



Contents

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<i>Special features</i>		<i>Departments</i>	
Report from Georgia	1	News	16
NTHMP Warning Coordination Subcommittee agenda	8	Websites	20
Helping readers understand natural hazards	9	Publications	17
The medium and message	11	State offices	23
Nationwide EAS post-test information	13	Classes/Workshops	21
Vertical evacuation plans could save lives	15	5 th International Tsunami Symposium—Call for papers	24
Building codes underestimate risks due to multiple hazards	15	Material added to NTHMP Library	22
Tsunami multi-channel warning system enters field testing	26	IAQ	23
FEMA Think Tank	26	Video reservations	25
Last minute news	27	Regional reports	3
Exercises: Pacifex12 and Lantex12	22	Conferences	21

REPORT FROM GEORGIA

Announcing the app that prepares you for an emergency and guides you to safety

Ready Georgia mobile app uses geo-location to deliver alerts, create emergency plans and show shelter locations

(ATLANTA) To make emergency preparation more accessible, the Georgia Emergency Management Agency/ Homeland Security (GEMA) and Georgia Department of Public Health (DPH) have partnered to create the *Ready Georgia* mobile app. The free app, available for both iPhone and Android devices, supports *Ready Georgia*'s mission to encourage residents to prepare, plan and stay informed for emergencies. From up-to-the-minute weather and hazard alerts based on a user's location, to customizable emergency preparedness checklists, the app combines a robust set of features not previously available in one mobile application.

"Preparation is key to surviving disasters, and the *Ready Georgia* mobile app makes it easier than ever for Georgians to get prepared, just in time for National Preparedness Month, which runs through September," said GEMA Director Charley English. "If you're shopping for emergency supplies, you have a checklist in your pocket. If you see storm clouds, you can check weather alerts. You can even pull up a local map to see if a shelter has been opened in your community."

Before an emergency, users will be able to create customizable checklists of emergency supplies, make disaster plans for their families and check flood risk levels and historic tornado data near their location. During an emergency, the app will deliver severe weather alerts, show the locations of open Red Cross shelters and provide information on what to do during different types of disasters.

In addition to localized severe weather alerts, users will also receive alerts from GEMA and DPH in the event of other emergencies, such as terrorist attacks, infectious diseases or biological threats.

"Diseases spread fast and the need to reach people in real time with life-saving information is more important than ever," said Brenda Fitzgerald, M.D., Commissioner of DPH. "The *Ready Georgia* mobile app gives us the ability to instantly deliver potentially life-saving information to almost anyone with a smartphone."

Despite all the extreme weather in 2011, a majority of Georgians are still not fully prepared for an emergency, according to a recent study from GEMA. According to the GEMA survey, 53 percent of households aware of *Ready Georgia* are more prepared to survive a disaster than those who are unaware of the campaign. With the number of smartphone users expected to grow 55 percent in 2011, the mobile app offers an opportunity to engage a large number of residents in a new way.

(continued on page 3)

TsuInfo Alert

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Division of Geology and Earth Resources
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(continued from page 1)

Residents can also visit the *Ready Georgia* website, www.ready.ga.gov, to learn how to prepare for emergencies.

About Ready Georgia

Ready Georgia is a statewide campaign that educates and empowers Georgians to prepare for and respond to natural disasters, pandemic outbreaks, potential terrorist attacks and other large-scale emergencies. The campaign is a project of the Georgia Emergency Management Agency (GEMA)/Homeland Security and provides a local dimension to *Ready America*, a broader national campaign. *Ready Georgia* prepares residents for maintaining self-sufficiency for at least three days following an emergency and uses an interactive website, online community toolkit, advertising and public awareness media messaging to reach its audiences.

For more information visit ready.ga.gov or find *Ready Georgia* at [Facebook.com/ReadyGA](https://www.facebook.com/ReadyGA) and [YouTube.com/ReadyGAfromGEMA](https://www.youtube.com/ReadyGAfromGEMA).

About the Georgia Department of Public Health

The Georgia Department of Public Health (DPH) is the lead agency responsible for the health of Georgia's communities and the entire population. In 2011, the General Assembly restored DPH to its own state agency after more than 30 years consolidated under other departments. At the state level, DPH is divided into numerous divisions, sections, programs and offices, and at the local level, DPH functions via 18 health districts and 159 county health departments. Through the changes, the mission has remained constant – to protect the lives of all Georgians. Today, DPH's main functions include: Health Promotion and Disease Prevention, Maternal and Child Health, Infectious Disease and Immunization, Environmental Health, Epidemiology, Emergency Preparedness and Response, Emergency Medical Services, Pharmacy, Nursing, Volunteer Health Care, the Office of Health Equity, Vital Records and the State Public Health Laboratory. For more information on DPH, visit www.health.state.ga.us.

Key App Features

- A customizable Ready Profile featuring a checklist of emergency supplies and a family disaster plan.
- Live weather, disaster and public health alerts delivered based on your location.
- Flooding threat assessment based upon location and stream gauges.
- Alerts include info on what to do in the event of each emergency.
- Map of nearby active Red Cross shelters during emergencies.
- Flood risk levels based on current location.

- Map of historic tornado strikes in Georgia, plus list of all major disasters to strike current location.
- Information on how to prepare for different threats and local contacts to help.
- Hazard trivia for every day of the year.

From: Georgia Emergency Management Agency/
Homeland Security
<http://www.gema.ga.gov/>
September 21, 2011

REGIONAL REPORTS

ANGUILLA [BRITISH TERRITORY]

Anguilla becomes first international TsunamiReady® community

Dec. 7, 2011

Sent by Christa von Hillebrandt-Andrade

The British territory of Anguilla is now more prepared for a tsunami, having completed a rigorous set of preparation criteria to earn National Weather Service TsunamiReady® recognition. The governor of Anguilla will receive the official designation in a ceremony on December 12, [2011], along with TsunamiReady signs and a recognition letter.

One of the most northerly of the Leeward Islands in the Lesser Antilles chain, Anguilla is located east of Puerto Rico and the Virgin Islands. A British territory since 1980, Anguilla's population is slightly above 15,000.

To earn TsunamiReady recognition, Anguilla established a 24-hour emergency operations center, developed multiple ways to receive tsunami warnings and alert the public, developed a formal tsunami hazard plan, conducted emergency exercises and promoted public readiness through community education.

In addition to Anguilla, nearly 100 communities have taken the necessary steps to become TsunamiReady in the United States, Puerto Rico, Guam and the Northern Mariana Islands. The National Weather Service is working in partnership with the Intergovernmental Oceanographic Commission to bring the TsunamiReady program to more countries in effort to bolster international tsunami preparedness. The Commission is part of the United Nation's Educational, Scientific and Cultural Organization.

"This recognition marks another significant milestone in our continuing tsunami mitigation efforts in the Caribbean and western Atlantic Basins," said Bill Proenza, regional director of the National Weather Service Southern Region. "I congratulate the governor, Anguilla's Department of Emergency Management and all the citizens of Anguilla on becoming the first international TsunamiReady community."

“While no community can be tsunami proof, Anguilla now has the tools necessary to minimize the loss of life when a tsunami strikes,” said Christa von Hillebrandt-Andrade, manager of the National Weather Service Caribbean Tsunami Warning Program. “A tsunami could happen at any time, but it may not strike for many generations. We are continuing to expand the program to more coastal communities in Puerto Rico and aim to eventually include all of our Caribbean neighbors.”

The National Weather Service is the primary source of weather data, forecasts and warnings for the United States and its territories. It operates the most advanced weather and flood warning and forecast system in the world, helping to protect lives and property and enhance the national economy. Working with partners, the National Weather Service is building a Weather-Ready Nation to support community resilience in the face of increasing vulnerability to extreme weather. Visit us online at weather.gov and on Facebook.

JAPAN

Japan was hit by ‘double-wave’ tsunami

The tsunami that devastated the north-east coast of Japan on 11 March [2011] was created by at least two wave fronts that merged to form a far more destructive “double tsunami”, scientists in the US have said.

Full story:

<http://www.guardian.co.uk/world/2011/dec/07/japan-double-tsunami-nasa-satellite>

Tsunami-hit city shares its stories on Facebook

Kesennuma, Miyagi has created a multilingual Facebook account to share locals’ stories and pictures of the March 11, 2011 disaster and their reconstruction efforts with people around the world. The Facebook page is entitled “Kesennuma: building for the future.” It’s URL is <http://www.facebook.com/kesennuma>.

Full story:

<http://www.yomiuri.co.jp/dy/national/T111005003679.htm>

OREGON

New series of tsunami inundation maps for Oregon Coast debuts

News release January 24, 2012

DOGAMI TIM-Coos-05, Tsunami inundation maps for Coos Bay-North Bend, Coos County, Oregon by DOGAMI, 2012, scale 1:12,000. Includes two plates showing local-source (Cascadia subduction zone) and distant-source (Alaska-Aleutian subduction zone) tsunami inundation scenarios.

DOGAMI is pleased to initiate the release of a new style of tsunami inundation maps that incorporate all the best tsunami science that is available today, including recent publications by colleagues studying the Cascadia subduction zone, updated computer simulation

models using high-resolution lidar topographic data, and knowledge gained from the 2004 Sumatra, 2010 Chile, and 2011 Tohoku earthquakes and tsunamis.

Plate 1 displays five scenarios, labeled “T-shirt sizes” (S, M, L, XL, and XXL), of the impact of Cascadia subduction zone tsunamis that reflect the full range of what was experienced in the past and will be encountered in the future. The geologic record shows that the amount of time that has passed since the last great Cascadia earthquake (312 years since January 26, 1700) is not a reliable indicator of the size of the next one, so the size ranges are intended to fully bracket what might happen next.

Plate 2 shows tsunami inundation scenarios for two distant-source tsunamis that were modeled and originate in Alaska. These distant tsunamis are not nearly as dangerous as the local ones, as Oregonians will have several hours instead of only minutes to evacuate and the tsunamis themselves are much smaller. For these reasons, DOGAMI’s focus is on the big Cascadia events. If the ground shakes for an extended period of time, don’t wait for more warning, evacuate to high ground as fast as possible.

These maps include a wealth of information, including projected tsunami wave height time series charts and a measurement of the exposure each community has to the various tsunami scenarios: we count the number of buildings that are inundated by each scenario.

We hope that the public, planners, emergency managers and first responders, elected officials, and other local decision makers will use this detailed and innovative map product to mitigate risk and to reduce the loss of life and property.

To learn more about this publication and to see the anticipated publication schedule for other publications in the TIM series, visit

<http://www.oregongeology.org/pubs/tim/p-TIM-Coos-05.htm>.

From:

<http://www.oregongeology.org/pubs/nr/press-release-2012-01-24b.pdf>

Local Hispanic families learn tsunami preparedness

It was standing room only as local Hispanic families streamed into the library meeting room [November 15, 2011] for a tsunami and emergency preparedness meeting in Spanish. Approximately 50 individuals of all ages attended the meeting put on by the Tillamook County Health Department, in cooperation with Tillamook Emergency Management and the Red Cross.

For the full story by Mary Faith Bell, Tillamook Headlight-Herald, Tillamook, Oregon, visit http://www.tillamookheadlightherald.com/news/article_cce489ae-1140-11e1-8542-001cc4c002e0.html

HAWAII

Tsunami debris survey launched northwest of Midway

Posted On: January 26, 2012 - 2:32pm

The tsunami that followed on the heels of the March 11, 2011, earthquake in Japan produced as much as 25 million tons of debris. Much of this debris was swept into the ocean. What stayed afloat drifted apart under the influence of winds and currents, most of it eastward. Predicted to reach the West Coast of the United States and Hawaii within the coming years, the debris' composition and how much is still floating on the surface are largely unknown. One thing is certain: the debris is hazardous to navigation, marine life, and when washed ashore, to coastlines.

To track where this debris is headed, a team of scientists and conservationists from the University of Hawaii at Manoa and at Hilo, the Scripps Institution of Oceanography, and the Ocean Recovery Alliance created a plan shortly after the tsunami to survey the debris field and mark it with satellite-tracked drifting buoys. This drifter array would then be used to monitor the debris' movement remotely and provide warnings.

This survey has now been partly realized. The team organized end of November an expedition from Honolulu to Midway Atoll and beyond. Horizon Lines LLC shipped the equipment from California to Hawaii and Nobeltec provided navigational software for the expedition. The team had only the projections of a computer model to go on in search of the debris. The model, based on the trajectories of historical drifters, predicted at the outset of the expedition that the debris was heading toward Midway and Papahānaumokuākea Marine National Monument, arriving there as early as this winter. The model's trajectory had been confirmed end of September 2011 by the Russian Sail Training Ship *Pallada*, which reported the edge of the debris field 250 miles northwest of Midway, and picked up 100 miles further on, a 20-foot boat from Fukushima, which had been lost during the tsunami.



These are some isolated floating objects found during the expedition. They are not likely from the tsunami.

(Photo Credit: Gisela Speidel)

The expedition has successfully completed the survey of the probable pathways of tsunami debris moving toward the Northwest Hawaiian Islands. Among other tasks, 11 drifting buoys, designed to simulate the motion of different types of debris, were deployed in a line between Midway and the leading edge of the tsunami debris field. The data from these satellite-tracked drifters, used in conjunction with computer models, now allow the movement of the debris field to be monitored remotely, giving scientists and operational agencies a better awareness of the status of the debris field and of the region's current system. Moreover, 400 numbered wooden blocks were deployed along the route, often near floating objects. If boaters, fishermen and beachgoers find these blocks and contact the scientists by the information on the blocks, they will also increase understanding of the motion of debris and currents in this remote region.

Among the most important results of the expedition was the recognition that tsunami debris has recently not advanced towards Midway, but instead has been flowing eastward well to the north of the atolls. Analysis of the ocean-current field shows why: for the past weeks, the general flow around all Hawaiian Islands has been from the southwest, producing a front located 300-400 miles northwest of the Midway. This front and associated northeastward jet keep the tsunami debris north of the islands...at least for the time being.



A drifting buoy is deployed.

(Photo Credit: Image courtesy Tsunami Debris Project.)

Although this flow has prevented tsunami debris from approaching the islands, it carries a lot of "ordinary" debris (mainly old plastic) from the Garbage Patch, located between Hawaii and California. The expedition documented 175 such objects, many photographed and collected for more thorough laboratory examination. These sightings of ordinary debris match reports at Kure and Midway Islands, where in recent weeks much debris has been washing up on the southern beaches of the atolls; some of these items could be tracked to the main Hawaiian Islands. Moreover, systematic examination of these samples (including water samples) with the Geiger counter has not revealed any significant radiation.



This is a numbered wooden block. If found please contact hilodrifter@gmail.com.

(Photo Credit: Image courtesy Tsunami Debris Project.)

Source: University of Hawaii - SOEST

U.S. VIRGIN ISLANDS

Region II trains first responders in the U.S. Virgin Islands

FEMA Region II recently trained 40 firefighters and rescue volunteers from the islands of St. Thomas, St. John, and St. Croix to help strengthen the Islands' ability to respond to disasters and rescue victims from the rubble of the many aging structures prone to collapse during hurricanes and earthquakes.

Volunteers attended forty combined hours of classroom training and scenario response, with instructors from FEMA Region II National Preparedness & Protection Division and regional agencies including the New York Urban Search & Rescue Task Force-1, New York State Office of Homeland Security, New York City Office of Emergency Management, and the Virgin Islands Office of Emergency Management. The topics covered included disaster preparedness, team operations, light search and rescue, and basin on-scene building construction awareness.

That knowledge was put into action during a field exercise hosted alongside local fire departments and the Virgin Islands Office of Emergency Management, which provided a hands-on opportunity to practice their newly learned skills in a simulated disaster scenario.

In addition to the hands-on training, FEMA Region II and several of the instructors provided guidance and best practices to senior leadership of the Fire Department, Virgin Islands Office of Emergency Management, and volunteer rescue on the development and

framework of the newly formed U.S. Virgin Islands Task Force-1 team.

From: Citizen Corps Weekly News Digest, Nov. 3, 2011.

WASHINGTON

Washington tsunami evacuation maps and interactive GIS portal

The tsunami layer:

https://fortress.wa.gov/dnr/geology/?Site=tsunami_evac

With this base map overlain by tsunami hazard zones, evacuation routes, and assembly areas, you can find evacuation routes and assembly areas near your home or work by using the address locator tool.

The portal's homepage for all geologic layers is http://www.dnr.wa.gov/ResearchScience/Topics/GeosciencesData/Pages/geology_portal.aspx

Using our [Washington Division of Geology and Earth Resources] interactive maps, you can create, save, and print custom maps, find out more information about map features, and download map data for use in a geographic information system (GIS). In addition to a variety of geoscience layers that can be turned on and off, each interactive map has many base layers to choose from, so you can customize your map in any number of ways. Please note that because of the volume of data available through these interactive maps, data loading and identification operations may not be instantaneous; we thank you for your patience.

For more information about the Washington State Geologic Information Portal, visit http://www.dnr.wa.gov/Publications/ger_fs2_portal.pdf for a 2 page fact sheet.

2011 FEMA individual and community preparedness awards honors

Camp Murray, Wash. – The Federal Emergency Management Agency (FEMA) has announced that the Washington Military Department, Emergency Management Division, has won a 2011 FEMA Individual and Community Preparedness Award in the category of *Innovative Training and Education Programs*.

The Individual and Community Preparedness Awards recognize the innovative practices and achievements of organizations and individuals that work to make our communities safer, stronger and better prepared to manage any emergency situation.

This year's winners were selected from across 36 states, as well as Puerto Rico and the Virgin Islands. The applications reflected the full breadth of the whole community, with submissions from faith-based, tribal, non-profit, private sector, and community-based organizations, as well as individuals.

The Award honors the Washington Emergency Management Division's diverse outreach programs which include:

Map Your Neighborhood – A program that prepares neighborhoods to survive emergencies and disaster situations by linking neighbors to neighbors. MYN is currently active in 38 states, and 2 countries. MYN also won FEMA's Challenge.gov Award this year. Other programs honored in the award include the *Washington State EMD Business portal*, *EMD Kidz website*, and the *Flood Preparedness Videos* series all found at www.emd.wa.gov.

"We are proud of these communities, organizations, and individuals and their remarkable accomplishments," said Paulette Aniskoff, FEMA's Director for Individual and Community Preparedness. "I'm honored to recognize those who are empowering the public to take action in making their communities safer and better prepared to respond to disaster. FEMA is just one part of the team, and we couldn't build our nation's preparedness without the innovation and creativity put forth by organizations and individuals, such as this year's winners."

Jim Mullen, Washington Emergency Management Director and Wendy Freitag, EMD External Affairs Manager joined other honored guests Tuesday [Jan. 17, 2012] in Washington, D.C. at a FEMA-hosted series of events to further recognize these achievements.

The FEMA Individual and Community Preparedness Division announced awards in thirteen categories:

Outstanding State Citizen Corps Council Initiatives

Arkansas State Citizen Corps (AR)

Outstanding Local Citizen Corps Council Initiatives

New York City Citizen Corps (NY)

Outstanding Community Emergency Response Team Initiatives

NBC Universal CERT (CA)

Outstanding Achievement in Youth Preparedness

American Red Cross of Greater Chicago (IL)

Preparing the Whole Community

San Manuel Band of Serrano Mission Indians (CA)

Promising Partnerships

Be Ready Alliance Coordinating for Emergencies (BRACE) (FL)

Engagement with Faith-Based Communities

David L. Maack (WI)

Innovative Training and Education Programs

Washington State Emergency Management Division (WA)

Outstanding Drill, Exercise, or Event

The Great Central United States ShakeOut (TN)

Awareness to Action

Earthquake Country Alliance (CA)

Innovative Use of Technology

Citizen Corps of St. Clair County (MI)

Outstanding Achievement in Public Health

Cobb County Public Health Preparedness and Response (GA)

Community Preparedness Heroes

Brenda Gormley (TX), Tod Pritchard (WI), Carolyn Bluhm (CO)

First Annual Recipient of the John D. Solomon Preparedness Award

John D. Solomon, Creator of In Case of Emergency, Read Blog (NY)

Winning applications demonstrated remarkable innovation and creativity in preparing their communities. Others were exemplary in their ability to train and educate community member. Many of this year's winners also distinguished themselves by bringing together the whole community in emergency preparedness. A complete list of this year's winners, including descriptions and those applicants that received honorable mentions in each category, is available at:

<http://www.citizencorps.gov/councils/awards/2011/awardwinners2011.shtm>.

From:

<http://www.washingtonresponder.com/external/content/document/1289/1281171/1/2012-LocalNewsRelease-Final.pdf>

Washington State Emergency News—Mitigation & Preparedness, Jan. 18, 2012 ♦

NTHMP Warning Coordination Subcommittee meeting agenda

Tuesday, February 7, 2012; 8:00am-noon
Marriott Mission Valley, San Diego, California

2011 Meeting Action Item Review

June, 2011 WCS telecom Action Items

- Revision of term "Tsunami Amplitude" to "Tsunami Height"
- EAS Activation for Tsunami Advisories

Tsunami Warning System Exercises

- Moving west coast comms test from Sept. to March in 2014?
- LANTEX/PACIFEX/PacWave Plans for 2012
- March, 2012 live code EAS test plans
- September, 2012 west coast EAS test plan
- Pac-Wave plans – international tsunami exercise for Pacific
- Consider date for 2013 exercises

Post-warning effectiveness assessment process

- Summarized results from three 2011 events
- Suggestions to improve process

TWC Products

- Product Improvement Team Summary
- Public Products – should they be continued?
- Tsunami travel times – should they be posted for non-w/w/a events?
- Estimate length of time w/adv in effect – should it be included in products?
- WFO Tsunami local statement – update
- Updated product time frame (outlined in new policy update)

TWC Procedures

- Review criteria for when Tsunami Information Statements are issued

- Major Warning level of alert

NTHMP Strategic Plan WCS Measures and Milestones

- Annual Table-top exercise (2010)
- Develop decision support tools for EM response (2013)
- All states with high/very high hazard establish high level response structure (2012) – NAS rec. 14
- Increase % response to monthly comms. tests from 82% to 90%
- Conduct annual end-to-end test (EAS activation)
- Develop post-event review process (2009)
- Conduct post-event reviews
- Develop inventory of local warning dissemination capabilities by 2010
- Develop inventory of local warning reception capabilities by 2010
- Update on inundation map distribution during events and current forecasts (Action Item from 1011)
- Review WCS Core members (add CTWP Mgr.?)

Review new Actions

Note that during the main meeting, sessions are also scheduled for:

Japan tsunami response

Tsunami Program social science project

Tsunami.gov update

USGS Tsunami Exercise

From: Paul Whitmore, Jan. 12, 2012 e-mail ♦

Helping readers understand natural hazards

An invited comment by Laurie J. Schmidt

Natural Hazards Observer, v. 35, no. 3, p. 10-12.

Reprinted with permission

In the early hours of October 15, 2006, a magnitude 6.7 earthquake, followed by several aftershocks, struck off the coast of Hawaii (the Big Island). Thousands would have been killed if the earthquakes had triggered a tsunami because people in low-lying areas did not move to higher ground, Hawaii tsunami specialist Dan Walker told the Honolulu *Star-Bulletin*. Walker also said spending money to improve tsunami warning systems is wasted if people don't have a fundamental understanding of what to do in a tsunami (Altonn, 2007).

Walker's point about public understanding seems to be right on the money. In fact, recent surveys of Hawaii residents showed that, although residents' awareness of warning sirens is high, their understanding of the meaning of the sirens is disturbingly low (Gregg et al. 2007). But the public's lack of understanding isn't unique to tsunami hazards in Hawaii. Similar results are likely when surveying South Florida residents about hurricane storm surges, or Pacific Northwest residents about potential eruptions of Mount Rainier or Mount Baker.

While it may be tempting to dismiss this lack of public understanding as a communication gap between scientists and laypeople, low knowledge levels might actually be traced to ineffective explanations of scientific phenomena—in this case, natural hazards. The following strategies can help create accurate and interesting text that help readers visualize and understand unfamiliar processes, thereby aiding them in decision making about risk.

Speak the reader's language

It's easy to slip into jargon when writing about an extremely familiar subject. But public service announcements, educational brochures, and Web site content won't accomplish much if the public doesn't understand the language.

According to *Science and Engineering Indicators 2010*, many Americans do not give correct answers to questions about basic scientific terms and concepts (National Science Board 2010). Other studies show that readers have trouble understanding science articles containing unfamiliar scientific terminology that is not adequately explained (Steinke 1995). The moral of the story? Make sure terms and phrases are defined—in plain English [or the language your audience speaks]. You may live and breathe seismology every day, but don't assume your readers know what a strike-slip fault is. Or any other type of fault, for that matter.

Analogies can help lay audiences envision unknown processes by relating the unfamiliar to some-

thing they know. For example, in an article about the 2001 Bhuj earthquake in India, many readers would have struggled to visualize pore-water pressure. But U.S. Geological Survey geologist Martitia Tuttle came up with an effective way to explain the process of liquefaction by comparing it to shaking a soda can: Imagine a cube full of sand and water. If you press it in from both sides (compressing and releasing it, then compressing it again), you build up what's called pore-water pressure. It's like shaking a soda can—when the pressure builds up and you release it, the fluid comes shooting to the surface. (earthobservatory.nasa.gov/Features/Earthquake).

Address myths and misconceptions

Many scientific processes and phenomena are counterintuitive to lay readers, which leads to misconceptions. For example, the concept of continental drift is counterintuitive because continents appear to be stationary. But simply defining a process or term is often not enough—communications research suggests that misconceptions need to be acknowledged or they will stand firm and be an obstacle to learning (Giordan 1991).

Misconceptions can become entrenched in public thinking and lead to poor decision making, which sometimes has catastrophic results. The idea that a 100-year flood will only occur once every 100 years, for example, is a widely held but erroneous belief. Addressing the misconception directly and then replacing it with an accurate explanation would help lay readers understand that a 100-year flood actually means a 1 percent chance of flood annually.

In a U.S. Geological Survey fact sheet titled *100-Year Flood—It's All About Chance* (Holmes and Dinicola 2010), the authors directly addressed the misconception by explaining probability to the reader: If we had 1,000 years of streamflow data, we would expect to see about 10 floods of equal or greater magnitude than the 100-year flood. These floods would not occur at 100-year intervals. In one part of the 1,000-year record, it could be 15 or fewer years between “100-year floods,” while in other parts, it could be 150 or more years between “100-year floods.”

An Associated Press article about flood terminology (Taylor 2008) explained probability by comparing it to something the average lay reader would understand—tossing a coin:

While the rules of probability say that the odds are 50-50 that a coin will come up heads, it is entirely possible to flip a quarter and come up with heads four or five times in a row.

Make your topic relevant

If I come across an article about a space mission to do a flyby of an asteroid, I may be mildly interested. But tell me that the asteroid's path will bring it to with-

in 500 miles of Earth in 10 years, and you bet I'm going to pay attention. That's relevance.

Today's readers are bombarded with information. If they don't see a connection between what they're reading and their own lives, their attention will bounce on to something else.

In the text below, Alaska Volcano Observatory volcanologist Kenneson Dean clearly explains the hazards posed to aircraft by volcanic eruptions, which make an article about a volcanic ash monitoring system relevant to the reader: Large-body jets fly across this region carrying about 2,000 passengers and \$1 billion in cargo daily. If a plane is flying towards an ash cloud, and the cloud is moving towards the plane, they will cross paths very quickly. Even if the cloud is not moving towards the plane, an aircraft still needs plenty of time to adjust its course and avoid the cloud. (earthobservatory.nasa.gov/Features/monvoc)

Add sidebars and glossaries

A detailed definition of scientific process can sometimes interrupt the flow of an article or report. Sidebars provide in-depth information for readers who wish to learn more without distracting readers already familiar with the term or process. Likewise, glossary boxes can provide shorter definitions—again without interrupting the flow.

For example, let's say you're writing about climate change and diminishing Arctic sea ice. Stopping mid-paragraph to define several sea ice-related terms could pull the reader's attention away from the main idea you're trying to communicate. Including a glossary box allows the reader to access additional information on an as-needed basis: Sea ice is any form of ice in the sea that originates from the freezing of salt water. Sea ice extent refers to the total area covered by some amount of ice, including open water between ice floes. Maximum extent refers to the day of the year when sea ice covers the largest area of the Arctic; minimum extent refers to the day of the year when sea ice covers the smallest area of the Arctic. (From www.popsoci.com/laurie-j-schmidt/article/2008-10/spying-sea-ice).

A fact sheet about avalanche risks might not need a full explanation of roof avalanches, but a sidebar on the topic is helpful to readers who want more in-depth information: Roof avalanches occur when a mix of ice and snow slides off a roof. Mid-winter thaws often precipitate roof avalanches—water from melting snow and ice lubricates the roof, allowing the snow from an entire winter season to slide off in a matter of seconds. Metal roofs are especially prone to avalanches, as there is little friction available to hold snow and ice to the metal. Poor roof design can also cause roof avalanches to fall on entry pathways and garage entrances. Large masses of snow and ice have slid off roofs with slope angles as low as 20

degrees. (from Colorado Avalanche Information Center website, 2010).

Make hazards real

Providing readers with real-life scenarios can help readers grasp the danger associated with hazards risks. For example, which of the following would be more likely to convey avalanche risks to readers—a technical description of a slab avalanche, or an account of two skiers who were caught in a slab avalanche last winter?

Capture attention by showing the severity of the risk, and follow up with the details needed to make safe decisions. Some of the best sources for field stories are researchers who routinely spend time in the field and know the risks first-hand.

For example, each year polar rookies deploy to Antarctica to work in various research support positions. Understanding the risks associated with being outside in sub-zero temperatures is essential to their survival. A quote like the one below communicates the risk far more effectively than simply telling the reader that field workers shouldn't be outside more than two hours.

"I went inside and was taking all my gear off, and it felt like I had a piece of duct tape stuck to my cheek." Glaciologist Ted Scambos said. It wasn't duct tape—his cheek was frozen, and it took about three to four minutes for it to thaw out.

"Over the next couple of days it was like a bad sunburn, and several layers of my skin fell off," he said.

Natural hazards pose potentially devastating effects—impacts that can be avoided if residents understand the science behind the hazards and the risk associated with their own decisions. Adding the above writing strategies to the communications toolbox can help create text that provides lay readers with accurate, interesting, and clear explanations of natural hazards.

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From: *Natural Hazards Observer*, v.35, no. 3, p. 10-12 ♦

The medium and message—Making building warnings meaningful

By Erica Kuligowski

Natural Hazards Observer, v. 35, no. 6, p. 1, 7-9.

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Emergency communication in buildings can fail at several points. In addition to instances where communications systems are rendered inoperable as in World Trade Center One on September 11, 2001 (Averill et al. 2005), there are times when communication systems are used improperly.

Examination of disasters shows links between insufficient, excessive, inaccurate, conflicting, or uncertain information and occupant confusion in building emergencies. Simply providing alarms does not give people enough information to determine what is happening. As a result, people can't make appropriate response decisions (Proulx 2000).

There is a glaring disconnect between the adoption of new and emerging communication technology and the requirements established for the use of these systems in building emergencies. Emergency notification systems have been installed in many buildings and building campuses in the United States to allow building officials to communicate with occupants before, during, and after emergencies.

The *2010 U.S. National Fire Alarm and Signaling Code* outlines requirements for the application, performance, and installation of emergency communication or mass notification technology (NFPA2010), but these requirements only address message delivery, not content. Little guidance is available to ensure effective emergency communication, including message content and length, speaking tone and rate, and frequency of delivery.

Information transfer

Without guidance, messages might not be useful when a disaster is unfolding. Message providers are usually building managers or other safety personnel with busy schedules. They might not have the time or institutional support to attend training sessions or to perform research on public warnings. In most instances, messages are "created" moments before

dissemination with little or no understanding of effective public warning techniques.

Providing individuals with too much information can be confusing, as well, especially in this age of electronic media. Too much information can mislead individuals about which steps are most important to take and inaccurate or conflicting information is detrimental to public response. For instance, incidents have been reported of occupants receiving messages sending them to the building's floor that's on fire or telling them to stay and then immediately instructing them to evacuate (Kuligowski and Hoskins 2010).

In 2008, a fire broke out outside the first floor mezzanine walls of a 32-story U.S. office building populated by 4,400 people and more than 25 different companies. The emergency alarm system was a combination of voice and alarm with the capability of making live announcements to occupants. Because the building was so tall, a selective evacuation process that provided different pre-recorded voice messages to different floors was also incorporated. For instance, a specific "fire zone" message could be broadcast on the floor of alarm origin and to the floors immediately above and below. A simultaneous "safe zone" message would be broadcast to other floors.

"Shortly after the fire was detected, occupants below the fifth floor received the automatic, pre-recorded voice alarm message to evacuate the building," we wrote in our study of this incident. "Initially, occupants on the fifth through 32nd floors received the "safe zone" message."

But less than five minutes later, "the fire alarm system received a second alarm initiated from a sixth floor fire alarm manual pull station which resulted in the fifth through seventh floor occupants consequently receiving a second automatic pre-recorded message. This message informed the occupants to evacuate down three floors and wait on that floor."

"In addition, occupants on the eighth floor and above also received a second automatic pre-recorded message that informed them that they were in a safe location and to wait for further instructions." About 15 minutes later a live voice announcement informed all the occupants to evacuate the building. In addition to the instructions, occupants received other environmental cues from the incident, including seeing smoke, especially below the eighth floor.

The right info, the right way

Messages like these can lead people into harm's way, rather than away from it. Warnings that contain unclear or uncertain information don't help. Alert colors and levels do not give enough information about what is going on and what steps must be taken (Drabek

2006). Warning systems have to provide the right information, the right way.

In 1990, more than 50 years of disaster-based social science research findings were synthesized to determine effective content of warning messages and dissemination during an emergency (Mileti and Sorensen 1990). Mileti and Sorensen—and research since then—demonstrate that the message is one of the most important factors in determining warning effectiveness (Mileti et al. 2006). A successful message should communicate the danger, what's to be done, the location of the hazard, a timeframe for action, and who is providing the information. The style of the message is also crucial. A successful message is one that is specific, consistent, certain, clear and accurate. Messages delivered frequently through correct channels (ones that broadcast content rather than sounding an alarm or initiating a strobe), are more like to initiate an appropriate response.

Even with these important findings, there remains an emergency communication problem in buildings. It is important for the "right" information to be disseminated so that it reaches individuals of all needs and conditions in a timely manner.

Populations receiving an emergency message can be a barrier to a successful emergency communication system. Distinct sections of any given population are likely to have difficulties perceiving, paying attention to, or comprehending a warning. In research on how to optimize fire alarm notification for high-risk groups, Gwynne identified various occupant types that could be vulnerable in emergencies, especially in message perception (2007). These occupants included individuals with sensory disabilities, such as hearing impairment or loss, visual impairment, or cognitive, thinking, or learning disabilities; the elderly, children; large groups; people who are alone; people who are asleep; intoxicated or sleep-deprived individuals; non-native speakers; and those engrossed in some particular activity when the alarm or warning begins.

Environmental distractions

Environmental distractions can also inhibit the effectiveness of emergency communication. In some cases, buildings have systems in place that regularly provide non-emergency information to occupants. Airports are an example. Occupants waiting at airline gates constantly receive audible and visual messages about departure information, seat changes, and delays. These regular messages can interfere with the ability to provide emergency messages and the ability of the message to grab occupants' attention because they might not differentiate the emergency message from regular messages.

The dynamic nature of hazards is another environmental concern. Changing disaster conditions inside or

outside the warning area could require individuals to take safety actions other than those previously suggested. It could be complicated to change the message or update individuals on the latest appropriate action, especially if a previous message originally instructed them to perform a different action altogether.

Finally, the disaster can induce vulnerabilities for the general population. Stress and anxiety during an emergency reduce the capacity for processing information (Chandler 2010; Keselman, Slaughter, and Patel 2005). When people spend a great deal of time in the same situation—their workplace, for example—and are accustomed to receiving the same information, sounds, smells, etc., they can sometimes neglect new information. In essence, people screen messages based on previous habits and conditioning (Chandler 2010).

Building codes and standards organizations need technically based guidance on message creation and dissemination for a full range of building emergencies. The Engineering Laboratory at the National Institute of Standards and Technology is currently working on a two-year project funded by the U.S. Department of Homeland Security to do just that for building emergencies likely to occur in the United States.

The project will include guidelines on structuring warning messages for different technologies, disseminating messages appropriately, and providing examples of the method with generic templates and canned messages for different emergency types. The first phase of this project is a literature review that outlines the current understanding of notification technology, dissemination approaches, and data on human response to warnings. The second phase will be the development of a best practices document.

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Nationwide Emergency Alert System post-test information

On Wednesday November 9th, 2011 the first-ever Nationwide Emergency Alert System (EAS) Test was conducted across the United States and territories at 2:00 PM Eastern. The purpose of the Test was to assess the readiness and effectiveness of the system for the President to address the public during times of extreme national emergency. Radio and television broadcasters, cable, satellite, and wireline providers across the country (commonly known as EAS Participants) participated in the Test.

FEMA originated an Emergency Action Notification (EAN) simultaneously to 61 Primary Entry Point (PEP) stations that serve as national-level relay points. These PEP stations rebroadcasted the message in their coverage area to local primary stations and other monitoring stations. The Test was not a pass or fail measure, but an exercise to proactively identify mitigation strategies and address the limitations of the current EAS. Although the test message was heard and seen by millions of Americans, many technical areas were identified for improvement, including audio quality, State

monitoring assignments and designations, and EAS device configuration. An important lesson learned from the first-ever Test was that when all technical areas are properly addressed, the National EAS functions as intended and can be improved.

Future testing of EAS will incrementally integrate other technologies that are Common Alerting Protocol (CAP)-based for a more resilient and effective system.

From:

http://www.fema.gov/emergency/ipaws/eas_info.shtm#1

Frequently asked questions about the nationwide test

What technical issues were observed in the November 9th EAS Test?

A technical malfunction occurred at the National Primary level that introduced a second set of EAN headers into the system. This affected the audio quality for many downstream stations and in some cases, resulted in duplicated messages or muted the audio test message. Due to the technical malfunction, an echo effect in the message was heard and preceded by several EAS tones.

How is FEMA mitigating and addressing these issues?

FEMA is very committed to mitigating these issues through scientific testing at the IPAWS laboratory. The technical malfunction that occurred has already been addressed and FEMA will continue to make improvements through regular exercising and testing of the system.

What were the key successes of the Test?

The Test revealed several successes:

- All Primary Entry Point stations were connected during the Test and over 90% were able to receive and relay the EAS message.
- The majority of EAS Participants across the country were able to receive and relay the test message.
- Active participation of the EAS Community assisted in station and facility-level improvements before and after the Test.
- The EAS Community took a proactive role in informing a FEMA IPAWS EAS Best Practices Guide and providing public information on the Test.
- The Test elevated public awareness, providing important information on EAS within the landscape of public alert and warning.

What were the key lessons learned?

The Test revealed some key lessons learned:

- Outreach to the EAS Community was essential to communicate expectations, develop EAS device best practices, and reinforce the purpose of testing.

- When all technical areas of the system are properly addressed, the National EAS functions as intended and can be improved.
- Regular and frequent testing of EAS is essential to identify mitigation strategies for a more resilient and effective system.
- EAS improvement is a process that takes time and requires a coordinated effort of diverse participants at multiple levels with varying roles and responsibilities.
- Coordinated State and Territory-wide EAS Tests in Alaska, Virgin Islands, Puerto Rico, and Nevada were essential to understand the limitations of EAS well in advance of the Test.

What were the National Test results?

Initial reports indicate that around 80% of EAS Participants across the country were able to receive and relay the test message. Visit the FCC Public Safety and Homeland Security Bureau for information and updates.

When will the government conduct the next Nationwide EAS Test? What other technologies will be integrated into the next Test?

In coordination with the FCC, NOAA, and other Federal partners, FEMA is committed to communicating the next Test date and is currently in the planning and coordination phase. Future EAS testing will integrate other technologies for a more resilient and effective system.

What other outreach and engagement activities can we expect before the next Test?

FEMA, in coordination with the Federal Partners and EAS Community, will continue to provide timely information updates through virtual roundtables, webinars, conferences, and other events. Please visit our [Events page](#) for more information.

What is the purpose of the next Test?

The next Test will assess the effectiveness of mitigation strategies and improvement approaches. FEMA is committed to communicating the future of testing and is currently in the planning and coordination phase. FEMA, in coordination with the Federal Partners and EAS Community, will also continue to provide timely information updates through virtual roundtables, webinars, conferences, and other events. Please visit our [FEMA] [Events page](#) for more information.

From:

http://www.fema.gov/emergency/ipaws/eas_info.shtm#1 ♦

Vertical evacuation plans could save thousands from tsunamis, studies say

Two new federally-funded studies say vertical evacuation structures could save thousands of Washington coastal residents from deadly tsunami waves.

A series of specially constructed berms, towers, and buildings could save an estimated 24,750 residents and visitors in Pacific and Grays Harbor counties which have more than 120 miles of Pacific Ocean coastline lying only a short distance from the Cascadia Subduction Zone. Geologic studies have shown that the low lying coastal zones of these counties have experienced Magnitude 9+ Cascadia earthquakes and tsunamis about every 300 to 500 years over the past 3,500 years.

“These reports are the product of the nation’s first community-based project to help low-lying areas that are vulnerable to devastating earthquakes and tsunamis like those from the Cascadia Subduction Zone off of the Washington coast. Vertical evacuation is the only viable evacuation strategy for some Washington communities” said John Schelling, manager of the Washington Emergency Management Division’s earthquake program.

Schelling was the state lead for a project – called Project Safe Haven -- which began in early 2010 to address vertical evacuation proposals for the Washington coastal counties, beginning in four Pacific County areas. Work started in three Grays Harbor County areas in early 2011. Additional work is scheduled in 2011 and 2012 in Jefferson and Clallam counties.

Using a National Tsunami Hazard Mitigation Program grant, Schelling tapped the University of Washington’s College of Built Environments Department of Urban Design and Planning, the state Department of Natural Resources Geology and Earth Resources Division, the Pacific County Emergency Management Agency, and Grays Harbor County Emergency Management to conduct a series of public meetings aimed at helping residents develop plans for integrating tsunami vertical evacuation into their communities. Additional technical assistance was provided by the National Oceanic and Atmospheric Administration, the U.S. Geological Survey, Federal Emergency Management Agency, and Degenkolb Engineers.

Stephanie Fritts, Pacific County emergency manager, said the key to the program was to emphasize the community’s role in identifying potential vertical evacuation locations. “Community members were listened to and consulted in each phase of the project,” she said. “The result is a Pacific County vertical evacuation project list that has wide-spread community support.”

“Coastal residents found the vertical evacuation to areas of safety offered a much better way to address tsunami evacuation than our existing plans,” said Charles Wallace, Grays Harbor County emergency manager. “Our Project Safe Haven project list reflects a

solid consensus of opinion about how and where the vertical evacuation structures should be built.”

Pacific County vertical evacuation recommendations:

- 20 facilities, including 13 berms, five towers, and two buildings.

- Estimated cost: \$ 11 million.

- Project areas: Long Beach, Ilwaco/Seaview, Ocean Park, Tokeland/North Cove.

- Affected population: 6,300.

Grays Harbor vertical evacuation recommendations:

- 32 facilities, including three berms, 18 towers, eight tower/berms, and three buildings.

- Estimated cost: \$40 million.

- Project areas: South Beach, Ocean Shores, and Taholah.

- Affected population: 18,450.

More detailed information about Project Safe Haven is available at

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

From the Washington Emergency Management website.

Building codes may underestimate risks due to multiple hazards

From the September 13, 2011 NIST Tech Beat

Building researchers from the National Institute of Standards and Technology (NIST) warn that a double whammy of seismic and wind hazards can increase the risk of structural damage to as much as twice the level implied in building codes. This is because current codes consider natural hazards individually, explains NIST’s Dat Duthinh, a research structural engineer. So, if earthquakes rank as the top threat in a particular area, local codes require buildings to withstand a specified seismic load. In contrast, if hurricanes or tornadoes are the chief hazard, homes and buildings must be designed to resist loads up to an established maximum wind speed.

In a timely article published in the *Journal of Structural Engineering*, Duthinh, NIST Fellow Emil Simiu and Chiara Crosti (now at the University of Rome) challenge this compartmentalized approach. They show that in areas prone to both seismic and wind hazards, such as South Carolina, the risk that design limits will be exceeded can be as much as twice the risk in regions where only one hazard occurs, even accounting for the fact that these multiple hazards almost never occur simultaneously. As a consequence, buildings designed to meet code requirements in these double-jeopardy locations "do not necessarily achieve the level of safety implied," the researchers write.

For the full write-up, visit www.nist.gov/public_affairs/techbeat/tb20110913.cfm#hazard . ♦

NEWS

Spring ahead to prepare for disasters

Daylight Savings Time in the United States starts on the second Sunday in March of each year and the Federal Emergency Management Agency encourages all Americans to use the change to daylight savings time to update emergency preparedness plans. For years, firefighters and safety professionals have asked the public to change smoke alarm batteries throughout their homes, as they move their clocks ahead. According to FEMA Regional Administrator Ken Murphy, the March ritual of making homes safer from fire is also a great opportunity to review disaster preparedness plans and restock their disaster kits.

March 8, 2011 e-mail from FEMA

Puerto Rico is setting up a tsunami alert system in densely populated San Juan.

San Juan Mayor Jorge Santini says experts warn that the island faces a very real threat from a tsunami though the last one occurred in 1918. Santini says the network of sirens and a public education campaign are critical in case of an evacuation. San Juan received about \$800,000 from the U.S. Federal Emergency Management Agency and the Department of Homeland Security to set up the alert system.

Puerto Rico is in a seismically active zone. The island's official seismic tracking center says one of the most powerful earthquakes in Puerto Rico history triggered the 1918 tsunami on the west coast. About 40 people were killed.

From:

<http://www.claimsjournal.com/news/southeast/2012/01/18/199003.htm>

Bulgaria, Romania to watch out for Black Sea tsunamis

A 10-station tsunami early warning system will be installed along the Black Sea coast, costing approximately EUR 6 million.

<http://www.thefreelibrary.com/Bulgaria,+Romania+to+Watch+Out+for+Black+Sea+Tsunamis.-a0274190533>

Cannon Beach envisions a tsunami safe school

Posted: Wednesday, January 18, 2012 4:46 pm | *Updated: 4:45 pm, Wed Jan 18, 2012.*

By Mary Faith Bell

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At a work session of the Cannon Beach City Council, City Manager Rich Mays told the council and approximately 30 parents and community members that

he has received indications that the superintendent of the Seaside School District "would support a new elementary school in Cannon Beach, as long as the City built the school."

"It seems like there is support for limited staff involvement to explore the possibility of a city-owned school," Mays told the council.

Discussion followed about the possibility of a city-owned school building outside the tsunami inundation zone that could also be a civic center/art center and tsunami evacuation site. Possible sites include land off of Tolovana Main-line Road, on the south end of town. Also suggested but more problematic is a five acre parcel adjacent Elk Creek Road in midtown.

Mays informed the council that the school board will host an earthquake workshop with DOGAMI (Department of Geology and Mineral Industries) scientists at Cannon Beach Elementary School on January 30 at 6 p.m.

DOGAMI is currently studying the Oregon coastline in order to redefine tsunami inundation and FEMA flood maps. The public is invited to attend the educational workshop.

A November 2011 engineering inspection found Cannon Beach Elementary School to be structurally unsound and dangerous in the event of an earthquake or a tsunami. Subsequently, the City Council took up the issue of whether to recommend to the school board that the school be closed, and the students bussed to school in Seaside.

Following an impassioned public outcry to keep the school open, bolstered with 275 signed petitions to that effect, the council is looking for creative and safe alternatives to keeping Cannon Beach elementary students in the community.

http://www.cannonbeachgazette.com/news/local_news/article_c2e76ef4-4236-11e1-9b41-0019bb2963f4.html

CERT basic training participant manual now available in Braille and screen reader versions

The National Community Emergency Response Team (CERT) Program is pleased to announce the release of the CERT Basic Training Participant Manual in Braille and in PDF screen reader. Each version includes the same nine units of course content and 13 hazard annexes as the standard version of the Participant Manual. These two releases also compliment the recent announcement of the low vision and Spanish versions of the CERT Basic Training Participant Manual.

Local CERT program coordinators/managers can request copies of the Braille version of the Participant Manual by calling the FEMA Distribution Center at

1-800-480-2520 or emailing FEMA-Publications-Warehouse@dhs.gov. Use Publication Number P-856 and Catalog Number 11189-2 to order the Participant Manual (four volumes in Braille). Please be sure to allow 6 – 8 weeks for delivery.

The [screen reader](#) version of the Participant Manual can be accessed directly through the [National CERT website](#).

For additional tools for communicating with all audiences, including people with disabilities, please visit the [FEMA Office of Disability Integration and Coordination Preparedness Resources web page](#).

From: fema@service.govdelivery.com, Dec. 20, 2011. Citizen Corps News Digest

It's 2030. Do you know where your crisis response is?

The Federal Emergency Management Agency doesn't claim to know, but it's gone a long way towards making an educated guess. FEMA's recent report, *Crisis Response and Disaster Resilience 2030: Forging Strategic Action in an Age of Uncertainty* is a thoughtful speculation about where emergency planning is headed in the next couple of decades.

Starting with FEMA's [Strategic Foresight Initiative](#) and continuing through to exercises which considered possible future scenarios, the report is the result of an interactive process designed to get the widest range of stakeholders to give our future a good hard look.

The many activities of the SFI—workshops, webinars, and other outreach—helped FEMA identify nine “drivers” of change. The drivers range from seemingly upbeat items, such as universal access to information, the changing role of the individual, and technological innovation and dependency, to potential negatives, such as decreasing government budgets, terrorist threats, and climate change.

While the drivers helped the agency think about possible futures, the key to the SFI approach is realizing that any of those drivers could lead us to places not quite imagined. It's what Director David Kaufman of FEMA's Office of Policy and Program Analysis calls a combination of foresight and prediction.

“While the two terms seem similar, a key difference between the two is that foresight acknowledges the fact that the future is uncertain, and tries to prepare decision makers for how the future may change,” he wrote in a [July blog post](#). “Predictions are an attempt to remove uncertainty from the future. Emergency managers must attempt to foresee what possible futures they may face when they make decisions that will have implications for years down the road.”

In the big picture, the report finds that emergency managers are likely to face more and more complicated disasters, while being less certain of operational frameworks and available resources. But those constraints could give rise to new types of individual and private-sector emergency actors, and working together globally and locally might become new norms. Of course, these developments would require increased trust between public and government, according to the report.

“Since trust is so essential to successful outcomes in disasters and emergencies, we must look for opportunities to build and strengthen public trust,” the report states. “Frequently the best pathway for doing so lies in ever wider and deeper channels of public participation.”

The bottom line? There are lots of possible changes ahead. Fortunately, the report goes on to offer 15 capabilities the emergency community can begin building. Today.

Of Note: An online discussion with Kaufman regarding the report's findings was slated to be held on EMForum Thursday afternoon after DR581 had gone to press. Transcripts of EMForum webinars are usually available on the [archive page](#) soon after the discussion airs.

From: Disaster Research 581, Jan. 26, 2012, p. 4

PUBLICATIONS

Natural Hazards Observer

The January 2012 issue is online:

http://www.colorado.edu/hazards/o/archives/2012/jan12_observerweb.pdf

Back issues can be found at:

<http://www.colorado.edu/hazards/o/>

Strengthening resilience through mitigation planning

Kenneth Topping has written an article which revisits the Disaster Mitigation Act of 2000, providing an overview, with a glossary of mitigation grants and programs.

The article is from *Natural Hazards Observer*, v. 36, no. 2 (November 2011), beginning on page 1.

http://www.colorado.edu/hazards/o/archives/2011/nov11_observerweb.pdf

Small is beautiful—Tsunami risk reduction

William Siembieda wrote an article concerning the easy, inexpensive way one village in Chile provided tsunami risk assessment, evacuation information, and hazard information for both residents and tourists.

From:
http://www.colorado.edu/hazards/o/archives/2011/no_v11_observerweb.pdf page 8-11.

CERT National Newsletter

Vol. 4, no. 1, December 2011

This exciting issue of the *CERT National Newsletter* features *Giving CERT A Spanish Flavor*, about CERT training to Spanish-speaking communities in Arizona, California, and Texas. The CERT response to tornadoes in Gloucester County, VA, Walker County, AL, and Joplin, MO shows how CERT members assisted communities who suffered devastating damage. And a story on CERT members running the medical tent at a bike race provides a good example of CERT assisting with non-disaster public safety efforts. These articles and more showcase CERT members making an impact in their communities and providing help whenever and wherever needed.

From:
http://www.citizencorps.gov/cert/newsletter/CERT_Newsletter_Dec%202011.pdf

CERT National Newsletter

Vol. 3, no. 4, 2011

In this issue of the CERT National Newsletter, Volume 3, Issue 4, you will read about the creative and diverse ways CERT members serve their communities when they aren't activated for emergency situations. Also featured in this issue is an article on the Pasadena Community College CERT's full-scale ShakeOut exercise, and the Denver CERT program's success in building community partnerships. Last but not least, find out more about Georgetown University's collaboration with other Washington, D.C. universities and colleges to provide CERT training.

From:
http://www.citizencorps.gov/cert/newsletter/CERT_Newsletter_V3_I4.pdf

CERT National Newsletter

Back issues.

<http://www.citizencorps.gov/cert/newsletter.shtm>

Disasters Preparedness and Mitigation in the Americas

December 2011 issue

<http://new.paho.org/disasters/newsletter/>

Managing spontaneous community volunteers in disasters: A field manual

By Lisa Orloff. 2011. ISBN: 978-1-4398-1833-6. 323 pp. \$80 (hardcover). CRC Press. www.crcpress.com.

It's a given that in most disasters the first responders are those already on the scene who have survived the initial onslaught. And it's also a given that people come out to volunteer spontaneously for a considerable time, not just immediately following the first shock. Lisa Orloff writes, "After the 1995 earthquake in Kobe, Japan, when communication lines were down and backup facilities lost, massive spontaneous aid emerged in the form of an estimated 630,000 to 1.3 million volunteers."

But all this manpower is not of a uniform benefit. It has to be managed carefully. For instance, speaking at the 2011 Natural Hazards Workshop in July, Claude de Ville de Goyet of the World Health Organization said after the 2010 Haiti earthquake, some teams and field hospitals that arrived to assist were not meeting minimal professional or ethical standards. Small underequipped and underfunded teams were a major burden for the coordination system. Foreign individuals who offered their medical services were a particular burden, de Ville said.

"You had everything from the highest quality to the charlatan," he said. "You have a lot of volunteers come in with nothing to offer but good will." People with few skills and no knowledge of the language were a major burden for the recovery.

"They were useless," he said.

This book is a process-oriented manual for dealing with volunteers. Chapter six, for instance, discusses setting up a walk-in volunteer reception center to "incorporate all types of volunteers into disaster response initiatives." Orloff outlines it in detail, from the main entrance and the floor plan to the copy machine.

There's also the obligatory chapter on social media in disasters, and its use in organizing volunteers. Finally there are also several short case studies in a chapter toward the end of the book. In the case study on Haiti, Orloff also finds disappointments, although they are different from the ones de Ville found.

"It became clear that the standards and expectations of local leaders by the international humanitarian sector did not take their needs and constraints into consideration," Orloff writes. "The agency in charge of the meeting only said a few words of warning about security and informed the group of community leaders that they would have to devise logistics plans to distribute food in a safe and fair manner. Most local leaders left the meeting very discouraged, as little to no training was given, nor was there a blueprint for how to proceed, and they had no prior experience with mass food distribution before the earthquake."

Tsunami hazard mitigation and preparedness: A perspective from state and territory tsunami programs in the high tsunami risk Pacific region

Western States Seismic Policy Council (WSSPC) has released WSSPC Report 2011-01, which documents the importance and effectiveness of the states and territorial tsunami programs to prepare local communities at high risk for future damaging tsunamis. Contributions came from Alaska, American Samoa, California, Guam, Hawaii, Northern Mariana Islands, Oregon, and Washington.

From: WSSPC E-Newsletter, Oct. 25, 2011
http://wsspc.org/Reports/WSSPC_Report_2011-01.pdf

Special report: The role of social media in disaster preparedness and response

By Amy Lewis, for WSSPC E-Newsletter, Fall 2011, p. 3-6. The report contains two case studies, from Queensland, Australia during the flooding, and Joplin, Missouri, devastated by an EF5 tornado.

http://www.wsspc.org/news/news_files/eNews_Fall11.pdf

Guidelines and Best Practices for Tsunami Evacuation Mapping Guidelines

The National Tsunami Hazard Mitigation Program (NTHMP) has released *Guidelines and Best Practices for Tsunami Evacuation Mapping Guidelines*. Groups and agencies producing tsunami evacuation maps with NTHMP funds are required to adopt these guidelines for maps produced after January 1, 2012; all other organizations are strongly encouraged to adopt these guidelines as well.

The objectives of the guidelines are to promote a consistent look and feel to tsunami evacuation maps; facilitate emergency management planning activities; depict the area(s) affected by a tsunami; and create viable maps incorporating a thorough assessment of local risks.

For more information and to download your copy of the guidelines, visit
<http://nthmp.tsunami.gov/>

From: WSSPC E-Newsletter, Fall 2011, p. 19

Guidelines and best practices to establish areas of tsunami inundation for non-modeled or low-hazard regions

Finalized: August 2011

Developed by the National Tsunami Hazard Mitigation Program (NTHMP) Mapping & Modeling Subcommittee, *Guidelines and Best Practices to Establish Areas of Tsunami Inundation for Non-modeled or Low-hazard Regions* specifies a set of guidelines and recommended practices to guide the determination of tsunami inundation zones in areas

where there is a low hazard – based on historical occurrence of tsunamis, a low risk – due to a low population and infrastructure vulnerability, or that may not have modeled inundation and evacuation maps in the near future and wish to initiate planning and preparedness efforts.

For more information and to download the guidelines, visit
http://nthmp.tsunami.gov/modeling_guidelines.html
From: WSSPC E-Newsletter, Fall 2011, p. 19

UNWTO 2010: Integration of tourism into national emergency structures and processes

The United Nations World Tourism Organisation released a tender document in July 2010 (UNWTO 2010)

http://www.bmwi.de/BMWi/Redaktion/PDF/A/ausssc_hreibungunwto.property=pdf.bereich=bmwi.sprache=de.rwb=true.pdf that called for the development of a global approach to and implementation of a best practice guide for the integration of tourism into national emergency structures and processes. The UNWTO's proposal for a formalised integrative approach represents a major advancement in global tourism approaches to risk and crisis management. At an informal level, considerable cooperation occurs between government tourism agencies and private tourism businesses and emergency management providers. In specific cases, notably with airlines and airports integration has been practiced in a structured manner for decades. Integrative practices have also been commonplace for mega events such as the Olympic Games and the World Cup.

From: The integration of emergency management and tourism, by David Beirman: *The Australian Journal of Emergency Management*, v. 26, no. 3, p. 30.

Preparing for disaster for people with disabilities and other access and functional needs (FEMA 476)

Available in Spanish (PDF 601KB, TXT 32KB). The report provides disaster preparedness information specific to people with disabilities and other access and functional needs including the elderly.

There is also a video:
<http://emc.ornl.gov/CSEPPweb/>

Tsunami hazard mitigation and preparedness—A perspective from State and Territory tsunami programs in the high risk Pacific Region

The Western States Seismic Policy Council (WSSPC) Tsunami Hazard Mitigation Committee, with contributions from Alaska, American Samoa, California, Guam, Oregon and Washington, has prepared a report *Tsunami hazard mitigation and preparedness—A perspective from State and Territory tsunami programs in the high risk Pacific*

Region that is linked from the WSSPC website's homepage: www.wsspc.org.

WEBSITES

<http://www.npr.org/2012/01/21/145564986/tsunami-debris-washes-ashore-on-washington-shores>

Tsunami debris washes ashore on Wash. shores, by Ashsley Ahearn, NPR

http://www.nzherald.co.nz/world/news/article.cfm?c_id=2&objectid=10780207

Japanese tsunami debris in Alaska, NZHerald, Jan. 25, 2012

<http://training.fema.gov/is/>

Check this site for FEMA's Independent Study Program classes.

The Emergency Management Institute (EMI) offers self-paced courses designed for people who have emergency management responsibilities and the general public. All are offered free-of-charge to those who qualify for enrollment. To get a complete listing of courses, click on the Course List at the link above.

FEMA's Independent Study Program offers course that support the nine mission areas identified by the National Preparedness Goal:

- Incident Management
- Operational Planning
- Disaster Logistics
- Emergency Communications
- Service to Disaster Victims
- Continuity Programs
- Public Disaster Communications
- Integrated Preparedness
- Hazard Mitigation

<http://www.geoplatform.gov/home/>

Geospatial Platform

Whether you're a GIS expert or just like to geek out with maps, Geospatial Platform has something for you. The platform marries data sets from government agencies like NOAA and the EPA with a Web-based mapping tool, so you can map anything from weather systems worldwide to Superfund sites along your vacation route. Upload and share your maps, and even join groups of users with similar mapping interests.

From: Disaster Research 580, Dec. 15, 2011

<http://www.tandf.co.uk/journals/offers/naturaldisasters/index.asp>

The Natural Hazards Collection

Need to know how an earthquake might affect a mountain slope? Or how a hurricane can wreak havoc

on a wastewater system? Heck, this collection of journal articles from Routledge can even lead you to resources on how Katrina cleanup compares to post-World War II Europe. Regardless of the type of disaster article you're looking for, this is a good place to start, with a wealth of information on how disaster affects the economy and environment. A subscription may be required to access some articles.

From: Disaster Research 580, Dec. 15, 2011

<http://www.fema.gov/plan/prevent/earthquake/qstoolkit/index.shtm>

QuakeSmart Business Earthquake Mitigation Toolkit

Businesses never need an earthquake plan until they need one very badly. That's why the Federal Emergency Management Agency has put together a package of resources that business owners and their employees can use to build a plan before they need one. The QuakeSmart kit provides simple steps to assess risk, create a plan, and implement it.

From: Disaster Research 581, Jan. 26, 2012

<http://www.whitehouse.gov/champions/previous/fema>
Disaster Preparedness Champions of Change

You'd be hard pressed to find a loser among people preparing their communities for disaster, but last week the White House singled out 17 individuals as disaster preparedness champions. Using innovative approaches that involve the entire community, these disaster heroes span the spectrum from high-level officials to municipal managers to community activists. Check out their bios and accomplishments on the Champions of Change page linked above.

From: Disaster Research 581, Jan. 26, 2012

<http://disasterinfo.nlm.nih.gov/dimrc/disasterapps.html>

Disaster Information Management Research Center disaster apps

Who doesn't have to access information on the fly these days—especially during a disaster? For all those folks, the National Library of Medicine's Disaster Information Management Research Center has compiled a list of disaster applications and Web information that can be easily used on a mobile device. From disaster medicine to hazards information to disaster resources, there's a handy list of offerings complete with download links for a variety of platforms and devices. And if you don't have time to explore now, no problem—connect to the page from your smartphone and keep it with you wherever you go.

From: Disaster Research 581, Jan. 26, 2012

CONFERENCES

March 25-30, 2012

National Emergency Management Association Mid Year Emergency Management Policy Leadership Forum, Hilton Alexandria Mark Center, Alexandria, VA

<http://www.nemaweb.org/>

April 9-11, 2012

Partners in Emergency Preparedness Annual Conference

<http://conferences.wsu.edu/emergencyprep>

April 22-25, 2012

Ninth International Conference on Information Systems for Crisis Response and Management International Community on Information Systems for Crisis Response and Management; Vancouver, Canada Cost and Registration: \$650 before March 16, open until filled.

This conference looks at integrative approaches to emergency management information systems. Topics include planning and risk analysis, GIS technology for crisis response, healthcare crisis management systems, social media and collaborative systems, inter-organizational exercises, and wireless connectivity management.

From: Disaster Research 580, Dec. 15, 2011

October 5-10, 2012

National Emergency Management Association Emergency Management Policy Leadership Forum,

<http://www.nemaweb.org/>

CLASSES/WORKSHOPS

Youth preparedness coming to a town near you

Leading educators and scholars in the field of preparedness education consider our nation's youth to be the best envoy for taking preparedness messages home to their families. In order to better prepare our nation's youth to bring preparedness home, FEMA is providing technical assistance workshops to state and local practitioners who support youth-based programs and who are interested in integrating preparedness education into their offerings.

The next workshop is scheduled for Tuesday, January 31, 2012 at the Orange County Emergency Operations Center in Winter Park, Florida. For more information please contact, Peggy Cadeaux immediately.

Future tentative workshops include:

FEMA Region VIII: February 28, 2012; Denver, CO

FEMA Region VII: March 21, 2012; Kansas City, MO

FEMA Region X: April, 2012

FEMA Region I: June, 2012

For more information about integrating preparedness education into your local youth programs, send a message to citizencorps@dhs.gov.

From: fema@service.govdelivery.com Jan. 24, 2012 Citizen Corps News Digest

FEMA's Independent Study Program

See website above: <http://training.fema.gov/is/>

COMET Program publication

The COMET Program is pleased to announce the publication of "Community Tsunami Preparedness: 2nd Edition". This 6-hour module is intended primarily for emergency managers in coastal communities that could be impacted by a tsunami. In addition to discussing the science behind tsunamis, their formation, and their hazards, the module provides an overview of forecast products and tools that emergency managers can use to help prepare their communities for these threats.

The first version of the module was released in May, 2011. This 2nd edition provides new information about regional tsunami risks, evacuations, and the recovery process. In addition, a new section contains video interviews with Crescent City, CA officials who describe what it was like to prepare for the March 11, 2011 tsunami and what lessons can be shared with other coastal emergency managers.

The module also contains links to extensive Reference and Resources sections. The latter provides tsunami PowerPoint presentations for each major U.S. region (Atlantic Coast, Gulf Coast, West Coast, Hawaii and Pacific Islands, Alaska, and Caribbean) that can be downloaded and customized for a particular location or need.

Please follow this link to start the module:

<http://www.meted.ucar.edu/tsunami/community/>.

The module will also be available soon in Spanish as Tsunamis: preparación de la comunidad 2ª edición.

Most COMET modules use JavaScript and Adobe® Flash® for navigation, animation, and/or presentation of multimedia elements. Ensure that you have a browser updated to its latest version with JavaScript enabled and the latest version of the Adobe FlashPlayer installed

(<http://get.adobe.com/flashplayer/>). For technical support for this module please visit our Registration and Support FAQs at

https://www.meted.ucar.edu/resources_faq.php.

NOTE TO NWS and other NOAA EMPLOYEES: This module is available in the Commerce Learning Center @ National Weather Service (<https://doc.learn.com/noaa/nws>). Please access it in that system in order to get credit.

We welcome any comments or questions you may have regarding the content, instructional approach, or use of this module. Please e-mail your comments or questions to Dr. Vickie Johnson (vjohnson@comet.ucar.edu).

From: Wendy Abshire, COMET Senior Project Manager, Meteorologist, Jan. 4, 2012 e-mail

National CERT Program courses

This New Year we're pleased to announce two new courses now available to States and local CERT programs across the nation:

G428: CERT Train-the-Trainer Course

G427: CERT Program Manager Course

States in particular are encouraged to offer these courses to local CERT instructors, Basic Training course managers, and program managers. The materials for each course include an Instructor Guide, Participant Manual, and PowerPoint slides, and are available for download at the national CERT website at www.citizencorps.gov/cert/training_mat.shtm.

EXERCISES

March 28, 2012

Pacifex12 and Lantex12, National Tsunami Exercises. Documents will be posted on WCATWC website by February 1, 2012. ♦

Material added to the NTHMP Library January-February 2012

Note: These, and all our tsunami materials, are included in the online (searchable) catalog at <http://www.dnr.wa.gov/ResearchScience/Topics/GeologyPublicationsLibrary/Pages/washbib.aspx>. Click on SEARCH DATABASE, then type 'tsunamis' in the Subject field to get a full listing of all the tsunami reports and maps in the collection.

American Geosciences Institute, 2011, Japan's March 11, 2011 earthquake and tsunami: EarthNotes No. 5, 2 p. <http://www.agiweb.org/environment/earthnotes/note.html?PublicID=5>

Balcerak, Ernie; Schultz, Colin, 2011, An ionospheric precursor to the Tohoku earthquake: Eos (American Geophysical Union Transactions), v. 92, no. 45, p. 408.

Kurowski, Maciej. J.; Hedley, Nick; Clague, John J., 2011, An assessment of educational tsunami evacuation map designs in Washington and Oregon: Natural Hazards, v. 59, no. 2, p. 1205-1223.

Lin, Frank C.; Zhu, Weiwei; Sookhanaphibarn, Kingkarn, 2011, Observation of tsunami radiation at Tohoku by remote sensing: Science of Tsunami Hazards, v. 30, no. 4, p. 223-232.

Lukkunaprasit, P.; Lau, T. L.; Ruangrassamee, A.; Ohmachi, T., 2011, Tsunami wave loading on a bridge deck with perforations: Science of Tsunami Hazards, v. 30, no. 4, p. 244-252.

Madlazim, 2011, Toward Indonesian tsunami early warning by using rapid rupture durations calculation: Science of Tsunami Hazards, v. 30, no. 4, p. 233-243.

Masataka, Ando; Ishida, Mizuho; Hayashi, Yoshinari; Mizuki, Chiharu, 2011, Interviews with survivors of Tohoku earthquake provide insights into fatality rate: Eos (American Geophysical Union Transactions), v. 92, no. 46, p. 411-412.

Medina, F.; Mhammdi, N.; Chiguer, A.; Akil, M.; Jaaidi, E. B., 2011, The Rabat and Larache boulder fields--New examples of high-energy deposits related to storms and tsunami waves in north-western Morocco: Natural Hazards, v. 59, no. 2., p. 725-747.

Morton, Allan E., 2003, Evidence for large tsunami in the Tongan Islands [abstract]: Geological Society of America Abstracts with Programs, v. 35, no. 4, p. 4.

Okal, Emile A.; Borrero, Jose C.; Synolakis, Costas E., 2006, Evaluation of tsunami risk from regional earthquakes at Pisco, Peru: Bulletin of the Seismological Society of America, v. 96, no. 5, p. 1634-1648.

Pararas-Carayannis, George, 2011, The earthquake and tsunami of July 21, 365 AD in the eastern Mediterranean Sea--Review of impact on the ancient world--Assessment of recurrence and future impact: Science of Tsunami Hazards, v. 30, no. 4, p. 253-292.

Pratt, Sara E., 2011, Tsunami observed by radar for first time: Earth, v. 56, no. 12, p. 11.

Sever, Megan, 2011 Destructive earthquakes [and tsunamis]: Earth, v. 56, no. 12, p. 41.

Siembieda, William, 2011, Small is beautiful--Tsunami risk reduction: Natural Hazards Observer, v. 36, no. 2, p. 8-11. http://www.colorado.edu/hazards/o/archives/2011/nov11_observerweb.pdf

Tselentis, G-Akis; Gkika, Faidra; Sokos, Efthimios, 2006, Tsunami hazards associated with the Perachora fault at eastern Corinth Gulf, Greece: Bulletin of the Seismological Society of America, v. 96, no. 5, p. 1649-1661.

Western States Seismic Policy Council, 2011, Tsunami hazard mitigation and preparedness--A perspective from State and Territory tsunami programs in the high tsunami risk Pacific region: Western States Seismic Policy Council Report 2011-01, 30 p.
http://wsspc.org/Reports/WSSPC_Report_2011-01.pdf

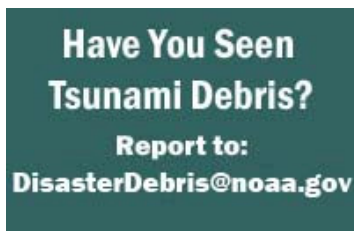
Yim, Solomon C.; Boon-intra, Sutaporn; Nimmala, Seshu B.; Winston, Holly M.; Azadbakht, Mohsen; Cheung, Kwok Fai, 2011, Development of a guideline for estimating tsunami forces on bridge superstructures--Final report: Oregon Department of Transportation, 1 v. ♦




Infrequently Asked Questions

What should I do if I find tsunami debris on the coastline?

Debris from the tsunami that devastated Japan could reach the United States as early as this winter, according to predictions by NOAA scientists. However, there is still a large amount of uncertainty over exactly what is still floating, where it's located, where it will go, and when it will arrive.



- RESOURCES:
1. [Tsunami Debris FAQs](#)
 2. [Downloadable one-pager](#) ( 227kb)
 3. [Making Waves podcast](#)

From:

<http://marinedebris.noaa.gov/info/japanfaqs.html>
See page 23 for another debris-reporting site:
hilodrifter@gmail.com

What is the estimated cost of the damage done by the Japanese 2011 earthquake and tsunami?

The earthquake and tsunami that sparked the Fukushima nuclear power plant catastrophe in March was also the costliest disaster [in 2011], causing damage worth \$210 billion.

From: <http://www.dawn.com/2012/01/19/disasters-cost-366bn-in-2011-un.html> Centre for Research on the Epidemiology of Disasters (CRED) Jan. 26, 2012

According to CRED, how much larger were disaster damage costs in 2011 than in 2010?

2011 practically saw a tripling in costs from \$123.9 billion recorded in the previous 12 months. CRED director Debarati Guha-Sapir said: "It was notable last year that many of the disasters were in high and middle income countries which have the resources for better disaster prevention."

From: <http://www.dawn.com/2012/01/19/disasters-cost-366bn-in-2011-un.html> Centre for Research on the Epidemiology of Disasters (CRED), Jan. 26, 2012

CRED's report claims that how many people world-wide were affected by disasters in 2011?

In total 206 million people were affected by disasters last year. This includes 106 million hit by floods and 60 million by drought, mainly in the Horn of Africa.

From:

<http://www.dawn.com/2012/01/19/disasters-cost-366bn-in-2011-un.html> Centre for Research on the Epidemiology of Disasters (CRED), Jan. 26, 2012

Which disasters accounted for 70% of the catastrophes world-wide?

Storms and floods, but earthquakes were the biggest killer (20,943 lives).

From:

<http://www.dawn.com/2012/01/19/disasters-cost-366bn-in-2011-un.html> Centre for Research on the Epidemiology of Disasters (CRED), Jan. 26, 2012♦

State Offices and agencies of emergency management:

Gives mailing addresses, phone and fax numbers, websites. Does not give personnel names or job titles.

<http://www.fema.gov/about/contact/statedr.shtm>

CALL FOR PAPERS

FIFTH INTERNATIONAL TSUNAMI SYMPOSIUM

of Tsunami Society International

August 31-September 1, 2012

DAVOS, SWITZERLAND

Dear Colleague,

On behalf of Tsunami Society International, I cordially invite you to attend and present a paper at the Fifth Tsunami Symposium (ITS - DAVOS 2012) on August 31 – September 1, 2012, in Davos, Switzerland. The Symposium will be held in conjunction and mutual co-sponsorship with the Global Risk Forum's 4TH International Disaster and Risk Conference (IDRC-Davos, 26-30 August 2012). The Symposium is a joint session with IDRC – Davos, focusing primarily on Tsunami Risk Analysis and Disaster Management. It will follow a Plenary Tsunami Session of the main Conference organized by TSI, in which we plan to introduce to attending delegates, the need for a holistic approach in coping and addressing also the array of tsunami risks facing vulnerable areas in all of the world's oceans and seas. The recent March 11, 2011 tsunami disaster in Japan, the meltdown at the Fukushima Daichi nuclear plant and other collateral disaster impacts of this and previous tsunami disasters in the Indian Ocean and elsewhere, point out to the need for a more comprehensive tsunami risk analysis approach and for more effective disaster management practices – even for countries that have initiated and have such programs in place.

For your information the IDRC - Davos biennial conference is organized by the Global Risk Forum (GRF Davos) and attracts an average of 1000 participants from 100 countries. Participants are global leading risk and disaster experts and include government officials, representatives from International Organizations, Non-governmental Organizations, the private sector, scientific and academic institutions, the media and other high-level personalities from all over the globe. The IDRC-Davos conference will provide a valuable platform for the world's risk and disaster management community and includes a vital mix of session formats, workshops and teaching courses enabling a profound exchange of science, policy and practice. The joint Tsunami Session will provide a unique opportunity for the participants of the 5th Tsunami Symposium to contribute towards strategies and synergies needed in mitigating the destructive impacts of tsunamis around the globe – a goal clearly stated in the Mandate of Tsunami Society International.

The success of our 5th International Tsunami Symposium relies on your valued support and professional experience. The attached First Announcement provides useful information for your participation. Additional information will be provided in the 2nd Announcement. If needed, TSI will also provide letters of invitation to participants needed to facilitate Swiss visa requirements. Please submit your abstract to TSI as soon as possible – as time is of the essence.

We are looking forward to seeing you in Davos and to your participation in this exciting, productive and insightful 5th International Tsunami Symposium.

With Best Wishes,

Dr. George Pararas-Carayannis

President Tsunami Society International

Chairman, 5th International Tsunami Symposium (ITS - Davos 2012)

<http://www.tsunamisociety.org>

ANNOUNCEMENT - CORRECTION

Although the Announcement gives the deadline for submission of abstracts to ITS for February 25, 2012, time is of the essence. Please indicate whether you plan to attend as early as possible, as we need to make logistical arrangements in Davos (i.e. size of conference rooms, discounted rates of registration for TSI members, discounted rates at hotels and sponsoring airlines, etc). THANK YOU.

VIDEO-CD-DVD RESERVATIONS

To reserve tsunami videos, CDs or DVDs, contact Lee Walkling, Division of Geology and Earth Resources Library, 1111 Washington St. SE, MS 47007, Olympia, WA 98504-7007; or e-mail lee.walkling@dnr.wa.gov.

These programs are available to all NTHMP participants, with a 3-week loan period.

Adventures of Disaster Dudes (14 min.). Preparedness for preteens. American Red Cross.

The Alaska Earthquake, 1964 (20 min.) Includes data on the tsunamis generated by that event.

Business Survival Kit for Earthquakes & Other Disasters; What every business should know before disaster strikes (27 min.). Global Net Productions for the Cascadia Regional Earthquake Workgroup, 2003. With CD disaster planning toolkit & other data.

Cannon Beach Fire District Community Warning System (COWS) (21 min.) Explains why Cannon Beach chose their particular warning system.

Cascadia: The Hidden Fire—An Earthquake Survival Guide (10 min.). Global Net Productions, 2001. A promo for a documentary about the Cascadia subduction zone and the preparedness its existence demands of Alaska, Oregon and Washington states. Includes mention of tsunamis.

Disasters are Preventable (22 min.) Ways to reduce losses from various kinds of disasters through preparedness and prevention.

Disaster Mitigation Campaign (15 min.). American Red Cross; 2000 TV spots. Hurricanes, high winds, floods, earthquakes.

Earthquake...Drop, Cover & Hold (5 min.). Washington Emergency Management Division. 1998.

Forum: Earthquakes & Tsunamis (2 hrs.). CVTV-23, Vancouver, WA (January 24, 2000). 2 lectures: Brian Atwater describes the detective work and sources of information about the Jan. 1700 Cascadia earthquake and tsunami; Walter C. Dudley talks about Hawaiian tsunamis and warning systems.

International Tsunami Information Centre, 2004, Tsunami warning evacuation news clips and video footage, UNESCO /IOC International Tsunami Information Centre, 1 DVD, 12 min.

Killer Wave: Power of the Tsunami (60 min.). National Geographic video.

Mitigation: Making Families and Communities Safer (13 min.) American Red Cross.

Not Business as Usual: Emergency Planning for Small Businesses, sponsored by CREW (Cascadia Regional Earthquake Workgroup) (10 min.), 2001. Discusses disaster preparedness and business continuity. Although it was made for Utah, the multi-hazard issues remain valid for everyone. Websites are included at the end of the video for further information and for the source of a manual for emergency preparedness for businesses.

Numerical Model Aonae Tsunami—7-12-93 (animation by Dr. Vasily Titov) and Tsunami Early Warning by Glenn Farley, KING 5 News (The Glenn Farley portion cannot be rebroadcast.)

Ocean Fury--Tsunamis in Alaska (25 min.) VHS and DVD. Produced by Moving Images for NOAA Sea Grant College Program, 2004.

The Prediction Problem (58 min.) Episode 3 of the PBS series "Fire on the Rim." Explores earthquakes and tsunamis around the Pacific Rim

Protecting Our Kids from Disasters (15 min.) Gives good instructions to help parents and volunteers make effective but low-cost, non-structural changes to child care facilities, in preparation for natural disasters. Accompanying booklet. Does NOT address problems specifically caused by tsunamis.

The Quake Hunters (45 min.) A good mystery story, explaining how a 300-year old Cascadia earthquake was finally dated by finding records in Japan about a rogue tsunami in January 1700

Raging Planet; Tidal Wave (50 min.) Produced for the Discovery Channel in 1997, this video shows a Japanese city that builds walls against tsunamis, talks with scientists about tsunami prediction, and has incredible survival stories.

Raging Sea: KGMB-TV Tsunami Special. (23.5 min.) Aired 4-17-99, tsunami preparedness in Hawaii.

The Restless Planet (60 min.) An episode of "Savage Earth" series. About earthquakes, with examples from Japan, Mexico, and the 1989 Loma Prieta earthquake.

Run to High Ground (14 min.). Produced by Global Net Productions for Washington Emergency Management Division and Provincial Emergency Program of British Columbia, 2004. Features storyteller Viola Riebe, Hoh Tribe. For K-6 grade levels. Have video and DVD versions.

Tsunami and Earthquake Video (60 min.). "Tsunami: How Occur, How Protect," "Learning from Earthquakes," "Computer modeling of alternative source scenarios."

Tsunami: Killer Wave, Born of Fire (10 min.). NOAA/ PMEL. Features tsunami destruction and fires on Okushiri Island, Japan; good graphics, explanations, and safety in-formation. Narrated by Dr. Eddie Bernard, (with Japanese subtitles).

Tsunami: Surviving the Killer Waves (13 min.). 2 versions, one with breaks inserted for discussion time.

Tsunami Chasers (52 min.). Costas Synolakis leads a research team to Papua New Guinea to study submarine landslide-induced tsunamis. Beyond Productions for the Discovery Channel.

Tsunami Evacuation PSA (30 sec.). DIS Interactive Technologies for WA Emergency Management Division. 2000.

TsunamiReady Education CD, 2005, American Geological Institute Earth Science Week kit.

Tsunamis: Know What to Do! (8 min. DVD)

Understanding Volcanic Hazards (25 min.). Includes information about volcano-induced tsunamis and landslides.

UNESCO/IOC International Tsunami Information Centre, 2005, U.S. National Tsunami Hazard Mitigation Program public information products—B-roll footage, tsunami science, warnings, and preparedness: UNESCO/IOC International Tsunami Information Centre, 1 DVD, 57 min.

The Wave: a Japanese Folktale (9 min.) Animated film to start discussions of tsunami preparedness for children.

Waves of Destruction (60 min.) An episode of the "Savage Earth" series. Tsunamis around the Pacific Rim.

Who Wants to be Disaster Smart? (9 min.). Washington Military Department/Emergency Management Division. 2000. A game show format, along the lines of *Who Wants to be a Millionaire?*, for teens. Questions cover a range of different hazards.

The Wild Sea: Enjoy It...Safely (7 min.) Produced by the Ocean Shores Wash. Interpretive Center, this video deals with beach safety, including tsunamis. ♦



The FEMA Think Tank

The FEMA Think Tank is a forum to engage FEMA partners, promote innovation, and facilitate discussions in the field of emergency management.

FEMA recognizes that the best solutions to the challenges we face are generated by the people and the communities who are closest to these challenges. It is essential that these partners are invited to the table to actively participate in thought-provoking discussions.

That is why we are reaching out to state, local, and tribal governments, and to all members of the public, including the private sector, the disability community, and volunteer community, to seek their input on how to improve the emergency management system. FEMA wants to hear your ideas and suggestions, to both explore best practices and generate new ideas. The FEMA Think Tank will help facilitate these conversations and encourage further discussion.

What is the FEMA Think Tank?

The FEMA Think Tank has two main components:

- Online Forum: Submit your own ideas, comment on others, and participate in conversations meant to generate creative solutions. The forum is open to anyone who wants to discuss a variety of emergency management issues, such as how as we prepare for, respond to, recover from, or mitigate against all types of disasters, as well as ideas on how we can continue to integrate the whole community.
- Monthly Conference Call Discussions: Deputy Administrator Serino will conduct monthly conference calls to discuss some of the real-life solutions and ideas that are generated by this online forum. These calls will be open to the general public and captioning for participants who are deaf or hard of hearing will be provided. The Deputy Administrator will travel to a different location each month to personally meet with members of the emergency management community.

The first call took place from Milwaukee, Wisconsin on Thursday, January 26th 2012. The Twitter hashtag is #femathinktank.

What ideas will be discussed during the monthly conference call?

Each month, Deputy Administrator Serino will select three to four ideas on improving emergency management at the federal level to discuss during the conference call. The individuals that submitted these ideas will have the opportunity to brief the Deputy Administrator during the call. The call will then be opened for questions and further discussion.

Who can participate?

Anyone can participate in the FEMA Think Tank. If you have an idea or suggestion on how to improve

the emergency management system, you can submit that idea to the online forum or comment, comment on another's idea, and listen to the monthly calls with Deputy Administrator Serino.

How do I participate?

Visit FEMA's [online collaboration platform](#) to participate in an open dialogue and discussion.

We look forward to a productive conversation that will generate innovative solutions and move us forward as a team.

Last Modified: Thurs., 26-Jan-2012 17:47:16 EST ♦

Tsunami multi-channel warning system enters field testing

London, UK (PRWEB) January 17, 2012

<http://www.prweb.com/releases/2012/1/prweb9114203.htm>

eVigilo and the European Commission Joint Research Centre (JRC) will collaborate in further developing an integrated Tsunami alert system for real-time and geo-targeted messages sent to the population across multiple channels.

Our practical experience in designing national tsunami alert and notification systems will contribute to this project and will serve as model for other countries.

eVigilo will integrate its Alert and Distribution Center (IADC) with the Global Disaster Alert and Coordination System (GDACS). IADC will receive Tsunami notifications from GDACS or from National authorities (e.g. Civil Protection) and will send automatically geo-targeted Internet and mobile alert messages across multiple channels such as : Push IP over fix and mobile networks, cell broadcast as well as TV, radio, sirens, billboards and pagers.

By using various channels to reach people at risk, the integration of the two systems will help maximize the number of people that can be directly alerted in case of a Tsunami. Thorough testing of the joint-system will be executed in Setubal (Portugal), 50km south of Lisbon, in collaboration with the local Civil Protection authorities and the local municipality, who have already developed a detailed evacuation plan in case of flooding due to a potential Tsunami.

eVigilo CEO Guy Weiss has said: "We are thrilled to become proactive members in this joint research project and happy to contribute from our knowledge. We are confident that our practical experience in designing national Tsunami alert and notification systems will contribute to this project and will serve as model for other countries."

Through the Global Disaster Alert and Coordination System (GDACS), the JRC will provide scenario calculations and Tsunami analyses. In the event of an incoming tsunami wave, innovative software

automatically calculates the results of tsunami propagation predictions and alerts via SMS or email the international responder community. GDACS could also directly alert people at risk by activating alerting devices such as the Tsunami Alerting Device's (TAD).

Alternatively the activation of the alerting devices could be decided by the local National authorities that then in turn would dispatch an alerting message through various channels, including TV, radio and devices such the TAD with one single command.

As part of the concept, eVigilo will enable the authorities to maintain interactive communication with the population through dedicated Smartphone applications. Those applications will enable the population to respond to messages received and send "Panic Messages" to the authorities when they are in distress. The authorities will be able to geo-locate those messages on a map using eVigilo IADC and execute required rescue efforts.

About eVigilo

eVigilo designs and develops the industry's only fully-integrated mass alert platform that can reach millions of people in just seconds, to substantially improve personal safety and save lives. Supporting communication between multiple alert channels, eVigilo line of products are both holistic and flexible alert platforms. Thus, eVigilo provides the most effective and efficient turnkey solution for mass alert systems, used by governments, homeland security agencies, municipalities and industrial organizations. For more information please visit <http://www.evigilo.net>

About the JRC

The Joint Research Centre (JRC) is the European Commission's in-house science service. Its mission is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of European Union policies. The JRC serves the common interest of the Member States, while being independent of special interests, whether private or national. Through its Institute for the Protection and Security of the Citizen (IPSC) the JRC develops methods and technologies in support to crisis management operations.

For further information please visit <http://www.jrc.ec.europa.eu>

About GDACS

The Global Disaster Alert and Coordination System (GDACS), jointly developed by the JRC and the United Nations, is a web-based platform that sends an automatic email or SMS message to its users worldwide and instantly alerts them in case of disasters that require international humanitarian intervention. GDACS aims at consolidating and strengthening the

network of providers and users of disaster information worldwide in order to provide reliable and accurate alerts and impact estimations after sudden-onset disasters and to improve the cooperation of international responders in the immediate aftermath of major natural, technological and environmental disasters.

For further information, please visit <http://www.gdacs.org> ♦

LAST MINUTE NEWS

BC prepares for tsunami debris from Japan

The Canadian Press

Date: Monday Jan. 9, 2012 9:39 PM ET

VANCOUVER — The B.C. government has taken the first step in planning for a massive wave of debris heading to the province's shores after the March 11 earthquake and tsunami in Japan.

Julianne McCaffrey of Emergency Management B.C. says the province named today a co-chair to the new Provincial Tsunami Debris Coordinating Committee. She says Jim Standen, assistant deputy minister at the Ministry of Environment, will help government agencies understand their roles and responsibilities when it comes to planning for the debris.

Full article:

<http://www.ctv.ca/CTVNews/SciTech/20120109/bc-tsunami-debris-japan-canada-120109/>

Debris found on Victoria beach (B.C., Canada) possibly from tsunami

Debris believed to be linked to the Japanese tsunami has washed up on the shores of Victoria, B.C., just weeks after residents in Tofino discovered air fresheners and lumber from the east.

Victoria resident Beth Hayhurst snapped photos of battered items she recently discovered on a beach, which include bottles with Asian writing and a battered sandal.

In December [2011] an assortment of cans, bottles and lumber with Japanese writing began turning up on Tofino's shores, although oceanographers' predictions were debris from the tsunami wouldn't arrive on the B.C. coast for at least another year.

By: ctvbc.ca BritishColumbiaHome Date: Sunday Jan. 8, 2012 8:10 PM PT

http://www.ctvbc.ctv.ca/servlet/an/local/CTVNews/20120108/bc_tsunami_debris_victoria_120108/20120108/?hub=

Bits and pieces of people's lives: NOAA investigates origin of recent ocean debris as people of Japan wait

Posted: 12/30/11 07:18 PM ET

Interesting observations about ‘garbage’ versus ‘shreds of human lives.’

The article also mentions two tracking projects: “In response, the National Oceanic and Atmospheric Administration (NOAA), has been scrambling to keep up with this still developing and constantly changing story. The latest information concerning the Japan tsunami debris can be found on these two websites which should provide you with the most up to date scientific information and answers to the questions you might have:

The Marine Debris Program:

<http://marinedebris.noaa.gov/info/japanfaqs.html>; and

The National Ocean Service:

<http://oceanservice.noaa.gov/news/features/dec11/japan-tsunami-debris.html>.”

Full article:

http://www.huffingtonpost.com/matthew-spiegel/tsunami-debris-japan-noaa_b_1177092.html

Debris from tsunami turns up near Neah Bay [Washington]

The Associated Press, 12/18/11 12:37 pm Updated: 12/18/11 12:32 am

PORT ANGELES – A black float about the size of a 55-gallon drum was found two weeks ago by a crew cleaning a beach a few miles east of Neah Bay at the northwest tip of Washington, the Peninsula Daily News reported last week.

Read more here:

<http://www.thenewtribune.com/2011/12/18/1949849/debris-from-tsunami-turns-upnear.html#storylink=cpy>

Photograph of the float:

<http://www.peninsuladailynews.com/article/20111215/news/312159994/first-debris-from-japanese-earthquake-tsunami-reaches-olympic>

‘Garbage patch’ cruises

Few people have seen the floating tsunami debris field up close, and most have been scientists or crew members on shipping freighters. But in May 2012 [Pangaea Explorations](#), the [Algalita Marine Research Foundation](#) and the [5 Gyres Institute](#)—organizations that specialize in researching plastic accumulation in the [oceans](#)—will take scientists and paying members of the public to the floating field of ruins.

Full story:

<http://news.nationalgeographic.com/news/travelnews/2011/12/111215-tsunami-debris-field-travel-science/>

Tsunami clouds

If you get Google Alerts for “tsunami”, you will have seen these clouds:

<http://www.livescience.com/17545-giant-tsunami-shape-clouds-roll-alabama-sky.html>

Experts say the clouds were pristine examples of “Kelvin-Helmholtz waves.” Whether seen in the sky or in the ocean, this type of turbulence always forms when a fast-moving layer of fluid slides on top of a slower, thicker layer, dragging its surface.

I think they look like stampeding Brachiosauri.

Beachcombers encouraged to look for, return mementos

Another topic touched on by most of the roundtable presenters was the human aspect of the debris issue, and the need for a healthy dose of respect when handling it.

“This was first and foremost a human tragedy, before it was a marine debris question or science question,” said Peter Murphy, Alaska coordinator of the NOAA Marine Debris Program.

He reminded listeners of the tragic scope of the tsunami, which was caused by a magnitude 9.0 earthquake and claimed more than 15,000 lives. The wave peaked at 130 feet, and swamped hundreds of square miles. Murphy described the surge as equivalent to about 15 percent of the Anchorage area being inundated with water.

Murkowski and panel members expressed to future beachcombers a reminder that some debris could be mementos of homes and family members lost to the disaster, and those items should be kept safe and reported — along with any dangerous debris.

The Marine Conservation Alliance Foundation at mcafoundation.org provides details for reporting found debris and returning mementos.

From:

http://thearcticsounder.com/article/1204tsunami_debris_is_sues_addressed_by_state

Report Marine Debris

Report sightings of marine debris to marinedebris@ak.net

DISCLAIMER: Report **hazardous material** directly to USCG at **1-800-478-5555/907-463-2000**

NOAA declares Los Angeles StormReady and TsunamiReady

On January 27, the City of Los Angeles will be recognized by NOAA’s National Weather Service as **Storm Ready®** and the largest city in the nation to become **TsunamiReady™**.

The nationwide voluntary community preparedness programs use a grassroots approach to help communities develop plans to prepare and warn citizens about severe weather, flooding and tsunami threats. ♦