

2019 NTHMP Annual Meetings in Salt Lake City, Utah

By Stephanie Earls, Washington Geological Survey

IN THIS ISSUE:

2019 NTHMP Annual Meetings in SLC, UT	1
NTHMP Annual Meetings Keynote: Lower the Obstacles for Trying New Things	3
The NTHMP Continues to Evolve	4
Cascadia Tsunami Debris Workshop	4
NCEI's Natural Hazards Image Database Gets an Update	5
Historical Tsunamis in Papua New Guinea and Solomon Islands Poster	5
Tsunami Simulation Videos Published in Washington State	6
Recognition of First TsunamiReady® Tier II Community: Manila, CA	6
Recent Activities of the Redwood Coast Tsunami Work Group	7
New Tsunami Research	8
NTHMP Events	8

State, territory, and federal agency partners, including guests from Canada and the U.S. Navy, participated in the 2019 NTHMP Annual Meetings, which took place August 19th-23rd in Salt Lake City, Utah at the Wallace F. Bennett Federal Building. Dr. Grant Cooper, NTHMP Chair and Director of the NWS Western Region, and Mike Angove, NWS Tsunami Program Manager, kicked off the week of meetings by welcoming everyone and setting the stage.



After the short welcome on Monday, both the Mapping and Modeling Subcommittee (MMS) and the Mitigation and Education Subcommittee (MES) met separately to discuss respective subcommittee work plan and partner grant activities.

Topics covered in the MMS meeting included:

- Tsunami Source Database
- Maritime Guidance
- Hazard Assessment Gap Analysis
- Currents Modeling Criteria
- Mapping & Modeling Guidance Update
- Sediment Transport Guidance
- HAZUS Guidance
- Landslide Modeling Guidance
- Powell Center Travel
- NCEI DEM Update
- MeteoTsunami Guidance

The MES discussed the following subjects:

- Maritime Guidance
- Mitigation
- Social Science Study
- TsunamiZone.org
- HAZUS
- Coastal Flood Exposure Map Viewer
- FEMA NDPTC Tsunami Awareness Training Course
- TsunamiReady Updates
- Vertical Evacuation

After the MES and MMS meetings wrapped up in the late afternoon, the Island Caucus, which includes representation from American Samoa, Commonwealth of Northern Mariana Islands, Guam, Hawaii, Puerto Rico, and U.S. Virgin Islands, held a meeting led by Co-Chairs Kevin Richards, Hawaii Emergency Management Agency, and Denise Lewis, U.S. Virgin Islands Territorial Emergency Management Agency. The Caucus approved a new leadership strategy and will work on creating mission and vision statements along with goals and objectives over the coming year.



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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2019 NTHMP Annual Meetings in Salt Lake City, Utah

By Stephanie Earls, Washington Geological Survey

(Continued from page 1)

On Tuesday, the day began with a remote presentation about the NOAA Data Management Plan by NOAA Grants Specialist Andrea Mack with the NOAA Grants Management Division.

Following the morning presentation, the Warning Coordination Subcommittee (WCS) met. The meeting started off with presentations on activities at each Tsunami Warning Center by Dr. Chip McCreery (PTWC Director) and Dr. James Gridley (NTWC Director). Next, plans for revisions and updates to Tsunami.gov were shared. Lastly, WCS Annual Work Plan and action items were discussed since the Federal Government Shutdown impacted this process earlier in the year. After the WCS Meeting wrapped up, the day ended with a Tsunami “Advisory” discussion under the NWS Hazards Simplification initiative.

The following day began with the keynote address by Marty Shaub, President of the International Association of Emergency Managers USA Council, titled “Challenges for Leaders Today—Everything’s changed and changing.” See article on page 3 for more details. After the keynote, all state, territory, and federal agency partners presented updates on their tsunami activities. Topics included tsunami preparedness exercises, tsunami inundation maps and simulations, and TsunamiReady status among many others. Partner presentations continued through midday on Thursday.

The week of meetings wrapped up with a discussion on the current NTHMP Subcommittee Structure on Thursday afternoon to prepare for actions during the NTHMP Coordinating Committee Meeting on Friday where co-chairs of all NTHMP entities presented meeting summaries and action items from the previous week.

You can view meeting agendas, minutes, and presentations online:

<https://nws.weather.gov/nthmp/meetings/2019annualmeeting/index.html>

NTHMP UPDATES

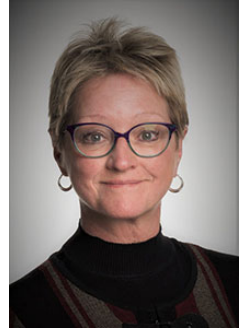
Lower the Obstacles for Trying New Things While Raising the Bar to Make Them Permanent

By Rocky Lopes, NTHMP Administrator

During the NTHMP Annual Meeting in Salt Lake City on August 21, we were honored to have a keynote address by Marty Shaub, President, International Association of Emergency Managers USA Council (IAEM).

Ms. Shaub has worked in the emergency management field for over 35 years and was elected to serve on the IAEM Board of Directors in 2008 when she became President of IAEM Region 8.

Her experience with strategic planning for her own organization at the University of Utah, as well as the IAEM, was important for NTHMP meeting attendees to learn from.



Some points from her keynote include:

- ◆ We must use data to make decisions on what we will do in the future. There are a number of changes we are dealing with, including demographics, technology, climate, and dwindling resources.
- ◆ Today's leaders **MUST** create an environment where change becomes both desirable and possible – something to embrace, not fear.
- ◆ Technology allows millennials to function more efficiently. They want more of it; they are not disrupted by technology changes – quite the opposite. Changes mean system improvements.
- ◆ We need to be *problem friendly and problem competent* rather than *problem resistant*.
- ◆ There are seven steps for problem-solving:
 - Define the issue – what is the problem
 - Understand everyone's interests
 - List possible solutions
 - Evaluate possible options
 - Select our option or options
 - Document the agreement
 - Manage contingencies and evaluations
- ◆ A lot of strategic planning is strategic management: we need to lower the obstacles for trying new things while raising the bar to make them permanent.



The last line was among the major take-aways from Ms. Shaub's presentation and was applied in changes that the NTHMP Coordinating Committee discussed and voted on. (See related article on page 4)

NTHMP UPDATES

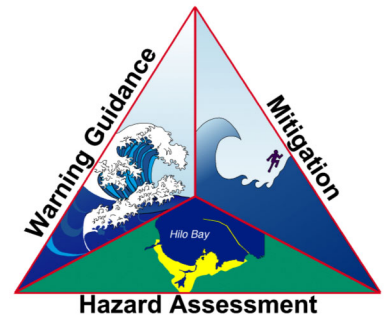
The NTHMP Continues to Evolve

By Rocky Lopes, NTHMP Administrator

The NTHMP has been struggling at times with balancing a number of needs and concerns among its members that span about half the globe from Saipan to St. Thomas and all U.S. salt water coasts between.

One of the biggest struggles has been dealing with the workload and functions of the NTHMP Subcommittees. After a careful and thorough internal review, including writing a 22-page NTHMP Subcommittee Workload and Analysis paper by a dedicated team of long-term NTHMP members, the NTHMP Coordinating Committee voted during its August 23 meeting to begin implementation of the following changes:

- ◆ Officially move the NTHMP summer meeting of subcommittees to the winter, and the Annual Meeting to the summer. This will avoid having the Annual Meeting affected by shutdowns of the Federal Government which have had “shutdown” impact for two years in a row by preventing Federal agency partners from attending.
- ◆ During the subcommittee meetings held in winter, a concurrent Program Review will also be held where each state and territory will be given time to provide a history of their grant-funded work with a description of what they are proposing for future grant work to NOAA/NWS and NTHMP Leadership.
- ◆ Appoint and stand up an NTHMP Mitigation & Recovery Planning Work Group. This activity was borne from a subgroup under the Mitigation & Education Subcommittee that got started in July 2018, but now has its own independent “legs”. This Work Group will develop its functional requirements, including its statement of purpose, membership, measurement metrics, and other operating procedures for Coordinating Committee review and approval soon.
- ◆ Change leadership positions and duration of service for the Mitigation & Education Subcommittee. Effective at the NTHMP Annual Meeting of 2020, the MES will be led by a Chair, a First Vice Chair, and a Second Vice Chair, each with one-year terms. The positions provide a succession plan for the MES.
- ◆ All current NTHMP Subcommittee Co-Chairs will remain in the same positions they hold now until the NTHMP Annual Meeting to be held in July or August 2020.



These changes will be incorporated into the NTHMP *Rules of Procedure* in Fall, 2019.

Cascadia Tsunami Debris Workshop

By Althea Rizzo, Oregon Office of Emergency Management

On May 29, 2019, the Oregon Office of Emergency Management hosted a workshop on Cascadia tsunami debris. The event was attended by forty participants from Oregon, Washington, California and elsewhere. Experts provided information on post-disaster clean-up, planning at the state and federal level, debris modeling, and planning for debris management. This workshop was a collaboration between Oregon Office of Emergency Management and Washington Emergency Management.



Participants will continue to collaborate and present quarterly webinars on this topic. The workshop was funded by a grant from the National Earthquake Hazards Reduction Program (NEHRP).

NTHMP UPDATES

NCEI's Natural Hazards Image Database Gets an Update

By Lindsey M. Wright, NOAA National Centers for Environmental Information (NCEI)

The NOAA National Centers for Environmental Information (NCEI) Natural Hazards Image Database (<https://www.ngdc.noaa.gov/hazardimages>) contains one of the largest collections of images related to geologic hazards including earthquakes, tsunamis, and volcanic eruptions. This database provides free and public access to images through a searchable, sortable, and dynamic web-based user interface. This database has recently undergone an update with new features added. The search tool allow users to search event titles and descriptions through keyword searches as well as by natural hazard category (earthquake, tsunami, volcano, other geologic hazards). Event search results are sortable by ascending and descending date, region, country, location, lat/long, hazard type, and number of images available. Within each event, images are sortable by ascending and descending region, description, lat/long, and image detail. Locations with available photographs are also displayed on a map platform and event images can be displayed in a gallery view. A shopping cart system allows users to download multiple high-resolution images from several events in a single batch download. Photographs and other visual media provide a valuable look into the societal impacts of natural hazards on our communities that are not always reflected through numerical data sets. Preserving these images is a priority that will hopefully contribute to the enhancement of our overall understanding of natural hazard events.



Our images come from a wide variety of contributors throughout the tsunami community including the International Tsunami Information Center (ITIC), universities, the general public, and more. New images are always welcome and any parties interested in contributing photographs to the free and public Natural Hazards Image Database may contact NCEI for submission requirements at haz.info@noaa.gov or Lindsey Wright at lindsey.m.wright@noaa.gov.

Historical Tsunamis in Papua New Guinea and Solomon Islands Poster Now Available

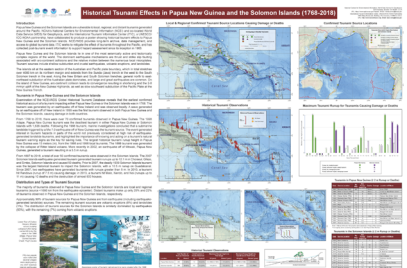
By Nicolás Arcos, Natural Hazards Data Manager, CIRES & NCEI

The National Centers for Environmental Information (NCEI) and the International Tsunami Information Center (ITIC) collaborated to develop a poster on the "Historical Tsunami Effects in Papua New Guinea and Solomon Islands (1786-2018)". The poster summarizes tsunami impacts to both countries, including the 1998 Papua New Guinea tsunami that resulted in 1,636 deaths. The poster was presented at the 29th International Union of Geodesy and Geophysics (IUGG) Tsunami Symposium on July, 13th 2019 in Montreal, Canada. The poster was presented and distributed at the ITIC Training Programme in Papua New Guinea the week of 05 August 2019. The regional historical tsunami poster is available at NCEI and ITIC's websites along with other regional historical tsunami posters, which include Hawaii, Tonga Trench area, and the Caribbean and Adjacent Regions.

NCEI tsunami webpage: <https://www.ngdc.noaa.gov/hazard/tsu.shtml>

ITIC webpage: <http://www.tsunamiwave.org>

Link to poster: <https://www.ngdc.noaa.gov/hazard/data/publications/tsunamis-papua-new-guinea-solomon-islands.png>



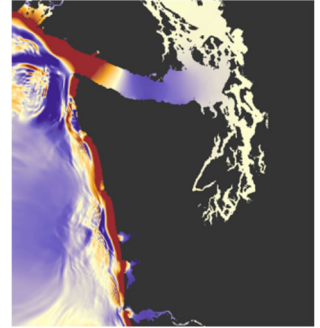
NTHMP UPDATES

Tsunami Simulation Videos Published in Washington State

By Alex Dolcimascolo, Washington Geological Survey

The Washington Geological Survey has released new videos showing simulated tsunami wave amplitudes and current speeds for several locations along the Washington coast.

Tsunamis are multi-wave events that affect coastal areas for many hours to potentially days after an earthquake happens. To show how tsunamis might affect a certain area over time we use computer models to simulate how tsunami waves might behave for a given earthquake scenario. Videos of tsunami simulations show tsunami wave behavior in a way that is difficult to convey through static images and maps. Following the public release of these videos, we have received many instances of positive correspondence from community members demonstrating increased awareness of tsunami hazards.



The new videos show tsunami wave amplitude (wave peaks and troughs) or speed (current velocity) for the entire Washington coast, as well as more detailed, localized views for Bellingham and the San Juan Islands. The videos represent a tsunami that might occur following a magnitude 9.0 Cascadia-sourced subduction zone earthquake. Each video is sped up 300 times to show the wave action of the tsunami over a period of several hours in minutes.

In the videos, wave speeds are shown in nautical miles per hour (knots). One knot is about 1.2 miles per hour. Wave amplitude is also shown over a range from 10 feet or lower (for wave troughs) to 10 feet or higher (for wave peaks). For more detailed tsunami wave heights for your area and for more information about tsunami inundation modeling, refer to our tsunami hazard maps: <https://www.dnr.wa.gov/programs-and-services/geology/geologic-hazards/tsunamis#tsunami-hazard-maps>

Note that these videos are for informational purposes only and should not be used for site-specific decision-making. You can find the videos and additional information about the simulations on our tsunami webpage:

<https://www.dnr.wa.gov/programs-and-services/geology/geologic-hazards/tsunamis#tsunami-simulation-videos>

Recognition of First TsunamiReady® Tier II Community: Manila, California

By Rocky Lopes, Deputy Program Manager, NWS Headquarters Tsunami Program

On September 4, 2019, Ryan Aylward, NWS Eureka Warning Coordination Meteorologist, and Troy Nicolini, Meteorologist-In-Charge, recognized Manila, CA, as the first TsunamiReady® Tier II Community.

The NWS TsunamiReady program recognizes that some communities are at greater risk for major tsunami impacts than others—particularly those on the earthquake-prone West Coast and in the Caribbean.

The TsunamiReady Tier II guidelines help high-risk communities more completely prepare for and mitigate extreme tsunami risk that may involve more challenging mitigation elements and require more funding, typically bonds and/or FEMA grants. Tier II also incorporates recovery planning, which may be more difficult, take longer to accomplish, and require more funding to support.

Tier II required building strong, long-term relationships with community leaders and overcoming roadblocks to evacuation, as well as developing a tsunami component to the pre-disaster Recovery Plan and creating a tsunami debris management plan.



(Continues on page 7)

NTHMP UPDATES

Recognition of First TsunamiReady® Tier II Community: Manila, California

By Rocky Lopes, Deputy Program Manager, NWS Headquarters Tsunami Program

(Continued from page 6)

Manila, CA, is on a long spit between the open Pacific Ocean and Humboldt Bay. Tsunami waves coming on shore from the ocean are not the key evacuation problem because high dunes are accessible from the beach. The danger in Manila occurs when the tsunami enters Humboldt Bay and wraps around the spit where Manila is located. There are homes and an elementary school on this low land which has a population of about 800 full-time residents in the tsunami inundation zone.

Through collaboration led by the NOAA grant-funded Redwood Coast Tsunami Work Group (RCTWG), CalTrans agreed to create breaks in a fence line along US101 that runs through the community, allowing access to the high dunes as tsunami assembly areas. Pacific Gas & Electric (PGE) strengthened structures holding high-tension power lines under which evacuees would need to cross to get to these very high dunes for safety.

King Salmon, the next TsunamiReady Tier II community that will be recognized is about 11 miles south. Naturally high ground for tsunami safety is on a decommissioned nuclear power site owned by PGE. Until recently, PGE had armed guards preventing people from accessing this high land, the only safe place above modeled tsunami inundation for this community of 1,000 year-round residents. Through collaboration from the RCTWG, PGE changed its policy to allow access to this site during a tsunami emergency and also for evacuation walkout drills. This community will receive its TsunamiReady Tier II recognition in late September 2019.

We congratulate these communities on the Pacific Coast of California for their hard work and collaboration that led to this significant recognition.

Recent Activities of the Redwood Coast Tsunami Work Group

By Lori Dengler, Humboldt State University

Redwood Coast Tsunami Work Group (RCTWG), in cooperation with the California Office of Emergency Services and the California Geological Survey has been involved with tsunami and earthquake outreach and preparedness efforts on California's North Coast since 1996. In the past two years we have continued to work with the Del Norte, Humboldt and Mendocino County Offices of Emergency Management in the NWS-led tsunami communication tests. We held a test on March 28, 2018 using the real or "live" codes that would be used in the event of a real tsunami event. It involved the launch of Humboldt County's emergency notification system, siren testing, a civil air patrol flyover and the emergency alert system. The 2019 test had to be canceled due to the US Government shutdown, which impacted the required pre-test planning.



Other activities included a brand new web site (humboldt.edu/rctwg), maintaining the RCTWG Facebook page (www.facebook.com/RCTWG/) and continuing our 11-day run in the Earthquake Tsunami Room at the Humboldt County Fair. The 2018 Fair featured Ellie the Earthquake Preparedness Elephant as the "Earthquake in the Room" to encourage discussion about why people don't prepare for disasters. Concurrent with OES-supported efforts is the Kamome Curriculum project, funded primarily by the California Seismic Safety Commission. The curriculum is entirely on-line and features activities for K-12 in four different age categories along with articulation with California educational requirements, additional resources for teachers and a daily "earthquake hotline" recording of recent seismic events. The curriculum can be accessed at humboldt.edu/Kamome.



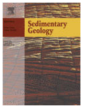
TSUNAMI RESEARCH & NTHMP EVENTS

NEW TSUNAMI RESEARCH

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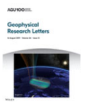
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UPCOMING NTHMP & RELATED EVENTS

- ◆ November 5, 2019—World Tsunami Awareness Day
<https://www.unisdr.org/tsunamiday>
- ◆ December 9-13, 2019—AGU Fall Meeting (San Francisco, California)
<https://fallmeeting.agu.org>
- ◆ March 19, 2020—CARIBE WAVE 20
<https://www.weather.gov/ctwp/>

