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#### New NTHMP Administrator Sarah Rogowski

Information provided by Greg Schoor, NOAA/NWS Branch Chief, Marine, Tropical, and Tsunami Services

The National Weather Service is excited to welcome Sarah Rogowski, new NWS Tsunami Program Analyst, who will serve as the NTHMP Administrator. Sarah began with the Tsunami Program in late March and has been learning about the NWSHQ Tsunami Program, the NTHMP, and the grants process. For those that have not been introduced or had the chance to communicate with her yet, please do so. She is excited to get to know NTHMP partners.

Sarah will continue to work out of Western Region HQ in Salt Lake City, UT, where she previously served as a Duty Officer at their Regional Operations Center (ROC). Make note of this for the time zone that she works/resides in (MT).

Sarah began her career in the National Weather Service (NWS) in 2002 at the Weather Forecast Office (WFO) in Lake Charles, LA, working then at WFO Jackson, MS and Baltimore/Washington DC (Sterling, VA), then to the Center Weather Service Unit (CWSU) in Salt Lake City, UT and most recently as an Emergency Response Specialist (ERS) and Regional Operations Center (ROC) Duty Officer



with NWS Western Region Headquarters. In her time in WRH and at the CWSU, Sarah was the co-developer and co-chair of the Intermountain West Aviation Weather Safety (IWAWS) Workshop and the lead of the Western Region HAZMAT Program. Sarah has experience with tsunami events from her time as an ERS Meteorologist, and also has extensive experience working with FEMA, the State of California, and other core partners. She is looking forward to bringing her skills to the National Tsunami Program, especially with her new role as Administrator of the NTHMP and the TsunamiReady® Program.

Sarah holds a Bachelor of Science in Atmospheric Science from the University of Louisiana at Monroe. Outside of work, you can find Sarah organizing and reorganizing her house, chasing her active 9-year-old son while coaching his school and rec league basketball teams, and watching sports, especially all things LSU, at home with her family.

For those also wondering about the responsibilities that Lewis Kozlosky (retired) held with management of the grants, Sarah will be picking up those duties, along with Greg Schoor, for the time being. Please continue to send inquiries, updates, and other correspondence on the grants, specifically, to <a href="mailto:nws.tsunamigrants@noaa.gov">nws.tsunamigrants@noaa.gov</a>.

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## TsuInfo Alert

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#### NATIONAL TSUNAMI HAZARD MITIGATION PROGRAM LIBRARY CATALOG:

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

The views expressed herein are those of the authors and not necessarily those of NOAA, the Washington Department of Natural Resources, or other sponsors of Tsulnfo Alert.

#### **New NTHMP Website Address June 2024**

Coming in mid-to-late June 2024 will be a redirect of the NWS-hosted NTHMP public-facing webpage. Please see the recently published NWS Service Change Notice (SCN), 24-56 -- the "National Tsunami Hazards Mitigation Program Website Will Move to New Web Address on or about June 19, 2024" (<a href="https://www.weather.gov/media/notification/pdf">https://www.weather.gov/media/notification/pdf</a> 2023 24/scn24-56 nthmp page address change.pdf). The web address will change from <a href="https://nww.weather.gov/nthmp/">https://nww.weather.gov/nthmp/</a> (the legacy site) to <a href="https://www.weather.gov/nthmp/">https://www.weather.gov/nthmp/</a> (new website). The look-and-feel of the



page will be different, as this new page is written on the standardized code that most of the NWS pages are hosted on (see graphic) but the content is the same, with the same links, sublinks, documents, and other materials from the legacy page. A project for the latter portion of 2024 will be refining and updating of many of the NTHMP pages and materials, updating outdated information and consolidating information where possible.

# Emergency Preparedness Week – Using Technology Before, During and After Emergencies

By PreparedBC, Ministry of Emergency Management and Climate Readiness, British Columbia

Emergency Preparedness Week (May 5 - 11, 2024) is a great time to learn about preparedness and how you and your loved ones can stay safe. This year, B.C.'s theme was "Using technology before, during and after emergencies", which recognizes the important role technology plays in preparedness and emergency management.

To acknowledge the role of technology in emergency preparedness, the <u>PreparedBC</u> team launched some new online resources and shared tech tips for each of the three steps to preparedness:

- I. Know the hazards: Use the <u>PreparedBC hazard map</u> to see what emergencies could happen near you!
- 2. <u>Make your plan</u>: Try the new <u>Emergency Ready Planner</u>. Build your personalized home emergency plan online using the interactive, customizable version of PreparedBC's home emergency plan.
- 3. <u>Gather supplies</u>: Don't forget to include tech essentials like batteries, a radio, flashlight and power bank.

We also connected with hundreds of people during the Emergency Preparedness Week webinar where we introduced these tech tips and answered questions from curious participants.



Technology touches our lives in so many new and exciting ways. For example, the <u>Canadian Earthquake Early Warning system</u> will send alerts to the public in B.C. on TV, radio and mobile devices through the National Public Alerting System. In addition, <u>EmergencyInfoBC</u> recently updated their website to increase access to timely information and enhance user experience and accessibility.

These positive advancements in technology help us to get the important information we need to stay safe during an emergency.

Of course, emergency preparedness is important year-round. To help keep communities and individuals connected through the year, the <u>B.C. Ministry of Emergency Management and Climate Readiness also launched a new blog</u>. The blog creates a space to share information and resources covering all four pillars of emergency management – mitigation, preparedness, response, recovery.

Have an idea for a topic you'd like to see featured on the blog? Let us know! Reach us by e-mail at <a href="mailto:PreparedBC@gov.bc.ca">PreparedBC@gov.bc.ca</a>.

Emergencies and disasters can happen at any time and often without warning. Educating people on how they can stay safe and get prepared by using technology made for a successful Emergency Preparedness Week, and we are already looking forward to next year!

**About PreparedBC**—PreparedBC is British Columbia's official emergency preparedness public education program for anyone who wants to be prepared, including Indigenous communities, local authorities, schools and the peoples of B.C.

#### Washington State Participates in 2024 Pacifex Exercise

By Elyssa Tappero, Washington Emergency Management Division

Washington State partners at the state, tribal, and local level took part in the National Tsunami Warning Center's (NTWC) Pacifex exercise this year for the first time in many years. Following on the heels of Washington's annual tsunami seminar and workshop in February 2024 and the Makah Tribe's tsunami exercise in April 2024, May 2024's national-level Pacifex exercise provided a perfect opportunity to put the processes and procedures discussed in the year's earlier exercises into action. For Washington Emergency Management Division (WA EMD), this participation included the repackaging and distribution of NTWC exercise bulletins, participation in NTWC conference calls, hosting Washington State Tsunami Coordination calls, and distribution of conference call notes, as well as activity and monitoring of Microsoft Teams and National Weather Service (NWS) Chat via Slack.

The Pacifex exercise highlighted many best practices and positive lessons learned for Washington's partners. Some of these include:

- NWS Chat is a great real-time resource during tsunami events for sharing information and asking questions of the NTWC and local NWS offices. WA EMD will continue to promote the use of NWS Chat to local jurisdictions while emphasizing the kind of communications for which the platform is intended.
- Microsoft Teams is also a great resource for real-time collaboration between partners at the local and state level, especially given its use for the WA State Tsunami Coordination calls. WA EMD and the Washington Geological Survey used Teams during the exercise to communicate directly in one shared chat, as did the WA EMD tsunami team and the WA Military Department's PIO team. WA EMD will encourage other state agencies to consider using Teams during tsunami events for coordinating within and between agencies.



Elyssa Tappero, Dante DiSabatino, and Ethan Weller in the WA State Emergency Operations Center preparing for the 2024 Pacifex exercise.

WA EMD's tsunami SOPs, response documents, and templates
proved very beneficial for those being trained during the exercise. While some areas of improvement were
identified, overall the documents are thoroughly vetted and play a key role during tsunami events in
Washington.

The exercise also highlighted areas where Washington and other state and federal partners can improve processes and products to ensure a smoother response in the future. Some of these include:

• Issues with participants receiving exercise messages through Everbridge, the platform WA EMD uses to send alerts. This lead to the WA EMD team discovering a more streamlined way to structure its tsunami alerting within the system, which will eliminate the risk of these issues occurring again in the future.

#### Washington State Participates in 2024 Pacifex Exercise

By Elyssa Tappero, Washington Emergency Management Division

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- When and why tsunami "undetermined danger" information statements are used for distant events versus the tsunami watch alert level. This topic continues to cause concern with state partners, so further discussion and clarification between NTWC and the Pacific partners are needed.
- Washington participants identified some potential opportunities to make it easier to find important information
  in the tsunami bulletins. WA EMD will follow up with the NTWC to see if these potential changes can be
  implemented.

Overall, WA EMD received very positive feedback from local stakeholders who participated in Pacifex and expects to see even more participation next year. Washington's state, tribal, and local jurisdictions definitely recognized the value of being able to practice tsunami communication procedures outside of a more casual workshop setting and look forward to doing so again next year. A big shout out and thank you to our NTWC and NWS partners for putting on such a successful and educational exercise!

#### Partnership Educates Clatsop County Hispanic-Latinx Residents About Natural Hazards

By Felicia Olmeta Schult, Oregon Sea Grant Extension Coastal Hazards Specialist

Latinos are the fastest-growing demographic in Oregon and often work in coastal industries located in high tsunami risk areas. This creates a necessity for natural hazard preparedness materials that consider the specific needs and values of Latino communities. For example, during past events such as the 2020 wildfires and the 2022 Tonga earthquake tsunami advisory, many Latino coastal residents didn't understand the warning systems in use and lacked awareness of how to respond to these disasters.

The results of a survey that was developed and distributed through a partnership of Oregon State University Extension Service, Oregon Sea Grant and Consejo Hispano at a Hispanic-Latinx community event in 2022 revealed that respondents had limited knowledge of earthquake and tsunami risks. The respondents had taken limited preparedness measures but want to receive more information via trainings and flyers, particularly at community or school events.

In response, OSU Extension organized a team consisting of Sea Grant, OSU faculty and staff and Consejo Hispano, a community-based organization working to empower and strengthen Hispanic-Latinx communities. The team was awarded a grant from the Cascadia Coastline and Peoples Hazards Research Hub, with the aim to co-create inclusive hazard awareness and emergency preparedness materials with Hispanic-Latinx coastal community members in Clatsop County.

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#### Partnership Educates Clatsop County Hispanic-Latinx Residents About Natural Hazards

By Felicia Olmeta Schult, Oregon Sea Grant Extension Coastal Hazards Specialist

(Continued from page 5)

The team evaluated existing tsunami and earthquake emergency preparedness materials for inclusivity indicators like language, multi-generational families and cultural representation. After identifying gaps and areas of improvement in some of the materials, the research team organized two focus group sessions with Consejo Hispano in January and February 2023 for the Hispanic-Latinx community that covered:

- Their support systems, particularly in times of emergency.
- What emergency preparedness information they would like to learn more about.
- Watching and evaluating emergency preparedness videos for both comprehension and if the content was relatable to their own circumstances, for example, multigenerational households and renters.

At the end of the focus group, each participant received a bag with earthquake/tsunami preparedness resources including tsunami inundation zone maps and a whistle. Thirteen people attended each focus group.



Community members take part in an activity on how to use tsunami evacuation maps during the hazards awareness training at the Bob Chisholm Community Center in Seaside. Credit: Jenna Tilt

As a result, the research team co-developed a new comprehensive hazard awareness two-hour training session in Seaside in June 2023 that specifically addressed the information needs and was highly relevant to Hispanic-Latinx coastal community members. The session, attended by 16 people, covered "go-bag" packing techniques and how to use tsunami evacuation maps. The session featured guest speakers Tiffany Brown from the Clatsop County Emergency Management office and Aaron Groth with the OSU Extension Fire Program, who shared insights into their respective areas of expertise. To support the participants in their preparedness efforts, Consejo Hispano donated a go-bag to each attendee.

The day after the training, the project team collected footage for two videos featuring four Spanish-speaking and Latinx community members who attended the training. The goal of the videos is to educate viewers on essential topics, specifically preparing a go-bag, and understanding the intricacies of reading a tsunami evacuation map for a safe evacuation. The videos are in Spanish with Spanish and English subtitles:

- Tsunami Evacuation Wayfinding
- Orientación de Evacuación por Tsunami
- Packing a Go Bag
- Cómo armar una mochila de emergencia

Sections of the videos are included in a third video, "Tsunami Preparedness in Coastal Communities."

Link to original article:

https://extension.oregonstate.edu/impact/partnership-educates-clatsop-county-hispanic-latinx-residents-about-natural-hazards

#### RESEARCH & NTHMP PARTNER NEWS

#### **RESEARCH**

**TITLE:** A Review of Tsunamis Generated by Volcanoes (TGV) Source Mechanism, Modelling, Monitoring and Warning Systems

**CITATION:** Schindelé, François; Kong, Laura; Lane, E. M.; Paris, Raphaël; Ripepe, Maurizio; Titov, Vasily; Bailey, Rick, 2024, A Review of Tsunamis Generated by Volcanoes (TGV) Source Mechanism, Modelling, Monitoring and Warning Systems: Pure and Applied Geophysics, <a href="https://doi.org/10.1007/s00024-024-03515-y">https://doi.org/10.1007/s00024-024-03515-y</a>.

**ABSTRACT:** Tsunamis generated by volcanic eruptions have risen to prominence since the December 2018 tsunami generated by the flank collapse of Anak Krakatau during a moderate eruption and then the global tsunami generated by the explosive eruption of the Hunga volcano in the Tongan Archipelago in January 2022. Both events cause fatalities and highlight the lack in tsunami warning systems to detect and warn for tsunamis induced by volcanic mechanisms. Following the Hunga Tonga—Hunga Ha'apai eruption and tsunami, an ad hoc working group on Tsunamis Generated by Volcanoes was formed by



the Intergovernmental Oceanographic Commission of UNESCO. Volcanic tsunamis differ from seismic tsunamis in that there are a wide range of source mechanisms that can generate the tsunamis waves and this makes understanding, modelling and monitoring volcanic tsunamis much more difficult than seismic tsunamis. This paper provides a review of both the mechanisms behind volcanic tsunamis and the variety of modelling techniques that can be used to simulate their effects for tsunami hazard assessment and forecasting. It gives an example of a volcanic tsunami risk assessment undertaken for Stromboli, outlines the requirement of volcanic monitoring to warn for tsunami hazard and provides examples of volcanic tsunami warning systems in Italy, the Hawaiian Island (USA), Tonga and Indonesia. The paper finishes by highlighting the need for implementing monitoring and warning systems for volcanic tsunamis for locations with submarine volcanoes or near-shore volcanoes which could potentially generate tsunamis.

#### Oregon Tsunami Awareness Week News Coverage

March 24th-30th, 2024

- Newport News-Times (Newport, newspaper)
- <u>The Curry Coastal Pilot</u> (Medford-Klamath Falls, newspaper)
- <u>KTVZ-TV</u> (Bend, television)
- KCBY-TV (Coos Bay, television)
- KMTR-TV (Eugene, television)
- <u>KVAL-TV</u> (Eugene, television)
- KPIC-TV (Roseburg, television)

- My Central Oregon (statewide, online)
- Cannon Beach Gazette (Cannon Beach, online)
- The News Guard (Lincoln City, newspaper)
- The World (Coos Bay, newspaper)
- KCFM Coast Radio (Florence, radio/online)
- <u>Basin Life</u> (Klamath Falls/online)
- <u>Tillamook Headlight Herald</u> (Tillamook/newspaper)

#### TSUNAMI RESEARCH & EVENTS

#### **RESEARCH**

DePaolis, J. M.; Dura, T.; Witter, R. C.; Haeussler, P. J.; Bender, A.; Curran, J. H.; Corbett, D. R., 2024, Repeated Coseismic Uplift of Coastal Lagoons Above the Patton Bay Splay Fault System, Montague Island, Alaska, USA: Journal of Geophysical Research Solid Earth, v. 129, no. 5, article Volume 129, article 2023 B028552. https://doi.org/10.1029/2023 B028552



Flores, C.; Lee, H. S.; Mas, E., 2024, Understanding Tsunami Evacuation via a Social Force Model While Considering Stress Levels Using Agent-Based Modelling: Sustainability, v. 16, no. 10, article 4307. <a href="https://doi.org/10.3390/su16104307">https://doi.org/10.3390/su16104307</a>



Goda, K.; De Risi, R., 2024, Time-dependent probabilistic tsunami risk assessment: application to Tofino, British Columbia, Canada, subjected to Cascadia subduction earthquakes: NPJ Natural Hazards, v. I, article 7. <a href="https://doi.org/10.1038/s44304-024-00006-x">https://doi.org/10.1038/s44304-024-00006-x</a>

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Henley, R. W.; de Ronde, C. E. J.; Arculus, R. J.; Hughes, G.; Pham, T-S.; Casas, A. S.; Titov, V.; Walker, S. L., 2024, The 15 January 2022 Hunga (Tonga) Eruption: A Gas-driven Climactic Explosion: Journal of Volcanology and Geothermal Research, v. 451, article 108077. https://doi.org/10.1016/j.jvolgeores.2024.108077



La Selle, S. M.; Nelson, A. R.; Witter, R. C.; Jaffe, B. E.; Gelfenbaum, Guy; Padgett, J. S., 2024, Testing Megathrust Rupture Models Using Tsunami Deposits: Journal of Geophysical Research Earth Surface, v. 129, no. 5, article e2023JF007444. https://doi.org/10.1029/2023JF007444



Lee, H.; Choi, Y.; Han, J. H.; Lee, S. D.; Park, S.; Choi, J-H., 2024, Submarine Volcanic Microbiota Record Three Volcano-Induced Tsunamis: Communications Earth & Environment, v. 5, article 272. <a href="https://doi.org/10.1038/s43247-024-01443-2">https://doi.org/10.1038/s43247-024-01443-2</a>



#### **UPCOMING NTHMP & RELATED EVENTS**

- July 26-August 1, 2024—NTHMP 2024 Summer Meeting (Pago Pago, American Samoa) <a href="https://nws.weather.gov/nthmp/">https://nws.weather.gov/nthmp/</a>
- September 10-14, 2024—AEG Annual Meeting (Philadelphia, PA) https://www.aegannualmeeting.org/
- ◆ September 22-25, 2024 Geological Society of America Annual Meeting (Anaheim, CA) <a href="https://community.geosociety.org/gsa2024/home">https://community.geosociety.org/gsa2024/home</a>
- December 12-16, 2022—AGU Fall Meeting (Washington, D.C.)
   <a href="https://www.agu.org/annual-meeting">https://www.agu.org/annual-meeting</a>







