

2015 NTHMP WASHINGTON ACCOMPLISHMENTS



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Division of Geology and Earth Resources
David K. Norman - State Geologist

A Look Back

- Various public forums and workshops hosted along the Pacific Coast of Washington:

- 2 forums in Grays Harbor County
- 3 forums and 3 workshops on Pacific County
- 3 workshops in Clallam County
- 1 workshop at the Partners in Preparedness Conference in Pierce County
- 1 workshop at the North Beach School District in Seattle

- New informational brochures printed and distributed
 - *Tsunami 101*
 - *Resource Guides*

What is the All Hazard Alert Broadcast System? (AHAB)

It is a pole-mounted voice/tone siren system with an intense blue light that is deployed on our coast.

What does an AHAB Siren sound like?

Tsunami Siren Test:

The AHAB is tested the **first Monday of each month at 12:00 noon**. During the routine test of the system, the siren will play the Westminster Chimes and a voice message, in English, will follow the test chimes:

- **Voice Test Message:** "The following is a test of the siren system. It is only a test. This is a test of the siren warning system. If this had been a real emergency you should tune in to your local radio station or listen to this system for further instructions. This was only a test."

Tsunami Warning:

Upon the issuance of a **Tsunami Warning**, the siren will play a wail sound and a voice message, in English, will follow the siren.

- **Voice Warning Message:** "This is not a test. A tsunami warning has been issued for the coastal areas of Washington. A tsunami can cause dangerous flooding. If you are in a low coastal area, you are at risk and must move to higher ground or inland now. Do not return until directed to do so. Tune into your local radio station for additional information. This is not a test. A tsunami warning has been issued for the coastal areas of Washington move to higher ground or inland now."



3 Key elements to prepare for a tsunami

1. Develop a family disaster plan. Everyone needs to know what to do on their own to protect themselves in case of disaster.
2. Be familiar with local earthquake and tsunami plans. Know where to go to survive a tsunami. Identify an evacuation site within 15 minutes walking distance of home and/or work.
3. Prepare three-day emergency kits for your home, vehicle, and work.

What should I have in my Emergency Kit?

You should prepare an emergency kit with a three-day supply of necessary items for each member of your family. The kit should be adapted to your needs, but keep it light and manageable in case you must evacuate on foot. Have it ready to go for immediate evacuation. Possible supplies include:

- Maps showing safe routes to high ground with assembly areas.
- Non-perishable food, cooking and eating utensils, including can opener.
- Water and a water purification kit.
- First-aid kit and prescriptions.
- Plastic bags for water storage and waste.
- Dental and personal hygiene items.
- Sturdy shoes, clothes, sleeping bag, and tent.
- Portable radio, headlamp/flashlight, and extra batteries.
- Pocket knife, whistle, matches, duct tape, and gloves.



For more information contact:

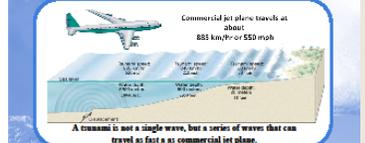
- Your local Emergency Management Office
- Washington State Emergency Management Division, www.emd.wa.gov



TSUNAMI Information & Preparedness

For the Pacific Ocean Coast of Washington State

What is a Tsunami?
A tsunami is a series of waves most commonly caused by an earthquake beneath the sea floor. They can occur at any time of the day or night. In deep water when a tsunami occurs, tsunamis cause no damage and are hardly noticed. As the tsunami wave approaches the shore from the open ocean, the wave slows down and can grow as high as 50-60 feet.



- Remember:**
- Tsunamis are a series of waves - the first wave is not always the largest - tsunami waves can last for hours.
 - Tsunamis can be thunderous walls of water that immediately flood inland areas. City streets can become rivers channels of floating debris.
 - Tsunami waves, of any size, can create strong currents that can cause damage and easily sweep people off their feet.
 - A person cannot swim, surf, or outrun a tsunami.

- Know these natural signs:**
- **Earthquake ground shaking.**
 - **Unusual ocean activity,** if the sea level decreases rapidly exposing the sea bed, this is a warning sign that a tsunami will arrive imminently. Do not go to the sea bed, run to high ground, immediately.
 - **Low rumbling sounds** from the ocean, like an approaching airplane or train.

PACIFIC COUNTY All Hazards Preparedness Guide
Emergency Management Agency (PCEMA) 2013-2013

Hazards Most Likely to Hit This Region

How to Protect Your Family and Property

Featuring Neighbors Helping Each Other

Emergency Services and Response

Preparing Your Business for Disaster

Identified by:
Pacific County Emergency Management Agency (PCEMA)
Washington State Military Department Emergency Management Division

Shoalwater Bay Indian Tribe
National Tsunami Hazard Mitigation Program

PACIFIC COUNTY TSUNAMI EVACUATION ROUTES

Evacuation routes are shown in yellow and orange. The map includes locations like Long Beach Assembly, Star Center, and Ocean Park.

TSUNAMI HAZARD ZONE

IN CASE OF EARTHQUAKE, GO TO HIGH GROUND OR INLAND

PACIFIC COUNTY TSUNAMI EVACUATION ROUTES

Evacuation routes are shown in yellow and orange. The map includes locations like Long Beach Assembly, Star Center, and Ocean Park.

TSUNAMI HAZARD ZONE

IN CASE OF EARTHQUAKE, GO TO HIGH GROUND OR INLAND

DANGER FROM THE SEA
Tsunami - Head for High Ground Immediately

Know these terms:

- Evacuation:** The act of leaving a place of danger.
- Assembly Area:** A place where people can gather safely.
- High Ground:** Land that is significantly higher than the surrounding area.
- Inland:** A safe area away from the coast.

TSUNAMI EMERGENCY ALERTS FOR COASTAL COMMUNITIES

INSTANT ALERTS FOR ALL EMERGENCIES
NOAA All Hazards Weather Radio

NOAA Weather Radio is a series of the National Oceanic and Atmospheric Administration. The NOAA Weather Radio provides the most accurate information about severe weather and other hazards.

Mirando Atrás

- Spanish-speaking community forum was held in Aberdeen, Washington.
- Spanish outreach items were developed, printed, and distributed:
 - Spanish AHAB Siren Informational Flyer (Figure 1)
 - Spanish Tsunami 101 brochure (Figure 2-3)
 - Spanish highway evacuation signs (Figure 4, 5, & 6)
 - Spanish Out-of-Area Contact Cards

Figure 1: Spanish AHAB Siren informational flyer

Sirena de Emisión de Alerta para Todo Tipo de Peligro (AHAB)

La División de Manejo de Emergencias del Estado de Washington ha desarrollado un sistema de sirena montada en un poste que está desplegado a lo largo de la costa.

Este sistema incluye diversas características:

- Activación satelital desde el Centro de Operaciones de Emergencia del Estado 24/7 (a toda hora).
- Activación por radio desde la Agencia de Manejo de Emergencias local.
- Altavoz modular con cobertura de 360 grados.
- Capacidad para proporcionar alertas de voz y tono.
- Luz azul intensa, que también puede ser vista a través de la neblina desde larga distancia, para alertar a las personas con deficiencias auditivas.



¿Cómo suena una sirena AHAB?

Durante una rutina de PRUEBA del sistema, la sirena reproducirá el carrillón de Westminster. El carrillón de prueba irá seguido por el siguiente mensaje de voz:

➔ **Mensaje de voz de prueba:** Esta es una prueba del sistema de sirenas. Es tan solo una prueba. Esta es una prueba del sistema de sirenas de advertencia. Si hubiera sido una emergencia real, debería simular su estación de radio local o escuchar este sistema para más instrucciones. Esto solo fue una prueba.

Ante la emisión de una ADVERTENCIA DE TSUNAMI, la sirena reproducirá un sonido agudo seguido por un mensaje de voz. Se usará el siguiente mensaje de voz:

➔ **Mensaje de voz de advertencia:** "Esta no es una prueba. Se ha emitido una advertencia de tsunami para las áreas costeras de Washington. Los tsunamis pueden causar inundaciones peligrosas. Si se encuentra en un área costera baja, está en peligro y debe desplazarse hacia terreno elevado o tierra adentro ahora. No regrese hasta que se lo indiquen. Síntomice su estación de radio local para más información. Esta NO es una prueba. Se ha emitido una advertencia de tsunami para las áreas costeras de Washington, desplácese a terreno elevado o tierra adentro ahora."

Patrocinado por



¿Qué es la Sirena de Emisión de Alerta para Todo Tipo de Peligro (AHAB)?

Es un sistema de sirena de aviso/voz montada en un poste con una luz azul intensa desplegado en nuestra costa.

¿Cómo suena una sirena AHAB?

PRUEBA DE LA SIRENA DE TSUNAMIS:

El AHAB va a probar el primer aviso de cada mes a las 17:00 del miércoles. Durante la prueba de todas las sirenas, la sirena reproducirá el carrillón de Westminster seguido por un mensaje de voz en inglés.

- Mensaje de voz de prueba: Este es una prueba del sistema de sirenas. Es tan solo una prueba. Esto es una prueba del sistema de sirenas de advertencia. Si hubiera sido una emergencia real, debería simular su estación de radio local o escuchar este sistema para más instrucciones. Esto solo fue una prueba.

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3 elementos clave para prepararse para un tsunami

- Desarrolle un plan familiar para evacuarse. Todos deben saber qué hacer para prepararse a sí mismos en caso de un terremoto.
- Practicar con los planes locales en caso de terremoto o tsunami. Sepa dónde ir para sobrevivir a un tsunami. Identifique un sitio de evacuación a 15 minutos de distancia o más desde su casa y/o lugar de trabajo.
- Prepare kits de emergencia que duren 3 días para su casa, vehículo y lugar de trabajo.

¿Qué debería tener en mi kit de emergencia?

Debe preparar un kit de emergencia con su familia que dure 3 días con los elementos necesarios para cada miembro de su familia. El kit debe adecuarse a sus necesidades, pero mantenga mínimo y esencial en caso de que tenga que evacuar a pie. Incluya lo siguiente para evacuar inmediatamente. Los posibles suministros incluyen:

- Mapas que indiquen rutas seguras hacia terreno elevado con trayecto de salida.
- Alimentos no perecederos, sencillos para cocinar y comer, incluyendo un almuerzo.
- Agua y un kit de purificación de agua.
- Botiquín de primeros auxilios y medicamentos.
- Botas de plástico para abrigarse agua y barro.
- Teléfono de emergencia personal y celular.
- Español escrito/leído, mapa, bolsa de dormir y ropa.
- Radio portátil, baterías extras y pilas de respaldo.
- Mercadería, dinero, identificación y guías.

Para más información, póngase en contacto con:

- Su Oficina de Manejo de Emergencias local.
- La División de Manejo de Emergencias del Estado de Washington.



TSUNAMI Información y preparación

Para la costa del Océano Pacífico del Estado de Washington

¿Qué es un Tsunami?

Un tsunami es una serie de olas causada generalmente por un movimiento rápido del fondo marino. Pueden ocurrir en cualquier momento del día o la noche. Las aguas profundas, cuando ocurre un tsunami, no se muestran turbadas y apenas son perceptibles. A medida que las olas del tsunami se aproximan a la costa desde el océano abierto, disminuyen en visibilidad y pueden crecer hasta 10-50 pies.



Recuerde:

- Los tsunamis son una serie de olas - la primera ola no siempre es la más grande - las olas pueden durar horas.
- Los tsunamis pueden ser peligrosos, incluso si agua que parecen inofensivos las olas sucesivas. Las olas de una ciudad pueden transformarse en olas de 50 metros de altura.
- Las olas de un tsunami de cualquier tamaño pueden causar corrientes fuertes que pueden causar daño o sermores a las personas.
- Una persona no puede bajar a tierra, refugiarse al costado de un tsunami.

¿Cómo estar mejor preparados?

- Conocer mejor valores naturales.
- Practicar con los planes locales.
- Identificar el nivel de inundación.
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- Identificar el nivel de inundación.

Nota: Puede que no haya tiempo para advertencias oficiales, desfogar siempre y cuando el fondo marino se mueva o el fondo marino se mueva o el fondo marino se mueva.

Figure 2: Spanish Tsunami 101 informational brochure (Front)

Figure 4: Spanish interpretive sign: "Caution Tsunami Zone / In case of Earthquake run to high ground"

Figure 5: Spanish sign: "Evacuation Route"

Figure 6: Spanish sign: "Assembly Area"

Figure 3: Spanish Tsunami 101 informational brochure (Back)

Did you hear?

Upgraded tsunami sirens to increase redundancy by providing Pacific County and the Shoalwater Bay Indian Tribe of the Shoalwater Bay Indian Reservation the ability to activate the tsunami sirens wirelessly.



*Figure 1:
Willapa Bay
Grange siren –
facing south*

Follow us UP the Yellow Brick Road

Pedestrian evacuation drills were held along the Pacific Coast of Washington in the spring of 2015 and in conjunction with the ShakeOut Drill held October 15th, 2015.



Are you



The Makah Indian Tribe of the Makah Indian Reservation completed their TsunamiReady certification on February 23rd, 2015

The TsuInfo Alert newsletter was published and distributed to over 600 followers throughout the year.

AUGUST 2015 Volume 17, Number 4

THE CASCADIA EARTHQUAKE AND TSUNAMI – WHAT ARE WE TO DO? A response to the New Yorker articles

By Chuck Wallace, Deputy Director Emergency Management, Grays Harbor County, WYA

The articles recently presented in The New Yorker Magazine by Kathryn Schulz, The Really Big One, (July 20, 2015) and How to Stay Safe When the Big One Comes, (July 28, 2015), have caused a tremendous amount of discussion throughout the nation. For the most part, her information is right on the mark as to what could occur during a Cascadia Subduction Zone earthquake and resulting tsunami. However, while understanding her wish to channel her article's "emotion into action," it is apparent Ms. Schulz neglected to report on specific types of mitigation, prevention, and safety plans which are in place in all coastal communities, to provide residents and visitors the best chance of surviving an earthquake and possible tsunami.

Credit: Washington Division of Geology and Earth Resources

In the City of Aberdeen, a coastal city in Grays Harbor County, Washington (WYA), Police Chief Bob Torgerson implemented a "Yellow Brick Road" signage program to help lead the citizens to higher ground and safety during an earthquake and tsunami event. The Quinalt Indian Nation has initiated the same type of program, as has the Shoalwater Bay Tribe in Tokeland, WYA. This type of program will save many lives by getting the affected to high ground prior to the impact of tsunami.

Our schools take the possibility of disaster seriously. Twice each year they practice Drop, Cover, and Hold On drills to teach students what they should do during an earthquake. During The Great Shakeout Exercise in October (modeled after the California Great Shakeout Earthquake exercise), every school in our county practices Drop, Cover, and Hold On, then students, faculty and staff evacuate the school to their assigned assembly areas which are in tsunami-safe areas.

The Ocosta School District just outside of Westport, WYA is currently building the first Vertical Evacuation, Tsunami Safe Haven building in North America. This was driven by a community desire to keep their children and the schools teachers and employees safe should a Cascadia event occur. This was modeled from Project Safe Haven which was initiated by Washington State Emergency Management Division, The Washington Department of Natural Resources, the University of Washington, and the Federal Emergency Management Agency*

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DECEMBER 2015 Volume 17, Number 6

New National Tsunami Hazard Mitigation Program (NTHMP) Chair Appointed

From NTHMP News

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In November 2015, Dr. Grant Cooper was appointed Chair of the NTHMP by National Weather Service (NWS) Deputy Director Laura Furgione. Dr. Cooper replaces Ms. Aimee Devaris as Chair upon Ms. Devaris' departure from the NWS to become the Alaska Region Director of the U.S. Geological Survey on November 30, 2015. Grant Cooper, Ph.D., is Director of the NOAA/National Weather Service Western Region in Salt Lake City, Utah.

Dr. Cooper joined the NWS following a thirty year career with the United States Navy. As a meteorologist and oceanographer, he served in a variety of operational weather tours and senior leadership positions including command of the Joint Typhoon Warning Center / Naval Maritime Forecast Center in Pearl Harbor, HI and Naval Central Meteorology and Oceanography Center, Kingdom of Bahrain. As Weather Services Director, Dr. Cooper had programmatic and operational oversight of the Navy's aviation, maritime, and expeditionary weather lines of operation.

The NTHMP Chair presides over the NTHMP Coordinating Committee and shall exercise all powers usually incident to the office. In addition to chairing meetings, the NTHMP Chair also has these responsibilities:

- Appoints the emergency management and science representatives for the East Coast and Gulf Coast states, confirmed by a majority vote of the Coordinating Committee.
- Votes only to break a tie.
- Attend meetings at which important NTHMP recommendations are presented and shall speak on behalf of the NTHMP.
- Has discretion to close meetings if sensitive matters will be discussed.
- Approves draft meeting agendas and meeting minutes as prepared by the NTHMP Administrator.



WASHINGTON STATE DEPARTMENT OF
Natural Resources
 Peter Goldmark - Commissioner of Public Lands

Division of Geology and Earth Resources
 David K. Norman - State Geologist

Where are we going with this?

- Complete Cascadia Subduction Zone Modeling for the entire Washington Coast
 - *Oregon will be helping us work on the Columbia River modeling*
- Provide coastal emergency managers (Tribal, County, and Local) with the information needed to plan response efforts
 - *This includes public education materials*
- Provide resources to the tourism/hospitality and retail industries
 - *To include parks and transportation*
- Up-to-Date Tsunami Warning Infrastructure available to all Washington coastal communities
- 100% Washington Pacific/Puget Sound Coast TsunamiReady

Feedback and Questions

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