



U.S. Tsunami Warning Center 2025 Recap

By Dave Snider, Tsunami Warning Coordinator, National Tsunami Warning Center

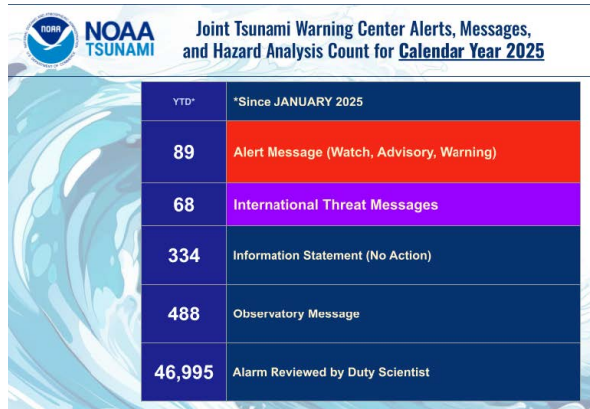
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Was it a busy year? Let's count 2025's alarms and alerts

Calendar Year 2025 was the first complete year we've recorded NTWC and PTWC message and alarm counts together. Strange but true- as best we know.

So what? Numbers and data help make policy decisions, build a story, generate awareness, and align efforts. Momentum builds- perhaps even shoals. This helps the Warning Centers and Information Center build on awareness, training, preparedness, and response efforts for you and NTHMP. This is just a sample of some of what quantifies what we do.



For the NTWC team, we responded to and supported:

- Feb 08 -- M7.6 Honduras event
- May 02 -- M7.5 Drake Passage event
- July 16 -- M7.3 Sand Point event
- July 19 -- M7.4 Kamchatka event
- July 29 -- M8.8 Petropavlovsk-Kamchatsky event
- Aug 10 -- Tracy Arm, AK, Landslide event (post analysis)
- Aug 21 -- M7.5 Drake Passage event - take 2
- Sep 18 -- M7.8 Kamchatka aftershock
- Dec 08 -- M7.6 Hokkaido event

Here's one way to look at the numbers:

- The US Tsunami Warning Centers communicate to the public nearly every day (on the 2025 average, 94) with a message of assurance and "no tsunami; no danger". [334 TIS messages sent in 2025, ~92% of 365 days].

(Continues on page 2)

TsuInfo Alert

Prepared and published bimonthly by the Washington State Department of Natural Resources, Washington Geological Survey, on behalf of the National Tsunami Hazard Mitigation Program (NTHMP), a state/federal partnership led by the National Oceanic and Atmospheric Administration (NOAA).

This publication is free upon request and is available in print by mail and online at:

<http://www.dnr.wa.gov/programs-and-services/geology/geologic-hazards/tsunamis/tsuinfo-alert>

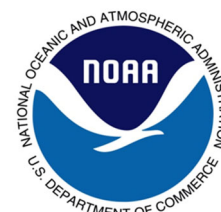
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NATIONAL TSUNAMI HAZARD MITIGATION PROGRAM LIBRARY CATALOG:

<http://d92019.eos-intl.net/D92019/OPAC/Index.aspx>

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U.S. Tsunami Warning Center 2025 Recap

By Dave Snider, Tsunami Warning Coordinator, National Tsunami Warning Center

(Continued from page 1)

- The US Tsunami Warning Centers rapidly analyzed nearly 500 significant earthquakes and contributed to the global seismic analysis process. Some of these earthquakes required a duty scientist to send a tsunami alert (see first bullet and the event list above) [488 Observatory Messages]
- The US Tsunami Warning Centers sent nearly 90 alert-level messages to coastal residents and partners during significant periods of tsunami risk along the United States coastline. [89 Tsunami Warning, Advisory, and Watch messages]. Every event is an opportunity to learn, grow, adapt, and improve our US Tsunami Warning System.
- The US Tsunami Warning Centers supported the International Tsunami Information Center and Pacific Tsunami Warning System and its communities, through the ITIC, with 68 Threat Messages to non-US partners during 2025.
- For each event, each message, every alarm, and every alert- our Tsunami teams (duty scientists, ITs, ETs, ASAs, and program leaders) keep the mission going and do a rapid reset to be ready again and always. **We are one day closer to the next tsunami.**



NTWC and PTWC Director respond to the 2025 Sep 18 Kamchatka M7.8 aftershock.

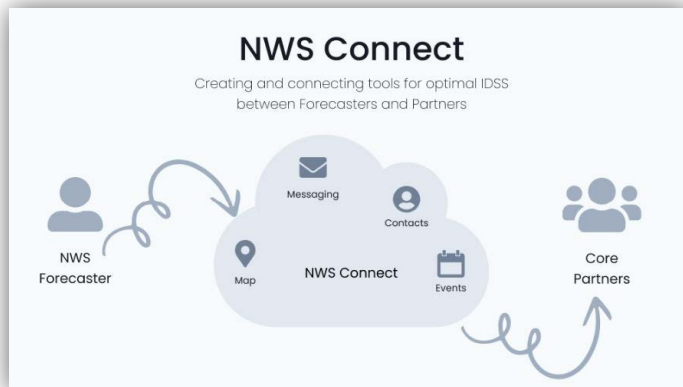
NTHMP PARTNER UPDATES

NWS Connect Begins at NTWC

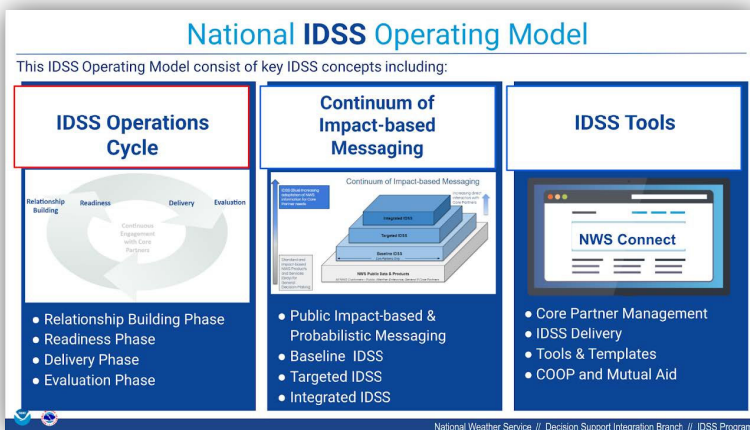
By Dave Snider, Tsunami Warning Coordinator, National Tsunami Warning Center

In late December, NTWC took the next step in joining the NWS's partner contact management tool, NWS Connect. Partners who have been contacted in the past for event response, outreach, training, or service questions received an invitation to join the new system.

NTWC has not enjoyed previous NWS systems that WFOs use to broadcast messages, service updates, to direct partners. As such, use of third-party paid tools like ISC International have been used to send SMS, email, and fax messages for years as a way to ensure critical coastal partners receive life-saving alerts from NTWC.



Once partners are onboarded in the new system, NTWC will use NWS Connect to overlap and integrate with the WFO and ROC-level partner lists, and rely on you, our customer and partner, to keep your contact information up to date and adjusted. NWS Connect is integrated with NWS Chat (Slack). If a customer has a NWS Chat account, they are likely in NWS Connect. However, a NWS Connect account does not need to be a NWS Chat user.



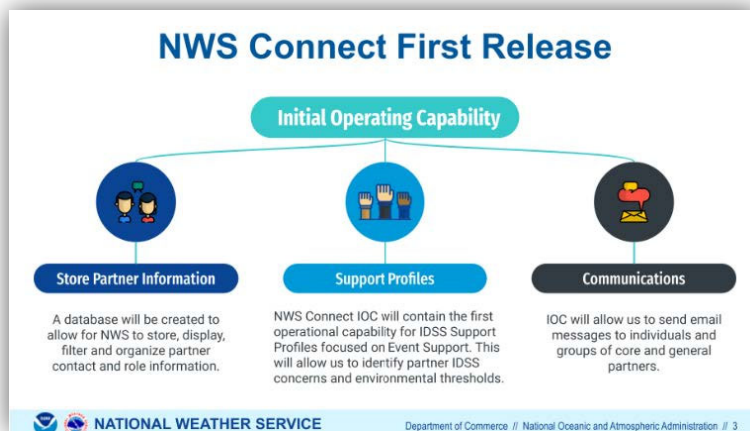
In just a few days, 100s of coastal partners have connected to NTWC thanks to the team's hard work and preparation, which leveraged years of list-keeping and ISC International updates.

What's next:

As we adjudicate the new partner lists and groups with hard copies and other system lists, we'll look for ways to test these connections with our partners to serve news and information about NTWC service, learning opportunities, functional or table top exercises, and in-event messaging.

We'll also explore ways to integrate this next generation of partner contact management into operations, and begin to use this database as our true north for phone calls (call downs), service backup, and future customer care.

If you didn't see an email to sign up and consider yourself an NTWC partner- send a note to david.snider@noaa.gov.



NCEI NATURAL HAZARDS IMAGE DATABASE

EVENT: February 27, 2010 Maule, Chile Earthquake and Tsunami—The February 27, 2010 magnitude 8.8 (Mw) earthquake occurred off the coast of Chile, north of Concepción. The ground shaking and tsunami resulted in 558 deaths, and USD \$30 billion damage in Chile. Locally, tsunami waves reached a runup height of 95 feet (29 meters). The most significant loss of life occurred in Constitución, when a tsunami swept away campers on Oreggo Island. The low-lying site was crowded with weekend visitors for a summer fireworks display but lacked high ground and easy escape routes. The [tsunami was observed throughout the Pacific basin](#), with reported observations as far as China (over 11,500 miles from the earthquake epicenter). While the tsunami waves caused over \$3 million in damage to California boat harbors, all related fatalities were confined to the local area.



PHOTO DETAILS: Tubul, Chile, South of Concepción Boats overturned after being swept by the tsunami waves into the Tubul Bridge. The eight-span steel girder Tubul bridge, oriented north-south with a span length of 92 ft (28 m), failed due to soil liquefaction and displacement caused by the earthquake's main shock and aftershock. All the spans were unseated at their sound end. Image courtesy of Hermann M. Fritz, Georgia Institute of Technology.

<https://www.ngdc.noaa.gov/hazardimages/#/tsunami/257>

More images from this event are available in the [NCEI Natural Hazards Image Database](#). Any parties interested in contributing photographs to this free and public resource may contact NCEI for submission requirements at haz.info@noaa.gov or Lindsey Wright at lindsey.m.wright@noaa.gov.

Link to NCEI Natural Hazards Image Database: <https://www.ngdc.noaa.gov/hazardimages/#/>

NTHMP PARTNER UPDATES

USVI Prepares to Launch Phase II of Territory-Wide Tsunami Community Assessment

By Regina Browne, VITEMA Deputy Director of Planning and Preparedness

The U.S. Virgin Islands Territorial Emergency Management Agency (VITEMA) is gearing up to launch the second phase of its Tsunami Awareness and Preparedness Community Assessment next quarter, building on the momentum of a successful first phase that has already transformed how the territory approaches tsunami preparedness.

The initial assessment, conducted in partnership with Consult Universal LLC, gathered responses from community members across St. Thomas, St. John, St. Croix, and Water Island. Using a data-driven approach grounded in human factors and community engagement research, the survey measured awareness of tsunami hazards, knowledge of warning signals and evacuation procedures, and overall preparedness levels across all four islands. The findings directly informed VITEMA's programming, most notably the territory's first-ever Tsunami Walk series, which brought residents, first responders, students, and community organizations together to practice evacuation routes and strengthen real-world response capabilities.



Phase II of the assessment will dig deeper into the gaps identified during the first round, with a focus on measuring whether community awareness and preparedness have improved following the Tsunami Walks and other outreach efforts. This next phase supports the NTHMP Strategic Plan, particularly Strategy 2.1.4 for evaluating outreach effectiveness and community preparedness levels, and has been a consistent component of VITEMA's NTHMP grant applications, reflecting the territory's long-term commitment to evidence-based preparedness programming.

A key deliverable of Phase II will be the development of a generalized version of the community assessment survey, designed so that other states and territories can adapt and utilize it within their own tsunami preparedness programs. Accompanying the survey will be a comprehensive guidebook and playbook that outlines the methodology, implementation strategies, data collection best practices, and lessons learned from the USVI experience. By sharing both the tool and the roadmap, VITEMA aims to contribute a scalable resource to the broader NTHMP community, allowing partner programs nationwide to conduct their own baseline assessments and measure the effectiveness of their outreach and education efforts.



The assessment has been a priority for VITEMA Director Daryl Jaschen, whose support for both the survey initiative and the Tsunami Walks has reinforced the agency's grassroots approach to building community resilience. As VITEMA has demonstrated, effective emergency management starts with listening to communities and empowering them with the knowledge and practice they need to stay safe.

Residents and stakeholders across the territory are encouraged to participate when Phase II launches. For more information, contact VITEMA at vitemaoutreach@vitema.vi.gov.

NTHMP PARTNER UPDATES

CRESCENT Announcements and Upcoming Webinars

New CRESCENT Special Interest Group: Tsunami Sources for Hazard Assessment

Simulating the fluid dynamics of a tsunami requires a source model specifying seafloor motion. For tsunami hazard assessment, a collection of sources is needed that spans some range of potential future earthquakes. Within the Cascadia Subduction Zone, several sets of sources have been used in the past, either for "scenario modeling" or for full probabilistic tsunami hazard assessment (PTHA). New sets are being actively generated and studied by the [DET Working Group](#), as well as by others such as the [USGS Powell Center Tsunami Source Standardization Working Group](#) and [Cascadia CoPes Hub Team I](#). This SIG seeks to help tsunami modelers and stakeholders in the emergency management and engineering communities understand the relation between these sets of sources and their appropriate use for practical tsunami hazard assessment projects or risk/loss calculations, while also ensuring transparent reproducibility of source generation methods and fostering continued improvements to these models. This SIG will collaborate with the [CPAL Working Group](#) to include information on past inundation and land-level changes as context to these sources, using recent geologic studies, when feasible. This SIG will also work on collecting and/or cataloging sources in open data repositories, and developing software and tutorials to facilitate their use.



If you are interested in participating, please complete [the interest survey](#).

If you are interested in updates, please join [the TSHA community listserv](#).

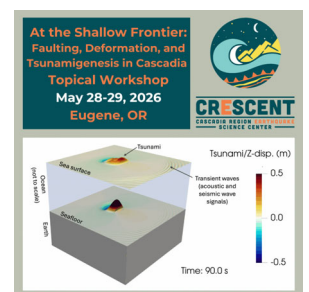
Webinars

- 2/26/2026, 1:00-2:00 pm - CRESCENT Staff:
"Updates from the Cascadia Region Earthquake Science Center"
<https://cascadia.engineering.oregonstate.edu/webinars/updates-from-the-cascadia-region-earthquake-science-center/>
- 3/19/2026, 1:00-2:00 pm - Dr. Heidar Rastiveis and Dr. Ben Leshchinsky, Oregon State University: "AI-Driven GIS Tool for Landslide-Induced Infrastructure Disruptions in the Cascadia Subduction Zone"
<https://cascadia.engineering.oregonstate.edu/webinars/ai-driven-gis-tool-for-landslide-induced-infrastructure-disruptions-in-the-cascadia-subduction-zone/>



Application Open for 2026 CRESCENT Topical Workshop

CRESCENT's Dynamic Rupture, Earthquake Cycle, and Tsunamis Working Group (DET) is organizing a Topical Workshop on May 28 & 29, 2026, at the University of Oregon in Eugene, OR. "[At the Shallow Frontier: Faulting, Deformation, and Tsunamiogenesis in Cascadia](#)" is a workshop to determine future research priorities to capture the full complexity of shallow rupture, deformation processes, and tsunami generation to improve tsunami hazard assessments for Cascadia. Apply to attend by 20 February, 2026.



Workshop and application info here: <https://cascadiaquakes.org/2025/01/20/det-topical-workshop/>

AWARDED TSUNAMI RESEARCH

Jacks in a Flash: Christine Regalla

By Jill Kimball, Northern Arizona University Review

How do the most intense earthquakes and tsunamis happen, and what can we do to mitigate the harm they cause? Thanks to geologists like Christine Regalla, an associate professor in the School of Earth and Sustainability, we're closer to answering big questions like these. Regalla recently won the International Ocean Discovery Program's prestigious Taira Prize for her work in the Pacific Ocean and in the lab, where she employs land-based research methods to understand what's really happening when tectonic plates move. The IODP prize is given each year to an early- to mid-career researcher who has made significant, trans-disciplinary contributions using data obtained through scientific ocean drilling. We asked her a few quick Qs about her research and the award.



Tell us about the research that earned you this prize.

A cornerstone of my research is using ocean drilling data to understand the geologic evolution of subduction zones, or plate tectonic boundaries, and their implications for hazards like large earthquakes and tsunamis. By integrating drilling data with other marine geophysical datasets like seismic imaging of geological structures below the seafloor, I have measured the style and rate of deformation where the tectonic plates meet off the shore of Japan. This subduction zone has experienced large and damaging earthquakes, including the 2011 magnitude 9.1 earthquake. One unique aspect of my research is applying land-based research techniques to marine settings. For example, I have adapted techniques to measure the amounts of the element beryllium-10, which is usually measured on land, to determine the age and movement of deep-sea sediments. I have also taken methods of analyzing topography to understand faulting on land and used them to understand faulting below the seafloor using bathymetric maps, which measure ocean depth. Through the years, my work has been made possible by the data and collaborations I built while participating in IODP scientific ocean drilling expeditions.

What does it mean to you to be recognized by your peers in this way?

It is an incredible honor to be selected for the 2025 Asahiko Taira International Scientific Ocean Drilling Research Prize. The opportunities to participate in multiple ocean drilling expeditions—from sailing as a graduate student on Expedition 343 following the 2011 Tohoku-oki earthquake to serving as co-chief scientist on IODP Expedition 405—have been among the most rewarding and transformative experiences of my career. These experiences have shown me the strength of international scientific collaboration and the extraordinary creativity and innovation that emerge when scientists from around the world work together to solve complex problems. I am deeply grateful to the scientists, engineers, technicians and staff whose expertise, dedication and collaboration make ocean drilling science possible and continue to expand our understanding of the oceanic frontier.

Where is your research headed next?

We are just at the beginning of being able to solve some of the most challenging scientific questions regarding what causes large earthquakes and tsunamis. The data we have collected from northeast Japan after the 2011 Tohoku-oki earthquake and tsunami are allowing us to advance our understanding far beyond where we were five or 10 years ago. I'm excited to continue to work with these data and take the lessons learned to other margins of the work to assess their hazard potential.

Link to original article: <https://news.nau.edu/jacks-in-a-flash-christine-regalla/>

NEW TSUNAMI RESEARCH

RESEARCH

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PARTNER UPDATES & TSUNAMI EVENTS/CONFERENCES

Permanent River Monitoring Stations Installed in Valdivia Chile

By Ignacio Sepúlveda – San Diego State University Coastal Engineering Lab

A new initiative in Valdivia, Chile is strengthening continuous monitoring of the Valdivia River through the installation of two permanent observation stations. The stations provide high-resolution, real-time measurements of water level and key water-quality variables—including temperature, salinity, dissolved oxygen, and chlorophyll—at multiple depths. One station was installed in November and a second became operational in January, supported



by INNOVEX (a Chilean sensing-technology company) and the Club de Yates Valdivia, in collaboration with Ignacio Sepúlveda (San Diego State University, Coastal Engineering Lab). Valdivia is internationally recognized in part because it was heavily impacted by the tsunami generated by the 1960 Great Chilean earthquake, which caused widespread devastation in the region. Beyond advancing estuarine research and navigation safety, the system will help track river responses to storms, tsunamis, meteorological surges, and other long waves, as well as seasonal salt-wedge intrusion. Data will be available online through the INNOVEX platform for the global research community, students, and local stakeholders.

UPCOMING NTHMP & RELATED EVENTS

- ◆ March 19, 2026—CARIBE WAVE 26 Tsunami Exercise
<https://tsunami.ioc.unesco.org/en/caribewave26>
- ◆ April 14-18, 2026—Seismological Society of America Meeting (Pasadena, CA)
<https://meetings.seismosoc.org/>
- ◆ May 2026—PACIFEX 26 Tsunami Exercise (Pacific US and Canada)
<https://tsunami.gov/?page=exercises>
- ◆ May 12-14, 2026—NTHMP 2026 Annual Meeting (Seattle, WA)
<https://www.weather.gov/nthmp/>
- ◆ August 3-7, 2026—LACSC 2026-Comprehensive study of tsunamis: causes, processes, effects and resilience Session (Mexico City, Mexico)
<https://lacsc2026.enesmorelia.unam.mx/#inicio>

