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**Operations and Services
TSUNAMI WARNING SERVICES, NWSPD 10-7**

TSUNAMI WARNING CENTER OPERATIONS

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SUMMARY OF REVISIONS: This supersedes NWS Instruction 10-701, dated December 22, 2006. Numerous changes were made to reflect new responsibilities and clarify tsunami warning services, following the December 26, 2004 tsunami in Indonesia.

1. Housing requirements for the West Coast and Alaska Tsunami Warning Center (WC/ATWC) were removed.
2. Operational responsibilities for the Atlantic Basin, U.S. and Canadian Atlantic Coasts, and the Gulf of Mexico were added to WC/ATWC. Tsunami bulletins for these areas are defined, including details such as breakpoints.
3. Operational responsibilities for the Indian Ocean and Caribbean were added to the Pacific Tsunami Warning Center, including the role of the Japan Meteorological Agency. Tsunami bulletins for these areas are defined.
4. Appendix A was added, containing product examples.
5. Appendix B was added, containing a glossary of terms

Revisions 8/2008:

1. Added new advisory product for WC/ATWC AOR
2. Moved PR/VI from PTWC AOR to WC/ATWC
3. Included new warning criteria for WC/ATWC AOR based on external review
4. Expanded section on TWC products
5. Removed final supplement message
6. Added Section on WFO actions supporting the warning system
7. Appendix C was added, containing a product matrix.
8. Appendix D was added, containing the PTWC and WC/ATWC AOR

signed
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March 27, 2009
Date

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1. **West Coast/Alaska Tsunami Warning Center (WC/ATWC).**

1.1 General. The WC/ATWC, located at Palmer, Alaska, is responsible for the preparation and dissemination of tsunami warning, watch, advisory, and information products to the WC/ATWC Area of Responsibility (AOR). The WC/ATWC AOR is defined as the coastal regions of Canada, Puerto Rico, the Virgin Islands, and all U.S. States except Hawaii. WC/ATWC has the primary responsibility for the detection and parameterization of potentially tsunamigenic earthquakes occurring within or immediately adjacent to its AOR, and events within the Atlantic Basin north of the Tropic of Cancer (23.5 degrees North Latitude).

1.2 Watch, Warning and Advisory Procedures. The WC/ATWC will operate in accordance with the following procedures for earthquakes occurring:

1.2.1 Near the Pacific coasts of Alaska, British Columbia, Washington, Oregon, and California. For earthquakes less than 100km deep and with initially determined magnitude greater than 7.0 but less than or equal to 7.5, the WC/ATWC will issue a tsunami warning or advisory as appropriate which extends to the nearest breakpoint beyond 250 kilometers (km) from the epicenter. No watch will be issued. The warning will not normally be expanded.

For earthquakes less than 100km deep and with initially determined magnitudes greater than 7.5 but less than or equal to 7.8, the WC/ATWC will issue a tsunami warning which extends to the nearest breakpoint beyond 500 km from the epicenter. An advisory will be issued for regions from 500km to 1000km from the epicenter. No watch will be issued. The warning and advisory will not normally be expanded.

For initially determined magnitudes greater than 7.8, a tsunami warning or advisory as appropriate will be issued for threatened regions within a 3-hour wave travel time from the time of product issuance, and a tsunami watch will be issued for the rest of the Pacific AOR. Threatened regions and the level of threat (warning or advisory) are determined through pre-computed models. All warning, watch, and advisory areas will be described using the breakpoints shown in Section 1.3. (See Appendix A for examples of WC/ATWC Pacific Tsunami Warning/Watch/Advisory products: WEPA41 PAAQ and WEAK51 PAAQ.)

1.2.2 Elsewhere in the Pacific Basin and when the event has potential to generate a tsunami dangerous to the WC/ATWC Pacific AOR. For earthquakes less than 100km deep and with an initially determined magnitude greater than 7.5 and less than or equal to 7.8, the WC/ATWC, after coordinating with the Pacific Tsunami Warning Center (PTWC), will issue a tsunami advisory for any of its AOR within 1000 km of the epicenter if the source region is known to produce tsunamis which impact the AOR. No watch will be issued and the advisory will not normally be expanded. If no AOR region is within 1000 km, the earthquake is inland or deeper than 100km, or the source region is not known to produce tsunamis which impact the AOR, a Tsunami Information Statement will be issued.

For earthquakes less than 100km deep, with an initially determined magnitude greater than 7.8, and the potential to trigger a tsunami dangerous to the AOR, the WC/ATWC, after coordinating with the PTWC, will issue a warning or advisory as appropriate to threatened regions within the

AOR that could be impacted within three hours tsunami travel time. Threatened regions and the level of threat (warning or advisory) are determined through pre-computed models. A watch will be issued to the rest of the AOR. If no part of the AOR is threatened within three hours, a Tsunami Information Statement will be issued.

1.2.3 Special Procedural Regions in the WC/ATWC Pacific AOR. For certain regions within the WC/ATWC Pacific AOR, special procedures are set (Arctic Ocean, Bering Sea, Cook Inlet, Strait of Georgia (BC), Puget Sound, and San Francisco Bay). Warnings or advisories will be issued for pre-determined coasts for earthquakes greater than magnitude 7.0 in these regions.

1.2.4 Near the U.S. and Canadian Atlantic Coast. For earthquakes less than 100km deep, and with initially determined magnitudes greater than 6.4 but less than or equal to 7.5, the WC/ATWC will issue a tsunami warning extending to the nearest breakpoint beyond 250 km from the epicenter. No watch will be issued. The warning will not normally be expanded.

For earthquakes less than 100km deep and with initially determined magnitudes greater than 7.5 but less than or equal to 7.8, the WC/ATWC will issue a tsunami warning which extends to the nearest breakpoint beyond 500 km from the epicenter. An advisory will be issued for regions from 500km to 1000km from the epicenter. No watch will be issued. The warning and advisory will not normally be expanded.

For initially determined magnitudes greater than 7.8, a tsunami warning or advisory as appropriate will be issued for threatened regions within 1000km of the epicenter, and a tsunami watch will be issued for the rest of the AOR. Threatened regions and the level of threat (warning or advisory) are determined through pre-computed models.

For earthquakes less than 100km deep and with initially determined magnitudes greater than 6.4 which occur within the Gulf of Saint Lawrence, a tsunami warning will be issued for the Gulf of Saint Lawrence coast. No watch will be issued, and the warning will not normally be expanded.

All watch and warning areas will be described using the breakpoints shown in section 1.3. (See Appendix A for examples of WC/ATWC Atlantic Tsunami Warning/Watch/Advisory products: WEXX20 PAAQ and WEXX30 PAAQ.)

1.2.5 The Gulf of Mexico. For earthquakes which occur under the continental shelf or within 50km of the continental slope, are less than 100km deep, and have initially determined magnitudes greater than 6.4, a tsunami warning will be issued for the Gulf of Mexico coast. For earthquakes which occur under the deep-water region of the Gulf, are less than 100km deep, and have initially determined magnitudes greater than 7.0, a tsunami warning will be issued for the Gulf of Mexico coast. No watch will be issued in either case. The warning will not normally be expanded.

1.2.6 Puerto Rico and the Virgin Islands. For earthquakes less than 100km deep, and with initially determined magnitudes greater than 6.4, a tsunami warning will be issued for Puerto Rico and the Virgin Islands. No watch will be issued.

1.2.7 Caribbean Sea and Outside the PR/VI Vicinity.

For earthquakes less than 100km deep located in the eastern Caribbean (east of 75W), and with initially determined magnitude greater than 7.5 and less than or equal to 7.8, the WC/ATWC will issue an advisory for Puerto Rico and the Virgin Islands. No watch will be issued.

For earthquakes less than 100km deep located in the western Caribbean and with an initially determined magnitude greater than 7.8, the WC/ATWC will issue an advisory for Puerto Rico and the Virgin Islands. No watch will be issued.

For earthquakes less than 100km deep located in the eastern Caribbean and with an initially determined magnitude greater than 7.8, the WC/ATWC will issue a warning for Puerto Rico and the Virgin Islands. No watch will be issued.

1.2.8 Elsewhere in the Atlantic Basin and when the event has the potential to generate a tsunami dangerous to the WC/ATWC's Atlantic AOR. For earthquakes less than 100km deep and with an initially determined magnitude greater than 7.5 and less than or equal to 7.8, the WC/ATWC, after coordinating with PTWC, will issue a tsunami advisory for any of its AOR within 1000 km of the epicenter if the source region has the potential to produce tsunamis dangerous to the AOR. No watch will be issued and the advisory will not normally be expanded. If no AOR region is within 1000 km, the earthquake is inland or deeper than 100km, or the source region is not expected to produce tsunamis dangerous to the AOR, a Tsunami Information Statement will be issued.

For events with an initially determined magnitude greater than 7.8 and when the event has generated a tsunami dangerous to the WC/ATWC's Atlantic AOR, the WC/ATWC, after coordinating with the PTWC, will issue a tsunami warning or advisory to threatened areas within its AOR using the breakpoints in section 1.3.

1.3 Tsunami Information Statements.

1.3.1 Pacific. The WC/ATWC will issue a Tsunami Information Statement whenever an earthquake with a magnitude of 6.5 or greater, but below the warning/watch/advisory thresholds described in sections 1.2.1 and 1.2.2, occurs within its Pacific AOR. The WC/ATWC, after coordination with the PTWC, will issue a Tsunami Information Statement for its Pacific AOR whenever an earthquake with a magnitude of 6.5 or greater occurs in the Pacific basin outside of the WC/ATWC AOR, for which no warning, watch, or advisory has been issued. (See Appendix A for examples of these products: WEPA43 PAAQ and WEAK53 PAAQ.)

1.3.2 Atlantic and Caribbean. The WC/ATWC will issue a Tsunami Information Statement whenever an earthquake with a magnitude of 6.0 or greater, but below the warning/watch/advisory thresholds described in sections 1.2.4 through 1.2.7, occurs within its Atlantic AOR or the Caribbean. The WC/ATWC, after coordination with the PTWC, will issue a Tsunami Information Statement for the Atlantic AOR whenever an earthquake with a magnitude

greater than or equal to 6.5 occurs elsewhere in the Atlantic basin. (See Appendix A for examples of these products: WEXX22 PAAQ and WEXX32 PAAQ.)

1.4 Tsunami Seismic Information Statements.

For AOR or near-AOR coastal earthquakes with the potential to be felt but below the thresholds in Sections 1.2. and 1.3., the WC/ATWC will issue Tsunami Seismic Information Statements stating the likelihood of tsunami impact and preliminary details of the earthquake. These messages are issued to prevent unnecessary evacuations. (See Appendix A for examples of these products: SEAK71 PAAQ, SEUS71 PAAQ, and SEXX60 PAAQ.)

1.5 Breakpoints. The geographical extent of tsunami warnings, watches, and advisories in the WC/ATWC’s Pacific AOR will be defined using the following breakpoints:

Attu, AK	Cordova, AK	Cascade Head, OR
Adak, AK	Yakutat, AK	Cape Blanco, OR
Nikolski, AK	Sitka, AK	Oregon-California Border
Dutch Harbor, AK	Langara Island, BC	Cape Mendocino, CA
Sand Point, AK	Northern Tip Vancouver Is., BC	Point Reyes, CA
Kodiak, AK	Washington-B.C. Border	Point Sur, CA
Seward, AK	Washington-Oregon Border	Point Concepcion, CA
		California-Mexico Border

The geographical extent of tsunami warnings, watches, and advisories in the WC/ATWC’s Atlantic AOR will be defined using the following breakpoints:

Brownsville, TX	Ocean Reef, FL	Watch Hill, RI
Baffin Bay, TX	Jupiter Inlet, FL	Merrimack River, MA
Port O’Connor, TX	Flagler Beach, FL	Stonington, ME
High Island, TX	Altamaha Sound, GA	US/Canada Border
Morgan City, LA	South Santee River, SC	Charlesville, NS
MS/AL Border	Surf City, NC	Chezzetcook, NS
Destin, FL	Duck, NC	Meat Cove, NS
Suwannee River, FL	New Point Comfort, VA	Cape Ray, NL
Bonita Beach, FL	Cape Henlopen, DE	La Manche, NL
Flamingo, FL	Sandy Hook, NJ	Boat Harbour, NL
		Cape Chidley, NL

1.6 Backup of the PTWC. In the event that the PTWC is disabled or otherwise unable to issue any of its critical products, the WC/ATWC will issue those products on its behalf using the PTWC product identifiers. The WC/ATWC will issue these products when notified by the PTWC that backup is necessary. The WC/ATWC will also issue PTWC products when a significant event has occurred, communications between the centers has ceased, and a time limit for the source region has been exceeded in which no critical products were issued by the PTWC. Time limits will be determined by the TWCs based on source regions.

2. Pacific Tsunami Warning Center (PTWC).

2.1 General. The PTWC, located at Ewa Beach, Oahu, Hawaii, is responsible for the preparation and dissemination of tsunami warning, watch, advisory, and information products to the PTWC AOR. In the Pacific, the PTWC AOR is defined as Hawaii and all U.S interests and other countries outside the WC/ATWC AOR. In the Indian Ocean, the PTWC AOR currently includes all countries with coastlines in that ocean. This interim arrangement is described in Section 2.2.3. In the Caribbean, the PTWC AOR is the wider Caribbean outside Puerto Rico and the Virgin Islands. This interim arrangement is described in Section 2.2.4.

International responsibilities are determined by agreement and in coordination with UNESCO Intergovernmental Oceanographic Commission (IOC) tsunami programs. The PTWC has the primary responsibility for the detection and parameterization of potentially tsunamigenic earthquakes that might affect their AOR, except for those earthquakes for which either WC/ATWC or the Northwest Pacific Tsunami Advisory Center (NWPTAC) operated by the Japan Meteorological Administration (JMA) has the primary responsibility. In the Pacific and its marginal seas this includes all earthquakes except those in the vicinity of Japan, the Bering Sea coast of Russia, Alaska, British Columbia, and the U.S. West Coast. In the Indian Ocean it is all earthquakes. In the Caribbean region it includes all earthquakes except those in the Gulf of Mexico and the vicinity of Puerto Rico and the Virgin Islands. In the Atlantic it is all earthquakes south of the Tropic of Cancer (23.5 degrees North Latitude).

2.1.1 Housing. Because the PTWC must quickly react to earthquakes 24-hours a day, its duty personnel respond either from within the Center or from government quarters located within 500 feet of the Center. Two persons are always available to respond, and one of these two will always be available from within the Center. Some PTWC personnel are required to live on the Center grounds in government quarters on a permanent basis, while others occupy quarters on a temporary basis only when they are on duty.

2.2. Watch, Warning and Advisory Procedures. PTWC will operate in accordance with the following procedures for earthquakes occurring:

2.2.1 Hawaii. The PTWC is the operational center for the State of Hawaii's tsunami warning system and covers tsunamis generated within the Hawaiian Islands. Procedures and criteria for local tsunami warnings in Hawaii, and the areas they cover, are coordinated with and approved by Hawaii State Civil Defense.

If the magnitude is greater than or equal to 7.6, PTWC will issue a statewide Urgent Local Tsunami Warning Message based only on the seismic data. If the magnitude is greater than or equal to 6.9 but less than 7.6, PTWC will issue an Urgent Local Tsunami Warning Message for the closest parts of the Hawaiian Islands based only on the seismic data. (See Appendix A for an example of this product: WEHW40 PHEB.)

Further, if significant tsunami waves or coastal flooding are detected, then an Urgent Local Tsunami Warning Message may be initiated or the area of coverage of an existing Warning may be modified appropriate to the threat.

For any Urgent Local Tsunami Warning PTWC will also issue a public product to help provide the most rapid information and instructions to get persons away from coastal zones at risk. (See Appendix A for an example of this product: WEHW50 PHEB).

Local tsunami watches or advisories will not be issued for a tsunami generated within the State of Hawaii due to very short lead times (typically less than an hour).

In addition to these local products, the PTWC will also issue products to Hawaii in accordance with its Pacific procedures outlined in Section 2.2.2.

2.2.2 The Pacific. The PTWC serves as the operational center for the United Nations Educational, Scientific and Cultural Organization (UNESCO) Intergovernmental Oceanographic Commission's (IOC) Pacific Tsunami Warning and Mitigation System (PTWS). It has the primary responsibility for the detection and evaluation of tsunamis which threaten U.S. and foreign coasts throughout the Pacific Basin outside the WC/ATWC Pacific AOR.

For any Pacific undersea earthquake less than 100 km deep with an initially determined magnitude greater than 7.8, the PTWC will issue a tsunami warning covering an area within a 3-hour tsunami wave travel time from the time of product issuance, a tsunami watch for the area within a 3- to 6- hour tsunami wave travel time, and a tsunami advisory for areas beyond the 6-hour tsunami wave travel time. The areas covered by the warning, watch and advisory will be expanded at least hourly with subsequent bulletins until data are received to warrant a cancellation, or an upgrade to a Pacific-wide warning. (See Appendix A for an example of this international product: WEPA40 PHEB.)

For any other Pacific undersea earthquake less than 100 km deep with an initially determined magnitude greater than 7.5 but less than or equal to 7.8, the PTWC will issue a tsunami warning covering coastlines within 1000 km of the epicenter. For all other Pacific areas covered by PTWC the message is an advisory. This fixed-area warning will continue until data are received to warrant a cancellation, or an upgrade to a wider warning. (See Appendix A for an example of this product: WEPA40 PHEB).

In all cases when an international warning or watch product is being issued to the Pacific for an earthquake outside of Hawaii, a harmonized product will be issued to the State of Hawaii that is tailored for the State of Hawaii. With a few exceptions, this product will put the entire State of Hawaii into either a warning, watch, or advisory according to the same criteria shown above for the international product. The exceptions are: 1) in the case of an expanding warning in the north Pacific for an earthquake north of 35°N, Hawaii is initially put into watch status even if the tsunami is still greater than 6 hours away; 2) in the case of WC/ATWC issuing a warning for any part of its Pacific Basin AOR, Hawaii would be in advisory status at a minimum, even if by the international criteria for an advisory is not met; and 3) the PTWC duty staff retain the flexibility to elevate or reduce the alert status for Hawaii independent of the international status. (See Appendix A for an example of this product: WEHW40 PHEB).

Close coordination between the WC/ATWC and PTWC is of utmost importance to avoid conflicting product information. Products will be disseminated to the international participants as outlined in the PTWS Users Guide (see Section 8.1).

Due to the emergence of regional warning systems in the Pacific, such as the NWPTAC, which issues tsunami advisories to the Northwest Pacific (WEPA40 RJTD), PTWC needs to coordinate with these agencies as well. JMA serves as the operator of the NWPTAC. For earthquakes in a well defined region around Japan, PTWC will use JMA's earthquake parameters in PTWC products.

2.2.3 The Indian Ocean. The PTWC and JMA provide interim tsunami warning services for the Indian Ocean while that region develops its own tsunami warning capabilities. This arrangement was reached in meetings organized by the IOC shortly following the December 26, 2004 Indian Ocean tsunami disaster.

The PTWC and JMA will issue tsunami watches, but will not issue tsunami warnings or advisories for the Indian Ocean in accordance with protocols agreed to by the UNESCO/IOC Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS).

For any other Indian Ocean undersea earthquake less than 100 km deep with a magnitude above 7.0, the PTWC will issue a tsunami watch. For magnitudes between 7.1 and 7.5, inclusive, the watch will be limited to the region within approximately 200 km of the epicenter. For magnitudes between 7.6 and 7.8, inclusive, the watch will be limited to the region within approximately 1000 km of the earthquake. For magnitudes of 7.9 and greater, the watch will be for the entire Indian Ocean. (See Appendix A for an example of this product: WEIO21 PHEB).

2.2.4 The Caribbean. The IOCARIBE, IOC Sub-Commission for the Caribbean and adjacent regions, has requested that PTWC provide interim tsunami warning services to the wider Caribbean until the region can implement its own warning services. Procedures are similar to those used in the Indian Ocean. Puerto Rico and the Virgin Islands are not included in the PTWC Caribbean AOR, but are a part of the WC/ATWC AOR and are discussed in Section 1.2.6

PTWC will issue tsunami watches, but will not issue tsunami warnings or advisories to the Caribbean and adjacent regions in accordance with protocols agreed to by the UNESCO/IOC Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS).

For any Caribbean undersea earthquake less than 100 km deep with a magnitude above 7.0, the PTWC will issue a tsunami watch. For magnitudes between 7.1 and 7.5, inclusive, the watch will be limited to the region within approximately 200 km of the epicenter. For magnitudes between 7.6 and 7.8, inclusive, the watch will be limited to the region within approximately 1000 km of the earthquake. For magnitudes of 7.9 and greater, the watch will be for the entire Caribbean basin. For an Atlantic earthquake with a magnitude of 7.9 and greater, a watch for the entire Caribbean will also be issued. (See Appendix A for an example of this product: WECA41 PHEB).

2.2.5 The South China Sea. The ICG/PTWS requested at its twentieth session that PTWC and JMA provide interim tsunami warning services to the South China Sea region as an extension of their Pacific responsibilities until tsunami warning services can be established by another organization within the region. Procedures for watches and warnings are identical to those established by PTWC and NWPTAC for the Pacific, with the exception that PTWC may confine a warning to the Celebes Sea, Sulu Sea, or South China Sea if the threat does not appear to extend into adjacent areas of PTWC's AOR. (See Appendix A for an example of this product: WEPA40 PHEB).

2.3 Tsunami Information Statements / Bulletins

2.3.1 Hawaii. For any Pacific earthquake outside of Hawaii for which PTWC is issuing a Tsunami Information Bulletin to the Pacific in accordance with procedures described in 2.3.2, PTWC will issue a harmonized Tsunami Information Statement to the State of Hawaii to advise that there is no threat of a destructive tsunami in Hawaii. (See Appendix A for an example of this product: WEHW42 PHEB).

2.3.2 The Pacific. For any Pacific earthquake with an initially determined magnitude greater than or equal to 6.5 but less than or equal to 7.5, the PTWC will issue a Tsunami Information Bulletin (TIB) to its Pacific AOR to advise no threat of a widespread destructive tsunami and only the very small threat of a destructive local tsunami. For larger earthquakes in the Pacific or adjacent regions that are deep inside the earth, are inland, or otherwise pose no tsunami threat to the Pacific, the PTWC will similarly issue a TIB. (See Appendix A for an example of this product: WEPA42 PHEB).

2.3.3 The Indian Ocean. For any Indian Ocean earthquake with an initially determined magnitude greater than or equal to 6.5 but less than or equal to 7.0, the PTWC will issue a TIB to its Indian Ocean AOR to advise no threat of a widespread destructive tsunami and only the very small threat of a destructive local tsunami. For larger earthquakes in the Indian Ocean region that are deep inside the earth, are inland, or otherwise pose no tsunami threat, the PTWC will similarly issue a TIB. (See Appendix A for an example of this product: WEIO23 PHEB).

2.3.4 The Caribbean Sea. For any Caribbean earthquake with an initially determined magnitude greater than or equal to 6.0 but less than or equal to 7.0, PTWC will issue a Tsunami Information Statement to its Caribbean AOR to advise no threat of a widespread destructive tsunami and only the very small threat of a destructive local tsunami. For an Atlantic earthquake with a magnitude greater than or equal to 6.5 but less than or equal to 7.8 PTWC will issue a Tsunami Information Statement to its Caribbean AOR to advise no tsunami threat to the Caribbean region. For larger earthquakes in the region that are deep inside the earth, are inland, or otherwise pose no tsunami threat, the PTWC will also issue a Tsunami Information Statement (See Appendix A for an example of this product: WECA43 PHEB).

2.3.5 The South China Sea. Procedures for TIBs are identical to those established for the Pacific as described in Section 2.3.2. (See Appendix A for an example of this product: WEPA42 PHEB).

2.4 Tsunami Seismic Information Statement. For any earthquake occurring in the vicinity of the Hawaiian Islands with a magnitude greater than or equal to 4.0 and less than or equal to 6.8, PTWC will issue a Tsunami Seismic Information Statement to advise that the earthquake does not have significant tsunamigenic potential, and to prevent unnecessary evacuations as the earthquake may have been felt in coastal areas . (See Appendix A for an example of this product: SEHW70 PHEB).

2.5 Backup of the WC/ATWC. In the event that the WC/ATWC is disabled or otherwise unable to issue any of its critical products, the PTWC will issue those products on its behalf using the WC/ATWC product identifiers. The PTWC will issue these products when notified by the WC/ATWC that backup is necessary. The PTWC will also issue WC/ATWC products when a significant event has occurred, communications between the centers has ceased, and a time limit for the source region has been exceeded in which no critical products were issued by the WC/ATWC. Time limits will be determined by the TWCs based on source regions.

3. TWC Products, Coordination, and Decision Making. Given the ocean-wide impact of some tsunami events, and that the two tsunami warning centers (Centers) may be responsible for different aspects of the same earthquake, timely coordination between the WC/ATWC and PTWC is essential for the overall effectiveness of tsunami services. Earthquake parameters will usually be refined through coordination between warning centers and others. The threshold for coordination will be magnitude 6.5 in the Pacific and Atlantic, and 6.0 in the Caribbean.

The WC/ATWC and PTWC are singularly responsible for the initial tsunami product for earthquakes with epicenters located within their respective regional AORs. All subsequent products issued by each Center will be fully coordinated, that is, issued immediately after coordination, contain common event parameters, and reflect the actions being taken by the other Center.

The determination of the location and magnitude to be used in the products is generally the responsibility of the Center whose AOR is closest to the epicenter. The decision as to whether to issue or cancel a warning, watch, or advisory product for its AOR is the responsibility of each Center.

Each TWC will conduct periodic tests of its dissemination system with primary recipients. These recipients include: national focal points, state/territorial warning points, coastal WFOs, US Coast Guard, and critical military dissemination points.

3.1. Product Content and Format. Appendix A provides examples of the products issued by each of the Centers. Public products were developed in 2005 and are designed to be more readable than the original, tabulated products. The public products are WEAK51 PAAQ, WEAK53 PAAQ, WEXX30 PAAQ, WEXX32 PAAQ, and WEHW50 PHEB.

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TWC domestic products should conform to NWS text product format standards (reference NWS Instruction 10-1701 and 10-1702 on product format). The table below indicates whether the products contain UGCs and whether or not they are segmented.

Product	UGC	Segmented
WEPA41 PAAQ, WEXX20 PAAQ, (WC/ATWC warning, watch, advisory)	X	X
WEHW40 PHEB, WEHW42 PHEB, SEHW70 PHEB, WEHW50 PHEB (PTWC Hawaii products)	X	
WEPA43 PAAQ, WEXX22 PAAQ, WEA51 PAAQ, WEA53 PAAQ, WEXX30 PAAQ, WEXX32 PAAQ, SEAK71 PAAQ, SEUS71 PAAQ, SEXX60 PAAQ, WEPA40 PHEB, WEPA42 PHEB, WEIO21 PHEB, WEIO23 PHEB, WECA41 PHEB, WECA43 PHEB		

Warning Centers will work with user groups to determine the contents of the messages. The WC/ATWC will primarily work through the National Tsunami Hazard Mitigation Program’s Warning Coordination Subcommittee (NTHMP/WCS). PTWC will work through the NTHMP/WCS, the Hawaii Technical Tsunami Review Committee and Hawaii State and County Civil Defense agencies for Hawaii messages. PTWC will work with the IOC and its ICGs, and their subsidiary bodies for international messages. Due to the differences inherent in content and terms of the various international and domestic products, each product should be self-descriptive.

Domestic warning, watch, and advisory messages should at a minimum contain the following information:

- Product header
- Mass news disseminator header
- Headline(s)
- Tsunami warning, watch, or advisory explanation
- Recommended actions or evaluation
- Wave observations in a common format
- Earthquake parameters
- Reference to the other center’s actions
- Follow-up message information
- Expected tsunami arrival times

3.2. Supplemental Messages. Procedures for the issuance of initial products are defined primarily by the location, depth, and magnitude of the earthquake in Sections 1 and 2. Decisions regarding subsequent products to initiate, continue, upgrade, or cancel, are based upon all available seismic and sea level data, any reliable tsunami observations, and the output of numerical tsunami forecast models. Each of these information sources is evaluated in the context of the historical tsunami data, knowledge of the general behavior of tsunamis, and the hazard they pose.

In the WC/ATWC AOR, where warnings and advisories indicate threat level, warnings are issued for regions where the expected or observed tsunami amplitude (elevation of the wave above normal sea level) is over 1 meter. Advisories are issued for regions where the expected or

observed wave is between 0.3 and 1 meter. Warnings, watches, and advisories will be cancelled where the expected or observed amplitude is below 0.3 meter.

In the PTWC AOR, where advisories do not indicate a threat level, warnings are issued for regions where the expected or observed tsunami amplitude is over 0.5 meter. Warnings and watches will be cancelled where the expected or observed amplitude is below 0.5 meter.

Given the broad geographic extent of TWC messages and the variability of tsunami amplitude along the coast, warning and advisory areas may have to be grouped so that warning and/or advisory regions do not fluctuate rapidly along coasts.

Warning, watch, and advisory messages will indicate the time interval when the next message will be issued. For domestic products (WEPA41 PAAQ, WEAK51 PAAQ, WEXX20 PAAQ, WEXX30 PAAQ, and WEHW40 PHEB), this will normally be 30 minutes. For international products (WEPA40 PHEB, WEIO21 PHEB, and WECA41 PHEB), this will normally be 60 minutes. In events where a significant tsunami is generated and warning center products may be issued over a period of more than several hours, the time intervals may be increased.

4. Weather Forecast Office (WFO) Tsunami Warning Support. NWS WFOs support the dissemination of tsunami information from the Tsunami Warning Centers in conjunction with actions taken by state, territory, and local emergency management agencies. WFOs are responsible for issuing tsunami messages over NOAA Weather Radio (NWR) and are responsible for activating the Emergency Alert System (EAS) in accordance with emergency management agency directions. Emergency management agencies have the ultimate responsibility for calling for evacuations for threatened populations. WFOs serve an important link in disseminating tsunami information and in working with emergency management agencies prior to, during, and after an event.

NWS Regions with WFOs involved in the tsunami warning system may create a regional supplement with specific instructions for WFO (and Weather Service Office where applicable) actions regarding tsunami information dissemination. WFOs are responsible for creating and maintaining specific instructions relating to tsunami information dissemination within their Station Duty Manuals.

In addition to forwarding tsunami information over NWR and EAS, WFOs may issue Special Weather Statements (SPS) to supplement information contained in TWC tsunami messages.

WFOs will support the tsunami warning system by providing outreach and educational services to partners and the general public within their County Warning Area (CWA). The TWCs will support these efforts as time and budget allow. WFOs will oversee the TsunamiReady program within their CWA (reference NWS Instruction 10-1802 on TsunamiReady program).

The Local Emergency Planning Committee (LEPC) representing local governments, emergency response officials, environmental and citizen groups, industry and other interested parties is responsible for developing a local emergency plan for their district in the event of a tsunami.

5. **Seismic Information Exchange and Dissemination.** The National Earthquake Information Center (NEIC), located in Golden, Colorado, has the responsibility for disseminating information on earthquakes occurring worldwide. The NWS tsunami program generally will not disseminate or directly answer inquiries for seismic information, except in response to tsunamigenic and potentially tsunamigenic earthquakes and in cases where informative messages are necessary to prevent unneeded evacuations (i.e., strongly felt earthquakes in coastal areas).

Separate from the exchange of information between Centers and with the NEIC, the WC/ATWC and PTWC will adhere to the following policy on the dissemination of seismic information:

- a. For tsunamigenic or potentially tsunamigenic earthquakes, no restrictions exist on the exchange of seismic data with any observatory.
- b. For non-tsunamigenic earthquakes with epicenters located outside the Center's regional area of responsibility, inquiries from the news media will be referred to the NEIC.
- c. For non-tsunamigenic earthquakes with epicenters located within the Center's regional area of responsibility (usually magnitude 4.0 or greater or those with felt reports), Information Messages disseminated to the news media or civil/military emergency service authorities will also be transmitted to the NEIC duty geophysicists at the time of release.
- d. For non-tsunamigenic earthquakes, all requests from foreign agencies for data will be referred to the NEIC.

6. **Earthquake Seismology.** The primary method of detecting and evaluating earthquakes is through a network of seismic stations. The WC/ATWC and PTWC receive seismic data from a network of stations operated by the NWS and by other cooperating domestic, foreign and international agencies and organizations. Seismic data are transmitted to the warning centers through various telemetry channels. These data allow the WC/ATWC and PTWC to locate, size, and characterize an earthquake, and therefore, determine the earthquake's potential for tsunami generation.

7. **Sea Level Data.** Sea level stations in the Tsunami Warning System (TWS) are operated by the NWS and by a wide variety of cooperating domestic, foreign and international agencies and organizations. These stations detect tsunamis along coasts and in mid-ocean by recording the unusual changes in sea level that tsunamis produce. Data from some of the stations are telemetered continuously in real time to the Centers. Others send their data when requested or on their own initiative if a tsunami is detected. Some stations have their data relayed in near real-time via the network of geostationary meteorological satellites (GOES).

The National Ocean Service operates and maintains the Next Generation Water Level Measurement System which also transmits sea level data over GOES.

NOAA's Pacific Marine Environmental Laboratory and the NWS' National Data Buoy Center operate and maintain the network of deep-ocean assessment and reporting of tsunamis (DART) systems.

8. Users Guides.

8.1. Description. The PTWS Users Guide serves as a key reference manual for participants of the PTWS. It provides a general overview of the nature of tsunamis and a brief history of the warning service. It lists the sea level and seismograph stations which transmit data to PTWC as the operational center of the PTWS describes procedures for the issuance of products, and gives examples of PTWC tsunami product formats and content. It also provides a summary of the PTWS procedures of WC/ATWC and the NWPTAC including their example products. The PTWS Users Guide is provided at:

<ftp://ftp.ioc.unesco.org/ITIC/PTWS/UsersGuide/>

A similar document has been prepared jointly by PTWC, JMA, and the IOC for participants of the Indian Ocean Tsunami Warning and Mitigation System. This document is provided at:

[http://ioc3.unesco.org/jcg/files/IOTWS InterimAdvisoryServiceUsersGuide\(1\).pdf](http://ioc3.unesco.org/jcg/files/IOTWS InterimAdvisoryServiceUsersGuide(1).pdf)

The user's guide for the Caribbean entitled « Communication Plan for the Interim Tsunami Advisory Information Service to the Caribbean Sea and Adjacent Regions in available at:

<http://ioc3.unesco.org/iocaribe/files/ICGII/CommPlanCaribbean723062.pdf>

Countries participating in the PTWS, IOTWS, and CARIBE-EWS are asked by the IOC to designate national Tsunami Warning Focal Points along with their preferred communications methods (e.g., GTS, AFTN, RANET, EMWIN, facsimile, email) to receive products. Usually these agencies also serve as the respective national dissemination agencies. This designation is facilitated by the tsunami programs of the IOC.

The corresponding document for the WC/ATWC is the WC/ATWC User's Guide. It describes communications, procedures, products, primary recipients, communication networks, and other pertinent information for participants in the WC/ATWC AOR. The document is provided at:

<http://wcatwc.arh.noaa.gov/ops/opsmanual.pdf>

8.2. Responsibility. The IOC is responsible for coordinating with PTWC, WC/ATWC, and JMA as appropriate for the development, publication, and updating of users guides for the Pacific Ocean, Indian Ocean, and Caribbean Sea regions. The WC/ATWC is responsible for updates to the WC/ATWC User's Guide. These documents will be updated with new versions or changes distributed as needed.

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1. WC/ATWC Products.

1.1 Pacific AOR Tsunami Warning/Watch/Advisory (WEPA41 PAAQ).

WEPA41 PAAQ 130850
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 1
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1150 PM AKST SAT JAN 12 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
WEPA41 MESSAGE...

...A TEST TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE ALASKA
COASTAL AREAS FROM KODIAK ALASKA TO ATTU ALASKA...

...A TEST TSUNAMI WATCH IS IN EFFECT FOR THE CALIFORNIA - OREGON
- WASHINGTON - BRITISH COLUMBIA AND ALASKA COASTAL AREAS
FROM POINT REYES CALIFORNIA TO KODIAK ALASKA...

...THIS MESSAGE IS INFORMATION ONLY FOR U.S. AND CANADIAN
PACIFIC COASTAL REGIONS NOT INCLUDED IN THE AREAS LISTED
ABOVE...

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 ALERT AREAS WILL BE REFINED.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.9
TIME - 2345 AKST JAN 12 2008
 0045 PST JAN 13 2008
 0845 UTC JAN 13 2008
LOCATION - 52.4 NORTH 175.2 WEST
 45 MILES/72 KM NW OF ATKA VILLAGE ALASKA
 75 MILES/121 KM NE OF ADAK ALASKA
DEPTH - 17 MILES/27 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 LISTED ABOVE.

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

MESSAGES WILL BE ISSUED EVERY 30 MINUTES OR MORE FREQUENTLY IF THE SITUATION WARRANTS. THE TSUNAMI ALERT WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

PKZ136>138-132-150-155-170-171-172-175-176-AKZ171-181-185-187-191-130950-
COASTAL AREAS BETWEEN AND INCLUDING KODIAK ALASKA TO ATTU ALASKA
1150 PM AKST SAT JAN 12 2008

...A TEST TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE ALASKA COASTAL AREAS FROM KODIAK ALASKA TO ATTU ALASKA...

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.

ADAK-AK	0009	AKST	JAN 13	SAND PT.-AK	0222	AKST	JAN 13
SHEMYA-AK	0103	AKST	JAN 13	COLD BAY-AK	0255	AKST	JAN 13
DUTCH HARBOR-AK	0105	AKST	JAN 13	KODIAK-AK	0316	AKST	JAN 13

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

\$\$

PZZ455-540-450-356-353-350-255-250-210-110-156-153-150-130>135-170-PKZ310-041-031>036-042-043-011>013-021-022-051-052-053-125>129-121-120-130-140-141-CAZ505-002-001-ORZ022-002-021-001-WAZ503-506>511-001-514>517-021-AKZ023-024-026>029-018>022-025-017-135-131-125-121-145-130950-
COASTAL AREAS FROM POINT REYES CALIFORNIA TO KODIAK ALASKA
1150 PM AKST SAT JAN 12 2008

...A TEST TSUNAMI WATCH IS IN EFFECT FOR THE CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA COASTAL AREAS FROM POINT REYES CALIFORNIA TO KODIAK ALASKA...

TSUNAMI WATCHES ARE AN ADVANCE ALERT 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 WARNING ARE PROVIDED BELOW.

SEWARD-AK	0341	AKST	JAN 13	JUNEAU-AK	0500	AKST	JAN 13
YAKUTAT-AK	0350	AKST	JAN 13	TOFINO-BC	0624	PST	JAN 13
SITKA-AK	0351	AKST	JAN 13	NEAH BAY-WA	0636	PST	JAN 13
VALDEZ-AK	0400	AKST	JAN 13	CHARLESTON-OR	0640	PST	JAN 13
LANGARA-BC	0500	PST	JAN 13	CRESCENT CITY-CA	0648	PST	JAN 13
CORDOVA-AK	0410	AKST	JAN 13	SEASIDE-OR	0649	PST	JAN 13
HOMER-AK	0434	AKST	JAN 13	WESTPORT-WA	0650	PST	JAN 13
KETCHIKAN-AK	0458	AKST	JAN 13				

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

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

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1.2 Pacific AOR Warning/Watch/Advisory Cancellation (WEPA41 PAAQ).

WEPA41 PAAQ 162257
TSUWCA

BULLETIN
TSUNAMI MESSAGE NUMBER 2
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
157 PM AKST WED JAN 16 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
WEPA41 CANCELLATION MESSAGE...

...THE TEST TSUNAMI WARNING AND WATCH ARE CANCELED FOR THE
COASTS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA...

EVALUATION
NO DESTRUCTIVE TSUNAMI HAS BEEN RECORDED. NO TSUNAMI DANGER
EXISTS FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON OR
CALIFORNIA. LOCAL AUTHORITIES CAN ASSUME ALL CLEAR UPON
RECEIPT OF THIS MESSAGE.

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 7.9
TIME - 1330 AKST JAN 16 2008
1430 PST JAN 16 2008
2230 UTC JAN 16 2008
LOCATION - 52.4 NORTH 175.2 WEST
45 MILES/72 KM NW OF ATKA VILLAGE ALASKA
75 MILES/121 KM NE OF ADAK ALASKA
DEPTH - 21 MILES/33 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE
A FINAL MESSAGE.

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

PKZ136>138-132-150-155-170-171-172-175-176-AKZ171-181-185-
187-191-170057-
COASTAL AREAS OF ALASKA.
157 PM AKST WED JAN 16 2008

...THE TSUNAMI WARNING IS CANCELED FOR THE COASTS OF
ALASKA...

REPEAT - THE TSUNAMI WARNING IS CANCELED.

\$\$

PZZ455-540-450-356-353-350-255-250-210-110-156-153-150-130>135-
170-PKZ310-041-031>036-042-043-011>013-021-022-051-052-053-
125>129-121-120-130-140-141-CAZ505-002-001-ORZ022-002-021-
001-WAZ503-506>511-001-514>517-021-AKZ023-024-026>029-018>022-
025-017-135-131-125-121-145-170057-
COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA AND ALASKA.
157 PM AKST WED JAN 16 2008

...THE TEST TSUNAMI WATCH IS CANCELED FOR THE COASTS OF
CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND

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ALASKA...

REPEAT - THE TEST TSUNAMI WATCH IS CANCELED.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

\$\$

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1.3 Pacific AOR Tsunami Information Statement (WEPA43 PAAQ).

WEPA43 PAAQ 130942
TIBWCA

TSUNAMI INFORMATION STATEMENT NUMBER 1
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
142 AM PST SUN JAN 13 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
WEPA43 MESSAGE...

...THIS TEST TSUNAMI INFORMATION STATEMENT IS FOR ALASKA/ BRITISH
COLUMBIA/ WASHINGTON/ OREGON AND CALIFORNIA ONLY...

NO WARNING... NO WATCH AND NO ADVISORY IS IN EFFECT FOR
THE STATES AND PROVINCES LISTED ABOVE.

EVALUATION

BASED ON MAGNITUDE AND HISTORIC TSUNAMI RECORDS THE EARTHQUAKE
WAS NOT SUFFICIENT TO GENERATE A TSUNAMI DAMAGING TO CALIFORNIA/
OREGON/ WASHINGTON/ BRITISH COLUMBIA OR ALASKA. SOME OF THESE
AREAS MAY EXPERIENCE NON-DAMAGING SEA LEVEL CHANGES. IN COASTAL
AREAS OF INTENSE SHAKING LOCALLY GENERATED TSUNAMIS CAN BE
TRIGGERED BY UNDERWATER LANDSLIDES.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 6.7
TIME - 0035 AKST JAN 13 2008
0135 PST JAN 13 2008
0935 UTC JAN 13 2008
LOCATION - 42.2 NORTH 124.7 WEST
100 MILES/161 KM NW OF EUREKA CALIFORNIA
255 MILES/410 KM SW OF PORTLAND OREGON
DEPTH - 6 MILES/10 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE
MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC.

THIS WILL BE THE ONLY STATEMENT ISSUED FOR THIS EVENT BY THE
WEST COAST/ALASKA TSUNAMI WARNING CENTER UNLESS ADDITIONAL
INFORMATION BECOMES AVAILABLE. REFER TO THE INTERNET SITE
WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

\$\$

1.4 Alaska Tsunami Seismic Information Statement (SEAK71 PAAQ).

SEAK71 PAAQ 130951
EQIAKX

TSUNAMI SEISMIC INFORMATION STATEMENT
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1251 AM AKST SUN JAN 13 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
SEAK71 MESSAGE...

...THIS IS A TEST INFORMATION STATEMENT...

EVALUATION

AN EARTHQUAKE HAS OCCURRED WITH A MAGNITUDE SUCH THAT A TSUNAMI
IS NOT EXPECTED. IN COASTAL AREAS OF INTENSE SHAKING LOCALLY
GENERATED TSUNAMIS CAN BE TRIGGERED BY UNDERWATER LANDSLIDES.
THIS WILL BE THE ONLY WCATWC MESSAGE ISSUED FOR THIS EVENT.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 5.7
TIME - 0048 AKST JAN 13 2008
 0148 PST JAN 13 2008
 0948 UTC JAN 13 2008
LOCATION - 59.7 NORTH 145.3 WEST
 60 MILES/97 KM SE OF CORDOVA ALASKA
 190 MILES/306 KM SE OF ANCHORAGE ALASKA
DEPTH - 6 MILES/10 KM

THE LOCATION AND MAGNITUDE ARE BASED ON PRELIMINARY INFORMATION.
FURTHER INFORMATION WILL BE ISSUED BY THE UNITED STATES
GEOLOGICAL SURVEY - EARTHQUAKE.USGS.GOV - OR THE APPROPRIATE
REGIONAL SEISMIC NETWORK.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

\$\$

1.5 U.S. West Coast Tsunami Seismic Information Statement (SEUS71 PAAQ).

SEUS71 PAAQ 130948
EQIWOC

TSUNAMI SEISMIC INFORMATION STATEMENT
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
148 AM PST SUN JAN 13 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
SEUS71 MESSAGE...

...THIS IS A TEST INFORMATION STATEMENT...

EVALUATION

AN EARTHQUAKE HAS OCCURRED WITH A MAGNITUDE SUCH THAT A TSUNAMI
WILL NOT BE GENERATED. THIS WILL BE THE ONLY WCATWC MESSAGE
ISSUED FOR THIS EVENT.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 5.2
TIME - 0045 AKST JAN 13 2008
0145 PST JAN 13 2008
0945 UTC JAN 13 2008
LOCATION - 52.2 NORTH 129.3 WEST
130 MILES/209 KM SE OF SANDSPIT BRITISH COLUMBIA
445 MILES/716 KM NW OF SEATTLE WASHINGTON
DEPTH - 6 MILES/10 KM

THE LOCATION AND MAGNITUDE ARE BASED ON PRELIMINARY INFORMATION.
FURTHER INFORMATION WILL BE ISSUED BY THE UNITED STATES
GEOLOGICAL SURVEY - EARTHQUAKE.USGS.GOV - OR THE APPROPRIATE
REGIONAL SEISMIC NETWORK.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

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1.6 Atlantic AOR Tsunami Warning/Watch/Advisory (WEXX20 PAAQ).

WEXX20 PAAQ 131000
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 2
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
600 AM AST SUN JAN 13 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
WEXX20 MESSAGE...

...A TEST TSUNAMI WARNING IS IN EFFECT FOR PUERTO RICO AND THE
VIRGIN ISLANDS...

...A TEST TSUNAMI ADVISORY IS IN EFFECT FOR THE NORTH CAROLINA -
VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK -
CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE
- MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND
COASTAL AREAS FROM DUCK NORTH CAROLINA TO LA MANCHE
NEWFOUNDLAND...

...THIS MESSAGE IS INFORMATION ONLY FOR U.S. AND CANADIAN
ATLANTIC AND GULF OF MEXICO COASTAL REGIONS NOT INCLUDED IN
THE AREAS LISTED ABOVE...

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 MOVR 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
SAN JUAN - PR	18.5N	66.1W	1145UTC	2.0M/6.6FT

TIME - TIME OF MEASUREMENT

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

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 8.2

TIME - 0455 EST JAN 13 2008
0555 AST JAN 13 2008
0955 UTC JAN 13 2008

LOCATION - 19.5 NORTH 68.6 WEST
130 MILES/209 KM NW OF MAYAGUEZ PUERTO RICO
180 MILES/290 KM NW OF SAN JUAN PUERTO RICO

DEPTH - 16 MILES/25 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL

NWSI 10-701 APRIL 10, 2009

ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS.

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.

MESSAGES WILL BE ISSUED EVERY 30 MINUTES OR MORE FREQUENTLY IF THE SITUATION WARRANTS. THE TSUNAMI ALERT WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

AMZ710-720-730-740-750-PRZ001>003-005-007-008-010-011-VIZ001-002-131100-COASTAL AREAS OF PUERTO RICO AND THE VIRGIN ISLANDS.
600 AM AST SUN JAN 13 2008

...A TEST TSUNAMI WARNING IS IN EFFECT FOR PUERTO RICO AND THE VIRGIN ISLANDS...

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 JUAN-PR 0620 AST JAN 13 CHRISTIANSTED-VI 0643 AST JAN 13
MAYAGUEZ-PR 0624 AST JAN 13 CHARLOT AMALI-VI 0700 AST JAN 13
FOR ARRIVAL TIMES AT ADDITIONAL LOCATIONS SEE
WCATWC.ARH.NOAA.GOV

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ANZ631>633-656-658-650-652-654-430-431-450>455-330-335-338-350-353-355-230>237-250-254-255-150-050>052-081-NCZ015>017-030>032-102-VAZ084-086-091-094-095-098-099-100-MDZ025-DEZ002>004-NJZ005-006-011>014-021-023>026-NYZ071>081-CTZ009>012-RIZ002-005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-029-030-131100-COASTAL AREAS FROM DUCK NORTH CAROLINA TO LA MANCHE
NEWFOUNDLAND
600 AM AST SUN JAN 13 2008

...A TEST TSUNAMI ADVISORY IS IN EFFECT FOR THE NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND
COASTAL AREAS FROM DUCK NORTH CAROLINA TO LA MANCHE
NEWFOUNDLAND...

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

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SITES IN THE WARNING ARE PROVIDED BELOW.

LOCKEPORT-NS	1024	AST	JAN 13	ST LAWRENCE-NL	1158	NST	JAN 13
MONTAUK-NY	0927	EST	JAN 13	GRAND MANAN-NB	1137	AST	JAN 13
VIRGINIA BCH-VA	0928	EST	JAN 13	MANHATTAN-NY	1053	EST	JAN 13
ATLANTIC CITY-NJ	0935	EST	JAN 13	PORTLAND-ME	1111	EST	JAN 13
NANTUCKET IS-MA	1003	EST	JAN 13	BOSTON-MA	1126	EST	JAN 13
SCATARIE IS-NS	1125	AST	JAN 13				

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

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

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1.7 Atlantic AOR Warning/Watch/Advisory Cancellation (WEXX20 PAAQ).

WEXX20 PAAQ 131100
TSUAT1

BULLETIN
TSUNAMI MESSAGE NUMBER 4
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
700 AM AST SUN JAN 13 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
WEXX20 CANCELLATION MESSAGE...

...THE TEST TSUNAMI WARNING IS CANCELED FOR PUERTO RICO AND THE
VIRGIN ISLANDS...

...THE TEST TSUNAMI ADVISORY IS CANCELED FOR THE
COASTS OF NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE -
NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND -
MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK -
NOVA SCOTIA AND NEWFOUNDLAND...

EVALUATION
NO DESTRUCTIVE TSUNAMI THREAT EXISTS FOR PUERTO RICO/ VIRGIN
ISLANDS/ THE U.S. ATLANTIC/ EASTERN CANADIAN/ AND GULF OF MEXICO
COASTS. HOWEVER SOME AREAS MAY EXPERIENCE NON-DAMAGING SEA LEVEL
CHANGES. AS LOCAL CONDITIONS CAN CAUSE A WIDE VARIATION IN TSUNAMI
WAVE ACTION THE ALL CLEAR DETERMINATIONS MUST BE MADE BY LOCAL
AUTHORITIES.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES

LOCATION	LAT	LON	TIME	AMPL
SAN JUAN - PR	18.5N	66.1W	1045UTC	2.0M/6.6FT

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

PRELIMINARY EARTHQUAKE PARAMETERS
MAGNITUDE - 8.2
TIME - 0455 EST JAN 13 2008
0555 AST JAN 13 2008
0955 UTC JAN 13 2008
LOCATION - 19.5 NORTH 68.6 WEST
130 MILES/209 KM NW OF MAYAGUEZ PUERTO RICO
180 MILES/290 KM NW OF SAN JUAN PUERTO RICO
DEPTH - 21 MILES/33 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL
ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO
AND THE VIRGIN ISLANDS.

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

AMZ710-720-730-740-750-PRZ001>003-005-007-008-010-011-VIZ001-
002-131100-
COASTAL AREAS OF PUERTO RICO AND VIRGIN ISLANDS.
700 AM AST SUN JAN 13 2008

NWSI 10-701 APRIL 10, 2009

...THE TEST TSUNAMI WARNING IS CANCELED FOR PUERTO RICO AND THE VIRGIN ISLANDS...

REPEAT - THE TEST TSUNAMI WARNING IS CANCELED.

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ANZ631>633-656-658-650-652-654-430-431-450>455-330-335-338-
350-353-355-230>237-250-254-255-150-050>052-081-NCZ015>017-
030>032-102-VAZ084-086-091-094-095-098-099-100-MDZ025-DEZ002>004-
NJZ005-006-011>014-021-023>026-NYZ071>081-CTZ009>012-RIZ002-
005>007-MAZ007-019>024-016-NHZ014-MEZ022>028-029-030-131100-
COASTAL AREAS OF NORTH CAROLINA - VIRGINIA - MARYLAND -
DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE
ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW
BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND.
700 AM AST SUN JAN 13 2008

...THE TEST TSUNAMI ADVISORY IS CANCELED FOR THE COASTS OF NORTH CAROLINA - VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK - CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE - MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND...

REPEAT - THE TEST TSUNAMI ADVISORY IS CANCELED.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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1.8 Atlantic AOR Tsunami Information Statement (WEXX22 PAAQ).

WEXX22 PAAQ 131012
TIBAT1

TSUNAMI INFORMATION STATEMENT NUMBER 1
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
512 AM EST SUN JAN 13 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
WEXX22 MESSAGE...

...THIS TEST TSUNAMI INFORMATION STATEMENT IS FOR PUERTO RICO/
THE VIRGIN ISLANDS/ THE U.S. ATLANTIC AND GULF OF
MEXICO STATES/ AND EASTERN CANADIAN PROVINCES...

NO WARNING... NO WATCH AND NO ADVISORY IS IN EFFECT FOR
THESE AREAS.

EVALUATION

BASED ON EARTHQUAKE DATA AND HISTORIC TSUNAMI RECORDS THE
EARTHQUAKE WAS NOT SUFFICIENT TO GENERATE A TSUNAMI DAMAGING TO
PUERTO RICO/ THE VIRGIN ISLANDS/ THE U.S. ATLANTIC AND GULF
OF MEXICO COASTS/ AND EASTERN CANADA.

HOWEVER - EARTHQUAKES OF THIS SIZE SOMETIMES GENERATE
TSUNAMIS THAT CAN BE DESTRUCTIVE ALONG COASTS LOCATED IN THE
REGION OF THE EARTHQUAKE EPICENTER. AUTHORITIES IN THE REGION
SHOULD BE AWARE OF THIS POSSIBILITY AND TAKE APPROPRIATE ACTION.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 7.4
TIME - 0505 EST JAN 13 2008
 0405 CST JAN 13 2008
 1005 UTC JAN 13 2008
LOCATION - 38.8 NORTH 10.9 WEST
 - NORTH ATLANTIC OCEAN
DEPTH - 21 MILES/33 KM

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL
ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO
AND THE VIRGIN ISLANDS.

THIS WILL BE THE ONLY STATEMENT ISSUED FOR THIS EVENT BY THE
WEST COAST/ALASKA TSUNAMI WARNING CENTER UNLESS ADDITIONAL
INFORMATION BECOMES AVAILABLE. REFER TO THE INTERNET SITE
WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

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1.9 Atlantic AOR Tsunami Seismic Information Statement (SEXX60 PAAQ).

SEXX60 PAAQ 131018
EQIAT1

TSUNAMI SEISMIC INFORMATION STATEMENT
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
518 AM EST SUN JAN 13 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
SEXX60 MESSAGE...

...THIS IS A TEST INFORMATION STATEMENT...

EVALUATION

AN EARTHQUAKE HAS OCCURRED WITH A MAGNITUDE SUCH THAT A TSUNAMI
WILL NOT BE GENERATED. THIS WILL BE THE ONLY WCATWC MESSAGE
ISSUED FOR THIS EVENT.

PRELIMINARY EARTHQUAKE PARAMETERS

MAGNITUDE - 5.4
TIME - 0510 EST JAN 13 2008
 0410 CST JAN 13 2008
 1010 UTC JAN 13 2008
LOCATION - 42.1 NORTH 70.5 WEST
 50 MILES/80 KM NE OF PROVIDENCE RHODE ISLAND
 35 MILES/56 KM SE OF BOSTON MASSACHUSETTS
DEPTH - 21 MILES/33 KM

THE LOCATION AND MAGNITUDE ARE BASED ON PRELIMINARY INFORMATION.
FURTHER INFORMATION WILL BE ISSUED BY THE UNITED STATES
GEOLOGICAL SURVEY - EARTHQUAKE.USGS.GOV - OR THE APPROPRIATE
REGIONAL SEISMIC NETWORK.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

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1.10 Pacific AOR Public Tsunami Warning/Watch/Advisory (WEAK51 PAAQ).

WEAK51 PAAQ 130850
TSUAK1

BULLETIN

PUBLIC TSUNAMI MESSAGE NUMBER 1
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1150 PM AKST SAT JAN 12 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
WEAK51 MESSAGE...

...A TEST TSUNAMI WARNING IS IN EFFECT WHICH INCLUDES THE ALASKA
COASTAL AREAS FROM KODIAK ALASKA TO ATTU ALASKA...

...A TEST TSUNAMI WATCH IS IN EFFECT FOR THE CALIFORNIA - OREGON
- WASHINGTON - BRITISH COLUMBIA AND ALASKA COASTAL AREAS
FROM POINT REYES CALIFORNIA TO KODIAK ALASKA...

...THIS MESSAGE IS INFORMATION ONLY FOR U.S. AND CANADIAN
PACIFIC COASTAL REGIONS NOT INCLUDED IN THE AREAS LISTED
ABOVE...

A TSUNAMI WARNING MEANS... 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 EVACUATE 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... 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 1145 PM ALASKAN STANDARD TIME ON JANUARY 12 AN EARTHQUAKE WITH
PRELIMINARY MAGNITUDE 7.9 OCCURRED 45 MILES/72 KM NORTHWEST OF
ATKA VILLAGE ALASKA.
THIS EARTHQUAKE MAY HAVE GENERATED A TSUNAMI. IF A TSUNAMI
HAS BEEN GENERATED THE WAVES WILL FIRST REACH
ADAK ALASKA AT 009 AM AKST ON JANUARY 13.
ESTIMATED TSUNAMI ARRIVAL TIMES AND MAPS ALONG WITH SAFETY RULES
AND OTHER INFORMATION CAN BE FOUND ON THE WEB SITE
WCATWC.ARH.NOAA.GOV.

TSUNAMIS CAN BE DANGEROUS WAVES THAT ARE NOT SURVIVABLE. WAVE
HEIGHTS ARE AMPLIFIED BY IRREGULAR SHORELINE AND ARE DIFFICULT TO
FORECAST. TSUNAMIS OFTEN APPEAR AS A STRONG SURGE AND MAY BE
PRECEDED BY A RECEDING WATER LEVEL. MARINERS IN WATER DEEPER
THAN 600 FEET SHOULD NOT BE AFFECTED BY A TSUNAMI. WAVE HEIGHTS
WILL INCREASE RAPIDLY AS WATER SHALLOWS. TSUNAMIS ARE A SERIES OF
OCEAN WAVES WHICH CAN BE DANGEROUS FOR SEVERAL HOURS AFTER THE
INITIAL WAVE ARRIVAL. DO NOT RETURN TO EVACUATED AREAS UNTIL AN
ALL CLEAR IS GIVEN BY LOCAL CIVIL AUTHORITIES.

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THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE
MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC OUTSIDE
CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA.

MESSAGES WILL BE ISSUED EVERY 30 MINUTES OR MORE FREQUENTLY IF
THE SITUATION WARRANTS. THE TSUNAMI ALERT 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 WEB SITE WCATWC.ARH.NOAA.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

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NWSI 10-701 APRIL 10, 2009

1.11 Pacific AOR Public Tsunami Information Statement (WEAK53 PAAQ).

WEAK53 PAAQ 130942
TIBAK1

PUBLIC TSUNAMI INFORMATION STATEMENT NUMBER 1
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
142 AM PST SUN JAN 13 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
WEAK53 MESSAGE...

...A STRONG EARTHQUAKE HAS OCCURRED BUT A TSUNAMI IS NOT
EXPECTED ALONG THE CALIFORNIA/ OREGON/ WASHINGTON/
BRITISH COLUMBIA OR ALASKA COASTS...

NO WARNING... NO WATCH AND NO ADVISORY IS IN EFFECT FOR
THESE AREAS.

BASED ON THE EARTHQUAKE MAGNITUDE AND HISTORIC TSUNAMI RECORDS
A DAMAGING TSUNAMI IS NOT EXPECTED ALONG
THE CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA
COASTS. SOME OF THESE AREAS MAY EXPERIENCE NON-DAMAGING SEA
LEVEL CHANGES. AT COASTAL LOCATIONS WHICH HAVE EXPERIENCED
STRONG GROUND SHAKING LOCAL TSUNAMIS ARE POSSIBLE DUE
TO UNDERWATER LANDSLIDES.

AT 135 AM PACIFIC STANDARD TIME ON JANUARY 13 AN EARTHQUAKE WITH
PRELIMINARY MAGNITUDE 6.7 OCCURRED 100 MILES/161 KM NORTHWEST OF
EUREKA CALIFORNIA.

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE
MESSAGES FOR HAWAII AND OTHER AREAS OF THE PACIFIC OUTSIDE
CALIFORNIA/ OREGON/ WASHINGTON/ BRITISH COLUMBIA AND ALASKA.

THIS WILL BE THE ONLY STATEMENT ISSUED FOR THIS EVENT BY THE
WEST COAST/ALASKA TSUNAMI WARNING CENTER UNLESS ADDITIONAL
INFORMATION BECOMES AVAILABLE. SEE THE WEB SITE WCATWC.ARH.NOAA.GOV
FOR BASIC TSUNAMI INFORMATION - SAFETY RULES AND TSUNAMI TRAVEL
TIMES.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

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1.12 Atlantic AOR Public Tsunami Warning/Watch/Advisory (WEXX30 PAAQ).

WEXX30 PAAQ 131000
TSUATE

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 2
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
600 AM AST SUN JAN 13 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
WEXX30 MESSAGE...

...A TEST TSUNAMI WARNING IS IN EFFECT FOR PUERTO RICO AND THE
VIRGIN ISLANDS...

...A TEST TSUNAMI ADVISORY IS IN EFFECT FOR THE NORTH CAROLINA -
VIRGINIA - MARYLAND - DELAWARE - NEW JERSEY - NEW YORK -
CONNECTICUT - RHODE ISLAND - MASSACHUSETTS - NEW HAMPSHIRE
- MAINE - NEW BRUNSWICK - NOVA SCOTIA AND NEWFOUNDLAND
COASTAL AREAS FROM DUCK NORTH CAROLINA TO LA MANCHE
NEWFOUNDLAND...

...THIS MESSAGE IS INFORMATION ONLY FOR U.S. AND CANADIAN
ATLANTIC AND GULF OF MEXICO COASTAL REGIONS NOT INCLUDED IN
THE AREAS LISTED ABOVE...

A TSUNAMI WARNING MEANS... 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 EVACUATE 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.
A TSUNAMI HAS BEEN RECORDED.

A TSUNAMI ADVISORY MEANS 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.

AT 555 AM ATLANTIC STANDARD TIME ON JANUARY 13 AN EARTHQUAKE WITH
PRELIMINARY MAGNITUDE 8.2 OCCURRED 130 MILES/209 KM NORTHWEST OF
MAYAGUEZ PUERTO RICO.
THIS EARTHQUAKE HAS GENERATED A TSUNAMI WHICH COULD CAUSE DAMAGE
TO REGIONS IN A WARNING OR ADVISORY. THE WAVES WILL FIRST REACH
SAN JUAN PUERTO RICO AT 620 AM AST ON JANUARY 13.
ESTIMATED TSUNAMI ARRIVAL TIMES AND MAPS ALONG WITH SAFETY RULES
AND OTHER INFORMATION CAN BE FOUND ON THE WEB SITE
WCATWC.ARH.NOAA.GOV.

A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES

LOCATION	LAT	LON	TIME	AMPL
SAN JUAN - PR	18.5N	66.1W	1045UTC	2.0M/6.6FT

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TIME - TIME OF MEASUREMENT

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

TSUNAMIS CAN BE DANGEROUS WAVES THAT ARE NOT SURVIVABLE. WAVE HEIGHTS ARE AMPLIFIED BY IRREGULAR SHORELINE AND ARE DIFFICULT TO FORECAST. TSUNAMIS OFTEN APPEAR AS A STRONG SURGE AND MAY BE PRECEDED BY A RECEDING WATER LEVEL. MARINERS IN WATER DEEPER THAN 600 FEET SHOULD NOT BE AFFECTED BY A TSUNAMI. WAVE HEIGHTS WILL INCREASE RAPIDLY AS WATER SHALLOWS. TSUNAMIS ARE A SERIES OF OCEAN WAVES WHICH CAN BE DANGEROUS FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL. DO NOT RETURN TO EVACUATED AREAS UNTIL AN ALL CLEAR IS GIVEN BY LOCAL CIVIL AUTHORITIES.

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO AND THE VIRGIN ISLANDS.

MESSAGES WILL BE ISSUED EVERY 30 MINUTES OR MORE FREQUENTLY IF THE SITUATION WARRANTS. THE TSUNAMI ALERT 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 WEB SITE WCATWC.ARH.NOAA.GOV.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST MESSAGE.

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1.13 Atlantic AOR Public Tsunami Information Statement (WEXX32 PAAQ).

WEXX32 PAAQ 131012
TIBATE

PUBLIC TSUNAMI INFORMATION STATEMENT NUMBER 1
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
512 AM EST SUN JAN 13 2008

...THIS MESSAGE IS FOR TEST PURPOSES TO SHOW AN EXAMPLE
WEXX32 MESSAGE...

...A STRONG EARTHQUAKE HAS OCCURRED BUT A TSUNAMI IS NOT
EXPECTED ALONG THE COASTS OF PUERTO RICO/ THE VIRGIN
ISLANDS/ U.S. ATLANTIC AND GULF OF MEXICO STATES/ AND EASTERN
CANADIAN PROVINCES...

NO WARNING... NO WATCH AND NO ADVISORY IS IN EFFECT FOR
THESE AREAS.

BASED ON THE EARTHQUAKE LOCATION - MAGNITUDE AND HISTORIC TSUNAMI
RECORDS A DAMAGING TSUNAMIS IS NOT EXPECTED ALONG THE PUERTO RICO/
VIRGIN ISLANDS/ U.S. ATLANTIC/ EASTERN CANADIAN AND GULF OF
MEXICO COASTS. EARTHQUAKES OF THIS SIZE CAN GENERATE DESTRUCTIVE
TSUNAMIS ALONG THE COAST NEAR THE EPICENTER. AUTHORITIES IN THE
EPICENTRAL REGION SHOULD BE AWARE OF THIS POSSIBILITY AND TAKE
APPROPRIATE ACTION.

AT 505 AM EASTERN STANDARD TIME ON JANUARY 13 AN EARTHQUAKE WITH
PRELIMINARY MAGNITUDE 7.4 OCCURRED
IN THE NORTH ATLANTIC OCEAN.

THE PACIFIC TSUNAMI WARNING CENTER IN EWA BEACH HAWAII WILL
ISSUE MESSAGES FOR AREAS IN THE CARIBBEAN OUTSIDE PUERTO RICO
AND THE VIRGIN ISLANDS.

THIS WILL BE THE ONLY STATEMENT ISSUED FOR THIS EVENT BY THE
WEST COAST/ALASKA TSUNAMI WARNING CENTER UNLESS ADDITIONAL
INFORMATION BECOMES AVAILABLE. SEE THE WEB SITE WCATWC.ARH.NOAA.GOV
FOR BASIC TSUNAMI INFORMATION - SAFETY RULES AND TSUNAMI TRAVEL
TIMES.

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS TEST
MESSAGE.

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2. PTWC Products.

2.1 Tsunami Warning/Watch/Advisory for the Pacific (WEPA40 PHEB).

WEPA40 PHEB 021426
TSUPAC

TSUNAMI BULLETIN NUMBER 001
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 1426Z 02 JUN 2008

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

JAPAN / RUSSIA / MARCUS IS.

A TSUNAMI WATCH IS IN EFFECT FOR

N. MARIANAS / GUAM / WAKE IS. / CHINESE TAIPEI / TAIWAN / YAP / PHILIPPINES / MARSHALL IS. / CHUUK / POHNPEI / BELAU / MIDWAY IS. / KOSRAE / INDONESIA / PAPUA NEW GUINEA / NAURU / HAWAII

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 ACTION TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1415Z 02 JUN 2008
COORDINATES - 38.5 NORTH 143.1 EAST
DEPTH - 33 KM
LOCATION - OFF EAST COAST OF HONSHU JAPAN
MAGNITUDE - 8.1

EVALUATION

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

NWSI 10-701 APRIL 10, 2009

LOCATION	FORECAST POINT	COORDINATES	ARRIVAL TIME	
JAPAN	KATSUURA	35.0N 140.3E	1502Z 02 JUN	
	KUSHIRO	42.9N 144.3E	1504Z 02 JUN	
	HACHINOHE	40.5N 141.7E	1508Z 02 JUN	
	SHIMIZU	32.8N 133.0E	1625Z 02 JUN	
	OKINAWA	26.2N 127.8E	1719Z 02 JUN	
RUSSIA	URUP IS	46.1N 150.5E	1538Z 02 JUN	
	PETROPAVLOVSK K	53.2N 159.6E	1646Z 02 JUN	
	SEVERO KURILSK	50.8N 156.1E	1650Z 02 JUN	
	UST KAMCHATSK	56.1N 162.6E	1708Z 02 JUN	
	MEDNNY IS	54.7N 167.4E	1709Z 02 JUN	
MARCUS IS.	MARCUS IS.	24.3N 154.0E	1627Z 02 JUN	
N. MARIANAS	SAIPAN	15.3N 145.8E	1725Z 02 JUN	
GUAM	GUAM	13.4N 144.7E	1742Z 02 JUN	
WAKE IS.	WAKE IS.	19.3N 166.6E	1753Z 02 JUN	
CHINESE TAIPEI	HUALIEN	24.0N 121.7E	1803Z 02 JUN	
	TAITUNG	22.7N 121.2E	1807Z 02 JUN	
	CHILUNG	25.2N 121.8E	1830Z 02 JUN	
TAIWAN	HUALIEN	24.0N 121.6E	1803Z 02 JUN	
YAP	YAP IS.	9.5N 138.1E	1817Z 02 JUN	
PHILIPPINES	PALANAN	17.1N 122.6E	1824Z 02 JUN	
	LEGASPI	13.2N 123.8E	1907Z 02 JUN	
	DAVAO	6.8N 125.7E	1921Z 02 JUN	
MARSHALL IS.	ENIWETOK	11.4N 162.3E	1830Z 02 JUN	
	KWAJALEIN	8.7N 167.7E	1913Z 02 JUN	
	MAJURO	7.1N 171.4E	1943Z 02 JUN	
CHUUK	CHUUK IS.	7.4N 151.8E	1831Z 02 JUN	
POHNPEI	POHNPEI IS.	7.0N 158.2E	1845Z 02 JUN	
PELAU	MALAKAL	7.3N 134.5E	1846Z 02 JUN	
MIDWAY IS.	MIDWAY IS.	28.2N 177.4W	1852Z 02 JUN	
KOSRAE	KOSRAE IS.	5.5N 163.0E	1913Z 02 JUN	
INDONESIA	GEME	4.6N 126.8E	1919Z 02 JUN	
	BEREBERE	2.5N 128.7E	1928Z 02 JUN	
	WARSA	0.6S 135.8E	1944Z 02 JUN	
	MANOKWARI	0.8S 134.2E	1951Z 02 JUN	
	PATANI	0.4N 128.8E	1953Z 02 JUN	
	SORONG	0.8S 131.1E	2003Z 02 JUN	
	JAYAPURA	2.4S 140.8E	2007Z 02 JUN	
	PAPUA NEW GUINE	KAVIENG	2.5S 150.7E	1955Z 02 JUN
		MANUS IS.	2.0S 147.5E	1956Z 02 JUN
		VANIMO	2.6S 141.3E	2007Z 02 JUN
	RABAU	4.2S 152.3E	2014Z 02 JUN	
NAURU	NAURU	0.5S 166.9E	2016Z 02 JUN	

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

THE JAPAN METEOROLOGICAL AGENCY MAY ALSO ISSUE TSUNAMI MESSAGES FOR THIS EVENT
 TO COUNTRIES IN THE NORTHWEST PACIFIC AND SOUTH CHINA SEA REGION. IN CASE OF
 CONFLICTING INFORMATION...THE MORE CONSERVATIVE INFORMATION SHOULD BE USED FOR
 SAFETY.

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

2.2 Tsunami Information Bulletin for the Pacific (WEPA42 PHEB).

WEPA42 PHEB 021425
TIBPAC

TSUNAMI BULLETIN NUMBER 001
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 1425Z 02 JUN 2008

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

... TSUNAMI INFORMATION BULLETIN ...

THIS BULLETIN IS FOR INFORMATION ONLY.

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

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1415Z 02 JUN 2008
COORDINATES - 38.5 NORTH 143.1 EAST
DEPTH - 33 KM
LOCATION - OFF EAST COAST OF HONSHU JAPAN
MAGNITUDE - 6.7

EVALUATION

NO DESTRUCTIVE WIDESPREAD TSUNAMI THREAT EXISTS BASED ON
HISTORICAL EARTHQUAKE AND TSUNAMI DATA.

HOWEVER - EARTHQUAKES OF THIS SIZE SOMETIMES GENERATE LOCAL
TSUNAMIS THAT CAN BE DESTRUCTIVE ALONG COASTS LOCATED WITHIN
A HUNDRED KILOMETERS OF THE EARTHQUAKE EPICENTER. AUTHORITIES
IN THE REGION OF THE EPICENTER SHOULD BE AWARE OF THIS
POSSIBILITY AND TAKE APPROPRIATE ACTION.

THIS WILL BE THE ONLY BULLETIN ISSUED FOR THIS EVENT UNLESS
ADDITIONAL INFORMATION BECOMES AVAILABLE.

THE JAPAN METEOROLOGICAL AGENCY MAY ALSO ISSUE TSUNAMI MESSAGES FOR THIS EVENT
TO COUNTRIES IN THE NORTHWEST PACIFIC AND SOUTH CHINA SEA REGION. IN CASE OF
CONFLICTING INFORMATION...THE MORE CONSERVATIVE INFORMATION SHOULD BE USED FOR
SAFETY.

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

NNNN

2.3 Tsunami Warning/Watch/Advisory for Hawaii (WEHW40 PHEB) – Pacific Event.

WEHW40 PHEB 021718
TSUHWX

HIZOO1>003-005>009-012>014-016>021-023>026-021918-

BULLETIN
TSUNAMI MESSAGE NUMBER 4
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
718 AM HST MON JUN 02 2008

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI WARNING

A TSUNAMI WARNING IS ISSUED FOR THE STATE OF HAWAII EFFECTIVE AT 0718 AM HST.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0415 AM HST 02 JUN 2008
COORDINATES - 38.5 NORTH 143.1 EAST
LOCATION - OFF EAST COAST OF HONSHU JAPAN
MAGNITUDE - 8.1 MOMENT
MAGNITUDE - 8.3 RICHTER (MS)

MEASUREMENTS OR REPORTS OF TSUNAMI WAVE ACTIVITY

GAUGE LOCATION	LAT	LON	TIME	AMPL	PER
OFUNATO JP	39.0N	141.7E	1520Z	2.23M/7.2FT	26MIN

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.

NWSI 10-701 APRIL 10, 2009

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

1122 AM HST 02 JUN 2008

MESSAGES WILL BE ISSUED HOURLY OR SOONER AS CONDITIONS WARRANT.

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2.4 Tsunami Information Statement for Hawaii (WEHW42 PHEB) – Pacific Event.

WEHW42 PHEB 021417
TIBHWX

HIZ001>003-005>009-012>014-016>021-023>026-021617-

TSUNAMI INFORMATION STATEMENT NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
417 AM HST MON JUN 02 2008

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - TSUNAMI INFORMATION

THIS STATEMENT IS FOR INFORMATION ONLY. NO ACTION REQUIRED.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0415 AM HST 02 JUN 2008
COORDINATES - 38.5 NORTH 143.1 EAST
LOCATION - OFF EAST COAST OF HONSHU JAPAN
MAGNITUDE - 6.7 MOMENT

EVALUATION

BASED ON ALL AVAILABLE DATA A DESTRUCTIVE PACIFIC-WIDE TSUNAMI IS NOT EXPECTED AND THERE IS NO TSUNAMI THREAT TO HAWAII. REPEAT. A DESTRUCTIVE PACIFIC-WIDE TSUNAMI IS NOT EXPECTED AND THERE IS NO TSUNAMI THREAT TO HAWAII.

THIS WILL BE THE ONLY STATEMENT ISSUED FOR THIS EVENT UNLESS ADDITIONAL DATA ARE RECEIVED.

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NNNN

2.5 Urgent Local Tsunami Warning for Hawaii (WEHW40 PHEB)

WEHW40 PHEB 021419
TSUHWX

HIZ023>026-021619-

BULLETIN - EAS ACTIVATION REQUESTED
TSUNAMI MESSAGE NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
419 AM HST MON JUN 02 2008

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - URGENT LOCAL TSUNAMI WARNING

EFFECTIVE IMMEDIATELY AN URGENT TSUNAMI WARNING IS ISSUED FOR

HAWAII COUNTY

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0415 AM HST 02 JUN 2008
COORDINATES - 19.3 NORTH 155.2 WEST
LOCATION - IN THE HILINA REGION OF KILAUEA VOLCANO
MAGNITUDE - 7.4

EVALUATION

A DESTRUCTIVE TSUNAMI MAY HAVE BEEN GENERATED BY THIS EARTHQUAKE.
RECOMMEND URGENT ACTION BE TAKEN TO PROTECT LIVES AND PROPERTY.

ADDITIONAL MESSAGES WILL BE ISSUED AS MORE INFORMATION
BECOMES AVAILABLE.

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NNNN

NWSI 10-701 APRIL 10, 2009

2.6 Public Urgent Local Tsunami Warning for Hawaii (WEHW50 PHEB).

WEHW50 PHEB 021419
TSUHW1

HIZ001>028-021619-

PUBLIC TSUNAMI MESSAGE NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
419 AM HST 02 JUN 2008

...AN URGENT LOCAL TSUNAMI WARNING IS IN EFFECT...

THIS IS AN URGENT TSUNAMI WARNING FROM THE PACIFIC TSUNAMI WARNING CENTER FOR HAWAII COUNTY.

PERSONS IN LOW LYING COASTAL AREAS OF THOSE COUNTIES SHOULD EVACUATE IMMEDIATELY AT LEAST A HALF MILE INLAND OR TO AN ELEVATION AT LEAST 30 FEET ABOVE SEA LEVEL OR TO THE 3RD FLOOR AND ABOVE IN STEEL OR CONCRETE BUILDINGS.

DANGEROUS TSUNAMI WAVES MAY ALREADY HAVE ARRIVED OR MAY COME ASHORE WITHIN MINUTES FROM A MAGNITUDE 7.4 EARTHQUAKE THAT OCCURRED AT 415 AM HST IN THE HILINA REGION OF KILAUEA VOLCANO.

THE TSUNAMI HAZARD MAY CONTINUE FOR SEVERAL HOURS OR LONGER. DO NOT RETURN TO EVACUATED COASTAL AREAS UNTIL AN ALL CLEAR FOR OUR AREA IS ISSUED BY CIVIL DEFENSE.

AGAIN...

THIS IS AN URGENT TSUNAMI WARNING FROM THE PACIFIC TSUNAMI WARNING CENTER FOR HAWAII COUNTY.

PERSONS IN LOW LYING COASTAL AREAS OF THOSE COUNTIES SHOULD EVACUATE IMMEDIATELY AT LEAST A HALF MILE INLAND OR TO AN ELEVATION AT LEAST 30 FEET ABOVE SEA LEVEL OR TO THE 3RD FLOOR AND ABOVE IN STEEL OR CONCRETE BUILDINGS.

DANGEROUS TSUNAMI WAVES MAY ALREADY HAVE ARRIVED OR MAY COME ASHORE WITHIN MINUTES FROM A MAGNITUDE 7.4 EARTHQUAKE THAT OCCURRED AT 415 AM HST IN THE HILINA REGION OF KILAUEA VOLCANO.

THE TSUNAMI HAZARD MAY CONTINUE FOR SEVERAL HOURS OR LONGER. DO NOT RETURN TO EVACUATED COASTAL AREAS UNTIL AN ALL CLEAR FOR OUR AREA IS ISSUED BY CIVIL DEFENSE.

ADDITIONAL INFORMATION WILL BE ISSUED BY THE PACIFIC TSUNAMI WARNING CENTER AS IT BECOMES AVAILABLE. AFTER YOU HAVE EVACUATED TO A SAFE LOCATION...TUNE TO LOCAL RADIO OR TELEVISION STATIONS FOR FURTHER INSTRUCTIONS.

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2.7 Hawaii Tsunami Seismic Information Statement

ZCZC
SEHW70 PHEB 200404
EQIHWX

HIZ001>003-005>009-012>014-016>021-023>026-200604-

TSUNAMI SEISMIC INFORMATION STATEMENT NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
604 PM HST FRI SEP 19 2008

TO - CIVIL DEFENSE IN THE STATE OF HAWAII

SUBJECT - LOCAL TSUNAMI INFORMATION

THIS STATEMENT IS FOR INFORMATION ONLY. NO ACTION REQUIRED.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 0600 PM HST 19 SEP 2008
COORDINATES - 19.3 NORTH 155.1 WEST
LOCATION - ON THE SOUTH FLANK OF KILAUEA VOLCANO
MAGNITUDE - 4.7

EVALUATION

NO TSUNAMI IS EXPECTED. REPEAT. NO TSUNAMI IS EXPECTED.
HOWEVER... SOME AREAS MAY HAVE EXPERIENCED STRONG SHAKING.
THIS WILL BE THE ONLY STATEMENT ISSUED FOR THIS EVENT UNLESS
ADDITIONAL DATA ARE RECEIVED.

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NNNN

2.8 Tsunami Watch for the Indian Ocean (WEIO21 PHEB).

WEIO21 PHEB 021428
TSUIOX

TSUNAMI BULLETIN NUMBER 001
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 1428Z 02 JUN 2008

THIS BULLETIN IS FOR ALL AREAS OF THE INDIAN OCEAN.

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

A TSUNAMI WATCH IS IN EFFECT FOR

INDONESIA / AUSTRALIA / THAILAND

FOR OTHER AREAS OF THE INDIAN OCEAN REGION... THIS MESSAGE 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 - 1415Z 02 JUN 2008
COORDINATES - 2.9 SOUTH 99.5 EAST
LOCATION - SOUTHERN SUMATRA INDONESIA
MAGNITUDE - 7.8

EVALUATION

EARTHQUAKES OF THIS SIZE HAVE THE POTENTIAL TO GENERATE A DESTRUCTIVE LOCAL TSUNAMI AND SOMETIMES A DESTRUCTIVE REGIONAL TSUNAMI ALONG COASTS LOCATED USUALLY NO MORE THAN A THOUSAND KILOMETERS FROM THE EARTHQUAKE EPICENTER. AREAS FURTHER FROM THE EPICENTER COULD EXPERIENCE SMALL SEA LEVEL CHANGES AND STRONG OR UNUSUAL COASTAL CURRENTS.

HOWEVER - IT IS NOT KNOWN THAT A TSUNAMI WAS GENERATED. THIS WATCH IS BASED ONLY ON THE EARTHQUAKE EVALUATION. AUTHORITIES IN THE REGION SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THE WATCH WILL NOT EXPAND TO OTHER AREAS OF THE INDIAN OCEAN UNLESS ADDITIONAL DATA ARE RECEIVED TO WARRANT SUCH AN EXPANSION.

DUE TO ONLY LIMITED SEA LEVEL DATA FROM THE REGION IT MAY NOT BE POSSIBLE FOR THIS CENTER TO RAPIDLY CONFIRM NOR EVALUATE THE THE STRENGTH OF A TSUNAMI IF ONE HAS BEEN GENERATED.

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 TIMEBETWEEN SUCCESSIVE TSUNAMI WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	FORECAST POINT	COORDINATES	ARRIVAL TIME
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INDONESIA	SEBERUT	1.5S	98.7E	1436Z	02 JUN
	PADANG	0.9S	100.1E	1448Z	02 JUN
	BENGKULU	3.9S	102.0E	1501Z	02 JUN
	SIMEULUE	2.5N	96.0E	1516Z	02 JUN
	BANDAR LAMPUNG	5.7S	105.3E	1558Z	02 JUN
	BANDA ACEH	5.5N	95.1E	1603Z	02 JUN
	CILACAP	7.8S	108.9E	1617Z	02 JUN
	BELAWAN	3.8N	99.0E	1936Z	02 JUN
AUSTRALIA	CHRISTMASN IS	10.4S	105.4E	1530Z	02 JUN
	COCOS ISLAND	12.1S	96.7E	1535Z	02 JUN
THAILAND	KO TARUTAO	6.6N	99.6E	1859Z	02 JUN

THIS WILL BE THE ONLY BULLETIN ISSUED BY THE PACIFIC TSUNAMI WARNING CENTER FOR THIS EVENT UNLESS ADDITIONAL INFORMATION BECOMES AVAILABLE.

THE JAPAN METEOROLOGICAL AGENCY MAY ISSUE ADDITIONAL INFORMATION FOR THIS EVENT. IN THE CASE OF CONFLICTING INFORMATION...THE MORE CONSERVATIVE INFORMATION SHOULD BE USED FOR SAFETY.

NNNN

2.9 Tsunami Information Bulletin for the Indian Ocean (WEIO23 PHEB).

WEIO23 PHEB 021426
TIBIOX

TSUNAMI BULLETIN NUMBER 001
PACIFIC TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED AT 1426Z 02 JUN 2008

THIS BULLETIN IS FOR ALL AREAS OF THE INDIAN OCEAN.

... TSUNAMI INFORMATION BULLETIN ...

THIS MESSAGE IS FOR INFORMATION ONLY.

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

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS

ORIGIN TIME - 1415Z 02 JUN 2008
COORDINATES - 2.9 SOUTH 99.5 EAST
LOCATION - SOUTHERN SUMATRA INDONESIA
MAGNITUDE - 6.8

EVALUATION

A DESTRUCTIVE WIDESPREAD TSUNAMI THREAT DOES NOT EXIST BASED ON HISTORICAL EARTHQUAKE AND TSUNAMI DATA.

HOWEVER - THERE IS A VERY SMALL POSSIBILITY OF A LOCAL TSUNAMI THAT COULD AFFECT COASTS LOCATED USUALLY NO MORE THAN A HUNDRED KILOMETERS FROM THE EARTHQUAKE EPICENTER. AUTHORITIES IN THE REGION NEAR THE EPICENTER SHOULD BE MADE AWARE OF THIS POSSIBILITY.

THIS WILL BE THE ONLY BULLETIN ISSUED BY THE PACIFIC TSUNAMI WARNING CENTER FOR THIS EVENT UNLESS ADDITIONAL INFORMATION BECOMES AVAILABLE.

THE JAPAN METEOROLOGICAL AGENCY MAY ISSUE ADDITIONAL INFORMATION FOR THIS EVENT. IN THE CASE OF CONFLICTING INFORMATION...THE MORE CONSERVATIVE INFORMATION SHOULD BE USED FOR SAFETY.

NNNN

2.10 Tsunami Watch for the Caribbean Sea (WECA41 PHEB).

WECA41 PHEB 021429
TSUCAX

TSUNAMI MESSAGE NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1429 UTC MON JUN 02 2008

THIS MESSAGE APPLIES TO ALL COUNTRIES WITHIN AND BORDERING THE
CARIBBEAN SEA...EXCEPT FOR PUERTO RICO AND THE VIRGIN ISLANDS.

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

A TSUNAMI WATCH IS IN EFFECT FOR

MONTERRAT / GUADELOUPE / ANTIGUA / SAINT KITTS / DOMINICA / MARTINIQUE /
BARBUDA / SAINT LUCIA / SAINT MAARTEN / ST VINCENT / SAINT MARTIN / ANGUILLA /
GRENADA / BARBADOS / TRINIDAD TOBAGO / BONAIRE / DOMINICAN REP / CURACAO /
ARUBA / VENEZUELA / TURKS N CAICOS / HAITI / GUYANA

FOR OTHER AREAS OF THE CARIBBEAN COVERED BY THIS MESSAGE...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 - 1415Z 02 JUN 2008
COORDINATES - 16.6 NORTH 62.3 WEST
LOCATION - LEEWARD ISLANDS
MAGNITUDE - 7.7

EVALUATION

EARTHQUAKES OF THIS SIZE HAVE THE POTENTIAL TO GENERATE A DESTRUCTIVE
LOCAL TSUNAMI AND SOMETIMES A DESTRUCTIVE REGIONAL TSUNAMI ALONG COASTS
LOCATED USUALLY NO MORE THAN A THOUSAND KILOMETERS FROM THE EARTHQUAKE
EPICENTER. AREAS FURTHER FROM THE EPICENTER COULD EXPERIENCE SMALL SEA
LEVEL CHANGES AND STRONG OR UNUSUAL CURRENTS.

HOWEVER - IT IS NOT KNOWN THAT A TSUNAMI WAS GENERATED. THIS WATCH IS
BASED ONLY ON THE EARTHQUAKE EVALUATION. AUTHORITIES IN THE REGION
SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THE
WATCH WILL NOT EXPAND TO OTHER AREAS OF THE CARIBBEAN UNLESS ADDITIONAL
DATA ARE RECEIVED TO WARRANT SUCH AN EXPANSION.

DUE TO ONLY LIMITED SEA LEVEL DATA FROM THE REGION IT MAY NOT BE POSSIBLE
FOR THIS CENTER TO RAPIDLY CONFIRM NOR EVALUATE THE STRENGTH OF A TSUNAMI
IF ONE HAS BEEN GENERATED.

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.

NWSI 10-701 APRIL 10, 2009

LOCATION	FORECAST POINT	COORDINATES		ARRIVAL TIME

MONTESERRAT	PLYMOUTH	16.7N	62.2W	1419Z 02 JUN
GUADELOUPE	BASSE-TERRE	16.0N	61.7W	1427Z 02 JUN
ANTIGUA	SAINTE JOHN'S	17.1N	61.9W	1432Z 02 JUN
SAINT KITTS	BASSETERRE	17.3N	62.7W	1433Z 02 JUN
DOMINICA	ROSEAU	15.3N	61.4W	1437Z 02 JUN
MARTINIQUE	FORT-DE-FRANCE	14.5N	61.2W	1444Z 02 JUN
BARBUDA	PALMETTO POINT	17.6N	61.9W	1446Z 02 JUN
SAINT LUCIA	CASTRIES	14.0N	61.2W	1449Z 02 JUN
SAINT MAARTEN	SIMPSON BAAI	18.0N	63.1W	1455Z 02 JUN
ST VINCENT	KINGSTOWN	13.1N	61.2W	1459Z 02 JUN
SAINT MARTIN	BAIE BLANCHE	18.1N	63.0W	1501Z 02 JUN
ANGUILLA	THE VALLEY	18.3N	63.1W	1506Z 02 JUN
GRENADA	SAINTE GEORGES	12.0N	61.8W	1509Z 02 JUN
BARBADOS	BRIDGETOWN	13.1N	59.6W	1517Z 02 JUN
TRINIDAD TOBAGO	PIRATES BAY	11.3N	60.6W	1531Z 02 JUN
	PORT-OF-SPAIN	19.5N	61.5W	1617Z 02 JUN
BONAIRE	ONIMA	12.3N	68.3W	1531Z 02 JUN
DOMINICAN REP	CABO ENGANO	18.6N	68.3W	1532Z 02 JUN
	SANTO DOMINGO	18.2N	70.0W	1541Z 02 JUN
	PUERTO PLATA	20.0N	70.8W	1558Z 02 JUN
CURACAO	WILLEMSTAD	12.1N	68.9W	1539Z 02 JUN
ARUBA	ORANJESTAD	12.5N	70.0W	1550Z 02 JUN
VENEZUELA	MAIQUETIA	10.8N	67.0W	1551Z 02 JUN
	CUMANA	10.5N	64.2W	1602Z 02 JUN
	PORLAMAR	10.9N	63.8W	1616Z 02 JUN
	PUNTO FIJO	11.7N	70.2W	1645Z 02 JUN
	GOLFO VENEZUELA	11.4N	71.2W	1723Z 02 JUN
TURKS N CAICOS	GRAND TURK	21.5N	71.1W	1604Z 02 JUN
HAITI	CAP-HAITEN	19.8N	72.0W	1620Z 02 JUN
	PORT-AU-PRINCE	18.8N	72.5W	1703Z 02 JUN
GUYANA	GEORGETOWN	7.0N	58.2W	1904Z 02 JUN

THE PACIFIC TSUNAMI WARNING CENTER WILL CONTINUE TO MONITOR THE SITUATION. FUTURE MESSAGES WILL BE ISSUED AT LEAST ONCE AN HOUR TO PROVIDE SEA LEVEL READINGS OR OTHER REPORTS OF TSUNAMI WAVE ACTIVITY OR TO FURTHER EVALUATE THE SITUATION UNTIL THE THREAT HAS PASSED.

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2.11 Tsunami Information Statement for the Caribbean Sea (WECA43 PHEB).

WECA43 PHEB 021425
TIBCAX

TSUNAMI INFORMATION STATEMENT NUMBER 1
NWS PACIFIC TSUNAMI WARNING CENTER EWA BEACH HI
1425 UTC MON JUN 02 2008

THIS STATEMENT APPLIES TO ALL COUNTRIES WITHIN AND BORDERING THE
CARIBBEAN SEA...EXCEPT FOR PUERTO RICO AND THE VIRGIN ISLANDS.

... TSUNAMI INFORMATION STATEMENT...

THIS MESSAGE IS FOR INFORMATION ONLY

THIS STATEMENT 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 - 1415Z 02 JUN 2008
COORDINATES - 16.6 NORTH 62.3 WEST
LOCATION - LEEWARD ISLANDS
MAGNITUDE - 6.3

EVALUATION

A DESTRUCTIVE WIDESPREAD TSUNAMI THREAT DOES NOT EXIST BASED ON HISTORICAL
EARTHQUAKE AND TSUNAMI DATA.

HOWEVER - THERE IS THE SMALL POSSIBILITY OF A LOCAL TSUNAMI THAT COULD EFFECT
COASTS LOCATED USUALLY NO MORE THAN A HUNDRED KILOMETERS FROM THE EARTHQUAKE
EPICENTER. AUTHORITIES IN THE REGION NEAR THE EPICENTER SHOULD BE MADE AWARE
OF THIS POSSIBILITY.

THIS WILL BE THE ONLY PRODUCT ISSUED BY THE PACIFIC TSUNAMI WARNING CENTER FOR
THIS EVENT UNLESS ADDITIONAL INFORMATION BECOMES AVAILABLE.

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3. TWC Graphical Internet-Based Products.

The following are NWS web-based graphic products which may be produced by the tsunami warning centers (see websites listed in Section 4):

Product

Epicentral zone maps with appropriate geophysical overlays
Tsunami travel time map
Warning/watch area map
Tsunami energy distribution map

4. TWC Text Internet-based products.

The following are NWS internet-based products which may be produced by the tsunami warning centers:

Product

Web-based tsunami arrival time list
Digital cell phone message
XML-CAP format message
Tsunami products formatted for web viewing
RSS feeds for tsunami products

These products can be found at both Tsunami Warning Center's homepage:

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

<http://www.prh.noaa.gov/pr/ptwc/>

APPENDIX B - Glossary of Terms

Area of Responsibility (AOR). The geographical area within which a Center has the responsibility for the dissemination of Tsunami Warnings, Watches, Advisories, and Information Bulletins/Statements and the provision of interpretive information to emergency managers and other officials, news media, and the public.

Earthquake Magnitude. A logarithmic scale for indicating the size of earthquakes. For tsunami warning purposes the moment magnitude scale (based on seismic P waves, surface waves, or both) will be used to size potentially tsunamigenic earthquakes. Other magnitude scales such as Ms, mb, and ml can be used as appropriate to size smaller non-tsunamigenic earthquakes and as a supplement to the moment magnitude scale for larger earthquakes.

Tsunami Advisory for the WC/ATWC AOR - A tsunami advisory is issued due to the threat of a potential tsunami which may produce strong currents or waves dangerous to those in or near the water. Coastal regions historically prone to damage due to strong currents induced by tsunamis are at the greatest risk. The threat may continue for several hours after the arrival of the initial wave, but significant widespread inundation is not expected for areas under an advisory. Appropriate actions to be taken by local officials may include closing beaches, evacuating harbors and marinas, and the repositioning of ships to deep waters when there is time to safely do so. Advisories are normally updated to continue the advisory, expand/contract affected areas, upgrade to a warning, or cancel the advisory.

Tsunami Advisory for the PTWC AOR - Advisories are issued to coastal populations within areas not currently in either warning or watch status when a tsunami warning has been issued for another region of the same ocean. An Advisory indicates that an area is either outside the current warning and watch regions or that the tsunami poses no danger to that area. The PTWC will continue to monitor the event, issuing updates at least hourly. As conditions warrant, the Advisory will either be continued, upgraded to a watch or warning, or ended.

Tsunami Amplitude. Usually measured on a sea level gage, it is the deviation of sea level caused by the tsunami that is above or below the normal tidal level. Tsunami amplitudes reported by TWCs in their operational products usually represent maximum amplitudes observed so far. Reported values may change as new data are received.

Tsunami Information Bulletin. Same as a Tsunami Information Statement. The product name "Tsunami Information Bulletin" is used for international products issued by the PTWC to the PTWS and IOTWS at the request of those respective user communities.

Tsunami Information Statement. A Tsunami Information Statement is issued to inform emergency management officials and the public that an earthquake has occurred, or that a tsunami warning, watch or advisory has been issued for another section of the ocean. In most cases, information statements are issued to indicate there is no threat of a destructive tsunami and to prevent unnecessary evacuations as the earthquake may have been felt in coastal areas. An information statement may, in appropriate situations, caution about the possibility of destructive

local tsunamis. Information statements may be re-issued with additional information, though normally these messages are not updated. However, a watch, advisory or warning may be issued for the area, if necessary, after analysis and/or updated information becomes available.

Tsunami Seismic Information Statement. A Tsunami Seismic Information Statements is issued to inform emergency management officials and the public that an earthquake has occurred, and determines the likelihood of tsunami impact and preliminary details of the earthquake magnitude. These messages are issued to prevent unnecessary evacuations.

Tsunami Warning. A tsunami warning is issued when a potential tsunami with significant widespread inundation is imminent or expected. Warnings alert the public that widespread, dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after arrival of the initial wave. Warnings also alert emergency management officials to take action for the entire tsunami hazard zone. Appropriate actions to be taken by local officials may include the evacuation of low-lying coastal areas, and the repositioning of ships to deep waters when there is time to safely do so. Warnings may be updated, adjusted geographically, downgraded, or canceled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.

Tsunami Warning System. The collection of resources, processes, and functions that ensure tsunami warnings are issued and disseminated. The system includes observational data (e.g. seismic, tide/sea-level), monitoring, communications and dissemination capabilities, products and services, and the human expertise at each point in the system. Warning systems may exist at local, national, international and global levels. A particular system has a governance body to oversee and ensure the proper working condition of the warning system.

Tsunami Watch. A tsunami watch is issued to alert emergency management officials and the public of an event which may later impact the watch area. The watch area may be upgraded to a warning (or advisory in the WC/ATWC AOR) - or canceled - based on updated information and analysis. Therefore, emergency management officials and the public should prepare to take action. Watches are normally issued based on seismic information without confirmation that a destructive tsunami is underway.

Warning Cancellation. A final product indicating the end of the damaging tsunami threat. A cancellation is usually issued after an evaluation of sea level data confirms that a destructive tsunami will not impact the warned area.

APPENDIX C - Product Matrix

Tsunami Product Codes - WMO Headers

NOAA Pacific Tsunami Warning Center (PTWC, PHEB)

NOAA West Coast / Alaska Tsunami Warning Center (WC/ATWC, PAAQ)

TWC	WMO Header	Product Explanation	Coverage
PTWC	WEPA40 PHEB	Tsunami Warnings and Watches [$> M7.5$]; Test	Pacific
	WEPA42 PHEB	Tsunami Information Bulletin [$M6.5$ to 7.5]	
	WEHW40 PHEB	Tsunami Warning, Watch, or Advisory for Hawaii Civil Defense [Hawaii source, $> M6.8$; Pacific source, $> M7.5$]	Hawaii
	WEHW42 PHEB	Tsunami Information Statement for Hawaii Civil Defense [Pacific source, $M6.5$ to 7.5]	
	SEHW70 PHEB	Tsunami Seismic Information Statement [Hawaii source, up to $M6.9$]	
	WEHW50 PHEB	Public Tsunami Warnings [Hawaii source, $> M6.8$]	
	WECA41 PHEB	Tsunami Watch [$> M7.0$; Atlantic source $> M7.8$]; Test	Caribbean
	WECA43 PHEB	Tsunami Information Statement [$M6.0$ to 7.0 ; Atlantic source $M6.5$ to 7.8]	
	WEIO21 PHEB	Tsunami Watch [$> M7.0$]; Test	Indian Ocean
	WEIO23 PHEB	Tsunami Information Bulletin [$M6.5$ to 7.0]	
WC/ATWC	WEPA41 PAAQ	Tsunami Warnings, Watches, and Advisories; Test	Alaska, British Columbia, Canada, and US West Coast
	WEPA43 PAAQ	Tsunami Information Statement [$M6.5$ to 7.0]	
	WEAK51 PAAQ	Public Tsunami Warnings, Watches, and Advisories	
	WEAK53 PAAQ	Public Tsunami Information Statement	
	SEAK71 PAAQ	Tsunami Seismic Information Statement [Alaska, $< M6.5$]	
	SEUS71 PAAQ	Tsunami Seismic Information Statement [US West Coast & BC, $< M6.5$]	
	WEXX20 PAAQ	Tsunami Warnings, Watches, and Advisories; Test	Puerto Rico/Virgin Islands, US East, Gulf, and Canadian Maritime Provinces
	WEXX22 PAAQ	Tsunami Information Statement	
	WEXX30 PAAQ	Public Tsunami Warnings, Watches, and Advisories	
	WEXX32 PAAQ	Public Tsunami Information Statement	
	SEXX60 PAAQ	Tsunami Seismic Information Statement [$< M6$]	

APPENDIX D - PTWC and WC/ATWC Area of Responsibility (AOR)

