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**Report from the Commonwealth of Northern Mariana Islands**

	<p><b>COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS</b></p> <p><i><b>Emergency Management Office</b></i></p> <p><i><b>Office of the Governor</b></i></p>	
<p>Benigno R. Fitial, Governor Timothy P. Villagomez, Lt. Governor</p>		<p>Mark S. Pangelinan, Acting Director ..... Dep. Director</p>

EMO IS COMPRISED OF NINE UNITS, WHICH ARE THE ADMINISTRATION, RESPONSE AND RECOVERY, COMMUNICATIONS (SMARTNET), OPERATIONS, SEISMIC, PLANNING AND TRAINING, MAINTENANCE, EMO TINIAN / ROTA REP. THESE UNITS HAVE THEIR DAY TO DAY RESPONSIBILITIES, BUT IN TIME OF EMERGENCY AND/OR DISASTER, PERSONNEL OF THESE UNITS ARE UTILIZED TO AUGMENT RESPONSE AND RECOVERY ACTIVITIES. WITH THIS CONCEPT, EVERY CORNER OF RESPONSIBILITIES DURING EMERGENCY/DISASTER ACTIVITIES ARE COVERED.

EMO PLAYS A MAJOR ROLE IN EMERGENCY OPERATIONS. STAFF ASSIGNMENTS HAVE BEEN CATEGORIZED BY FUNCTION TO ENSURE THAT EMERGENCY RECOVERY EFFORTS WILL NOT BE HAMPERED OR PROLONGED. THE DIRECTOR OF EMERGENCY MANAGEMENT OFFICE IS RESPONSIBLE FOR THE GENERAL COORDINATION OF TASK ASSIGNMENTS WHEN THE EMERGENCY OPERATION PLAN IS ACTIVATED.

THE MOST COMMON DISASTERS IN THE CNMI ARE STORMS, TYPHOONS, FLOODS, STRUCTURAL FIRES, HAZARDOUS MATERIALS, OIL SPILLS AND VOLCANIC ERUPTION. LOSS AT SEA IS ALSO COMMON IN CNMI, HOWEVER, THERE ARE OTHER DISASTERS THAT DO NOT OCCUR AS FREQUENTLY SUCH AS EARTHQUAKES AND TSUNAMIS BUT SHOULD NOT BE OVERLOOKED SINCE THE CNMI IS NOT IMMUNE TO THESE THREATS.

EMO'S ROLE IS TO ASSIST THE GOVERNOR IN OVERSEEING THE ACTIVITIES AND COORDINATION OF THE CNMI GOVERNMENT IN RESPONDING TO AND RECOVERING FROM A DISASTER. IT IS RESPONSIBLE IN RESPONDING TO ALL EMERGENCY CALLS AND REQUESTS FROM THE BOTH GOVERNMENT AND PRIVATE SECTOR ( ty- phoons, earthquakes, volcanic eruptions, search and rescue mission, hazardous materials incidents, emergency and medical evacuations, and unexploded World War II Ordnance).

*(continued on page 3)*

# *TsuInfo Alert*

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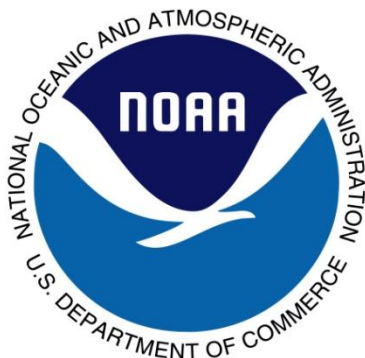
Participants in the TsuInfo program can request copies of reports listed in this issue from:

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WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**  
Peter Goldmark - Commissioner of Public Lands

(continued from page 1)

IT IS ALSO RESPONSIBLE IN OVERSEEING OF ALL THE COORDINATION ACTIVITIES OF THE RESPONSE EFFORT TO INSURE THE PROTECTION OF HUMAN LIFE AND REDUCE THE POTENTIAL LOSS TO PROPERTY.

IT IS RESPONSIBLE IN DEVELOPING ON-GOING PLANS, POLICIES, AND PROGRAMS FOR THE CNMI IN REGARDS TO DISASTER AWARENESS, PREPAREDNESS AND TRAINING FOR EMERGENCY RESPONDERS AND THE CNMI RESIDENTS.

#### Goals

Goal 1: Improve the effectiveness and efficiency of the CNMI Government in responding to and providing assistance to residents of the Commonwealth recover from natural or man-made disasters.

Goal 2: Representing the Governor in coordinating with federal entities(FEMA, SBA, and ARC) in providing recovery assistance to Commonwealth residents after a natural or declared emergency.

Goal 3: Upgrading the response capabilities of other CNMI government entities in regards to emergencies whether natural or man-made is vital in rendering assistance to residents of the Commonwealth.

Goal 4: Organizing a massive government response to the incident and insuring the accomplishment and type of assistance needed is critical.

Generated 6:00 am, Tuesday, Nov. 07, 2000  
<http://www.cnmiemo.gov.mp/services.htm>

#### What is EMO?

##### A. Establishment:

1. Establishment August 23, 1995 by Executive Order 94-3.
2. Both agencies were previously under the CNMI Department of Public Safety. With EO 94-3, falls directly under the supervisory of the Governor.
3. Agency formed by merging 2 agencies into 1.
  - a. Disaster Control Office (PL 1-40, Oct. 09, 1979)
  - b. Civil Defense Office (PL 1-44, Feb. 04, 1980)
4. The Emergency Management Office is staffed 24 hours a day, 7 days a week. There are also a number of standby/on-call duty officers prepared to handle emergencies after regular working hours.

##### B. Location

1. Located on Capital Hill on the Island of Sai-pan in a building which was formerly the

CNMI Convention Center. The EMO can be reached by turning right at the Capital Hill traffic light intersection. Proceed uphill making a left turn at the first cross intersection. After making that left turn, make the first right turn at the first building.

##### C. Functions & Unit

##### D. Facility and Equipment

1. Facility Structure and Capabilities
  - a. Full permanent structure
  - b. Self sustain with 260 KVA Generators with 1100 U.S. gallons fuel storagetank.
  - c. 50,000 U.S. gallons water catchment and storage tank.
2. Communication Equipment
  - a. Smartnet System
    1. 2-way radio communications system for the CNMI Government.
    2. 1 Mobile Command Vehicle
  - b. Peacesat
3. Operational Vehicle
  - a. 3 Pick-up Truck (4X4)
  - b. 1 Vessel (Challenger Junior)
  - c. 1 Mobile Command Vehicle

From:

<http://www.cnmiemo.gov.mp/what%20is%20emo.htm>

Accessed: 5-19-2011

#### Commonwealth of Northern Mariana Islands emergency management and homeland security statutory authorities summarized

<http://digital.library.unt.edu/ark:/67531/metacrs6736/>

This report is one of a series that profiles the emergency management and homeland security statutory authorities of the 50 states, the District of Columbia, the Commonwealth of the Northern Mariana Islands, the Commonwealth of Puerto Rico, and three territories (American Samoa, Guam, and the U.S. Virgin Islands). Each profile identifies the more significant elements of state statutes, generally as codified. Congressional readers may wish to conduct further searches for related provisions using the Internet link presented in the last section of this report. ♦

#### REGIONAL NEWS

##### ALASKA

#### New tsunami inundation digital elevation models for Alaska

The National Geophysical Data Center (NGDC) has developed a series of nested, coastal digital elevation

models (DEMs) for the University of Alaska at Fairbanks. The new DEMs include the coastal areas of Juneau, Chenega Bay and Tatitlek, Alaska. These integrated bathymetric-topographic DEMs are part of an ongoing collaboration to support individual coastal States as part of the National Tsunami Hazard Mitigation Program's efforts to improve community preparedness and resiliency. The Chenega Bay and Tatitlek DEMs provide higher resolution, nearshore depiction of the relief inside a previously completed DEM for Prince William Sound.

The NGDC has also developed a new model for Kachemak Bay. An important part of the Kachemak Bay DEM was the use of the National Ocean Service hydrographic survey data collected as part of NOAA's "Hydro-palooza" project. Shoreline and seafloor data was collected for a range of uses and follows the "Map once, use many times" goal.

For more information, visit [http://www.ngdc.noaa.gov/nndc/struts/results?eq\\_1=2011/01&op\\_3=eq&v\\_3=N&t=102750&s=3&d=10,6,11](http://www.ngdc.noaa.gov/nndc/struts/results?eq_1=2011/01&op_3=eq&v_3=N&t=102750&s=3&d=10,6,11)  
From: WSSPC E-Newsletter, Spring 2011, p. 8

## CALIFORNIA

### **SAFELY OUT™ kits distributed in California**

During California's Tsunami Awareness week in March 2011, 40,000 SAFELY OUT™ Kits began being distributed throughout the state, helping prepare some of our most vulnerable for disasters. Last fall, CalEMA granted Citizen Voice funds to distribute tens of thousands of SAFELY OUT™ Kits statewide to residents that would have difficulty in evacuating after a manmade or natural disaster—the frail elderly, disabled and families with young children.

The SAFELY OUT™ Kit provides a unique alert and helper system so a vulnerable person knows that at least three of his or her neighbors have agreed prior to a disaster that they will assist them to safety. SAFELY OUT™ Kits also enable neighbors to help vulnerable neighbors get out with the critical information needed to reunite them with family or caregivers, alert others of their medical needs and more.

For the full press release, visit [http://www.citizenvoice.org/privacy\\_ewsletter/documents/PRkitdistrib3-11.pdf](http://www.citizenvoice.org/privacy_ewsletter/documents/PRkitdistrib3-11.pdf)

From: WSSPC E-Newsletter, Spring 2011, p. 2.

### **President declares major disaster for California (from the FEMA website)**

On April 18, 2011, the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) announced that federal disaster aid has been made available to California to supplement the state and local recovery efforts in the area struck by the tsunami

wave surge generated by the Tohoku, Japan earthquake on March 11, 2011.

Federal funding is available to state and local governments and certain private nonprofit organizations on a cost-sharing basis for emergency work and the repair or replacement of facilities damaged by the tsunami wave surge in Del Norte and Santa Cruz counties.

Federal funding is also available on a cost-sharing basis for hazard mitigation measures statewide.

From: WSSPC E-Newsletter, Spring 2011, p. 5.

### **L.A. County supervisors seek more information on tsunami warning system**

Los Angeles Times

<http://latimesblogs.latimes.com/lanow/2011/03/tsunami-warning-system-la-county-supervisors.html>

March 29, 2011 | 8:17 pm

Los Angeles County supervisors are requesting more information on creating an emergency siren system along the coast to warn the public about incoming tsunamis. The supervisors voted unanimously Tuesday ask the county Office of Emergency Management about the feasibility of developing a tsunami emergency siren warning system. Crescent City, Calif., near the Oregon border, which has a history of damage from tsunamis, had tsunami sirens sound on March 11, hours before the first damaging waves generated by the magnitude 9 earthquake in Japan hit the harbor.

For full story, visit the URL given above.

### **Town meeting in September about San Onofre nuclear plant**

By Fred Swegkes

The Orange County Register

<http://www.ocregister.com/news/nuclear-295361-san-meeting.html>

Mark your calendar for Sept. 27 if you'd like to attend a town meeting in San Clemente [California] about lessons the [San Onofre Nuclear Generating Station](#) has learned from the earthquake/tsunami disaster at the [Fukushima Daiichi nuclear plant in Japan](#). The San Clemente City Council this week set the date well in advance with the idea that it gives San Onofre owner [Southern California Edison](#) and staff of the [U.S. Nuclear Regulatory Commission](#) time to develop information to present to the city and the public.



**Santa Cruz harbor to share in \$6M labor grant:  
Tsunami recovery efforts continue with pile driving**

From: [http://www.mercurynews.com/breaking-news/ci\\_18043829](http://www.mercurynews.com/breaking-news/ci_18043829)

The funding is separate from the much larger federal disaster assistance requested by the Port District to cover an estimated \$28.5 million in damage to public infrastructure at Santa Cruz Small Craft Harbor. Crescent City's harbor in Del Norte County sustained about \$20 million in damage from the March 11 tsunami that was triggered by a 9.0 earthquake off the coast of Japan.

Full report at link above.

HAWAII

**Interagency team conducts aerial and ground survey of tsunami damage in Papahānaumokuākea Marine National Monument**

News release, March 28, 2011

(Honolulu, HI) A six-person Papahānaumokuākea Marine National Monument team, made up of representatives from the U.S. Fish and Wildlife Service (FWS), Hawai'i Department of Land and Natural Resources (DLNR), NOAA's National Marine Fisheries Service (NMFS) and Office of National Marine Sanctuaries (ONMS), and the U.S. Coast Guard, have completed an aerial survey of tsunami damage in the Northwestern Hawaiian Islands. During the two-day assessment, the team also surveyed natural resource damage on the ground at the Midway Atoll National Wildlife Refuge, including Sand and Eastern Islands.

The Monument, covering ten major islands and low-lying atolls of the Northwestern Hawaiian Islands, as well as seamounts and countless coral reefs, was the first U.S. land mass struck by the earthquake-caused tsunami that originated off the coast of Japan on March 10, 2011.

Surges of up to five feet high washed ashore on many of the tiny atolls, which are mere feet above sea level. Damage to terrestrial natural resources on other islands and atolls besides Midway will not be fully known until researchers or field camp workers are able to conduct on-site assessments. Damage to coral reefs and underwater habitats won't be confirmed until participants in research cruises begin surveys later this year.

Ray Born, Monument FWS Permit Manager, led the assessment team and said, "Our superior working relationship with the U.S. Coast Guard allowed a C-130 from Air Station Barbers Point to provide us the platform to over-fly all the major islands and atolls and look for evidence of shoreline damage, impacts to field camps, man-made structures and to wildlife habitat." Photographs and video taken on the mission will be compared with previous aerial photos and maps to try and provide baseline comparisons to enhance analysis of the scope and extent of damage. That will lead to enhancing existing restora-

tion and recovery plans for refuge lands within Papahānaumokuākea Marine National Monument.

It is already known that tens of thousands of chicks and adult birds at Midway Atoll were swept out to sea or drowned on land when tsunami waves struck. Researchers with the FWS estimate 110,000 Laysan and Black Footed Albatross chicks were killed on the three islands of Midway Atoll: Sand, Eastern and Spit. Similar, heavy losses may have occurred at other islands and atolls in the Monument. FWS biologist Beth Flint was particularly interested in the initial bird loss reports from Midway and other atolls. At Midway she said eyewitness reports, comparison of population data sets, and her own observations confirm that tens of thousands of birds were casualties of the tsunami. Flint explained, "This tsunami provided a preview of what could happen when global climate change causes the sea level to rise. As the low-lying atolls of the Northwestern Hawaiian Islands become inundated, there will be an attendant reduction in available habitat for the 14 million tropical seabirds that have always used these land features for breeding and nesting."

Papahānaumokuākea is the world's largest tropical seabird rockery. The team saw hundreds of birds, endangered Hawaiian monk seals and green turtles basking or resting on the beaches of Papahānaumokuākea's islands and atolls. At Laysan Island, where NOAA's National Marine Fisheries Service maintains a field research station and where seven workers were evacuated shortly after the tsunami, the fly-over demonstrated that much of the terrestrial wildlife survived the event. The same situation was evident at Kure Atoll, the location of a State Wildlife Sanctuary and another field camp.

Papahānaumokuākea is home to nearly 7,000 marine and land species and is one of the richest and healthiest ocean environments remaining on the planet. NOAA Deputy Superintendent for the Monument, David Swatland explained, "The Monument's co-managing agencies worked together to conduct a coordinated response before and during the tsunami, ensuring the safety of all the people in the Northwestern Hawaiian Islands; a similar ongoing coordinated effort will be needed to assess the damage and develop plans for the restoration and recovery of one of earth's natural and cultural crown jewels."

Papahānaumokuākea is cooperatively managed to ensure ecological integrity and achieve strong, long-term protection and perpetuation of Northwestern Hawaiian Island ecosystems, Native Hawaiian culture, and heritage resources for current and future generations. Three co-trustees - the Department of Commerce, Department of the Interior, and State of Hawai'i - joined by the Office of Hawaiian Affairs, protect this special place. Papahānaumokuākea Marine National Monument was inscribed as the first mixed (natural and cultural) UNESCO World Heritage Site in the United States in July 2010. For more information, please visit [www.papahanaumokuakea.gov](http://www.papahanaumokuakea.gov)

from:

[http://www.papahanaumokuakea.gov/news/tsunami\\_assessment\\_mission\\_032811.pdf](http://www.papahanaumokuakea.gov/news/tsunami_assessment_mission_032811.pdf)

April 12, 2011

### **Tsunami Observer Program**

In June 2006, the Pacific Tsunami Museum was awarded a contract to manage the Tsunami Observer Program until 2010. As of June 2010, the program has been contracted to Jacqueline Miller on Oahu, but it remains the same. Funded by NOAA and sponsored by Hawaii State Civil Defense, this program was set up to record all important data associated with a tsunami event including footage of the wave inundating the coastline and wave runup heights in a post tsunami field survey.

The program consists of: 44 volunteer Tsunami Observers, spread across Kauai, Lanai, Maui, Oahu and Hawaii, two Technical Directors - George Curtis and Daniel Walker, and a Program Manager, Jacqueline Miller. When a tsunami WATCH is issued all Tsunami Observers will be alerted by phone tree system, they will then set up recording equipment at safe locations to monitor the waves as they come ashore. Following a large tsunami event, Tsunami Observers will be deployed into the field to carry out a comprehensive post-tsunami field survey which will record an array of data including runups, building damages as well as information from eyewitnesses.

The Tsunami Observers had their first real taste as a Tsunami Observer when they received calls on the evening of January 12th, 2007 following the 8.3 Mw earthquake in the Kuril Islands. The Tsunami Observers all performed extremely well and we are thrilled to be working with such wonderful volunteers on this project. Outreach programs included working with the downtown Hilo businesses to help them become better prepared for the next tsunami and creating and preparing exhibits for the openings of tsunami museums in Thailand and India.

From:

<http://www.tsunami.org/programs.html#community>

### **President declares major disaster For Hawaii**

Release Date: April 8, 2011

Release Number: HQ-11-36

» [En Español](#)

WASHINGTON – The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) today announced that federal disaster aid has been made available to Hawaii to supplement the state and local recovery efforts in the area struck by tsunami waves on March 11, 2011.

Federal funding is available to state and eligible local governments and certain private nonprofit organizations on a cost-sharing basis for emergency work and the repair or replacement of facilities damaged by the tsunami

waves surge in Hawaii County, Maui County, and the City and County of Honolulu.

Federal funding is also available on a cost-sharing basis for hazard mitigation measures statewide.

Michael L. Karl has been named as the Federal Coordinating Officer for federal recovery operations in the affected area. Karl said additional designations may be made at a later date if requested by the state and warranted by the results of further damage assessments.

From:

<http://www.fema.gov/news/newsrelease.fema?id=54242>

## JAPAN

### **EERI plans for Japan events**

Earthquake Engineering Research Newsletter, v. 45, no. 4, p. 1-2.

A great deal of information is available on EERI's clearinghouse at <http://www.eqclearinghouse.org/2011-03-11-sendai/> about the massive magnitude 9.0 Tohoku, Japan, earthquake and tsunami that struck on March 11, 2011. Most of it was provided by Japanese colleagues, including photo galleries, reports on ground motion characteristics and strong motion observations, quick reconnaissance reports, damage to viaducts, information on damage in the cities of Natori and Izumi, and many links to additional information under "Other Resources". Also posted are reports on the effects of the tsunami in California, Alaska, and Hawaii. California alone sustained an estimated \$50-100 million worth of damage.

Japanese colleagues have begun to organize a liaison committee, currently consisting of the Japan Association for Earthquake Engineering (JAEE), the Japan Society of Civil Engineers (JSCE), the Architectural Institute of Japan (AIJ), and the Japan Society of Mechanical Engineering (JSME). This liaison committee will send updates and help EERI when the situation improves to a point that a reconnaissance team can travel.

EERI is prepared to send a team to Japan when it is safe, when a team would not be in the way, and when it could work collaboratively with Japanese colleagues. Current plans include submitting a RAPID grant proposal to NSF to provide travel support for academic research.

The practitioner community will be approached to self-fund their participation on EERI's unique multi-disciplinary team.

Some of the types of issues that EERI may investigate include:

- Warning (including early warning systems)
- Tsunami protection
- Benefits and effects of awareness and education programs
- Performance of engineered structures
- Performance of base-isolated structures

- Response issues for a large subduction zone earthquake
- Tsunami and earthquake impacts on a medium-sized urban area
- Nuclear power plant failures
- Economic impacts
- Impacts of aftershocks
- Impacts on coastal ecosystems
- Effect of vegetation on tsunami inundation
- Behavioral science and social science issue of both earthquake and tsunami, including the role of social media.

### Researchers help map Japan's tsunami and earthquake damage

Posted: March 25, 2011

<http://news.bioscholar.com/2011/03/researchers-help-map-japan%E2%80%99s-tsunami-and-earthquake-damage.html>

“Researches at the Rochester Institute of Technology, New York, are currently processing satellite images of areas in Japan that were recently affected in a 9.0 magnitude earthquake and tsunami.

The team has uploaded 30 megabyte pdfs of the Fukushima Nuclear Power Plant and the cities of Hachinohe and Kesenuma to the U.S. Geological Survey's website for charter members and Japanese emergency responders to access.”

Full story at URL above.



“High dwellings are the peace and harmony of our descendants. Remember the calamity of the great tsunamis. Do not build any houses below this point”

For full story: <http://www.good.is/post/ancient-people-are-still-awesome-centuries-old-japanese-tsunami-warning-markers-saved-lives/>

### Letters from Fukushima: Tepco worker e-mails

<http://blogs.wsj.com/japanrealtime/2011/03/28/letters-from-fukushima-tepco-worker-emails/>

March 28, 2011, 8:21 PM JST

An email exchange between a Tokyo Electric Power Co. employee working at one of the Fukushima nuclear power plants and a colleague located at Tokyo headquarters shines a rare light on the gripping personal losses weighing on those battling to bring the nuclear reactors under control. It also gives an inside look at the radically different problems faced by company workers at the plant compared to those being shouldered at headquarters.

The following emails, one signed by a worker at the Fukushima Daini plant near the stricken Fukushima Dai-ichi reactors and the other by a Tokyo-based Tepco employee, were sent last Wednesday to a private email list and viewed by The Wall Street Journal. A Tepco spokesman verified the emails' authenticity. The email exchange was translated into English below. Worker names have been removed.

#### EMAIL #1

This is [name removed] at the Fukushima Daini plant. I met you a few times at some meetings in the past. I'm happy to receive an e-mail from you. I had written in hopes that many people would understand the situation in the field.

I felt reassured to receive such a supportive message from [name removed]. Though we're still in the middle of our fight, we feel a little relieved to know we have the support from a person like [name removed]. I just wanted people to understand that there are many people fighting under harsh circumstances in the nuclear plants. That is all I want. Crying is useless. If we're in hell now all we can do is to crawl up towards heaven.

Please watch out for the hidden strength of nuclear power. I'll make sure we will make a recovery. I'd like to ask you to continue to support us.

Thank you very much.

From, Fukushima worker

#### EMAIL #2

I read your e-mail to me. (What you wrote) is what I had imagined. But at a loss for words, I could only be overwhelmed with tears. But as a person living in Tokyo enjoying electricity, there is no time to waste by simply crying.

People in Tokyo are scrambling due to the planned blackout and stockpiling supplies, alternately acting at ease then worried over the spread of radioactive materials. I can only think this situation is strange. I feel frustrating

anger across the nation pointing to Tepco. I suspect Tepco executives feel it well enough.

But everyone here pays respect and has lowered their head to pray for those who are facing the brunt of it and fighting on the front lines surrounded by enemies.

Although I am not in a position to say such a thing, I beg you to hang in there. What I can do for you is limited. But when the time comes, we will take our turn to protect you all. Without fail.  
From, Tokyo worker

#### EMAIL #3

Thank you for your hard work. I'm sure you are too busy at the disaster unit's headquarters to look at emails. But I'd like to pass on the current situation at the plants. We at the plants have been working on restoration work without sleep or rest since the earthquake. About two weeks have passed since the quake, and things have gotten better on the first floor. We wish the cooling efforts will continue to work.

As you know, most of the workers on the first and second floors are local residents and victims of the quake. There are many workers whose houses were washed away.

I myself have had to stay in the disaster measurement headquarters the entire time ever since the earthquake occurred, and have been fighting alongside my colleagues without any sleep or rest. Personally, my entire hometown, Namie-machi, which is located along the coast, was washed away by the tsunami. My parents were washed away by the tsunami and I still don't know where they are. Normally I would rush to their house as soon as I could. But I can't even enter the area because it is under an evacuation order. The Self-Defense Forces are not conducting a search there. I'm engaged in extremely tough work under this kind of mental condition...I can't take this any more!

#### MAINE

#### **Maine wins tsunami grant; locals say it will help trapped tourists**

Now the Maine Emergency Management Agency, with the help of the Maine Department of Transportation, is installing more than 100 signs along the coast to help people evacuate the seaside in case of an emergency.

Maine will spend about \$30,000 on the signs, including installation, with all of the funding provided by a tsunami preparedness grant from the National Oceanic and Atmospheric Administration.

Full report:

<http://new.bangordailynews.com/2011/05/09/news/state/maine-wins-tsunami-grant-locals-say-it-will-help-trapped-tourists/>

#### NEW YORK

#### **New York City unveils first-in-the-nation public safety system; Enabled mobile devices will receive emergency alerts at critical moments with potentially life-saving messages**

Release Date: May 10, 2011

Release Number: HQ-11-073

» En Español

New York, N.Y. -- Mayor Michael Bloomberg, Federal Emergency Management Agency Administrator Craig Fugate, Federal Communications Commission Chairman Julius Genachowski, top executives from AT&T, Sprint, T-Mobile and Verizon and others convened at the World Trade Center site to announce PLAN--the Personal Localized Alerting Network. PLAN is a free service that will allow customers with an enabled mobile device to receive geographically-targeted, text-like messages alerting them of imminent threats to safety in their area. This service will be available in New York City by the end of 2011, at least two calendar quarters before the rest of the nation.

PLAN ensures that emergency alerts will not get stalled by user congestion, which can happen with standard mobile voice and texting services. Authorized government officials can send messages, which participating wireless providers then push using their cell towers to enabled mobile devices in a targeted geographic area.

"In both the public and private sectors, I've always believed in the need to harness technology in new ways, including ways that its designers hadn't anticipated. The City's opt-in Notify NYC system is a great example of that: it alerts people to dangers and delays via email and mobile devices, and it has become a national model of emergency communication," said New York City Michael Bloomberg.

"But given the kinds of threats made against New York City at the World Trade Center, Times Square, and other places popular with visitors and tourists, we'll be even safer when authorities can broadcast warnings to everyone in a geographic area regardless of where they came from or bought their phone," Mayor Bloomberg continued. "I want to congratulate FCC Chairman Julius Genachowski and FEMA Administrator Craig Fugate for this quantum leap forward in using technology to help keep people safe."

"Following the devastating tornadoes in the Southeast, we are witnessing yet again the critical role the public plays as part of our nation's emergency management team. Making sure that they get useful and life-saving information, quickly and easily, right on their mobile phones, will help more people get out of harm's way when a threat exists," said FEMA Administrator Fugate.

"This new technology could become a lifeline for millions of Americans and is another tool that will strengthen our nation's resilience against all hazards."



“Communications technology – and in particular mobile broadband – has the potential to revolutionize emergency response,” said FCC Chairman Genachowski. “Our communications networks need to be reliable and resilient in times of emergency. The FCC is working with carriers to ensure that they are.”

When PLAN is operational, customers in an area affected by an emergency who have a PLAN-capable mobile device will receive an alert of ninety characters or less. Consumers will receive three types of alerts from PLAN: (1) alerts issued by the President; (2) alerts involving imminent threats to safety of life; and (3) Amber Alerts. Participating carriers may allow subscribers to block all but Presidential alerts.

In 2006, Congress passed the Warning, Alert and Response Network (WARN) Act, requiring carriers that choose to participate to activate PLAN technology by a deadline determined by the FCC, which is April 2012. Participants that will offer PLAN at least two calendar quarters ahead of schedule in New York City are AT&T, Sprint, T-Mobile, and Verizon. Ninety percent of New York subscribers who have a PLAN-capable mobile device in these cities will be able to receive PLAN alerts by the end of 2011.

For more information on PLAN visit [blog.fema.gov/2011/05/plan-another-part-of-publics-emergency.html](http://blog.fema.gov/2011/05/plan-another-part-of-publics-emergency.html).

*FEMA's mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.*

Last Modified: Tuesday, 10-May-2011 11:22:45  
<http://www.fema.gov/news/newsrelease.fema?id=54888>

## OREGON

### **Yumei Wang inside NOVA**

In January 2011, Yumei Wang, Geohazards Section Leader at the Oregon Department of Geology & Mineral Industries, was featured as an expert on NOVA's *Deadliest Earthquakes* program. She also provided blog entries to the **Inside NOVA** website regarding the danger of tsunamis, the earthquake threat to Oregon coastal schools, and earthquake engineering.

To watch *Deadliest Earthquakes*, visit <http://www.pbs.org/wgbh/nova/earth/deadliest-earthquakes.html>.

To read Yumei's blog entries, visit <http://www.pbs.org/wgbh/nova/insidenova/author/yumei-wang/>.

From: WSSPC E-Newsletter, Spring 2011, p. 2

### **Oregon coast tsunami: Federal disaster relief headed for Brookings, Curry County [Oregon]**

By Michael Russell, The Oregonian

March 25, 2011

“Two weeks after an earthquake in Japan sent a tsunami ripping along the southern Oregon coast, the Federal Emergency Management Agency announced Friday it will fund repairs and replace damaged infrastructure in Curry County.

The surge of water that swept into the The Port of Brookings Harbor on March 11 smashed boats like bathtub toys and destroyed nearly half the port. No one was killed. Federal and state officials estimated damage to the port at \$6.7 million.

The tsunami's economic impact is still being calculated in Brookings, a fishing community that already was suffering from high unemployment. The tsunami came at the tail end of the lucrative Dungeness crab season and threatened the start of shrimp season.”

For the full story, visit [http://www.oregonlive.com/pacific-northwest-news/index.ssf/2011/03/oregon\\_coast\\_tsunami\\_federal\\_disaster\\_relief\\_headed\\_for\\_brookings\\_curry\\_county.html](http://www.oregonlive.com/pacific-northwest-news/index.ssf/2011/03/oregon_coast_tsunami_federal_disaster_relief_headed_for_brookings_curry_county.html)

### **Tsunami evacuation drills at the Oregon coast beginning next week!**

E-mail sent May 13, 2011

Portland, Oregon: As part of the ongoing Tsunami Outreach Oregon education and awareness program administered by the Oregon Department of Geology and Mineral Industries (DOGAMI) and Oregon Emergency Management (OEM), several coastal communities will be holding tsunami evacuation drills in the next 2 weeks.

The coastal communities of Pacific City and Neskowin and surrounding communities will be holding a voluntary Tsunami Evacuation Drill Tuesday, May 17, beginning at 10 AM.

For more information on this drill, please contact Fire Captain Jim Kusz at (541) 407-0801.

Gold Beach, Port Orford and surrounding communities will be holding voluntary Tsunami Evacuation Drills Thursday, May 19, beginning at 10 AM.

For more information on the drills contact South Coast Tsunami Outreach Coordinator Dave Lacey at (541) 373-0487 or Don Kendall, Curry County Sheriff's Office, Emergency Services Coordinator at (541) 247-3208.

On May 25 at 10 AM, the City Of Warrenton, nearby unincorporated areas, and Warrenton area schools will hold their voluntary Tsunami Evacuation Drill. For more information on this drill contact North Coast Tsunami Outreach Coordinator Patrick Wingard at (503) 717-3995.

The community wide drills in Pacific City, Gold Beach and Port Orford will also incorporate an aircraft broadcasting a message about the drill using an airborne

public address system developed by Guardians From Above and the Power Sonix Corporation. This same type of airborne public address system has been used in search and rescue efforts by the Civil Air Patrol throughout the region and has been demonstrated in tsunami drills as an additional method of alerting coastal residents of a distant tsunami warning issued by the National Weather Service where sirens have limited coverage.

Read the complete news release online at:

<http://www.OregonGeology.org>

From: James Roddey, Earth Sciences Information Officer, Oregon Department of Geology and Mineral Industries, 800 NE Oregon Street, Suite 965, Portland Oregon 97232

[james.roddey@dogami.state.or.us](mailto:james.roddey@dogami.state.or.us)

(971) 673-1543 office - (503) 807-8343 cell

For follow-up report on the drills, read:

<http://www.koinlocal6.com/news/local/story/Tsunami-drill-on-Oregon-coast-tests-readiness/Wn-rVzGAY0mRWy7Wn8SJYg.csp>

### **Tsunami keeps teaching lessons long after water recedes**

By Winston Ross

The Register-Guard

Published: (Wednesday, Mar 30, 2011 12:00AM)

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Register-Guard Editor's Note: Register-Guard reporter Winston Ross traveled to Japan in 2005 as a World Affairs fellow, sponsored by the International Center for Journalists, to study how Japan prepares for tsunamis and what Oregon could learn from it.

Six years ago, the West Coast and the world were still reeling from the heartbreaking images and shaky videos of the 9.1-magnitude earthquake and tsunami in Sumatra that reached heights of 100 feet, ripping Indonesia into pieces and killing 230,000 people by the time it was finished.

Everyone wanted to know: Could that happen here? The answer was and is an emphatic yes, especially when you consider that the fault line off the Sumatran coast is virtually identical to the one that lies between 50 and 70 miles off the U.S. West Coast, the Cascadia Subduction Zone. The two locked plates there — the continental and Juan de Fuca plates — slip every 300 to 500 years, geologists say, producing a 9.0 or greater temblor and tsunami that can crash on shore in as little as 10 minutes. The last time such a quake struck Oregon? 1700.

Oregon Department of Geology and Mineral Industries' George Priest predicts this looming natural disaster would be the worst the United States has ever seen. Among Priest's many suggestions after Sumatra: "Be more like the Japanese."

That may be a hard statement to swallow right now, given the gut-wrenching photos and videos of obliterated buildings in Japan streaming across the airwaves and the veiled media criticism that implies their seawalls "didn't work," that maybe the Japanese weren't as ready as they should have been.

Make no mistake about it. Japan's preparedness has saved tens of thousands, if not hundreds of thousands, of lives. Three-quarters of those rescued in one of Japan's modern-day disasters, the Great Hanshin-Awaji earthquake that struck Kobe in 1995, were saved by relatives and neighbors, not the government.

The tsunami that hit Okushiri Island in 1993 struck the town five minutes after the earthquake that triggered it, killing 15 percent of the population. A comparable temblor and tsunami in Warapu, Papua New Guinea, hit a town of similar population in 1998. It killed 40 percent of the residents. Many of those who escaped death in Sumatra in 2004 were warned by Japanese tourists.

The quake and tsunami in Sumatra, a country far more thinly populated than Japan, killed 240,000 people. Japan's death toll is estimated at 10,000 so far and, even if none of the 17,000 missing are ever found, it is nothing short of remarkable that such a small percentage of their people perished. Each life lost is, of course, a tragedy. But each life saved by decades and centuries of diligent preparation, education and effort is the silver lining, the smile that pushes tears toward the backs of our faces.

To really understand how the Japanese prepared for earthquakes and tsunamis, I knew I'd have to immerse myself in their culture and politics, to see their towering seawalls, hear their ear-piercing sirens, step into their reinforced buildings.

I came away impressed, and surprised. Impressed at so many things. The government's aim was to alert its citizens of an impending tsunami within three minutes of a major quake. The Japan Meteorological Agency operates six regional centers that track 180 seismometers collecting data 24 hours a day. When a temblor strikes, computers scroll through 100,000 pre-calculated scenarios, finding the closest geological and seismic match to the current event, in order to instantly predict not only whether a tsunami is likely to occur but where it will strike and with what level of force.

When a warning goes out, it's immediately transmitted to the country's 47 states — called prefectures — and coastal cities, and it's aired on the Japan Broadcasting Corp., available in every home with a television set, reaching nearly 60 percent of the country's population. There are massive seawalls in select locales all over the country. In the small town of Aonae, on the island of Okushiri, the government spent \$1.3 billion to rebuild the town after a magnitude-7.8 quake and resulting tsunami obliterated it in 1993. A seawall now rises as high as 38 feet, and new houses were built atop a landfill, 20 feet higher than they were before. When a quake hits, sensors

set off alarms installed inside each resident's house, and 22 escape routes, lit by solar-powered signboards, offer a path to higher ground.

Elsewhere in Japan, there are floodgates at more than 6,500 locations to slow tsunamis that surge up rivers. In the quake-prone Shizuoka prefecture alone, the government built 258 tremor- and tsunami-resistant shelters that resemble lighthouses, allowing evacuees to get to safety even when there's no nearby high ground.

The Japanese can justify these investments because of their history. Ten percent of the world's earthquakes occur in Japan, 10,000 each month. Six a day are big enough to feel. Eight major tsunamis struck the country in the 160 years before this month, killing tens of thousands of people and destroying hundreds of villages. Before the Sumatra event, nearly one in three tsunami victims worldwide were from Japan. Eighty percent of the country's residents live along its 20,000 miles of coastline. The very word "tsunami," the worldwide standard for earthquake-borne breakers, is Japanese. It translates to "harbor wave."

So this infrastructure, this extraordinary preparation, all made sense. But here's what surprised me: The Japanese knew they could not engineer their way to safety. They knew that buildings can only be so strong, that seawalls can only blunt and redirect the impact of a wave. They knew that the way they would save the greatest amount of lives was by educating their citizens about the danger of tsunamis and the way to escape them.

Flyers and pamphlets depicting well-marked evacuation routes are distributed in hotels. The country's meteorological agency produces educational videos, sends experts to give lectures in schools and includes information about what to do in the event of a tsunami on its website. There's an earthquake preparedness center in Shizuoka that includes a banner depicting the actual height of past tsunamis, and a wave basin where the 50,000 visitors who attend each year can watch a simulated tsunami striking model houses. There are regular evacuation drills in schools.

The country has even sponsored a Disaster Prevention Education Challenge Plan, choosing the year's top 20 local disaster prevention programs and awarding a prize for the best. The year I went to Japan, the winners created a 3-D map of the coastline showing where a tsunami probably would inundate it.

And the country has infused its history of tsunamis into its national storytelling fabric, into its legends. Throughout the country, in schools, in museums and in television programs, the 150-year-old saga "Fire in the Rice Stacks" lives on. The tale is of an 1854 earthquake that struck the small village of Hirogawa, on the country's central Pacific coast. As the villagers rode out the shaking, a powerful soy sauce maker named Goryo Hamaguchi knew that a tsunami would soon follow. He set fire to his rice fields on high ground, knowing that his fellow

villagers would rush to help him douse the flames, towards safety. All but 36 of the town's 1,300 villagers survived.

This is a very old story, but it is alive and well in Japanese culture. It has been translated into at least nine different languages, fictionalized by a novelist and taught to students and adults around the world. Each year in Hirogawa, the village celebrates Goryo-san's memory with two festivals. The town was building a museum in Goryo's honor when I went to visit, complete with a statue and monument, with words inscribed that explain "What to do when the earthquake hits." (video: *The Wave*; see page 24)

Students in Hirogawa's primary school now include Goryo's story in its curriculum, after school officials asked students 10 years ago what they would do if a tsunami came, and learned that an alarming number said they would go down the hill and look at the waves. When I visited the school in 2005, I got very different answers. "If I was you," said 12-year-old Taiki Kanamaru, when I asked the class what I should do if an earthquake hits, "I would run to the mountainside, or to the other higher places."

Stories like Goryo's are passed down from generation to generation, from one remote province to another. They are colorful enough to entertain children and clear enough to get across a critical message: when you feel the ground shake, run for high ground. This is a country that relies as much on talking to each other, on memories, as it does on superstructures and seawalls.

But there was something else that surprised me on my visit to Japan: how tough they are on themselves, despite how incredibly prepared they seem to be. While researching for the trip, I read newspaper reports that analyzed the country's floodgates, finding 1,200 of the 6,500 incapable of closing before a tsunami hits because there's not enough staff to operate the gates, or no automatic system in place. A survey conducted by the federal Office of Fire and Disaster Management showed only about 14 percent of autonomies in coastal areas have designated buildings where people can take shelter in a tsunami, and 40 percent don't have emergency broadcasting systems. Experts warned of complacency, of people who wouldn't bother to flee because seawalls provided them a false sense of security.

"Most Japanese people still do not fully understand the true terror of tsunami," wrote Fumi Imamura, a leading tsunami researcher at Tohoku University, in a newspaper editorial he wrote in July 2005. "Nor do they know exactly what to do if a tsunami should strike."

After everything I'd seen, to witness this level of self-criticism was nothing short of stunning, coming from a country widely acknowledged to be better prepared than any other in the world. And now I realize that's all part of it, part of how they have gotten this way. They tell their stories and build their seawalls and hold their drills, but

they do not rest on their laurels. They never consider the job done.

Take their self-criticism with some hefty grains of salt, though. Many more people could have died than did. So as we perform the requisite debriefing here, as people mourn the losses an ocean away, and as we ask ourselves what we did and didn't do right when the waves struck our own shores, I hope we remember this: Japan's current nuclear crisis notwithstanding, that country has a lot to teach America about what to do when the earth shakes. We should listen.

From:

<http://www.registerguard.com/web/newslocalnews/26038291-41/tsunami-japan-japanese-earthquake-percent.html.csp>

See also article on page 18

ST. THOMAS (Virgin Islands)

### **Installation of tsunami warning sirens under way**

May 14, 2011

From: <http://en.baomoi.com/Info/Vietnam-tests-its-first-tsunami-warning-system/6/143228.epi>

VIETNAM

### **Vietnam tests its first tsunami warning system**

May 16, 2011

From: <http://en.baomoi.com/Info/Vietnam-tests-its-first-tsunami-warning-system/6/143228.epi>

WASHINGTON

### **Jim Mullen named NEMA president**

On January 14, Jim Mullen began his tenure as president of the National Emergency Management Association (NEMA). Mullen has been the director of the Washington Division of Emergency Management since July 21, 2004. He previously served as director of emergency management for the city of Seattle for 12 years.

For full press release, visit

[www.washingtonresponder.com/external/content/document/1289/990747/1/Washington%20Director%20to%20Lead%20NEMA.pdf](http://www.washingtonresponder.com/external/content/document/1289/990747/1/Washington%20Director%20to%20Lead%20NEMA.pdf)

From: WSSPC E-Newsletter, Spring 2011, p. 3

### **Tim Walsh discusses WA earthquake risk on DNR radio**

On February 28, 2011, Tim Walsh, Washington State Chief Hazards Geologist with the Washington Department of Natural Resources (DNR), Division of Geology and Earth Resources, was featured in a minute-long interview on DNR Radio. In the interview, Walsh highlights the impact of shallow earthquakes, and notes that though

the earthquake risk in Western Washington is higher than Eastern Washington, Eastern Washington does get earthquakes along shallow crustal faults. For audio clips of the interview, or to read the transcription, visit [http://www.dnr.wa.gov/AboutDNR/DNRRadio/Pages/20110228\\_twalsh\\_quakerisks.aspx](http://www.dnr.wa.gov/AboutDNR/DNRRadio/Pages/20110228_twalsh_quakerisks.aspx).

From: WSSPC E-Newsletter, Spring 2011, p. 3

### **Washington state seismic mitigation policy gap analysis—A cross-state comparison from the Executive Summary**

The purpose of this study is to understand how Washington State compares with other states with respect to state-level seismic mitigation policies. This facilitates the identification of potential Washington State policy gaps that might be filled with policies similar to those of other states. This study was accomplished by compiling, synthesizing, and analyzing state-level policies listed in the mitigation plan of 47 states (3 would not be obtained by the completion of the study). A catalog describing each of the compiled policies—legislation or executive orders—was assembled. A spreadsheet database was created in order to synthesize, search, and analyze the policies.

Quantitative analysis was conducted using a cross-state analysis and two different computed indicators based on seismic risk and policy count. The cross-state analysis facilitates a broad assessment of Washington State's policy coverage given its seismic risk, as well as identification of policies from states with more seismic mitigation policies than Washington State.

To download the report, which includes the State Seismic Mitigation Policy Catalog, visit [www.emd.wa.gov/about/documents/HAZ\\_gap\\_analysisoct2010final.pdf](http://www.emd.wa.gov/about/documents/HAZ_gap_analysisoct2010final.pdf)

From: WSSPC E-Newsletter, Spring 2011, p. 11

### **Quileute Tribe cites tsunami threat in bid for land transfer**

Friday April 15, 2011

<http://64.38.12.138/News/2011/001172.asp>

INDIANZ.COM

The leader of the Quileute Tribe of Washington told the Senate Indian Affairs Committee that her people live in constant fear of a tsunami.

Tribal members deal with flooding every winter. With only one road in and out of the reservation, a tsunami would make conditions even worse.

“Thank you for allowing me to speak about how our children and elders could be killed in a tsunami unless we can move our village to higher ground,” Chairwoman Bonita Cleveland testified.

Cleveland asked the committee to support of S. 636. The bill transfers 772 acres within Olympic National Park to the tribe in order to move reservation residents out of danger.

The Obama administration supports the bill.

## Washington Emergency Management Division receives Western States Seismic Policy Council Awards for 2011

Washington Emergency Management Division's (EMD) Train the Trainer Program for Tsunami Public Education has won the Western States Seismic Policy Council's 2011 Overall Award in Excellence for Outreach to the General Public.

The award was presented April 4 to John Schelling, EMD's earthquake and tsunami program manager, at the council's annual meeting in Boise. EMD's program trains a cadre of professionals to serve as tsunami education instructors at the community level. The Train the Trainer program also provides local emergency managers with an additional resource to reach out to their communities. "In today's challenging economic environment, we needed to find a way to continue to support local emergency managers with earthquake and tsunami public education efforts while at the same time making the most effective use of limited resources available," said Schelling. "Training local community members through the Train the Trainer program enables us to do just that." EMD also received a Council Award in Excellence for its Disaster Response Training for the Hospitality Industry on Washington's Coast in the Outreach to Business/Government Category.

From:

<http://www.washingtonresponder.com/go/site/1289>◆

### Book review

#### **2:46—Aftershocks: Stories from the Japan Earthquake** (Kindle edition)

A British teacher living in Abiko city (Japan) lead a volunteer team of bloggers, writers and editors to produce a collection of reflections and images of the Japanese earthquake/tsunami that is being sold as a digital publication, all proceeds to the Japanese Red Cross. The full story of the origin of *Quakebook* (its original title) is online:

<http://www.npr.org/templates/story/story.php?storyId=135004019>. It's an amazing story.

Amazon.com is now handling the distribution of the book, which has accumulated 57 reviews. Here's one: By [Jake Adelstein "investigative reporter, paladin"](#) (Tokyo, Japan) April 12, 2011

I'm in no way an objective reviewer of this book since I contributed a piece to it and I know many of the people who brought it together. On March 11th at 2:46 pm, a 9.0 magnitude earthquake, followed by massive tsunami devastated Japan and nuclear reactors in Fukushima Prefecture. The estimated death toll is expected to reach 40,000.

It is a tragedy of such magnitude that it's hard to wrap your head around it. Numbers are numbers. They have no face; it is hard to feel for figures. *Quakebook* tells the

story of this earthquake and the aftermath in art, essays, short memoirs, and photographs. Each story is moving its own way. There are accounts from those who directly suffered, those who were left in limbo waiting to find out if their loved ones were missing or dead. There are stories of those who could not but help leave Japan after the earthquake as well. Some of the essays are painful to read.

The piece "Positive" is simply about one man watching a news broadcast of a rescue attempt going badly and how he could not watch the rest. If you read it, you'll understand why. There are some things we do not want to know but perhaps should know. That's for each person to decide. It is not only a book of mourning; it is a book of hope.

The book came into existence because one man felt like he could not stand by and do nothing. This book began with his idea and took shape through the hard work of many others. People made enormous sacrifices to make this book into a reality.

Amazon went to great lengths to ensure that all proceeds from this book go directly to the Japan Red Cross, which aids the victims in Japan in many ways. They are not taking a single cent. It is a tremendous act of corporate altruism.

The writing quality in the book is uneven. There are typos as well--the book was rushed together while the memory of the disaster was fresh in the minds of people and also because there are many who still need medical aid, food, blankets, support right now, not months later. Some entries are poorly worded but the sentiments are heart-felt. Yes, there is disparity in the quality of the writing. This is to be expected; this is not a book written by professional journalists or novelists. These are pieces from Japanese citizens, foreign residents, bystanders, witnesses, journalists, artists, and people who are tied to Japan in often nebulous ways. What they have in common is a love for this country, Japan, and for humanity.

I'm very fond of Japanese proverbs and there's one that sums up this book quite beautifully. "Nasake wa hito no tame narazu". It's difficult to translate but what it means is this: the kindness we bestow on others benefits not only them but in some ways ourselves as well. I've often felt the best way to mourn the dead is to help those who remain. Reading this book is one way to do it. ◆

### Blog review

#### **'Do not cry'--A nurse's blog brings comfort to Japan's tsunami survivors**

A nurse who was part of an emergency medical team dispatched from Tokyo, has written about her experiences in [a blog that offers one of the most detailed accounts yet](#) of the tsunami's toll on the tens of thousands who survived. Thanks to [an anonymous translator](#), every word of [her online journal is available in English](#).

Painstakingly tapped into the nurse's mobile phone at the end of exhausting days touring evacuation zones and hospitals, the blog chronicles eight days that begin with trepidation and end with a reluctant return to Tokyo. In between, there are moments of despair and optimism, even humour. And floods of tears.

The blog opens with the nurse preparing for her imminent assignment to Rikuzentakata, a town in Iwate prefecture where 2,000 of the 23,000 residents died and 80% of its 8,000 homes were destroyed.

The blog is an incredible eyewitness account. The Guardian report is also eye-opening. Full report: <http://www.guardian.co.uk/world/2011/may/08/japan-tsunami-nurse-blog-comfort-survivors> ♦

### 2011 WSSPC Awards in Excellence

Awards were presented at the WSSPC Annual Meeting Awards in Excellence Banquet, Monday, April 4, 2011

#### Leadership Award

The Western States Seismic Policy Council is pleased to announce that Dr. James Goltz has been awarded the 2011 WSSPC Leadership Award for inspirational leadership in tsunami hazard mitigation, public awareness, and emergency preparedness for the state of California.

#### Overall Award In Excellence

Award Categories: Outreach to General Public  
Washington State Military Department, Emergency Management Division

Tsunami Public Education Instructor: Train the Trainer (T3) Program

Local Tsunamis Fact Sheet

#### Award Category: Outreach to Schools

Nevada Earthquake Safety Council  
Drop, Cover, and Hold 3-D Animation

#### Award Category: Outreach to General Public

Linda Kozlowski  
Emergency Volunteer Corps of Nehalem Bay

#### Award Category: Outreach to Business/

#### Government

Washington State Military Department, Emergency Management Division  
Disaster Response Training for the Hospitality Industry on Washington's Coast ♦

#### 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>

#### National Tsunami Hazard Mitigation Program (NTHMP) Partners:

<http://nthmp.tsunami.gov/partners.html> (Does not give personnel names or job titles)

National Oceanic and Atmospheric Administration (NOAA)

The United States Geological Survey (USGS)

Department of Homeland Security/Federal Emergency Management Agency (DHS/FEMA)

National Science Foundation (NSF)

State, Territorial, and Commonwealth Partners:

Alaska

Hawaii

Oregon

Washington

California

Texas

Louisiana

Mississippi

Alabama

Florida

Georgia

South Carolina

North Carolina

Virginia

Maryland

Delaware

New Jersey

New York

Rhode Island

Connecticut

Massachusetts

New Hampshire

Maine

Puerto Rico

Guam

American Samoa

U.S. Virgin Islands

Northern Mariana Islands

Marshall Islands

5-20-2011 ♦

#### Trawler's net knocks out earthquake, tsunami monitor

"A wayward fishing trawler has knocked out a key section of the \$100-million Neptune Canada observatory on the sea floor off Vancouver Island.

The trawler was dragging its giant net across the sea floor—in an area where the fishermen are not supposed to go—and hit one of Neptune's platforms, loaded with costly titanium instruments that monitor everything from earthquakes to tsunamis."

Full story:

<http://www.vancouversun.com/news/Trawler+knocks+earthquake+tsunami+monitor/4815366/story.html> ♦

## NEWS

### **The National Level Exercise 2011 Self-directed Tabletop is now available for download**

Thanks to the keen insights and stellar feedback of the private sector, the FEMA Private Sector Division and FEMA National Exercise Division took innovative steps toward consolidating the whole community approach to emergency management. This year the agency created five distinct options for the private sector to participate in the National Level Exercise 2011.

The Option 4 - Self-directed Tabletop (TTX) with complete facilitator notes is available now for download at: <http://www.fema.gov/privatesector/exercises.shtm>. The exercise is posted online in both Adobe pdf and PowerPoint formats for your convenience with full [download instructions](#) for each.

This [self-directed TTX](#), is a scaled down version of the full level play, designed to fully simulate the catastrophic nature of a major earthquake in the central U.S region of the New Madrid Seismic Zone (NMSZ). It includes three mock news videos, and interactive discussion and planning questions, including emergency management planning tools for employees and community members with disabilities and accessibility needs. Please visit the site, test the tool, and share widely with a broad audience, so they can test their capabilities as well.

For more information on the National Level Exercise 2011, please visit the [NLE 2011 Private Sector Participation](#) page. We look forward to hearing your feedback and are pleased to provide you with a convenient, yet meaningful, option to participate in this year's National Level Exercise.

From: Disaster Recovery Journal's Informational Update for Thursday, May 05, 2011  
Disaster Recovery Journal [drj@drj.ccsend.com]; on behalf of; Disaster Recovery Journal [drj@drj.com]

### **IBHS and ICC sign new agreement to help improve building codes**

The Insurance Institute for Business & Home Safety (IBHS) and the International Code Council (ICC) have signed a memorandum of understanding, increasing the role IBHS building science data plays in the creation of new building codes by the ICC.

IBHS offers a suite of voluntary, code-plus "FORTIFIED" standards and guidelines for the design and construction of new homes and light commercial structures, as well as for retrofitting existing homes to strengthen them against natural and man-made hazards. The engineering-based material that comprises the FORTIFIED program elements, along with new building science findings from test conducted at the IBHS Research Center will be used to inform the development of new ICC codes and standards for both wind-related and non-wind related hazards.

For the full press release, visit <http://www.disastersafety.org/newsroom/view.asp?id=13512&Mode=List>

From: WSSPC E-Newsletter, Spring 2011, p. 4.

### **Out of sight, out of mind: Invisible systems are vulnerable, too**

It was with you at the ATM, it was with you in your car; it's probably right in front of you as you read this. Chances are you carry it in your pocket or purse, as well as having it strewn about your house. It helped create all those nifty things you like, too—plowed roads, sewer systems, mountain highways. It makes modern life possible.

It's the Global Positioning System, and it's only a matter of time until we have to live without it. Although you might expect something with the benevolent ubiquity of GPS—which provides time-stamping as well as navigation—to be cherished and closely tended, the truth is, many businesses and individuals use it regularly without ever realizing what a key role it plays.

"The bad news is that people that use it, don't know they use it," Jim Caverly, of the Department of Homeland Security, told scientists at the [Space Weather Workshop](#) in Boulder last week. "Since the system has been so reliable, a lot of people haven't had that aha moment to say this is important to me."

That moment could come sooner than we think. Smooth delivery of GPS signals can be impeded by a number of on-the-ground threats, from handheld jammers to [new wireless technology](#). Add to those worries an upcoming solar maximum, which [can cause geomagnetic storms](#) that interfere with GPS, and you have a recipe for ... well, no one knows exactly what.

"I have been a proponent, rather facetiously, of shutting down GPS for two days and seeing what happens," Caverly said. "It's not a good policy decision but I have no way of knowing how else we'll know what's possible."

Scientists know that disruptions can cause communication shutdowns, power failures, and navigation, traffic, and transport problems. What's less clear is what it could mean to financial systems that use GPS time stamping to qualify transactions.

"A significant failure of GPS could cause lots of services to fail at the same time, including many that are thought to be completely independent of each other," Martyn Thomas, who recently led a Royal Academy of Engineering study that found countries "dangerously reliant" on GPS, told [Agence France-Presse](#).

How emergency agencies might need to respond to such incidents is also murky, but the DHS and the Federal Emergency Management Agency are beginning to address how we can be better prepared for that eventuality, Caverly said.

“This is like pandemic,” he said. “It’s going to happen, we just can’t tell you where or with what amplitude.”  
From: Disaster Research 567, May 5, 2011.

## PUBLICATIONS

### ***Emergency Management journal***

Subscribe! Each issue has 1-3 articles that would be helpful to *TsuInfo Alert* readers, but there isn’t space to include them all. You can subscribe online:  
[www.emergencymgmt.com](http://www.emergencymgmt.com).

### **Coastal inundation toolkit**

<http://www.csc.noaa.gov/digitalcoast/inundation/index.html>

Provides the tools and information communities need to understand and address coastal flooding.

### ***Building Resilient Coastal Communities: Counties and the Digital Coast***

[http://www.csc.noaa.gov/digitalcoast/inundation/\\_pdf/Issue\\_brief.pdf](http://www.csc.noaa.gov/digitalcoast/inundation/_pdf/Issue_brief.pdf)

This publication by the National Association of Counties highlights many of the Digital Coast resources that county officials can use to address coastal flooding, habitat conservation, and land use issues.

### ***JHAZ: Journal of Hazard Mitigation and Risk Assessment***

From linking green building techniques and hazard mitigation to learning the lessons taught by damaging earthquakes, this new journal is aimed at mitigating disaster losses. Published by the National Institute of Building Sciences as part of a push to expand its Multihazard Mitigation Council, the first issue invites readers to join the council, give feedback, and submit articles for future issues.

<http://www.wbdg.org/references/jhaz.php>

From: Disaster Research 566, April 21, 2011

### ***National Media Tsunami Guidebook***

The National Tsunami Hazard Mitigation Program has released the 2011 update to their *National Media Tsunami Guidebook*. To download a copy, visit  
<http://nthmp.tsunami.gov/documents/guidebook-final.pdf>.

### ***Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation’s Preparedness Efforts (2010)***

The National Research Council has released *Tsunami Warning and Preparedness: An Assessment of the U.S. Tsunami Program and the Nation’s Preparedness Efforts (2010)*. This report reviews progress made to strengthen the nation’s tsunami warning and preparation systems, and identifies ways to further improve tsunami preparation efforts. Minimizing future losses of lives and

property caused by tsunamis will require persistent progress across the broad spectrum of efforts reviewed in this report: risk assessment, public education, and warning-center operations.

For information on the report’s findings, and to purchase or read an online copy of the report, visit  
<http://dels.nas.edu/Report/Tsunami-Warning-Preparedness-Assessment/12628>.

From: WSSPC E-Newsletter, Spring 2011, p. 12.

### ***Natural Hazards, Unnatural Disasters: The Economics of Effective Prevention***

Earthquakes, droughts, floods, [tsunamis], and storms are natural hazards, but unnatural disasters resulting from human activity cause deaths and damage. Every disaster is unique, but each one exposes actions by governments and individuals, which, had they been different, would have resulted in fewer deaths and less damage.

The book *Natural Hazards, Unnatural Disasters: The Economics of Effective Prevention* published by the World Bank, examines disasters mostly from an economic perspective. However, it also draws on other disciplines, such as psychology (to examine how people may misperceive risks), political science (to understand voting patterns), and nutrition science to see how undernutrition in children after a disaster impairs cognitive abilities and can affect their productivity as adults. It asks provocative questions, such as: Should all disasters be prevented? Do disasters increase or decrease conflict? Does foreign aid help or hinder prevention? How do growing cities and a changing climate shape the disaster prevention landscape? This book will appeal to government officials, urban planners, aid agencies, NGOs, donors, and other development professionals. The English version can be accessed online:

<http://issuu.com/world.bank.publications/docs/9780821380505>.

From: Disasters Preparedness and Mitigation in the Americas, issue 115, April 2011, p. 10

### ***Disasters Preparedness and Mitigation in the Americas***

The PAHO/WHO newsletter, *Disasters Preparedness and Mitigation in the Americas*, has been available in print format since 1979 and in digital format since 1995. Now the newsletter’s portal, [www.paho.org/disasters/newsletter](http://www.paho.org/disasters/newsletter), allows readers to browse through current and previous issues and a new search engine makes it easier to find specific topics. The newsletter can also be accessed using e-reader systems, on Facebook ([www.facebook.com/PAHODisasters](http://www.facebook.com/PAHODisasters)), and on Twitter ([www.twitter.com/PAHODisasters](http://www.twitter.com/PAHODisasters)).

If you would like to receive the newsletter by e-mail, or if you have changed your e-mail account, please contact us at [disaster-newsletter@paho.org](mailto:disaster-newsletter@paho.org).

From: Disasters Preparedness and Mitigation in the Americas, issue 115, April 2011, p. 10



## WEBSITES

<http://www.safety-maps.org/>  
Safety Maps

It's a simple concept—pick a safe place, plan to meet there in an emergency. Now Safety Maps makes it simpler by helping you create the map, append a message, then print it and stuff it. Whether you're thrown off your game by disaster stress or just can't remember where mom said she'd meet you, all you have to do is check your pocket and you're one step closer to safety.

From: Disaster Research 566, April 21, 2011

[http://itic.ioc-unesco.org/index.php?option=com\\_content&view=article&id=1713&Itemid=2365&lang=en](http://itic.ioc-unesco.org/index.php?option=com_content&view=article&id=1713&Itemid=2365&lang=en)

ITIC's links to reports, media, bulletins about the March 11, 2011 Honshu earthquake and tsunami.

<http://www.tsunamis.fr>

Historical tsunami database for France and its overseas territories.

From: Natural Hazards and Earth System Sciences, v. 11, no. 4, p. 1037.

<http://www.desaprender.org/> (SPANISH)

DesAprender is an interactive web portal that aims to improve the preparation and training of people working in disaster risk reduction at the community level. It provides tools, reports, and access to blogs and forums on a variety of topics relating to disaster preparedness.

The International Federation of Red Cross and Red Crescent Societies (IFRC), a sponsor of DesAprender, and CRID\* (Regional Disaster Information Center) signed an agreement making it possible for CRID to publish information resources on the web portal. To access these resources, visit [www.desaprender.org](http://www.desaprender.org).

From: Disasters Preparedness and Mitigation in the Americas, issue 115, April 2011, back cover.

\* CRID's mission is to promote the development of a culture of prevention in Latin American and Caribbean countries through the compilation and dissemination of disaster-related information and the promotion of cooperative efforts to improve risk management in the Region.

## SOCIAL MEDIA

### **DRJ invites you to join us on LinkedIn**

Our [Disaster Recovery Journal] LinkedIn group is a fantastic place for networking and information-sharing. Sign up today and you will be amongst some of the best continuity planners and practitioners in the industry. This is a great way to make new contacts and share ideas and solutions with others. It is also helpful in career building,

whether you are looking for a new job or just searching for ways to improve your current one. LinkedIn is a business-oriented social networking site and has more than 90 million registered users. We would love to have you join us! <http://www.linkedin.com/groups?gid=117659>

### **Twitter saving lives in wake of Japan disaster**

Link to full report:

<http://www.digitaltrends.com/mobile/twitter-saving-lives-in-wake-of-japan-disaster/>

“According to a [report](#) by the BBC, Japanese doctors are applauding the social networking and microblogging site Twitter, calling it “an excellent system” that allows them to communicate with patients to let them know where they can obtain vital medication. The doctors’ appreciation of the service came to light on Friday after letters were published in *The Lancet*, one of the world’s leading medical journals.

## CONFERENCES

### **August 12-16, 2011**

National Emergency Management Association. Annual conference, Marriott Des Moines, Des Moines, Iowa. <http://www.nemaweb.org/?2068>

### **April 9-11, 2012**

Partners in Emergency Preparedness Annual Conference. <http://conferences.wsu.edu/emergencyprep>

## CLASSES/TRAINING

### **Tsunami training models completed**

The Cooperative Program for Operational Meteorology, Education and Training (COMET®) Meteorology Education Program, has developed two on-line training modules describing tsunami warning systems and tsunami science.

The Tsunami Warning System module, which can be completed in approximately 1 to 2 hours, describes the processes involved in anticipating, detecting, and warning for a tsunami by summarizing data collection, modeling, analysis, and alert procedures used at NOAA's Tsunami Warning Centers.

The Tsunami Science module, entitled *Tsunamis*, delves into the science behind tsunami generation, propagation, and inundation. These fully narrated modules contain numerous graphical data products and photographs, as well as a companion print version. The intended audience includes Weather Forecast Office staff and emergency managers who require a better understanding of the technical aspects of tsunami warning delivery and tsunami science. The content is also appro-

priate for anyone wanting to learn more about tsunamis and the components of tsunami warning systems.

To access this training, please follow these links:  
<http://www.met.ed.ucar.edu/tsunami/warningsystem>  
<http://www.met.ed.ucar.edu/tsunami/tsunamis>

To learn more about COMET®, visit  
[www.comet.ucar.edu/index.htm](http://www.comet.ucar.edu/index.htm)EXHIBITS.

From: WSSPC E-Newsletter, Spring 2011, p. 12.

## SOFTWARE/APPLICATIONS

### Android Disaster Application

The Pacific Disaster Center (PDC) makes worldwide information on hazards and disasters available to Android-based mobile device users. “Disaster Alert,” a free application published by PDC, gives users of devices running Android software access to the PDC Active Hazards.

The term PDC Active Hazards refers to a collection of current and real-time incidents, compiled from authoritative sources on events around the globe. The events in the system have been designated “potentially hazardous to people, property, or assets” by the automated processes of PDC’s DisasterAWARE decision support system and by disaster management professionals who use the system. The Disaster Alert application provides instant access to visualized data on 12 different hazard types, including earthquake and tsunami.

For more details and to download the App, visit  
[http://www.pdc.org/PDCNewsWebArticles/2011/droid/disaster\\_alert.htm](http://www.pdc.org/PDCNewsWebArticles/2011/droid/disaster_alert.htm).

From: WSSPC E-Newsletter, Spring 2011, p. 12.♦

### Et tu, Japan? Even in the best prepared societies, people forget they’re vulnerable

Despite its well-known penchant for preparedness, Japan proved surprisingly vulnerable to a spate of disasters following a 9.0 magnitude earthquake on March 11. Nearly 15,000 people died, thousands of buildings were damaged or destroyed, and officials are only now getting a handle on the shattered nuclear plant at Fukushima. Millions have been left without electricity and water.

Perhaps more frightening than the toll extracted by the mammoth earthquake and tsunami is that the price was paid by what’s considered one of the most disaster aware nations in the world. When strict building codes, early warning systems, and a well-informed, compliant public don’t ensure disaster safety, what’s gone wrong?

The answer, on one hand, is nothing. The Japanese disasters were immense, and had they happened elsewhere, experts say damage and loss of life would have been much greater. But it’s also a mistake to think that all the losses were inevitable.

“Some brief arguments regarding the relative success of Japanese disaster preparedness can still be mentioned,” writes Harvard postdoctoral researcher Jonatan Lassa in the *Jakarta Post*. “First, its coastal towns and cities are often densely populated, which . . . means there is a higher level of exposure to disaster risks. Second, the recent Japanese disasters were not simply a problem because the disaster prevention/mitigation failed, but because there are limits to prevention and mitigation—especially when the exposure to risk is neither reduced nor considered.”

Put more directly, people often live where they shouldn’t, and that happens for a variety of reasons. Perhaps the most under-examined is the loss of “disaster memory,” as *New York Times* environmental writer Andrew Revkin terms it.

“It seems that just about everyone immersed in disaster preparedness and risk mitigation has an example of communities quickly forgetting wrenching lessons from past disasters,” he wrote in a 2008 article on the concept. This was certainly true along the Japanese coastline, which is strewn with ancient markers that have warned generations of people of tsunami danger.

“High dwellings are the peace and harmony of our descendants,” a stone marker near Aneyoshi reads according to the *Associated Press*. “Remember the calamity of the great tsunamis. Do not build any homes below this point.” (see photo on page 7)

The small village paid attention and survived the most recent tsunami, but many more don’t. Nor do they have the collective memory needed to give them a strong sense of the danger.

“It takes about three generations for people to forget,” Tohoku University Disaster Planning Professor Fumihiko Imamura told the AP. “Those that experience the disaster themselves pass it to their children and their grandchildren, but then the memory fades.”

That’s unfortunate, because there are indications that warnings transmitted person-to-person go much further than all the safety drills and public service messages combined. A “megastudy” examining human behavior related to risk determined that people are more likely to engage in risk avoiding behaviors if they see others they know do it, said former Natural Hazards Center Director Dennis Mileti, who worked on the study.

“It’s cues; seeing other people take action,” he said in a recent presentation of the results. “A brilliant social psychologist a hundred years ago described this basic scientific tenet as ‘monkey see, monkey do.’”

Without that relevancy, warnings can easily fade into the daily information barrage. This is especially true after a lull in hazard events, such as the “roughly 40-year period of relative seismic calm,” that existed before this decade, Revkin points out in a recent article on Fukushima. It’s then that people forget to assess their living conditions, communities forget and allow building in risky areas, and governments forget that one catastrophe can

demolish the progress something like a nuclear power plant creates. And in culture after culture, once that forgetfulness sets in, it's only a matter of time before the dangerous status quo returns.

"I always told my parents it was dangerous here," Hiroshi Kosai, whose parents died when the tsunami hit his home town of Natori, told the AP. "In five years, you'll see houses begin to sprout up here again."

From: Disaster Research 566, April 21, 2011 ♦

## 2010 Hazard Mitigation Plans

The following WSSPC members have updated their State Hazard Mitigation Plans for 2010.

Links to the plans are also posted to the WSSPC website at [http://wsspc.org/mitigation/state\\_plans.shtml](http://wsspc.org/mitigation/state_plans.shtml)

### Alaska

[www.ak-prepared.com/plans/documents/SHMP\\_2010\\_UPDATE\\_ENTIRE\\_FINAL\\_COMPLETE.Pdf](http://www.ak-prepared.com/plans/documents/SHMP_2010_UPDATE_ENTIRE_FINAL_COMPLETE.Pdf)

### Arizona

[www.dem.azdema.gov/operations/mitigation/hazmitplan/hazmitplan.html](http://www.dem.azdema.gov/operations/mitigation/hazmitplan/hazmitplan.html)

### California - Enhanced Mitigation Plan

[http://hazardmitigation.calema.ca.gov/docs/2010\\_SHMP\\_Final.pdf](http://hazardmitigation.calema.ca.gov/docs/2010_SHMP_Final.pdf)

### Colorado

[www.coemergency.com/p/mitigation.html](http://www.coemergency.com/p/mitigation.html)

### Hawaii

[www.scd.hawaii.gov/documents/HawaiiMultiHazardMitigationPlan2010PUBLIC.pdf](http://www.scd.hawaii.gov/documents/HawaiiMultiHazardMitigationPlan2010PUBLIC.pdf)

### Idaho

[www.idahoshmpupdate.com/announcements/finaldraftversionoftheupdatedplan](http://www.idahoshmpupdate.com/announcements/finaldraftversionoftheupdatedplan)

### Montana

<http://mt-hmpupdate.com/plan/>

### Nevada - Enhanced Mitigation Plan

[www.nbmg.unr.edu/nhmpc/NV\\_plan\\_2010/index.html](http://www.nbmg.unr.edu/nhmpc/NV_plan_2010/index.html)

### New Mexico Natural Hazard Mitigation Plan

[www.nmdhsem.org/uploads/Text/docs/FINAL\\_NM\\_Plan\\_Sept2010.pdf](http://www.nmdhsem.org/uploads/Text/docs/FINAL_NM_Plan_Sept2010.pdf)

### Utah - Draft

<http://publicsafety.utah.gov/homelandsecurity/UtahHazardMitigationPlan.html>

### Washington - Enhanced Mitigation Plan

[www.emd.wa.gov/plans/washington\\_state\\_hazard\\_mitigation\\_plan.shtml](http://www.emd.wa.gov/plans/washington_state_hazard_mitigation_plan.shtml)

From: WSSPC E-Newsletter, Spring 2011, p. 8 ♦

## Game-changing trends—Population shifts and aging infrastructure beg evolution of emergency management planning

By Margaret Steen

Emergency Management, March/April 2011, p. 24-26, 28. Reprinted with permission

Emergency management can be a reactive field, responding to crises and planning for events similar to those that have already happened. But the field will change as the population shifts, funding streams change and threats like terrorism evolve.

"The world is changing," said Dave Kaufman, director of FEMA's Office of Policy and Program Analysis. "None of us has to look very far to see evidence of the changes in the world around us."

FEMA recently spearheaded the Strategic Foresight Initiative, in which the agency used its expertise and that of others in the emergency management community to "launch an exploration of how the world is changing and what it might portend for emergency management," Kaufman said. "Historically the field of emergency management has not always done a good job of looking ahead and trying to understand the ways those changes are taking place, and what the implications are."

The initiative identified a number of factors that are driving change in the field. Three key issues are: changing demographics, an aging population, and the aging of the country's infrastructure. Even more important, these factors interact with one another, making it even more complicated to anticipate how emergency managers must adapt.

### Changing demographics

The United States' population is growing, but the growth isn't evenly spread across regions. Recent census data show the U.S. population shifting toward the South and West—areas that are vulnerable to hurricanes and earthquakes.

In Florida, for example, a majority of residents live near the coast. The natural beauty and recreational opportunities understandably attract people—but there's a downside.

"Where there's water, there's danger," said Lee Clarke, a sociology professor at Rutgers University in New Jersey. "Rivers flood. If you move to the ocean, there's a risk of tsunami or hurricane."

This trend suggests that emergency managers will need to be able to feed, shelter and in some cases evacuate increasingly larger groups of people in areas that are prone to wide-scale natural disasters.

Other changes in the population also could affect emergency planning. If a particular region sees strong growth in its non-English-speaking population, emergency managers may need to change their communication plans to ensure that everyone understands what's happening in a disaster, said Tim Sevison, deputy director of

planning and preparedness for the Pennsylvania Emergency Management Agency.

Some populations may trust government less overall, he added, which could require a different communication strategy. And although TV and radio have been effective for notifying people about emergencies, it could turn out that the younger part of the population would be likelier to respond to a text message.

#### Aging population

One demographic change that stands out is the aging of the population. People ages 65 and older composed about 12 percent of the U.S. population in 2006. By 2030, this group is expected to make up about 19 percent of the population. This growth will affect the demand for emergency services and the supply of volunteers who provide these services.

An older population could need more help and a different type of help in an emergency, said Amy Donahue, head of the Department of Public Policy at the University of Connecticut. “The retired or geriatric population has a very different set of needs,” she said. There will likely be more people in nursing homes and assisted living facilities. In a disaster, these people will need more help evacuating than younger residents. Some may even need supplies of medication—and some could even be on respirators.

“When we identify shelter and evacuation needs, how are we going to take care of the people who have special needs, who have disabilities?” asked Rick Cox, chairman of the board of directors of the International Association of Emergency Managers.

Donahue said city planners should keep these issues in mind as they build new facilities to house, for example, Alzheimer’s disease patients. In some cases, those approving the projects “haven’t thought about whether the fire or [emergency medical] service can handle that burden, or the more complex issues like the evacuation of special needs populations.”

There’s another way in which an aging population will affect emergency management.

“The first responders are not the people in uniforms,” Clarke said. In the aftermath of an earthquake or other sudden disaster, ordinary people usually help those around them. But the aging of the population could mean more people who need help and fewer who can assist.

“How do you plan for increased numbers of people who are not as well equipped as a 30-year-old to look after themselves and others?” Clarke said. Beyond the aftermath of a catastrophe, many emergency management plans include volunteers. “In a state like ours, the overwhelming majority of non-law enforcement emergency services are [provided by] volunteers,” Severson said. But retirees are less likely to be able to be volunteer firefighters, for example.

Many areas depend heavily on volunteers for day-to-day emergency response and even more during disasters, Donahue said. “We could not pay for the service that we get,” she said. “But if the volunteer work force is aging, retiring and moving, where is that work force to offer those services?”

The positive side of the growing numbers of retirees: a huge group of experienced, skilled people who may be willing to volunteer. “How can we tap into this increased pool of people who may be looking for something to do?” asked Brian Scully, a strategic planning analyst in FEMA’s Strategic Planning and Analysis Division.

#### Aging infrastructure

The population isn’t the only thing that’s aging. The United States’ infrastructure is as well. Bridges, railroads, highways, dams, the electrical grid—are all areas that have “an increased vulnerability that can take a regular disaster and make it more catastrophic,” Scully said.

“We have been, even during times of economic prosperity, fairly myopic about maintaining our infrastructure,” said Art Botterell, a disaster management consultant with Carnegie Mellon University as its Silicon Valley, Calif., campus. “We like to build new things. Maintaining old things is less exciting and less politically gratifying.”

The current economic problems make it even more difficult to do the maintenance that could prevent an infrastructure catastrophe such as a bridge collapse or a gas pipeline explosion—and that’s an area where emergency managers typically have little control.

“All we can do is go to our fellow agencies to ask if they are inspecting,” said David Maxwell, director of the Arkansas Department of Emergency Management and past president of the National Emergency Management Association. “Emergency management is not regulatory in nature.”

Then, of course, emergency managers plan for the worst-case scenario. “If that bridge is not there, then how do we evacuate?” Cox said. “What is our plan if the utility system fails at the time when it’s most needed?”

However, Scully sees an opportunity to make the next generation of infrastructure even better able to withstand a catastrophe. “[At] the end of its natural life cycle, can we invest to make it more resilient, more efficient in the future?”

#### Other factors

Changing demographics and aging population and infrastructure are not the only factors that could force emergency management to change. Another is the budget climate—or as Cox put it, “the expectation versus what the community can afford.” It’s one thing to identify all the parts of the infrastructure that need to be replaced, but that doesn’t mean the money will be there to fix them or to ensure a robust response to a disaster.

“Doing more with less—that’s great if you can do it,” Cox said. “But unfortunately there are certain things that require people to do them.” At some point, the public’s expectations for emergency management may run up against the realities of constrained resources.

If government funding continues to shrink, some emergency services could be privatized. “That would be a fairly significant change,” Scully said. On the other hand, continued budgetary pressures on state and local governments could force the federal government to assume a larger role.

Changes in communications and other technology have already caused significant changes in emergency management. “We did not have the tools yesterday that we do today,” Cox said. “Technology has really helped support emergency managers do their jobs today.”

It also requires an increased level of preparedness for when that new technology fails. “Technology is great. We use it, we embrace it, and we build redundancies to keep it from failing,” Cox said. “But if it does fail, then we’ll have problems if we are dependent on something and we don’t have a backup plan.”

And sometimes the efficiencies that technology allows come at a price. For example, a better ability to track inventory has allowed government agencies, like businesses, to order supplies as they are needed, rather than in big batches. But when a disaster disrupts the supply chain, the lack of extra supplies can be a problem.

“There are strong near-term incentives to squeeze the fat out of our inventory,” Botterell said. But the risks of doing so can put emergency managers in an awkward spot. “We wind up having to argue that some degree of inefficiency in all our systems is a good thing, and there’s not a strong constituency for that point of view,” he said.

Improvements in communications have also gotten the public accustomed to having access to information in real time. This puts more pressure on decision-makers to act quickly and transparently, Scully said. However, it also gives government more options in terms of crowd-sourcing information.

Finally, the threats are constantly evolving. International terrorism wasn’t as prominent a threat before 9/11, but after the attacks it took center stage. It’s not clear how large a role it will play in the future.

“Just about every one of these drivers is a game-changing trend,” Scully said.

#### Interconnectedness

More crucial than any one factor, however, is the way these drivers of change interact with one another.

“We have, in some places, infrastructure already under stress, and people moving to those areas and aging at the same time,” FEMA’s Kaufman said.

A growing population can increase stress on the infrastructure—and infrastructure failures can complicate evacuation plans in case of disaster. “The ability to

compound the disasters by continually adding population seems to be more focused on the earthquake-prone and hurricane-prone areas,” Sevison said.

There also are monetary implications. A growing elderly population can strain government budgets through pension payments and increased demand for services. “How does all that play into the amount of resources available for emergency management?” Scully asked.

#### The future of emergency management

So how will emergency management change, given this complicated vision of the future? One change that’s already under way but that many expect to continue is increased coordination and cooperation among local governments and other emergency planners, as well as among different levels of government.

This change was accelerated by the 9/11 attacks. After the attacks, emergency management was heavily focused on helping law enforcement try to prevent the next attack, which brought increased emphasis on region cooperation.

“We couldn’t face the post-9/11 threats,” Sevison said. “We had to look at cost sharing and resource sharing. Still, that doesn’t make local planning obsolete. “Fundamentally, disasters are local events,” Clarke said. “That means that planning and execution of disaster plans need to happen at the local level.”

Another certainty about the future is uncertainty. Even a trend as seemingly unstoppable as the aging of the population comes with caveats. “The advancement of life-altering medications and treatments could significantly increase not only life spans, but the quality of life as we age as well,” Scully said. This could mean that the predictions of large numbers of nursing home residents needing help in an evacuation do not come to pass.

Because of all the uncertainties, one thing is clear: Emergency managers will need to prepare for multiple disasters and the multiple effects of those disasters.

“Plan A is: We’ll try to do it this way,” Cox said. “Then plan B and plan C. A good emergency manager has got somebody working on Plan D.”

Margaret Steen is a writer in Los Altos, Calif., who writes frequently about business and management. ♦

#### Responsible social media

By Adam Crowe

Emergency Management, January/February 2011, p. 58  
Reprinted with permission

As reports like the recent American Red Cross study continue to indicate an increasing impact of social media in emergency management and disasters such as the Deep-water Horizon oil spill continue to dominate the proverbial Twittersphere and blogosphere, the issue of responsible social media use has not been fully addressed.

Specifically emergency responders and citizens need to establish and accept rules for proper social media use during emergencies and disaster to ensure responder and citizen safety as well as incident preservation. For instance, emergency incident scenes have long been controlled (or at least defined) by protective barriers like the proverbial “yellow tape.” However, as the use of photo- and video-integrated mobile phones continues to rise, this traditional scene control nearly evaporates. Real-time, potentially accurate information can be posted via text, video or photo by any citizen with a clear view of the scene. This level of access can be dangerous to both the general public and first responders.

For example, what if a local law enforcement agency responded to a neighborhood based on a report of a hostage situation in a home related to domestic violence? Because of the response scene’s equipment, resources and specialized responders, dozens (if not more) comments, photos and videos are posted on Facebook, Twitter and YouTube by neighbors because they are shocked at the scene and fascinated by the novelty. Because of natural (and pre-existing) connections between the neighbors, the person of interest holding the hostage is now potentially aware of many of the response actions the law enforcement agency has set up, including descriptions of team uniforms, response tactics, position of personnel and type of equipment in use. This level of awareness means that the traditional protective strategies in place are vulnerable because of social media use.

Likewise, if a natural disaster, such as a tornado or earthquake, happened in a community, many local citizens would seek ways to capture information about the disaster, including pictures, videos, and firsthand accounts. This public response is caused by many reasons, including the novelty of such an event impacting their lives as well as the encouragement of local media outlets to provide citizen journalism reports of the event. Citizens often make this desire to witness the event the priority rather than calling 911. Much like the first responders mentioned above, this type of situation puts local citizens in significant danger from the disaster conditions.

Consequently local citizens, traditional media, emergency managers and local community leaders must identify rules to follow when using social media during emergencies or disasters to ensure the safety of citizen and responders. The following rules (or commandments) are proposed as a jumping-off point in the discussion of citizen responsibility for safe and effective social media use:

I will not put emergency responders and other public safety officials in harm’s way by using social media.

I will not put myself or those around me at risk by using social media.

I will not redistribute disaster-related content unless it’s been confirmed by two different trusted sources.

I will not expect a response via social media from an emergency response agency unless it has stated that this will be supported.♦

## Material added to the NTHMP Library

May - June 2011

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 Red Cross Multidisciplinary Team, 2011, Report on the 2010 Chilean earthquake and tsunami response: U.S. Geological Survey Open-File Report 2011-1053, 68 p.

Choi, B. H.; Kaistrenko, V.; Kim, K. O.; Min, B. I.; Pelinovsky, E., 2011, Rapid forecasting of tsunami runup heights from 2-D numerical simulations: Natural Hazards and Earth System Sciences, v. 11, no. 3, p. 707-714.

Gardi, A.; Valencia, N.; Guillande, R.; Andre, C., 2011, Inventory of uncertainties associated with the process of tsunami damage assessment on buildings (SCHEMA FP6 EC co-funded project): Natural Hazards and Earth System Sciences, v. 11, no. 3, p. 883-893.

Krausmann, E.; Cozzani, V.; Salzano, E.; Renni, E., 2011, Industrial accidents triggered by natural hazards--An emerging risk issue: Natural Hazards and Earth System Sciences, v. 11, no. 3, p. 921-929.

Lambert, J.; Terrier, M., 2011, Historical tsunami database for France and its overseas territories: Natural Hazards and Earth System Sciences, v. 11, no. 4, p. 1037-1046.

Munch, U.; Rudloff, A.; Lauterjung, J., 2011, "The GITEWS project—Results, summary and outlook": Natural Hazards and Earth System Sciences, v. 11, no. 3, p. 765-769.

Myers, Reed; Tapanila, Leif, 2010, Two-stage tsunami resurge deposition in the wake of the Alamo impact, Lincoln County, Nevada [abstract]: Geological Society of America Abstracts with Programs, v. 42, no. 5, p. 306.

Papadopoulos, G. A.; Diakogianni, G.; Fokaefs, A.; Rangelov, B., 2011, Tsunami hazard in the Black Sea and the Azov Sea--A new tsunami catalogue: Natural Hazards and Earth System Sciences, v. 11, no. 3, p. 945-963.

Saunders, W. S. A.; Prasetya, G.; Leonard, G. S., 2011, New Zealand's next top model—Integrating tsunami inundation modelling into land use planning: GNS Science Miscellaneous Series 34, 37 p. ♦

# INFREQUENTLY ASKED QUESTIONS

## **How many U.S. coastal states are partners in the National Tsunami Hazard Mitigation Program?**

29.

From: National Tsunami Hazard Mitigation Program, 2010, National media tsunami guidebook: National Tsunami Hazard Mitigation Program, 44 p.

URL: <http://nthmp.tsunami.gov/documents/guidebook-final.pdf>

## **Can you name the four steps of the Tsunami Warning Center product flow chart?**

Step 1 Pacific Tsunami Warning Center and/or West Coast/Alaska Warning Center issue a tsunami warning/advisory/watch/information message.

Step 2 This message is received by the National Weather Service (NWS) Forecast Offices, state/provincial, county, local emergency services offices, broadcasters, Emergency Alert System, other federal agencies, international partners, and the public

Step 3 County/local officials issue county/local tsunami or evacuation (when needed) message.

Step 4 This message is received by local jurisdictions, broadcasters and the public.

From: National Tsunami Hazard Mitigation Program, 2010, National media tsunami guidebook: National Tsunami Hazard Mitigation Program, p. 7

URL: <http://nthmp.tsunami.gov/documents/guidebook-final.pdf>

## **What are the four levels of tsunami warning messages?**

1. Warning – Danger! Run for high ground and follow emergency instructions.
2. Advisory – Possibly dangerous local currents. Move off the beach and stay out of the water.
3. Watch – Potential danger. Stay tuned for more information.
4. Information statement – Relax. No local danger, but a distant ocean basin may be in danger.

NOTE: This list is in order of highest to lowest tsunami alert and pertains to tsunami alerts for the U.S. and Canada. International products may have different definitions based on agreements with the Intergovernmental Oceanographic Commission (IOC).

From: National Tsunami Hazard Mitigation Program, 2010, National media tsunami guidebook: National Tsunami Hazard Mitigation Program, p. 9..

URL: <http://nthmp.tsunami.gov/documents/guidebook-final.pdf>

## **Hawaii is experiencing a drop in tourism by the Japanese, by what percent?**

According to Bloomberg Businessweek, “The Council on Revenues...[noted] a 25 percent drop in Japanese visitors since the March 11 earthquake and tsunami.”

From: Bloomberg Businessweek, March 30, 2011, Hawaii budget troubles worsen following tsunami, by Mark Niese.

<http://www.businessweek.com/ap/financialnews/D9M9HTI80.htm>

## **What is the rule of thumb about the magnitude of earthquakes that generate tsunamis?**

“Earthquakes of large magnitude (>M 7.0 Richter scale) result in the generation of tsunamis.” Marine Geology, v. 34, no. 1, p. 29 (2011).



## VIDEO-CD-DVD RESERVATIONS

To reserve tsunami videos, CDs or DVDs, contact Lee Walking, Division of Geology and Earth Resources Library, 1111 Washington St. SE, MS 47007, Olympia, WA 98504-7007; or e-mail [lee.walking@dnr.wa.gov](mailto:lee.walking@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 information. 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.

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. ♦



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