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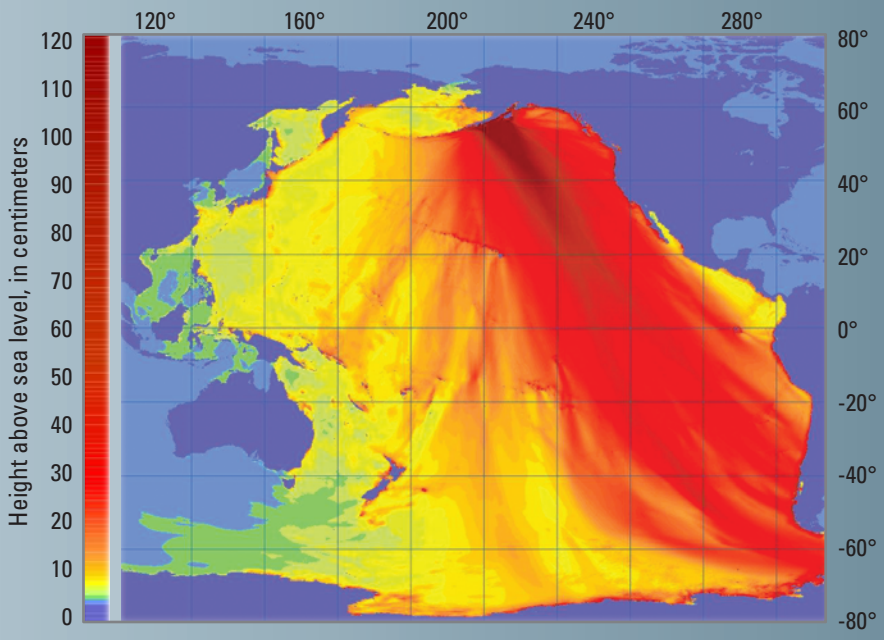
Emergency Management Response to a Warning-Level Alaska-Source Tsunami Impacting California



Open-File Report 2013–1170–J
California Geological Survey Special Report 229

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COVER: NOAA's modeled tsunami energy maps can highlight coastal areas of heightened concern to decision-makers. Protecting the Ports of Los Angeles and Long Beach requires extensive planning and coordination.

The SAFRR (Science Application for Risk Reduction) Tsunami Scenario

Stephanie Ross and Lucile Jones, Editors

Emergency Management Response to a Warning-Level Alaska-Source Tsunami Impacting California By

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Suggested citation:
Miller, K., and Long, K., 2013, Emergency management response to a warning-level Alaska-source tsunami impacting California, chap. J., *in* Ross, S.L., and Jones, L.M., eds., The SAFRR (Science Application for Risk Reduction) Tsunami Scenario: U.S. Geological Survey Open-File Report 2013–1170, 245 p., http://pubs.usgs.gov/of/2013/1170/j/.

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Contents

Emergency Management Response to a Warning-Level Alaska-Source Tsunami Impacting California

By Kevin M. Miller[1] and Kate Long[1]

Introduction and Purpose

This chapter is directed towards two audiences: Firstly, it targets nonemergency management readers, providing them with insight on the process and challenges facing emergency managers in responding to tsunami Warning, particularly given this "short fuse" scenario. It is called "short fuse" because there is only a 5.5-hour window following the earthquake before arrival of the tsunami within which to evaluate the threat, disseminate alert and warning messages, and respond. This action initiates a period when crisis communication is of paramount importance. An additional dynamic that is important to note is that within 15 minutes of the earthquake, the National Oceanic and Atmospheric Administration (NOAA) and the National Weather Service (NWS) will issue alert bulletins for the entire Pacific Coast. This is one-half the time actually presented by recent tsunamis from Japan, Chile, and Samoa. Second, the chapter provides emergency managers at all levels with insights into key considerations they may need to address in order to augment their existing plans and effectively respond to tsunami events.

We look at emergency management response to the tsunami threat from three perspectives:

- "Top Down" (Threat analysis and Alert/Warning information from the Federal agency charged with Alert and Warning)
- "Bottom Up" (Emergency management's Incident Command approach to responding to emergencies and disasters based on the needs of impacted local jurisdictions)
- "Across Time" (From the initiating earthquake event through emergency response)

We focus on these questions:

- What are the government roles, relationships, and products that support Tsunami Alert and Warning dissemination? (Emergency Planning and Preparedness.)
- What roles, relationships, and products support emergency management response to Tsunami Warning and impact? (Engendering prudent public safety response.)
- What are the key emergency management activities, considerations, and challenges brought out by the SAFRR tsunami scenario? (Real emergencies)
- How do these activities, considerations, and challenges play out as the tsunami event unfolds across the "life" of the event? (Lessons)

[1] California Governor's Office of Emergency Services (Cal OES)

Top Down: Information Flow during Tsunami Alert and Warning

Certain potentially life-threatening or damaging emergency/disaster events, such as earthquakes and terrorist attacks, are referred to as "no notice" or sudden-onset events by emergency managers. These events do not provide advance warnings. Other threats, such as hurricanes—and a "distant source" tsunami like the one discussed in this scenario—provide emergency managers with the opportunity to warn the public and provide life-safety instructions. For "advance notice" events such as distant source tsunamis, Alert and Warning dissemination is the initial key emergency-management-related function, central to minimizing loss of life, injury and, to some extent, property damage. Timely Warning notification to all potentially affected areas is undertaken using a central information source and delivered through multiple, redundant, backup communication channels as illustrated by figure 1.

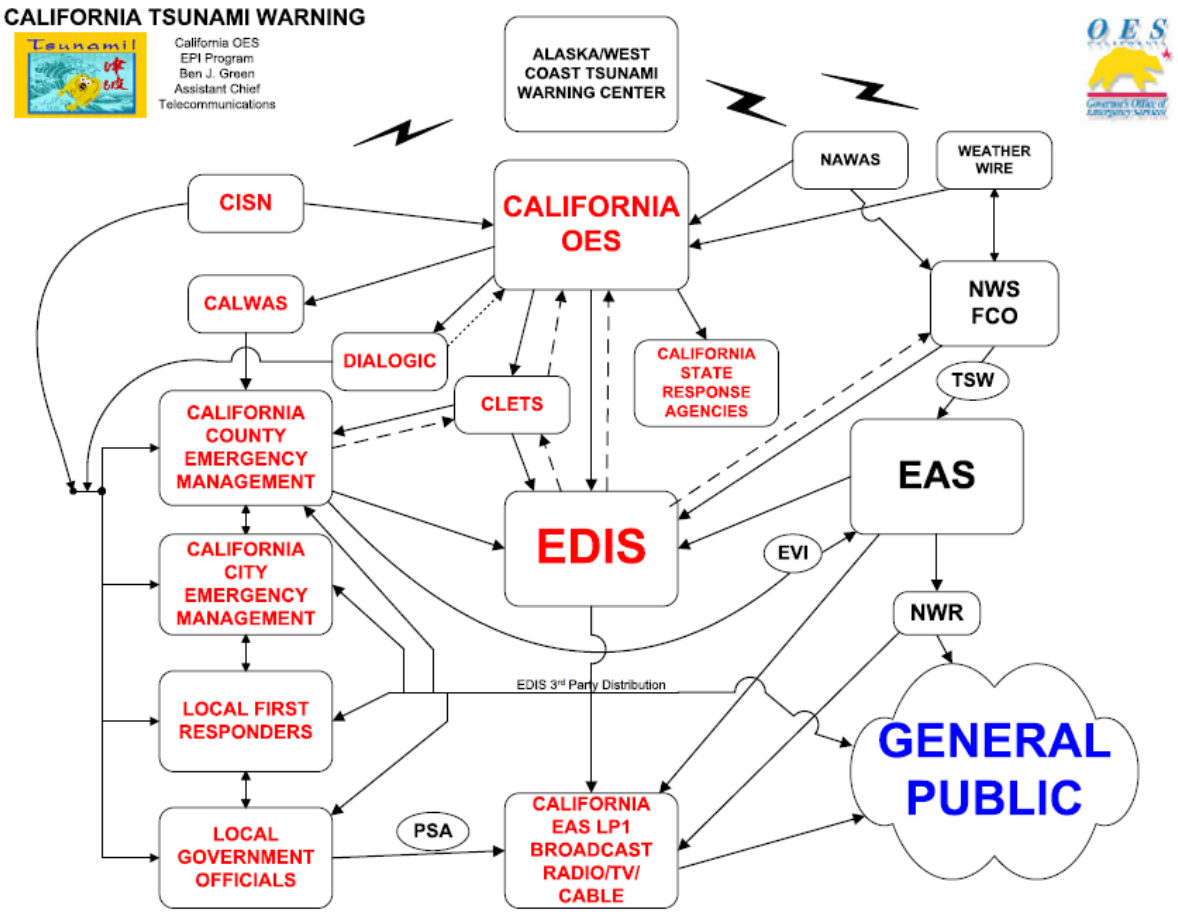

Figure 1. Flow diagram showing how Alert and Warning dissemination is "top down," from Federal to State to local. Courtesy of Ben Green, California Governor's Office of Emergency Services.

Federal Role in Threat Identification and Alert Dissemination

The National Oceanographic and Atmospheric Administration (NOAA) is the federally designated agency responsible for official alert and warning for a tsunami, generated anywhere in the world, that may impact U.S. states and territories. The Tsunami Warning and Education Act of 2006 (TWEA) was passed by Congress following the devastating Indian Ocean tsunami. The purpose of this law was to authorize and strengthen the tsunami detection, forecast, warning, and mitigation program of NOAA, to be carried out by its component agency, the National Weather Service (NWS). This is done by the agency's two Warning Centers through their alert and notification responsibilities. For the U.S. West Coast, including California, these alerts are issued by NOAA's West Coast and Alaska Tsunami Warning Center (WCATWC) in Palmer, Alaska. The WCATWC has most of North America under its Area Of Responsibility (AOR), while NOAA's Pacific Tsunami Warning Center (PTWC) in Hawaii provides alerts to the remainder of the Pacific Basin (see fig. 2). TWEA also vested NOAA and the Warning Centers with responsibilities for international coordination for detection, warnings, and outreach for tsunamis. The full responsibilities of the Warning Centers include (A) continuously monitoring data from seismological, deep ocean, and tidal monitoring stations; (B) evaluating earthquakes that have the potential to generate tsunamis; (C) evaluating deep ocean buoy data and tidal monitoring stations for indications of tsunamis resulting from earthquakes and other sources; and (D) disseminating forecasts and tsunami Warning Bulletins to Federal, State, and local government officials and the public.

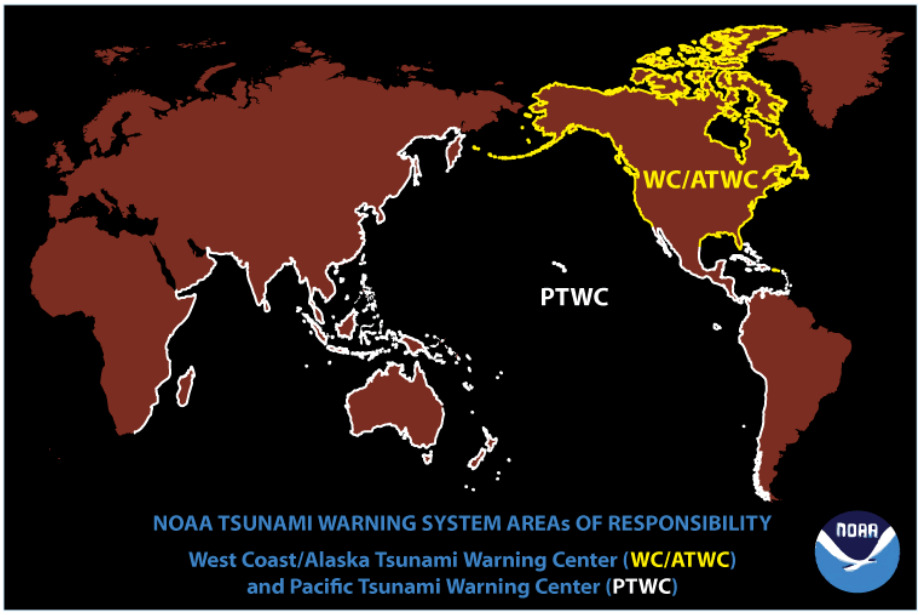

Figure 2. World map showing Areas of Responsibility (AOR) of the two Tsunami Warning Centers of the National Oceanic and Atmospheric Administration (NOAA). Courtesy NOAA.

NOAA uses four levels of tsunami alert in the United States; they are, in order of decreasing urgency: Warning, Advisory, Watch, and Information Statement. Each has a distinct

meaning relating to local emergency response (fig. 3). For a more detailed explanation of alert levels, see appendix A

Alert Level	Threat	Action
 WarningWarning	Inundating wave possible	Full evacuation suggested
 AdvisoryAdvisory	Strong currents likely	Stay away from the shore
 Watch	Danger level not known yet	Stay alert for more information
 Information	Minor waves at most	No action suggested

Figure 3. Table of the NOAA tsunami alert levels, each with distinct meaning relating to local emergency response.

State Role in Alert and Warning Dissemination: Cal OES

The California State Warning Center (CSWC), operated by the California Governor's Office of Emergency Services (Cal OES), is the designated "Warning Point" agency for dissemination of alerts issued by the WCATWC. CSWC is notified of the potential tsunami by WCATWC, simultaneously through various, redundant notification systems initiated at the Federal level, and this notice is then forwarded by the State to local level Warning Points (figure 1).

For alert and warning for potential tsunami, Cal OES's primary roles as designated State Warning Point are to (1) receive Tsunami Information Bulletins from WCATWC; (2) relay the messages to potentially impacted Operational Areas (counties); and (3) provide ongoing liaison between the WCATWC and potentially impacted California counties. CSWC is only authorized to communicate the original WCATWC tsunami alert; it does not undertake any threat analysis and will not advise local governments regarding response issues, such as Emergency Operations Center (EOC) activations or evacuations.

Upon receipt of WCATWC's initial Alert Bulletin, CSWC forwards the information to the Cal OES Earthquake and Tsunami and regional duty officers and to county emergency management offices. The CSWC also notifies the Cal OES Regional Duty Officer for all active Watch and Warning alerts issued in their area of responsibility. The Cal OES Regional Duty Officer will verify that counties, unincorporated areas, and special districts within their area of responsibility have received the CSWC Watch/Advisory/Warning alerts. All information from the WCATWC is passed directly to the county via redundant methods.

County Role in Alert and Warning Dissemination

Counties receive information from Cal OES through their designated Warning Point, and they provide threat notification to jurisdictions within. The Warning Point agency designated by each county may vary. County governments are responsible for notifying their constituent cities and special districts through multiple, redundant means. In addition, they notify county departments (sheriff, fire, medical, harbor, and so forth) as appropriate. Examples of county departments with Warning-response and event-response roles include Emergency Operations/Management Departments; local police dispatch centers (coastal cities' police agencies and coastal sheriff substations); County Fire Emergency Command and Control Centers; Department of Public Works Dispatch Centers; Department of Health Services; Departments of Beaches and Harbors; Airport Police; and Ports.

In the case of a Warning-level tsunami alert, evacuation within each city is the responsibility of that local jurisdiction; however the county may assist cities and special districts in evacuation and provide wider traffic control. In addition, for unincorporated county areas, the county is the "local authority" ordering evacuations. The county will use the Emergency Alert System (EAS) through local radio and television stations to deliver tsunami Warning and evacuation messages. Additional methods used to evacuate the public may include emergency service units using public alert systems, door-to-door notification, media announcements; announcements on Travelers Information Service; and sounding of sirens (for example, a steady blast indicates peacetime emergency), if available.

Local Role in Alert and Warning Dissemination

This chapter highlights issues presented by the SAFRR (Science Application for Risk Reduction) tsunami scenario to the Port of Los Angeles (POLA) and Port of Long Beach (POLB), both in Los Angeles County. We use the Ports of Los Angeles and Long Beach as an example of local entities and how they might respond to this scenario. This is by no means intended to represent all possibilities in California, because there are many types of communities, small marinas, coastal cities, beaches, parks, and so on along the State's 1,100-mile coastline. We describe this particular community's response as a way to demonstrate the flow of information and manner of operational response by the emergency management system from Federal to State to county to local level, addressing needs at all levels during an ongoing tsunami emergency, from beginning to end. The local level is where the public will be most influenced by emergency actions designed to protect lives and property.

All orders for evacuation within a given local jurisdiction are under the authority and responsibility of that jurisdiction. The local role is not only disseminating warnings, but executing all evacuation orders and related public safety actions. In Los Angeles County, immediate alert notification is made by the County Warning Point to the Los Angeles County Department of Beaches and Harbors, the U.S. Coast Guard Los Angeles Command Center/Los Angeles Station; the Port of Los Angeles Police, and the Port of Long Beach Police. The Port of Los Angeles is within the City of Los Angeles, which has civil authority over evacuation. The Port of Long Beach is within the City of Long Beach, which has civil authority over its

evacuation. The roles of the Cities of Los Angeles and Long Beach and Port Authority in Alert and Warning dissemination cross over into response actions resulting from the Warning, and they will be discussed further in the next section.

Bottom Up: Emergency Management Protocol in Response to Tsunami

All Disasters Are Local

Although Alert and Warning (identification of a tsunami threat and dissemination of that threat) described in the previous section cascade "top down" from the WCATWC, the actual emergency management response activities undertaken to save lives and protect property—both during the WARNING period and event response operations—are "bottom up" from the local jurisdiction. Both legal authorities and the actual way agencies are organized to coordinate delivery of emergency management services acknowledge a basic concept: "All disasters are local."

From car accidents to crime scenes to freeway closures, most emergencies are "manageable" enough to be resolved by the local authority. Emergency services organizations, including police, fire, ambulance, and emergency management, successfully address such daily emergencies as their normal routine. However, some emergency events become so large or complex that local resources are exhausted and external resources must be brought to bear. In emergency management parlance, when available response resources are insufficient, local authorities are unable to effectively stabilize life-safety and property protection threats, and an emergency transitions to a "disaster." However, it is important to note that even when an emergency becomes a disaster that requires multiagency management, the emergency services community still adheres to the "All disasters are local" concept, meaning local governments remain in charge. That is, official response to all emergencies is determined by local need, at local direction. When a local jurisdiction requests help from other entities, be they county, State or Federal, the assisting jurisdictions and resources are provided in support of the affected jurisdiction; the affected jurisdiction retains its authorities, responsibilities, and command of the incident.

The complexity of emergency management coordination comes as disaster events impact multiple jurisdictions and more than one individual "incident" occurs. The example provided by the SAFRR tsunami scenario has broad impacts on coastal counties across California. Such an event exponentially increases the number of agencies needed to respond and the need for prioritization of scarce resources across jurisdictions in need.

Across Time: The Emergency Management "Life" of a Tsunami in Seven Periods, a Timeline of Tsunami Warning and Response

The following sections discuss key emergency management considerations and issues raised in this SAFRR tsunami scenario, with emphasis on how they relate to the Ports of Los Angeles and Long Beach as an example of a local response, affecting those on the immediate coast. During recent tsunamis affecting California, the course of action in activating and

operating the emergency management system has followed a timeline that, for the purposes of this chapter, is described via seven general time periods.

Period 1: Initial Earthquake Event Notification

Prior to NOAA verification of tsunamigenic hazard, via Alert Bulletin at a level considered actionable by emergency managers (Advisory or Warning). State and local government notification of earthquake from U.S. Geological Survey (USGS) via pager or California Integrated Seismic Network (CISN) Display

Period 2: First NOAA-verified Alert Message at Warning Level

From first verified NOAA Alert-level Bulletin through the arrival of first waves in California. Includes local government actions in issuing Evacuation Orders and other pronouncements.

Period 3: During the Event

From first wave arrival in California through Warning cancellation

Period 4: Warning cancelled for specific areas

Advisory still in place in those areas

Period 5: Evacuation ALL CLEAR as determined by each coastal jurisdiction

Advisory still in place for those jurisdictions

Period 6: Advisory CANCELLATION

Emergency Response Actions continue

Period 7: Transition: Response to Recovery

Period 1: Initial Earthquake Event and Notification

When a large, undersea earthquake occurs, it is the responsibility of the Federal government through NOAA's Tsunami Warning Centers to notify states within their area of responsibility of potentially imminent danger and assess, evaluate, and confirm any threat.

General Description of Period 1 (Bulletins 1–3: Thursday March 27th 11:54 a.m. until 2:05 p.m. PDT; 0—2 hours after earthquake)

Immediately following the identification of an earthquake around the Pacific Ocean with tsunamigenic potential on the west coast, NOAA's West Coast and Alaska Tsunami Warning Center (WCATWC) begins preliminary evaluation to determine whether a tsunami has actually been generated and what areas are forecasted for impact. Databases of preexisting numerical tsunami model results are matched against the location and magnitude of the earthquake, and historical data are analyzed. Pending this assessment, initial alert bulletins from WCATWC can often be limited to an Information Statement. If the earthquake event warrants, the initial bulletin(s) may immediately place potentially impacted areas of the State at the Watch or Warning level. Particularly for areas very close to the origin of the earthquake, a Warning level of alert will be immediate, weighing the need to have urgent timely advice over the need for increased confidence through additional data and analysis. Both Advisory and Warning level

alert bulletins will trigger response actions by emergency managers. The WCATWC begins initial conference calls with State-level Warning Points and National Weather Service-Warning Forecast Offices (WFOs). As California's Warning Point, Cal OES makes initial contact with the impacted coastal counties to prepare for subsequent briefings as situation emerges.

Scenario-Informed Situation, Emergency Management Activities, Key Considerations and Challenges during Period 1

On Thursday, March 27, 2014, a large earthquake occurs offshore at 11:50 a.m. PDT (local California time) offshore the Alaska Peninsula region of Alaska. The earthquake is located in the vicinity of a known subduction zone, under the Aleutian trench, which is capable of producing dangerous tsunamis with potential to seriously impact the coastline of California. Initially, the only information known is a magnitude and location of the earthquake. Preliminary earthquake information relayed by automated alerting systems (Advanced National Seismic System, USGS, CISN, and the WCATWC) indicates an unverified magnitude of 8.2.

- Immediately following identification of an earthquake around the Pacific Ocean of the size and location that might generate a tsunami on the west coast, NOAA's West Coast and Alaska Tsunami Warning Center (WCATWC) begins preliminary evaluation to determine whether a tsunami has actually been generated and which areas are forecasted for impact. At the WCATWC, databases of preexisting numerical tsunami model results are matched against the location and magnitude of the earthquake. In the case of this SAFRR scenario earthquake, the initially identified size and location of the event make it of immediate concern.
- Based on seismic information alone, NOAA/NWS Bulletin #1 is issued by WCATWC within 3 minutes after the earthquake. Bulletin #1 projects first wave arrival in Los Angeles at 5:35 pm, 5 hours 45 minutes from issuance of this message.
- Bulletin #1 initiates a Watch-level alert for the entire coastline of California, Oregon, and Washington States. A Watch activates the Emergency Alert System, which automatically and simultaneously relays notifications about the possible tsunami to emergency management systems and personnel, television, and radio stations. TV Stations begin scrolling a crawler message across their video programming "TSUNAMI WATCH FOR CALIFORNIA."
- The information in the initial WCATWC Bulletin is based solely on seismic readings and provides early information about estimated initial tsunami surge arrival times for points on the coast of California. In the SAFRR tsunami scenario Bulletin #1, arrival time estimates are provided (as with all bulletins) within an expected accuracy of plus or minus 15 minutes.

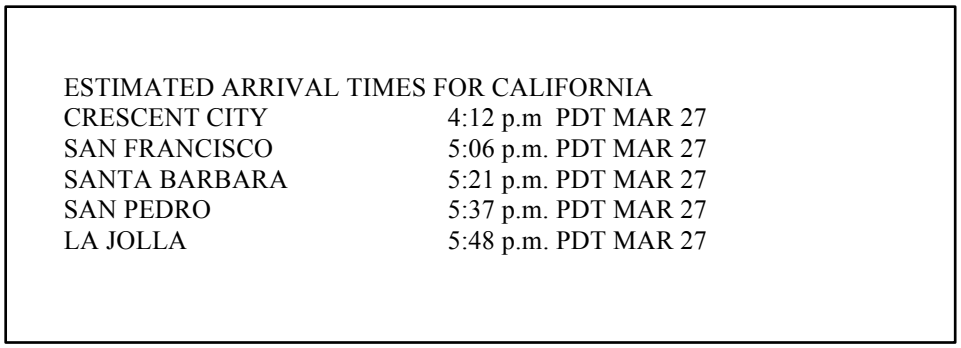

Figure 4. NOAA/NWS/WCATWC Bulletin #1: estimated initial tsunami surge arrival times

- At the local level, the Cities of Los Angeles and Long Beach, each responsible for determining the local need for evacuation orders, must stand by for WCATWC's next alert bulletins for determination that a tsunami has actually been generated. Evacuation may be considered costly monetarily, in terms of public safety, and in terms of public confidence. However, Bulletin #1 indicates that if a tsunami has been generated, it will arrive in less than 6 hours. In the case of a subsequent Warning-level alert, extensive evacuations could be triggered that could take as long as 6 hours. The time window to take appropriate action is already abutting Bulletin #1; the jurisdictions must poise senior decision makers to be able to order evacuations quickly once WCATWC confirms the threat, and they wait anxiously for additional information.
- The State Warning Center and all Warning Points in California coastal counties, the U.S. Coast Guard, the U.S. Navy, and the public, including the media, are automatically notified of the WATCH simultaneously through the variety of existing systems and backup notification systems described earlier in this chapter. During this period, the WCATWC begins evaluation based on forecast models to determine whether the WATCH status will be upgraded, cancelled, or remain the same upon issuance of the next Alert Bulletin #2.
- Bulletin #2 is issued and California remains in WATCH status pending continued evaluation of forecast models. Bulletin #2 arrives at 12:31 p.m. PDT and indicates an updated magnitude—the earthquake has now been adjusted to magnitude 8.6. Any earthquake above magnitude 7.5 on a submarine thrust fault has a strong potential to generate a tsunami.
- WCATWC initiates its first West Coast conference call conducted to provide state Warning Points and weather forecast officers with the latest available forecast analysis, as well as observed information, as available. Geographic areas of heightened concern are called out and discussed, each state is polled for attendance and concerns, and a question/answer exchange provided. Participants include the Cal OES Earthquake and Tsunami Duty Officer, California State Warning Center, and coastal NWS Weather Forecast Meteorologists. Counterparts are on the line from Alaska, Washington, Oregon, and British Columbia. Technical information received from WCATWC calls includes specific areas/locations of heightened concern based on initial wave arrival times, forecast wave heights, and normal tide conditions.
- The Cal OES Executive Duty Officer, Earthquake and Tsunami Duty Officer, and California State Warning Center confer and agree on the need to initiate the first statewide conference

call to 20 coastal county emergency managers. These counties are (from north to south): Del Norte, Humboldt, Mendocino, Sonoma, Marin, Napa, Solano, Contra Costa, San Francisco, Alameda, San Mateo, Santa Clara, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Diego.

- Bulletin #3 is issued, and California remains in WATCH status pending continued evaluation of forecast models. Bulletin #3 is issued at 1:03 p.m. and indicates another updated magnitude of the earthquake to M9.0. Depending on depth and earthquake mechanism, a large tsunami can easily be expected from an earthquake of this magnitude. The possibility of its adversely affecting California's entire coast is now a strong possibility.
- The most important actions during this period are (1) notifications and (2) information flow and exchange from WCATWC to the State, to the counties, and to coastal cities.

Key Considerations during Period 1

Key emergency management considerations during this period include:

1.1 Confirm receipt and notification of initial information from WCATWC across entities responsible for public safety at Federal (for example, Coast Guard), state, county, and local jurisdictions.
1.2 Focus on prioritized areas of highest concern, based on wave amplitude and arrival time.
1.3 Analyze tide conditions at arrival times. Prepare for proper response and protective measure actions.
1.4 For Port Captains, assess which vessels will be at high risk during tsunami or carry cargo that could create a hazardous condition in the event of vessel damage (especially liquid bulk, including petroleum). Evaluate timing necessary and prioritize potential vessel evacuation.
1.5 Ensure private entities with responsibility in ports and marinas are included in the information loop; establish contacts for coordination between port and local jurisdiction emergency managers with jurisdictional responsibility for land evacuations.
1.6 Within potentially impacted jurisdictions, use WATCH period to review emergency plans, identify areas in danger with highest priority, and be poised to initiate immediate action should an Advisory or Warning be issued.
1.7 Assess local offshore (storm) conditions. Consider compounding factors: Darkness and high tide—sunset is at 1815; high tide builds and peaks at 2000, 2 hours and 30 minutes after initial wave arrival in Los Angeles/Long Beach. (High tide will be occurring atop continued, worsening tsunami surges in the initial arrival of this event). Build in conservative interpretation for potential errors in forecasted amplitudes and arrival times.
1.8 Begin coordination with media; disseminate correct information about Watch and how public should respond if Alert Level moves to Advisory or Warning. Ensure media are briefed on how to disseminate evacuation information based on local jurisdiction authority.
1.9 Contend with public perception and possible traffic issues where those in coastal areas begin to self-evacuate based on WATCH information and media coverage.

Highlighted Emergency Management Challenges during Period 1

This scenario tsunami would be the most serious tsunami event in the United States since Alaska 1964. In fact, a similar actual tsunami hitting the same areas today could become the worst in U.S. history, given increased development in low-lying areas along the coasts of California, Oregon, Washington, Alaska, and Hawaii. Emergency managers across California have extensive and well exercised emergency plans, but the potential need to fully address land-based and ocean-based evacuations as well as infrastructure protection within a short number of hours will present challenges that may only become apparent as the disaster unfolds. This

scenario provides an opportunity to raise and examine consequential issues that have not been understood nor addressed through previous experience.

The Warning level tsunami from Alaska will provide specific challenges to ensuring that port authorities, harbormasters, ship and boat owners and operators, and terminal operators are all properly notified. Evacuation considerations must address appropriate groups with potentially differing recommendations based on ship size, which ships are appropriate to send to sea, and how much time is available and needed by each vessel to do so. Large military, container, and cruise ships have different requirements and capabilities when it comes to going to the open ocean from mid-size fishing vessels and from small recreational, private yachts and boats. Who you send to sea will depend on weather conditions. Small operators must consider having enough fuel for extended periods (2–4 days for this event) and whether they have the seagoing ability to get to distant ports if the home port is destroyed. This may sound far-fetched, but it is exactly what happened to Crescent City Harbor in the 2011 Tohoku, Japan, tsunami. For large ships, the time needed to get crew aboard to allow the vessel to depart may be more critical than seagoing capability. How much time is required to board and move to an offshore depth safe from dangerous tsunami currents and whether this time fits within the 3–4 hour window of safety becomes critical.

The public's primary source of information during a disaster is not directly from emergency management personnel, but rather from the media. The automated NOAA alerts available to emergency managers are simultaneously available to the media, and they constitute "breaking news"—meaning the media will voraciously seek information. It is important for emergency managers to coordinate messaging and be able to provide the media with accurate public safety information, in order to give the public correct instructions about what they need to do to protect themselves. California media outlets largely understand that the correct safety information for the west coast is coming out of the West Coast Alaska Tsunami Warning Center (WCATWC), but this understanding may not be universal, especially at the level of the national media. In addition to providing information, emergency management organizations must monitor the media to correct misinformation, hearsay, and self-appointed experts.

Initial focus in the media in recent events has been on expected first-wave arrival times and projected wave height, provided in the Warnings. A vital point not typically addressed by media is the dangerous tsunami activity that occurs after the first wave. Since the public will get their information from the media, rather than from emergency managers directly. It is important for the media to understand that the first wave is almost never the largest, that waves may last for many hours (47 in this event). People's returning after the first wave, thinking it is safe and that danger has passed, accounts for many unnecessary deaths in tsunamis. Additionally, tsunamis are not surfable. There is generally no breaking wave face, they are driven by a push of water hundreds of miles long, they create strong, unpredictable currents, and they carry sediment and dangerous, deadly debris. An additional key element of information is the time of expected high tide. This can make a huge difference in whether a section of coast is inundated or not by simply the timing of tsunami surges with respect to low or high tide.

Additional topics for emergency management education and coordination with media include explanations of how to respond to NOAA-issued Tsunami Alerts (WATCH, Warning, and Advisory; contextual historical tsunami information relative to the current tsunami and geographic areas affected; explanations of warning signs that a tsunami is coming (official vs. natural warning); definitions of tsunami terminology; provision of Web resources; and information about tsunami detection and forecasting. The media must also be provided timely

information on what emergency-response safety measures are being undertaken and where, including information about evacuation areas, routes, shelters, and real-time updates of important developments as they occur.

Period 2: First NOAA-Verified Alert Message at Warning Level

During Period 2 the state is responsible for disseminating and clarifying actionable information coming from NOAA/WCATWC, and for offering assistance to local governments. Local governments must notify their affected populations and secure their safety, through evacuation and other measures, during this period.

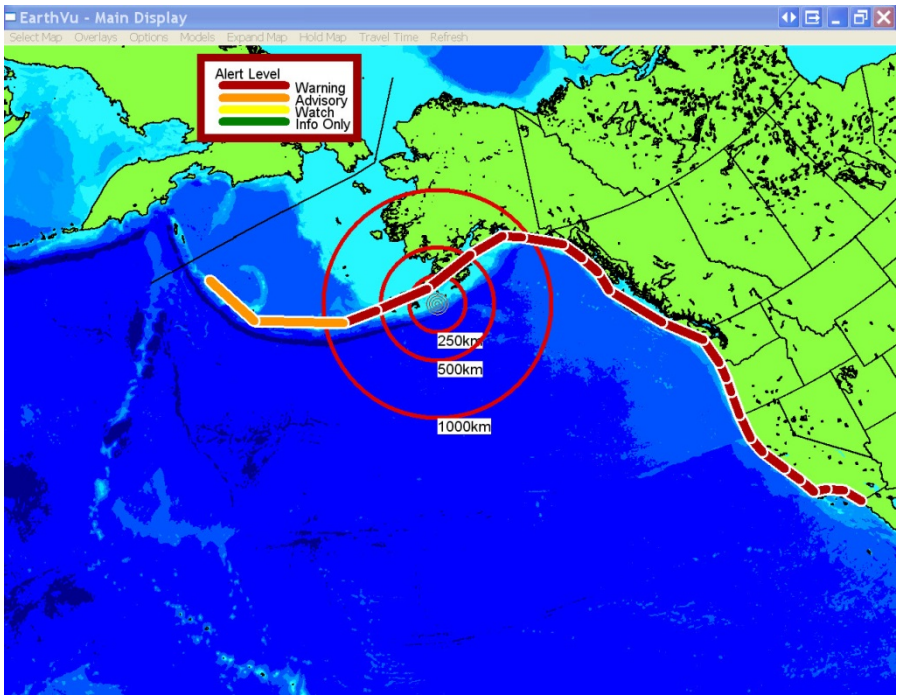

Figure 5. Annotated map of northeast Pacific Ocean and adjacent lands constituting Bulletin #4 Alert Status of West Coast: Warning. Courtesy WCATWC.

General Description of Period 2 (Bulletins 4–7: Thursday March 27th 2:05 p.m. through 6:01 p.m.; 2—6 hours after earthquake)

Bulletin 4 has been received and, based on observed readings from deep ocean buoys and coastal tide gauges, the WCATWC confirmed that a tsunami had been generated and issued an alert bulletin placing the entire California coastline in a Warning.

The Warning message in the Bulletin 4 now reads:
"Tsunami warning in effect for the coastal areas of California from the California-Mexico border to the Oregon-California border impacts for tsunami warning areas.

Impacts for tsunami warning areas:

- Widespread dangerous coastal flooding accompanied by powerful currents is possible and may continue for many hours after tsunami arrival.
- The first wave may not be the largest.

Recommended actions:

- If you are in a warning area - move inland to higher ground.
- Be alert to instructions from your local emergency officials.
- Do not go to the coast to observe the tsunami.
- Do not return to the coast until local emergency officials indicate it is safe to do so."

During the time between Warning for California and first wave arrival, the WCATWC continues to acquire additional information as the tsunami passes successive deep ocean buoys or coastal tide gauges, adjusts the initial modeling forecasts, and continues to use sequentially numbered bulletins to update not only the alert level, but forecasts for first-wave arrival times and projected wave amplitudes. Schedules for periodic briefing calls are initiated between the WCATWC and State Warning Points. Cal OES initiates a similar schedule for communication with State agencies and all 20 potentially impacted counties on the coast. Counties in turn ensure communication is continued with their city jurisdictions, special districts, and especially to impacted sectors such as ports and marinas. The California Geological Survey deploys tsunami observation teams to predetermined locations to provide updates to Cal OES and the impacted counties after the tsunami arrives.

Emergency Operations Centers begin to activate at the port, local jurisdiction, county, and state level. The U.S. Coast Guard activates its protocol for Planned Response to a tsunami. This includes provision of mutual aid to the Ports and affected jurisdictions statewide to support eventual search and rescue operations, launch of coast guard air asset support according to policy, notification of commercial vessels and applicable facilities of the tsunami Warning, closing of ports to all inbound vessel traffic and encouraging vessels to move to a safe location, and conducting of patrols of waterways within the affected zone to ensure maritime security. The Federal Emergency Management Agency (FEMA) activates its Regional Operations Center. Local emergency managers initiate plans, including evacuation if warranted, and recommended protective measures as necessary. City and/or county emergency managers are responsible for determining if land evacuations are necessary in the ports. Harbormasters determine efficacy and timing for allowed departure of vessels from harbors and marinas, or recommend that boats do not leave if their owners are not prepared to stay offshore for an extended period of time. All evacuations and protective emergency measures must commence quickly and be completed or established prior to first wave arrival. Based on need, local jurisdictions may request Mutual Aid, or state assistance using established assistance request processes.

Scenario-Informed Situation, Emergency Management Activities, Key Considerations and Challenges

Approximately 2 hours and 15 minutes after the earthquake, at 2:05 p.m., (2 hours and 9 minutes after the initial WCATWC WATCH Bulletin), Bulletin #4 puts California into a Warning with approximately 3 hours and 30 minutes remaining to the start of tsunami, at 5:35 p.m., along the Los Angeles coast. The challenge now becomes enacting all decisions to quickly engender desired response actions to adequately inform and protect the public within this remaining window of time.

- At all levels of emergency management, Emergency Operations Centers are fully activated. Trained emergency personnel are called in to staff functions of the incident command structure. Cooperating State, Federal, and local agencies assume liaison roles upon request.
- To convey situational information, Cal OES convenes its first statewide conference call with the 20 coastal county emergency managers and establishes a schedule for subsequent hourly update calls. The purpose of these calls is to relay technical information received on the WCATWC call with Cal OES as the State's Warning Point, as well as address concerns, answer questions, focus on any specific areas of heightened concern based on information provided in the bulletins or otherwise, and receive information from county emergency managers on the coast. Each county will in turn conduct information exchange among its cities and districts.

On the statewide call, participating counties include all 20 of California's coastal counties. Also in attendance are: regional agencies (for example, Metropolitan Transportation Commission), State agencies (for example, California Geological Survey, California State Parks, Department of Fish and Wildlife, Caltrans, Department of Health Services, Department of Water Resources, CalFire), Federal agencies (for example, USGS, NOAA, USCG, U.S. Navy) and NOAA Weather Forecast Meteorologists from the Eureka, Monterey, Oxnard, San Diego, and Sacramento offices.

- Hourly WCATWC calls with West Coast Warning Points and Cal OES statewide conference calls continue. Statewide coordination calls progressively focus on specific areas or locations of heightened concern based on initial wave arrival times, forecast wave heights, and normal tide conditions.
- Additional discussions on statewide calls include exchange of information regarding protective measures and emergency response actions being taken by counties (cities, ports, terminals), consistency of public information messaging and media coordination, whether State assistance is needed or being received (for example, reconnaissance flights, changeable message road signs, responders), evacuations being conducted (City of Long Beach, Ports, Los Angeles), and shelters being opened. This information will also be provided via situational reports from each operational area (county) for each 12-hour staffing period.
- Emergency Operations Centers (EOCs) at all jurisdictional levels develop their strategic plans (objectives, course of action) and a staffing pattern for the following 12-hour period. The California Geological Survey sends observers to safe locations along the coast to provide real-time, trusted, subject matter expert observations back to the State. Public Information is coordinated through the Office of Public Information at Cal OES Headquarters. Staff from various State and Federal agencies continue to arrive at the State Operations Center in Sacramento and Regional Emergency Operation Centers in the Bay Area and Southern California and may then be deployed to the field to begin assisting with response activities and damage assessment in the most affected coastal counties.

- According to Bulletin #4, first-wave arrival time at San Pedro in the Port of Los Angeles is projected to be as little as 3½ hours away. The decision to begin evacuations must be executed so that evacuations can begin immediately. For cities on the coast with local geographic public safety responsibility, the change from Watch to Warning has triggered the need for the important evacuation decision within the entity's area of jurisdiction. This includes all areas within the city limits, unincorporated county, and county and state beaches. For the Port of Los Angeles, the jurisdiction responsible for ordering evacuation is the City of Los Angeles. For the Port of Long Beach, the jurisdiction responsible for ordering evacuation is the City of Long Beach. Decision makers have to act quickly to approve evacuation and publicize these orders. Public safety officials (police and fire) responsible for the actual evacuation must immediately begin its implementation. The 3 hour and 30 minute window will continue to shrink as the evacuation order goes out and people begin to move away from the coast.
- As a result of the short timeframe prior to first-wave arrival, local jurisdictions may not have time to completely evacuate areas within the designated inundation zone and will need to prioritize. Automated telephone notification systems are activated to notify residents within evacuation areas (for example, Reverse-911). The Cities will notify their respective ports, which will in turn notify tenants and initiate their emergency plans. Public venues near the coast and beaches will present particular challenges, as will dependent care facilities (such as schools, hospitals, and convalescent care facilities), where evacuation may be slower and require vehicles for nonambulatory patient transport.
- County and local agencies also have responsibility for area security and area reentry. First responders are deployed to traffic checkpoints at the edge of the evacuation zone to direct traffic out and restrict traffic from coming back in to dangerous areas. Traffic control points are set up at strategic locations to reduce traffic flow toward the coast and to restrict sightseer traffic to the coast, as required.
- As each area is evacuated, public safety agencies will set up Traffic Control Points consisting of roadblocks, barricades, and (or) a system of patrols to secure evacuated areas. Traffic Control Points require multiagency coordination and many personnel for extended periods of time. Public safety agencies will be using their auxiliaries and volunteers to staff traffic control points and requesting mutual aid assistance from inland communities.
- The Ports of Los Angeles and Long Beach must consider evacuation and safety and protection of populations and assets on the water as well as on land. On land, employees working throughout individually managed port terminals and other facilities must be notified and evacuated. A Federal Border Patrol detention facility within the Port of Los Angeles houses some 1,200 detainees and will implement its secure, independent plan to take appropriate protective measures.
- The U.S. Coast Guard (USCG) has ultimate authority over vessel traffic. Authority to close the port lies with the Captain of the Port, under jurisdiction of USCG Sector Commander of USCG District 11, Sector Los Angeles. (This is one of three sectors in California, the others being San Francisco and San Diego). The 11th Coast Guard District encompasses the States of California, Arizona, Nevada, and Utah, the coastal and offshore waters out more than a thousand miles, and the offshore waters of Mexico and Central America down to South America. The USCG Captain of the Ports will take charge of determining and prioritizing evacuation of large ships in the ports and determining which and how many will have time to leave port for deeper, safe water depths, beyond the high-velocity tsunami surge. The port

must also notify incoming vessels to remain at sea. Port Authorities and vessel owners must assess whether liquid bulk vessels can (have enough time to be) successfully depart from the port during the Warning period, prior to the start of tsunami, and when the cutoff time for departure will be. For vessels that cannot make it out in time, moorings may be manned from onboard or other measures taken to secure ships as best as possible.

Key Considerations during Period 2

2.1 "Short fuse" event for evacuations: The 3.5-hour window to order, initiate, and complete evacuations is very short; in some cases it could be shorter than the anticipated time required to clear dangerous areas and address special needs of various populations (see following section, "Decision Making on a Short Fuse").

2.2 Activate automated telephone notification systems and other local protocols to ensure rapid notification of residents/workers/visitors within the zone regarding evacuation.

2.3 Coordinate with port and marina authorities regarding disparate maritime communities (vessels = large, medium, small). Evacuate different-sized boats and ships to open ocean or not? Consider offshore conditions, timing of event, and ability of members of maritime community to stay offshore for extended time before recommending maritime evacuation. Determine if it is appropriate to leave personnel on ships during the event or evacuate to safety on land. Threats to life-safety should overrule consideration of damage to ships/boats/docks.

2.4 Need to direct people away from the zone safely via designated routes and methods. (Implement evacuation plan. Pre-identify/designate/sign optimum evacuation routes.) . If evacuation time is short, evacuation on foot instead of by vehicle may be recommended, especially in areas of limited egress, such as the ports.

2.5 Identify refuge/staging areas with the capacity to shelter the evacuated population.

2.6 Need to secure road entry/exit points. (Need to alert key first responders at the local level, if warranted by situation. Need to assist with first responders deployed to evacuation sites.) Need to keep those who want to "watch" away from shore.

2.7 Given the widespread impact of the tsunami along the coast, collaboration and coordination will be required to secure a vast evacuation perimeter up and down Los Angeles County and the State.

2.8 Is there an adequate number of first responder staff, informed of proper protocol for this type of scenario, and available for rapid deployment? Just-in-time training for out of region mutual aid may be required.

2.9 Need to stage/move emergency equipment outside of inundation area. Need to establish ingress/egress routes for emergency vehicles and evacuation buses and establish evacuation routes.

2.10 All first responders must be out of danger zones at least 30 minutes prior to first wave arrival. (at 5:05 p.m.) They must remain out until all-clear for first responders is issued.

2.11 Determine and request need for mutual aid/outside resources to initiate evacuation, secure evacuation area, and prepare for response.

2.12 Need to coordinate with media (to ensure they have accurate local information on which locations and people require evacuation and information to both zone-inhabitants and public regarding need to stay away for prolonged period). In addition, areas to be evacuated will be based on pre-identified evacuation plans, maps, and (or) maximum mapped inundation zone. However, the tsunami may not inundate all mapped areas. This will be an ongoing education and public information issue as the event progresses.

Highlighted Emergency Management Challenges during Period 2

Once the Warning is provided by WCATWC, local jurisdictions must approve evacuation orders. Evacuations are not ordered lightly, and in the City of Los Angeles, for example, the order must be agreed upon by the Police Chief, Fire Chief, Director of Emergency Services, and Mayor. This can further truncate the window between evacuation initiation and first wave arrival. The evacuation time window may be desperately short, depending on the size and character of areas within the inundation zone to be evacuated within the short 3.5-hour window

remaining. Emergency managers must consider the estimated time needed to thoroughly evacuate an area, including limited egress areas (islands/peninsulas); populations more difficult to reach (for example, people with language barriers or people in group housing, at public venues, and beach and coastal visitors); those that may require extended evacuation time (in areas at a far distance to high ground); those requiring additional time to evacuate (such as schools, care facilities, hospitals); and those with special evacuation limitations (such as jails/prisons). They must consider accommodation of special populations (elderly, those with access and /functional needs). There may be a recommendation to identify structures that can be used for vertical evacuation structures for areas that cannot be adequately evacuated within the remaining timeframe allotted (for example, concrete and steel frame structures, three stories or higher). Note that vertical evacuation is a last resort and moving to higher ground if readily available is always a safer option.

The Map Gap

There is a significant issue illustrated by the SAFRR tsunami scenario. There will be areas evacuated on the basis of the scenario that will not ultimately be inundated by the tsunami. However, during an actual event, this information would not be available to emergency managers as the tsunami event unfolds (knowing this in advance is a scenario "artificiality"). In other words, you won't know what areas will actually be inundated by water until the tsunami happens. Therefore, you must evacuate based on previous projections. In this case, given the short time allowed, and availability of worst-case inundation line maps from the State of California, recommendations will be made for full evacuation of this entire zone. Inundation zone mapping information currently available to emergency managers uses a "maximum inundation zone" that will not be reached during every Warning level tsunami event, yet is the best (and only) available information in advance of a tsunami (see figs. 6 and 7).

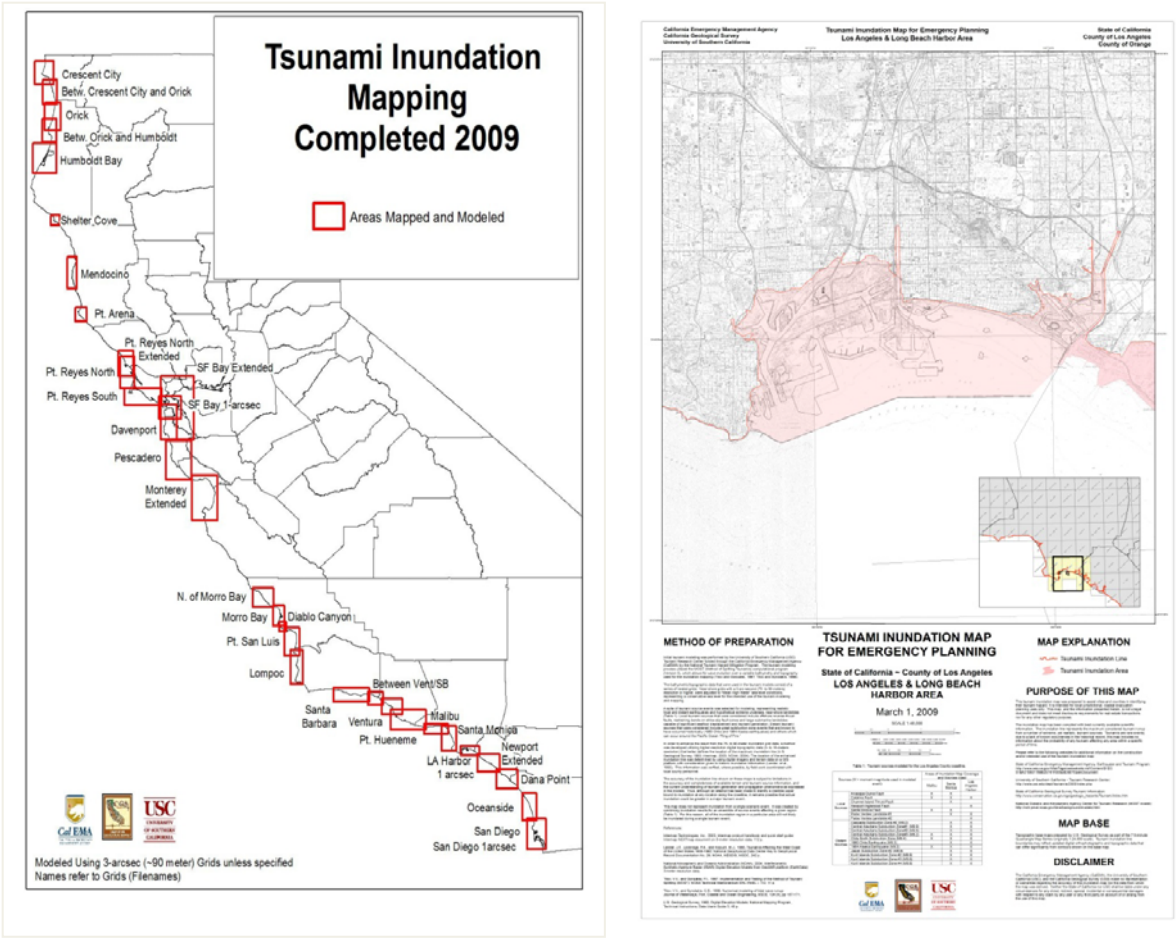

Figure 6. Tsunami inundation maps for emergency planning: Los Angeles and Long Beach Harbor area.

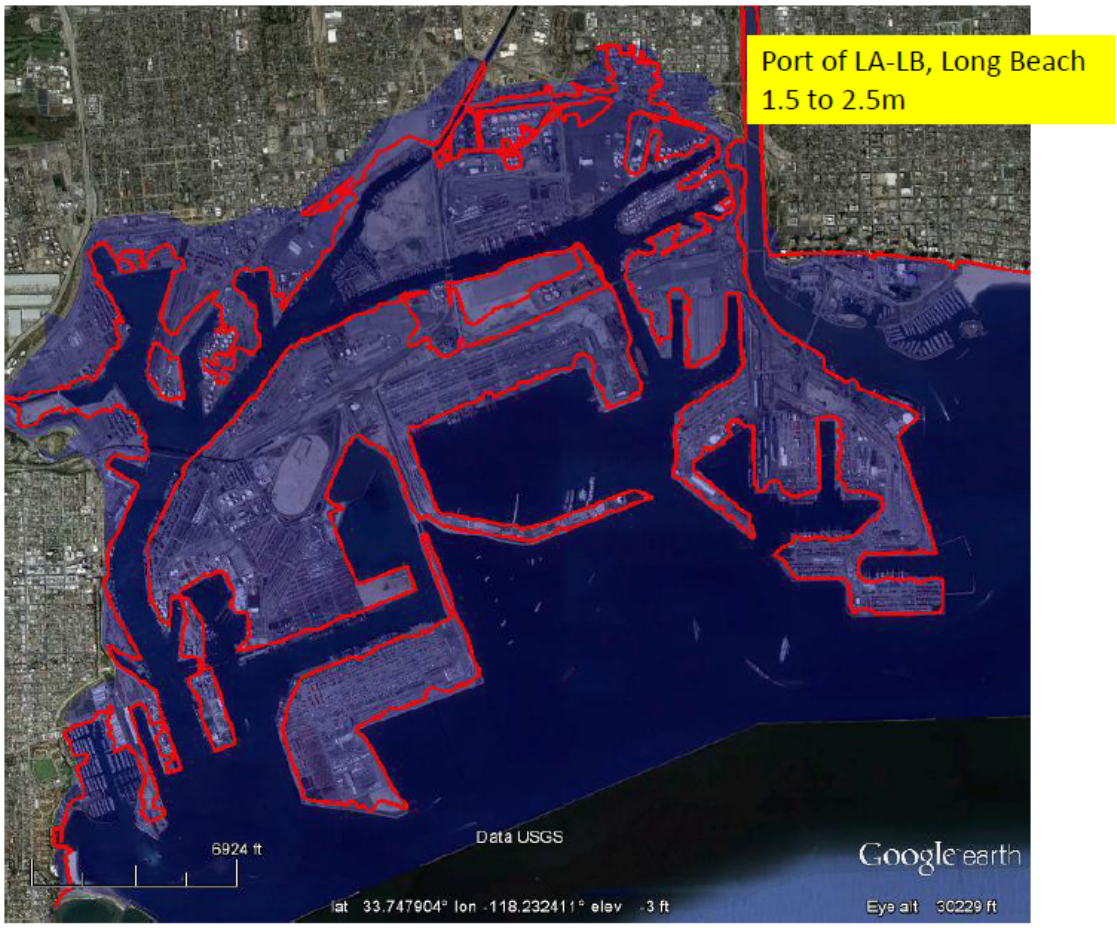

Figure 7. Map of Los Angeles and Long Beach Harbor area showing expected SAFRR Scenario Inundation Line compared to State Maximum Inundation Line. Note: This information WOULD NOT be available during any ongoing real tsunami. Red line is the inundation line for this Alaska tsunami scenario. Blue area is the maximum inundation from State maps used for pre-planning emergency response.

Decision Making as Information Unfolds

NOAA's WCATWC provides three key pieces of information that are central to providing emergency managers with the data they need in order to make crucial and immediate Warning response decisions. The first of these is initial wave arrival times at various locations along the coast. The second element of information is NOAA's forecast wave heights (amplitudes) at various locations. Arrival times and amplitudes are provided for as many as 30 locations with existing tide gauges along the coastline of California. These are updated as the tsunami progresses, and as the scope of the threat is revealed, State and local emergency managers can begin to ask more detailed questions to gain a clear picture of what may be expected regarding specific coastal areas of heightened concern. This is important information that ongoing conference calls with the WCATWC, the State, coastal counties, and coastal cities

and communities provide a critical opportunity to discuss and clarify as an event unfolds. The third type of information is the normal tide conditions across the expected wave-arrival period. This piece of the picture is key because the difference in wave height if the highest wave surges are coming in at high tide or low tide can mean the difference between dry-land inundation and no inundation.

Seaward Evacuation Guidance Specifics

There are several issues regarding tsunami response of specific concern to the maritime community, defined as ports, harbors, marinas, and the vessels and people who make use of them. There is little time following a Tsunami Warning to make informed decisions regarding seaward evacuation of vessels, nor to determine who is appropriate (vessels, people) to send to the open ocean (considering prevailing weather, oceangoing capabilities, length of time to remain evacuated, fuel, food, speed of the vessel, and distance to alternative ports). The California Tsunami Program, comprising Cal OES and the California Geological Survey, in coordination with county emergency managers and port/harbor authorities, has highlighted these concerns, observed recent events, undertaken a work plan to make recommendations for mitigating tsunami risk to ports, harbors, and marinas, and actively solicited input, feedback and participation of those affected communities. The State of California Tsunami Program has research underway to inform and provide consistent statewide policy, including the following overarching recommendations:

- a single depth contour for offshore evacuations,
- hazard thresholds defined and addressed for harbor facilities,
- hazard thresholds defined and addressed for vessels and best practices for ship (re)positioning, and
- protocol recommendations of minimum times required for evacuate vs. do not evacuate (depending on type of vessel).

SPECIAL NOTE: The Alamitos Breakpoint

The SAFRR tsunami scenario, using modeled data and simulated bulletins, was able to bring to light a previously unrealized potential issue with regard to existing NOAA Breakpoints and a possible need for a change of protocol of how Alert delivery classifies specific coastal areas of Southern California during tsunamis. This issue was important for state officials to be aware of and discuss with county officials and was discussed with NOAA officials at the WCATWC. The results were (1) the scenario bulletins were changed to more accurately reflect what would be issued by existing protocol/practice during an actual event and (2) the option of moving the Alamitos Breakpoint further south was discussed.

Note: Warning, Watch and Advisory extents are set based on distance from epicenter, tsunami travel time, or pre-computed threat estimates, and are listed in the messages as extending from X to Y (along a coastline).

Issue #1 (Affects how bulletins were developed for this scenario):

As the SAFRR scenario originally stood, areas from Alamitos Bay to the Mexico border started in an Advisory (non-evacuation situation) and were upgraded to a Warning level (evacuation situation) an hour-and-a-half after the first wave arrived. This encompassed the coastlines of Orange and San Diego Counties. Initially the bulletins developed for this scenario

placed areas south of Alamitos Bay in an Advisory while those to the north were placed in a Warning (as of 2pm, Bulletin #4, fig. 8). At 7pm (as of Bulletin #9), areas to the south of Alamitos Bay transitioned from an Advisory to Warning. This was subsequent to the "start of tsunami" for this entire southern California section of coastline.

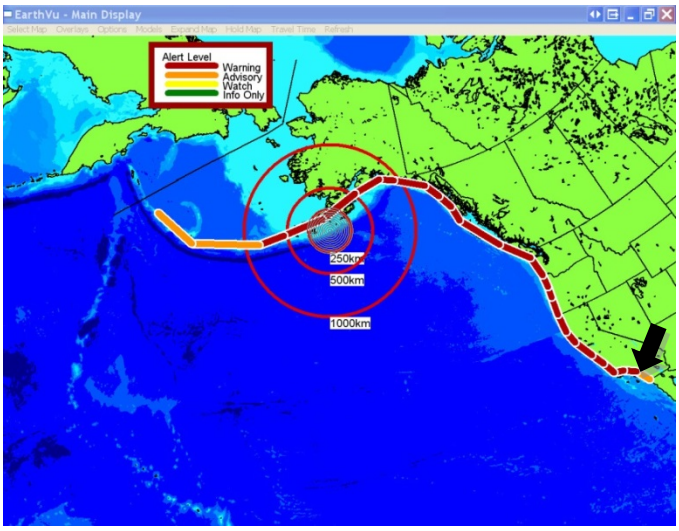

Figure 8. Annotated map of northeast Pacific Ocean and adjacent lands constituting previous SAFRR Scenario Bulletin #4 Alert Status of West Coast: Warning/Avisory. Courtesy WCATWC.

Under this scenario, areas where inundation would likely occur (Huntington Beach, Newport Beach, Dana Point, and Coronado) would not have been officially evacuated before the tsunami arrived because they were in an Advisory. If this had been the case, government decision makers in the areas in and around Orange and San Diego counties would have been in a dangerous and difficult situation because they would not have called evacuations during an Advisory but by the time they were upgraded to a Warning... inundation would likely have been occurring and no one would have been officially evacuated. With upgrade to a Warning, this would have turned from an evacuation issue into a life-safety issue for the newly alerted areas.

This issue was identified by the State of California (California Geological Survey and California Emergency Management Agency) and discussed with the WCATWC. It was noted that bulletins developed for the scenario were based on a variety of modeled data with different variations of the same source and released somewhat differently than would be done during an actual event. The Bulletins developed by the WCATWC for SAFRR relied strictly on this modeled data and followed protocol within the WCATWC guidelines, without applying three important inputs that would occur during an actual event before bulletins are released widely to the public:

1. Consultation among the scientific team in the WCATWC,
2. Real data coming from DART Buoys, and
3. West Coast conference calls with state/province emergency managers and Warning Coordination Meteorologists with the National Weather Service, regional Weather Forecast Offices.

The above inputs and discussion would help confirm and guide decisions before bulletins were released during an actual tsunami event.

As a result, Bulletin #4 through Bulletin #9 were adjusted, as they would be during a real event, to place the coastline south of Alamitos Bay to the Mexican Border into a Warning – thus reflecting the same threat level for the similar coastal settings to the north and south of this breakpoint (fig. 9).

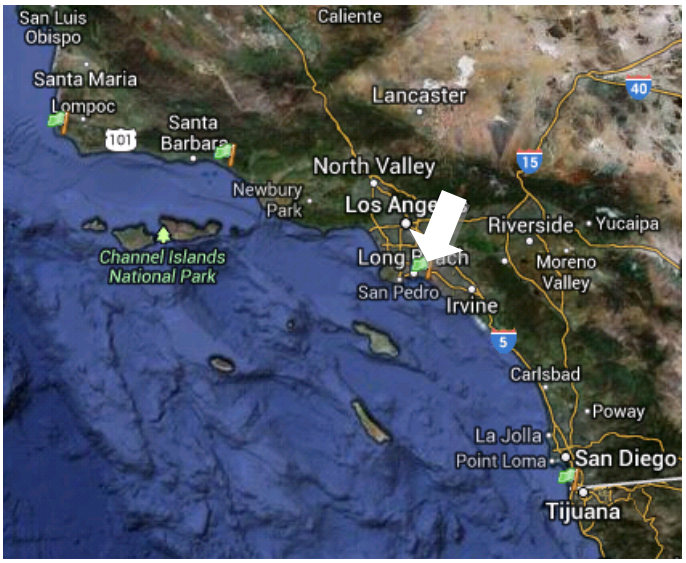

Figure 9. Google image map of Southern California coastline showing Alamitos Breakpoint location.

Issue #2 (Should the Breakpoint be moved from the Alamitos Bay to the Orange County-San Diego County line?)

The SAFRR scenario has raised a potentially important long-term issue: Should a break point exist with potentially differing levels of alert (for example, Warning/Advisory) between very similar flat, low-lying, densely populated geographies of southern Los Angeles and northern Orange counties? This includes low-lying, highly populated areas like Long Beach (Belmont Shore, Naples Island), Seal Beach, Huntington Beach, and Newport Beach (Islands in Newport Bay and the Balboa Peninsula).

This issue was also discussed, and protocol may be changed based on this discussion and continued follow up with the Weather Forecast Offices in San Diego and Oxnard. This could result in a permanent adjustment, but retain the existence of a breakpoint between the Ports of Los Angeles/Long Beach and San Diego, possibly at the Orange and San Diego county border.

Period 3: During the Event

During Period 3 the first tsunami waves begin to progressively hit the coast of California from north to south. Areas within mapped tsunami inundation zones will be dangerous during this time. Impacts are observed via remote means by the media and emergency managers; post-event reconnaissance is planned/staged.

General Description of Period 3 (Bulletins 8–25: Thursday March 27th 6:01 p.m. through Friday March 28th 12:02 p.m.; 7–24 hours after earthquake)

Regularly scheduled conference calls exchanging updated information flow among all affected jurisdictions, continuing at multiple levels: WCATWC-to-States/WFOs, State-to-Counties, and County-to-Cities/Cities-Port/Marina Authorities and maritime communities. Assessment and reporting of local jurisdiction actions may include evacuations conducted, shelters opened, and remote intelligence gathering of evacuation shortfalls and damage or casualties sustained. Tactics for impact assessment, rescue, and response are refined as observed impacts are reported remotely. Mutual aid needs are projected by impacted jurisdictions. County and State level support activities continue and may include coordination of the mutual aid requests, coordination of public information messaging, assessment and provision of State assistance needed, and coordination of resources through mission tasking.

Scenario-Informed Situation, Emergency Management Activities, Key Considerations and Challenges

At 5 hours and 45 minutes after the earthquake the first tsunami surges begin to arrive at the Ports of Los Angeles and Long Beach. The time is 5:35 p.m., and it is 40 minutes before sundown. High tide will continue to build for another 2.5 hours following estimated first surge arrivals, peaking at around 8:00 p.m. As demonstrated by recent tsunamis around the world, this is a time when the highest waves and most extreme currents can occur; the first surge is almost never the worst. Thus, worsening tsunami surges are hitting the outer coast and funneling into the ports atop increasing tidal conditions.

In the harbor, successive tsunami surges may be increasing in height. Although the greatest inundation danger may be at high tide, extreme fluctuations, both positive waves that inundate normally dry land and negative waves that expose the sea floor and threaten large vessels in port, will extend for many hours.

As the event progresses through the Warning period, areas experience flooding inundation approaching the maximum state-mapped inundation zone. These include the City of Long Beach downtown area, below the bluff. Some areas in the Port of Long Beach will also be inundated. However, much of POLB and POLA will experience substantially smaller amounts of inundation than the maximum mapped inundation zone (see “The Map Gap” section above and fig. 7).

- Hourly calls with the WCATWC continue to collect and provide the latest available technical support information. In addition to estimated wave height information, observations from deep ocean assessment buoys and tide gauge readings from around the Pacific Ocean already experiencing the tsunami are being reported. Information about current and projected status of subsequent alert bulletins is provided: whether or when Warning level is expected to be downgraded, expected length of time before downgrade (if available), which areas of coastline remain in which alert level, and answers to any pertinent questions from locally affected communities.
- Statewide calls continue every other hour alternating with WCATWC multistate conference calls to relay technical updates and maintain updated situation status of affected communities as the event unfolds up and down the coast. Evaluations of evacuation status, assessment of

local resource needs from the State, reporting of local damage sustained, and State personnel deployment are also provided to the Regional Emergency Operations Center (REOC) and State Operations Center (SOC) by counties . Primary information flow is from affected coastal areas to the REOCs to the SOC and eventually to the Governor's office.

- The scenario tsunami will impact all 20 coastal counties in California. At this time the State's Emergency Operations Centers (SOC and REOCs) are fully staffed and working to support impacted counties by working with unaffected counties and state resources to coordinate and support local needs/requests for assistance. The SOC and REOCs house a variety of organizational representatives, which may include expert staff from FEMA, the U.S. Coast Guard, California Geological Survey, California State Parks, CalTrans, Regional Transportation Authorities (MTC, LA Metro, BART), Department of Water Resources, National Weather Service, American Red Cross, Utilities (PG&E, SCE, SDG&E), American Red Cross, and private sector business continuity groups.
- At the local EOCs, critical, ongoing actions include assessing the success of evacuation and planning for post-Warning reentry into the evacuation zone and rescue, as well as perimeter security for the evacuation areas. Implementation of these actions may be assisted by personnel from adjacent, unaffected jurisdictions or facilitated through use of State resources.
- During the period while the tsunami is in progress with damaging waves, currents, and inundation, a challenge for authorities will be to ensure public safety by maintaining security of an extensive perimeter. Access will only be provided once an "all clear" has been declared by local civil authorities. The evacuation in Los Angeles County will span not only the Ports, but residential, business, beach, and commercial areas. Beyond the damage to Los Angeles County, the tsunami will impact the entire California coast, requiring a secure perimeter on the coastline of most of California's 20 coastal counties. Police/responder personnel requests to staff perimeters and assist with other response activities could stress even Mutual Aid resources from inland counties. POLA and POLB have their own police and fire resources, but may also request personnel resources from their cities, and the County of Los Angeles may need to request State augmentation of first responder personnel (for example, California Highway Patrol, California National Guard). This function will need to be turned over to private security providers in each county as soon as feasible, because law mutual aid (police; sheriff) and the California National Guard are not sustainable long-term solutions.
- Reception centers, feeding operations, and sheltering for evacuated residents will be operational, including care for people and animals and those with access and functional needs. This will be a function of the American Red Cross, California National Guard, NGOs and faith-based organizations
- The harbor district may experience power outages due to localized tsunami flooding, as well as intentional shutdown to preserve facility operational integrity.
- In the Los Angeles County coordination of public information will take place at the county level, with the Sheriff's Department responsible for media coordination, including preparation of daily County Emergency Operation Center press briefings, assisting in the preparation of press announcements for key elected officials, and responding to inquiries from the media in conjunction with appropriate departmental subject-matter experts. The Sheriff will make every attempt to coordinate emergency public information releases with impacted jurisdictions and agencies in order to ensure consistency. All press briefings and media releases will follow the policies and procedures outlined in the Los Angeles County Emergency Public Information Plan.

Key Considerations during Period 3

3.1 Continue communication with State and Federal tsunami forecast experts and field observation teams.
3.2 Assess effectiveness of evacuation efforts to prepare for initial search and rescue operations upon all-clear. Consider alternatives for safe evacuation of stranded populations (such as aerial).
3.3 Receive evacuees at refuge/staging areas with the capacity to shelter the evacuated population.
3.4 Continued need for securing evacuation zone and keeping people away from shore who want to go down and watch.
3.5 Continued need to stage emergency equipment outside of inundation area. Need to establish ingress/egress routes for emergency vehicles and evacuation buses and establish evacuation routes.
3.6 Continued need to coordinate with media (rumor control, continued correct information regarding evacuation zone and need to stay away for prolonged period). For consistency in messaging, information will be coordinated across emergency public affairs offices at the county level regarding evacuation areas and at the NOAA/State level for questions about additional forecast information.
3.7 Consider and plan for the length of the event through multiple 12-hour staffing periods, which may fatigue emergency decision-making and response personnel. Dangerous tsunami activity, especially in maritime communities, may last for days. Make sure there are adequate personnel available for sustained operations of local, county, regional and State emergency operations functions.

Highlighted Emergency Management Challenges during Period 3

Incomplete Land Evacuations

The Cities of Los Angeles and Long Beach will use standing evacuation plans based on the maximum mapped inundation line to determine areas to be evacuated. In spite of redundant communication methods, there are likely to be those who do not hear the order, those who decide not to leave, and those who may not have time to evacuate during the 3.5-hour evacuation window prior to first wave arrival. Examples within the latter group could include vulnerable groups such as those in dependent care or with mobility or functional and access needs. For their own safety, it is important that first responders themselves avoid re-entering dangerous areas until cleared to do so.

Keeping People From Returning to Evacuated Areas Prematurely

Tsunami waves are expected to continue to arrive on land, and evacuation orders will stay in force, for some 47 hours. Local authorities will have used the best available information—maximum mapped inundation zones—to establish and maintain evacuation perimeters. As the tsunami event period continues, there will be areas where observed inundation does not reach all areas evacuated. This is likely to create pressure from residents to lift evacuation orders – perhaps prematurely.

Maintaining security around the Ports of Los Angeles and Long Beach could be one of the most challenging undertaken in the region because of the scope and geographic complexity of the area.

The expense and regional economic impact of interrupted commercial activities within the ports creates strong port-tenant need to lift evacuation orders as soon as possible. There will be pressure to reopen the on-land portions of the port—or even to keep it open throughout to allow movement of goods and commerce already in the port and arriving from inland.

In addition to these pressures, continued maintenance of safety perimeters across the 47-hour life of the tsunami Warning will include the problem of those who want to "go see" or "surf" the tsunami. All of these issues with the public wanting and in some cases demanding to return to potentially unsafe areas will need to be met with education, both in advance of a tsunami and during the event. Elected officials and emergency responders must understand the nature of the ongoing threat. The media will be another powerful partner, and to ensure coverage of the appropriate safety message, emergency managers should be prepared to provide continued availability of educated spokespersons.

Incomplete Water Evacuation

Using preestablished priorities and judgment about timing and relative dangers within the ports waterways, the U.S. Coast Guard Captain of the Port will have evacuated commercial vessels prior to first wave arrival. Within the Port, remaining vessels will be secured, in many cases with their crews aboard.

In previous Advisory-level tsunamis in California there have been examples of smaller vessels that have become caught in strong tsunami currents as they make a late attempt to leave harbor. No two tsunamis are alike, and currents and surges during this scenario event would be on the order of three times as bad as recent actual events. However people may base decisions on their own experience in POLA and POLB with recent tsunamis from Chile and Japan. Mariners who refuse to heed the Warning and attempt to leave or enter the harbor during the extreme currents of tsunami surges will likely require rescue. Should these situations arise, decisions will need to be made about whether to attempt rescue and risk lives of response personnel. During the recent Japanese tsunami in 2011, harbor personnel in Santa Barbara were injured assisting mariners attempting to dock during ongoing tsunami surges. Numerous vessels had difficulty entering and leaving harbor entrances in the midst of tsunami surges.

The "short fuse" nature of this event may exacerbate the above situations because of the short time window to make decisions, prepare, and leave should a mariner decide to do so. Problems have occurred with late entering/exiting vessels at the seaward entrances to harbors during recent tsunamis. Given less time to try to make it out within the reduced Warning period, less informed citizens may make the wrong decision and ultimately not make it out in time. In the 2011 event, a vessel in Crescent City, the Amanda B nearly foundered trying to make it out while tsunami surges were beginning to occur. There appears to be significant potential for dangerous behavior by boat owners in POLA and POLB. Boat owners expecting to trailer their boats should expect congested boat ramps and must remember that they have to get their boat to the trailer, out of the water, and out of the tsunami zone before the tsunami arrives.

Period 4: Warning Cancelled for Specific Areas

General Description of Period 4 (Bulletins 26–33: Friday March 28th 12:02 p.m. through Friday March 28th 8:02 p.m.; 24–32 hours after earthquake)

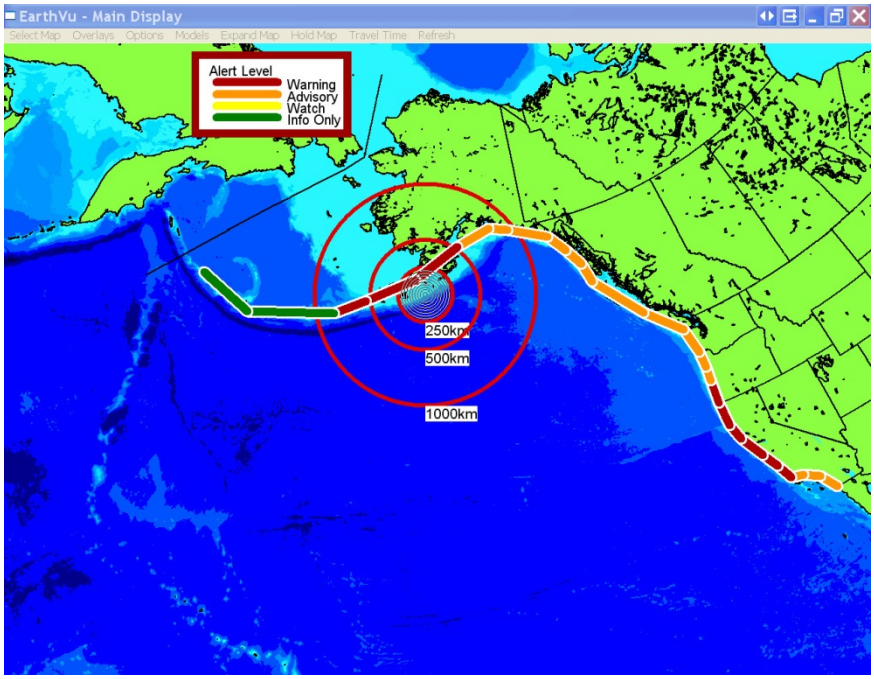

Figure 10. Annotated map of northeast Pacific Ocean and adjacent lands constituting Bulletin #31 Alert Status of West Coast (Warning/Advisory). Courtesy WCATWC.

Where a Warning was in effect and then cancelled (compare fig. 9 to fig. 10), local authorities may begin safety assessment of impacted land-based areas to determine a schedule for lifting of evacuation orders, allowing re-entry into inundated and nonimpacted evacuation areas. Initial "Windshield Surveys" assess life-safety and damage in preparation for search and rescue operations and other response efforts. Closure of or limited access to harbors, marinas, and beaches remain in place. Access to evacuation areas remain limited to response personnel until deemed safe for the public to return; shelters remain open.

Scenario-Informed Situation, Emergency Management Activities, Key Considerations and Challenges

At 32 hours after the earthquake, the Warning ends for California. This indicates that the danger of continuing dry-land inundation from incoming surges has passed. The alert is downgraded by the WCATWC to Advisory status, which is conveyed via alert Bulletin 34. Advisory status indicates continued strong, dangerous currents in the ports. It is still not safe to

go in or near the water, nor to allow vessels to enter and leave the port. The U.S. Coast Guard will maintain closure of all dangerous waters until at least the Advisory level threat is lifted.

- At this time, the WCATWC is unable to determine when danger has passed in many areas. Local conditions, particularly strong currents in channels and harbors, can cause wide variations in tsunami wave action. Consequently, local emergency management officials, and not the WCATWC, will make all-clear determinations.
- The WCATWC will issue a cancellation in either of the following situations: (1) an evaluation of sea level data has confirmed that a destructive tsunami will not impact the affected area; or (2) following a destructive tsunami when data indicate that the threat has largely subsided to nondestructive levels. Following a destructive tsunami, the WCATWC provides guidance to local officials regarding when they can consider the threat to have passed based on local conditions.
- In general, after receipt of a Tsunami Warning, agencies can assume all-clear status when their area is free from damaging waves for two hours, unless the WCATWC has announced expected times of arrival (ETAs) for additional waves or local conditions warrant continuation of the Tsunami Warning status. This requires that the local government, or scientific staff from the California Geological Survey, are able to observe the waves from a safe distance and height.
- Hence, if no wave or only insignificant waves occur, local agencies may assume "all clear" status two hours after the latest ETA announced by WCATWC, unless the presence of strong currents in channels and harbors has been noted, which may warrant continuation of the Tsunami Warning. The public should not return to low-lying areas until the tsunami threat has passed and local authorities announce "all clear."
- At 12 hours (approximately 23:00) "B-Shift" staff comes on duty for Tsunami Duty Officer, State Operations Center, and Regional Emergency Operations Center. A briefing is held to transfer information about critical issues and activities occurring during the previous 12 hours and convey objectives, priorities, and a strategic course of action established by the management team for the incoming staff.
- Hourly West Coast calls between WCATWC and State Warning Points and Cal OES statewide conference calls with coastal counties and State agencies continue as long as the Advisory is in place. Statewide calls continue to focus on updated status of continuing dangerous conditions (strong, damaging, dangerous currents within the port and ocean waters), information about current and projected status of subsequent alert bulletins, whether observations indicate when Advisory level is expected to be downgraded, expected length of time before downgrade (if available), which areas of coastline remain in which alert level, and answers to any pertinent questions from locally affected communities.
- It is important for the emergency management community to understand that tsunamis, including this one, are long-duration events, in which unpredictable, dangerous conditions exist for many hours. This requires development and planning for multiple staffing periods at the outset of the event. If local and county jurisdictions do not have enough staff to maintain this capacity, there may be a need to call on assistance from other, unaffected jurisdictions.
- As the Advisory continues, staffing at City, County, and State EOCs will rotate back to A-Shift" at 11:00 on March 28, then back to "B-Shift" at 23:00 for another 12-hour work period.

Key Considerations during Period 4

4.1 Maintain appropriate and consistent tsunami evacuation and response planning. Due to the length of the event, there may be pressure to allow people and businesses to "return to normal." Consider all life safety issues and protocols before allowing return to normalcy.
4.2 Maintain emergency response and evacuation protocol in and along the waterfront areas. Strong tsunami currents will likely continue during this time period.
4.3 Localized initial safety assessment for search and rescue, emergency medical attention, and to determine continuing hazards (debris fields, fires, fuel leaks, hazardous material spills, damaged, unsafe structures).
4.4 Localized determination and implementation of strategy for reopening of evacuated and inundated areas, including phased or facilitated reentry where damage or continuing hazards exists.
4.5 Localized assessment of ongoing need to provide services to those displaced by home damage/destruction.
4.6 Begin response operations, including rescue, stabilization of ongoing hazard conditions, debris removal for emergency egress.
4.7 Assess need for equipment and response personnel staging areas near, but outside, damaged and affected areas.
4.8 Begin county and statewide assessment of overall unmet needs and requirements for outside resources through mutual aid, State resources and request for Federal assistance.
4.9 Continued need to coordinate with media (rumor control, continued correct information regarding Advisory and continued maritime danger, status of evacuation order).

Highlighted Emergency Management Challenges during Period 4

The Pressure is on (to Open the Ports)

During Periods 4 and 5 the port remains closed based on scientific advice and tide gauge readings by the NOAA WCATWC, conveyed by Cal OES to county emergency managers. The California Geological Survey will also have observers stationed near the coast to provide scientific observations and advice relevant to emergency management and locally important decisions. Hard data and observed information, supported by qualified, trusted expertise will become increasingly important the longer the event lasts and the longer the port remains closed, as pressure to reopen will be coming from a variety of different sources. There may be pressure from the ports themselves, because lengthy disruption will be costly to port tenants and customers. The stature of the San Pedro Port Complex is well recognized due to the large volume of commerce that flows through it and its importance to the local, regional, State and national economies. There will also be political pressure at all levels, as well as media scrutiny of emergency operations. The decisions being made and actions taken to protect lives and property could be questioned. The jurisdictions and agencies responding may be well advised to proclaim local, county, and State emergencies through their political leaders (Boards of Supervisors, Governor) to support decisions and allow needed emergency operations to continue undeterred by outside influences. A coordinated plan for reopening and provision of public information about how this will be implemented may be a good strategy for alleviating public concern.

Wild Card: Fire Following Tsunami

Overall, infrastructure impact on the ports is not catastrophic, based on the Moffat and Nichols section of Porter and others (2013). However, Charles Scawthorn's contribution (in Porter and others, 2013) includes concern about potential "fire following" if flooding damaged petrochemical tank farms within the ports. Considering the history of similar ports in the past 50 years and the quantity of petrochemicals stored at these ports, one or more fires would likely result. For example, if a tank were to rupture and a fire were to ignite on Mormon Island in the Port of Los Angeles, a 5-square-kilometer fire could cause the loss of product, tanks, control systems, and other assets at 7 berths housing 28 million barrels of stored petroleum products in 48 tanks, plus 350,000 tons of industrial chemicals. This would present significant problems in terms of fire agency resources, air deployment, access to potentially flooded areas, and management of a tsunami-threat-compounded conflagration. Porter and others (2013) also highlights the possibility that many minor to small individual incidents will arise as a result of this event. The combined effect of managing response and communication and coordinating response to all of these possible fires at the same time will tax the resources and capabilities of any singly affected jurisdiction or responding agency. The importance of staff support for full and rapid implementation of the emergency management system at all levels will become increasingly paramount.

Media Control—Information Flow

A lesson learned during the 2011 Tohoku tsunami for California is that once the broad scope of the tsunami event becomes clear, the State will open a Joint Information Center (JIC) along with coordinating agencies, to facilitate information exchange with the media. As the JIC very often becomes the "face" of an incident, it would allow press releases to be made available as well as be a coordinated location for broadcast media outlets to interview incident public-information-office staff and receive important information. Given the unprecedented scope of this event—that is, in placing the entire coast in a Warning—coordinating common and consistent messaging information across agencies through the JIC is warranted and advantageous. The importance of accurate public safety messaging underscores the need for high-level media coordination and timely briefing of emergency operations and strategic planning to restore normalcy to the ports and harbor community.

Period 5: Evacuation ALL CLEAR as Determined by Each Coastal Jurisdiction

General Description of Period 5 (Bulletins 34–49: Friday March 28th 8:02 p.m. through Saturday March 29th 12:00 p.m.; 32–48 hours after earthquake)

Once local authorities in affected areas have assessed safety issues to the extent they are able to begin search and rescue operations and other response efforts, they may reopen areas to the public. Authority is seated at each coastal jurisdiction. Reopening areas may include phased or facilitated reentry where damage or continuing hazards exists (debris fields, fires, fuel leaks,

hazardous material spills, damaged or unsafe structures). Shelters remain open. However, shelter populations begin to drop as those evacuated from areas that were not inundated return home. While the threat of dry-land inundation has ended, waterways, ports, piers, and beaches remain closed due to dangerous currents affecting areas in and near the water, with people recommended to stay away from the shoreline.

Scenario-Informed Situation, Emergency Management Activities, Key Considerations and Challenges

- Evacuated areas must remain closed to the public until after the threat of a tsunami no longer exists and local authorities announce an "all clear." Local authorities can reopen risk areas 2 hours after the last observed wave, or 2 hours after the estimated time of arrival has passed without a wave coming ashore. The risk-area incident commander, in consultation with the County EOC, will make the decision to allow reentry following short-term evacuations. For long-term evacuations, local authorities, in conjunction with health and safety agencies, make the decisions for reentry. Reentry criteria, for both short-term and long-term evacuations, will account for public needs, and for public and response personnel safety. Residents should enter through control points to ensure that safety and sanitary precautions are provided.
- Local authorities will control reentry via media releases, evacuation/staging area coordination, and modification of closure levels at Traffic Control Points. Coordination between the County EOC, local EOCs, and all primary and support agencies involved is critical in controlling reentry.
- Emergency response actions continue at the local level depending on circumstances, whether damage has occurred and life safety or rescue situations exist. Upon all-clear, emergency personnel can now get back into the hazard area and begin rescue and evacuation of any injured.
- Damage is expected to be modest in the Ports of Los Angeles and Long Beach, especially if liquid bulk vessels have been successfully evacuated from the port during the Warning period. Overall, it is expected that the ports' land commerce will return to service within a day or two following the tsunami, with the exception of a few terminals where flooding is expected to damage operations buildings and some warehouses. Maritime transportation could take longer, since no assessment of underwater damage will begin until the Advisory is lifted.
- At the State level, monitoring and reporting activities continue, including providing or closing out missions and continuing to assist local officials with collection of damage information needed for a Preliminary Damage Assessment document necessary to request State and Federal assistance. Public information and media relations at the State level continue to be coordinated via Cal OES Headquarters Public Information Office, with possible establishment of a Joint Information Center(s) near affected areas.
- Calls with WCATWC continue, with focus on expected duration of the Advisory and whether continued localized areas of heightened concern exist or will remain in place following cancellation of the Advisory. Statewide Cal OES calls with coastal counties continue, focusing on status of evacuations, status of EOC activations, preliminary damage assessments, and beginning to address recovery issues, including whether local proclamations will be sought.

Key Considerations during Period 5

5.1 Maintain emergency response and evacuation protocol in and along waterfront areas. Strong tsunami currents will likely continue during this time period.
5.2 Rescue/evacuation of those in damaged areas/facilities that were not evacuated before the event.
5.3 Managing response and egress in areas of damage or where continuing hazards exist (debris fields, fires, fuel leaks, hazardous material spills, damaged, unsafe structures, egress issues).
5.4 Facilitating orderly reentry while continuing response operations.
5.5 Addressing needs of those with long-term displacement due to damage. Assess need for field offices and phone numbers for affected populations.
5.6 Continued need to coordinate with media (rumor control, continued correct information regarding Advisory and continued maritime danger, varied status/limitations of local "all clear" orders).

Highlighted Emergency Management Challenges during Period 5

Not so Fast! (Making the "All Clear" Call)

Affected areas must be thoroughly inspected for safety issues before providing the "all clear" allowing residents and employees back in. The "all clear," like evacuation, is under the authority of the most local, incorporated jurisdiction. Assessments of the impacted area, following significant flooding, must be conducted before permitting public reentry. These assessments include the extent of damage to public infrastructure on land and over water, as well as safety of roads, bridges, buildings, machinery, and other facilities. The presence of public health risks in water, broken sewer lines, downed utility lines, animal or human remains, must be determined and addressed, and the presence of hazardous materials or other risks must be ascertained.

Phased Reentry

Specific procedures for limited reentry, following a damaging tsunami, can be established based on the situation. If the tsunami causes significant flooding and damage, the area may be hazardous and the potential for looting of damaged homes and businesses exists. Public reentry will need to be limited to residents and business owners and may be limited in duration. A valid driver's license or other form of government-issued identification (copy of a business license for a business owner), indicating residency inside the restricted area, will be required for entry. Re-establishment of electricity may be a consideration but will not necessarily preclude reentry.

Wild Card: Blockage in a Major Port Channel

Although deep, wide main channels in POLA and POLB are not projected to require long port-wide closure by Moffat and Nichol (in Porter and others, 2013), it is notable that a single large ship attempting to move in the ports during the tsunami could complicate recovery if it were to lose control. While the port is officially closed, priority would be to stop any unauthorized ship that could cause problems from moving. Barring this, an out-of-control vessel would pose a serious challenge for the Coast Guard and other water authorities to the safety of their own personnel. They would need to make an informed decision about whether they could safely stop a large vessel loose in the harbor from causing damage to itself (sinking, causing hazardous spillage) and damaging other port structures and infrastructure. This would involve coordination and assessment of the situation with tug and pilot personnel.

Period 6: Advisory CANCELLATION for Coastal Waterways

General Description of Period 6 (Bulletin 50: Saturday March 29th 12:00 p.m.; 48 hours after earthquake)

Dry-land response operations continue. Additionally, WCATWC cancellation of the Advisory allows port authorities and private marinas to begin assessment of damage to vessels and infrastructure in and near the water. Where vessels have sunk or become beached, fuel spills may have occurred, or other significant hazards to navigation may exist; portions of the ports may remain closed to vessel traffic until appropriate measures can be taken to clear hazards. Debris clearance, contamination clean up, and dredging typically include permitting issues and require assistance from a variety of State and Federal agencies with cooperation by private entities. These activities could take days or even weeks to complete.

Scenario-Informed Situation, Emergency Management Activities, Key Considerations and Challenges

At 48 hours after the earthquake, the Advisory is cancelled. This indicates the end of dangerous wave surges and currents. It is March 29 at about 11:02 a.m., two days after initial notification.

- Under this SAFRR tsunami scenario, in the Ports of Los Angeles and Long Beach, the level of inundation, hardened infrastructure and relatively deep, wide main channels are expected to result in damage that should not require long port-wide closure. The Moffat and Nichol analysis (in Porter and others, 2013) indicates that the ports should not remain completely shut down for more than two days. In many areas of the POLA and POLB, land operations can resume alongside cleanup and repair. Many terminals and docks should be able to quickly resume operations and goods movement.
- Inspection of harbor channels for hazards to navigation in the form of sunken vessels or other debris is finally able to begin, now that the Advisory is lifted. The amount and location of debris will impact reopening of the ports' waterways, and closure may be further extended beyond the two days projected for port operations to resume if significant navigational hazards or hazardous materials spills exist. Sunken and damaged boats may be carried and be deposited as debris from small boat marinas into larger channels by strong tsunami currents. There may also be sediment movement; however, POLA's and POLB's deep, wide shipping lanes mean that debris and sediment may be isolated—although they could limit some traffic, they should not interrupt the bulk of maritime transportation.
- At the local level, response operations continue, including sheltering of displaced populations, land-based debris removal, and restoration of utilities. If a Federal disaster was declared by the President during the event, Cal OES and FEMA recovery personnel will be prepositioned to begin quantifying damage to determine State and Federal recovery program availability; however, these Federal/State/local joint Preliminary Damage Assessments (PDAs) will not begin until local governments address life-safety and property protection issues.

Key Considerations during Period 6

6.1 Continued response issues and coordination of scarce response resources; status of local emergencies, State emergency proclamations, and Federal emergency declarations.
6.2 Full maritime safety assessment to determine in-water infrastructure and debris/dredging issues that will impact port and marina reopening.
6.3 Priority of commercial port reopening and coordination among jurisdictional entities with authorities within ports.
6.4 Continued need to coordinate with media (rumor control, continued status/limitations of "all clear" orders based on severe damage).
6.5 Local, county, State, and Federal coordination of resources for response activities and continued emergency management operations.
6.6 Expediting completion of Preliminary Damage Assessments by State and Federal partners while they continue to address response.

Highlighted Emergency Management Challenges during Period 6

Survey and Salvage in the water

It is important to note that following the ports' expected 2-day closure by the Coast Guard Captain of the Port, based on 48 hours of dangerous waves during the Tsunami Warning and subsequent Advisory, there will be an additional period in which port waters could be closed due to hazards to navigation. This could be an additional period of days or longer (perhaps weeks) to allow for surveying for sunken and floating debris, as well as an unknown time (weeks, months) to coordinate salvage (removal, movement) of wreckage, sunken small boats, or other fragments and remains in portions of the ports. Surveying under water is neither straightforward nor easy, and safe conditions, in terms of both currents and weather, would need to exist before either divers or survey vessels could be allowed in the water.

There could be hazardous material spills, which would require cordoning off areas of the ports. Modeling indicates that debris from the small-boat marinas in the Port of Los Angeles would likely travel into the main channel. In addition, surveys must confirm that no hazards to navigation from sediment transport and other material from the seafloor had been deposited in shipping channels to such a degree that they posed hazards to navigation.

The permitting and removal process has significant, potentially lengthy, regulatory and environmental hurdles to overcome and involves permits, Federal and State agency approvals, followed by logistics and coordination of activities. In Crescent City, following the 2011 Tohoku tsunami, it took 6 months before all permits could be cleared to begin sediment removal in the middle of the harbor, and it was a year before the harbor was cleared, largely because of the complexity of regulations surrounding removal of debris. Major issues surrounded whether the debris contained contaminants and whether the grain size would allow disposal of the sediment further out to sea or would require it to be transported to landfills on land. Financial difficulties were also a factor.

Period 7: Transition: Response to Recovery

General Description of Period 7

During the post-event response period, threats to life-safety and loss of property are assessed, confirmed, or addressed to resolution, including egress and hazardous materials issues. With this resolution begins recovery, including reopening of facilities and repair of damage. Cal OES Recovery Branch personnel and often FEMA representatives are deployed to affected coastal jurisdictions, assisting with preliminary damage assessment. If proclamations of local emergency have not already been initiated, these assessments will accompany local requests for State and Federal assistance. In cases where a State proclamation or Federal declaration is approved, various loan and reimbursement grant programs may be made available. Transition activities may take weeks; recovery activities extend for many months and in some cases, years.

Scenario-Informed Situation, Emergency Management Activities, Key Considerations and Challenges

- Staff from various State and Federal agencies are in the field assisting with cleanup and damage assessment, assisting with local proclamations, and assisting local governments and port authorities with coordination among regulatory agencies. All affected county departments, agencies, and coastal cities are responsible for submitting status and damage assessment reports to the county emergency management agency following an actual tsunami occurrence according to the county's Disaster Information Reporting Procedures. Damage assessment includes damage resulting from both tsunamis and earthquakes, if applicable. The Los Angeles County Office of Emergency Management will use damage assessment information to initiate standard disaster response and recovery procedures outlined in the County Emergency Operations Center Standard Operating Procedures. The county is responsible for submitting preliminary damage assessments to the State.
- Full assessment begins of hazards to navigation, sunken vessels, damage to on-land structures or piers and water-related infrastructure; whether material deposited on the seafloor will require dredging begins to be coordinated. Depending on what has occurred as a result of the tsunami, this could be a lengthy and arduous process.
- Emergency Proclamations will be made by local jurisdictions based on the scale of impact and the internal assessment that the event has exceeded the jurisdiction's capacity to respond. As this "disaster" event unfolds regionally, subsequent proclamations will most assuredly expand to the county and then the state level. Because of the severity and widespread impacts of this tsunami there will be a designation of a number of counties as disaster areas. This is done via Gubernatorial Disaster Proclamation and, beyond that, via a Federal Disaster Declaration by the President. Depending on the severity and clear impacts of the event, such designations may be made while the event is still underway, or they may be done postevent as the extent of damage is quantified. State and Federal disaster designations can trigger funding programs addressing both response and recovery costs.

Key Considerations during Period 7

7.1 Expediting debris clearance and dredging permit issues to expedite port commercial restoration. (Clear coordination among Federal/State regulatory agencies needed to fast-track a streamlined recovery process and lessen local burdens.)
7.2 Recovery planning to assess consequences and coordinate handling of complex incident-specific, complicated issues. Examples:
    7.2.1 State assistance with local preliminary damage assessments.
    7.2.2 State assistance with proper completion of applications for securing local proclamations.
    7.2.3 Federal/State staffing, including divers to assess underwater damage and hazards to navigation.
    7.2.4 Federal/State agency assistance with regulatory and permitting issues related to dredging and debris removal assessment and process.
    7.2.5 Upon need, establish localized incident management offices (for example, Incident Operations Center, Disaster Field Office, Joint Information Center).
7.3 Address long-duration emergency management staffing patterns (EOC/Activation and all operations for multiple days/weeks).
7.4 Continued need to coordinate with media (rumor control, response/recovery progress).
7.5 Expediting and facilitating of recovery/rebuilding effort, including emergency regulations permit waivers.
7.6 Pressure on emergency management will be based on public and commercial demand to reopen ports and address cost of port damage/closure.
7.7 Pursuance of Gubernatorial Proclamation.
7.8 Pursuance of Major Presidential Disaster Declaration.

Highlighted Emergency Management Challenges during Period 7

Quick and Accurate Damage Assessments are Important

If a Federal declaration of major disaster is sought, as it most likely would be with a natural disaster of this severity, speed, accuracy, and completion of information about locally incurred damage and associated costs are important. For this reason, State officials (Cal OES, Governor's Office) are asking questions about response activities, damage incurred, shelters opened, populations affected, and other details every step of the way. State-level field coordinators and recovery experts will be dispatched to affected coastal communities to ensure that preliminary damage assessment forms to be submitted are as complete and accurate as possible. Each county, as well as the State as a whole, must meet specific monetary loss thresholds in order to facilitate assistance that will be important and possibly necessary for a full recovery and return to normal operations for all affected areas. It is the mission of all emergency management agencies to ensure that, if needed, this aid is sought. This assistance also requires the signature and approval of elected officials; therefore it is generally important to request assistance as quickly as possible. Expediting applications for assistance is important not only to meet statutory deadlines, but also while the political pressure is on to provide assistance to those who need it.

Potential Recovery Issues within Ports

The following insights are taken from recent experience with FEMA Pubic Assistance Program-funded recovery from damages to smaller harbors (Crescent City and Santa Cruz) during the recent Chile and Japan tsunamis:

As with all disaster events, saving lives and protecting property is always the top priority. Once the response phase of the disaster winds down, State and local government agencies affected by a tsunami should begin assessing damage and compiling a list of projects that require immediate or permanent (long-term) repairs. When the assessment is complete, public agencies should begin the process of determining whether any permits, approvals, consultations, or authorizations (collectively called permits for this article) are needed to perform the repairs. Although exemptions exist for disaster repair projects under the National Environmental Policy Act and the California Environmental Quality Act, other Federal or State laws or executive orders may not contain such exemptions and require approval by one or more regulatory agencies. In some instances emergency permits are available with expedited processing procedures, or regulatory agencies may allow the repair work to proceed while the permit(s) are being processed.

Damages suffered by public agencies in Major Disaster Declaration "California Tsunami Waves" declared by President Obama, through FEMA, on April 18, 2011, fell into several broad categories including:

- Debris removal including sunken vessels and damaged docks,
- Replacing damaged piles,
- Replacing or repairing damaged docks,
- Repairing breakwaters,
- Rock slope protection within the harbor, and
- Dredging.

All of these types of projects are regulated by one or more of the following agencies:

- The Army Corp of Engineers (404 permit),
- U.S. Environmental Protection Agency (Approval of dredging plan and disposal of sediment),
- U.S. Fish and Wildlife Service (Consultation if threatened or endangered species may be affected),
- National Marine Fisheries Service (Consultation if native fish may be affected);
- Regional Water Quality Control Board (401 Water Quality Certification),
- California Coastal Commission (Coastal Development Permit),
- State Lands Commission (Dredging in state-owned tidelands or submerged waters), or
- National Oceanic and Atmospheric Administration Marine Sanctuary (Review of dredging plan).

Permitting a dredging operation within a harbor can be a complicated process requiring the preparation and approval of a dredging plan, collecting sediment samples, laboratory analysis, and finally dredging and disposal. Each step takes time to perform, and other repair projects may hinge on the dredging to occur first. For this reason, agencies should provide updates to decision makers and the public on their progress in repairing tsunami related damage so they are not left with the impression that nothing is being done.

Recommendations for future tsunami events:

4. Affected jurisdictions should know in advance which agencies may have permitting jurisdiction and know how to contact them.

5. When applying for permits from State or Federal agencies, subgrantees should determine if permits can be issued on an emergency basis or if the permitting agency will allow the subgrantee to proceed with the condition that a permit will be secured in the immediate future.
6. Permitting agencies should be made aware of the time frames in which repairs must be made to meet any critical deadlines or events such as the start of a fish or crab season.
7. At the applicant briefing(s), it should be made very clear that subgrantees cannot start permanent repair work until all required permits have been obtained.
8. Decision makers and the public should be provided updates on the progress of repairing tsunami damage so they are aware of the progress being made.

Smaller harbor districts have limited resources and may need the assistance of consultants to help complete the permitting process. Cal OES and FEMA should be ready to help pay the cost of these services if required.

Conclusions

This tsunami would be worse than any experienced in historical time by the State of California, and by the United States as a nation. It would be worse than the 1964 tsunami from Alaska, which resulted in the destruction of much of Crescent City's downtown and 12 deaths statewide. It would be 4 to 5 times worse in California than the Tohoku tsunami from Japan in 2011, which resulted in $100 million in damage to 27 harbors and marinas down the length of the State's coast.

Such an event would stretch the State's emergency response system up to and beyond its limits. However, the system is built to expand beyond its limits, with cities calling upon the State and the State asking the Federal government when its resources and personnel capabilities have been reached. And California has had plenty of experience putting its emergency management practices into play over recent decades—during earthquakes, wildfires, and flooding events.

The trick will be to understand the nature of the tsunami to come, its impacts, and what the public needs to know ahead of time to understand what to do to save their lives and protect their property when the warning comes. While we may have a warning window on the day (or night) of the tsunami, it can be years between damaging, life threatening events. Sustaining public preparedness and government capabilities to respond to this specific threat is key. When the next tsunami comes from Alaska, we will have only five and one-half hours to prove we know what to do.

The analysis and expertise brought to bear by this scenario report can provide the basis for ever-increasingly informed emergency response and evacuation planning.

Acknowledgments

The authors thank Jim Goltz, Rich Eisner and Johanna Fenton (Cal OES, retired), Jeff Terry (Los Angeles County Office of Emergency Management), and Anne Wein (USGS) for thoughtful reviews that improved the report.

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Appendix A—NOAA Tsunami Alert Level Definitions

- A Tsunami **Warning** is issued when a tsunami with the potential to generate widespread inundation is imminent, expected, or occurring. Warnings alert the public that dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after initial arrival. Warnings 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. Warnings are issued when the earthquake information or tsunami forecasts indicate that a wave height over 1 meter (or over 3 feet) in amplitude is expected, possible, or ongoing.

- A Tsunami **Advisory** is issued when a tsunami with the potential to generate strong currents or waves dangerous to those in or very near the water is imminent, expected, or occurring. The threat may continue for several hours after initial arrival, but significant 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. Advisories are issued when the tsunami wave height forecast is in the range of 1/3 to 1 meter (or 1–3 feet).

- 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—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.

- 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 that 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 reissued 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.

Appendix B—NOAA WCATWC Tsunami Scenario Alert Bulletins

Bulletin #	NOAA Alert Level(s)	Bulletin Time/Date	Geographic Breakpoint	Period (in this Chapter)
Bulletin 1	Watch	1154 AM PDT THU MAR 27 2014	All	1
Bulletin 2	Watch	1231 PM PDT THU MAR 27 2014	All	1
Bulletin 3	Watch	103 PM PDT THU MAR 27 2014	All	1
Bulletin 4	Warning	205 PM PDT THU MAR 27 2014	All	2
Bulletin 5	Warning	301 PM PDT THU MAR 27 2014	All	2
Bulletin 6	Warning	401 PM PDT THU MAR 27 2014	All	2
Bulletin 7	Warning	502 PM PDT THU MAR 27 2014	All	2
Bulletin 8	Warning	601 PM PDT THU MAR 27 2014	All	3
Bulletin 9	Warning	701 PM PDT THU MAR 27 2014	All	3
Bulletin 10	Warning	801 PM PDT THU MAR 27 2014	All	3
Bulletin 11	Warning	901 PM PDT THU MAR 27 2014	All	3
Bulletin 12	Warning	1001 PM PDT THU MAR 27 2014	All	3
Bulletin 13	Warning	1100 PM PDT THU MAR 27 2014	All	3
Bulletin 14	Warning	1201 AM PDT FRI MAR 28 2014	All	3
Bulletin 15	Warning	100 AM PDT FRI MAR 28 2014	All	3
Bulletin 16	Warning	201 AM PDT FRI MAR 28 2014	All	3
Bulletin 17	Warning	300 AM PDT FRI MAR 28 2014	All	3
Bulletin 18	Warning	400 AM PDT FRI MAR 28 2014	All	3
Bulletin 19	Warning	500 AM PDT FRI MAR 28 2014	All	3
Bulletin 20	Warning	600 AM PDT FRI MAR 28 2014	All	3
Bulletin 21	Warning	701 AM PDT FRI MAR 28 2014	All	3
Bulletin 22	Warning	800 AM PDT FRI MAR 28 2014	All	3
Bulletin 23	Warning	901 AM PDT FRI MAR 28 2014	All	3
Bulletin 24	Warning	1001 AM PDT FRI MAR 28 2014	All	3
Bulletin 25	Warning	1101 AM PDT FRI MAR 28 2014	All	3
Bulletin 26	Warning/Advisory	1202 PM PDT FRI MAR 28 2014	@ Alamitos	4
Bulletin	Warning/Advisory	100 PM PDT FRI MAR 28 2014	@ Alamitos	4

27				
Bulletin 28	Warning/Advisory	201 PM PDT FRI MAR 28 2014	@ Alamitos	4
Bulletin 29	Warning/Advisory	300 PM PDT FRI MAR 28 2014	@ Alamitos	4
Bulletin 30	Warning/Advisory	400 PM PDT FRI MAR 28 2014	@ Alamitos	4
Bulletin 31	Warning/Advisory	504 PM PDT FRI MAR 28 2014	@ Concepcion	4
Bulletin 32	Warning/Advisory	601 PM PDT FRI MAR 28 2014	@ Concepcion	4
Bulletin 33	Warning/Advisory	701 PM PDT FRI MAR 28 2014	@ Concepcion	4
Bulletin 34	Advisory	802 PM PDT FRI MAR 28 2014	All	5
Bulletin 35	Advisory	902 PM PDT FRI MAR 28 2014	All	5
Bulletin 36	Advisory	1000 PM PDT FRI MAR 28 2014	All	5
Bulletin 37	Advisory	1100 PM PDT FRI MAR 28 2014	All	5
Bulletin 38	Advisory	1200 AM PDT SAT MAR 29 2014	All	5
Bulletin 39	Advisory	100 AM PDT SAT MAR 29 2014	All	5
Bulletin 40	Advisory	201 AM PDT SAT MAR 29 2014	All	5
Bulletin 41	Advisory	300 AM PDT SAT MAR 29 2014	All	5
Bulletin 42	Advisory	401 AM PDT SAT MAR 29 2014	All	5
Bulletin 43	Advisory	500 AM PDT SAT MAR 29 2014	All	5
Bulletin 44	Advisory	600 AM PDT SAT MAR 29 2014	All	5
Bulletin 45	Advisory	701 AM PDT SAT MAR 29 2014	All	5
Bulletin 46	Advisory	801 AM PDT SAT MAR 29 2014	All	5
Bulletin 47	Advisory/Cancel	901 AM PDT SAT MAR 29 2014	@ Rincon	5
Bulletin 48	Advisory/Cancel	1002 AM PDT SAT MAR 29 2014	@ Rincon	5
Bulletin 49	Advisory/Cancel	1101 AM PDT SAT MAR 29 2014	@ Rincon	5
Bulletin 50	Cancel	1200 PM PDT SAT MAR 29 2014	All	6

WEAK51 PAAQ 271854
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 1
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1054 AM AKDT THU MAR 27 2014

...A TSUNAMI WARNING IS NOW IN EFFECT...

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

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU ALASKA

TSUNAMI WATCH IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON AND

BRITISH COLUMBIA FROM THE CALIFORNIA-MEXICO BORDER TO THE
NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 8.2
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS

---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI WATCH AREAS

---

* EXPECTED IMPACT IS UNKNOWN AT THIS TIME.

* THE WATCH WILL BE UPGRADED OR CANCELED AT LEAST TWO HOURS BEFORE EXPECTED IMPACT.

RECOMMENDED ACTIONS - UPDATED

---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN A WATCH AREA - STAY ALERT FOR FURTHER INSTRUCTIONS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI
* ALASKA	
SAND POINT	1213 AKDT MAR 27
KODIAK	1228 AKDT MAR 27
DUTCH HARBOR	1231 AKDT MAR 27
SEWARD	1253 AKDT MAR 27
COLD BAY	1254 AKDT MAR 27
ELFIN COVE	1255 AKDT MAR 27
ADAK	1256 AKDT MAR 27
YAKUTAT	1303 AKDT MAR 27
SITKA	1303 AKDT MAR 27
VALDEZ	1313 AKDT MAR 27
CORDOVA	1322 AKDT MAR 27
SHEMYA	1340 AKDT MAR 27
HOMER	1346 AKDT MAR 27
CRAIG	1404 AKDT MAR 27
* BRITISH COLUMBIA	
LANGARA	1413 PDT MAR 27
TOFINO	1540 PDT MAR 27
* WASHINGTON	
NEAH BAY	1552 PDT MAR 27
WESTPORT	1608 PDT MAR 27
* OREGON	
CHARLESTON	1603 PDT MAR 27
SEASIDE	1606 PDT MAR 27
* CALIFORNIA	
CRESCENT CITY	1612 PDT MAR 27
SAN FRANCISCO	1706 PDT MAR 27
SANTA BARBARA	1721 PDT MAR 27
SAN PEDRO	1737 PDT MAR 27
LA JOLLA	1748 PDT MAR 27

NEXT UPDATE AND ADDITIONAL INFORMATION
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* THIS MESSAGE WILL BE UPDATED IN 30 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 271931
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 2
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1131 AM AKDT THU MAR 27 2014

THIS MESSAGE INCREASES MAGNITUDE TO 8.6.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

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

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU ALASKA

TSUNAMI WATCH IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON AND BRITISH COLUMBIA FROM THE CALIFORNIA-MEXICO BORDER TO THE NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI WATCH AREAS
---

* EXPECTED IMPACT IS UNKNOWN AT THIS TIME.

* THE WATCH WILL BE UPGRADED OR CANCELED AT LEAST TWO HOURS BEFORE EXPECTED IMPACT.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN A WATCH AREA - STAY ALERT FOR FURTHER INSTRUCTIONS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI
* ALASKA	
SAND POINT	1207 AKDT MAR 27

KODIAK 1221 AKDT MAR 27
DUTCH HARBOR 1226 AKDT MAR 27
SEWARD 1246 AKDT MAR 27
COLD BAY 1247 AKDT MAR 27
ELFIN COVE 1248 AKDT MAR 27
ADAK 1251 AKDT MAR 27
YAKUTAT 1256 AKDT MAR 27
SITKA 1256 AKDT MAR 27
VALDEZ 1305 AKDT MAR 27
CORDOVA 1315 AKDT MAR 27
SHEMYA 1334 AKDT MAR 27
HOMER 1339 AKDT MAR 27
CRAIG 1357 AKDT MAR 27

* BRITISH COLUMBIA
LANGARA 1406 PDT MAR 27
TOFINO 1533 PDT MAR 27

* WASHINGTON
NEAH BAY 1545 PDT MAR 27
WESTPORT 1601 PDT MAR 27

* OREGON
CHARLESTON 1558 PDT MAR 27
SEASIDE 1600 PDT MAR 27

* CALIFORNIA
CRESCENT CITY 1608 PDT MAR 27
SAN FRANCISCO 1702 PDT MAR 27
SANTA BARBARA 1718 PDT MAR 27
SAN PEDRO 1734 PDT MAR 27
LA JOLLA 1745 PDT MAR 27

FORECAST MODELS PROJECT THAT 22 FOOT/6.7 METER WAVES COULD DEVELOP ALONG THE COAST OF ALASKA. WAVES OF THIS SIZE ARE KNOWN TO CAUSE INUNDATION AND DAMAGE TO COASTAL STRUCTURES. IN ALASKA THE TSUNAMI
IS EXPECTED TO REACH PEAK SIZE 30 MINUTES TO TWO HOURS AFTER THE EXPECTED ARRIVAL TIME.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED.

PRELIMINARY EARTHQUAKE PARAMETERS - UPDATED
---

* MAGNITUDE 8.6
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION
---
* THIS MESSAGE WILL BE UPDATED IN 30 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 272003
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 3
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1203 PM AKDT THU MAR 27 2014

THIS MESSAGE INCREASES MAGNITUDE TO 9.0 AND EXPANDS THE
WARNING AREA.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

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

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF OREGON - WASHINGTON AND BRITISH
  COLUMBIA FROM THE OREGON-CALIFORNIA BORDER TO THE NORTH TIP
  OF VANCOUVER ISLAND BRITISH COLUMBIA

* THE COASTAL AREAS OF BRITISH COLUMBIA AND ALASKA FROM THE

NORTH TIP OF VANCOUVER ISLAND BRITISH COLUMBIA TO ATTU
ALASKA

TSUNAMI WATCH IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO THE OREGON-CALIFORNIA BORDER

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI WATCH AREAS
---

* EXPECTED IMPACT IS UNKNOWN AT THIS TIME.

* THE WATCH WILL BE UPGRADED OR CANCELED AT LEAST TWO HOURS BEFORE EXPECTED IMPACT.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN A WATCH AREA - STAY ALERT FOR FURTHER INSTRUCTIONS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF TSUNAMI	FORECAST TSUNAMI DURATION	FORECAST MAX TSUNAMI HEIGHT	OBSERVED TSUNAMI HEIGHT

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* ALASKA
SAND POINT 1157 AKDT MAR 27 4.5 FT
KODIAK 1213 AKDT MAR 27
DUTCH HARBOR 1215 AKDT MAR 27
COLD BAY 1232 AKDT MAR 27
SEWARD 1239 AKDT MAR 27
ADAK 1240 AKDT MAR 27
ELFIN COVE 1240 AKDT MAR 27
YAKUTAT 1248 AKDT MAR 27
SITKA 1248 AKDT MAR 27
VALDEZ 1258 AKDT MAR 27
CORDOVA 1308 AKDT MAR 27
SHEMYA 1323 AKDT MAR 27
HOMER 1332 AKDT MAR 27
CRAIG 1351 AKDT MAR 27

* BRITISH COLUMBIA
LANGARA 1400 PDT MAR 27
TOFINO 1527 PDT MAR 27

* WASHINGTON
NEAH BAY 1540 PDT MAR 27
WESTPORT 1556 PDT MAR 27

* OREGON
SEASIDE 1555 PDT MAR 27
CHARLESTON 1555 PDT MAR 27

* CALIFORNIA
CRESCENT CITY 1606 PDT MAR 27
SAN FRANCISCO 1702 PDT MAR 27
SANTA BARBARA 1718 PDT MAR 27
SAN PEDRO 1735 PDT MAR 27
LA JOLLA 1746 PDT MAR 27

FORECAST MODELS PROJECT THAT 22 FOOT/6.7 METER WAVES COULD DEVELOP ALONG THE COAST OF ALASKA. WAVES OF THIS SIZE ARE KNOWN TO CAUSE INUNDATION AND DAMAGE TO COASTAL STRUCTURES. IN ALASKA THE TSUNAMI
IS EXPECTED TO REACH PEAK SIZE 30 MINUTES TO TWO HOURS AFTER THE EXPECTED ARRIVAL TIME. A 4.5-FOOT TSUNAMI HAS BEEN REPORTED AT SAND POINT AK.

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL

ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

OBSERVED TSUNAMI HEIGHT IS THE HIGHEST WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

DEEP OCEAN PRESSURE SENSOR DATA INDICATES A TSUNAMI WAS GENERATED.

PRELIMINARY EARTHQUAKE PARAMETERS - UPDATED
---
* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION
---
* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 272105
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 4
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
105 PM AKDT THU MAR 27 2014

THIS MESSAGE EXPANDS THE WARNING/ADVISORY AREA AND REMOVES THE WATCH. FORECAST TSUNAMI HEIGHTS ARE ADDED BELOW.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...A TSUNAMI ADVISORY IS NOW IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO THE OREGON-CALIFORNIA BORDER

* THE COASTAL AREAS OF OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE OREGON-CALIFORNIA BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS - UPDATED
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF TSUNAMI	FORECAST TSUNAMI DURATION	FORECAST MAX TSUNAMI HEIGHT	OBSERVED TSUNAMI HEIGHT
* ALASKA				
SAND POINT	1157 AKDT MAR 27	48 HRS	12.0FT +/- 3.6	4.5FT
KODIAK	1213 AKDT MAR 27	12 HRS	2.9FT +/- 0.9	4.5FT
DUTCH HARBOR	1215 AKDT MAR 27	9 HRS	2.1FT +/- 0.6	0.8FT
COLD BAY	1232 AKDT MAR 27	9 HRS	2.1FT +/- 0.6	
SEWARD	1239 AKDT MAR 27	9 HRS	1.8FT +/- 0.6	3.2FT
ADAK	1240 AKDT MAR 27	6 HRS	1.4FT +/- 0.4	0.6FT
ELFIN COVE	1240 AKDT MAR 27	6 HRS	1.3FT +/- 0.4	1.3FT
YAKUTAT	1248 AKDT MAR 27	9 HRS	2.0FT +/- 0.6	
SITKA	1248 AKDT MAR 27	15 HRS	3.3FT +/- 1.0	2.6FT
VALDEZ	1258 AKDT MAR 27	6 HRS	1.1FT +/- 0.3	
CORDOVA	1308 AKDT MAR 27		Less than 1 FT	
SHEMYA	1323 AKDT MAR 27		Less than 1 FT	
HOMER	1332 AKDT MAR 27	9 HRS	2.3FT +/- 0.7	
CRAIG	1351 AKDT MAR 27			
* BRITISH COLUMBIA				
LANGARA	1400 PDT MAR 27	6 HRS	1.1FT +/- 0.3	
TOFINO	1527 PDT MAR 27	12 HRS	2.3FT +/- 0.7	
* WASHINGTON				
NEAH BAY	1540 PDT MAR 27	6 HRS	1.4FT +/- 0.4	
WESTPORT	1556 PDT MAR 27	9 HRS	1.7FT +/- 0.5	
* OREGON				
SEASIDE	1555 PDT MAR 27	18 HRS	4.1FT +/- 1.2	
CHARLESTON	1555 PDT MAR 27	9 HRS	2.0FT +/- 0.6	
* CALIFORNIA				
CRESCENT CITY	1606 PDT MAR 27	21 HRS	4.9FT +/- 1.5	
SAN FRANCISCO	1702 PDT MAR 27	9 HRS	2.1FT +/- 0.6	
SANTA BARBARA	1718 PDT MAR 27	9 HRS	1.9FT +/- 0.6	
SAN PEDRO	1735 PDT MAR 27	6 HRS	1.6FT +/- 0.5	
LA JOLLA	1746 PDT MAR 27	12 HRS	2.5FT +/- 0.7	

A 4.5-FOOT TSUNAMI HAS BEEN REPORTED AT KODIAK AK. KING COVE AK HAS REPORTED A 4.3-FOOT TSUNAMI, AND CHIGNIK AK HAS REPORTED A 21.8-FOOT TSUNAMI.

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

OBSERVED TSUNAMI HEIGHT IS THE HIGHEST WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

* PACIFIC COASTAL RESIDENTS OUTSIDE CALIFORNIA... OREGON... WASHINGTON... BRITISH COLUMBIA AND ALASKA SHOULD REFER TO THE

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

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WEAK51 PAAQ 272201
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 5
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
201 PM AKDT THU MAR 27 2014

THIS MESSAGE IS UPDATED WITH NEW OBSERVATIONS.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

FORECAST START OF	FORECAST TSUNAMI	FORECAST MAX TSUNAMI	OBSERVED TSUNAMI

SITE	OF TSUNAMI	DURATION	HEIGHT	HEIGHT
* ALASKA				
SAND POINT	1157 AKDT MAR 27	48 HRS	12.5FT +/- 3.8	11.6FT
KODIAK	1213 AKDT MAR 27	15 HRS	3.0FT +/- 0.9	4.5FT
DUTCH HARBOR	1215 AKDT MAR 27	9 HRS	2.2FT +/- 0.6	1.4FT
COLD BAY	1232 AKDT MAR 27	9 HRS	2.2FT +/- 0.7	
SEWARD	1239 AKDT MAR 27	9 HRS	1.9FT +/- 0.6	3.2FT
ADAK	1240 AKDT MAR 27	6 HRS	1.4FT +/- 0.4	0.9FT
ELFIN COVE	1240 AKDT MAR 27	6 HRS	1.4FT +/- 0.4	1.3FT
YAKUTAT	1248 AKDT MAR 27	9 HRS	2.1FT +/- 0.6	1.7FT
SITKA	1248 AKDT MAR 27	15 HRS	3.4FT +/- 1.0	2.6FT
VALDEZ	1258 AKDT MAR 27	6 HRS	1.1FT +/- 0.3	
CORDOVA	1308 AKDT MAR 27		Less than 1 FT	
SHEMYA	1323 AKDT MAR 27		Less than 1 FT	0.3FT
HOMER	1332 AKDT MAR 27	12 HRS	2.3FT +/- 0.7	
CRAIG	1351 AKDT MAR 27		2.8FT	
* BRITISH COLUMBIA				
LANGARA	1400 PDT MAR 27	6 HRS	1.2FT +/- 0.4	
TOFINO	1527 PDT MAR 27	12 HRS	2.4FT +/- 0.7	
* WASHINGTON				
NEAH BAY	1540 PDT MAR 27	6 HRS	1.5FT +/- 0.4	
WESTPORT	1556 PDT MAR 27	9 HRS	1.7FT +/- 0.5	
* OREGON				
SEASIDE	1555 PDT MAR 27	21 HRS	4.3FT +/- 1.3	
CHARLESTON	1555 PDT MAR 27	9 HRS	2.0FT +/- 0.6	
* CALIFORNIA				
CRESCENT CITY	1606 PDT MAR 27	24 HRS	5.1FT +/- 1.5	
SAN FRANCISCO	1702 PDT MAR 27	9 HRS	2.2FT +/- 0.7	
SANTA BARBARA	1718 PDT MAR 27	9 HRS	2.0FT +/- 0.6	
SAN PEDRO	1735 PDT MAR 27	9 HRS	1.7FT +/- 0.5	
LA JOLLA	1746 PDT MAR 27	12 HRS	2.6FT +/- 0.8	

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

OBSERVED TSUNAMI HEIGHT IS THE HIGHEST WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 272301
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 6
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
301 PM AKDT THU MAR 27 2014

THIS MESSAGE IS UPDATED WITH NEW OBSERVATIONS AND FORECAST DURATIONS.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI	FORECAST TSUNAMI DURATION	FORECAST MAX TSUNAMI HEIGHT	OBSERVED TSUNAMI HEIGHT
* ALASKA				
SAND POINT	1157 AKDT MAR 27	48 HRS	13.5FT +/- 4.0	11.6FT
KODIAK	1213 AKDT MAR 27	48 HRS	3.2FT +/- 1.0	4.5FT
DUTCH HARBOR	1215 AKDT MAR 27	24 HRS	2.3FT +/- 0.7	1.4FT
COLD BAY	1232 AKDT MAR 27	24 HRS	2.4FT +/- 0.7	
SEWARD	1239 AKDT MAR 27	24 HRS	2.0FT +/- 0.6	3.2FT
ADAK	1240 AKDT MAR 27	12 HRS	1.5FT +/- 0.5	0.9FT
ELFIN COVE	1240 AKDT MAR 27	24 HRS	1.5FT +/- 0.5	1.3FT
YAKUTAT	1248 AKDT MAR 27	24 HRS	2.3FT +/- 0.7	1.7FT
SITKA	1248 AKDT MAR 27	24 HRS	3.6FT +/- 1.1	3.7FT
VALDEZ	1258 AKDT MAR 27	12 HRS	1.2FT +/- 0.4	
CORDOVA	1308 AKDT MAR 27		Less than 1 FT	0.9FT
SHEMYA	1323 AKDT MAR 27		Less than 1 FT	0.3FT
HOMER	1332 AKDT MAR 27	12 HRS	2.5FT +/- 0.8	
CRAIG	1351 AKDT MAR 27		2.8FT	
* BRITISH COLUMBIA				
LANGARA	1400 PDT MAR 27	24 HRS	1.3FT +/- 0.4	1.6FT
TOFINO	1527 PDT MAR 27	24 HRS	2.6FT +/- 0.8	2.4FT
* WASHINGTON				
NEAH BAY	1540 PDT MAR 27	24 HRS	1.6FT +/- 0.5	
WESTPORT	1556 PDT MAR 27	24 HRS	1.9FT +/- 0.6	
* OREGON				
SEASIDE	1555 PDT MAR 27	24 HRS	4.6FT +/- 1.4	
CHARLESTON	1555 PDT MAR 27	24 HRS	2.2FT +/- 0.6	
* CALIFORNIA				
CRESCENT CITY	1606 PDT MAR 27	24 HRS	5.4FT +/- 1.6	
SAN FRANCISCO	1702 PDT MAR 27	24 HRS	2.4FT +/- 0.7	
SANTA BARBARA	1718 PDT MAR 27	24 HRS	2.1FT +/- 0.6	
SAN PEDRO	1735 PDT MAR 27	24 HRS	1.8FT +/- 0.5	
LA JOLLA	1746 PDT MAR 27	24 HRS	2.8FT +/- 0.8	

FORECAST MODELS PROJECT TSUNAMIS UP TO 15.0-FOOT HEIGHT COULD DEVELOP
ALONG THE COASTS OF CANADA - WASHINGTON - OREGON AND CALIFORNIA. WAVES OF THIS SIZE ARE KNOWN TO CAUSE INUNDATION AND DAMAGE TO COASTAL STRUCTURES. TSUNAMIS ARE EXPECTED TO REACH PEAK

SIZE ONE TO THREE HOURS AFTER THE EXPECTED ARRIVAL TIME.

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

OBSERVED TSUNAMI HEIGHT IS THE HIGHEST WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
ADAK AK	2142 UTC 3-27	0.86 FT
CRAIG AK	2152 UTC 3-27	2.79 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
PORT ORFORD OR	2252 UTC 3-27	4.92 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 280002
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 7
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
402 PM AKDT THU MAR 27 2014

THIS MESSAGE IS UPDATED WITH NEW OBSERVATIONS.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI	FORECAST TSUNAMI DURATION	FORECAST MAX TSUNAMI HEIGHT	OBSERVED TSUNAMI HEIGHT

* ALASKA
SAND POINT 1157 AKDT MAR 27 48 HRS 15.2FT +/- 4.5 11.6FT
KODIAK 1213 AKDT MAR 27 48 HRS 3.6FT +/- 1.1 4.5FT
DUTCH HARBOR 1215 AKDT MAR 27 24 HRS 2.6FT +/- 0.8 1.4FT
COLD BAY 1232 AKDT MAR 27 24 HRS 2.7FT +/- 0.8
SEWARD 1239 AKDT MAR 27 24 HRS 2.3FT +/- 0.7 4.1FT
ADAK 1240 AKDT MAR 27 12 HRS 1.7FT +/- 0.5 0.9FT
ELFIN COVE 1240 AKDT MAR 27 24 HRS 1.7FT +/- 0.5 1.3FT
YAKUTAT 1248 AKDT MAR 27 24 HRS 2.6FT +/- 0.8 1.7FT
SITKA 1248 AKDT MAR 27 24 HRS 4.1FT +/- 1.2 3.7FT
VALDEZ 1258 AKDT MAR 27 12 HRS 1.3FT +/- 0.4
CORDOVA 1308 AKDT MAR 27 Less than 1 FT 0.9FT
SHEMYA 1323 AKDT MAR 27 Less than 1 FT 0.3FT
HOMER 1332 AKDT MAR 27 12 HRS 2.8FT +/- 0.8
CRAIG 1351 AKDT MAR 27 3.9FT

* BRITISH COLUMBIA
LANGARA 1400 PDT MAR 27 24 HRS 1.4FT +/- 0.4 1.6FT
TOFINO 1527 PDT MAR 27 24 HRS 2.9FT +/- 0.9 2.4FT

* WASHINGTON
NEAH BAY 1540 PDT MAR 27 24 HRS 1.8FT +/- 0.5 2.0FT
WESTPORT 1556 PDT MAR 27 24 HRS 2.1FT +/- 0.6 2.1FT

* OREGON
SEASIDE 1555 PDT MAR 27 24 HRS 5.2FT +/- 1.6
CHARLESTON 1555 PDT MAR 27 24 HRS 2.5FT +/- 0.7 1.6FT

* CALIFORNIA
CRESCENT CITY 1606 PDT MAR 27 36 HRS 6.1FT +/- 1.8 5.9FT
SAN FRANCISCO 1702 PDT MAR 27 24 HRS 2.7FT +/- 0.8 2.4FT
SANTA BARBARA 1718 PDT MAR 27 24 HRS 2.4FT +/- 0.7
SAN PEDRO 1735 PDT MAR 27 24 HRS 2.0FT +/- 0.6
LA JOLLA 1746 PDT MAR 27 24 HRS 3.1FT +/- 0.9

FORECAST MODELS PROJECT TSUNAMIS UP TO 15.0-FOOT HEIGHT COULD DEVELOP
ALONG THE COASTS OF CANADA - WASHINGTON - OREGON AND CALIFORNIA. WAVES OF THIS SIZE ARE KNOWN TO CAUSE INUNDATION AND DAMAGE TO COASTAL STRUCTURES. TSUNAMIS ARE EXPECTED TO REACH PEAK
SIZE ONE TO THREE HOURS AFTER THE EXPECTED ARRIVAL TIME.

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

OBSERVED TSUNAMI HEIGHT IS THE HIGHEST WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	2314 UTC 3-27	2.76 FT
POINT REYES CA	2344 UTC 3-27	3.15 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	2347 UTC 3-27	1.74 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA

485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION
---
* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 280101
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 8
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
501 PM AKDT THU MAR 27 2014

THIS MESSAGE IS UPDATED WITH NEW OBSERVATIONS.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI	FORECAST TSUNAMI DURATION	FORECAST MAX TSUNAMI HEIGHT	OBSERVED TSUNAMI HEIGHT

* ALASKA
SAND POINT 1157 AKDT MAR 27 48 HRS 16.1FT +/- 4.8 11.6FT
KODIAK 1213 AKDT MAR 27 48 HRS 3.8FT +/- 1.2 4.5FT
DUTCH HARBOR 1215 AKDT MAR 27 24 HRS 2.8FT +/- 0.8 1.4FT
COLD BAY 1232 AKDT MAR 27 24 HRS 2.9FT +/- 0.9
SEWARD 1239 AKDT MAR 27 24 HRS 2.5FT +/- 0.7 4.1FT
ADAK 1240 AKDT MAR 27 12 HRS 1.8FT +/- 0.6 1.0FT
ELFIN COVE 1240 AKDT MAR 27 24 HRS 1.8FT +/- 0.5 1.3FT
YAKUTAT 1248 AKDT MAR 27 24 HRS 2.7FT +/- 0.8 2.4FT
SITKA 1248 AKDT MAR 27 24 HRS 4.4FT +/- 1.3 3.7FT
VALDEZ 1258 AKDT MAR 27 12 HRS 1.4FT +/- 0.4
CORDOVA 1308 AKDT MAR 27 Less than 1 FT 0.9FT
SHEMYA 1323 AKDT MAR 27 Less than 1 FT 0.3FT
HOMER 1332 AKDT MAR 27 12 HRS 3.0FT +/- 0.9
CRAIG 1351 AKDT MAR 27 3.9FT

* BRITISH COLUMBIA
LANGARA 1400 PDT MAR 27 24 HRS 1.5FT +/- 0.5 1.6FT
TOFINO 1527 PDT MAR 27 24 HRS 3.1FT +/- 0.9 2.4FT

* WASHINGTON
NEAH BAY 1540 PDT MAR 27 24 HRS 1.9FT +/- 0.6 2.0FT
WESTPORT 1556 PDT MAR 27 24 HRS 2.2FT +/- 0.7 2.1FT

* OREGON
SEASIDE 1555 PDT MAR 27 24 HRS 5.5FT +/- 1.7
CHARLESTON 1555 PDT MAR 27 24 HRS 2.6FT +/- 0.8 2.7FT

* CALIFORNIA
CRESCENT CITY 1606 PDT MAR 27 36 HRS 6.5FT +/- 2.0 6.7FT
SAN FRANCISCO 1702 PDT MAR 27 24 HRS 2.9FT +/- 0.9 3.4FT
SANTA BARBARA 1718 PDT MAR 27 24 HRS 2.6FT +/- 0.8 1.9FT
SAN PEDRO 1735 PDT MAR 27 24 HRS 2.2FT +/- 0.6 1.2FT
LA JOLLA 1746 PDT MAR 27 24 HRS 3.3FT +/- 1.0

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

OBSERVED TSUNAMI HEIGHT IS THE HIGHEST WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	2344 UTC 3-27	3.15 FT
ALAMEDA CA	0029 UTC 3-28	1.12 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0022 UTC 3-28	5.58 FT
SANTA MONICA CA	0044 UTC 3-28	2.43 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 280201
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 9
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
601 PM AKDT THU MAR 27 2014

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF TSUNAMI	FORECAST TSUNAMI DURATION	FORECAST MAX TSUNAMI HEIGHT	OBSERVED TSUNAMI HEIGHT

* ALASKA

SAND POINT 1157 AKDT MAR 27 48 HRS 17.0FT +/- 5.1 11.6FT
KODIAK 1213 AKDT MAR 27 48 HRS 4.1FT +/- 1.2 4.5FT
DUTCH HARBOR 1215 AKDT MAR 27 24 HRS 2.9FT +/- 0.9 1.4FT
COLD BAY 1232 AKDT MAR 27 24 HRS 3.0FT +/- 0.9
SEWARD 1239 AKDT MAR 27 24 HRS 2.6FT +/- 0.8 4.1FT
ADAK 1240 AKDT MAR 27 12 HRS 1.9FT +/- 0.6 1.0FT
ELFIN COVE 1240 AKDT MAR 27 24 HRS 1.9FT +/- 0.6 1.3FT
YAKUTAT 1248 AKDT MAR 27 24 HRS 2.9FT +/- 0.9 2.4FT
SITKA 1248 AKDT MAR 27 24 HRS 4.6FT +/- 1.4 3.7FT
VALDEZ 1258 AKDT MAR 27 12 HRS 1.5FT +/- 0.5
CORDOVA 1308 AKDT MAR 27 Less than 1 FT 0.9FT
SHEMYA 1323 AKDT MAR 27 Less than 1 FT 0.3FT
HOMER 1332 AKDT MAR 27 12 HRS 3.2FT +/- 1.0
CRAIG 1351 AKDT MAR 27 3.9FT

* BRITISH COLUMBIA
LANGARA 1400 PDT MAR 27 24 HRS 1.6FT +/- 0.5 1.6FT
TOFINO 1527 PDT MAR 27 24 HRS 3.2FT +/- 1.0 2.4FT

* WASHINGTON
NEAH BAY 1540 PDT MAR 27 24 HRS 2.0FT +/- 0.6 2.0FT
WESTPORT 1556 PDT MAR 27 24 HRS 2.4FT +/- 0.7 2.1FT

* OREGON
SEASIDE 1555 PDT MAR 27 36 HRS 5.8FT +/- 1.7
CHARLESTON 1555 PDT MAR 27 24 HRS 2.8FT +/- 0.8 2.7FT

* CALIFORNIA
CRESCENT CITY 1606 PDT MAR 27 36 HRS 6.9FT +/- 2.1 7.1FT
SAN FRANCISCO 1702 PDT MAR 27 24 HRS 3.0FT +/- 0.9 3.7FT
SANTA BARBARA 1718 PDT MAR 27 24 HRS 2.7FT +/- 0.8 1.9FT
SAN PEDRO 1735 PDT MAR 27 24 HRS 2.3FT +/- 0.7 1.2FT
LA JOLLA 1746 PDT MAR 27 24 HRS 3.5FT +/- 1.1 1.5FT

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

OBSERVED TSUNAMI HEIGHT IS THE HIGHEST WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN DIEGO CA	0120 UTC 3-28	1.44 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---
* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 280301
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 10
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
701 PM AKDT THU MAR 27 2014

THIS MESSAGE IS UPDATED WITH NEW OBSERVATIONS.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF OF TSUNAMI	FORECAST TSUNAMI DURATION	FORECAST MAX TSUNAMI HEIGHT	OBSERVED TSUNAMI HEIGHT

* BRITISH COLUMBIA
LANGARA 1400 PDT MAR 27 24 HRS 1.7FT +/- 0.5 1.6FT
TOFINO 1527 PDT MAR 27 24 HRS 3.4FT +/- 1.0 2.4FT

* WASHINGTON
NEAH BAY 1540 PDT MAR 27 24 HRS 2.1FT +/- 0.6 2.0FT
WESTPORT 1556 PDT MAR 27 24 HRS 2.5FT +/- 0.7 2.1FT

* OREGON
SEASIDE 1555 PDT MAR 27 36 HRS 6.1FT +/- 1.8
CHARLESTON 1555 PDT MAR 27 24 HRS 2.9FT +/- 0.9 2.7FT

* CALIFORNIA
CRESCENT CITY 1606 PDT MAR 27 48 HRS 7.3FT +/- 2.2 7.1FT
SAN FRANCISCO 1702 PDT MAR 27 24 HRS 3.2FT +/- 1.0 3.7FT
SANTA BARBARA 1718 PDT MAR 27 24 HRS 2.9FT +/- 0.9 2.6FT
SAN PEDRO 1735 PDT MAR 27 24 HRS 2.4FT +/- 0.7 2.8FT
LA JOLLA 1746 PDT MAR 27 24 HRS 3.7FT +/- 1.1 2.3FT

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS
ALONG SOUTHERN ALASKA COASTS EAST OF NIKOLSKI.

MUCH DAMAGE HAS BEEN REPORTED ALONG THE OREGON COAST FROM LINCOLN CITY
TO NESKOWIN. WAVES HAVE ERODED THE BEACHES AROUND CASCADE HEAD DAMAGING
LOCAL RESERVES. LOS ANGELES CA REPORTED A 1.2-FOOT/0.4-METER
TSUNAMI AND THERE ARE CONCERNS THAT THE SUDDEN RISE IN WATER LEVEL MAY
PART MOORING LINES IN THE HARBOR.

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

OBSERVED TSUNAMI HEIGHT IS THE HIGHEST WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

TIME OBSERVED MAX

SITE	OF MEASUREMENT	TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014

1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION
---
* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 280401
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 11
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
801 PM AKDT THU MAR 27 2014

THIS MESSAGE IS UPDATED WITH NEW OBSERVATIONS.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* A TSUNAMI WITH SIGNIFICANT WIDESPREAD INUNDATION OF LAND IS EXPECTED.

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

	FORECAST	FORECAST	FORECAST	OBSERVED

SITE	START OF TSUNAMI	TSUNAMI DURATION	MAX TSUNAMI HEIGHT	TSUNAMI HEIGHT
* BRITISH COLUMBIA				
LANGARA	1400 PDT MAR 27	24 HRS	1.7FT +/- 0.5	1.6FT
TOFINO	1527 PDT MAR 27	24 HRS	3.4FT +/- 1.0	2.4FT
* WASHINGTON				
NEAH BAY	1540 PDT MAR 27	24 HRS	2.1FT +/- 0.6	2.0FT
WESTPORT	1556 PDT MAR 27	24 HRS	2.5FT +/- 0.7	2.1FT
* OREGON				
SEASIDE	1555 PDT MAR 27	36 HRS	6.1FT +/- 1.8	
CHARLESTON	1555 PDT MAR 27	24 HRS	2.9FT +/- 0.9	2.7FT
* CALIFORNIA				
CRESCENT CITY	1606 PDT MAR 27	48 HRS	7.3FT +/- 2.2	7.1FT
SAN FRANCISCO	1702 PDT MAR 27	24 HRS	3.2FT +/- 1.0	3.7FT
SANTA BARBARA	1718 PDT MAR 27	24 HRS	2.9FT +/- 0.9	3.3FT
SAN PEDRO	1735 PDT MAR 27	24 HRS	2.4FT +/- 0.7	3.1FT
LA JOLLA	1746 PDT MAR 27	24 HRS	3.7FT +/- 1.1	3.2FT

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS
ALONG SOUTHERN ALASKA COASTS EAST OF NIKOLSKI.

PT REYES REPORTS HEAVY SURF AND STRONG CURRENTS.
APPROXIMATELY 50 FEET OF SHORELINE HAS BEEN ERODED FROM POINT REYES BEACH SOUTH AND 35 FEET FROM POINT REYES BEACH NORTH.

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

OBSERVED TSUNAMI HEIGHT IS THE HIGHEST WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT
GUAM	0321 UTC 3-28	0.30 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014

1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION
---
* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 280501
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 12
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
901 PM AKDT THU MAR 27 2014

THIS MESSAGE IS UPDATED WITH NEW OBSERVATIONS.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

FORECASTS AND/OR OBSERVATIONS OF TSUNAMI ACTIVITY

SITE	FORECAST START OF TSUNAMI	FORECAST TSUNAMI DURATION	FORECAST MAX TSUNAMI HEIGHT	OBSERVED TSUNAMI HEIGHT

* WASHINGTON
NEAH BAY 1540 PDT MAR 27 36 HRS 2.1FT +/- 0.6 2.0FT
WESTPORT 1556 PDT MAR 27 36 HRS 2.5FT +/- 0.7 2.1FT

* OREGON
SEASIDE 1555 PDT MAR 27 36 HRS 6.1FT +/- 1.8
CHARLESTON 1555 PDT MAR 27 36 HRS 2.9FT +/- 0.9 2.7FT

* CALIFORNIA
CRESCENT CITY 1606 PDT MAR 27 48 HRS 7.3FT +/- 2.2 7.1FT
SAN FRANCISCO 1702 PDT MAR 27 36 HRS 3.2FT +/- 1.0 3.7FT
SANTA BARBARA 1718 PDT MAR 27 36 HRS 2.9FT +/- 0.9 3.3FT
SAN PEDRO 1735 PDT MAR 27 36 HRS 2.4FT +/- 0.7 3.1FT
LA JOLLA 1746 PDT MAR 27 36 HRS 3.7FT +/- 1.1 3.5FT

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS
ALONG SOUTHERN ALASKA COASTS EAST OF NIKOLSKI AND IN BRITISH COLUMBIA.

FORECAST MAX TSUNAMI HEIGHT IS THE HIGHEST EXPECTED WATER LEVEL ABOVE THE TIDE.

FORECAST TSUNAMI DURATION IS THE APPROXIMATE LENGTH OF TIME WHICH THE TSUNAMI MAY PRODUCE DANGEROUS CURRENTS AND WAVE ACTIVITY.

OBSERVED TSUNAMI HEIGHT IS THE HIGHEST WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT

CORDOVA AK	2235	UTC 3-27	1.82 FT
SHEMYA AK	2245	UTC 3-27	0.34 FT
SITKA AK	2222	UTC 3-27	3.74 FT
CRAIG AK	2255	UTC 3-27	3.88 FT
LANGARA BC	2300	UTC 3-27	1.60 FT
TOFINO BC	2334	UTC 3-27	2.41 FT
LAPUSH WA	2241	UTC 3-27	3.15 FT
PORT ANGELES WA	2354	UTC 3-27	1.38 FT
GARIBALDI OR	2259	UTC 3-27	1.05 FT
NEWPORT OR	2309	UTC 3-27	2.46 FT
PORT ORFORD OR	2355	UTC 3-27	6.76 FT
ARENA COVE CA	2313	UTC 3-27	5.58 FT
EUREKA CA	0006	UTC 3-28	4.23 FT
POINT REYES CA	0142	UTC 3-28	3.38 FT
ALAMEDA CA	0141	UTC 3-28	1.84 FT
MONTEREY CA	2338	UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108	UTC 3-28	14.30 FT
SANTA MONICA CA	0157	UTC 3-28	3.38 FT
SAN DIEGO CA	0214	UTC 3-28	1.74 FT
MIDWAY IS	2304	UTC 3-27	1.44 FT
NAWILIWILI HI	2323	UTC 3-27	2.20 FT
HALEIWA HI	2338	UTC 3-27	4.99 FT
HONOLULU HI	2338	UTC 3-27	2.23 FT
KAHULUI HI	2341	UTC 3-27	7.15 FT
KAWAIHAE HI	0014	UTC 3-28	2.89 FT
WAKE ISLAND	0052	UTC 3-28	0.33 FT
GUAM	0321	UTC 3-28	0.30 FT
PAGO PAGO AM SAMOA	0433	UTC 3-28	0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---
* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 280600
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 13
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1000 PM AKDT THU MAR 27 2014

IN THIS MESSAGE THE FORECAST CHART HAS BEEN REMOVED AND ALL OBSERVATIONS ARE CONTAINED IN THE OBSERVATION TABLE. SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED FOR MANY LOCATIONS ON THE WEST COAST FOR UP TO 48 HOURS.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU

ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT

HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 280701
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 14
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1101 PM AKDT THU MAR 27 2014

NO NEW INFORMATION IS CONTAINED IN THIS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

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* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

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* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK 1945 UTC 3-27 11.60 FT
KING COVE AK 2023 UTC 3-27 4.33 FT
CHIGNIK AK 2026 UTC 3-27 21.82 FT
NIKOLSKI AK 2054 UTC 3-27 1.61 FT
UNALASKA AK 2056 UTC 3-27 1.44 FT
KODIAK AK 2100 UTC 3-27 4.50 FT
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SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
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KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT

PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 280800
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 15
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1200 AM AKDT FRI MAR 28 2014

NO NEW INFORMATION IS CONTAINED IN THIS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK 1945 UTC 3-27 11.60 FT
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PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

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WEAK51 PAAQ 280901
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 16
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
101 AM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU
  ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS

---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
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TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT

GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS
---
* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION
---
* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 281000
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 17
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
200 AM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS

---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT

GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 281100
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 18
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
300 AM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS

---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT

GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 281200
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 19
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
400 AM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS

---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
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SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT

GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 281300
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 20
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
500 AM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS

---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT

GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 281401
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 21
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
601 AM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU
  ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK 1945 UTC 3-27 11.60 FT
KING COVE AK 2023 UTC 3-27 4.33 FT
CHIGNIK AK 2026 UTC 3-27 21.82 FT
NIKOLSKI AK 2054 UTC 3-27 1.61 FT
UNALASKA AK 2056 UTC 3-27 1.44 FT
KODIAK AK 2100 UTC 3-27 4.50 FT
SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT

PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 281500
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 22
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
700 AM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU
  ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK 1945 UTC 3-27 11.60 FT
KING COVE AK 2023 UTC 3-27 4.33 FT
CHIGNIK AK 2026 UTC 3-27 21.82 FT
NIKOLSKI AK 2054 UTC 3-27 1.61 FT
UNALASKA AK 2056 UTC 3-27 1.44 FT
KODIAK AK 2100 UTC 3-27 4.50 FT
SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT

PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 281601
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 23
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
801 AM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU
  ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK 1945 UTC 3-27 11.60 FT
KING COVE AK 2023 UTC 3-27 4.33 FT
CHIGNIK AK 2026 UTC 3-27 21.82 FT
NIKOLSKI AK 2054 UTC 3-27 1.61 FT
UNALASKA AK 2056 UTC 3-27 1.44 FT
KODIAK AK 2100 UTC 3-27 4.50 FT
SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT

PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 281701
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 24
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
901 AM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU
  ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK 1945 UTC 3-27 11.60 FT
KING COVE AK 2023 UTC 3-27 4.33 FT
CHIGNIK AK 2026 UTC 3-27 21.82 FT
NIKOLSKI AK 2054 UTC 3-27 1.61 FT
UNALASKA AK 2056 UTC 3-27 1.44 FT
KODIAK AK 2100 UTC 3-27 4.50 FT
SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT

PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 281801
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 25
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1001 AM AKDT FRI MAR 28 2014

THIS MESSAGE REDUCES THE WARNING FOR SOME AREAS IN SOUTHERN CALIFORNIA TO AN ADVISORY.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./ TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./

* THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
48 HOURS AFTER THE WAVES INITIAL ARRIVAL ALONG SOUTHERN ALASKA COASTS
EAST OF NIKOLSKI AND ALONG THE US AND CANADIAN WEST COAST.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT

KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 281902
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 26
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1102 AM AKDT FRI MAR 28 2014

THIS MESSAGE REDUCES THE TSUNAMI WARNING TO A TSUNAMI ADVISORY FOR AREAS OF SOUTHERN ALASKA/ BRITISH COLUMBIA AND WASHIGTON. THE TSUNAMI ADVISORY FOR THE WESTERN ALEUTIANS IS CANCELLED.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA AND OREGON FROM ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./ TO THE OREGON-WASHINGTON BORDER

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/ TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./

* THE COASTAL AREAS OF WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE OREGON-WASHINGTON BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

CANCELLATIONS
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* THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF ALASKA FROM NIKOLSKI ALASKA TO ATTU ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA - THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 24 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT

MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 282000
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 27
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1200 PM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA AND OREGON FROM ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./ TO THE OREGON-WASHINGTON BORDER

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/ TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./

* THE COASTAL AREAS OF WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE OREGON-WASHINGTON BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA - THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 24 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT

MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 282101
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 28
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
101 PM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA AND OREGON FROM ALAMITOS
  BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./ TO THE
  OREGON-WASHINGTON BORDER

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO
  BORDER TO ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF
  L.A./

* THE COASTAL AREAS OF WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE OREGON-WASHINGTON BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA - THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 24 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT

MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 282200
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 29
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
200 PM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA AND OREGON FROM ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./ TO THE OREGON-WASHINGTON BORDER

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/ TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./

* THE COASTAL AREAS OF WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE OREGON-WASHINGTON BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA - THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
24 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT

MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 282300
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 30
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
300 PM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA AND OREGON FROM ALAMITOS
  BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./ TO THE
  OREGON-WASHINGTON BORDER

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO
  BORDER TO ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF
  L.A./

* THE COASTAL AREAS OF WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE OREGON-WASHINGTON BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA - THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
18 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT

MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 290004
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 31
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
404 PM AKDT FRI MAR 28 2014

THIS MESSAGE DOWNGRADES THE TSUNAMI WARNING TO AN ADVISORY FOR SOME AREAS OF CALIFORNIA AND OREGON.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA AND OREGON FROM POINT CONCEPTION CALIFORNIA TO DOUGLAS-LANE COUNTY LINE OREGON/10 MILES SW OF FLORENCE/

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/ TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./

* THE COASTAL AREAS OF CALIFORNIA FROM ALAMITOS BAY CALIFORNIA/LOCATED 20 MILES SE OF L.A./ TO POINT CONCEPTION CALIFORNIA

* THE COASTAL AREAS OF OREGON FROM DOUGLAS-LANE COUNTY LINE OREGON/10 MILES SW OF FLORENCE/ TO THE OREGON-WASHINGTON BORDER

* THE COASTAL AREAS OF WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE OREGON-WASHINGTON BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA - THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 18 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT

ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 290101
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 32
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
501 PM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA AND OREGON FROM POINT CONCEPTION CALIFORNIA TO DOUGLAS-LANE COUNTY LINE OREGON/10 MILES SW OF FLORENCE/

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/ TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO POINT CONCEPTION CALIFORNIA

* THE COASTAL AREAS OF OREGON - WASHINGTON - BRITISH COLUMBIA

AND ALASKA FROM DOUGLAS-LANE COUNTY LINE OREGON/10 MILES SW OF FLORENCE/ TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA - THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
18 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT

MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 290201
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 33
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
601 PM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA AND OREGON FROM POINT CONCEPTION CALIFORNIA TO DOUGLAS-LANE COUNTY LINE OREGON/10 MILES SW OF FLORENCE/

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/ TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO POINT CONCEPTION CALIFORNIA

* THE COASTAL AREAS OF OREGON - WASHINGTON - BRITISH COLUMBIA

AND ALASKA FROM DOUGLAS-LANE COUNTY LINE OREGON/10 MILES SW OF FLORENCE/ TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA - THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
18 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT

MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 290302
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 34
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
702 PM AKDT FRI MAR 28 2014

THIS MESSAGE DOWNGRADES THE TSUNAMI WARNING TO AN ADVISORY FOR ALL AREAS IN CALIFORNIA AND OREGON WHICH WERE IN A WARNING.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/ TO NIKOLSKI ALASKA

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO POINT CONCEPTION CALIFORNIA

* THE COASTAL AREAS OF CALIFORNIA AND OREGON FROM POINT CONCEPTION CALIFORNIA TO DOUGLAS-LANE COUNTY LINE OREGON/10 MILES SW OF FLORENCE/

* THE COASTAL AREAS OF OREGON - WASHINGTON - BRITISH COLUMBIA

AND ALASKA FROM DOUGLAS-LANE COUNTY LINE OREGON/10 MILES SW OF FLORENCE/ TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA - THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
15 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT

MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 290402
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 35
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
802 PM AKDT FRI MAR 28 2014

THIS MESSAGE DOWNGRADES THE TSUNAMI WARNING TO AN ADVISORY FOR SOME REGIONS IN THE EASTERN ALEUTIAN ISLANDS.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
  CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER
  TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES
DANGEROUS
  TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL
  STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI
  ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF
  HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT
  EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS
  INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
15 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT

HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 290500
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 36
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
900 PM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF
  HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED
  80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
  CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER
  TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES
DANGEROUS
  TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL
  STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI
  ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF
  HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT
  EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS
  INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
12 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
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SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT

KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 290600
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 37
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1000 PM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF
  HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED
  80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -

THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
12 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT

KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 290700
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 38
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1100 PM AKDT FRI MAR 28 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF
  HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED
  80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO
12 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

TIME OBSERVED MAX

SITE	OF MEASUREMENT	TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT

WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 290800
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 39
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1200 AM AKDT SAT MAR 29 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF
  HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED
  80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 12 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK 1945 UTC 3-27 11.60 FT
KING COVE AK 2023 UTC 3-27 4.33 FT
CHIGNIK AK 2026 UTC 3-27 21.82 FT
NIKOLSKI AK 2054 UTC 3-27 1.61 FT
UNALASKA AK 2056 UTC 3-27 1.44 FT
KODIAK AK 2100 UTC 3-27 4.50 FT
SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT

PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 290901
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 40
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
101 AM AKDT SAT MAR 29 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF
  HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED
  80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS

---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 9 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT

KING COVE AK 2023 UTC 3-27 4.33 FT
CHIGNIK AK 2026 UTC 3-27 21.82 FT
NIKOLSKI AK 2054 UTC 3-27 1.61 FT
UNALASKA AK 2056 UTC 3-27 1.44 FT
KODIAK AK 2100 UTC 3-27 4.50 FT
SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 291000
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 41
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
200 AM AKDT SAT MAR 29 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF
  HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED
  80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 9 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT

CHIGNIK AK 2026 UTC 3-27 21.82 FT
NIKOLSKI AK 2054 UTC 3-27 1.61 FT
UNALASKA AK 2056 UTC 3-27 1.44 FT
KODIAK AK 2100 UTC 3-27 4.50 FT
SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 291101
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 42
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
301 AM AKDT SAT MAR 29 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF
  HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED
  80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL

CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 9 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT

NIKOLSKI AK 2054 UTC 3-27 1.61 FT
UNALASKA AK 2056 UTC 3-27 1.44 FT
KODIAK AK 2100 UTC 3-27 4.50 FT
SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
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LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE

TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS
---
* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION
---
* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 291200
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 43
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
400 AM AKDT SAT MAR 29 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF
  HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED
  80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
  CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER

TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 6 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT

UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT
GUAM	0321 UTC 3-28	0.30 FT
PAGO PAGO AM SAMOA	0433 UTC 3-28	0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 291300
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 44
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
500 AM AKDT SAT MAR 29 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF
  HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED
  80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
  CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER
  TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 6 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT

KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
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YAKUTAT AK	2132 UTC 3-27	2.44 FT
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CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
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LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT
PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
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SAN FRANCISCO	0155 UTC 3-28	3.71 FT
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SANTA MONICA CA	0157 UTC 3-28	3.38 FT
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SAN DIEGO CA	0214 UTC 3-28	1.74 FT
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KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT
GUAM	0321 UTC 3-28	0.30 FT
PAGO PAGO AM SAMOA	0433 UTC 3-28	0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 291401
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 45
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
601 AM AKDT SAT MAR 29 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF
  HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED
  80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
  CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER
  TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 6 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT

SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---
* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION
---
* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 291501
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 46
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
701 AM AKDT SAT MAR 29 2014

THIS MESSAGE CONTINUES THE WARNING AND ADVISORY AS IN THE
PREVIOUS MESSAGE.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON -
  BRITISH COLUMBIA AND ALASKA FROM THE CALIFORNIA-MEXICO
  BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF
  HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED
  80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---
* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL
  CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER
  TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---
* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 3 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT

SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---
* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION
---
* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 291601
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 47
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
801 AM AKDT SAT MAR 29 2014

THIS MESSAGE CANCELS THE ADVISORY FOR AREAS IN SOUTHERN CALIFORNIA.

...THE TSUNAMI WARNING REMAINS IN EFFECT...

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI WARNING IN EFFECT FOR...

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM RINCON POINT CALIFORNIA/LOCATED 15 MILES SE OF SANTA BARBARA/ TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

* THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

CANCELLATIONS
---
* THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF CALIFORNIA FROM THE CALIFORNIA-MEXICO BORDER TO RINCON POINT CALIFORNIA/LOCATED 15 MILES SE OF SANTA BARBARA/

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA - THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI WARNING AREAS
---

* WIDESPREAD DANGEROUS COASTAL FLOODING ACCOMPANIED BY POWERFUL CURRENTS IS POSSIBLE AND MAY CONTINUE FOR MANY HOURS AFTER TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

IMPACTS FOR TSUNAMI ADVISORY AREAS
---

* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS
---

* IF YOU ARE IN A WARNING AREA - MOVE INLAND TO HIGHER GROUND.

* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 3 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK 1945 UTC 3-27 11.60 FT
KING COVE AK 2023 UTC 3-27 4.33 FT
CHIGNIK AK 2026 UTC 3-27 21.82 FT
NIKOLSKI AK 2054 UTC 3-27 1.61 FT
UNALASKA AK 2056 UTC 3-27 1.44 FT
KODIAK AK 2100 UTC 3-27 4.50 FT
SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT

PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

---

* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 291702
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 48
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
902 AM AKDT SAT MAR 29 2014

THIS MESSAGE DOWNGRADES THE PREVIOUSLY WARNED REGION IN ALASKA TO
ADVISORY AND CANCELS THE ADVISORY FOR PORTIONS OF ALASKA/ BRITISH COLUMBIA AND WASHINGTON.

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA AND OREGON FROM RINCON POINT CALIFORNIA/LOCATED 15 MILES SE OF SANTA BARBARA/ TO THE OREGON-WASHINGTON BORDER

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

CANCELLATIONS
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* THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF WASHINGTON - BRITISH COLUMBIA AND ALASKA FROM THE OREGON-WASHINGTON BORDER TO KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/

* THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF ALASKA FROM UNIMAK PASS ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/ TO NIKOLSKI ALASKA

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA - THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI ADVISORY AREAS

---
* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES DANGEROUS
TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS - UPDATED
---
* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 3 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT

SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
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SANTA MONICA CA 0157 UTC 3-28 3.38 FT
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MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
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KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT
PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

---

* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
1150 PDT MAR 27 2014
1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST

* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION
---
* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 291801
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 49
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1001 AM AKDT SAT MAR 29 2014

THIS MESSAGE CANCELS THE TSUNAMI ADVISORY FOR TE CAST OF OREGON.

...THE TSUNAMI ADVISORY REMAINS IN EFFECT...

WARNINGS/ADVISORIES/WATCHES - UPDATED

TSUNAMI ADVISORY IN EFFECT FOR...

* THE COASTAL AREAS OF CALIFORNIA FROM RINCON POINT
  CALIFORNIA/LOCATED 15 MILES SE OF SANTA BARBARA/ TO THE
  OREGON-CALIFORNIA BORDER

* THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE
  ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS
  ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

CANCELLATIONS
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* THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF
  OREGON FROM THE OREGON-CALIFORNIA BORDER TO THE
  OREGON-WASHINGTON BORDER

* FOR OTHER US AND CANDIAN PACIFIC COASTS IN NORTH AMERICA -
  THIS IS FOR INFORMATION ONLY.

IMPACTS FOR TSUNAMI ADVISORY AREAS
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* A TSUNAMI CAPABLE OF PRODUCING STRONG CURRENTS OR WAVES
DANGEROUS
  TO PERSONS IN OR VERY NEAR THE WATER IS EXPECTED.

* CURRENTS MAY BE HAZARDOUS TO SWIMMERS... BOATS... AND COASTAL
  STRUCTURES AND MAY CONTINUE FOR MANY HOURS AFTER THE TSUNAMI
  ARRIVAL.

* THE FIRST WAVE MAY NOT BE THE LARGEST.

RECOMMENDED ACTIONS

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* IF YOU ARE IN AN ADVISORY AREA - MOVE OFF THE BEACH AND OUT OF HARBORS AND MARINAS. WIDESPREAD INUNDATION OF LAND IS NOT EXPECTED FOR ADVISORY AREAS.

* BE ALERT TO INSTRUCTIONS FROM YOUR LOCAL EMERGENCY OFFICIALS.

* DO NOT GO TO THE COAST TO OBSERVE THE TSUNAMI.

* DO NOT RETURN TO THE COAST UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

SIGNIFICANT TSUNAMI ACTIVITY IS EXPECTED TO CONTINUE FOR UP TO 3 MORE HOURS FOR AREAS STILL IN A LEVEL OF ALERT.

ADDITIONAL OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT
SAND POINT AK	1945 UTC 3-27	11.60 FT
KING COVE AK	2023 UTC 3-27	4.33 FT
CHIGNIK AK	2026 UTC 3-27	21.82 FT
NIKOLSKI AK	2054 UTC 3-27	1.61 FT
UNALASKA AK	2056 UTC 3-27	1.44 FT
KODIAK AK	2100 UTC 3-27	4.50 FT
SEWARD AK	2110 UTC 3-27	4.11 FT
ADAK AK	2145 UTC 3-27	1.03 FT
ELFIN COVE AK	2133 UTC 3-27	1.32 FT
YAKUTAT AK	2132 UTC 3-27	2.44 FT
PORT ALEXANDER AK	2114 UTC 3-27	1.41 FT
CORDOVA AK	2235 UTC 3-27	1.82 FT
SHEMYA AK	2245 UTC 3-27	0.34 FT
SITKA AK	2222 UTC 3-27	3.74 FT
CRAIG AK	2255 UTC 3-27	3.88 FT
LANGARA BC	2300 UTC 3-27	1.60 FT
TOFINO BC	2334 UTC 3-27	2.41 FT
NEAH BAY WA	2234 UTC 3-27	2.02 FT
LAPUSH WA	2241 UTC 3-27	3.15 FT
WESTPORT WA	2302 UTC 3-27	2.11 FT

PORT ANGELES WA	2354 UTC 3-27	1.38 FT
GARIBALDI OR	2259 UTC 3-27	1.05 FT
NEWPORT OR	2309 UTC 3-27	2.46 FT
CHARLESTON OR	2333 UTC 3-27	2.74 FT
PORT ORFORD OR	2355 UTC 3-27	6.76 FT
CRESCENT CITY CA	0100 UTC 3-28	7.11 FT
ARENA COVE CA	2313 UTC 3-27	5.58 FT
EUREKA CA	0006 UTC 3-28	4.23 FT
POINT REYES CA	0142 UTC 3-28	3.38 FT
SAN FRANCISCO	0155 UTC 3-28	3.71 FT
ALAMEDA CA	0141 UTC 3-28	1.84 FT
MONTEREY CA	2338 UTC 3-27	3.97 FT
PORT SAN LUIS CA	0108 UTC 3-28	14.30 FT
SANTA BARBARA CA	0145 UTC 3-28	2.64 FT
SANTA MONICA CA	0157 UTC 3-28	3.38 FT
SAN PEDRO CA	0230 UTC 3-28	3.11 FT
LA JOLLA CA	0222 UTC 3-28	3.5 FT
SAN DIEGO CA	0214 UTC 3-28	1.74 FT
MIDWAY IS	2304 UTC 3-27	1.44 FT
NAWILIWILI HI	2323 UTC 3-27	2.20 FT
HALEIWA HI	2338 UTC 3-27	4.99 FT
HONOLULU HI	2338 UTC 3-27	2.23 FT
KAHULUI HI	2341 UTC 3-27	7.15 FT
KAWAIHAE HI	0014 UTC 3-28	2.89 FT
WAKE ISLAND	0052 UTC 3-28	0.33 FT
GUAM	0321 UTC 3-28	0.30 FT
PAGO PAGO AM SAMOA	0433 UTC 3-28	0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

PRELIMINARY EARTHQUAKE PARAMETERS

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* MAGNITUDE 9.0
* ORIGIN TIME 1050 AKDT MAR 27 2014
  1150 PDT MAR 27 2014
  1850 UTC MAR 27 2014
* COORDINATES 55.2 NORTH 156.7 WEST
* DEPTH 11 MILES
* LOCATION 100 MILES SE OF CHIGNIK ALASKA
  485 MILES SW OF ANCHORAGE ALASKA

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THIS MESSAGE WILL BE UPDATED IN 60 MINUTES.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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WEAK51 PAAQ 291900
TSUAK1

BULLETIN
PUBLIC TSUNAMI MESSAGE NUMBER 50
NWS WEST COAST/ALASKA TSUNAMI WARNING CENTER PALMER AK
1100 AM AKDT SAT MAR 29 2014

...THE TSUNAMI ADVISORY IS CANCELLED...

CANCELLATIONS
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* THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF CALIFORNIA FROM RINCON POINT CALIFORNIA/LOCATED 15 MILES SE OF SANTA BARBARA/ TO THE OREGON-CALIFORNIA BORDER

* THE TSUNAMI ADVISORY IS CANCELED FOR THE COASTAL AREAS OF ALASKA FROM KENNEDY ENTRANCE ALASKA/LOCATED 40 MILES SW OF HOMER/ TO UNIMAK PASS ALASKA/LOCATED 80 MILES NE OF DUTCH HARBOR/

IMPACTS - UPDATED
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* TSUNAMI ACTIVITY HAS SUBSIDED ALONG THE COASTS OF THE U.S. WEST COAST STATES... BRITISH COLUMBIA AND ALASKA.

* ONGOING ACTIVITY MAY PERSIST IN SOME AREAS CAUSING STRONG CURRENTS DANGEROUS TO SWIMMERS AND BOATS.

* THE DETERMINATION TO RE-OCCUPY HAZARD ZONES MUST BE MADE BY LOCAL OFFICIALS.

RECOMMENDED ACTIONS - UPDATED
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* DO NOT RE-OCCUPY HAZARD ZONES UNTIL LOCAL EMERGENCY OFFICIALS INDICATE IT IS SAFE TO DO SO.

OBSERVATIONS OF TSUNAMI ACTIVITY - UPDATED

SITE	TIME OF MEASUREMENT	OBSERVED MAX TSUNAMI HEIGHT

SAND POINT AK 1945 UTC 3-27 11.60 FT
KING COVE AK 2023 UTC 3-27 4.33 FT
CHIGNIK AK 2026 UTC 3-27 21.82 FT
NIKOLSKI AK 2054 UTC 3-27 1.61 FT
UNALASKA AK 2056 UTC 3-27 1.44 FT
KODIAK AK 2100 UTC 3-27 4.50 FT
SEWARD AK 2110 UTC 3-27 4.11 FT
ADAK AK 2145 UTC 3-27 1.03 FT
ELFIN COVE AK 2133 UTC 3-27 1.32 FT
YAKUTAT AK 2132 UTC 3-27 2.44 FT
PORT ALEXANDER AK 2114 UTC 3-27 1.41 FT
CORDOVA AK 2235 UTC 3-27 1.82 FT
SHEMYA AK 2245 UTC 3-27 0.34 FT
SITKA AK 2222 UTC 3-27 3.74 FT
CRAIG AK 2255 UTC 3-27 3.88 FT
LANGARA BC 2300 UTC 3-27 1.60 FT
TOFINO BC 2334 UTC 3-27 2.41 FT
NEAH BAY WA 2234 UTC 3-27 2.02 FT
LAPUSH WA 2241 UTC 3-27 3.15 FT
WESTPORT WA 2302 UTC 3-27 2.11 FT
PORT ANGELES WA 2354 UTC 3-27 1.38 FT
GARIBALDI OR 2259 UTC 3-27 1.05 FT
NEWPORT OR 2309 UTC 3-27 2.46 FT
CHARLESTON OR 2333 UTC 3-27 2.74 FT
PORT ORFORD OR 2355 UTC 3-27 6.76 FT
CRESCENT CITY CA 0100 UTC 3-28 7.11 FT
ARENA COVE CA 2313 UTC 3-27 5.58 FT
EUREKA CA 0006 UTC 3-28 4.23 FT
POINT REYES CA 0142 UTC 3-28 3.38 FT
SAN FRANCISCO 0155 UTC 3-28 3.71 FT
ALAMEDA CA 0141 UTC 3-28 1.84 FT
MONTEREY CA 2338 UTC 3-27 3.97 FT
PORT SAN LUIS CA 0108 UTC 3-28 14.30 FT
SANTA BARBARA CA 0145 UTC 3-28 2.64 FT
SANTA MONICA CA 0157 UTC 3-28 3.38 FT
SAN PEDRO CA 0230 UTC 3-28 3.11 FT
LA JOLLA CA 0222 UTC 3-28 3.5 FT
SAN DIEGO CA 0214 UTC 3-28 1.74 FT
MIDWAY IS 2304 UTC 3-27 1.44 FT
NAWILIWILI HI 2323 UTC 3-27 2.20 FT
HALEIWA HI 2338 UTC 3-27 4.99 FT
HONOLULU HI 2338 UTC 3-27 2.23 FT
KAHULUI HI 2341 UTC 3-27 7.15 FT
KAWAIHAE HI 0014 UTC 3-28 2.89 FT
WAKE ISLAND 0052 UTC 3-28 0.33 FT
GUAM 0321 UTC 3-28 0.30 FT

PAGO PAGO AM SAMOA 0433 UTC 3-28 0.46 FT

HEIGHT - OBSERVED MAX TSUNAMI HEIGHT IS THE WATER LEVEL ABOVE THE TIDE LEVEL AT THE TIME OF MEASUREMENT.

NEXT UPDATE AND ADDITIONAL INFORMATION

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* THIS WILL BE THE LAST WEST COAST/ALASKA TSUNAMI WARNING CENTER BULLETIN ISSUED FOR THIS EVENT.

* REFER TO THE INTERNET SITE WCATWC.ARH.NOAA.GOV FOR MORE INFORMATION.

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

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