND DAMAGE TO COASTAL STRUCTURES. TSUNAMIS ARE EXPECTED TO REACH PEAK SIZE ONE TO TWO HOURS AFTER THE EXPECTED ARRIVAL TIME. A 9.6-FOOT/3.0 METER TSUNAMI ALONGWITH STRONG OFFSHORE CURRENTS HAS BEEN REPORTED AT SAND POINT AK. A PIER WAS WASHED AWAY AT THE LOCAL PORT. SEVERAL PEOPLE ARE MISSING AND PRESUMED DROWN.

PRELIMINARY EARTHQUAKE PARAMETERS

- MAGNITUDE - 9.0
- TIME - 0900 AKDT MAR 24 2010
- 1000 PDT MAR 24 2010
- 1700 UTC MAR 24 2010
- LOCATION - 55.0 NORTH 157.0 WEST
- 105 MILES/169 KM SE OF CHIGNIK ALASKA
- 500 MILES/805 KM SW OF ANCHORAGE ALASKA
- DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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 ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION

IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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.

PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-356-310-350-255-250-210-CAZ039>043-087-034-035-530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-241935-
/T.CAN.PAAQ.TS.A.0011.000000T0000Z-000000T0000Z/
/T.EXA.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO THE OREGON-WASHINGTON BORDER
1035 AM AKDT WED MAR 24 2010

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

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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.

CHARLESTON-OR	1416	PDT	MAR 24	SAN FRANCISCO-CA	1517	PDT	MAR 24
SEASIDE-OR	1421	PDT	MAR 24	SANTA BARBARA-CA	1532	PDT	MAR 24
CRESCENT CITY-CA	1425	PDT	MAR 24	LA JOLLA-CA	1559	PDT	MAR 24

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

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PZZ110-156-153-150-130>135-170-PKZ310-041-031>036-042-043-011>013-021-022-051-052-053-125>129-121-120-130-140-141-136>138-132-150-155-WAZ503-506>511-001-514>517-021-AKZ023-024-026>029-018>022-025-017-135-131-125-121-145-171-181-241935-
/T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE OREGON-WASHINGTON BORDER TO DUTCH HARBOR ALASKA
1035 AM AKDT WED MAR 24 2010

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

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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.

DUTCH HARBOR-AK	1045	AKDT	MAR 24	CORDOVA-AK	1140	AKDT	MAR 24
KODIAK-AK	1046	AKDT	MAR 24	HOMER-AK	1204	AKDT	MAR 24
COLD BAY-AK	1108	AKDT	MAR 24	KETCHIKAN-AK	1228	AKDT	MAR 24
SEWARD-AK	1111	AKDT	MAR 24	JUNEAU-AK	1230	AKDT	MAR 24
YAKUTAT-AK	1120	AKDT	MAR 24	TOFINO-BC	1356	PDT	MAR 24
SITKA-AK	1121	AKDT	MAR 24	NEAH BAY-WA	1408	PDT	MAR 24
VALDEZ-AK	1130	AKDT	MAR 24	WESTPORT-WA	1422	PDT	MAR 24
LANGARA-BC	1230	PDT	MAR 24				

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

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PKZ170-171-172-175-176-AKZ185-187-191-241935-
/T.CAN.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
/T.NEW.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/

COASTAL AREAS BETWEEN AND INCLUDING DUTCH HARBOR ALASKA TO
ATTU ALASKA
1035 AM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF ALASKA FROM DUTCH HARBOR ALASKA TO ATTU
ALASKA...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR
WATER IS IMMINENT OF EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
IS NOT EXPECTED FOR AREAS IN AN ADVISORY. 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 ADVISORY ARE PROVIDED BELOW.

SHEMYA-AK 1153 AKDT MAR 24 ADAK-AK 1110 AKDT MAR 24
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
WCATWC.ARH.NOAA.GOV

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WCATWC Message #5

WEPA41 PAAQ 241905
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 5
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1105 AM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
DUTCH HARBOR ALASKA...

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF ALASKA FROM DUTCH HARBOR ALASKA TO ATTU
ALASKA...

RECOMMENDED ACTIONS

- A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE
WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS
IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM
THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED
BY EMERGENCY RESPONSE AGENCIES.
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
HIGHER GROUND.
- PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -
LOCATION LAT LON TIME AMPL

LOCATION	LAT	LON	TIME	AMPL
SAND POINT AK	55.3 N	160.5 W	1825	10.2 FT/3.12 M
KING COVE AK	55.1 N	163.3 W	1833	5.40 FT/1.65 M
KODIAK AK	57.8 N	152.4 W	1846	3.90 FT/1.20 M

FORECAST MODELS PROJECT THAT 3.2-9.6 FOOT/1-3 METER WAVES COULD DEVELOP
ALONG THE WEST COASTS OF ALASKA - CANADA - WASHINGTON - OREGON AND
CALIFORNIA. WAVES OF THIS SIZE ARE KNOWN TO CAUSE INUNDATION AND DAMAGE TO
COASTAL STRUCTURES. TSUNAMIS ARE EXPECTED TO REACH PEAK SIZE ONE TO TWO
HOURS AFTER THE EXPECTED ARRIVAL TIME.

A 3.0-FOOT/0.9 METER TSUNAMI ALONGWITH STRONG OFFSHORE CURRENTS
HAS BEEN REPORTED AT KODIAK AK. KODIAK'S FISH-PROCESSING DOCK WAS
SIGNIFICANTLY DAMAGED AND LOCAL FISHING BOATS ARE AWAITING
A FLOATING PROCESSOR. KING COVE AK REPORTED A 5.5-FOOT/1.7-METER WAVE THAT
CAUSED APPROXIMATELY \$1.2 MILLION DAMAGE TO LOCAL FISHING BOATS.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
 TIME - 0900 AKDT MAR 24 2010
 1000 PDT MAR 24 2010
 1700 UTC MAR 24 2010
 LOCATION - 55.0 NORTH 157.0 WEST
 105 MILES/169 KM SE OF CHIGNIK ALASKA
 500 MILES/805 KM SW OF ANCHORAGE ALASKA
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

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TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-356-310-350-255-250-210-110-156-153-150-130>135-170-PKZ310-041-031>036-042-043-011>013-021-022-051-052-053-125>129-121-120-130-140-141-136>138-132-150-155-CAZ039>043-087-034-035-530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-WAZ503-506>511-001-514>517-021-AKZ023-024-026>029-018>022-025-017-135-131-125-121-145-171-181-242005-
 /T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO DUTCH HARBOR ALASKA
 1105 AM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO DUTCH HARBOR ALASKA...

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COLD BAY-AK	1108 AKDT MAR 24	TOFINO-BC	1356	PDT MAR 24
SEWARD-AK	1111 AKDT MAR 24	NEAH BAY-WA	1408	PDT MAR 24
YAKUTAT-AK	1120 AKDT MAR 24	CHARLESTON-OR	1416	PDT MAR 24
SITKA-AK	1121 AKDT MAR 24	SEASIDE-OR	1421	PDT MAR 24
VALDEZ-AK	1130 AKDT MAR 24	WESTPORT-WA	1422	PDT MAR 24
LANGARA-BC	1230 PDT MAR 24	CRESCENT CITY-CA	1425	PDT MAR 24
CORDOVA-AK	1140 AKDT MAR 24	SAN FRANCISCO-CA	1517	PDT MAR 24
HOMER-AK	1204 AKDT MAR 24	SANTA BARBARA-CA	1532	PDT MAR 24
JUNEAU-AK	1230 AKDT MAR 24	LA JOLLA-CA	1559	PDT MAR 24
KETCHIKAN-AK	1228 AKDT MAR 24			

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

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PKZ170-171-172-175-176-AKZ185-187-191-242005-
 /T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING DUTCH HARBOR ALASKA TO

ATTU ALASKA
1105 AM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF ALASKA FROM DUTCH HARBOR ALASKA TO ATTU
ALASKA...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
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TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED
SITES IN THE ADVISORY ARE PROVIDED BELOW.

ADAK-AK 1110 AKDT MAR 24 SHEMYA-AK 1153 AKDT MAR 24
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
WCATWC.ARH.NOAA.GOV

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WCATWC Message #6

WEPA41 PAAQ 241935
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 6
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1135 AM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
DUTCH HARBOR ALASKA...

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF ALASKA FROM DUTCH HARBOR ALASKA TO ATTU
ALASKA...

RECOMMENDED ACTIONS

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WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS
IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM
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BY EMERGENCY RESPONSE AGENCIES.
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
HIGHER GROUND.
 - PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
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THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -
LOCATION LAT LON TIME AMPL

LOCATION	LAT	LON	TIME	AMPL
KODIAK AK	57.8 N	152.4 W	1846	3.90 FT/1.20 M
SEWARD AK	60.1 N	149.4 W	1911	2.40 FT/0.74 M

FORECAST MODELS PROJECT THAT 3.2-9.6 FOOT/1-3 METER WAVES COULD DEVELOP
ALONG THE WEST COASTS OF CANADA - WASHINGTON - OREGON AND
CALIFORNIA. A TSUNAMI BETWEEN 1.0-2.6 FEET/0.3-0.8 METERS HAVE BEEN
REPORTED BETWEEN SEWARD AND KETCHIKAN AK. AND BETWEEN DUTCH HARBOR AND
AMCHITKA.THESE AREAS HAVE REPORTED DAMAGE TO DOCKS AND BOATS LOCATED IN
HARBORS.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 9.0
TIME - 0900 AKDT MAR 24 2010
1000 PDT MAR 24 2010
1700 UTC MAR 24 2010
LOCATION - 55.0 NORTH 157.0 WEST

105 MILES/169 KM SE OF CHIGNIK ALASKA
 500 MILES/805 KM SW OF ANCHORAGE ALASKA
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL
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TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
 INUNDATION IS IMMINENT OR EXPECTED. 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 ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
 STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE
 WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
 IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE
 HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY
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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-
 356-310-350-255-250-210-110-156-153-150-130>135-170-PKZ310-
 041-031>036-042-043-011>013-021-022-051-052-053-125>129-121-
 120-130-140-141-136>138-132-150-155-CAZ039>043-087-034-035-
 530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-WAZ503-
 506>511-001-514>517-021-AKZ023-024-026>029-018>022-025-017-
 135-131-125-121-145-171-181-242035-
 /T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
 BORDER TO DUTCH HARBOR ALASKA
 1135 AM AKDT WED MAR 24 2010

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 COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
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COLD BAY-AK	1108	AKDT	MAR 24	TOFINO-BC	1356	PDT	MAR 24
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KETCHIKAN-AK	1228	AKDT	MAR 24				

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

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PKZ170-171-172-175-176-AKZ185-187-191-242035-
 /T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING DUTCH HARBOR ALASKA TO
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 1135 AM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
 COASTAL AREAS OF ALASKA FROM DUTCH HARBOR ALASKA TO ATTU
 ALASKA...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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SHEMYA-AK 1153 AKDT MAR 24
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
WCATWC.ARH.NOAA.GOV

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WCATWC Message #7

WEPA41 PAAQ 242005
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 7
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1205 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO DUTCH HARBOR ALASKA...

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF ALASKA FROM DUTCH HARBOR ALASKA TO ATTU ALASKA...

RECOMMENDED ACTIONS

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- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.
- PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -
LOCATION LAT LON TIME AMPL

LOCATION	LAT	LON	TIME	AMPL
SEWARD AK	60.1 N	149.4 W	1911	2.40 FT/0.74 M
YAKUTAT AK	59.5 N	139.7 W	1920	1.90 FT/0.57 M
SITKA AK	57.1 N	135.3 W	1921	5.40 FT/1.66 M
LANGARA BC	54.2 N	133.1 W	1930	1.90 FT/0.58 M
CORDOVA AK	60.5 N	145.7 W	1940	0.90 FT/0.26 M
ATTU AK	52.9 N	173.2 W	2000	1.22 FT/0.38 M

FORECAST MODELS PROJECT THAT 3.2-9.6 FOOT/1-3 METER WAVES COULD DEVELOP ALONG THE WEST COASTS OF CANADA - WASHINGTON - OREGON AND CALIFORNIA. A 2.4-FOOT/0.7-METER TSUNAMI WAS REPORTED AT SEWARD AK WHERE BOATS WERE REPORTED TORN FROM THEIR MOORINGS. THE SOUTHERN HALF OF SEWARDS DEEP-DRAFT WHARF IS REPORTED DAMAGED AND NO SHIPS ARE ALLOWED TO TIE-UP ALONGSIDE UNTIL FURTHER NOTICE. A 1.8-FOOT/0.6-METER TSUNAMI WAS REPORTED AT YAKUTAT WHERE ITS REPORTED THAT THREE PEOPLE ARE MISSING AND PRESUMED DEAD. A 1.2-FOOT/0.4-METER TSUNAMI AT ATTU DISPLACED NAVIGATION AIDS AND BOATS ARE BEING CAUTIONED TO NAVIGATE IN THE HARBOR AT THEIR OWN RISK.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 9.0
TIME - 0900 AKDT MAR 24 2010
1000 PDT MAR 24 2010
1700 UTC MAR 24 2010
LOCATION - 55.0 NORTH 157.0 WEST

105 MILES/169 KM SE OF CHIGNIK ALASKA
 500 MILES/805 KM SW OF ANCHORAGE ALASKA
 DEPTH - 28 MILES/45 KM

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 INITIAL WAVE ARRIVAL.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
 STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE
 WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
 IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE
 HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY
 CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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.

PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-
 356-310-350-255-250-210-110-156-153-150-130>135-170-PKZ310-
 041-031>036-042-043-011>013-021-022-051-052-053-125>129-121-
 120-130-140-141-136>138-132-150-155-CAZ039>043-087-034-035-
 530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-WAZ503-
 506>511-001-514>517-021-AKZ023-024-026>029-018>022-025-017-
 135-131-125-121-145-171-181-242105-
 /T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
 BORDER TO DUTCH HARBOR ALASKA
 1205 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE
 COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
 COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
 DUTCH HARBOR ALASKA...

PERSONS 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 OR EXPECTED. 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.

LANGARA-BC	1230	PDT	MAR 24	SEASIDE-OR	1421	PDT	MAR 24
KETCHIKAN-AK	1228	AKDT	MAR 24	WESTPORT-WA	1422	PDT	MAR 24
JUNEAU-AK	1230	AKDT	MAR 24	CRESCENT CITY-CA	1425	PDT	MAR 24
TOFINO-BC	1356	PDT	MAR 24	SAN FRANCISCO-CA	1517	PDT	MAR 24
NEAH BAY-WA	1408	PDT	MAR 24	SANTA BARBARA-CA	1532	PDT	MAR 24
CHARLESTON-OR	1416	PDT	MAR 24	LA JOLLA-CA	1559	PDT	MAR 24

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

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PKZ170-171-172-175-176-AKZ185-187-191-242105-
 /T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING DUTCH HARBOR ALASKA TO
 ATTU ALASKA
 1205 PM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
 COASTAL AREAS OF ALASKA FROM DUTCH HARBOR ALASKA TO ATTU
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PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
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STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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

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WCATWC Message #8

WEPA41 PAAQ 242035
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 8
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1235 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO DUTCH HARBOR ALASKA...

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF ALASKA FROM DUTCH HARBOR ALASKA TO ATTU ALASKA...

RECOMMENDED ACTIONS

- A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.
- PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -

LOCATION	LAT	LON	TIME	AMPL
LANGARA BC	54.2 N	133.1 W	1930	1.90 FT/0.58 M
CORDOVA AK	60.5 N	145.7 W	1940	0.90 FT/0.26 M
ATTU AK	52.9 N	173.2 W	2000	1.22 FT/0.38 M
N. VANCOUVER IS	50.8 N	128.5 W	2016	2.37 FT/0.74 M

FORECAST MODELS PROJECT THAT 3.2-9.6 FOOT/1-3 METER WAVES COULD DEVELOP ALONG THE WEST COASTS OF WASHINGTON - OREGON AND CALIFORNIA. A 2.4-FOOT/0.7-METER TSUNAMI WAS REPORTED AT THE N. TIP OF VANCOUVER IS. THE BOARDWALKS AT PORT MCNEILL AND PORT HARDY HAVE BEEN REPORTED AS BEING SEVERLY DAMAGED SLOWING FOOT-TRAFFIC IN THOSE COMMUNITIES. THREE ORCAS WERE WASHED ASHORE IN TELEGRAPH COVE AND ONE PERSON DROWNED AT SAYWARD.

PRELIMINARY EARTHQUAKE PARAMETERS

- MAGNITUDE - 9.0
- TIME - 0900 AKDT MAR 24 2010
- 1000 PDT MAR 24 2010
- 1700 UTC MAR 24 2010
- LOCATION - 55.0 NORTH 157.0 WEST
- 105 MILES/169 KM SE OF CHIGNIK ALASKA
- 500 MILES/805 KM SW OF ANCHORAGE ALASKA
- DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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 ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-356-310-350-255-250-210-110-156-153-150-130>135-170-PKZ310-041-031>036-042-043-011>013-021-022-051-052-053-125>129-121-120-130-140-141-136>138-132-150-155-CAZ039>043-087-034-035-530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-WAZ503-506>511-001-514>517-021-AKZ023-024-026>029-018>022-025-017-135-131-125-121-145-171-181-242135-
/T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO DUTCH HARBOR ALASKA
1235 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO DUTCH HARBOR ALASKA...

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TOFINO-BC	1356	PDT MAR 24	CRESCENT CITY-CA	1425	PDT MAR 24
NEAH BAY-WA	1408	PDT MAR 24	SAN FRANCISCO-CA	1517	PDT MAR 24
CHARLESTON-OR	1416	PDT MAR 24	SANTA BARBARA-CA	1532	PDT MAR 24
SEASIDE-OR	1421	PDT MAR 24	LA JOLLA-CA	1559	PDT MAR 24
WESTPORT-WA	1422	PDT MAR 24			

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

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PKZ170-171-172-175-176-AKZ185-187-191-242135-
/T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING DUTCH HARBOR ALASKA TO ATTU ALASKA
1235 PM AKDT WED MAR 24 2010

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

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WCATWC Message #9

WEPA41 PAAQ 242105
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 9
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
105 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO
DUTCH HARBOR ALASKA...

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COASTAL AREAS OF ALASKA FROM DUTCH HARBOR ALASKA TO ATTU
ALASKA...

RECOMMENDED ACTIONS

- A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE
WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS
IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM
THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED
BY EMERGENCY RESPONSE AGENCIES.
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
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WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -
LOCATION LAT LON TIME AMPL

N. VANCOUVER IS 50.8 N 128.5 W 2016 2.37 FT/0.74 M
FORECAST MODELS PROJECT THAT 3.2-9.6 FOOT/1-3 METER WAVES COULD DEVELOP
ALONG THE WEST COASTS OF WASHINGTON - OREGON AND
CALIFORNIA. A 0.6-FOOT/0.2-METER TSUNAMI WAS REPORTED IN NIKOLSKI CAUSING
SOME FLOODING TO LOCAL HOMES. THE ELEVATION OF NIKOLSKI IS REPORTED TO BE
7.0 FT/2.2 M. A 0.6-FOOT/0.2-METER TSUNAMI IN ADAK WAS REPORTED AS
CAUSING LITTLE DAMAGE EXCEPT TO ONE FISHING VESSEL WHICH DRAGGED ITS ANCHOR
UNTIL IT RAN AGROUND 3.0 MI/4.8 KM WEST OF THE TOWN.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
TIME - 0900 AKDT MAR 24 2010
1000 PDT MAR 24 2010
1700 UTC MAR 24 2010
LOCATION - 55.0 NORTH 157.0 WEST
105 MILES/169 KM SE OF CHIGNIK ALASKA
500 MILES/805 KM SW OF ANCHORAGE ALASKA
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL
ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC
OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT OR EXPECTED. WARNINGS INDICATE THAT
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 356-310-350-255-250-210-110-156-153-150-130>135-170-PKZ310-
 041-031>036-042-043-011>013-021-022-051-052-053-125>129-121-
 120-130-140-141-136>138-132-150-155-CAZ039>043-087-034-035-
 530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-WAZ503-
 506>511-001-514>517-021-AKZ023-024-026>029-018>022-025-017-
 135-131-125-121-145-171-181-242205-
 /T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
 BORDER TO DUTCH HARBOR ALASKA
 105 PM AKDT WED MAR 24 2010

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 COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
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PKZ170-171-172-175-176-AKZ185-187-191-242205-
 /T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING DUTCH HARBOR ALASKA TO
 ATTU ALASKA
 105 PM AKDT WED MAR 24 2010

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WCATWC Message #10

WEPA41 PAAQ 242135
 TSUWCA

BULLETIN
 TSUNAMI MESSAGE NUMBER 10
 NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
 135 PM AKDT WED MAR 24 2010

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

LANGARA ISLAND BRITISH COLUMBIA...

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF ALASKA FROM LANGARA ISLAND BRITISH COLUMBIA TO DUTCH HARBOR ALASKA...

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF ALASKA FROM DUTCH HARBOR ALASKA TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

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A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -

LOCATION	LAT	LON	TIME	AMPL
N. VANCOUVER IS	50.8 N	128.5 W	2016	2.37 FT/0.74 M
WASH/BC BORDER	48.4 N	124.6 W	2102	1.60 FT/0.50 M
OR/WASH BORDER	46.2 N	123.8 W	2109	0.99 FT/0.31 M
CASCADE HEAD OR	44.6 N	124.1 W	2114	6.24 FT/1.95 M
CA/OR BORDER	41.7 N	124.2 W	2125	5.28 FT/1.65 M

MUCH DAMAGE HAS BEEN REPORTED ALONG THE OREGON COAST FROM LINCOLN CITY TO NESKOWIN. PIERS HAVE BEEN DAMAGED AND 13 PEOPLE IN OREGON ARE REPORTED MISSING AND PRESUMED DEAD. WAVES HAVE ERODED THE BEACHES AROUND CASCADE HEAD DAMAGING LOCAL RESERVES. ALASKA ZONES HAVE BEEN DROPPED TO AN ADVISORY BECAUSE AMPLITUDES THROUGHOUT THE AREA MEASURE BETWEEN 0.9-3.1 FT/0.3-1.0 M.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
 TIME - 0900 AKDT MAR 24 2010
 1000 PDT MAR 24 2010
 1700 UTC MAR 24 2010
 LOCATION - 55.0 NORTH 157.0 WEST
 105 MILES/169 KM SE OF CHIGNIK ALASKA
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TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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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/T.CON.PAAQ.TS.W. 0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
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135 PM AKDT WED MAR 24 2010

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SAN FRANCISCO-CA 1517 PDT MAR 24 LA JOLLA-CA 1559 PDT MAR 24
SANTA BARBARA-CA 1532 PDT MAR 24
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
WCATWC.ARH.NOAA.GOV

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PKZ041-031>036-042-043-011>013-021-022-051-052-053-125>129-
121-120-130-140-141-136>138-132-150-155-AKZ023-024-026>029-
018>022-025-017-135-131-125-121-145-171-181-242235-
/T.CAN.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
/T.EXA.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
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/T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
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ALASKA...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR
WATER IS IMMINENT OF EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF
WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL
TIME.

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WCATWC Message #11

WEPA41 PAAQ 242205
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 11
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
205 PM AKDT WED MAR 24 2010

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF ALASKA FROM LANGARA ISLAND BRITISH
COLUMBIA TO ATTU ALASKA...

RECOMMENDED ACTIONS

- A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE
WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS
IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM
THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED
BY EMERGENCY RESPONSE AGENCIES.
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
HIGHER GROUND.
 - PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -
LOCATION LAT LON TIME AMPL

LOCATION	LAT	LON	TIME	AMPL
OR/WASH BORDER	46.2 N	123.8 W	2109	0.99 FT/0.31 M
CASCADE HEAD OR	44.6 N	124.1 W	2114	6.24 FT/1.95 M
CA/OR BORDER	41.7 N	124.2 W	2125	5.28 FT/1.65 M
PT REYES CA	38.1 N	122.9 W	2147	4.74 FT/1.48 M

WAVES BETWEEN DUTCH HARBOR AND SEWARD HAVE BEEN REPORTED AS BEING
1.0-2.9 FEET/0.3-0.9 METERS. WAVES BETWEEN SEWARD AND THE N. TIP
OF VANCOUVER IS. CONTINUE TO DIMINISH BUT REMAIN BETWEEN 1.0-1.9 FEET/0.3-
0.6 METERS IN HEIGHT. NORTH SPIT CA REPORTS A 3.5-FOOT/1.1-METER WAVE. PT
REYES REPORTS HEAVY SURF AND STRONG CURRENTS. APPROXIMATELY 50.0 FT/16.0 M
OF SHORELINE HAS BEEN ERODED FROM POINT REYES BEACH SOUTH AND 35.0 FT/11.2
M FROM POINT REYES BEACH NORTH. THREE PEOPLE ARE MISSING FROM STINSON
BEACH LOCATED NORTH OF SAN FRANCISCO AND ARE PRESUMED DROWNED.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
TIME - 0900 AKDT MAR 24 2010
1000 PDT MAR 24 2010
1700 UTC MAR 24 2010
LOCATION - 55.0 NORTH 157.0 WEST
105 MILES/169 KM SE OF CHIGNIK ALASKA
500 MILES/805 KM SW OF ANCHORAGE ALASKA
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL
ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC
OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT OR EXPECTED. 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 ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE
WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE
HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY
CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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.

PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-356-310-350-255-250-210-110-156-153-150-130>135-170-PKZ310-CAZ039>043-087-034-035-530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-WAZ503-506>511-001-514>517-021-242305-/T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO LANGARA ISLAND BRITISH COLUMBIA
205 PM AKDT WED MAR 24 2010

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

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

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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 1517 PDT MAR 24 LA JOLLA-CA 1559 PDT MAR 24
SANTA BARBARA-CA 1532 PDT MAR 24
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
WCATWC.ARH.NOAA.GOV

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PKZ041-031>036-042-043-011>013-021-022-051-052-053-125>129-121-120-130-140-141-136>138-132-150-155-170-171-172-175-176-AKZ023-024-026>029-018>022-025-017-135-131-125-121-145-171-181-185-187-191-242305-/T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING LANGARA ISLAND BRITISH COLUMBIA TO ATTU ALASKA
205 PM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF ALASKA FROM LANGARA ISLAND BRITISH COLUMBIA TO ATTU ALASKA...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR WATER IS IMMINENT OF EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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WCATWC Message #12

WEPA41 PAAQ 242235
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 12
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
235 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS 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 ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF BRITISH COLUMBIA FROM THE WASHINGTON-BRITISH COLUMBIA BORDER TO LANGARA ISLAND BRITISH COLUMBIA...

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF ALASKA FROM LANGARA ISLAND BRITISH COLUMBIA TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.
- PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -

LOCATION	LAT	LON	TIME	AMPL
PT REYES CA	38.1 N	122.9 W	2147	4.74 FT/1.48 M
PT CONCEPTION CA	34.7 N	120.5 W	2212	5.12 FT/1.60 M

WAVES BETWEEN DUTCH HARBOR AND SEWARD HAVE BEEN REPORTED AS BEING 1.0-2.9 FEET/0.3-0.9 METERS AND DIMINISHING. DAMAGE REPORTS CONTINUE COMING IN FOR COASTAL COMMUNITIES BETWEEN DUTCH HARBOR AND SEWARD AK. LUMBER AND OTHER DEBREE IN THE GULF OF ALASKA IS REPORTED TO BE WASHING UP ON THE ALASKAN SHORELINE. BOTH PT REYES CA AND NORTH SPIT CA REPORT SOME DAMAGE TO PIER FACES AND HEAVY EROSION OF BEACH MATERIAL. THIRTY-SIX DEATHS HAVE BEEN REPORTED IN THIS PART OF CALIFORNIA THUS FAR OF PEOPLE WHO WERE DROWNED FROM BEING TOO CLOSE TO THE WAVE AS IT CAME TO SHORE.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
 TIME - 0900 AKDT MAR 24 2010
 1000 PDT MAR 24 2010
 1700 UTC MAR 24 2010
 LOCATION - 55.0 NORTH 157.0 WEST
 105 MILES/169 KM SE OF CHIGNIK ALASKA
 500 MILES/805 KM SW OF ANCHORAGE ALASKA
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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 ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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.

PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-356-310-350-255-250-210-110-156-153-150-130>135-CAZ039>043-087-034-035-530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-WAZ503-506>511-001-514>517-021-242335- /T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/

COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER
235 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF CALIFORNIA - OREGON AND WASHINGTON FROM
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COLUMBIA BORDER...

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WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL
TIME. ESTIMATED TIMES OF INITIAL WAVE ARRIVAL FOR SELECTED
SITES IN THE WARNING ARE PROVIDED BELOW.

LA JOLLA-CA 1559 PDT MAR 24
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
WCATWC.ARH.NOAA.GOV

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PZZ170-PKZ310-242335-
/T.CAN.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
/T.EXA.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE WASHINGTON-BRITISH
COLUMBIA BORDER TO LANGARA ISLAND BRITISH COLUMBIA
235 PM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF BRITISH COLUMBIA FROM THE
WASHINGTON-BRITISH COLUMBIA BORDER TO LANGARA ISLAND
BRITISH COLUMBIA...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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TIME.

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PKZ041-031>036-042-043-011>013-021-022-051-052-053-125>129-
121-120-130-140-141-136>138-132-150-155-170-171-172-175-176-
AKZ023-024-026>029-018>022-025-017-135-131-125-121-145-171-
181-185-187-191-242335-
/T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING LANGARA ISLAND BRITISH
COLUMBIA TO ATTU ALASKA
235 PM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF ALASKA FROM LANGARA ISLAND BRITISH
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WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL
TIME.

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WCATWC Message #13

WEPA41 PAAQ 242305
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 13
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
305 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS 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 ADVISORY IS IN EFFECT WHICH INCLUDES 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 COULD CAUSE DAMAGE TO THE
WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS
IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM
THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED
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THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -
LOCATION LAT LON TIME AMPL

LOCATION	LAT	LON	TIME	AMPL
PT CONCEPTION CA	34.7 N	120.5 W	2212	5.12 FT/1.60 M
CAL/MEX BORDER	32.7 N	117.1 W	2305	1.28 FT/0.40 M

WAVES BETWEEN DUTCH HARBOR AND SEWARD CONTINUE TO DIMINISH AND
CURRENTLY VARY 0.3-1.3 FEET/0.1-0.4 METERS. 3.2-FOOT/1.0-METER WAVES HAVE
BEEN REPORTED AT LA JOLLA CA AND 2.9-FOOT/0.9-METER WAVES HAVE BEEN
REPORTED AT PT.SUR CA. 5-FOOT/1.6-METER WAVES WERE REPORTED TO BE UNDER-
CUTTING JALAMA ROAD JUST NORTH OF PT CONCEPTION CA. HEAVY SURF WAS
REPORTED IN THE SANTA BARBARA CHANNEL RESULTING IN DAMAGE TO SEVERAL BOATS.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
TIME - 0900 AKDT MAR 24 2010
1000 PDT MAR 24 2010
1700 UTC MAR 24 2010
LOCATION - 55.0 NORTH 157.0 WEST
105 MILES/169 KM SE OF CHIGNIK ALASKA
500 MILES/805 KM SW OF ANCHORAGE ALASKA
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL
ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC
OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
INUNDATION IS IMMINENT OR EXPECTED. 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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THE SITUATION WARRANTS. THE TSUNAMI MESSAGE WILL REMAIN IN EFFECT
UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE
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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-356-310-350-255-250-210-110-156-153-150-130>135-CAZ039>043-087-034-035-530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-WAZ503-506>511-001-514>517-021-250005-
/T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER
305 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF CALIFORNIA - OREGON AND WASHINGTON FROM
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WCATWC.ARH.NOAA.GOV

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PZZ170-PKZ310-041-031>036-042-043-011>013-021-022-051-052-
053-125>129-121-120-130-140-141-136>138-132-150-155-170-171-
172-175-176-AKZ023-024-026>029-018>022-025-017-135-131-125-
121-145-171-181-185-187-191-250005-
/T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE WASHINGTON-BRITISH
COLUMBIA BORDER TO ATTU ALASKA
305 PM AKDT WED MAR 24 2010

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TIME.

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WCATWC Message #14

WEPA41 PAAQ 242335
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 14
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
335 PM AKDT WED MAR 24 2010

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

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COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE
WASHINGTON-BRITISH COLUMBIA BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

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A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -
 LOCATION LAT LON TIME AMPL

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CAL/MEX BORDER  32.7 N 117.1 W  2305   1.28 FT/0.40 M
WAVES BETWEEN DUTCH HARBOR AND SEWARD HAVE DIMINISHED AND CURRENTLY VARY
0.3-0.6 FEET/0.1-0.2 METERS.  3.2-FOOT/1.0-METER WAVES HAVE BEEN REPORTED
AT LA JOLLA CA AND 2.9-FOOT/0.9-METER WAVES HAVE BEEN REPORTED AT PT.SUR
CA.  3-FOOT/1.0-METER WAVES HAVE BEEN REPORTED IN LONG BEACH - OCEANSIDE
AND AT THE CAL/MEX BORDER.  TWENTY-THREE PEOPLE ARE REPORTED DROWNED IN
THIS REGION DUE TO WALKING OUT TO SEE THE TIDEPOOLS AT AN EXTREME LOW TIDE
AS THE WATER DREW OUT PRIOR TO THE TSUNAMI COMING TO SHORE.
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PRELIMINARY EARTHQUAKE PARAMETERS

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MAGNITUDE - 9.0
TIME       - 0900 AKDT MAR 24 2010
           - 1000 PDT MAR 24 2010
           - 1700 UTC MAR 24 2010
LOCATION    - 55.0 NORTH 157.0 WEST
           - 105 MILES/169 KM SE OF CHIGNIK ALASKA
           - 500 MILES/805 KM SW OF ANCHORAGE ALASKA
DEPTH     - 28 MILES/45 KM
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TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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 ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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.

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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-
356-310-350-255-250-210-110-156-153-150-130>135-CAZ039>043-
087-034-035-530-006-506-508-509-529-505-002-001-ORZ022-002-
021-001-WAZ503-506>511-001-514>517-021-250035-
/T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER
335 PM AKDT WED MAR 24 2010
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...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF CALIFORNIA - OREGON AND WASHINGTON FROM THE CALIFORNIA-MEXICO BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER...

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

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

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

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PZZ170-PKZ310-041-031>036-042-043-011>013-021-022-051-052-
 053-125>129-121-120-130-140-141-136>138-132-150-155-170-171-
 172-175-176-AKZ023-024-026>029-018>022-025-017-135-131-125-
 121-145-171-181-185-187-191-250035-
 /T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE WASHINGTON-BRITISH
 COLUMBIA BORDER TO ATTU ALASKA
 335 PM AKDT WED MAR 24 2010

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

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
 WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
 STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR
 WATER IS IMMINENT OF EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
 IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF
 WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL
 TIME.

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WCATWC Message #15

WEPA41 PAAQ 250005
 TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 15
 NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
 405 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS 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 ADVISORY IS IN EFFECT WHICH INCLUDES THE
 COASTAL AREAS OF BRITISH COLUMBIA FROM THE
 WASHINGTON-BRITISH COLUMBIA BORDER TO LANGARA ISLAND
 BRITISH COLUMBIA...

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS
 OF ALASKA FROM LANGARA ISLAND BRITISH COLUMBIA TO ATTU
 ALASKA...

RECOMMENDED ACTIONS

- A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE
 WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS
 IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM
 THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED
 BY EMERGENCY RESPONSE AGENCIES.
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
 HIGHER GROUND.
 - PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
 WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI
 AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -
 LOCATION LAT LON TIME AMPL

 CAL/MEX BORDER 32.7 N 117.1 W 2305 1.28 FT/0.40 M
 WAVES BETWEEN DUTCH HARBOR AND SEWARD HAVE DIMINISHED AND
 CURRENTLY VARY 0.3-0.6 FEET/0.1-0.2 METERS. ALL WAVES BETWEEN

SEWARD AND N. TIP OF VANCOUVER IS HAVE DIMINSHED TO LESS THAN 1.0 FOOT/0.3 METERS. WAVES SOUTH OF SAN FRANCISCO CA ARE DIMINSHING. THE COAST GUARD REPORTS THAT MANY HARBORS CONTAIN UNOCCUPIED AND UNMOORED WATERCRAFT. THEY ENCOURAGE ALL BOAT OWNERS TO CHECK ON THEIR PROPERTY ONCE LOCAL OFFICIALS HAVE DECLARED IT SAFE TO RETURN TO THE SHORELINE.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
 TIME - 0900 AKDT MAR 24 2010
 1000 PDT MAR 24 2010
 1700 UTC MAR 24 2010
 LOCATION - 55.0 NORTH 157.0 WEST
 105 MILES/169 KM SE OF CHIGNIK ALASKA
 500 MILES/805 KM SW OF ANCHORAGE ALASKA
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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 ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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.

PKZ041-031>036-042-043-011>013-021-022-051-052-053-125>129-121-120-130-140-141-136>138-132-150-155-170-171-172-175-176-
 AKZ023-024-026>029-018>022-025-017-135-131-125-121-145-171-181-185-187-191-250105-
 /T.CAN.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING LANGARA ISLAND BRITISH COLUMBIA TO ATTU ALASKA
 405 PM AKDT WED MAR 24 2010

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF ALASKA FROM LANGARA ISLAND BRITISH COLUMBIA TO ATTU ALASKA...

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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-356-310-350-255-250-210-110-156-153-150-130>135-CAZ039>043-087-034-035-530-006-506-508-509-529-505-002-001-ORZ022-002-021-001-WAZ503-506>511-001-514>517-021-250105-
 /T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER
 405 PM AKDT WED MAR 24 2010

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

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

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

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

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PZZ170-PKZ310-250105-
/T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE WASHINGTON-BRITISH
COLUMBIA BORDER TO LANGARA ISLAND BRITISH COLUMBIA
405 PM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF BRITISH COLUMBIA FROM THE
WASHINGTON-BRITISH COLUMBIA BORDER TO LANGARA ISLAND
BRITISH COLUMBIA...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR
WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF
WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL
TIME.

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WCATWC Message #16

WEPA41 PAAQ 250035
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 16
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
435 PM AKDT WED MAR 24 2010

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

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF WASHINGTON FROM THE OREGON-WASHINGTON
BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER...

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS
OF BRITISH COLUMBIA FROM THE WASHINGTON-BRITISH COLUMBIA
BORDER TO LANGARA ISLAND BRITISH COLUMBIA...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF
ALASKA FROM LANGARA ISLAND BRITISH COLUMBIA TO ATTU
ALASKA...

RECOMMENDED ACTIONS

- A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE
WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS
IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM
THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED
BY EMERGENCY RESPONSE AGENCIES.
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO
HIGHER GROUND.
 - PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE
WATER... OFF THE BEACH AND OUT OF HARBOR AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI
AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -
WAVES CONTINUE TO DIMINISH ALONG THE WASHINGTON COAST. MANY COAST TOWNS
HAVE REPORTED CURRENT WAVEHEIGHTS BETWEEN 0.6-1.6 FEET/0.2-0.5 METERS.
THESE SAME TOWNS REPORT MUCH DAMAGE TO BOATS AND FIXED STRUCTURES - SUCH AS
DOCKS - THAT WERE DIRECTLY IN THE TSUNAMIS PATH. WAVES GENERALLY APPEAR TO
BE DIMINISHING FROM NORTH TO SOUTH ALONG THE CALIFORNIA COAST.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
 TIME - 0900 AKDT MAR 24 2010
 1000 PDT MAR 24 2010
 1700 UTC MAR 24 2010
 LOCATION - 55.0 NORTH 157.0 WEST
 105 MILES/169 KM SE OF CHIGNIK ALASKA
 500 MILES/805 KM SW OF ANCHORAGE ALASKA
 DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL
 ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC
 OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD
 INUNDATION IS IMMINENT OR EXPECTED. 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 ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING
 STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE
 WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION
 IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE
 HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY
 CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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.

PZZ170-PKZ310-250135-
 /T.CAN.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE WASHINGTON-BRITISH
 COLUMBIA BORDER TO LANGARA ISLAND BRITISH COLUMBIA
 435 PM AKDT WED MAR 24 2010

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS
 OF BRITISH COLUMBIA FROM THE WASHINGTON-BRITISH COLUMBIA
 BORDER TO LANGARA ISLAND BRITISH COLUMBIA...

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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-
 356-310-350-255-250-210-CAZ039>043-087-034-035-530-006-506-
 508-509-529-505-002-001-ORZ022-002-021-001-250135-
 /T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
 BORDER TO THE OREGON-WASHINGTON BORDER
 435 PM AKDT WED MAR 24 2010

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

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

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

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PZZ110-156-153-150-130>135-WAZ503-506>511-001-514>517-021-
 250135-
 /T.CAN.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
 /T.EXA.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
 COASTAL AREAS BETWEEN AND INCLUDING THE OREGON-WASHINGTON
 BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER
 435 PM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
 COASTAL AREAS OF WASHINGTON FROM THE OREGON-WASHINGTON
 BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR WATER IS IMMINENT OF EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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WCATWC Message #17

WEPA41 PAAQ 250105
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 17
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
505 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO THE OREGON-CALIFORNIA BORDER...

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF OREGON FROM THE OREGON-CALIFORNIA BORDER TO THE OREGON-WASHINGTON BORDER...

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF WASHINGTON FROM THE OREGON-WASHINGTON BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE WASHINGTON-BRITISH COLUMBIA BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

- A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE DAMAGE TO THE WARNING AND/OR ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.
- PERSONS IN TSUNAMI WARNING COASTAL AREAS SHOULD MOVE INLAND TO HIGHER GROUND.
 - PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES - WAVES FROM NEAH BAY WA TO THE OR/WA BORDER ARE REPORTED TO BE LESS THAN 1.0 FOOT/0.3 METERS IN HEIGHT. WAVE HEIGHTS ARE REPORTED BETWEEN SAN FRANCISCO CA AND LA JOLLA CA AS BEING 1.0-2.6 FEET/0.3-0.8 METERS. USCG IN SAN DIEGO HAVE PULLED 11 PEOPLE FROM THE LOCAL WATERS THAT WERE OVERTAKEN BY THE TSUNAMI AND DRAWN OUT TO SEA. ALL 11 WERE IDENTIFIED AS DOA AT LOCAL AREA HOSPITALS. BOATERS ARE BEING WARNED TO WATCH OUT FOR LUMBER AND OTHER DEBREE FLOATING IN OFFSHORE WATERS THROUGHOUT THE WEST COAST.

PRELIMINARY EARTHQUAKE PARAMETERS

- MAGNITUDE - 9.0
TIME - 0900 AKDT MAR 24 2010
 1000 PDT MAR 24 2010
 1700 UTC MAR 24 2010
LOCATION - 55.0 NORTH 157.0 WEST
 105 MILES/169 KM SE OF CHIGNIK ALASKA
 500 MILES/805 KM SW OF ANCHORAGE ALASKA
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL

ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI WARNINGS MEAN THAT A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION IS IMMINENT OR EXPECTED. 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 ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-
CAZ039>043-087-034-035-530-006-506-508-509-529-505-002-001-
250205-
/T.CON.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
BORDER TO THE OREGON-CALIFORNIA BORDER
505 PM AKDT WED MAR 24 2010

...A TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO
BORDER TO THE OREGON-CALIFORNIA BORDER...

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

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

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PZZ356-310-350-255-250-210-ORZ022-002-021-001-250205-
/T.CAN.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
/T.EXA.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE OREGON-CALIFORNIA
BORDER TO THE OREGON-WASHINGTON BORDER
505 PM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE
COASTAL AREAS OF OREGON FROM THE OREGON-CALIFORNIA BORDER
TO THE OREGON-WASHINGTON BORDER...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

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PZZ110-156-153-150-130>135-WAZ503-506>511-001-514>517-021-
250205-
/T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE OREGON-WASHINGTON
BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER
505 PM AKDT WED MAR 24 2010

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COASTAL AREAS OF WASHINGTON FROM THE OREGON-WASHINGTON

BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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WCATWC Message #18

WEPA41 PAAQ 250135
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 18
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
535 PM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO THE OREGON-CALIFORNIA BORDER...

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF OREGON FROM THE OREGON-CALIFORNIA BORDER TO THE OREGON-WASHINGTON BORDER...

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF WASHINGTON FROM THE OREGON-WASHINGTON BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER...

...THIS MESSAGE IS INFORMATION ONLY FOR COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE WASHINGTON-BRITISH COLUMBIA BORDER TO ATTU ALASKA...

RECOMMENDED ACTIONS

A TSUNAMI HAS BEEN GENERATED WHICH COULD IMPACT THE ADVISORY REGIONS LISTED IN THE HEADLINE. PERSONS IN LOW-LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR LOCAL EMERGENCY OFFICIALS. EVACUATIONS ARE ONLY ORDERED BY EMERGENCY RESPONSE AGENCIES.

- PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

THIS MESSAGE IS BASED ON EARTHQUAKE DATA... OBSERVED TSUNAMI AMPLITUDES... HISTORICAL INFORMATION AND FORECAST MODELS.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -
WAVE HEIGHTS ARE REPORTED BETWEEN SAN FRANCISCO CA AND LA JOLLA CA AS BEING 0.3-1.3 FEET/0.1-0.4 METERS. THOUGH THESE WAVE HEIGHTS ARE DIMINISHING ONGOING DANGER CONTINUES TO EXIST DUE TO STRONG CURRENTS. CONSULT YOUR LOCAL SAFETY OFFICIALS BEFORE RESUMING ALL PACIFIC WATER ACTIVITIES.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
TIME - 0900 AKDT MAR 24 2010
1000 PDT MAR 24 2010
1700 UTC MAR 24 2010
LOCATION - 55.0 NORTH 157.0 WEST
105 MILES/169 KM SE OF CHIGNIK ALASKA
500 MILES/805 KM SW OF ANCHORAGE ALASKA
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC OUTSIDE THE STATES AND PROVINCES PREVIOUSLY LISTED.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE

WATER IS IMMINENT OR EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS UNDER AN ADVISORY. CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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.

PZZ110-156-153-150-130>135-WAZ503-506>511-001-514>517-021-250235-
/T.CAN.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE OREGON-WASHINGTON BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER
535 PM AKDT WED MAR 24 2010

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF WASHINGTON FROM THE OREGON-WASHINGTON BORDER TO THE WASHINGTON-BRITISH COLUMBIA BORDER...

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PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-CAZ039>043-087-034-035-530-006-506-508-509-529-505-002-001-250235-
/T.CAN.PAAQ.TS.W.0011.000000T0000Z-000000T0000Z/
/T.EXA.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO BORDER TO THE OREGON-CALIFORNIA BORDER
535 PM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO THE OREGON-CALIFORNIA BORDER...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR WATER IS IMMINENT OF EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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PZZ356-310-350-255-250-210-ORZ022-002-021-001-250235-
/T.CON.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE OREGON-CALIFORNIA BORDER TO THE OREGON-WASHINGTON BORDER
535 PM AKDT WED MAR 24 2010

...A TSUNAMI ADVISORY IS IN EFFECT WHICH INCLUDES THE COASTAL AREAS OF OREGON FROM THE OREGON-CALIFORNIA BORDER TO THE OREGON-WASHINGTON BORDER...

PERSONS IN TSUNAMI ADVISORY AREAS SHOULD MOVE OUT OF THE WATER... OFF THE BEACH AND OUT OF HARBORS AND MARINAS.

TSUNAMI ADVISORIES MEAN THAT A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR WATER IS IMMINENT OF EXPECTED. SIGNIFICANT WIDESPREAD INUNDATION IS NOT EXPECTED FOR AREAS IN AN ADVISORY. TSUNAMIS ARE A SERIES OF WAVES POTENTIALLY DANGEROUS SEVERAL HOURS AFTER INITIAL ARRIVAL TIME.

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WCATWC Message #19

WEPA41 PAAQ 250205
TSUWCA

BULLETIN

TSUNAMI MESSAGE NUMBER 19
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
605 PM AKST WED FEB 24 2010

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS
OF CALIFORNIA AND OREGON FROM THE CALIFORNIA-MEXICO BORDER
TO THE OREGON-WASHINGTON BORDER...

EVALUATION

DAMAGING TSUNAMIS ARE NO LONGER EXPECTED ALONG THE COASTS OF
THE U.S. WEST COAST STATES - ALASKA AND BRITISH COLUMBIA. AS
LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE
ACTION THE ALL CLEAR DETERMINATIONS MUST BE MADE BY LOCAL
AUTHORITIES.

TSUNAMI AMPLITUDES HAVE DROPPED BELOW DANGEROUS LEVELS AT MOST
LOCATIONS ALONG THE U.S. WEST COAST - CANADA AND ALASKA. SEA
LEVEL CONDITIONS STILL VARY GREATLY FROM LOCATION TO LOCATION
ALONG THE COAST. DECISIONS RELATING TO REOCCUPATION OF COASTAL
ZONES MUST BE MADE BY LOCAL AUTHORITIES.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES -
WAVE HEIGHTS ARE REPORTED FROM THE OR/WA BORDER AND THE CAL/MEX
BORDER AS BEING 0.3-1.0 FEET/0.1-0.3 METERS. PRELIMINARY ESTIMATES OF
DAMAGE ARE IN THE TENS OF MILLIONS OF DOLLARS AND ARE EXPECTED TO
RISE. BEACHES HAVE BEEN ERODED HOMES LOST AND FISHING AND PLEASURE BOATS
DESTROYED. FEMA HAS INITIATED A RECOVERY PROGRAM FOR THE IMPACTED REGIONS.
THE FEDERAL GOVERNMENT HAS DECLARED A STATE OF EMERGENCY FOR THE ENTIRE
CONTIGUOUS WEST COAST AND ALASKA. ONE FEMA EMPLOYEE NOTED THAT THIS EVENT
WILL BE MORE COSTLY THAN THE HURRICANE KATRINA CLEAN-UP EFFORTS. NINETY
-THREE PEOPLE ARE EITHER KNOWN TO BE DEAD OR MISSING AT THIS POINT. PAST
EVENTS HAVE SHOWN THAT THIS FIGURE IS A FRACTION OF FINAL DEATH TOLL.
STRONG CURRENTS MAY CONTINUE TO OCCUR ALONG PORTIONS OF THE ENTIRE NORTH
AMERICAN WEST COAST AND ALASKA FOR THE NEXT 24 HOURS. LOCAL OFFICIALS WILL
ADVISE RESIDENTS WHEN IT IS SAFE TO RESUME BEACH ACTIVITIES.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 9.0
TIME - 0900 AKDT MAR 24 2010
1000 PDT MAR 24 2010
1700 UTC MAR 24 2010
LOCATION - 55.0 NORTH 157.0 WEST
105 MILES/169 KM SE OF CHIGNIK ALASKA
500 MILES/805 KM SW OF ANCHORAGE ALASKA
DEPTH - 28 MILES/45 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII IS CONTINUING
ITS WARNING AND WATCH FOR AREAS OUTSIDE THE STATES AND PROVINCES
PREVIOUSLY LISTED.

THIS WILL BE THE LAST WEST COAST/ALASKA TSUNAMI WARNING
CENTER MESSAGE ISSUED FOR THIS EVENT UNLESS CONDITIONS WARRANT
FURTHER INFORMATION.
THIS INFORMATION IS ALSO POSTED AT WCATWC.ARH.NOAA.GOV.

PZZ775-750-655-650-673-670-565-535-530-545-560-455-540-450-
356-310-350-255-250-210-CAZ039>043-087-034-035-530-006-506-
508-509-529-505-002-001-ORZ022-002-021-001-250305-
/T.CAN.PAAQ.TS.Y.0011.000000T0000Z-000000T0000Z/
COASTAL AREAS BETWEEN AND INCLUDING THE CALIFORNIA-MEXICO
BORDER TO THE OREGON-WASHINGTON BORDER
605 PM AKST WED FEB 24 2010

...THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS
OF CALIFORNIA AND OREGON FROM THE CALIFORNIA-MEXICO BORDER
TO THE OREGON-WASHINGTON BORDER...

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PTWC Pacific Messages

The following messages, created for the PACIFEX 10 tsunami exercise, are representative of the international Pacific products that would be issued by the Pacific Tsunami Warning Center in response to a magnitude 9.0 earthquake and tsunami originating at 55.0°N, 157.0°W.

PTWC Pacific Message #1

WEPA40 PHEB 241705
TSUPAC

TSUNAMI BULLETIN NUMBER 001
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 1705Z 24 MAR 2010

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. / WAKE IS.

FOR ALL OTHER AREAS COVERED BY THIS BULLETIN... IT IS FOR INFORMATION ONLY AT THIS TIME.

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.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1700Z 24 MAR 2010
COORDINATES - 55.0 NORTH 157.0 WEST
DEPTH - 45 KM
LOCATION - ALASKA PENINSULA
MAGNITUDE - 9.0

EVALUATION

IT IS NOT KNOWN THAT A TSUNAMI WAS GENERATED. THIS WARNING IS BASED ONLY ON THE EARTHQUAKE EVALUATION.

HOWEVER...AN EARTHQUAKE OF THIS GREAT 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 GAUGES NEAR THE EARTHQUAKE TO DETERMINE IF A TSUNAMI WAS GENERATED AND ESTIMATE THE SEVERITY OF THE THREAT.

ESTIMATED INITIAL TSUNAMI WAVE 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. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	FORECAST POINT	COORDINATES	ARRIVAL TIME
RUSSIA	MEDNNY IS	54.7N 167.4E	2004Z 24 MAR
	UST KAMCHATSK	56.1N 162.6E	2030Z 24 MAR
	PETROPAVLOVSK K	53.2N 159.6E	2101Z 24 MAR
	URUP IS	46.1N 150.5E	2141Z 24 MAR
	SEVERO KURILSK	50.8N 156.1E	2149Z 24 MAR

MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2111Z 24 MAR
HAWAII	NAWILIWILI	22.0N 159.4W	2133Z 24 MAR
	HONOLULU	21.3N 157.9W	2149Z 24 MAR
	HILO	19.7N 155.1W	2152Z 24 MAR
JAPAN	KUSHIRO	42.9N 144.3E	2225Z 24 MAR
	HACHINOHE	40.5N 141.5E	2259Z 24 MAR
JOHNSTON IS.	JOHNSTON IS.	16.7N 169.5W	2231Z 24 MAR
WAKE IS.	WAKE IS.	19.3N 166.6E	2301Z 24 MAR

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT.
THE TSUNAMI WARNING AND WATCH WILL REMAIN IN EFFECT UNTIL
FURTHER NOTICE.

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

NNNN

PTWC Pacific Message #2

WEPA40 PHEB 241805
TSUPAC

TSUNAMI BULLETIN NUMBER 002
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 1805Z 24 MAR 2010

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

... A WIDESPREAD TSUNAMI WARNING IS IN EFFECT ...

A TSUNAMI WARNING IS IN EFFECT FOR

RUSSIA / MIDWAY IS. / HAWAII / JAPAN / JOHNSTON IS. / WAKE IS. /
MEXICO / MARCUS IS. / PALMYRA IS. / MARSHALL IS. / KIRIBATI /
JARVIS IS. / N. MARIANAS / HOWLAND-BAKER / POHNPEI / KOSRAE /
GUAM / CHUUK / NAURU / COOK ISLANDS / YAP / TOKELAU / TUVALU /
TAIWAN / FR. POLYNESIA / BELAU / PHILIPPINES / SAMOA /
AMERICAN SAMOA / WALLIS-FUTUNA / PAPUA NEW GUINEA / NIUE /
INDONESIA / SOLOMON IS. / VANUATU / TONGA / GUATEMALA / FIJI /
EL SALVADOR / NICARAGUA / KERMADEC IS / COSTA RICA / HONDURAS /
PITCAIRN / PANAMA / ECUADOR / NEW CALEDONIA / NEW ZEALAND /
COLOMBIA / AUSTRALIA / CHILE / PERU / ANTARCTICA

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.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1700Z 24 MAR 2010
COORDINATES - 55.0 NORTH 157.0 WEST
DEPTH - 45 KM
LOCATION - ALASKA PENINSULA
MAGNITUDE - 9.0

EVALUATION

INITIAL SEA LEVEL READINGS FROM DEEP OCEAN GAUGES CONFIRM
THAT A SIGNIFICANT TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE
WIDESPREAD DAMAGE. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION
IN RESPONSE TO THIS THREAT. THIS CENTER WILL CONTINUE TO MONITOR
SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE
THREAT.

A TSUNAMI IS A SERIES OF WAVES AND THE FIRST WAVE MAY NOT BE THE
LARGEST. TSUNAMI WAVE HEIGHTS CANNOT BE PREDICTED AND CAN VARY
SIGNIFICANTLY ALONG A COAST DUE TO LOCAL EFFECTS. THE TIME FROM
ONE TSUNAMI WAVE TO THE NEXT CAN BE FIVE MINUTES TO AN HOUR, AND
THE THREAT CAN CONTINUE FOR MANY HOURS AS MULTIPLE WAVES ARRIVE.

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 WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI WAVE 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. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	FORECAST POINT	COORDINATES	ARRIVAL TIME	
RUSSIA	MEDNNY IS	54.7N 167.4E	2004Z 24 MAR	
	UST KAMCHATSK	56.1N 162.6E	2030Z 24 MAR	
	PETROPAVLOVSK K	53.2N 159.6E	2101Z 24 MAR	
	URUP IS	46.1N 150.5E	2141Z 24 MAR	
	SEVERO KURILSK	50.8N 156.1E	2149Z 24 MAR	
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2111Z 24 MAR	
HAWAII	NAWILIWILI	22.0N 159.4W	2133Z 24 MAR	
	HONOLULU	21.3N 157.9W	2149Z 24 MAR	
JAPAN	HILO	19.7N 155.1W	2152Z 24 MAR	
	KUSHIRO	42.9N 144.3E	2225Z 24 MAR	
	HACHINOHE	40.5N 141.5E	2259Z 24 MAR	
	KATSUURA	35.1N 140.3E	2312Z 24 MAR	
	SHIMIZU	32.8N 133.0E	0032Z 25 MAR	
JOHNSTON IS.	OKINAWA	26.2N 127.8E	0132Z 25 MAR	
	JOHNSTON IS.	16.7N 169.5W	2231Z 24 MAR	
WAKE IS.	WAKE IS.	19.3N 166.6E	2301Z 24 MAR	
MEXICO	ENSENADA	31.8N 116.8W	2306Z 24 MAR	
	PUNTA ABREOJOS	26.7N 113.6W	2341Z 24 MAR	
	CABO SAN LUCAS	22.8N 110.0W	0024Z 25 MAR	
	SOCORRO	18.8N 111.0W	0036Z 25 MAR	
	MAZATLAN	23.2N 106.4W	0115Z 25 MAR	
	MANZANILLO	19.1N 104.3W	0150Z 25 MAR	
	ACAPULCO	16.9N 99.9W	0214Z 25 MAR	
	PUERTO MADERO	14.8N 92.5W	0345Z 25 MAR	
	MARCUS IS.	MARCUS IS.	24.3N 154.0E	2308Z 24 MAR
	PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	2344Z 24 MAR
ENIWETOK		11.4N 162.3E	0015Z 25 MAR	
MARSHALL IS.	KWAJALEIN	8.7N 167.7E	0023Z 25 MAR	
	MAJURO	7.1N 171.4E	0028Z 25 MAR	
	CHRISTMAS IS.	2.0N 157.5W	0019Z 25 MAR	
KIRIBATI	TARAWA IS.	1.5N 173.0E	0102Z 25 MAR	
	KANTON IS.	2.8S 171.7W	0103Z 25 MAR	
	MALDEN IS.	3.9S 154.9W	0104Z 25 MAR	
	FLINT IS.	11.4S 151.8W	0207Z 25 MAR	
JARVIS IS.	JARVIS IS.	0.4S 160.1W	0042Z 25 MAR	
N. MARIANAS	SAIPAN	15.3N 145.8E	0044Z 25 MAR	
HOWLAND-BAKER	HOWLAND IS.	0.6N 176.6W	0045Z 25 MAR	
POHNPEI	POHNPEI IS.	7.0N 158.2E	0058Z 25 MAR	
KOSRAE	KOSRAE IS.	5.5N 163.0E	0058Z 25 MAR	
GUAM	GUAM	13.4N 144.7E	0108Z 25 MAR	
CHUUK	CHUUK IS.	7.4N 151.8E	0119Z 25 MAR	
NAURU	NAURU	0.5S 166.9E	0143Z 25 MAR	
COOK ISLANDS	PENRYN IS.	8.9S 157.8W	0150Z 25 MAR	
	PUKAPUKA IS.	10.8S 165.9W	0209Z 25 MAR	
	RAROTONGA	21.2S 159.8W	0330Z 25 MAR	
YAP	YAP IS.	9.5N 138.1E	0151Z 25 MAR	
TOKELAU	NUKUNONU IS.	9.2S 171.8W	0155Z 25 MAR	
TUVALU	FUNAFUTI IS.	7.9S 178.5E	0159Z 25 MAR	
TAIWAN	HUALIEN	24.0N 121.7E	0209Z 25 MAR	
	HUALIEN	24.0N 121.6E	0209Z 25 MAR	
	CHILUNG	25.2N 121.8E	0236Z 25 MAR	
	TAITUNG	22.7N 121.2E	0247Z 25 MAR	
	HIVA OA	10.0S 139.0W	0220Z 25 MAR	
FR. POLYNESIA	PAPEETE	17.5S 149.6W	0304Z 25 MAR	
	RIKITEA	23.1S 135.0W	0425Z 25 MAR	
BELAU	MALAKAL	7.3N 134.5E	0226Z 25 MAR	
PHILIPPINES	PALANAN	17.1N 122.6E	0230Z 25 MAR	
	LEGASPI	13.2N 123.8E	0310Z 25 MAR	
	DAVAO	6.8N 125.7E	0324Z 25 MAR	
SAMOA	APIA	13.8S 171.8W	0234Z 25 MAR	
AMERICAN SAMOA	PAGO PAGO	14.3S 170.7W	0238Z 25 MAR	

WALLIS-FUTUNA	WALLIS IS.	13.2S	176.2W	0239Z	25	MAR
PAPUA NEW GUINEA	KAVIENG	2.5S	150.7E	0242Z	25	MAR
	MANUS IS.	2.0S	147.5E	0249Z	25	MAR
	KIETA	6.1S	155.6E	0319Z	25	MAR
	VANIMO	2.6S	141.3E	0322Z	25	MAR
	AMUN	6.0S	154.7E	0323Z	25	MAR
	RABAUL	4.2S	152.3E	0328Z	25	MAR
	WEWAK	3.5S	143.6E	0329Z	25	MAR
	MADANG	5.2S	145.8E	0342Z	25	MAR
	LAE	6.8S	147.0E	0404Z	25	MAR
	PORT MORESBY	9.3S	146.9E	0526Z	25	MAR
NIUE	NIUE IS.	19.0S	170.0W	0313Z	25	MAR
INDONESIA	WARSA	0.6S	135.8E	0316Z	25	MAR
	GEME	4.6N	126.8E	0322Z	25	MAR
	MANOKWARI	0.8S	134.2E	0323Z	25	MAR
	JAYAPURA	2.4S	140.8E	0324Z	25	MAR
	BEREBERE	2.5N	128.7E	0329Z	25	MAR
	SORONG	0.8S	131.1E	0339Z	25	MAR
	PATANI	0.4N	128.8E	0352Z	25	MAR
SOLOMON IS.	GHATERE	7.8S	159.2E	0321Z	25	MAR
	PANGGOE	6.9S	157.2E	0324Z	25	MAR
	KIRAKIRA	10.4S	161.9E	0329Z	25	MAR
	FALAMAE	7.4S	155.6E	0330Z	25	MAR
	MUNDA	8.4S	157.2E	0348Z	25	MAR
	AUKI	8.8S	160.6E	0401Z	25	MAR
	HONIARA	9.3S	160.0E	0401Z	25	MAR
VANUATU	ESPERITU SANTO	15.1S	167.3E	0335Z	25	MAR
	ANATOM IS.	20.2S	169.9E	0413Z	25	MAR
TONGA	NUKUALOFA	21.0S	175.2W	0346Z	25	MAR
GUATEMALA	SIPICATE	13.9N	91.2W	0355Z	25	MAR
FIJI	SUVA	18.1S	178.4E	0407Z	25	MAR
EL SALVADOR	ACAJUTLA	13.6N	89.8W	0411Z	25	MAR
NICARAGUA	PUERTO SANDINO	12.2N	86.8W	0433Z	25	MAR
	SAN JUAN DL SUR	11.2N	85.9W	0435Z	25	MAR
	CORINTO	12.5N	87.2W	0438Z	25	MAR
KERMADEC IS	RAOUL IS.	29.2S	177.9W	0434Z	25	MAR
COSTA RICA	CABO SAN ELENA	10.9N	86.0W	0435Z	25	MAR
	PUERTO QUEPOS	9.4N	84.2W	0445Z	25	MAR
	CABO MATAPALO	8.4N	83.3W	0447Z	25	MAR
HONDURAS	AMAPALA	13.2N	87.6W	0438Z	25	MAR
PITCAIRN	PITCAIRN IS.	25.1S	130.1W	0451Z	25	MAR
PANAMA	PUNTA BURICA	8.0N	82.8W	0455Z	25	MAR
	PUNTA MALA	7.5N	79.9W	0544Z	25	MAR
	PUERTO PINA	7.4N	78.1W	0554Z	25	MAR
	BALBOA HTS.	9.0N	79.6W	0712Z	25	MAR
ECUADOR	BALTRA IS.	0.5S	90.3W	0526Z	25	MAR
	ESMERELDAS	1.2N	79.8W	0613Z	25	MAR
	LA LIBERTAD	2.2S	81.2W	0646Z	25	MAR
NEW CALEDONIA	NOUMEA	22.3S	166.5E	0537Z	25	MAR
NEW ZEALAND	EAST CAPE	37.7S	178.5E	0540Z	25	MAR
	GISBORNE	38.7S	178.0E	0556Z	25	MAR
	NORTH CAPE	34.4S	173.3E	0607Z	25	MAR
	NAPIER	39.5S	176.9E	0636Z	25	MAR
	WELLINGTON	41.3S	174.8E	0646Z	25	MAR
	AUCKLAND(E)	36.7S	175.0E	0708Z	25	MAR
	AUCKLAND(W)	37.1S	174.2E	0734Z	25	MAR
	LYTTELTON	43.6S	172.7E	0751Z	25	MAR
	NEW PLYMOUTH	39.1S	174.1E	0813Z	25	MAR
	NELSON	41.3S	173.3E	0818Z	25	MAR
	DUNEDIN	45.9S	170.5E	0827Z	25	MAR
	MILFORD SOUND	44.6S	167.9E	0838Z	25	MAR
	WESTPORT	41.8S	171.6E	0853Z	25	MAR
	BLUFF	46.6S	168.3E	0940Z	25	MAR
COLOMBIA	BAHIA SOLANO	6.3N	77.4W	0602Z	25	MAR
	TUMACO	1.8N	78.9W	0621Z	25	MAR
	BUENAVENTURA	3.8N	77.2W	0641Z	25	MAR
AUSTRALIA	CAIRNS	16.7S	145.8E	0615Z	25	MAR
	BRISBANE	27.2S	153.3E	0710Z	25	MAR
	SYDNEY	33.9S	151.4E	0747Z	25	MAR
	MACKAY	21.1S	149.3E	0809Z	25	MAR
	GLADSTONE	23.8S	151.4E	0815Z	25	MAR
	HOBART	43.3S	147.6E	0914Z	25	MAR
CHILE	EASTER IS.	27.1S	109.4W	0632Z	25	MAR
	IQUIQUE	20.2S	70.1W	0921Z	25	MAR
	ARICA	18.5S	70.3W	0923Z	25	MAR
	ANTOFAGASTA	23.3S	70.4W	0935Z	25	MAR
	CALDERA	27.1S	70.8W	1000Z	25	MAR

	COQUIMBO	29.9S	71.3W	1014Z	25	MAR
	VALPARAISO	33.0S	71.6W	1030Z	25	MAR
	TALCAHUANO	36.7S	73.1W	1113Z	25	MAR
	CORRAL	39.8S	73.5W	1123Z	25	MAR
	GOLFO DE PENAS	47.1S	74.9W	1221Z	25	MAR
	PUERTO MONTT	41.5S	73.0W	1351Z	25	MAR
	PUNTA ARENAS	53.2S	70.9W	1425Z	25	MAR
	PUERTO WILLIAMS	54.8S	68.2W	1615Z	25	MAR
PERU	TALARA	4.6S	81.5W	0656Z	25	MAR
	PIMENTAL	6.9S	80.0W	0718Z	25	MAR
	CHIMBOTE	9.0S	78.8W	0813Z	25	MAR
	LA PUNTA	12.1S	77.2W	0820Z	25	MAR
	SAN JUAN	15.3S	75.2W	0832Z	25	MAR
	MOLLENDO	17.1S	72.0W	0905Z	25	MAR
ANTARCTICA	CAPE ADARE	71.0S	170.0E	1045Z	25	MAR
	THURSTON IS.	72.0S	100.0W	1213Z	25	MAR

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT.
THE TSUNAMI WARNING WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

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

NNNN

PTWC Pacific Message #3

WEPA40 PHEB 241905
TSUPAC

TSUNAMI BULLETIN NUMBER 003
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 1905Z 24 MAR 2010

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

... A WIDESPREAD TSUNAMI WARNING IS IN EFFECT ...

A TSUNAMI WARNING IS IN EFFECT FOR

RUSSIA / MIDWAY IS. / HAWAII / JAPAN / JOHNSTON IS. / WAKE IS. /
MEXICO / MARCUS IS. / PALMYRA IS. / MARSHALL IS. / KIRIBATI /
JARVIS IS. / N. MARIANAS / HOWLAND-BAKER / POHNPEI / KOSRAE /
GUAM / CHUUK / NAURU / COOK ISLANDS / YAP / TOKELAU / TUVALU /
TAIWAN / FR. POLYNESIA / BELAU / PHILIPPINES / SAMOA /
AMERICAN SAMOA / WALLIS-FUTUNA / PAPUA NEW GUINEA / NIUE /
INDONESIA / SOLOMON IS. / VANUATU / TONGA / GUATEMALA / FIJI /
EL SALVADOR / NICARAGUA / KERMADEC IS / COSTA RICA / HONDURAS /
PITCAIRN / PANAMA / ECUADOR / NEW CALEDONIA / NEW ZEALAND /
COLOMBIA / AUSTRALIA / CHILE / PERU / ANTARCTICA

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DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND
ANY ACTIONS TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1700Z 24 MAR 2010
COORDINATES - 55.0 NORTH 157.0 WEST
DEPTH - 45 KM
LOCATION - ALASKA PENINSULA
MAGNITUDE - 9.0

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	Lon	TIME	AMPL	PER
KING COVE AK	55.1N	162.3W	1852Z	1.65M / 5.4FT	27MIN
SAND POINT AK	55.3N	160.5W	1847Z	3.12M / 10.2FT	23MIN
KODIAK AK	57.7N	152.5W	1836Z	1.20M / 3.9FT	22MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
 PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

SEA LEVEL READINGS CONFIRM THAT A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE WIDESPREAD DAMAGE. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS THREAT. THIS CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE THREAT.

A TSUNAMI IS A SERIES OF WAVES AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMI WAVE HEIGHTS CANNOT BE PREDICTED AND CAN VARY SIGNIFICANTLY ALONG A COAST DUE TO LOCAL EFFECTS. THE TIME FROM ONE TSUNAMI WAVE TO THE NEXT CAN BE FIVE MINUTES TO AN HOUR, AND THE THREAT CAN CONTINUE FOR MANY HOURS AS MULTIPLE WAVES ARRIVE.

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 WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI WAVE 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. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	FORECAST POINT	COORDINATES	ARRIVAL TIME	
RUSSIA	MEDNNY IS	54.7N 167.4E	2004Z 24 MAR	
	UST KAMCHATSK	56.1N 162.6E	2030Z 24 MAR	
	PETROPAVLOVSK K	53.2N 159.6E	2101Z 24 MAR	
	URUP IS	46.1N 150.5E	2141Z 24 MAR	
	SEVERO KURILSK	50.8N 156.1E	2149Z 24 MAR	
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2111Z 24 MAR	
HAWAII	NAWILIWILI	22.0N 159.4W	2133Z 24 MAR	
	HONOLULU	21.3N 157.9W	2149Z 24 MAR	
JAPAN	HILO	19.7N 155.1W	2152Z 24 MAR	
	KUSHIRO	42.9N 144.3E	2225Z 24 MAR	
	HACHINOHE	40.5N 141.5E	2259Z 24 MAR	
	KATSUURA	35.1N 140.3E	2312Z 24 MAR	
	SHIMIZU	32.8N 133.0E	0032Z 25 MAR	
JOHNSTON IS.	OKINAWA	26.2N 127.8E	0132Z 25 MAR	
	JOHNSTON IS.	16.7N 169.5W	2231Z 24 MAR	
	WAKE IS.	WAKE IS.	19.3N 166.6E	2301Z 24 MAR
MEXICO	ENSENADA	31.8N 116.8W	2306Z 24 MAR	
	PUNTA ABREOJOS	26.7N 113.6W	2341Z 24 MAR	
	CABO SAN LUCAS	22.8N 110.0W	0024Z 25 MAR	
	SOCORRO	18.8N 111.0W	0036Z 25 MAR	
	MAZATLAN	23.2N 106.4W	0115Z 25 MAR	
	MANZANILLO	19.1N 104.3W	0150Z 25 MAR	
	ACAPULCO	16.9N 99.9W	0214Z 25 MAR	
	PUERTO MADERO	14.8N 92.5W	0345Z 25 MAR	
	MARCUS IS.	MARCUS IS.	24.3N 154.0E	2308Z 24 MAR
	PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	2344Z 24 MAR
MARSHALL IS.	ENIWETOK	11.4N 162.3E	0015Z 25 MAR	
	KWAJALEIN	8.7N 167.7E	0023Z 25 MAR	
	MAJURO	7.1N 171.4E	0028Z 25 MAR	
KIRIBATI	CHRISTMAS IS.	2.0N 157.5W	0019Z 25 MAR	
	TARAWA IS.	1.5N 173.0E	0102Z 25 MAR	
	KANTON IS.	2.8S 171.7W	0103Z 25 MAR	
	MALDEN IS.	3.9S 154.9W	0104Z 25 MAR	
	FLINT IS.	11.4S 151.8W	0207Z 25 MAR	
JARVIS IS.	JARVIS IS.	0.4S 160.1W	0042Z 25 MAR	
N. MARIANAS	SAIPAN	15.3N 145.8E	0044Z 25 MAR	
HOWLAND-BAKER	HOWLAND IS.	0.6N 176.6W	0045Z 25 MAR	
POHNPEI	POHNPEI IS.	7.0N 158.2E	0058Z 25 MAR	
KOSRAE	KOSRAE IS.	5.5N 163.0E	0058Z 25 MAR	

GUAM	GUAM	13.4N	144.7E	0108Z	25	MAR	
CHUUK	CHUUK IS.	7.4N	151.8E	0119Z	25	MAR	
NAURU	NAURU	0.5S	166.9E	0143Z	25	MAR	
COOK ISLANDS	PENRYN IS.	8.9S	157.8W	0150Z	25	MAR	
	PUKAPUKA IS.	10.8S	165.9W	0209Z	25	MAR	
	RAROTONGA	21.2S	159.8W	0330Z	25	MAR	
YAP	YAP IS.	9.5N	138.1E	0151Z	25	MAR	
TOKELAU	NUKUNONU IS.	9.2S	171.8W	0155Z	25	MAR	
TUVALU	FUNAFUTI IS.	7.9S	178.5E	0159Z	25	MAR	
TAIWAN	HUALIEN	24.0N	121.7E	0209Z	25	MAR	
	HUALIEN	24.0N	121.6E	0209Z	25	MAR	
	CHILUNG	25.2N	121.8E	0236Z	25	MAR	
	TAITUNG	22.7N	121.2E	0247Z	25	MAR	
	FR. POLYNESIA	HIVA OA	10.0S	139.0W	0220Z	25	MAR
		PAPEETE	17.5S	149.6W	0304Z	25	MAR
RIKITEA		23.1S	135.0W	0425Z	25	MAR	
BELAU	MALAKAL	7.3N	134.5E	0226Z	25	MAR	
	PHILIPPINES	PALANAN	17.1N	122.6E	0230Z	25	MAR
LEGASPI		13.2N	123.8E	0310Z	25	MAR	
DAVAO		6.8N	125.7E	0324Z	25	MAR	
SAMOA	APIA	13.8S	171.8W	0234Z	25	MAR	
AMERICAN SAMOA	PAGO PAGO	14.3S	170.7W	0238Z	25	MAR	
WALLIS-FUTUNA	WALLIS IS.	13.2S	176.2W	0239Z	25	MAR	
PAPUA NEW GUINE	KAVIENG	2.5S	150.7E	0242Z	25	MAR	
	MANUS IS.	2.0S	147.5E	0249Z	25	MAR	
	KIETA	6.1S	155.6E	0319Z	25	MAR	
	VANIMO	2.6S	141.3E	0322Z	25	MAR	
	AMUN	6.0S	154.7E	0323Z	25	MAR	
	RABAU	4.2S	152.3E	0328Z	25	MAR	
	WEWAK	3.5S	143.6E	0329Z	25	MAR	
	MADANG	5.2S	145.8E	0342Z	25	MAR	
	LAE	6.8S	147.0E	0404Z	25	MAR	
	PORT MORESBY	9.3S	146.9E	0526Z	25	MAR	
	NIUE	NIUE IS.	19.0S	170.0W	0313Z	25	MAR
	INDONESIA	WARSA	0.6S	135.8E	0316Z	25	MAR
		GEME	4.6N	126.8E	0322Z	25	MAR
		MANOKWARI	0.8S	134.2E	0323Z	25	MAR
JAYAPURA		2.4S	140.8E	0324Z	25	MAR	
BEREBERE		2.5N	128.7E	0329Z	25	MAR	
SORONG		0.8S	131.1E	0339Z	25	MAR	
PATANI		0.4N	128.8E	0352Z	25	MAR	
SOLOMON IS.		GHATERE	7.8S	159.2E	0321Z	25	MAR
		PANGGOE	6.9S	157.2E	0324Z	25	MAR
		KIRAKIRA	10.4S	161.9E	0329Z	25	MAR
	FALAMAE	7.4S	155.6E	0330Z	25	MAR	
MUNDA	8.4S	157.2E	0348Z	25	MAR		
AUKI	8.8S	160.6E	0401Z	25	MAR		
HONIARA	9.3S	160.0E	0401Z	25	MAR		
VANUATU	ESPERITU SANTO	15.1S	167.3E	0335Z	25	MAR	
	ANATOM IS.	20.2S	169.9E	0413Z	25	MAR	
TONGA	NUKUALOFA	21.0S	175.2W	0346Z	25	MAR	
GUATEMALA	SIPICATE	13.9N	91.2W	0355Z	25	MAR	
FIJI	SUVA	18.1S	178.4E	0407Z	25	MAR	
EL SALVADOR	ACAJUTLA	13.6N	89.8W	0411Z	25	MAR	
NICARAGUA	PUERTO SANDINO	12.2N	86.8W	0433Z	25	MAR	
	SAN JUAN DL SUR	11.2N	85.9W	0435Z	25	MAR	
	CORINTO	12.5N	87.2W	0438Z	25	MAR	
	RAOUL IS.	29.2S	177.9W	0434Z	25	MAR	
KERMADEC IS	CABO SAN ELENA	10.9N	86.0W	0435Z	25	MAR	
	PUERTO QUEPOS	9.4N	84.2W	0445Z	25	MAR	
	CABO MATAPALO	8.4N	83.3W	0447Z	25	MAR	
HONDURAS	AMAPALA	13.2N	87.6W	0438Z	25	MAR	
PITCAIRN	PITCAIRN IS.	25.1S	130.1W	0451Z	25	MAR	
PANAMA	PUNTA BURICA	8.0N	82.8W	0455Z	25	MAR	
	PUNTA MALA	7.5N	79.9W	0544Z	25	MAR	
	PUERTO PINA	7.4N	78.1W	0554Z	25	MAR	
	BALBOA HTS.	9.0N	79.6W	0712Z	25	MAR	
	ECUADOR	BALTRA IS.	0.5S	90.3W	0526Z	25	MAR
ESMERELDAS		1.2N	79.8W	0613Z	25	MAR	
LA LIBERTAD		2.2S	81.2W	0646Z	25	MAR	
NEW CALEDONIA	NOUMEA	22.3S	166.5E	0537Z	25	MAR	
NEW ZEALAND	EAST CAPE	37.7S	178.5E	0540Z	25	MAR	
	GISBORNE	38.7S	178.0E	0556Z	25	MAR	
	NORTH CAPE	34.4S	173.3E	0607Z	25	MAR	
	NAPIER	39.5S	176.9E	0636Z	25	MAR	
	WELLINGTON	41.3S	174.8E	0646Z	25	MAR	
	AUCKLAND (E)	36.7S	175.0E	0708Z	25	MAR	

	AUCKLAND(W)	37.1S 174.2E	0734Z 25 MAR
	LYTTELTON	43.6S 172.7E	0751Z 25 MAR
	NEW PLYMOUTH	39.1S 174.1E	0813Z 25 MAR
	NELSON	41.3S 173.3E	0818Z 25 MAR
	DUNEDIN	45.9S 170.5E	0827Z 25 MAR
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NNNN

PTWC Pacific Message #4

WEPA40 PHEB 242005
TSUPAC

TSUNAMI BULLETIN NUMBER 004
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 2005Z 24 MAR 2010

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OCEAN AND ADJACENT SEAS...EXCEPT ALASKA...BRITISH COLUMBIA...
WASHINGTON...OREGON AND CALIFORNIA.

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A TSUNAMI WARNING IS IN EFFECT FOR

RUSSIA / MIDWAY IS. / HAWAII / JAPAN / JOHNSTON IS. / WAKE IS. /
MEXICO / MARCUS IS. / PALMYRA IS. / MARSHALL IS. / KIRIBATI /
JARVIS IS. / N. MARIANAS / HOWLAND-BAKER / POHNPEI / KOSRAE /
GUAM / CHUUK / NAURU / COOK ISLANDS / YAP / TOKELAU / TUVALU /
TAIWAN / FR. POLYNESIA / BELAU / PHILIPPINES / SAMOA /
AMERICAN SAMOA / WALLIS-FUTUNA / PAPUA NEW GUINEA / NIUE /
INDONESIA / SOLOMON IS. / VANUATU / TONGA / GUATEMALA / FIJI /
EL SALVADOR / NICARAGUA / KERMADEC IS / COSTA RICA / HONDURAS /
PITCAIRN / PANAMA / ECUADOR / NEW CALEDONIA / NEW ZEALAND /
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AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1700Z 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 DEPTH - 45 KM
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

Gauge Location	LAT	Lon	Time	Ampl	Per
SITKA AK	57.1N	135.3W	1932Z	1.66M / 5.4FT	21MIN
YAKUTAT AK	59.5N	139.7W	1929Z	0.57M / 1.9FT	24MIN
SEWARD AK	60.1N	149.4W	1918Z	0.74M / 2.4FT	19MIN
KING COVE AK	55.1N	162.3W	1852Z	1.65M / 5.4FT	27MIN
SAND POINT AK	55.3N	160.5W	1847Z	3.12M / 10.2FT	23MIN
KODIAK AK	57.7N	152.5W	1836Z	1.20M / 3.9FT	22MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
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 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
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LOCATION	FORECAST POINT	COORDINATES	ARRIVAL TIME
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	URUP IS	46.1N 150.5E	2141Z 24 MAR
	SEVERO KURILSK	50.8N 156.1E	2149Z 24 MAR
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2111Z 24 MAR
HAWAII	NAWILIWILI	22.0N 159.4W	2133Z 24 MAR
	HONOLULU	21.3N 157.9W	2149Z 24 MAR
	HILO	19.7N 155.1W	2152Z 24 MAR
JAPAN	KUSHIRO	42.9N 144.3E	2225Z 24 MAR
	HACHINOHE	40.5N 141.5E	2259Z 24 MAR
	KATSUURA	35.1N 140.3E	2312Z 24 MAR
	SHIMIZU	32.8N 133.0E	0032Z 25 MAR
	OKINAWA	26.2N 127.8E	0132Z 25 MAR

JOHNSTON IS.	JOHNSTON IS.	16.7N 169.5W	2231Z	24	MAR
WAKE IS.	WAKE IS.	19.3N 166.6E	2301Z	24	MAR
MEXICO	ENSENADA	31.8N 116.8W	2306Z	24	MAR
	PUNTA ABREOJOS	26.7N 113.6W	2341Z	24	MAR
	CABO SAN LUCAS	22.8N 110.0W	0024Z	25	MAR
	SOCORRO	18.8N 111.0W	0036Z	25	MAR
	MAZATLAN	23.2N 106.4W	0115Z	25	MAR
	MANZANILLO	19.1N 104.3W	0150Z	25	MAR
	ACAPULCO	16.9N 99.9W	0214Z	25	MAR
	PUERTO MADERO	14.8N 92.5W	0345Z	25	MAR
MARCUS IS.	MARCUS IS.	24.3N 154.0E	2308Z	24	MAR
PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	2344Z	24	MAR
MARSHALL IS.	ENIWETOK	11.4N 162.3E	0015Z	25	MAR
	KWAJALEIN	8.7N 167.7E	0023Z	25	MAR
	MAJURO	7.1N 171.4E	0028Z	25	MAR
KIRIBATI	CHRISTMAS IS.	2.0N 157.5W	0019Z	25	MAR
	TARAWA IS.	1.5N 173.0E	0102Z	25	MAR
	KANTON IS.	2.8S 171.7W	0103Z	25	MAR
	MALDEN IS.	3.9S 154.9W	0104Z	25	MAR
	FLINT IS.	11.4S 151.8W	0207Z	25	MAR
JARVIS IS.	JARVIS IS.	0.4S 160.1W	0042Z	25	MAR
N. MARIANAS	SAIPAN	15.3N 145.8E	0044Z	25	MAR
HOWLAND-BAKER	HOWLAND IS.	0.6N 176.6W	0045Z	25	MAR
POHNPEI	POHNPEI IS.	7.0N 158.2E	0058Z	25	MAR
KOSRAE	KOSRAE IS.	5.5N 163.0E	0058Z	25	MAR
GUAM	GUAM	13.4N 144.7E	0108Z	25	MAR
CHUUK	CHUUK IS.	7.4N 151.8E	0119Z	25	MAR
NAURU	NAURU	0.5S 166.9E	0143Z	25	MAR
COOK ISLANDS	PENRYN IS.	8.9S 157.8W	0150Z	25	MAR
	PUKAPUKA IS.	10.8S 165.9W	0209Z	25	MAR
	RAROTONGA	21.2S 159.8W	0330Z	25	MAR
YAP	YAP IS.	9.5N 138.1E	0151Z	25	MAR
TOKELAU	NUKUNONU IS.	9.2S 171.8W	0155Z	25	MAR
TUVALU	FUNAFUTI IS.	7.9S 178.5E	0159Z	25	MAR
TAIWAN	HUALIEN	24.0N 121.7E	0209Z	25	MAR
	HUALIEN	24.0N 121.6E	0209Z	25	MAR
	CHILUNG	25.2N 121.8E	0236Z	25	MAR
	TAITUNG	22.7N 121.2E	0247Z	25	MAR
FR. POLYNESIA	HIVA OA	10.0S 139.0W	0220Z	25	MAR
	PAPEETE	17.5S 149.6W	0304Z	25	MAR
	RIKITEA	23.1S 135.0W	0425Z	25	MAR
BELAU	MALAKAL	7.3N 134.5E	0226Z	25	MAR
PHILIPPINES	PALANAN	17.1N 122.6E	0230Z	25	MAR
	LEGASPI	13.2N 123.8E	0310Z	25	MAR
	DAVAO	6.8N 125.7E	0324Z	25	MAR
SAMOA	APIA	13.8S 171.8W	0234Z	25	MAR
AMERICAN SAMOA	PAGO PAGO	14.3S 170.7W	0238Z	25	MAR
WALLIS-FUTUNA	WALLIS IS.	13.2S 176.2W	0239Z	25	MAR
PAPUA NEW GUINEA	KAVIENG	2.5S 150.7E	0242Z	25	MAR
	MANUS IS.	2.0S 147.5E	0249Z	25	MAR
	KIETA	6.1S 155.6E	0319Z	25	MAR
	VANIMO	2.6S 141.3E	0322Z	25	MAR
	AMUN	6.0S 154.7E	0323Z	25	MAR
	RABAUL	4.2S 152.3E	0328Z	25	MAR
	WEWAK	3.5S 143.6E	0329Z	25	MAR
	MADANG	5.2S 145.8E	0342Z	25	MAR
	LAE	6.8S 147.0E	0404Z	25	MAR
	PORT MORESBY	9.3S 146.9E	0526Z	25	MAR
NIUE	NIUE IS.	19.0S 170.0W	0313Z	25	MAR
INDONESIA	WARSA	0.6S 135.8E	0316Z	25	MAR
	GEME	4.6N 126.8E	0322Z	25	MAR
	MANOKWARI	0.8S 134.2E	0323Z	25	MAR
	JAYAPURA	2.4S 140.8E	0324Z	25	MAR
	BEREBERE	2.5N 128.7E	0329Z	25	MAR
	SORONG	0.8S 131.1E	0339Z	25	MAR
	PATANI	0.4N 128.8E	0352Z	25	MAR
SOLOMON IS.	GHATERE	7.8S 159.2E	0321Z	25	MAR
	PANGGOE	6.9S 157.2E	0324Z	25	MAR
	KIRAKIRA	10.4S 161.9E	0329Z	25	MAR
	FALAMAE	7.4S 155.6E	0330Z	25	MAR
	MUNDA	8.4S 157.2E	0348Z	25	MAR
	AUKI	8.8S 160.6E	0401Z	25	MAR
	HONIARA	9.3S 160.0E	0401Z	25	MAR
VANUATU	ESPERITU SANTO	15.1S 167.3E	0335Z	25	MAR
	ANATOM IS.	20.2S 169.9E	0413Z	25	MAR
TONGA	NUKUALOFA	21.0S 175.2W	0346Z	25	MAR
GUATEMALA	SIPICATE	13.9N 91.2W	0355Z	25	MAR

FIJI	SUVA	18.1S	178.4E	0407Z	25	MAR
EL SALVADOR	ACAJUTLA	13.6N	89.8W	0411Z	25	MAR
NICARAGUA	PUERTO SANDINO	12.2N	86.8W	0433Z	25	MAR
	SAN JUAN DL SUR	11.2N	85.9W	0435Z	25	MAR
	CORINTO	12.5N	87.2W	0438Z	25	MAR
KERMADEC IS	RAOUL IS.	29.2S	177.9W	0434Z	25	MAR
COSTA RICA	CABO SAN ELENA	10.9N	86.0W	0435Z	25	MAR
	PUERTO QUEPOS	9.4N	84.2W	0445Z	25	MAR
	CABO MATAPALO	8.4N	83.3W	0447Z	25	MAR
HONDURAS	AMAPALA	13.2N	87.6W	0438Z	25	MAR
PITCAIRN	PITCAIRN IS.	25.1S	130.1W	0451Z	25	MAR
PANAMA	PUNTA BURICA	8.0N	82.8W	0455Z	25	MAR
	PUNTA MALA	7.5N	79.9W	0544Z	25	MAR
	PUERTO PINA	7.4N	78.1W	0554Z	25	MAR
	BALBOA HTS.	9.0N	79.6W	0712Z	25	MAR
ECUADOR	BALTRA IS.	0.5S	90.3W	0526Z	25	MAR
	ESMERELDAS	1.2N	79.8W	0613Z	25	MAR
	LA LIBERTAD	2.2S	81.2W	0646Z	25	MAR
NEW CALEDONIA	NOUMEA	22.3S	166.5E	0537Z	25	MAR
NEW ZEALAND	EAST CAPE	37.7S	178.5E	0540Z	25	MAR
	GISBORNE	38.7S	178.0E	0556Z	25	MAR
	NORTH CAPE	34.4S	173.3E	0607Z	25	MAR
	NAPIER	39.5S	176.9E	0636Z	25	MAR
	WELLINGTON	41.3S	174.8E	0646Z	25	MAR
	AUCKLAND(E)	36.7S	175.0E	0708Z	25	MAR
	AUCKLAND(W)	37.1S	174.2E	0734Z	25	MAR
	LYTTELTON	43.6S	172.7E	0751Z	25	MAR
	NEW PLYMOUTH	39.1S	174.1E	0813Z	25	MAR
	NELSON	41.3S	173.3E	0818Z	25	MAR
	DUNEDIN	45.9S	170.5E	0827Z	25	MAR
	MILFORD SOUND	44.6S	167.9E	0838Z	25	MAR
	WESTPORT	41.8S	171.6E	0853Z	25	MAR
	BLUFF	46.6S	168.3E	0940Z	25	MAR
COLOMBIA	BAHIA SOLANO	6.3N	77.4W	0602Z	25	MAR
	TUMACO	1.8N	78.9W	0621Z	25	MAR
	BUENAVENTURA	3.8N	77.2W	0641Z	25	MAR
AUSTRALIA	CAIRNS	16.7S	145.8E	0615Z	25	MAR
	BRISBANE	27.2S	153.3E	0710Z	25	MAR
	SYDNEY	33.9S	151.4E	0747Z	25	MAR
	MACKAY	21.1S	149.3E	0809Z	25	MAR
	GLADSTONE	23.8S	151.4E	0815Z	25	MAR
	HOBART	43.3S	147.6E	0914Z	25	MAR
CHILE	EASTER IS.	27.1S	109.4W	0632Z	25	MAR
	IQUIQUE	20.2S	70.1W	0921Z	25	MAR
	ARICA	18.5S	70.3W	0923Z	25	MAR
	ANTOFAGASTA	23.3S	70.4W	0935Z	25	MAR
	CALDERA	27.1S	70.8W	1000Z	25	MAR
	COQUIMBO	29.9S	71.3W	1014Z	25	MAR
	VALPARAISO	33.0S	71.6W	1030Z	25	MAR
	TALCAHUANO	36.7S	73.1W	1113Z	25	MAR
	CORRAL	39.8S	73.5W	1123Z	25	MAR
	GOLFO DE PENAS	47.1S	74.9W	1221Z	25	MAR
	PUERTO MONTT	41.5S	73.0W	1351Z	25	MAR
	PUNTA ARENAS	53.2S	70.9W	1425Z	25	MAR
	PUERTO WILLIAMS	54.8S	68.2W	1615Z	25	MAR
PERU	TALARA	4.6S	81.5W	0656Z	25	MAR
	PIMENTAL	6.9S	80.0W	0718Z	25	MAR
	CHIMBOTE	9.0S	78.8W	0813Z	25	MAR
	LA PUNTA	12.1S	77.2W	0820Z	25	MAR
	SAN JUAN	15.3S	75.2W	0832Z	25	MAR
	MOLLENDO	17.1S	72.0W	0905Z	25	MAR
ANTARCTICA	CAPE ADARE	71.0S	170.0E	1045Z	25	MAR
	THURSTON IS.	72.0S	100.0W	1213Z	25	MAR

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT.
THE TSUNAMI WARNING WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

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

NNNN

PTWC Pacific Message #5

WEPA40 PHEB 242105
 TSUPAC

TSUNAMI BULLETIN NUMBER 005
 PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
 ISSUED AT 2105Z 24 MAR 2010

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

... A WIDESPREAD TSUNAMI WARNING IS IN EFFECT ...

A TSUNAMI WARNING IS IN EFFECT FOR

RUSSIA / MIDWAY IS. / HAWAII / JAPAN / JOHNSTON IS. / WAKE IS. / MEXICO / MARCUS IS. / PALMYRA IS. / MARSHALL IS. / KIRIBATI / JARVIS IS. / N. MARIANAS / HOWLAND-BAKER / POHNPEI / KOSRAE / GUAM / CHUUK / NAURU / COOK ISLANDS / YAP / TOKELAU / TUVALU / TAIWAN / FR. POLYNESIA / BELAU / PHILIPPINES / SAMOA / AMERICAN SAMOA / WALLIS-FUTUNA / PAPUA NEW GUINEA / NIUE / INDONESIA / SOLOMON IS. / VANUATU / TONGA / GUATEMALA / FIJI / EL SALVADOR / NICARAGUA / KERMADEC IS / COSTA RICA / HONDURAS / PITCAIRN / PANAMA / ECUADOR / NEW CALEDONIA / NEW ZEALAND / COLOMBIA / AUSTRALIA / CHILE / PERU / ANTARCTICA

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.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1700Z 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 DEPTH - 45 KM
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
TOFINO BC	49.2N	125.9W	2052Z	1.72M / 5.6FT	20MIN
SKAGWAY AK	59.5N	135.3W	2043Z	0.88M / 2.9FT	25MIN
LANGARA POINT BC	54.2N	133.1W	2003Z	0.58M / 1.9FT	22MIN
CORDOVA AK	60.6N	145.8W	2001Z	0.26M / 0.9FT	28MIN
SITKA AK	57.1N	135.3W	1932Z	1.66M / 5.4FT	21MIN
YAKUTAT AK	59.5N	139.7W	1929Z	0.57M / 1.9FT	24MIN
SEWARD AK	60.1N	149.4W	1918Z	0.74M / 2.4FT	19MIN
KING COVE AK	55.1N	162.3W	1852Z	1.65M / 5.4FT	27MIN
SAND POINT AK	55.3N	160.5W	1847Z	3.12M / 10.2FT	23MIN
KODIAK AK	57.7N	152.5W	1836Z	1.20M / 3.9FT	22MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
 PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

SEA LEVEL READINGS CONFIRM THAT A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE WIDESPREAD DAMAGE. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS THREAT. THIS CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE THREAT.

A TSUNAMI IS A SERIES OF WAVES AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMI WAVE HEIGHTS CANNOT BE PREDICTED AND CAN VARY SIGNIFICANTLY ALONG A COAST DUE TO LOCAL EFFECTS. THE TIME FROM ONE TSUNAMI WAVE TO THE NEXT CAN BE FIVE MINUTES TO AN HOUR, AND THE THREAT CAN CONTINUE FOR MANY HOURS AS MULTIPLE WAVES ARRIVE.

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 WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT. THE TSUNAMI WARNING WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

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

NNNN

PTWC Pacific Message #6

WEPA40 PHEB 242205
TSUPAC

TSUNAMI BULLETIN NUMBER 006
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 2205Z 24 MAR 2010

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

... A WIDESPREAD TSUNAMI WARNING IS IN EFFECT ...

A TSUNAMI WARNING IS IN EFFECT FOR

RUSSIA / MIDWAY IS. / HAWAII / JAPAN / JOHNSTON IS. / WAKE IS. / MEXICO / MARCUS IS. / PALMYRA IS. / MARSHALL IS. / KIRIBATI / JARVIS IS. / N. MARIANAS / HOWLAND-BAKER / POHNPEI / KOSRAE / GUAM / CHUUK / NAURU / COOK ISLANDS / YAP / TOKELAU / TUVALU / TAIWAN / FR. POLYNESIA / BELAU / PHILIPPINES / SAMOA / AMERICAN SAMOA / WALLIS-FUTUNA / PAPUA NEW GUINEA / NIUE / INDONESIA / SOLOMON IS. / VANUATU / TONGA / GUATEMALA / FIJI / EL SALVADOR / NICARAGUA / KERMADEC IS / COSTA RICA / HONDURAS / PITCAIRN / PANAMA / ECUADOR / NEW CALEDONIA / NEW ZEALAND / COLOMBIA / AUSTRALIA / CHILE / PERU / ANTARCTICA

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AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1700Z 24 MAR 2010
COORDINATES - 55.0 NORTH 157.0 WEST
DEPTH - 45 KM
LOCATION - ALASKA PENINSULA
MAGNITUDE - 9.0

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GUAGE LOCATION	LAT	Lon	TIME	AMPL	PER
KAHULUI MAUI	20.9N	156.5W	2147Z	2.31M / 7.6FT	23MIN
MOKUOLOE OAHU	21.4N	157.8W	2138Z	0.36M / 1.2FT	18MIN
NAWILIWILI KAUAI	22.0N	159.4W	2133Z	1.17M / 3.8FT	22MIN
CRESCENT CITY CA	41.7N	124.2W	2131Z	2.29M / 7.5FT	24MIN
TERN FR. FRIGATE	23.8N	166.2W	2129Z	0.86M / 2.8FT	23MIN
MIDWAY	28.2N	177.4W	2111Z	0.58M / 1.9FT	25MIN
ASTORIA OR	46.2N	123.8W	2110Z	1.27M / 4.1FT	28MIN
NEAH BAY WA	48.4N	124.6W	2059Z	1.81M / 5.9FT	30MIN
TOFINO BC	49.2N	125.9W	2052Z	1.72M / 5.6FT	20MIN
SKAGWAY AK	59.5N	135.3W	2043Z	0.88M / 2.9FT	25MIN
LANGARA POINT BC	54.2N	133.1W	2003Z	0.58M / 1.9FT	22MIN
CORDOVA AK	60.6N	145.8W	2001Z	0.26M / 0.9FT	28MIN
SITKA AK	57.1N	135.3W	1932Z	1.66M / 5.4FT	21MIN
YAKUTAT AK	59.5N	139.7W	1929Z	0.57M / 1.9FT	24MIN

SEWARD AK	60.1N 149.4W	1918Z	0.74M / 2.4FT	19MIN
KING COVE AK	55.1N 162.3W	1852Z	1.65M / 5.4FT	27MIN
SAND POINT AK	55.3N 160.5W	1847Z	3.12M / 10.2FT	23MIN
KODIAK AK	57.7N 152.5W	1836Z	1.20M / 3.9FT	22MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
 PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

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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 WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

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

NNNN

PTWC Pacific Message #7

WEPA40 PHEB 242305
 TSUPAC

TSUNAMI BULLETIN NUMBER 007
 PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
 ISSUED AT 2305Z 24 MAR 2010

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

... A WIDESPREAD TSUNAMI WARNING IS IN EFFECT ...

A TSUNAMI WARNING IS IN EFFECT FOR

RUSSIA / MIDWAY IS. / HAWAII / JAPAN / JOHNSTON IS. / WAKE IS. / MEXICO / MARCUS IS. / PALMYRA IS. / MARSHALL IS. / KIRIBATI / JARVIS IS. / N. MARIANAS / HOWLAND-BAKER / POHNPEI / KOSRAE / GUAM / CHUUK / NAURU / COOK ISLANDS / YAP / TOKELAU / TUVALU / TAIWAN / FR. POLYNESIA / BELAU / PHILIPPINES / SAMOA / AMERICAN SAMOA / WALLIS-FUTUNA / PAPUA NEW GUINEA / NIUE / INDONESIA / SOLOMON IS. / VANUATU / TONGA / GUATEMALA / FIJI / EL SALVADOR / NICARAGUA / KERMADEC IS / COSTA RICA / HONDURAS / PITCAIRN / PANAMA / ECUADOR / NEW CALEDONIA / NEW ZEALAND / COLOMBIA / AUSTRALIA / CHILE / PERU / ANTARCTICA

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ANY ACTIONS TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1700Z 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 DEPTH - 45 KM
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GUAGE LOCATION	LAT	Lon	TIME	AMPL	PER
LOS ANGELES CA	33.7N	118.3W	2247Z	0.91M / 3.0FT	24MIN
FT POINT SAN FRAN	37.8N	122.5W	2231Z	0.41M / 1.3FT	25MIN
HANASAKI HOKKAIDO	43.3N	145.6E	2225Z	0.29M / 1.0FT	31MIN
KAWAIHAE HAWAII	20.0N	155.8W	2208Z	0.51M / 1.7FT	28MIN
KAUMALAPAU	20.8N	157.0W	2156Z	0.76M / 2.5FT	25MIN
HILO HAWAII	19.7N	155.1W	2152Z	2.34M / 7.7FT	21MIN
MONTEREY HARBOR CA	36.6N	121.9W	2151Z	1.26M / 4.1FT	29MIN
SEVERO KURILSK RU	50.7N	156.1E	2149Z	0.46M / 1.5FT	19MIN
HONOLULU OAHU	21.3N	157.9W	2149Z	0.83M / 2.7FT	27MIN
KAHULUI MAUI	20.9N	156.5W	2147Z	2.31M / 7.6FT	23MIN
MOKUOLOE OAHU	21.4N	157.8W	2138Z	0.36M / 1.2FT	18MIN
NAWILIWILI KAUAI	22.0N	159.4W	2133Z	1.17M / 3.8FT	22MIN
CRESCENT CITY CA	41.7N	124.2W	2131Z	2.29M / 7.5FT	24MIN
TERN FR. FRIGATE	23.8N	166.2W	2129Z	0.86M / 2.8FT	23MIN
MIDWAY	28.2N	177.4W	2111Z	0.58M / 1.9FT	25MIN
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NEAH BAY WA	48.4N	124.6W	2059Z	1.81M / 5.9FT	30MIN
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LANGARA POINT BC	54.2N	133.1W	2003Z	0.58M / 1.9FT	22MIN
CORDOVA AK	60.6N	145.8W	2001Z	0.26M / 0.9FT	28MIN
SITKA AK	57.1N	135.3W	1932Z	1.66M / 5.4FT	21MIN
YAKUTAT AK	59.5N	139.7W	1929Z	0.57M / 1.9FT	24MIN
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LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
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SEA LEVEL READINGS CONFIRM THAT A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE WIDESPREAD DAMAGE. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS THREAT. THIS CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE THREAT.

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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 WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

ESTIMATED INITIAL TSUNAMI WAVE 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. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	FORECAST POINT	COORDINATES	ARRIVAL TIME	
RUSSIA	MEDNNY IS	54.7N 167.4E	2004Z 24 MAR	
	UST KAMCHATSK	56.1N 162.6E	2030Z 24 MAR	
	PETROPAVLOVSK K	53.2N 159.6E	2101Z 24 MAR	
	URUP IS	46.1N 150.5E	2141Z 24 MAR	
	SEVERO KURILSK	50.8N 156.1E	2149Z 24 MAR	
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	2111Z 24 MAR	
HAWAII	NAWILIWILI	22.0N 159.4W	2133Z 24 MAR	
	HONOLULU	21.3N 157.9W	2149Z 24 MAR	
	HILO	19.7N 155.1W	2152Z 24 MAR	
JAPAN	KUSHIRO	42.9N 144.3E	2225Z 24 MAR	
	HACHINOHE	40.5N 141.5E	2259Z 24 MAR	
	KATSUURA	35.1N 140.3E	2312Z 24 MAR	
	SHIMIZU	32.8N 133.0E	0032Z 25 MAR	
	OKINAWA	26.2N 127.8E	0132Z 25 MAR	
JOHNSTON IS.	JOHNSTON IS.	16.7N 169.5W	2231Z 24 MAR	
WAKE IS.	WAKE IS.	19.3N 166.6E	2301Z 24 MAR	
MEXICO	ENSENADA	31.8N 116.8W	2306Z 24 MAR	
	PUNTA ABREOJOS	26.7N 113.6W	2341Z 24 MAR	
	CABO SAN LUCAS	22.8N 110.0W	0024Z 25 MAR	
	SOCORRO	18.8N 111.0W	0036Z 25 MAR	
	MAZATLAN	23.2N 106.4W	0115Z 25 MAR	
	MANZANILLO	19.1N 104.3W	0150Z 25 MAR	
	ACAPULCO	16.9N 99.9W	0214Z 25 MAR	
	PUERTO MADERO	14.8N 92.5W	0345Z 25 MAR	
	MARCUS IS.	MARCUS IS.	24.3N 154.0E	2308Z 24 MAR
	PALMYRA IS.	PALMYRA IS.	6.3N 162.4W	2344Z 24 MAR
	MARSHALL IS.	ENIWETOK	11.4N 162.3E	0015Z 25 MAR
KWAJALEIN		8.7N 167.7E	0023Z 25 MAR	
MAJURO		7.1N 171.4E	0028Z 25 MAR	
KIRIBATI	CHRISTMAS IS.	2.0N 157.5W	0019Z 25 MAR	
	TARAWA IS.	1.5N 173.0E	0102Z 25 MAR	
	KANTON IS.	2.8S 171.7W	0103Z 25 MAR	
	MALDEN IS.	3.9S 154.9W	0104Z 25 MAR	
	FLINT IS.	11.4S 151.8W	0207Z 25 MAR	
JARVIS IS.	JARVIS IS.	0.4S 160.1W	0042Z 25 MAR	
N. MARIANAS	SAIPAN	15.3N 145.8E	0044Z 25 MAR	
HOWLAND-BAKER	HOWLAND IS.	0.6N 176.6W	0045Z 25 MAR	
POHNPEI	POHNPEI IS.	7.0N 158.2E	0058Z 25 MAR	
KOSRAE	KOSRAE IS.	5.5N 163.0E	0058Z 25 MAR	
GUAM	GUAM	13.4N 144.7E	0108Z 25 MAR	
CHUUK	CHUUK IS.	7.4N 151.8E	0119Z 25 MAR	
NAURU	NAURU	0.5S 166.9E	0143Z 25 MAR	
COOK ISLANDS	PENRYN IS.	8.9S 157.8W	0150Z 25 MAR	
	PUKAPUKA IS.	10.8S 165.9W	0209Z 25 MAR	
	RAROTONGA	21.2S 159.8W	0330Z 25 MAR	
	YAP IS.	9.5N 138.1E	0151Z 25 MAR	
YAP	YAP IS.	9.5N 138.1E	0151Z 25 MAR	
TOKELAU	NUKUNONU IS.	9.2S 171.8W	0155Z 25 MAR	
TUVALU	FUNAFUTI IS.	7.9S 178.5E	0159Z 25 MAR	
TAIWAN	HUALIEN	24.0N 121.7E	0209Z 25 MAR	
	HUALIEN	24.0N 121.6E	0209Z 25 MAR	
	CHILUNG	25.2N 121.8E	0236Z 25 MAR	
	TAITUNG	22.7N 121.2E	0247Z 25 MAR	
FR. POLYNESIA	HIVA OA	10.0S 139.0W	0220Z 25 MAR	
	PAPEETE	17.5S 149.6W	0304Z 25 MAR	
	RIKITEA	23.1S 135.0W	0425Z 25 MAR	
BELAU	MALAKAL	7.3N 134.5E	0226Z 25 MAR	
PHILIPPINES	PALANAN	17.1N 122.6E	0230Z 25 MAR	
	LEGASPI	13.2N 123.8E	0310Z 25 MAR	
	DAVAO	6.8N 125.7E	0324Z 25 MAR	
SAMOA	APIA	13.8S 171.8W	0234Z 25 MAR	
AMERICAN SAMOA	PAGO PAGO	14.3S 170.7W	0238Z 25 MAR	
WALLIS-FUTUNA	WALLIS IS.	13.2S 176.2W	0239Z 25 MAR	
PAPUA NEW GUINEA	KAVIENG	2.5S 150.7E	0242Z 25 MAR	
	MANUS IS.	2.0S 147.5E	0249Z 25 MAR	
	KIETA	6.1S 155.6E	0319Z 25 MAR	
	VANIMO	2.6S 141.3E	0322Z 25 MAR	
	AMUN	6.0S 154.7E	0323Z 25 MAR	
	RABAU	4.2S 152.3E	0328Z 25 MAR	
	WEWAK	3.5S 143.6E	0329Z 25 MAR	
	MADANG	5.2S 145.8E	0342Z 25 MAR	
	LAE	6.8S 147.0E	0404Z 25 MAR	
	PORT MORESBY	9.3S 146.9E	0526Z 25 MAR	
	NIUE	NIUE IS.	19.0S 170.0W	0313Z 25 MAR
INDONESIA	WARSA	0.6S 135.8E	0316Z 25 MAR	

	GEME	4.6N 126.8E	0322Z	25	MAR
	MANOKWARI	0.8S 134.2E	0323Z	25	MAR
	JAYAPURA	2.4S 140.8E	0324Z	25	MAR
	BEREBERE	2.5N 128.7E	0329Z	25	MAR
	SORONG	0.8S 131.1E	0339Z	25	MAR
	PATANI	0.4N 128.8E	0352Z	25	MAR
SOLOMON IS.	GHATERE	7.8S 159.2E	0321Z	25	MAR
	PANGGOE	6.9S 157.2E	0324Z	25	MAR
	KIRAKIRA	10.4S 161.9E	0329Z	25	MAR
	FALAMAE	7.4S 155.6E	0330Z	25	MAR
	MUNDA	8.4S 157.2E	0348Z	25	MAR
	AUKI	8.8S 160.6E	0401Z	25	MAR
	HONIARA	9.3S 160.0E	0401Z	25	MAR
VANUATU	ESPERITU SANTO	15.1S 167.3E	0335Z	25	MAR
	ANATOM IS.	20.2S 169.9E	0413Z	25	MAR
TONGA	NUKUALOFA	21.0S 175.2W	0346Z	25	MAR
GUATEMALA	SIPICATE	13.9N 91.2W	0355Z	25	MAR
FIJI	SUVA	18.1S 178.4E	0407Z	25	MAR
EL SALVADOR	ACAJUTLA	13.6N 89.8W	0411Z	25	MAR
NICARAGUA	PUERTO SANDINO	12.2N 86.8W	0433Z	25	MAR
	SAN JUAN DL SUR	11.2N 85.9W	0435Z	25	MAR
	CORINTO	12.5N 87.2W	0438Z	25	MAR
KERMADEC IS	RAOUL IS.	29.2S 177.9W	0434Z	25	MAR
COSTA RICA	CABO SAN ELENA	10.9N 86.0W	0435Z	25	MAR
	PUERTO QUEPOS	9.4N 84.2W	0445Z	25	MAR
	CABO MATAPALO	8.4N 83.3W	0447Z	25	MAR
HONDURAS	AMAPALA	13.2N 87.6W	0438Z	25	MAR
PITCAIRN	PITCAIRN IS.	25.1S 130.1W	0451Z	25	MAR
PANAMA	PUNTA BURICA	8.0N 82.8W	0455Z	25	MAR
	PUNTA MALA	7.5N 79.9W	0544Z	25	MAR
	PUERTO PINA	7.4N 78.1W	0554Z	25	MAR
	BALBOA HTS.	9.0N 79.6W	0712Z	25	MAR
ECUADOR	BALTRA IS.	0.5S 90.3W	0526Z	25	MAR
	ESMERELDAS	1.2N 79.8W	0613Z	25	MAR
	LA LIBERTAD	2.2S 81.2W	0646Z	25	MAR
NEW CALEDONIA	NOUMEA	22.3S 166.5E	0537Z	25	MAR
NEW ZEALAND	EAST CAPE	37.7S 178.5E	0540Z	25	MAR
	GISBORNE	38.7S 178.0E	0556Z	25	MAR
	NORTH CAPE	34.4S 173.3E	0607Z	25	MAR
	NAPIER	39.5S 176.9E	0636Z	25	MAR
	WELLINGTON	41.3S 174.8E	0646Z	25	MAR
	AUCKLAND(E)	36.7S 175.0E	0708Z	25	MAR
	AUCKLAND(W)	37.1S 174.2E	0734Z	25	MAR
	LYTTTELTON	43.6S 172.7E	0751Z	25	MAR
	NEW PLYMOUTH	39.1S 174.1E	0813Z	25	MAR
	NELSON	41.3S 173.3E	0818Z	25	MAR
	DUNEDIN	45.9S 170.5E	0827Z	25	MAR
	MILFORD SOUND	44.6S 167.9E	0838Z	25	MAR
	WESTPORT	41.8S 171.6E	0853Z	25	MAR
	BLUFF	46.6S 168.3E	0940Z	25	MAR
COLOMBIA	BAHIA SOLANO	6.3N 77.4W	0602Z	25	MAR
	TUMACO	1.8N 78.9W	0621Z	25	MAR
	BUENAVENTURA	3.8N 77.2W	0641Z	25	MAR
AUSTRALIA	CAIRNS	16.7S 145.8E	0615Z	25	MAR
	BRISBANE	27.2S 153.3E	0710Z	25	MAR
	SYDNEY	33.9S 151.4E	0747Z	25	MAR
	MACKAY	21.1S 149.3E	0809Z	25	MAR
	GLADSTONE	23.8S 151.4E	0815Z	25	MAR
	HOBART	43.3S 147.6E	0914Z	25	MAR
CHILE	EASTER IS.	27.1S 109.4W	0632Z	25	MAR
	IQUIQUE	20.2S 70.1W	0921Z	25	MAR
	ARICA	18.5S 70.3W	0923Z	25	MAR
	ANTOFAGASTA	23.3S 70.4W	0935Z	25	MAR
	CALDERA	27.1S 70.8W	1000Z	25	MAR
	COQUIMBO	29.9S 71.3W	1014Z	25	MAR
	VALPARAISO	33.0S 71.6W	1030Z	25	MAR
	TALCAHUANO	36.7S 73.1W	1113Z	25	MAR
	CORRAL	39.8S 73.5W	1123Z	25	MAR
	GOLFO DE PENAS	47.1S 74.9W	1221Z	25	MAR
	PUERTO MONTT	41.5S 73.0W	1351Z	25	MAR
	PUNTA ARENAS	53.2S 70.9W	1425Z	25	MAR
	PUERTO WILLIAMS	54.8S 68.2W	1615Z	25	MAR
PERU	TALARA	4.6S 81.5W	0656Z	25	MAR
	PIMENTAL	6.9S 80.0W	0718Z	25	MAR
	CHIMBOTE	9.0S 78.8W	0813Z	25	MAR
	LA PUNTA	12.1S 77.2W	0820Z	25	MAR
	SAN JUAN	15.3S 75.2W	0832Z	25	MAR

ANTARCTICA MOLLENDO 17.1S 72.0W 0905Z 25 MAR
 CAPE ADARE 71.0S 170.0E 1045Z 25 MAR
 THURSTON IS. 72.0S 100.0W 1213Z 25 MAR

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT.
 THE TSUNAMI WARNING WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

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

NNNN

PTWC Pacific Message #8

WEPA40 PHEB 250005
 TSUPAC

TSUNAMI BULLETIN NUMBER 008
 PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
 ISSUED AT 0005Z 25 MAR 2010

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

... A WIDESPREAD TSUNAMI WARNING IS IN EFFECT ...

A TSUNAMI WARNING IS IN EFFECT FOR

RUSSIA / MIDWAY IS. / HAWAII / JAPAN / JOHNSTON IS. / WAKE IS. /
 MEXICO / MARCUS IS. / PALMYRA IS. / MARSHALL IS. / KIRIBATI /
 JARVIS IS. / N. MARIANAS / HOWLAND-BAKER / POHNPEI / KOSRAE /
 GUAM / CHUUK / NAURU / COOK ISLANDS / YAP / TOKELAU / TUVALU /
 TAIWAN / FR. POLYNESIA / BELAU / PHILIPPINES / SAMOA /
 AMERICAN SAMOA / WALLIS-FUTUNA / PAPUA NEW GUINEA / NIUE /
 INDONESIA / SOLOMON IS. / VANUATU / TONGA / GUATEMALA / FIJI /
 EL SALVADOR / NICARAGUA / KERMADEC IS / COSTA RICA / HONDURAS /
 PITCAIRN / PANAMA / ECUADOR / NEW CALEDONIA / NEW ZEALAND /
 COLOMBIA / AUSTRALIA / CHILE / PERU / ANTARCTICA

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.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1700Z 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 DEPTH - 45 KM
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GUAGE LOCATION	LAT	LOX	TIME	AMPL	PER
OMAEZAKI HONSHU	34.6N	138.2E	2341Z	0.44M / 1.4FT	26MIN
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WAKE US	19.3N	166.6E	2301Z	0.48M / 1.6FT	23MIN
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 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
 PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

SEA LEVEL READINGS CONFIRM THAT A TSUNAMI HAS BEEN GENERATED WHICH COULD CAUSE WIDESPREAD DAMAGE. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS THREAT. THIS CENTER WILL CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND SEVERITY OF THE THREAT.

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NNNN

PTWC Pacific Message #9

WEPA40 PHEB 250105
 TSUPAC

TSUNAMI BULLETIN NUMBER 009
 PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
 ISSUED AT 0105Z 25 MAR 2010

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... A WIDESPREAD TSUNAMI WARNING IS IN EFFECT ...

A TSUNAMI WARNING IS IN EFFECT FOR

RUSSIA / MIDWAY IS. / HAWAII / JAPAN / JOHNSTON IS. / WAKE IS. / MEXICO / MARCUS IS. / PALMYRA IS. / MARSHALL IS. / KIRIBATI / JARVIS IS. / N. MARIANAS / HOWLAND-BAKER / POHNPEI / KOSRAE / GUAM / CHUUK / NAURU / COOK ISLANDS / YAP / TOKELAU / TUVALU /

TAIWAN / FR. POLYNESIA / BELAU / PHILIPPINES / SAMOA /
 AMERICAN SAMOA / WALLIS-FUTUNA / PAPUA NEW GUINEA / NIUE /
 INDONESIA / SOLOMON IS. / VANUATU / TONGA / GUATEMALA / FIJI /
 EL SALVADOR / NICARAGUA / KERMADEC IS / COSTA RICA / HONDURAS /
 PITCAIRN / PANAMA / ECUADOR / NEW CALEDONIA / NEW ZEALAND /
 COLOMBIA / AUSTRALIA / CHILE / PERU / ANTARCTICA

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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.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1700Z 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 DEPTH - 45 KM
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
SAIPAN US	15.2N	145.7E	0044Z	0.16M / 0.5FT	22MIN
SOCORRO MX	18.7N	110.0W	0036Z	0.90M / 3.0FT	22MIN
MAJURO MH	7.1N	171.4E	0028Z	0.37M / 1.2FT	22MIN
CABO SAN LUCAS MX	23.9N	109.9W	0024Z	1.55M / 5.1FT	22MIN
KWAJALEIN MH	8.7N	167.7E	0022Z	0.28M / 0.9FT	22MIN
OMAEZAKI HONSHU	34.6N	138.2E	2341Z	0.44M / 1.4FT	26MIN
SAN DIEGO CA	32.7N	117.2W	2302Z	1.13M / 3.7FT	23MIN
WAKE US	19.3N	166.6E	2301Z	0.48M / 1.6FT	23MIN
OFUNATO HONSHU	39.0N	141.8E	2258Z	0.22M / 0.7FT	20MIN
LOS ANGELES CA	33.7N	118.3W	2247Z	0.91M / 3.0FT	24MIN
FT POINT SAN FRAN	37.8N	122.5W	2231Z	0.41M / 1.3FT	25MIN
HANASAKI HOKKAIDO	43.3N	145.6E	2225Z	0.29M / 1.0FT	31MIN
KAWAIHAE HAWAII	20.0N	155.8W	2208Z	0.51M / 1.7FT	28MIN
KAUMALAPAU	20.8N	157.0W	2156Z	0.76M / 2.5FT	25MIN
HILO HAWAII	19.7N	155.1W	2152Z	2.34M / 7.7FT	21MIN
MONTEREY HARBOR CA	36.6N	121.9W	2151Z	1.26M / 4.1FT	29MIN
SEVERO KURILSK RU	50.7N	156.1E	2149Z	0.46M / 1.5FT	19MIN
HONOLULU OAHU	21.3N	157.9W	2149Z	0.83M / 2.7FT	27MIN
KAHULUI MAUI	20.9N	156.5W	2147Z	2.31M / 7.6FT	23MIN
MOKUOLOE OAHU	21.4N	157.8W	2138Z	0.36M / 1.2FT	18MIN
NAWILIWILI KAUAI	22.0N	159.4W	2133Z	1.17M / 3.8FT	22MIN
CRESCENT CITY CA	41.7N	124.2W	2131Z	2.29M / 7.5FT	24MIN
TERN FR. FRIGATE	23.8N	166.2W	2129Z	0.86M / 2.8FT	23MIN
MIDWAY	28.2N	177.4W	2111Z	0.58M / 1.9FT	25MIN
ASTORIA OR	46.2N	123.8W	2110Z	1.27M / 4.1FT	28MIN
NEAH BAY WA	48.4N	124.6W	2059Z	1.81M / 5.9FT	30MIN
TOFINO BC	49.2N	125.9W	2052Z	1.72M / 5.6FT	20MIN
SKAGWAY AK	59.5N	135.3W	2043Z	0.88M / 2.9FT	25MIN
LANGARA POINT BC	54.2N	133.1W	2003Z	0.58M / 1.9FT	22MIN
CORDOVA AK	60.6N	145.8W	2001Z	0.26M / 0.9FT	28MIN
SITKA AK	57.1N	135.3W	1932Z	1.66M / 5.4FT	21MIN
YAKUTAT AK	59.5N	139.7W	1929Z	0.57M / 1.9FT	24MIN
SEWARD AK	60.1N	149.4W	1918Z	0.74M / 2.4FT	19MIN
KING COVE AK	55.1N	162.3W	1852Z	1.65M / 5.4FT	27MIN
SAND POINT AK	55.3N	160.5W	1847Z	3.12M / 10.2FT	23MIN
KODIAK AK	57.7N	152.5W	1836Z	1.20M / 3.9FT	22MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
 PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

SEA LEVEL READINGS CONFIRM THAT A TSUNAMI HAS BEEN GENERATED
 WHICH COULD CAUSE WIDESPREAD DAMAGE. AUTHORITIES SHOULD TAKE
 APPROPRIATE ACTION IN RESPONSE TO THIS THREAT. THIS CENTER WILL
 CONTINUE TO MONITOR SEA LEVEL DATA TO DETERMINE THE EXTENT AND
 SEVERITY OF THE THREAT.

A TSUNAMI IS A SERIES OF WAVES AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMI WAVE HEIGHTS CANNOT BE PREDICTED AND CAN VARY SIGNIFICANTLY ALONG A COAST DUE TO LOCAL EFFECTS. THE TIME FROM ONE TSUNAMI WAVE TO THE NEXT CAN BE FIVE MINUTES TO AN HOUR, AND THE THREAT CAN CONTINUE FOR MANY HOURS AS MULTIPLE WAVES ARRIVE.

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 WAVE ACTION THE ALL CLEAR DETERMINATION MUST BE MADE BY LOCAL AUTHORITIES.

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT. THE TSUNAMI WARNING WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE.

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

NNNN

PTWC Pacific Message #10

WEPA40 PHEB 250205
TSUPAC

TSUNAMI BULLETIN NUMBER 010
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 0205Z 25 MAR 2010

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

... A WIDESPREAD TSUNAMI WARNING IS IN EFFECT ...

A TSUNAMI WARNING IS IN EFFECT FOR

RUSSIA / MIDWAY IS. / HAWAII / JAPAN / JOHNSTON IS. / WAKE IS. / MEXICO / MARCUS IS. / PALMYRA IS. / MARSHALL IS. / KIRIBATI / JARVIS IS. / N. MARIANAS / HOWLAND-BAKER / POHNPEI / KOSRAE / GUAM / CHUUK / NAURU / COOK ISLANDS / YAP / TOKELAU / TUVALU / TAIWAN / FR. POLYNESIA / BELAU / PHILIPPINES / SAMOA / AMERICAN SAMOA / WALLIS-FUTUNA / PAPUA NEW GUINEA / NIUE / INDONESIA / SOLOMON IS. / VANUATU / TONGA / GUATEMALA / FIJI / EL SALVADOR / NICARAGUA / KERMADEC IS / COSTA RICA / HONDURAS / PITCAIRN / PANAMA / ECUADOR / NEW CALEDONIA / NEW ZEALAND / COLOMBIA / AUSTRALIA / CHILE / PERU / ANTARCTICA

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ORIGIN TIME - 1700Z 24 MAR 2010
COORDINATES - 55.0 NORTH 157.0 WEST
DEPTH - 45 KM
LOCATION - ALASKA PENINSULA
MAGNITUDE - 9.0

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

Gauge Location	LAT	Lon	Time	AMPL	PER
MANZANILLO MX	19.1N	104.3W	0150Z	1.92M / 6.3FT	22MIN
NAURU	0.5S	166.9E	0143Z	0.26M / 0.9FT	22MIN
KANTON KI	2.8S	171.7W	0103Z	0.22M / 0.7FT	22MIN
DEKEHTIK POHNPEI FM	7.0N	158.2E	0058Z	0.35M / 1.1FT	22MIN
SAIPAN US	15.2N	145.7E	0044Z	0.16M / 0.5FT	22MIN
SOCORRO MX	18.7N	110.0W	0036Z	0.90M / 3.0FT	22MIN
MAJURO MH	7.1N	171.4E	0028Z	0.37M / 1.2FT	22MIN

CABO SAN LUCAS MX	23.9N	109.9W	0024Z	1.55M /	5.1FT	22MIN
KWAJALEIN MH	8.7N	167.7E	0022Z	0.28M /	0.9FT	22MIN
OMAEZAKI HONSHU	34.6N	138.2E	2341Z	0.44M /	1.4FT	26MIN
SAN DIEGO CA	32.7N	117.2W	2302Z	1.13M /	3.7FT	23MIN
WAKE US	19.3N	166.6E	2301Z	0.48M /	1.6FT	23MIN
OFUNATO HONSHU	39.0N	141.8E	2258Z	0.22M /	0.7FT	20MIN
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SAND POINT AK	55.3N	160.5W	1847Z	3.12M /	10.2FT	23MIN
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 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
 PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

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

NNNN

PTWC Hawaii Messages

The following messages, created for the PACIFEX 10 tsunami exercise, are representative of the Hawaii products that would be issued by the Pacific Tsunami Warning Center in response to a magnitude 9.0 earthquake and tsunami originating at 55.0°N, 157.0°W.

PTWC Hawaii Message #1

WEHW40 PHEB 241705
TSUHWX

HIZ001>003-005>009-012>014-016>021-023>026-241905-
/O.NEW.PHEB.TS.A.0013.100324T1705Z-000000T0000Z/

TSUNAMI MESSAGE NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
705 AM HST WED MAR 24 2010

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI WATCH

A TSUNAMI WATCH IS ISSUED FOR THE STATE OF HAWAII EFFECTIVE AT
0705 AM HST.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0700 AM HST 24 MAR 2010
COORDINATES - 55.0 NORTH 157.0 WEST
LOCATION - ALASKA PENINSULA
MAGNITUDE - 9.0 MOMENT

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.

IF TSUNAMI WAVES IMPACT HAWAII THE ESTIMATED EARLIEST ARRIVAL OF
THE FIRST TSUNAMI WAVE IS

1133 AM HST WED 24 MAR 2010

MESSAGES WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

NNNN

PTWC Hawaii Message #2

WEHW40 PHEB 241805
TSUHWX

HIZ001>003-005>009-012>014-016>021-023>026-242005-
/O.CAN.PHEB.TS.A.0013.000000T0000Z-000000T0000Z/
/O.NEW.PHEB.TS.W.0012.100324T1805Z-000000T0000Z/

TSUNAMI MESSAGE NUMBER 2
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
805 AM HST WED MAR 24 2010

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI WARNING

A TSUNAMI WARNING IS ISSUED FOR THE STATE OF HAWAII EFFECTIVE AT
0805 AM HST.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0700 AM HST 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0 MOMENT
 MAGNITUDE - 8.4 RICHTER (MS)

EVALUATION

BASED ON SEA LEVEL READINGS FROM DEEP OCEAN GAUGES NEAR THE EARTHQUAKE... A SIGNIFICANT TSUNAMI HAS BEEN GENERATED THAT 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 PREDICTED AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMI WAVES EFFICIENTLY WRAP AROUND ISLANDS. ALL SHORES ARE AT RISK NO MATTER WHICH DIRECTION THEY FACE. THE TROUGH OF A TSUNAMI WAVE 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.

THE ESTIMATED ARRIVAL TIME IN HAWAII OF THE FIRST TSUNAMI WAVE IS
 1133 AM HST WED 24 MAR 2010

MESSAGES WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

NNNN

PTWC Hawaii Message #3

WEHW40 PHEB 241905
 TSUHWX

HIZ001>003-005>009-012>014-016>021-023>026-242105-
 /O.CON.PHEB.TS.W.0012.100324T1905Z-000000T0000Z/

TSUNAMI MESSAGE NUMBER 3
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 905 AM HST WED MAR 24 2010

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI WARNING SUPPLEMENT

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

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0700 AM HST 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0 MOMENT
 MAGNITUDE - 8.4 RICHTER (MS)

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
KING COVE AK	55.1N	162.3W	1852Z	1.65M / 5.4FT	27MIN
SAND POINT AK	55.3N	160.5W	1847Z	3.12M / 10.2FT	23MIN
KODIAK AK	57.7N	152.5W	1836Z	1.20M / 3.9FT	22MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.

IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
 PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

A TSUNAMI HAS BEEN GENERATED THAT 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 PREDICTED AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMI WAVES EFFICIENTLY WRAP AROUND ISLANDS. ALL SHORES ARE AT RISK NO MATTER WHICH DIRECTION THEY FACE. THE TROUGH OF A TSUNAMI WAVE 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.

THE ESTIMATED ARRIVAL TIME IN HAWAII OF THE FIRST TSUNAMI WAVE IS

1133 AM HST WED 24 MAR 2010

MESSAGES WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

NNNN

PTWC Hawaii Message #4

WEHW40 PHEB 242005
 TSUHWX

HIZ001>003-005>009-012>014-016>021-023>026-242205-
 /O.CON.PHEB.TS.W.0012.100324T2005Z-000000T0000Z/

TSUNAMI MESSAGE NUMBER 4
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 1005 AM HST WED MAR 24 2010

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI WARNING SUPPLEMENT

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

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0700 AM HST 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0 MOMENT

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GUAGE LOCATION	LAT	LON	TIME	AMPL	PER
SITKA AK	57.1N	135.3W	1932Z	1.66M / 5.4FT	21MIN
YAKUTAT AK	59.5N	139.7W	1929Z	0.57M / 1.9FT	24MIN
SEWARD AK	60.1N	149.4W	1918Z	0.74M / 2.4FT	19MIN
KING COVE AK	55.1N	162.3W	1852Z	1.65M / 5.4FT	27MIN
SAND POINT AK	55.3N	160.5W	1847Z	3.12M / 10.2FT	23MIN
KODIAK AK	57.7N	152.5W	1836Z	1.20M / 3.9FT	22MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
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EVALUATION

A TSUNAMI HAS BEEN GENERATED THAT 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 PREDICTED AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMI WAVES EFFICIENTLY WRAP AROUND ISLANDS. ALL SHORES ARE AT RISK NO MATTER WHICH DIRECTION THEY FACE. THE TROUGH OF A TSUNAMI WAVE 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.

THE ESTIMATED ARRIVAL TIME IN HAWAII OF THE FIRST TSUNAMI WAVE IS
 1133 AM HST WED 24 MAR 2010

MESSAGES WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

NNNN

PTWC Hawaii Message #5

WEHW40 PHEB 242105
 TSUHWX

HIZ001>003-005>009-012>014-016>021-023>026-242305-
 /O.CON.PHEB.TS.W.0012.100324T2105Z-000000T0000Z/

TSUNAMI MESSAGE NUMBER 5
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 1105 AM HST WED MAR 24 2010

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI WARNING SUPPLEMENT

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

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0700 AM HST 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0 MOMENT

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GUAGE LOCATION	LAT	LON	TIME	AMPL	PER
TOFINO BC	49.2N	125.9W	2052Z	1.72M / 5.6FT	20MIN
SKAGWAY AK	59.5N	135.3W	2043Z	0.88M / 2.9FT	25MIN
LANGARA POINT BC	54.2N	133.1W	2003Z	0.58M / 1.9FT	22MIN
CORDOVA AK	60.6N	145.8W	2001Z	0.26M / 0.9FT	28MIN
SITKA AK	57.1N	135.3W	1932Z	1.66M / 5.4FT	21MIN
YAKUTAT AK	59.5N	139.7W	1929Z	0.57M / 1.9FT	24MIN
SEWARD AK	60.1N	149.4W	1918Z	0.74M / 2.4FT	19MIN
KING COVE AK	55.1N	162.3W	1852Z	1.65M / 5.4FT	27MIN
SAND POINT AK	55.3N	160.5W	1847Z	3.12M / 10.2FT	23MIN
KODIAK AK	57.7N	152.5W	1836Z	1.20M / 3.9FT	22MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).

PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

A TSUNAMI HAS BEEN GENERATED THAT 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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THE ESTIMATED ARRIVAL TIME IN HAWAII OF THE FIRST TSUNAMI WAVE IS

1133 AM HST WED 24 MAR 2010

MESSAGES WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

NNNN

PTWC Hawaii Message #6

WEHW40 PHEB 242205
TSUHWX

HIZ001>003-005>009-012>014-016>021-023>026-250005-
/O.CON.PHEB.TS.W.0012.100324T2205Z-000000T0000Z/

TSUNAMI MESSAGE NUMBER 6
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1205 PM HST WED MAR 24 2010

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI WARNING SUPPLEMENT

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

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0700 AM HST 24 MAR 2010
COORDINATES - 55.0 NORTH 157.0 WEST
LOCATION - ALASKA PENINSULA
MAGNITUDE - 9.0 MOMENT

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LOX	TIME	AMPL	PER
KAHULUI MAUI	20.9N	156.5W	2147Z	2.31M / 7.6FT	23MIN
MOKUOLOE OAHU	21.4N	157.8W	2138Z	0.36M / 1.2FT	18MIN
NAWILIWILI KAUAI	22.0N	159.4W	2133Z	1.17M / 3.8FT	22MIN
CRESCENT CITY CA	41.7N	124.2W	2131Z	2.29M / 7.5FT	24MIN
TERN FR. FRIGATE	23.8N	166.2W	2129Z	0.86M / 2.8FT	23MIN
MIDWAY	28.2N	177.4W	2111Z	0.58M / 1.9FT	25MIN
ASTORIA OR	46.2N	123.8W	2110Z	1.27M / 4.1FT	28MIN
NEAH BAY WA	48.4N	124.6W	2059Z	1.81M / 5.9FT	30MIN
TOFINO BC	49.2N	125.9W	2052Z	1.72M / 5.6FT	20MIN
SKAGWAY AK	59.5N	135.3W	2043Z	0.88M / 2.9FT	25MIN
LANGARA POINT BC	54.2N	133.1W	2003Z	0.58M / 1.9FT	22MIN
CORDOVA AK	60.6N	145.8W	2001Z	0.26M / 0.9FT	28MIN
SITKA AK	57.1N	135.3W	1932Z	1.66M / 5.4FT	21MIN
YAKUTAT AK	59.5N	139.7W	1929Z	0.57M / 1.9FT	24MIN
SEWARD AK	60.1N	149.4W	1918Z	0.74M / 2.4FT	19MIN
KING COVE AK	55.1N	162.3W	1852Z	1.65M / 5.4FT	27MIN

SAND POINT AK 55.3N 160.5W 1847Z 3.12M / 10.2FT 23MIN
 KODIAK AK 57.7N 152.5W 1836Z 1.20M / 3.9FT 22MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
 PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

TSUNAMI WAVES ARE NOW IMPACTING THE COASTLINES OF ALL ISLANDS
 IN THE STATE OF HAWAII. URGENT ACTION SHOULD BE TAKEN TO
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 TIDES OR HIGH SURF CAN SIGNIFICANTLY INCREASE THE TSUNAMI HAZARD.

THE ESTIMATED ARRIVAL TIME IN HAWAII OF THE FIRST TSUNAMI WAVE WAS
 1133 AM HST WED 24 MAR 2010

MESSAGES WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

NNNN

PTWC Hawaii Message #7

WEHW40 PHEB 242305
 TSUHWX

HIZ001>003-005>009-012>014-016>021-023>026-250105-
 /O.CON.PHEB.TS.W.0012.100324T2305Z-000000T0000Z/

TSUNAMI MESSAGE NUMBER 7
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 105 PM HST WED MAR 24 2010

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI WARNING SUPPLEMENT

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

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0700 AM HST 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0 MOMENT

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GUAGE LOCATION	LAT	LON	TIME	AMPL	PER
LOS ANGELES CA	33.7N	118.3W	2247Z	0.91M / 3.0FT	24MIN
FT POINT SAN FRAN	37.8N	122.5W	2231Z	0.41M / 1.3FT	25MIN
HANASAKI HOKKAIDO	43.3N	145.6E	2225Z	0.29M / 1.0FT	31MIN
KAWAIHAE HAWAII	20.0N	155.8W	2208Z	0.51M / 1.7FT	28MIN
KAUMALAPAU	20.8N	157.0W	2156Z	0.76M / 2.5FT	25MIN
HILO HAWAII	19.7N	155.1W	2152Z	2.34M / 7.7FT	21MIN
MONTEREY HARBOR CA	36.6N	121.9W	2151Z	1.26M / 4.1FT	29MIN

SEVERO KURILSK RU	50.7N	156.1E	2149Z	0.46M /	1.5FT	19MIN
HONOLULU OAHU	21.3N	157.9W	2149Z	0.83M /	2.7FT	27MIN
KAHULUI MAUI	20.9N	156.5W	2147Z	2.31M /	7.6FT	23MIN
MOKUOLOE OAHU	21.4N	157.8W	2138Z	0.36M /	1.2FT	18MIN
NAWILIWILI KAUAI	22.0N	159.4W	2133Z	1.17M /	3.8FT	22MIN
CRESCENT CITY CA	41.7N	124.2W	2131Z	2.29M /	7.5FT	24MIN
TERN FR. FRIGATE	23.8N	166.2W	2129Z	0.86M /	2.8FT	23MIN
MIDWAY	28.2N	177.4W	2111Z	0.58M /	1.9FT	25MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
 PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

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THE ESTIMATED ARRIVAL TIME IN HAWAII OF THE FIRST TSUNAMI WAVE WAS

1133 AM HST WED 24 MAR 2010

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NNNN

PTWC Hawaii Message #8

WEHW40 PHEB 250005
 TSUHWX

HIZ001>003-005>009-012>014-016>021-023>026-250205-
 /O.CON.PHEB.TS.W.0012.100325T0005Z-000000T0000Z/

TSUNAMI MESSAGE NUMBER 8
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 205 PM HST WED MAR 24 2010

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI WARNING SUPPLEMENT

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

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0700 AM HST 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0 MOMENT

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
-----	---	---	---	-----	---
OMAEZAKI HONSHU	34.6N	138.2E	2341Z	0.44M / 1.4FT	26MIN

SAN DIEGO CA	32.7N	117.2W	2302Z	1.13M /	3.7FT	23MIN
WAKE US	19.3N	166.6E	2301Z	0.48M /	1.6FT	23MIN
OFUNATO HONSHU	39.0N	141.8E	2258Z	0.22M /	0.7FT	20MIN
LOS ANGELES CA	33.7N	118.3W	2247Z	0.91M /	3.0FT	24MIN
FT POINT SAN FRAN	37.8N	122.5W	2231Z	0.41M /	1.3FT	25MIN
HANASAKI HOKKAIDO	43.3N	145.6E	2225Z	0.29M /	1.0FT	31MIN
KAWAIHAE HAWAII	20.0N	155.8W	2208Z	0.51M /	1.7FT	28MIN
KAUMALAPAU	20.8N	157.0W	2156Z	0.76M /	2.5FT	25MIN
HILO HAWAII	19.7N	155.1W	2152Z	2.34M /	7.7FT	21MIN
MONTEREY HARBOR CA	36.6N	121.9W	2151Z	1.26M /	4.1FT	29MIN
SEVERO KURILSK RU	50.7N	156.1E	2149Z	0.46M /	1.5FT	19MIN
HONOLULU OAHU	21.3N	157.9W	2149Z	0.83M /	2.7FT	27MIN
KAHULUI MAUI	20.9N	156.5W	2147Z	2.31M /	7.6FT	23MIN
MOKUOLOE OAHU	21.4N	157.8W	2138Z	0.36M /	1.2FT	18MIN
NAWILIWILI KAUAI	22.0N	159.4W	2133Z	1.17M /	3.8FT	22MIN
CRESCENT CITY CA	41.7N	124.2W	2131Z	2.29M /	7.5FT	24MIN
TERN FR. FRIGATE	23.8N	166.2W	2129Z	0.86M /	2.8FT	23MIN
MIDWAY	28.2N	177.4W	2111Z	0.58M /	1.9FT	25MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
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 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
 PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

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THE ESTIMATED ARRIVAL TIME IN HAWAII OF THE FIRST TSUNAMI WAVE WAS

1133 AM HST WED 24 MAR 2010

MESSAGES WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

NNNN

PTWC Hawaii Message #9

WEHW40 PHEB 250105
 TSUHWX

HIZ001>003-005>009-012>014-016>021-023>026-250305-
 /O.CON.PHEB.TS.W.0012.100325T0105Z-000000T0000Z/

TSUNAMI MESSAGE NUMBER 9
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 305 PM HST WED MAR 24 2010

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI WARNING SUPPLEMENT

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

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0700 AM HST 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0 MOMENT

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

Gauge Location	LAT	Lon	Time	AMPL	PER
KAWAIHAE HAWAII	20.0N	155.8W	2208Z	0.51M / 1.7FT	28MIN
KAUMALAPAU	20.8N	157.0W	2156Z	0.76M / 2.5FT	25MIN
HILO HAWAII	19.7N	155.1W	2152Z	2.34M / 7.7FT	21MIN
MONTEREY HARBOR CA	36.6N	121.9W	2151Z	1.26M / 4.1FT	29MIN
SEVERO KURILSK RU	50.7N	156.1E	2149Z	0.46M / 1.5FT	19MIN
HONOLULU OAHU	21.3N	157.9W	2149Z	0.83M / 2.7FT	27MIN
KAHULUI MAUI	20.9N	156.5W	2147Z	2.31M / 7.6FT	23MIN
MOKUOLOE OAHU	21.4N	157.8W	2138Z	0.36M / 1.2FT	18MIN
NAWILIWILI KAUAI	22.0N	159.4W	2133Z	1.17M / 3.8FT	22MIN
CRESCENT CITY CA	41.7N	124.2W	2131Z	2.29M / 7.5FT	24MIN
TERN FR. FRIGATE	23.8N	166.2W	2129Z	0.86M / 2.8FT	23MIN
MIDWAY	28.2N	177.4W	2111Z	0.58M / 1.9FT	25MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
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 1133 AM HST WED 24 MAR 2010

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NNNN

PTWC Hawaii Message #10

WEHW40 PHEB 250205
 TSUHWX

HIZ001>003-005>009-012>014-016>021-023>026-250405-
 /O.CAN.PHEB.TS.W.0012.000000T0000Z-000000T0000Z/

TSUNAMI MESSAGE NUMBER 10
 NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
 405 PM HST WED MAR 24 2010

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI WARNING CANCELLATION

THE TSUNAMI WARNING IS CANCELLED FOR THE STATE OF HAWAII EFFECTIVE

AT 0405 PM HST.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0700 AM HST 24 MAR 2010
 COORDINATES - 55.0 NORTH 157.0 WEST
 LOCATION - ALASKA PENINSULA
 MAGNITUDE - 9.0 MOMENT

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
KAWAIHAE HAWAII	20.0N	155.8W	2208Z	0.51M / 1.7FT	28MIN
KAUMALAPAU	20.8N	157.0W	2156Z	0.76M / 2.5FT	25MIN
HILO HAWAII	19.7N	155.1W	2152Z	2.34M / 7.7FT	21MIN
MONTEREY HARBOR CA	36.6N	121.9W	2151Z	1.26M / 4.1FT	29MIN
SEVERO KURILSK RU	50.7N	156.1E	2149Z	0.46M / 1.5FT	19MIN
HONOLULU OAHU	21.3N	157.9W	2149Z	0.83M / 2.7FT	27MIN
KAHULUI MAUI	20.9N	156.5W	2147Z	2.31M / 7.6FT	23MIN
MOKUOLOE OAHU	21.4N	157.8W	2138Z	0.36M / 1.2FT	18MIN
NAWILIWILI KAUAI	22.0N	159.4W	2133Z	1.17M / 3.8FT	22MIN
CRESCENT CITY CA	41.7N	124.2W	2131Z	2.29M / 7.5FT	24MIN
TERN FR. FRIGATE	23.8N	166.2W	2129Z	0.86M / 2.8FT	23MIN
MIDWAY	28.2N	177.4W	2111Z	0.58M / 1.9FT	25MIN

LAT - LATITUDE (N-NORTH, S-SOUTH)
 LON - LONGITUDE (E-EAST, W-WEST)
 TIME - TIME OF THE MEASUREMENT (Z IS UTC IS GREENWICH TIME)
 AMPL - TSUNAMI AMPLITUDE MEASURED RELATIVE TO NORMAL SEA LEVEL.
 IT IS ...NOT... CREST-TO-TROUGH WAVE HEIGHT.
 VALUES ARE GIVEN IN BOTH METERS(M) AND FEET(FT).
 PER - PERIOD OF TIME IN MINUTES(MIN) FROM ONE WAVE TO THE NEXT.

EVALUATION

BASED ON ALL AVAILABLE DATA THE TSUNAMI THAT IMPACTED THE STATE OF HAWAII HAS NOW PASSED. THEREFORE THE TSUNAMI WARNING FOR HAWAII IS CANCELLED.

HOWEVER SOME COASTAL AREAS MAY CONTINUE TO EXPERIENCE SEA LEVEL CHANGES AND STRONG OR UNUSUAL CURRENTS LASTING SEVERAL HOURS OR LONGER.

THIS TSUNAMI WARNING CANCELLATION DOES NOT MEAN IT IS NOW SAFE TO RESUME NORMAL ACTIVITIES OR REENTER EVACUATED SHORELINE AREAS. YOUR COUNTY CIVIL DEFENSE AGENCY AND POLICE DEPARTMENT WILL MAKE THIS DETERMINATION. STAY TUNED TO YOUR LOCAL BROADCAST STATION FOR THE CIVIL DEFENSE -ALL CLEAR- ANNOUNCEMENT FOR YOUR AREA.

REPEAT -
 DO NOT REENTER EVACUATED SHORELINE AREAS UNTIL ANNOUNCED BY YOUR COUNTY CIVIL DEFENSE AGENCY. STAY TUNED TO YOUR LOCAL BROADCAST STATION FOR THE -ALL CLEAR- ANNOUNCEMENT FOR YOUR AREA. PLEASE YIELD TO ROADBLOCKS AND UNIFORMED OFFICERS WHO ARE CONTROLLING REENTRY INTO EVACUATED SHORELINE AREAS.

THIS WILL BE THE FINAL MESSAGE ISSUED FOR THIS EVENT UNLESS ADDITIONAL DATA ARE RECEIVED.

NNNN

Appendix E. WCATWC Web-based Products

Graphical and web-based products are posted to the WCATWC web site during an event. This Appendix contains examples of several of these. The first is the html-based text message with embedded links.

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 03/24/2010 at 9:07AM AKDT

A **[Tsunami Warning](#)** is in effect which includes the coastal areas of **British Columbia and Alaska from the north tip of Vancouver Island, British Columbia to Attu, Alaska.**

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

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. This tsunami warning is based solely on earthquake information - the tsunami has not yet been confirmed.

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 9:00 AM Alaskan Daylight Time on March 24, an [earthquake](#) with preliminary magnitude 9.0 [occurred 105 miles/169 Km southeast of Chignik, Alaska](#). (Refer to the [United States Geological Survey](#) for official earthquake parameters.) This earthquake **may have** generated a tsunami. If a tsunami has been generated, the waves will first reach Sand Point, Alaska at 10:25 AM AKDT on March 24. 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 187 meters 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.

The [Pacific Tsunami Warning Center](#) in Ewa Beach, Hawaii will issue messages for Hawaii and other areas of the Pacific outside the states and provinces listed above.

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.

[Link to Standard Warning Message](#)

[Link to Public Warning Message](#)

[Link to XML/CAP Message](#)

[Link to Printable Message](#)

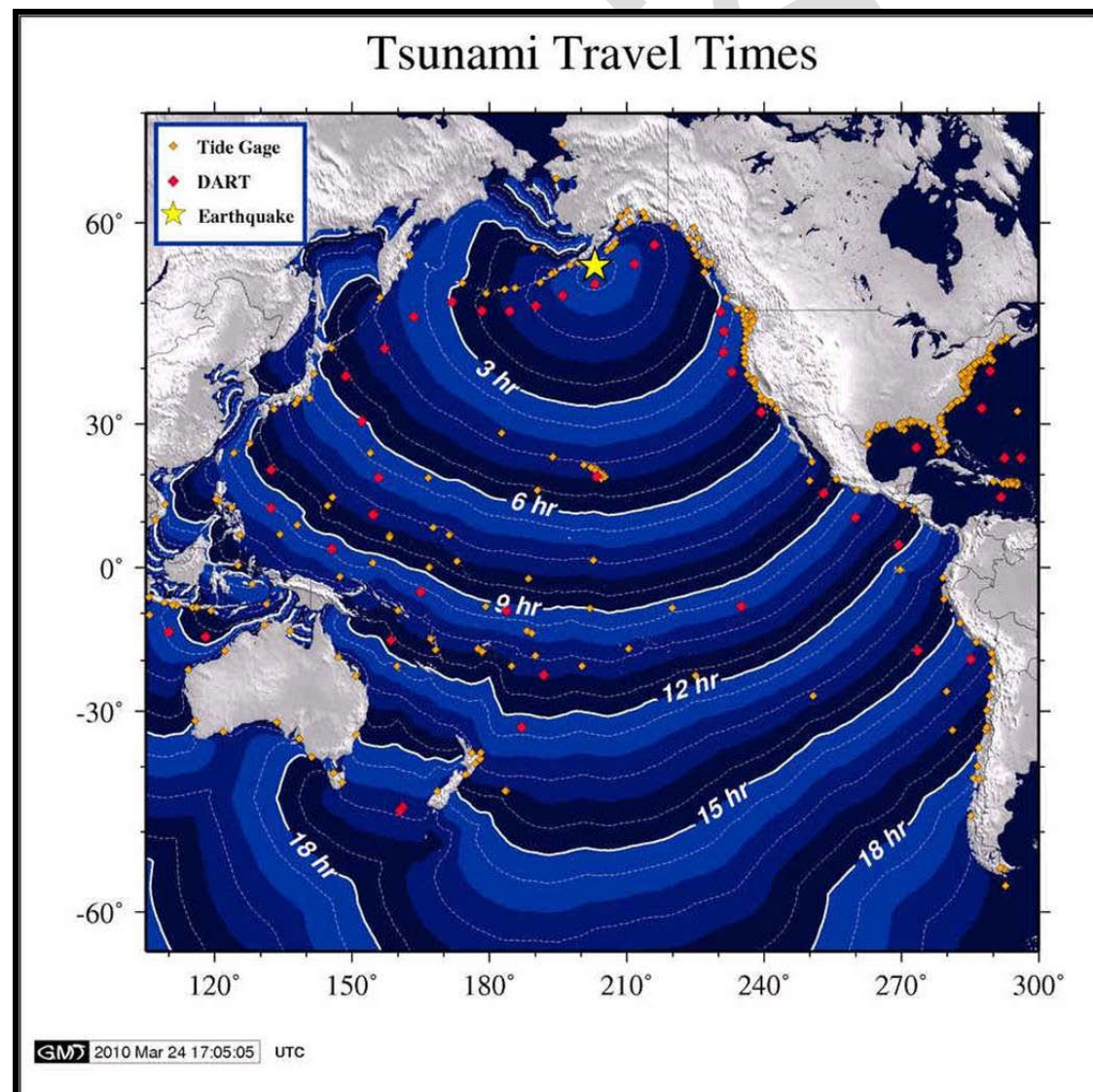


Figure E1: Tsunami Travel Time Map generated after issuing Bulletin 1

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 list is ordered by arrival time starting with the earliest. Since tsunami speed is directly related to water depth, tsunami ETAs can be computed independent of tsunami amplitude. THE LISTING OF A TSUNAMI ARRIVAL TIME BELOW DOES NOT INDICATE A WAVE IS IMMINENT. 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.

Source:
 Lat: 55.0N
 Lng: 157.0W
 Mag: 9.0
 O-time: 1700UTC
 Date: MAR 24

Estimated times of initial tsunami arrival:

DART 46403	0924 AKDT MAR 24	1724 UTC MAR 24
DART 46409	0948 AKDT MAR 24	1748 UTC MAR 24
DART 46402	0953 AKDT MAR 24	1753 UTC MAR 24
DART 46410	1013 AKDT MAR 24	1813 UTC MAR 24
DART 46408	1020 AKDT MAR 24	1820 UTC MAR 24
Perryville, Alaska	1023 AKDT MAR 24	1823 UTC MAR 24
Sand Point, Alaska	1025 AKDT MAR 24	1825 UTC MAR 24
Akutan, Alaska	1032 AKDT MAR 24	1832 UTC MAR 24
King Cove, Alaska	1033 AKDT MAR 24	1833 UTC MAR 24
Nikolski, Alaska	1039 AKDT MAR 24	1839 UTC MAR 24
DART 46413	1042 AKDT MAR 24	1842 UTC MAR 24
Dutch Harbor, Alaska	1045 AKDT MAR 24	1845 UTC MAR 24
Kodiak, Alaska	1046 AKDT MAR 24	1846 UTC MAR 24
Atka, Alaska	1048 AKDT MAR 24	1848 UTC MAR 24
Old Harbor, Alaska	1048 AKDT MAR 24	1848 UTC MAR 24
Cold Bay, Alaska	1108 AKDT MAR 24	1908 UTC MAR 24
Adak, Alaska	1110 AKDT MAR 24	1910 UTC MAR 24
DART 21414	1110 AKDT MAR 24	1910 UTC MAR 24
Seward, Alaska	1111 AKDT MAR 24	1911 UTC MAR 24
Amchitka, Alaska	1111 AKDT MAR 24	1911 UTC MAR 24
Alitak, Alaska	1112 AKDT MAR 24	1912 UTC MAR 24
Elfin Cove, Alaska	1113 AKDT MAR 24	1913 UTC MAR 24
Yakutat, Alaska	1120 AKDT MAR 24	1920 UTC MAR 24
Sitka, Alaska	1121 AKDT MAR 24	1921 UTC MAR 24
Port Alexander, Alaska	1122 AKDT MAR 24	1922 UTC MAR 24
Valdez, Alaska	1130 AKDT MAR 24	1930 UTC MAR 24
Langara Island, British Columbia	1230 PDT MAR 24	1930 UTC MAR 24
DART 21415	1138 AKDT MAR 24	1938 UTC MAR 24
Cordova, Alaska	1140 AKDT MAR 24	1940 UTC MAR 24
Shemya, Alaska	1153 AKDT MAR 24	1953 UTC MAR 24
DART 46419	1258 PDT MAR 24	1958 UTC MAR 24
Attu, Alaska	1200 AKDT MAR 24	2000 UTC MAR 24
Homer, Alaska	1204 AKDT MAR 24	2004 UTC MAR 24
St. Paul, Alaska	1206 AKDT MAR 24	2006 UTC MAR 24
DART 46404	1315 PDT MAR 24	2015 UTC MAR 24
The north tip of Vancouver Island, British Columbia	1316 PDT MAR 24	2016 UTC MAR 24
Craig, Alaska	1221 AKDT MAR 24	2021 UTC MAR 24
DART 46407	1327 PDT MAR 24	2027 UTC MAR 24
Ketchikan, Alaska	1228 AKDT MAR 24	2028 UTC MAR 24
Juneau, Alaska	1230 AKDT MAR 24	2030 UTC MAR 24
Tofino, British Columbia	1356 PDT MAR 24	2056 UTC MAR 24
DART 46411	1356 PDT MAR 24	2056 UTC MAR 24
Prince Rupert, British Columbia	1359 PDT MAR 24	2059 UTC MAR 24
the Washington-British Columbia border	1402 PDT MAR 24	2102 UTC MAR 24
Neah Bay, Washington	1408 PDT MAR 24	2108 UTC MAR 24
La Push, Washington	1409 PDT MAR 24	2109 UTC MAR 24
the Oregon-Washington border	1409 PDT MAR 24	2109 UTC MAR 24
Point Grenville, Washington	1411 PDT MAR 24	2111 UTC MAR 24
Cape Blanco, Oregon	1412 PDT MAR 24	2112 UTC MAR 24
Cascade Head, Oregon	1414 PDT MAR 24	2114 UTC MAR 24

Tillamook Bay, Oregon	1415	PDT	MAR	24	2115	UTC	MAR	24
Charleston, Oregon	1416	PDT	MAR	24	2116	UTC	MAR	24
Cape Mendocino, California	1419	PDT	MAR	24	2119	UTC	MAR	24
Seaside, Oregon	1421	PDT	MAR	24	2121	UTC	MAR	24
Westport, Washington	1422	PDT	MAR	24	2122	UTC	MAR	24
Newport, Oregon	1424	PDT	MAR	24	2124	UTC	MAR	24
Humboldt Bay, California	1424	PDT	MAR	24	2124	UTC	MAR	24
the Oregon-California border	1425	PDT	MAR	24	2125	UTC	MAR	24
Crescent City, California	1425	PDT	MAR	24	2125	UTC	MAR	24
Fort Bragg, California	1427	PDT	MAR	24	2127	UTC	MAR	24
Point Arena, California	1433	PDT	MAR	24	2133	UTC	MAR	24
Astoria, Oregon	1441	PDT	MAR	24	2141	UTC	MAR	24
Port Angeles, Washington	1445	PDT	MAR	24	2145	UTC	MAR	24
Point Reyes, California	1447	PDT	MAR	24	2147	UTC	MAR	24
Point Sur, California	1453	PDT	MAR	24	2153	UTC	MAR	24
Monterey, California	1455	PDT	MAR	24	2155	UTC	MAR	24
Port Moller, Alaska	1401	AKDT	MAR	24	2201	UTC	MAR	24
Bella Bella, British Columbia	1502	PDT	MAR	24	2202	UTC	MAR	24
DART 46412	1510	PDT	MAR	24	2210	UTC	MAR	24
Point Concepcion, California	1512	PDT	MAR	24	2212	UTC	MAR	24
San Francisco, California	1517	PDT	MAR	24	2217	UTC	MAR	24
Port San Luis, California	1518	PDT	MAR	24	2218	UTC	MAR	24
Santa Barbara, California	1532	PDT	MAR	24	2232	UTC	MAR	24
Seattle, Washington	1541	PDT	MAR	24	2241	UTC	MAR	24
Saint Matthew Island, Alaska	1446	AKDT	MAR	24	2246	UTC	MAR	24
San Pedro, California	1548	PDT	MAR	24	2248	UTC	MAR	24
Santa Monica, California	1548	PDT	MAR	24	2248	UTC	MAR	24
Newport Beach, California	1554	PDT	MAR	24	2254	UTC	MAR	24
La Jolla, California	1559	PDT	MAR	24	2259	UTC	MAR	24
the California-Mexico border	1605	PDT	MAR	24	2305	UTC	MAR	24
Cape Newenham, Alaska	1535	AKDT	MAR	24	2335	UTC	MAR	24
Gambell, Alaska	1705	AKDT	MAR	24	0105	UTC	MAR	25
Dillingham, Alaska	1725	AKDT	MAR	24	0125	UTC	MAR	25
Hooper Bay, Alaska	1859	AKDT	MAR	24	0259	UTC	MAR	25
Little Diomed Island, Alaska	2002	AKDT	MAR	24	0402	UTC	MAR	25
Nome, Alaska	2157	AKDT	MAR	24	0557	UTC	MAR	25
Unalakleet, Alaska	0046	AKDT	MAR	25	0846	UTC	MAR	25

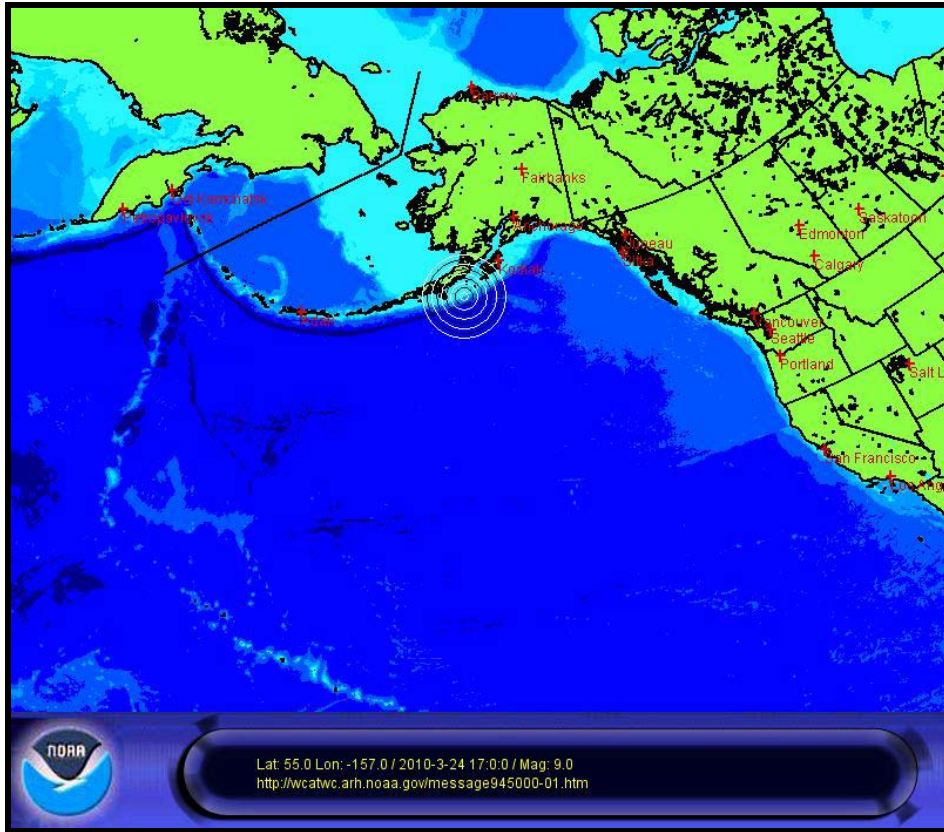


Figure E2: Small-scale map issued with Bulletin 1

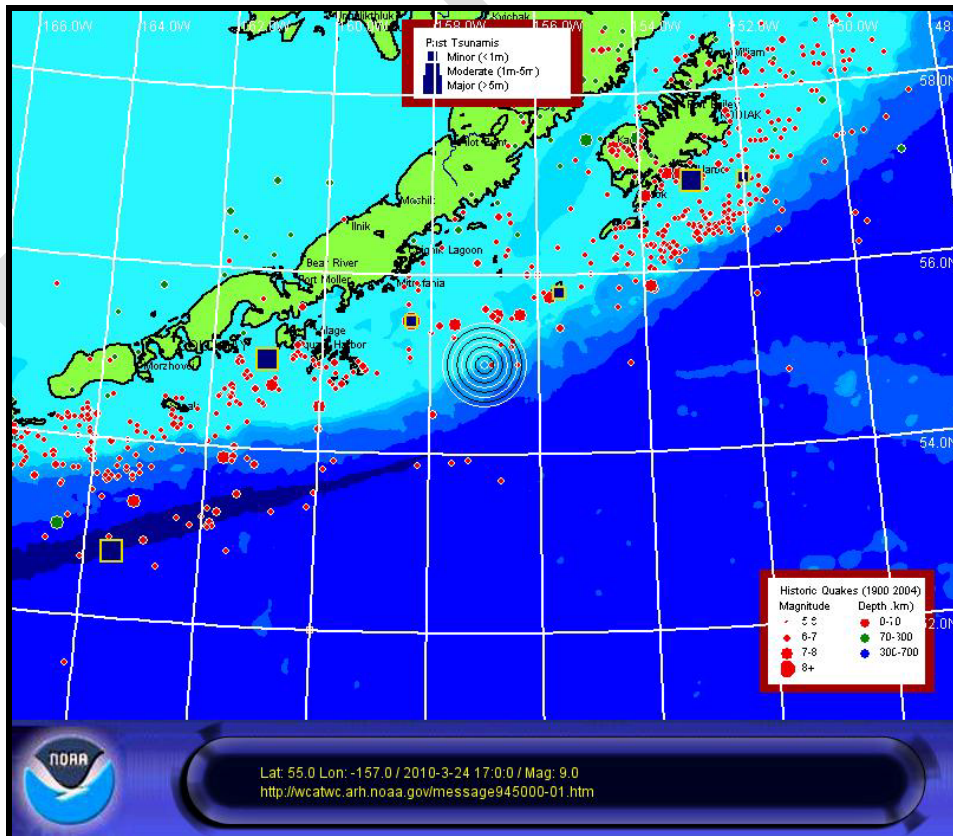


Figure E3: Large-scale map issued with Bulletin 1

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 24, 2010

(insert community/county/state name) will join other localities in the Pacific as a participant in a tsunami response exercise on March 24, 2010. 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 2004 Indian Ocean tsunami brought to the attention of the world 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 10, will simulate a widespread Tsunami Warning and Advisory situation along U.S. and Canadian Pacific coasts requiring implementation of local tsunami response plans. The exercise will *(insert "include" or "not include")* public notification.

The exercise will simulate a major earthquake and tsunami generated near Alaska's Shumagin Islands at 10:00 am Pacific Daylight Time *(or appropriate local time)* on March 24, 2010. 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.

###

On the Web:

West Coast/Alaska Tsunami Warning Center <http://wcatwc.arh.noaa.gov>
Pacific Tsunami Warning Center <http://www.prh.noaa.gov/ptwc>
NOAA Tsunami Program <http://www.tsunami.gov>

NTHMP:

Insert state/local emergency response URLs

<http://tsunami.noaa.gov>
<http://nthmp.tsunami.gov>

Appendix G. Post-Exercise Evaluation

All participating agencies are requested to provide brief feedback on the exercise. This feedback will assist the NTHMP and NOAA in the evaluation of PACIFEX 10 and the development of subsequent exercises.

Please fill out and return the form by Friday, April 9, 2010 to:

For Alaska, the U.S. West Coast, and the west coast of Canada

WCATWC Director
NOAA/West Coast/Alaska Tsunami Warning Center
910 South Felton Street
Palmer, Alaska 99645

FAX: 907-745-6071

Or scanned and emailed to paul.whitmore@noaa.gov.

For Hawaii

PTWC Director
NOAA Pacific Tsunami Warning Center
91-270 Fort Weaver Road
Ewa Beach, HI 96706

Fax: 808-689-4543

Or scanned and emailed to charles.mccreery@noaa.gov

PACIFEX 10 Tsunami Response Exercise Evaluation Form
For Official Use Only

Participant Location: _____

Participant Agency: _____

Agency Contact Information:

Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

Email: _____

Please answer the following questions and provide any suggestions.

Was the exercise format satisfactory?

Did you receive the “dummy” message from the WCATWC or PTWC to start the exercise? If so, through what channel(s) and approximately what time was it received?

Was the content and intention of the tsunami messages clear?

Should any other content be added to the messages, or was any superfluous?

Did your agency have a tsunami response plan in place prior to the exercise?

If so, was the response plan adequate to address the event?

What actions did the agency take during the exercise?

Were the emergency management actions during the event clearly laid out by the plan?

During a real event, how is the local population notified of any tsunami danger?

Was any feedback received from the public?

Are the potential tsunami danger zones known in your area?

Was the exercise helpful in validating the response plan or showing that it was not sufficient?