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A. Example

1. West Coast/Alaska Tsunami Watch/Warning/Advisory Product A-1
2. West Coast/Alaska Tsunami Watch/Warning Cancellation B-1

1. **General:** This Regional Supplement describes responsibilities and provides guidance to National Weather Service (NWS) Western Region (WR) Weather Forecast Offices (WFO) with coastal areas of responsibility. WR WFOs with coastal areas of responsibility are responsible for planning for and taking appropriate action when there is a threat of a tsunami, including dissemination of tsunami watches and warnings. Coastal WFOs in WR are also responsible for ensuring the readiness of office staff and systems through routine operational drills and for coordinating community outreach activities to increase tsunami hazard awareness and to assist in emergency preparedness for tsunami events (e.g. promotion of the TsunamiReady program). State emergency offices (California, Oregon, and Washington) have the responsibility to develop warning procedures, plans and evacuations for local communities. WFOs should cooperate with these agencies and, where possible, aid in warning dissemination. Specific (localized) procedures will be included in WFO Station Duty Manuals.

2. **Tsunami Watch/Warning Products and Dissemination:** Tsunami watch/warning/advisory and earthquake information bulletin headers (AWIPS headers: **TSUWCA, TIBWCA, EQIAKX, and EQIWOC**) and dissemination paths are described at:

<http://wcatwc.arh.noaa.gov/Products/messagesumm.htm>

Specific message definitions for these products are provided at:

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

The West Coast/Alaska Tsunami Warning Center (WC/ATWC), located at Palmer, Alaska, is the official source of all tsunami watches, warnings, and supplemental information bulletins for WR WFOs. See Appendix A for an example Tsunami Watch/Warning/Advisory product (issued by WC/ATWC).

The initial notification of the tsunami watch/warning will be transmitted by WC/ATWC to WFOs in California, Oregon, and Washington via AWIPS and also by voice announcement on the National Warning System (NAWAS). If NAWAS is inoperative, commercial telephone should be used as a back-up. Tsunami Watches/Warnings will be handled and disseminated by WFOs with the highest possible priority. Concerning dissemination of tsunami watches/warnings on NOAA Weather Radio (NWR), the following procedures apply.

2.1. Tsunami Watches and Warnings: Edit the TSUWCA product for information specific to tsunami watches and/or warnings effective in WFO areas of responsibility, taking into account NWR broadcast areas which extend into adjacent WFO County Warning Areas. Tsunami watches and warnings may be manually recorded, but should be broadcast without delay, using appropriate SAME codes on NWR transmitters with coastal public and marine zone coverage (this will activate EAS as defined by the governing EAS plan). Tsunami watches and warnings may also be broadcast on transmitters covering (solely) inland areas, depending on local customer requirements. Minimum information in broadcast tsunami watches/warnings (as taken from the TSUWCA) will include:

- a. Effective area(s) for watches/warnings,
- b. Time, location, and magnitude of tsunami-generating earthquake, and
- c. Estimated times of arrival of tsunami at designated geographical points (as taken from the TSUWCA).

2.2. Updates to Tsunami Watches/Warnings: Updated Tsunami Watches/Warnings (also using the product header **TSUWCA**) may be issued by the WC/ATWC to further refine watch/warning areas and forecast times of arrival. Follow similar procedures as outlined in paragraph 2.1 (above).

2.3. Advisories and Information Bulletins: When the Pacific Tsunami Warning Center (PTWC) in Hawaii issues a tsunami watch and/or warning within its Area of Responsibility (AOR), but the west coast (California, Oregon, and Washington) *remains outside the warning threshold area*, the WC/ATWC follows up by issuing a “Tsunami Advisory” for the west coast (also using the AWIPS header: **TSUWCA**). For earthquakes of magnitude 6.5 or greater, but remaining below warning threshold, a “Tsunami Information Bulletin” is issued (AWIPS header: **TIBWCA**). In either of these situations, WFOs may broadcast selected information over NWR contained within these bulletins, as needed for local customer requirements.

2.4. “ALL CLEAR”: The WC/ATWC is responsible for issuing tsunami watch/warning cancellation bulletins (TSUWCA) and final supplements, but local emergency management authorities are ultimately responsible for determining the final “ALL CLEAR”. An example cancellation bulletin (from WC/ATWC) is in Appendix A.

2.5 Acknowledgment of TSUWCA products: WFOs will acknowledge initial watches, warnings, cancellations, and test products from WC/ATWC, as quickly as possible, using the AWIPS product header: **TMAXXX** (where “XXX” = WFO identifier). In the Acknowledgment message, provide time of receipt (Z), WFO name (or 3-letter WFO ID), e-mail address of the responding individual, and WFO phone number.

APPENDIX A

Example (Initial) Tsunami Watch/Warning/Advisory from WC/ATWC
(TSUWCA)

WEPA41 PAAQ 182247

TSUWCA

TO - TSUNAMI WARNING SYSTEM PARTICIPANTS IN
ALASKA/BRITISH COLUMBIA/WASHINGTON/OREGON/CALIFORNIA
FROM - WEST COAST AND ALASKA TSUNAMI WARNING CENTER/NOAA/NWS
SUBJECT - TSUNAMI WARNING BULLETIN - INITIAL
BULLETIN NUMBER 1
ISSUED 08/18/2004 AT 2247 UTC

...A TSUNAMI WARNING IS IN EFFECT FOR THE COASTAL AREAS
FROM THE CALIFORNIA-MEXICO BORDER TO LANGARA I.-BC.
INCLUSIVE...

...A TSUNAMI WATCH IS IN EFFECT FOR THE COASTAL AREAS FROM
LANGARA I.-BC. TO SITKA-AK...

...AT THIS TIME THIS BULLETIN IS FOR INFORMATION ONLY FOR
OTHER AREAS OF ALASKA...

EARTHQUAKE DATA

PRELIMINARY MAGNITUDE - 7.3

LOCATION - 41.5N 125.1W - 70 MILES NW OF EUREKA-CA.
295 MILES NW OF SAN FRANCISCO-CA.

TIME - 1440 ADT 08/18/2004
1540 PDT 08/18/2004
2240 UTC 08/18/2004

EVALUATION

IT IS NOT KNOWN - REPEAT NOT KNOWN - IF A TSUNAMI EXISTS BUT A
TSUNAMI MAY HAVE BEEN GENERATED. THEREFORE PERSONS IN LOW
LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR
LOCAL EMERGENCY OFFICIALS. PERSONS ON THE BEACH SHOULD MOVE TO
HIGHER GROUND IF IN A WARNED AREA. TSUNAMI WAVE HEIGHTS CANNOT BE
PREDICTED. TSUNAMIS MAY BE A SERIES OF WAVES WHICH COULD BE
DANGEROUS FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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PZZ130-131-133-134-132-135-150-153-156-110-250-210-255-350-
353-356-450-455-550-530-535-555-670-673-650-655-750-WAZ001-
002-005-006-007-008-009-010-011-013-014-015-016-021-ORZ001-
002-021-022-CAZ001-002-005-007-006-075-074-009-034-035-039-
040-046-041-042-043-182347-

COASTAL AREAS FROM THE CALIFORNIA-MEXICO BORDER TO LANGARA
I.-BC. INCLUSIVE.

NWS WR SUPP 17 SEPTEMBER 27, 2004

...A TSUNAMI WARNING IS IN EFFECT FOR THE COASTAL AREAS FROM THE CALIFORNIA-MEXICO BORDER TO LANGARA I.-BC. INCLUSIVE...

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL

CRESCENT CITY-CA	1609 PDT AUG 18	ASTORIA-OR	1734 PDT AUG 18
CHARLESTON-OR	1623 PDT AUG 18	TOFINO-BC	1738 PDT AUG 18
SEASIDE-OR	1705 PDT AUG 18	SAN PEDRO-CA	1802 PDT AUG 18
SAN FRANCISCO-CA	1724 PDT AUG 18	LA JOLLA-CA	1817 PDT AUG 18
NEAH BAY-WA	1728 PDT AUG 18	LANGARA-BC	1827 PDT AUG 18

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PKZ032-031-042-034-033-035-041-036-AKZ023-024-025-026-028-029-027-182347-
COASTAL AREAS FROM LANGARA I.-BC. TO SITKA-AK.

...A TSUNAMI WATCH IS IN EFFECT FOR THE COASTAL AREAS FROM LANGARA I.-BC. TO SITKA-AK...

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL

SITKA-AK	1813 ADT AUG 18	KETCHIKAN-AK	1839 ADT AUG 18
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PKZ176-175-172-170-171-155-150-132-136-138-137-130-141-140-120-121-129-127-125-126-128-052-051-022-012-043-013-011-021-AKZ191-185-181-171-145-111-101-121-125-131-135-017-022-018-019-021-022-181347-
COASTAL AREAS FROM SITKA-AK. TO ATTU-AK.

...NO - REPEAT NO - TSUNAMI WATCH OR WARNING IS IN EFFECT FOR THE COASTAL AREAS FROM SITKA-AK. TO ATTU-AK...

FOR INFORMATION ONLY - ESTIMATED TIMES OF INITIAL WAVE ARRIVAL

YAKUTAT-AK	1906 ADT AUG 18	CORDOVA-AK	1957 ADT AUG 18
JUNEAU-AK	1919 ADT AUG 18	DUTCH HARBOR-AK	2006 ADT AUG 18
KODIAK-AK	1923 ADT AUG 18	COLD BAY-AK	2025 ADT AUG 18
SEWARD-AK	1930 ADT AUG 18	ADAK-AK	2031 ADT AUG 18
VALDEZ-AK	1948 ADT AUG 18	HOMER-AK	2035 ADT AUG 18
SAND PT.-AK	1949 ADT AUG 18	SHEMYA-AK	2112 ADT AUG 18

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THE PACIFIC TSUNAMI WARNING CENTER AT EWA BEACH HAWAII WILL ISSUE BULLETINS FOR OTHER AREAS OF THE PACIFIC.

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS WARRANT. THE TSUNAMI WATCH/WARNING WILL REMAIN IN EFFECT UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE [HTTP://WCATWC.ARH.NOAA.GOV](http://WCATWC.ARH.NOAA.GOV) FOR MORE INFORMATION AND ETA SITES.

APPENDIX B

**Example Tsunami Watch/Warning Cancellation Bulletin
(TSUWCA)**

WEPA41 PAAQ 182253

TSUWCA

TO - TSUNAMI WARNING SYSTEM PARTICIPANTS IN
ALASKA/BRITISH COLUMBIA/WASHINGTON/OREGON/CALIFORNIA
FROM - WEST COAST AND ALASKA TSUNAMI WARNING CENTER/NOAA/NWS
SUBJECT - TSUNAMI WARNING BULLETIN - FINAL
BULLETIN NUMBER 2
ISSUED 08/18/2004 AT 2253 UTC

...THE TSUNAMI WARNING AND WATCH STATUS IS CANCELLED FOR
CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA - AND
ALASKA...

EARTHQUAKE DATA

PRELIMINARY MAGNITUDE - 7.2
LOCATION - 41.5N 125.1W - 70 MILES NW OF EUREKA-CA.
295 MILES NW OF SAN FRANCISCO-CA.
TIME - 1440 ADT 08/18/2004
1540 PDT 08/18/2004
2240 UTC 08/18/2004

A SMALL TSUNAMI WAS OBSERVED AT THE FOLLOWING SITES
POINT ARENA 030CM/1.0FT.

EVALUATION

NO TSUNAMI DANGER EXISTS FOR ALASKA - BRITISH COLUMBIA -
WASHINGTON - OREGON OR CALIFORNIA. HOWEVER SOME AREAS MAY
EXPERIENCE SMALL SEA LEVEL CHANGES. AS LOCAL CONDITIONS
CAN CAUSE A WIDE VARIATION IN TSUNAMI WAVE ACTION THE ALL
CLEAR DETERMINATIONS MUST BE MADE BY LOCAL AUTHORITIES.

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PKZ032-031-042-034-033-035-041-036-PZZ130-131-133-134-132-
135-150-153-156-110-250-210-255-350-353-356-450-455-550-
530-535-555-670-673-650-655-750-AKZ023-024-025-026-028-029-
027-WAZ001-002-005-006-007-008-009-010-011-013-014-015-016-
021-ORZ001-002-021-022-CAZ001-002-005-007-006-075-074-009-
034-035-039-040-046-041-042-043-182253-
COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA - AND ALASKA.

...THE TSUNAMI WARNING AND WATCH STATUS IS CANCELLED FOR
CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA - AND
ALASKA...

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THE PACIFIC TSUNAMI WARNING CENTER WILL ISSUE A FINAL BULLETIN.

THIS WILL BE THE LAST WEST COAST AND ALASKA TSUNAMI WARNING
CENTER WATCH/WARNING BULLETIN ISSUED FOR THIS EVENT.

THIS INFORMATION IS ALSO POSTED AT [HTTP://WCATWC.ARH.NOAA.GOV](http://WCATWC.ARH.NOAA.GOV).