

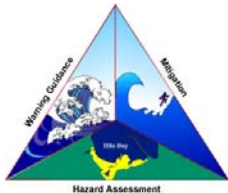


TsuInfo Alert

prepared by the Washington State Department of Natural Resources on behalf of the

National Tsunami Hazard Mitigation Program

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New National Tsunami Hazard Mitigation Program (NTHMP) Chair Appointed

From NTHMP News

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

Grant Cooper, Ph.D., is Director of the NOAA/National Weather Service Western Region in Salt Lake City, Utah.



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

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

- Appoints the emergency management and science representatives for the East Coast and Gulf Coast states, confirmed by a majority vote of the Coordinating Committee.
- Votes only to break a tie.
- Attend meetings at which important NTHMP recommendations are presented and shall speak on behalf of the NTHMP.
- Has discretion to close meetings if sensitive matters will be discussed.
- Approves draft meeting agendas and meeting minutes as prepared by the NTHMP Administrator.
- Reviews recommendations for NTHMP grants from the Federal Grant Review Panel and provides his/her endorsement of those recommendations to the Analyze, Forecast, and Support Office Director at National Weather Service headquarters for approval.

See full article: <http://nws.weather.gov/nthmp/chair.html>



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

<http://www.dnr.wa.gov/researchscience/topics/geologypublicationslibrary/pages/tsuinfo.aspx>



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NATIONAL TSUNAMI HAZARD MITIGATION PROGRAM LIBRARY CATALOG:

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



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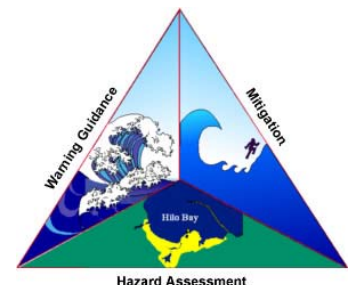
NTHMP Grant Investment Activities Report FY08-15

By Rocky Lopes, NTHMP Administrator, NOAA/National Weather Service Tsunami Program

NTHMP partners and the Tsunami Program office at National Weather Service headquarters are frequently asked by constituencies, stakeholders, and congressional staff, "How have the funds awarded to NTHMP partners through grants been used, and what capabilities were delivered?"

After two and one-half years of data gathering, analysis, writing, and collaboration with all NTHMP partners, a report that answers that fundamental question has been released.

The NTHMP Grant Investment Activities Report FY08-15 describes how eight years of NTHMP grant investments of some \$36M have been applied by NTHMP partners—representing 28 coastal states and territories—to increase tsunami preparedness, mitigation, mapping, modeling, warning notification, and response capabilities throughout the nation.



The report can be downloaded from the NTHMP website, here:

<http://nws.weather.gov/nthmp/grants/iareport.html>

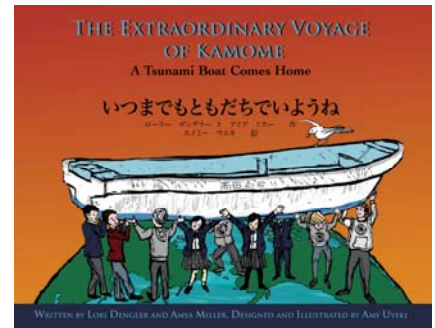
NEWLY PUBLISHED

New Children's Book: The Extraordinary Voyage of Kamome: A Tsunami Boat Comes Home

By Lori Dengler, Emeritus Geology Professor, Humboldt State University

Humboldt State University Press announces its inaugural publication “The Extraordinary Voyage of Kamome: A Tsunami Boat Comes Home”, a bilingual Japanese – English children’s book aimed at lower elementary-aged children.

On April 7, 2013, a little over two years after the magnitude 9 Tohoku-oki Japan earthquake triggered a massive tsunami off the coast of northeastern Japan, a boat washed up on the shores of Northern California. Its confirmation as belonging to a high school in Rikuzentakata was the first step in an amazing story that linked two tsunami-vulnerable communities on opposite sides of the Pacific and initiated friendships between high school students in Rikuzentakata, Japan and Crescent City, California. This true story is now a book co-authored by Humboldt State University Emeritus Geology Professor Lori Dengler and Amya Miller, the Special Assistant to Rikuzentakata, and featuring wood-cut inspired illustrations by Arcata artist Amy Uyeki.



“Through the trials of disaster, this is an amazing story of how the journey of one small boat built huge and lasting bonds of international respect and friendship.” – Rocky Lopes, NOAA/National Weather Service Tsunami Program Deputy. Showing how a small act of kindness can bridge physical and cultural chasms and bring a little happiness to a devastated community, this sweet story is intended to provide a window for discussing earthquakes, tsunamis, marine debris, preparedness, and cultural awareness in the classroom and



within families. A pdf of the book can be viewed at http://www2.humboldt.edu/kamome/sites/default/files/kamome_book_optimizedForWeb.pdf

The website humboldt.edu/kamome includes photographs of the book and documentation of the true story of Kamome. Over the next two years, we will be developing interactive curriculum for elementary schools to accompany the book.

For ordering information, email kamome@humboldt.edu or leave a message at (707)826-6019.

For more information about the book, please visit:

<http://now.humboldt.edu/news/tsunami-boats-journey-captured-in-new-childrens-book/>

<http://www.facebook.com/kamomeboat>

PROJECT UPDATES

IOC/CARIBE-EWS Established Tsunami Ready Programme

By Carolina Hincapie and Christa von Hillebrandt, NWS Caribbean Tsunami Program

The Tenth Session of the UNESCO Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS-X), held in Philipsburg, Sint Maarten, in May 2015, recommended the approval of the Tsunami Ready Programme and the corresponding guidelines for Community Performance Based Tsunami Recognition as a pilot project. The General Assembly of the UNESCO Intergovernmental Oceanographic Commission approved this recommendation in June, 2015. This Caribbean program is based on the successful US NWS/NOAA TsunamiReady® program that helps coastal communities to strengthen tsunami preparedness and implement best practices to minimize loss of life and property. Just as for the new US TsunamiReady® program guidelines three categories are defined: Mitigation, Preparedness, and Response. Communities with plausible local tsunami threats should include efforts that enable both individuals at risk for tsunami inundation to take self-protective actions, and coastal communities in addressing regional and distant tsunamis. Corresponding regional and national Tsunami Ready Boards will be responsible for working with communities seeking recognition, addressing their concerns and verifying that they meet the guidelines. The Caribbean Tsunami Information Center (CTIC), with the Caribbean Tsunami Warning Program (NOAA/NWS CTWP), will be implementing the guidelines in coordination with member states and territories with the support of regional organizations.

Categories	Completed
MITIGATION	
Mit-1. Have designated and mapped tsunami hazard zones	✓
Mit-2. Have a public display of tsunami information	✓
PREPAREDNESS	
Prep-1. Produce easily understood tsunami evacuation maps as determined to be appropriate by local authorities in collaboration with communities	✓
Prep-2. Develop and distribute outreach and public education materials	✓
Prep-3. Hold at least three outreach or educational activities annually	✓
Prep-4. Conduct an annual tsunami community exercise	✓
RESPONSE	
Resp-1. Address tsunami hazards in the community's emergency operations plan (EOP)	✓
Resp-2. Commit to supporting the emergency operations center (EOC) during a tsunami incident if an EOC is opened and activated	✓
Resp-3. Have redundant and reliable means for a 24-hour warning point (and EOC if activated) to receive official tsunami threats	✓
Resp-4. Have redundant and reliable means for 24-hour warning point and/or EOC to disseminate official tsunami alerts to the public	✓

Waimanalo, Hawaii, Recognized as TsunamiReady® and StormReady®



By Anna Koethe, Public Relations Officer, SCD/Hawaii EMA

Hawaii Emergency Management Agency (HI-EMA) proudly supported the community of Waimanalo on Oahu's Windward coast as the National Oceanic and Atmospheric Administration (NOAA) acknowledged them for earning their TsunamiReady® and StormReady® community recognition. The community had to demonstrate that it had: a 24-hour warning point and emergency operations center (at the city, county, and state); multiple ways to receive severe weather warnings and forecasts along with multiple methods for alerting the public; a system to monitor local weather conditions; held community seminars to promote readiness; and developed a formal hazardous weather plan. Four other Oahu communities will likely earn their recognition during the first quarter of 2016, including Pearl Harbor, Ewa Beach, Kaneohe, and Waianae. Six additional communities are also at different stages of the certification process and are well on their way to being recognized as TsunamiReady® and StormReady®.



Credit: Hawaii Emergency Management Agency

IN THE NEWS

NTWC Tsunami Alert Messages Revised Based on Social Science Review

by Paul Whitmore, Director, NOAA/NWS National Tsunami Warning Center

Effective November 30, 2015, tsunami warning, advisory, and watch messages issued by the NOAA/National Tsunami Warning Center (NTWC) will include recommendations from the NOAA Social Science project to improve message content. The changes include:

- Message sections reordered by importance
- Many clarifications and additions to text and tables
- Greatly-expanded Impacts and Recommended Actions sections
- Alert areas in the Pacific given by state/province regions versus linear extents along the North American coast



These changes are the culmination of an extensive process started in 2010 when NOAA awarded a contract to review and recommend improvements to the contents of tsunami alert messages. A group led by Chris Gregg of Eastern Tennessee University won the award and then followed a methodical path to develop recommendations.

The process started with stakeholder meetings in ten coastal communities around the country where emergency managers and other critical message recipients provided input. Based on the accumulated information, the researchers created a tsunami alert message metric.

They then applied the metric to existing tsunami warning messages which had recently been updated by an NWS review, and developed a series of recommendations and examples. The examples were submitted to the National Tsunami Hazard Mitigation Program Warning Coordination Subcommittee (WCS) for comment. The WCS is composed of all primary tsunami warning center customers. WCS provided further refinement of the message content and added a recommendation to better describe regions contained within the alert.

Actions from the 2015 WCS annual meeting included an action for the NTWC to implement the combined social science and WCS recommendations into operations by the end of the year. After testing and developing a series of examples, an NWS Service Change Notice was issued in late-October, 2015 which specified November 30, 2015 for the implementation date.

For more information, see web sites:

- http://ntwc.arh.noaa.gov/?page=product_list – for message examples
- <http://www.nws.noaa.gov/os/notification/scn15-49ntwccomplexcoast.htm> – service change notice

U.N. Committee Adopts Japanese-led Resolution to Raise Tsunami Awareness

By Kyodo, The Japan Times

NEW YORK – A U.N. General Assembly committee on Friday adopted a resolution declaring Nov. 5 as World Tsunami Awareness Day to highlight the dangers posed by the killer waves ahead of the fifth anniversary of the Great East Japan Earthquake on March 11.

“Even though tsunami are relatively rare phenomena among natural disasters, they can cause tremendous damage both in terms of the loss of human lives and the destruction of property,” said U.N. Ambassador Motohide Yoshikawa before the text was adopted by consensus in the Economic and Financial Committee.

See full article: <http://tinyurl.com/p3gl6jb>

IN THE NEWS

Redefining Citizen Response to Coastal Earthquakes

By Charles Wallace, Deputy Director, Grays Harbor County Emergency Management

“... our communities seem well armed to constantly gain in wisdom and progress towards mitigation of a perceived level of tsunami hazard, but individual new events often bring an element of diversity which redefines the goal, and keeps pushing it forward, in an everlasting challenge,” (Okal, E. A., Sept. 2015).

A common theme relayed to coastal residents and visitors to coastal communities when describing actions to take following any earthquake felt along the coast is to “Move/Run to Higher Ground”. However, many times a caveat is added—especially when describing a Cascadia subduction zone earthquake scenario with its strong intensity and long duration. The explanation is that the earthquake will create major issues for roads and buildings and will possibly knock people off their feet. Many Emergency Management agencies tell people that the warning sirens may not activate due to the intensity of the event and to understand the earthquake itself is their warning sign to “Drop, Cover & Hold On”, then immediately “Move/Run to Higher Ground” when the shaking stops.

See full article: <https://www.linkedin.com/pulse/redefining-citizen-response-coastal-earthquakes-charles-wallace>

Tsunami Early Warning: JRC Tests New Low-cost Device to Measure Sea Level

By European Commission Joint Research Centre

A new, low-cost experimental device for sea level measurement has been developed by JRC scientists. The first four devices have been installed in Spain and Portugal, in collaboration with the European Commission’s Directorate-General for Humanitarian Aid and Civil Protection and the UNESCO Intergovernmental Oceanographic Commission (IOC). Additional 16 devices will be installed in the Mediterranean and will concretely contribute to the improvement of tsunami monitoring activities.

Tsunami early warning systems are based on observation networks of seismometers and sea level measuring stations, which send real time data to national and regional warning centres (TWCs). Based on these observations, TWCs are able to confirm or cancel a tsunami watch or warning.



The presence of devices for sea level measurement in many different locations along the coast is crucial for effective tsunami monitoring, but so far the high installation and maintenance cost of these devices have prevented their large-scale use.

The JRC has developed the Inexpensive Device for Sea Level Measurement (IDSL), a novel mareograph system to measure the sea level in real time. Compared to existing similar devices, the IDSL has a very low cost while still providing high quality measurements within few seconds. Sea level data are measured every five seconds and transmitted to JRC servers through the GPRS phone lines and thus immediately available for analysis. A web site is available to visualise, analyse and download the data as soon as they are stored.

See full article: <https://ec.europa.eu/jrc/en/news/tsunami-early-warning-jrc-tests-new-low-cost-device-measure-sea-level>

RESEARCH

NEW TSUNAMI RESEARCH

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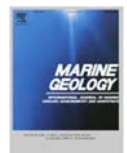


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NTHMP NEWS & EVENTS

2016 NTHMP Annual Meeting Overview

By Rick Wilson, Seismic Hazards Mapping Program – Tsunami Projects, California Geological Survey

The National Tsunami Hazard Mitigation Program (NTHMP) will hold its 2016 Annual Meeting and related pre-meetings during the week of February 1st in Boulder, CO. Here are some of the activities and discussions planned for this meeting:

- A two-day pre-meeting workshop will be held between NTHMP members, scientists, and managers from the U.S. Geological Survey (USGS). The focus of this workshop will be to improve collaboration between the coastal states, NOAA, and the USGS with regard to tsunami source characterization, scenario development, evacuation modeling, and vulnerability analyses.
- The three NTHMP Subcommittees will also meet prior to the Annual Meeting:
 - ◆ The Mitigation and Education Subcommittee (MES) will discuss MES priorities for the NTHMP Strategic Plan, examine future graphical, mobile, and outreach products, and get updates from evacuation planning, maritime, and tsunami safety awareness sub-groups.
 - ◆ The Warning Coordination Subcommittee will review new and updated Warning Center products and plan for the upcoming regional tsunami exercises in March.
 - ◆ The Mapping and Modeling Subcommittee will discuss results and proceedings from the 2015 tsunami current modeling benchmark workshop, plan for the 2016 landslide modeling workshop, and finalize tsunami preparedness and response guidance for harbors and ports.
- The Annual Meeting will be a one-and-one half day event where the following topics will be discussed:
 - ◆ Lessons learned from recent events in Japan and Chile, and their application to tsunami preparedness efforts in the U.S.
 - ◆ Integration of earthquake early-warning with tsunami warning.
 - ◆ Updates on maritime tsunami response, tsunami evacuation modeling, and international tsunami activities.
 - ◆ Highlights from NTHMP state and territory partners about their tsunami planning work in 2015.
- Following the one-and-one half day NTHMP Annual Meeting, the NTHMP Coordinating Committee will hold a half-day meeting to discuss on-going NTHMP program activities and partner support.

For more information about these meetings, as well as the location where presentations and notes from the meetings will be posted, please visit: <http://nws.weather.gov/nthmp/2016annualmeeting/>

UPCOMING NTHMP & RELATED EVENTS

- ◆ February 1–5, 2016—NTHMP Annual Meeting Boulder, Colorado USA
<http://nws.weather.gov/nthmp/2016annualmeeting/>
- ◆ March 16, 2016—LANTEX Tsunami Exercise (East Coast and Gulf Coast, USA and East Coast, Canada) <http://tsunamizone.org>
- ◆ March 17, 2016—CARIBE WAVE Tsunami Exercise (Caribbean and Adjacent Regions)
<http://caribewave.info> and <http://tsunamizone.org>
- ◆ March 27–April 2, 2016—Tsunami Preparedness Week
<http://nws.weather.gov/nthmp/tpw/tsunami-preparedness-week.html>
- ◆ April 17–22, 2016—EGU General Assembly Vienna, Austria
- ◆ Seismological Society of America Meeting April 20–22, 2016 Reno, Nevada, USA
- ◆ June 2016—Cascadia Rising 2016/PACIFEX2016 Tsunami Exercise (West Coast U.S./Pacific Ocean Region) <http://wcatwc.arh.noaa.gov/?page=exercises>

