TsuInfo Alert

prepared by the Washington State Department of Natural Resources on behalf of the
National Tsunami Hazard Mitigation Program
a state/federal partnership funded through the National Oceanic and Atmospheric Administration (NOAA)

AUGUST 2020 Volume 22, Number 4

California Geological Survey Issues New Tsunami Maps for Humboldt County

California Department of Conservation Press Release

On August 13, 2020, the California Geological Survey (CGS) released two tsunami hazard maps for Humboldt County online at: www.tsunami.ca.gov. One shows potential tsunami inundation – how far inland a surge of seawater might go in a worst-case scenario event. The other map shows where evacuees from a pending tsunami should go to ensure their safety.

"We're updating our 2009 inundation maps to reflect an improved knowledge of the potential hazards," Acting State Geologist Steve Bohlen said. "We have new scientific information and improved computer modeling that allow us to better forecast whether an earthquake will create a tsunami, and the path one would take. This new information can help local governments and emergency response providers update their community evacuation plans."

Some communities have produced their own evacuation maps in the past, but this is the first time CGS has been directly involved in their creation and made them available on a centralized website.

"Local government officials around the state have asked for our help creating them, and we worked closely with local authorities on the Humboldt County evacuation map," said Rick Wilson, head of the CGS tsunami program. "Cities and the county decided where to draw the lines for the areas of evacuation. It's an important tool should a tsunami occur."

In addition to working with Humboldt County, CGS collaborated with the local Governor's Office of Emergency Services representative, the Redwood Coast Tsunami Work Group, and the National Weather Service in Eureka in developing the maps.

Engineering geologist Jason Patton, who investigated evidence of prehistoric tsunamis in Humboldt Bay in earning his master's degree at Humboldt State University, led this mapping project for CGS and is now working on maps for Del Norte County.

Generally, the evacuation maps instruct people to go beyond a certain street or known landmark to ensure their safety. In Humboldt County, some tall dune areas on the Samoa Peninsula have been identified as safe tsunami evacuation sites.

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WASHINGTON STATE DEPT OF NATURAL RESOURCES
WASHINGTON GEOLOGICAL SURVEY

TsuInfo Alert

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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

NTHMP 2020-2021 Meeting Schedule*

DATE	TIME	EVENT	DATE	TIME	EVENT
8/27/2020	5:00 EDT	Island Caucus	2/9/2021	4:00 EDT	Partner 101 - (PR)
9/11/2020	3:00 EDT	WCS Meeting	2/22/2021	4:00 EDT	Partner 101 - (WA)
9/15/2020	3:00 EDT	CC Meeting	3/16/2021	4:00 EDT	Partner 101 - (CNMI)
9/15/2020	TBD	MMS Meeting	3/26/2021	TBD	WCS Meeting
TBD	TBD	MRPWG	3/30/2021	TBD	MES Meeting
9/29/2020	TBD	MES Meeting	3/30/2021	TBD	MMS Meeting
TBD	TBD	Keynote - TBD	TBD	TBD	MRPWG
10/27/2020	4:00 EDT	Partner 101 - (CA)	3/30/2021	3:00 EDT	CC Meeting - Keynote - TBD
11/17/2020	3:00 EDT	CC Meeting	3/30/2021	4:00 EDT	Partner 101 - (USVI)
11/17/2020	2:00 EDT	Partner 101 - (TWC(s))	4/20/2021	4:00 EDT	Partner 101 - (Gulf)
TBD	TBD	WCS Meeting	4/22/2021	5:00 EDT	Island Caucus
TBD	TBD	MMS Meeting	5/11/2021	5:00 EDT	Partner 101 - (GU)
TBD	TBD	MES Meeting	5/26/2021	TBD	WCS Meeting
TBD	TBD	MRPWG	5/27/2021	TBD	MES Meeting
12/8/2020	5:00 EDT	Partner 101 - (AS)	5/27/2021	TBD	MMS Meeting
Early Jan	TBD	(Grantee Briefs to Federal Review Panel)	TBD	TBD	MRPWG
1/12/2021	TBD	Partner 101 NCEI/CIRES/ Keynote - TBD	5/27/2021	3:00 EDT	CC meeting / Keynote - TBD
1/22/2021	TBD	WCS Winter Meeting	5/27/2021	4:00 EDT	Partner 101 - (AK)
TBD	TBD	Island Caucus Winter Meeting	6/15/2021	4:00 EDT	Partner 101 - (NESEC)
1/26/2021	TBD	MMS Winter Meeting	6/29/2021	4:00 EDT	Partner 101 - (HI)
1/26/2021	TBD	MES Winter meeting	7/13/2021	4:00 EDT	Partner 101 - (USGS)
TBD	TBD	MRPWG	7/27/2021	4:00 EDT	Partner 101 - (PMEL)
1/26/2021	3:00 EDT	CC Winter Meeting / Keynote - TBD	July		Summer Meeting in Sacramento
1/26/2021	4:00 EDT	Partner 101 - (OR)			

*Schedule is subject to change. Please check the NTHMP website for most current updated information.

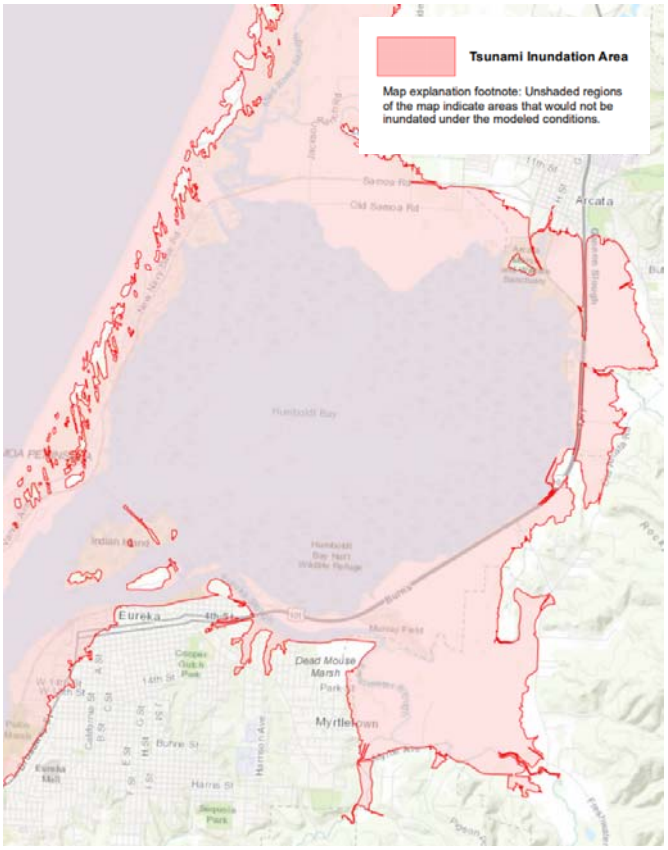
California Geological Survey Issues New Tsunami Maps for Humboldt County

California Department of Conservation Press Release

(Continued from page 1)

"For Eureka itself, typically people have to move a few blocks inland to get to an evacuation area," Wilson said. "That sounds relatively easy to do in 10 minutes, but the concern is that if there's a big earthquake offshore, there could be a lot of damage to the streets and roads, live power lines down, and a crush of people trying to get away from the ocean as fast as they can, so it might be challenging."

Tsunamis are an uncommon but legitimate threat in California. Over 150 tsunamis have hit California's coast since 1800. Many are barely noticeable but nearly a dozen have caused fatalities or significant damage, most recently during the March 11, 2011 tsunami generated by an earthquake in Japan.



The most devastating tsunami to hit California occurred March 28, 1964. Surges reaching 21 feet high swept into Crescent City four hours after a magnitude 9.2 earthquake in Alaska. Ten people died, and half of the waterfront business district was destroyed.

A major earthquake on the Cascadia subduction zone -- the 700-mile undersea boundary where two tectonic plates are colliding -- could have a significant impact on the North Coast. Scientists have evidence that the subduction zone in 1700 generated a magnitude 9 earthquake and tsunami.

A similar event could send surges onshore up to 50 feet high toward Crescent City and 30 feet high along the outer coast of Humboldt Bay and the Eureka area. A big quake on the Cascadia megathrust subduction fault might cause five to six minutes of shaking and give people along the coast a maximum of 10 minutes to get to an evacuation area.

In the next few months, CGS will release updated maps for other counties, possibly including Del Norte, Alameda, and Los Angeles counties. It hopes to have new maps available for the entire coastline within two years.

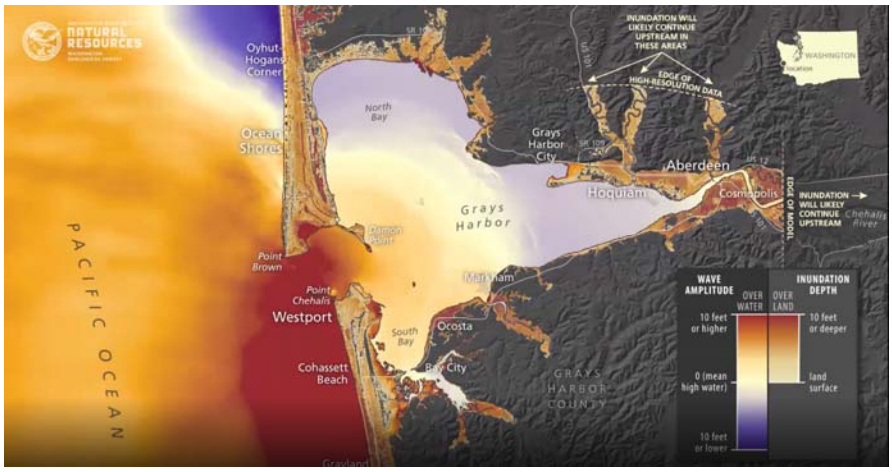
Neither the inundation nor the evacuation maps are regulatory. But CGS is working with an advisory panel to develop tsunami zone maps to guide local land-use planning under the Seismic Hazards Mapping Act. CGS currently creates zone maps for several secondary earthquake hazards, helping to ensure public safety and minimize economic impacts.

New Tsunami Simulation Videos Published in Washington State for Grays Harbor and Willapa Bay

By Alex Dolcimascolo, Washington Geological Survey

The Washington Geological Survey has released new videos showing simulated wave amplitude (wave peaks and troughs), inundation (extent of tsunami flooding over land), and current velocity (wave speed), for communities in southwest Washington.

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.



These new videos represent a tsunami that might occur following a hypothetical magnitude 9.0 earthquake scenario on the Cascadia subduction zone (CSZ). The next earthquake to happen on the CSZ may cause tsunami wave action that varies from the results shown in these simulations.

The videos demonstrate estimated tsunami wave arrival times following the earthquake and either detailed, localized tsunami amplitude and inundation or current velocity (wave speed) for the coastal areas along Grays Harbor and Willapa Bay. Each video is sped up 360 times to show the wave action of the tsunami over a period of several hours in minutes.

In the videos, for areas over bodies of water, wave amplitude is shown over a range from 10 feet or lower (for wave troughs) to 10 feet or higher (for wave peaks). For areas over land, tsunami inundation is shown from a range of 0 feet to 10 feet or higher. Additionally, wave speeds are shown in nautical miles per hour (knots). One knot is about 1.2 miles per hour. These simulations use the model results from the Southwest Washington tsunami inundation and current velocity publication that came out in 2018: http://www.dnr.wa.gov/publications/ger_ms2018-01_tsunami_hazard_southwest_washington.zip. For more detailed tsunami information in your area, refer to our tsunami hazard maps.

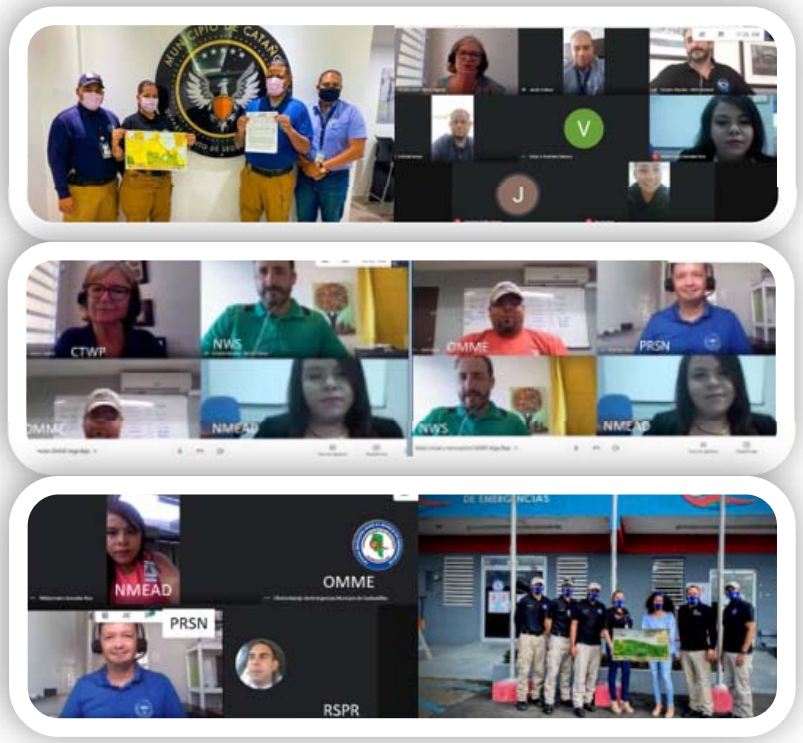
Note that these videos are for informational purposes only and should not be used for site-specific decision-making. You can find the videos and additional information about the simulations on our tsunami webpage:

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

Virtual Evaluation for TsunamiReady® Recognition Renewal During COVID-19

By Wildaomaris Gonzalez Ruiz, Puerto Rico Emergency Management Bureau

The COVID-19 pandemic has caused everyone to face new realities in their lives. The need to maintain physical distance has brought significant changes, especially for emergency managers and response agencies, who have had to update their emergency plans taking this physical distancing requirement into consideration. The TsunamiReady program was no exception. This recognition program began in Puerto Rico in 2006, and by 2016 a total of 46 communities achieved the TsunamiReady recognition. Annually, an average of 15 communities have to renew. For the fiscal year 2019-2020, a total of 17 communities have to demonstrate that they maintained the guidelines established by the National Weather Service to renew their TsunamiReady recognition. Due to the significant seismic activity experienced in Puerto Rico since December 28, 2019, and the impacts of the pandemic, the community review visits have been delayed. For this reason, the Puerto Rico TsunamiReady Program evaluation committee[1] has established guidelines to perform the evaluations virtually. As part of the new guidelines, each community has to demonstrate that they maintained tsunami education for the general public and schools that are inside the tsunami evacuation zone. In addition, each community has to demonstrate that at least 50% of the signs installed when they were initially recognized still stand or have been reinstalled, which has been difficult due to the recent seismicity and the added challenge of recent severe weather on the island. Also, a virtual workshop is required for all personnel who have a task to perform within the tsunami response plan (e.g. make a call as part of the telephone tree established in the plan). Personnel are also required to send a video of the redundant and reliable means in which official tsunami alerts are received and what means are available to disseminate them to the tsunami focal point and the Emergency Management Office (EOC) of each municipality or community. Once the committee receives all the written evidence and videos, a virtual visit is coordinated using the virtual MEET platform in which the members of the TsunamiReady evaluation committee and the staff of the EOC participate. To date, three coastal communities have renewed their TsunamiReady recognition virtually[2] (Vega Baja, Quebradillas and Cataño). Although the procedure has been a challenge for everyone, we are very pleased and proud of the commitment of the emergency managers to maintain this recognition and, above all, the preparation to face in the best possible way a tsunami event that could affect Puerto Rico, thus minimizing loss of life and property.



TsunamiReady recognition renewals: Cataño; Vega Baja; & Quebradillas (top to bottom).

[1]Puerto Rico TsunamiReady Board includes: President-Ernesto Morales (WCM, NWS San Juan Forecast Office); Members-Dr. Victor Huerfano (Acting Director of the PRSN), Wildaomaris Gonzalez (representatiing the Director of PREMB) and Christa von Hillebrandt-Andrade (NOAA CTWP).

[2]Eight total communities have renewed in FY20 (Hatillo, Quebradillas, Dorado, Isabela, Vega Baja, Cataño, Bayamón, and Canóvanas), along with two new TsunamiReady Supporters (Centro Head Start Dorado, and Aguadilla regional office of the Puerto Rico Bureau of Emergency and Disaster Management)

Tsunami Social Science Findings and Application-Part 1

By Elyssa Tappero, Washington Emergency Management Division

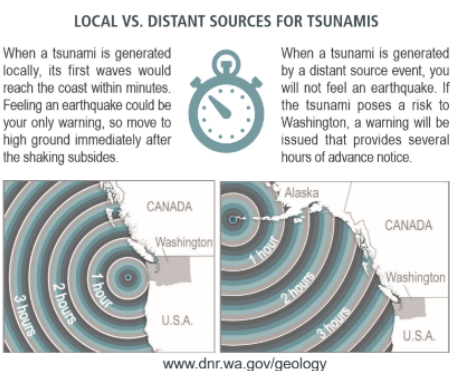
In 2018 the Washington State Tsunami Program teamed up with Dr. Michael Lindell's team at the Environmental Hazards Research Institute (EHRI) to conduct a social science research study of tsunami evacuation products[1]. EHRI conducted a survey of 221 residents in three Pacific coast communities that are vulnerable to a Cascadia Subduction Zone (CSZ) earthquake and tsunami—Discovery Bay, Washington; Lincoln City, Oregon; and Eureka, California.

This survey, which was conducted via the internet and a paper hardcopy, used a composite tsunami hazard brochure to analyze participants' understanding of the general tsunami hazard, their local tsunami risk, natural warning signs and official alerts, and preparedness and evacuation. It also surveyed what preparedness measures they had already taken or would be willing to take in the future, such as packing a go-bag, buying a NOAA Weather Radio, attending a community presentation, and taking emergency response training.

While the study areas were limited to the western coast of the United States, we believe the takeaways from this research are worth sharing with the wider tsunami community, along with the ways Washington is working to better emphasize them in our program. We've broken the findings down into three major categories, two of which are covered here in Part 1 of this article series, and the third which will be covered in Part 2 in the October issue of TsuInfo.

Local vs Distant Tsunamis

Responses showed the majority of participants did not understand the key differences between distant and local source tsunamis. Many either did not know the estimated wave arrival times for a local tsunami or assumed a greater amount of time than there really was. They also did not know which alert methods to expect with which kind of tsunami - respondents had unrealistic expectations of being warned of a distant tsunami by ground shaking, draw-down, or other natural signs, and equally unrealistic expectations of receiving official alerts (including via tsunami siren) for a local tsunami in time to respond and reach safety.



Since Washington has complex intercoastal waterways which have not received much tsunami outreach in the past, it is especially important the public understands that earthquakes originating in these areas could cause tsunamis with wave arrival times of just seconds to minutes. With that in mind and based on the study's findings, we reworked our educational materials to better highlight this information and repeatedly emphasize "The Shaking Is Your Warning!" for a local event. The new tsunami brochure the Washington Geological Survey shared in a previous *TsuInfo* volume reflects this as well. We also designed a standing banner for outreach events which outlines the key differences between distant and local source tsunamis.

[1] *Social Science Evaluation of Tsunami Evacuation Products, Part 2: Survey Results*; Michael K. Lindell, Carla S. Prater, and Donald H. House; Environmental Hazards Research Institute, Seattle Washington; 31 November, 2019.

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Tsunami Social Science Findings and Application-Part I

By Elyssa Tappero, Washington Emergency Management Division

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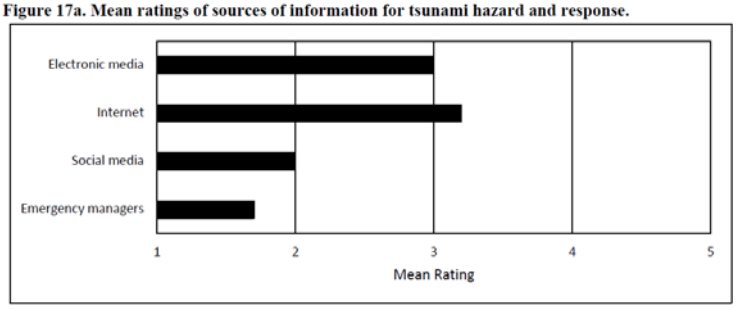
Preferred Information Sources

Regarding preferred information sources for tsunami events, many participants indicated they would turn to internet/ electronic media and social media sources first and follow up with friends, family, or neighbors to confirm. Overall, emergency managers were ranked lowest as sources of information (see Figure 17a, taken from the final report). In addition, only 28% of participants said they owned a NOAA Weather Radio (NWR) and 36% indicated they had no intent to obtain one in the future. This may be due to a general unawareness of the service or other related barriers, so it remains important to keep promoting NWR as a prime warning source.

Figure 17a. Mean ratings of sources of information for tsunami hazard and response.



Since the public seems to overwhelmingly prefer electronic and social media sources of information, these sources should be highlighted in outreach presentations and materials. Our team promotes Washington's upcoming ShakeAlert Earthquake Early Warning app, which will include tsunami evacuation information and alerts. We emphasize the need for multiple alert methods and encourage people to sign up for alerts through the National Weather Service, Tsunami Warning Centers, and local jurisdictions. Future messaging will need to ensure the public is aware they can no longer receive tsunami alerts as SMS notifications via Twitter and provide easy alternatives based on their location. Given the infrequency of tsunami alerts in some areas, it's likely many people will not even notice the service has ceased, making it even more important to educate them.

A Good Resource for Coastal Data, Tools, and Training: The Digital Coast

By Donna McCaskill, Communications, NOAA's Office for Coastal Management

We live in a time where there is an almost overwhelming abundance of information resources available: satellite imagery, training programs designed to help communities become more resilient, and predictive tools and visualizations.

While this abundance is a benefit, there is a dark side, as it can be difficult to determine the right information resources for your needs, and to be assured of the quality of your options.

That's why NOAA developed the Digital Coast (https://coast.noaa.gov/digitalcoast/). This information platform is focused on the needs of the coastal resource management community. The site is divided up into data, tools, and training to make it helpful to find what you need. While the information contained in the Digital Coast comes from numerous authoritative sources, each entry is vetted by NOAA for pertinence and quality assurance.

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A Good Resource for Coastal Data, Tools, and Training: The Digital Coast

By Donna McCaskill, Communications, NOAA's Office for Coastal Management

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The website's slogan is also very telling – "More than Just Data." While the depth of the data found here is impressive, the people responsible for the site, NOAA's Office for Coastal Management, are committed to doing more than just serving up data. The site also provides the tools, training, and information resources needed to ensure you are able to maximize the use of all the data.

Take lidar elevation data (https://coast.noaa.gov/digitalcoast/data/coastallidar.html), for instance, which is the most used dataset on the Digital Coast. Visit the training section and you'll find four information resources available to help you understand how to use lidar, such as the "Introduction to Lidar" course (https://coast.noaa.gov/digitalcoast/training/intro-lidar.html). Same with the tools section. Type "lidar" in the search bar to see which tools use lidar data.

And to be even more helpful, the site includes a "Topics" section (e.g. Adaptation Strategies; Coastal Storms; Vulnerability Assessments; and more). Here you can easily access the top products associated with the topic of your choosing. "Stories from the Field," the final section to be discussed in this article, shows you, state-by-state, how others are using the resources found in the Digital Coast.

Listed below are examples of other Digital Coast resources you may find helpful.

- **Case Study:** Fostering Tsunami-Resilient Communities Through Land Use
  https://coast.noaa.gov/digitalcoast/training/oregon.html
- **Tool:** Coastal Inundation Mapping
  https://coast.noaa.gov/digitalcoast/training/inundationmap.html
- **Data:** Data Access Viewer
  https://coast.noaa.gov/digitalcoast/tools/dav.html
- **Training:** Risk Communications
  https://coast.noaa.gov/digitalcoast/training/building-risk-communication-skills.html
- **Outreach:** Tsunami Fast Draw Video
  https://coast.noaa.gov/digitalcoast/training/tsunamis-be-prepared.html

The Digital Coast also has staff on hand to offer technical assistance for many topics and resources. Take some time to explore this resource!

Student Intern Experience at ITIC and CTWP

Stephanie Soto, NOAA Caribbean Tsunami Warning Program

NOAA's International Tsunami Information Center (ITIC) and Caribbean Tsunami Warning Program (CTWP) have provided numerous opportunities for students to learn and be part of advancing tsunamis services in the Pacific and the Caribbean region. The experience has helped them acquire a diverse set of skills and knowledge in a teamwork environment that will benefit them in their future endeavors while supporting ongoing projects and activities of the centers. Students in the fields of physical sciences, engineering, or information technology (IT), have had the opportunity to work on tasks related to their field of interest. During COVID-19, the student interns have worked from home and participated in virtual meetings to enhance their learning. Below, the current student interns introduce and describe their internship experience.

ITIC/CTWP Tsunami Staff, Summer 2020. From Top to Bottom, Left to Rght: Daelan Mangapit, Tammy Fukuji, Laura Kong, Christa von Hillebrandt, Art Sonen, Jazar Abuellouf, Luis Espada, Dane Sobol, Anna Grimes, Luis Rivera, and Stephanie Soto.

Anna Grimes (CTWP: June - September 2020)—"I am Anna Grimes and I recently graduated with my Bachelor's in Ecology for Environmental Science from the University of North Texas (UNT). Currently pursuing a Professional Master's degree in Geography with a focus on hydrology and GIS at UNT. This summer, I've been developing guidelines on how to prepare, conduct, and evaluate a community tsunami exercise. This experience has helped me gain valuable knowledge on communication and working in a team environment. Having grown up in Northern Texas, an area with no threat of tsunamis, this internship in itself has been a wonderful learning adventure. One thing that took me by surprise when learning about tsunamis was that they are not the big waves out at sea, but they are small and under the surface, until they get closer to the shore and become bigger."

Daelan Mangapit (ITIC: June - September 2020)—"My name is Daelan Mangapit, and I am an incoming senior at the University of Southern California, majoring in Intelligence and Cyber Operations. Despite going to college in California, I am originally from Honolulu, Hawaii. This summer, I have been working on the Information Technology sector by helping update ITIC's website and improve its proprietary software Tide Tool. For my future career, I am hoping to enter the cybersecurity space either as a Cyber Security Specialist or as a Systems Analyst. I believe that my experience with the ITIC will help me in my professional endeavor by giving me the knowledge of how security and information are handled at the government level, including the different

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Student Intern Experience at ITIC and CTWP

Stephanie Soto, NOAA Caribbean Tsunami Warning Program

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protocols and security requirements used. Additionally, when it comes to tsunamis, I think that the most interesting thing I have learned about them while working for NOAA is that historically, about 80 percent of them have occurred in the Pacific Ocean."

Dane Sobol (ITIC: June - September 2020)—"My name is Dane Sobol, and I was raised in Honolulu, Hawaii. I recently received a Bachelor of Science degree in Civil and Environmental Engineering at the University of Hawai'i at Mānoa (UH). I am continuing my education to earn a Master of Science degree in Civil and Environmental Engineering at UH. I plan to pursue a career in either Environmental or Coastal Engineering and acquire a Professional Engineering License. At ITIC, I've been compiling research and contacting experts from the USA and around the world on vertical evacuation from tsunamis, and marine ports and harbors guidance. I am also developing tsunami outreach games for children to provide an interactive activity to teach tsunami vocabulary. Communicating technical documents and developing graphic designs for tsunami outreach will improve my marketing skills for engineering projects. An interesting thing I have learned is that the 2018 International Building Code references Chapter 6, "Tsunami Loads and Effects" of the ASCE/SEI 7-16 standard to design tsunami resilient buildings."

Jazar Abuellouf (CTWP: December 2017 – December 2020)—"My name is Jazar Abuellouf Amin. I am an electrical engineering senior student at the University of Puerto Rico, Mayagüez Campus. In the next five to ten years, I see myself working in a company related to my area of study and having a workshop as a hobby. At CTWP, I have done a variety of tasks involving administrative and IT work. Currently, I am responsible for generating the monthly Sea Level reports that are being used to track the operational status of these stations for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions. As an electrical engineering student, this job has showed me how to maintain electrical systems and equipment. I've also learned that all employees should know how the bureaucracy works in their respective areas, even in IT. An important aspect learned while working in the CTWP, is how to identify a tsunami in Tide Tool and prepare for a tsunami event."

Luis Alberto Espada (CTWP: January 2020 – January 2021)—"My name is Luis Alberto Espada Rivera and I am from Aibonito, Puerto Rico. I recently received a Bachelor of Science degree in Geology. I plan to continue a Master's in geology within the fields of geomorphology and sedimentology. I've been working at the CTWP with the Tsunami Ready Project. This work experience has helped me learn more about the science, preparation, response, and mitigation of tsunamis in coastal communities. Also, it has helped me develop skills in teamwork, communication, and networking. The most astonishing thing that I've learned during this experience is the process

(Continues on page 11)

Student Intern Experience at ITIC and CTWP

Stephanie Soto, NOAA Caribbean Tsunami Warning Program

(Continued from page 10)

that a community must accomplish to become TsunamiReady. This procedure is based on guidelines with several steps that are summarized as mitigation, preparedness, and response. Throughout my work and virtual meetings, I continue learning about this interesting and interdisciplinary science field."

Marcos J. González (CTWP: August 2019 – September 2020)—"I am Marcos J. González Ramos, born and raised in Carolina, Puerto Rico. I moved to the municipality of Mayagüez to study Computer Science and Engineering at the University of Puerto Rico–Mayagüez. My job for the past year has consisted of providing support to the technology of CTWP as well as handling everyday tasks that keep our operation going. The range of tasks I've handled has given me insight into areas that I would not have gained anywhere else. I have also put into practice the programming skills from my classes by designing a Python program that reports the latency of seismic stations in the Caribbean. Working on these projects has taught me about geology and emergency management, two fields which I previously knew nothing about and of which I now understand the importance. The most eye-opening thing I've learned is that a tsunami is not just a big wave that can become a local hazard but a force of nature that can cross oceans and affect different continents. My experience at CTWP has driven me to want a career as a programmer which has a positive impact on the world instead of simply designing consumer products."

Stephanie Soto (CTWP: August 2018 – September 2020)—"My name is Stephanie Soto, and I am pursuing a bachelor's degree in geology with a minor in writing and communication in English at the University of Puerto Rico, Mayagüez Campus. Being raised on the island of Puerto Rico and exposed to several natural disasters sparked an interest in being part of a scientific community with the purpose of reducing the risk to lives and livelihood. I've been assisting the preparations for the annual Caribe Wave exercise by creating the reports and presentations that are shared among emergency managers in the Caribbean. This work experience has provided me with valuable skills and knowledge about emergency management that will benefit my future endeavors. An important insight from tsunamis taken from this learning experience is that annual exercises such as Caribe Wave and Pacwave are designed to particularly promote community resilience and improve tsunami readiness and response."

UPCOMING NTHMP & RELATED EVENTS

- September 15-20, 2020—AEG Annual Meeting (Virtual) https://www.aegannualmeeting.org/
- September 11, 2020—NTHMP WCS Meeting (Virtual) https://nws.weather.gov/nthmp/
- September 15, 2020—NTHMP CC & MMS Meetings (Virtual) https://nws.weather.gov/nthmp/
- November 16-18, 2020—IAEM Annual Conference (Virtual) https://www.iaem.org/usconf

NEW TSUNAMI RESEARCH

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