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It has been reported that emails to the editor (lee.walking@dnr.wa.gov) have been bounced back or have received an error message. It is still the correct work email address. (If you type the address, make sure there are two L's in my last name.) However, if you still encounter problems contacting me via email, try the alternative route via TsuInfoAlert@gmail.com.

VIDEOS

The list of videos available for loan (VHS, CD and DVD) are listed on page 24. The list is included in every issue.

IMPORTANT

In compliance with the results of the NTHMP Partners survey asking that *TsuInfo Alert* feature reports from all the geographic areas covered by the program, *TsuInfo Alert* will begin leading each issue with a report from a different locale. Since the Partners do not meet that often, it was decided to assign them issues/dates and get started.

The report can be on any aspect of your emergency management mission or program for tsunami mitigation and preparedness...whatever you think is important about the work you do, or is valuable for other readers, or is just a good topic for discussion. Send it as a WORD document, please. Deadlines will usually be the 20th day of the month prior to the issue's release.

Here is the assigned schedule:

		2010	
October issue	Alabama Emergency Management		Deadline for submission: Sept. 20
December issue	Alaska Emergency Management		Deadline for submission: Dec. 1 (editor on vacation)
		2011	
February	American Samoa		Deadline for submission: Jan. 20
April	California		Deadline for submission: Mar. 21
June	Commonwealth of the Northern Mariana Islands		Deadline for submission: May 20
August	Connecticut		Deadline for submission: July 20
October	Guam		Deadline for submission: Sept. 20
December	Florida		Deadline for submission: Nov. 21

(continued on page 3)

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Washington Department of Natural Resources
Division of Geology and Earth Resources
1111 Washington Street SE, MS 47007
Olympia, WA 98504-7007
360/902-1473
fax: 360/902-1785
e-mail: lee.walkling@dnr.wa.gov
TsuInfoAlert@gmail.com

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2012

February	Georgia
April	Hawaii
June	Louisiana
August	Maine
October	Maryland
December	Massachusetts

2013

February	Republic of the Marshall Islands
April	New Jersey
June	New York
August	North Carolina
October	Oregon
December	Palau

2014

February	Puerto Rico
April	Rhode Island
June	South Carolina
August	Texas
October	U.S. Virgin Islands
December	Virginia

2015

February	Washington
April	Delaware
June	New Hampshire
August	Micronesia
October	Mississippi
December	Pennsylvania ♦

Selling emergency management

By Eric Holdeman

Emergency Management, v. 5, no. 3, p. 64

Reprinted with permission

When you look at job descriptions in emergency management, you find titles like program manager and director. The responsibilities might include disaster mitigation, preparedness, response and recovery. However, the unspoken job function that comes with every emergency management position is that of marketing.

Put more crudely, it means you must “sell emergency management” to a variety of people and organizations. The list is endless and there isn’t an element of your public or private community that doesn’t need what emergency management has to offer.

You might be scratching your heads at this notion that you are a salesperson with a job of having people buy into emergency management so let’s start with the basics:

No one wants to be sold anything—they want to be buyers. The good thing about being in your position is

that people won’t immediately recognize that you’re selling something and they’re the potential buyers. That will remove a few barriers to make the sale.

Remember that you’re selling the benefits and not the features of emergency management. Think about trying to sell four-wheel drive or air conditioning in a car. The wrong thing to do is talk about how it works, what it costs and how to operate it. Instead, the idea is to describe what it can do for the buyer.

Before you start selling emergency management, you must know what the buyer wants. You do this by first listening and then working to build a relationship with the buyer. It may take some time to build rapport with a particular individual or organization. The key is maintaining contact. Add them to your e-mail lists for information on grant programs, informational seminars and the like. Doing this will help build trust.

Think about timing and when it’s best to have a sale. The answer is when people are motivated to buy. When is that in emergency management? When there’s a disaster. Anytime there’s a catastrophe anywhere in the world is a good time to push your emergency management wares.

Update your Web page with information on how people can help with disaster relief efforts. Some emergency management organizations also use Facebook and Twitter to disseminate information.

If you’re a part of a government organization, one of your customer segments is your jurisdiction’s elected officials and senior appointed policymakers. Your job is to make them look good all the time. Here are a few tips for keeping them engaged:

Keep them informed on incidents happening in their jurisdiction and neighboring ones. People like to be in the loop, and you can build a strong relationship just by keeping them informed with an occasional e-mail or phone call.

Include them in every public event you have. If you are having a disaster presentation in an elected official’s district, invite him/her to attend. Offer them an opportunity to give opening remarks and provide them with a few talking points to make it easy for them.

Include a quote in your news releases (coordinated, of course) from the elected official on the topic you’re addressing.

Lastly, in these circumstances, the media is often your friend. They provide free advertising by covering your messages. Get to know the assignment editors and news directors for your local television and radio stations.

Happy selling—and sorry, there are no sales commissions.

About the author:

Eric Holdeman is the former director of the King County, Washington, Office of Emergency Management. His blog is located at www.disaster-zone.com ♦

FCC and first responders set to tussle over newest piece of communication pie

Reprinted from *Disaster Research* 549, June 17, 2010

Contentiousness is in the air today as groups representing emergency responders and the Federal Communications Commission prepare to tell Congress why the other shouldn't control of a key piece of the wireless broadband spectrum.

At issue is a new block of the spectrum—often referred to as the D Block—that the FCC is attempting to auction to private communication companies, according to a *New York Times* article. The FCC is hoping to capitalize on wireless providers looking for bandwidth to support the next generation of mobile technology. Public safety officials, however, were hoping to expand into the D Block—right next door to their existing spectrum space—and create a network dedicated to public safety use.

Although the pressing need to create an interoperable network for emergency response is generally agreed upon, the FCC holds that dedicating the D Block to public safety isn't necessarily the answer. A [white paper](#) issued by the Commission this month states there is already more than enough bandwidth dedicated to public safety for daily operations and the boost given by the block would do little to meet responder needs in worst-case scenarios. The paper goes on to indicate response agencies could make more efficient use of their existing spectrum.

The Commission supports auctioning the D Block—the proceeds of which would go towards the estimated \$6.5 billion cost of building the block—and allowing emergency communications to supersede other uses when necessary, according to a *Politico* article. A bill before the House Subcommittee on Communications, Technology and the Internet today will discuss setting aside funds for a private bidder to eventually build and operate the dedicated network elsewhere on the spectrum.

"This plan is like providing public safety with its own expandable, high speed lane, and it is a cost-effective investment in a national asset," the article quoted FCC Public Safety and Homeland Security Bureau Chief Jamie Barnett as saying. "Merely allocating an additional 10 MHz to public safety would be like building a separate, stand-alone highway system, and one so expensive that it would not even reach every community in America for years."

Still public safety officials say they need that stand-alone highway to make sure they don't get caught in traffic while trying to respond to emergencies and disasters, according to the [Public Safety Alliance](#), a group formed specifically to address matters related to building a dedicated wireless response network. They contend that responders will face holes in coverage, even when given priority on the network, and that public safety experts need to be in control of their communications.

"It's got to be a system that is run by public safety," former FEMA director and Alliance founder R. David Paulison told *Politico*. "We're selling our souls and the future of our first responders."

The push and pull between the two groups might not be the only issue driving the debate, however. There are indications that large telecommunications companies might be trying to throw the match, according to *Bloomberg Businessweek*. By throwing their hats and wallets into the ring with the Public Safety Alliance—whose membership is made up of organizations such as the International Association of Fire Chiefs, the National Sheriffs' Association, the Association of Public-Safety Communications Officials, and others—AT&T and Verizon Wireless could be trying to remove the new spectrum from the auction block, leaving smaller competitors at a disadvantage.

"This is all about AT&T and Verizon trying to keep their spectrum advantage," the magazine quoted Public Knowledge legal director Harold Feld as saying.

While not denying the affinity, Verizon spokesman Jeffrey Nelson pointed out that the groups are naturally allied by a common frustration—communication break down, especially when it's needed most.

"We're saying what public safety says," Nelson said. "This has been a mess for far too long." ♦

NASA demonstrates tsunami prediction system

June 14, 2010; RELEASE: 10-139

Dwayne Brown , Headquarters, Washington

dwayne.c.brown@nasa.gov

Alan Buis , Jet Propulsion Laboratory, Pasadena, Calif.

alan.buis@jpl.nasa.gov

WASHINGTON -- A NASA-led research team has successfully demonstrated for the first time elements of a prototype tsunami prediction system that quickly and accurately assesses large earthquakes and estimates the size of resulting tsunamis.

After the magnitude 8.8 Chilean earthquake on Feb. 27, a team led by Y. Tony Song of NASA's Jet Propulsion Laboratory in Pasadena, Calif., used real-time data from the agency's Global Differential GPS (GDGPS) network to successfully predict the size of the resulting tsunami. The network, managed by JPL, combines global and regional real-time data from hundreds of GPS sites and estimates their positions every second. It can detect ground motions as small as a few centimeters.

"This successful test demonstrates that coastal GPS systems can effectively be used to predict the size of tsunamis," said Song. "This could allow responsible agencies to issue better warnings that can save lives and reduce false alarms that can unnecessarily disturb the lives of coastal residents."

Song's team concluded that the Chilean earthquake, the fifth largest ever recorded by instruments, would gen-

erate a moderate, or local, tsunami unlikely to cause significant destruction in the Pacific. The tsunami's effect was relatively small outside of Chile.

Song's GPS-based prediction was later confirmed using sea surface height measurements from the joint NASA/French Space Agency Jason-1 and Jason-2 altimetry satellites. This work was partially carried out by researchers at Ohio State University, Columbus.

"The value of coordinated real-time observations from precision GPS, satellite altimetry and advanced Earth models has been demonstrated," said John Labrecque, manager of the Solid Earth and Natural Hazards program in the Earth Science Division of NASA's Science Mission Directorate in Washington.

Song's prediction method, published in 2007, estimates the energy an undersea earthquake transfers to the ocean to generate a tsunami. It relies on data from coastal GPS stations near an epicenter, along with information about the local continental slope. The continental slope is the descent of the ocean floor from the edge of the continental shelf to the ocean bottom.

Conventional tsunami warning systems rely on estimates of an earthquake's location, depth and magnitude to determine whether a large tsunami may be generated. However, history has shown earthquake magnitude is not a reliable indicator of tsunami size. Previous tsunami models presume a tsunami's power is determined by how much the seafloor is displaced vertically. Song's theory says horizontal motions of a faulting continental slope also contribute to a tsunami's power by transferring kinetic energy to the ocean.

The theory is further substantiated in a recently accepted research paper by Song and co-author Shin-Chan Han of NASA's Goddard Space Flight Center, Greenbelt, Md. That study used data from the NASA/German Aerospace Center Gravity Recovery and Climate Experiment (GRACE) satellites to examine the 2004 Indian Ocean tsunami.

When the Feb. 27 earthquake struck, its ground motion was captured by the NASA GDGPS network's station in Santiago, Chile, about 146 miles from the earthquake's epicenter. These data were made available to Song within minutes of the earthquake, enabling him to derive the seafloor motions. Based on these GPS data, Song calculated the tsunami's source energy, ranking it as moderate: a 4.8 on the system's 10-point scale (10 being most destructive). His conclusion was based on the fact that the ground motion detected by GPS indicated the slip of the fault transferred fairly little kinetic energy to the ocean.

"We were fortunate to have a station sufficiently close to the epicenter," said Yoaz Bar-Sever, JPL manager of the GDGPS system. "Broad international collaboration is required to densify the GPS tracking network so that it adequately covers all the fault zones that can give rise to large earthquakes around the world."

For information about NASA and agency programs, visit:

<http://www.nasa.gov>

From:

http://www.nasa.gov/home/hqnews/2010/jun/HQ_10-139_Tsunami_Prediction_System.html ♦

About the Tsunami Society International and its award-winning scholarly journal

TSI is a nonprofit organization dedicated to promoting awareness and mitigation of the adverse impact of tsunamis on humanity. The Society furthers the concept that the impact of tsunami disasters transcends national boundaries and interests and, therefore, encourages regional and international cooperation for research, public education and preparedness.

To accomplish these goals, TSI holds Tsunami symposiums and workshops every two or three years, for the purpose of presenting recent advances in research, early warning systems and technology. The Fourth International Tsunami Symposium was held in Toronto, Canada on July 25-29, 2010. Also, since 1982, the Society has been publishing, free of charge, its Open Access, international, scholarly journal, "Science of Tsunami Hazards."

This is the only peer-reviewed journal in the world specifically dedicated to the dissemination of knowledge about tsunamis, research advances, programs of preparedness and strategies for mitigating losses of lives and destruction of property. TSI maintains and archives an extensive electronic database of all its past publications for the last 30 years at its own website and at mirror sites made available at the Los Alamos National Laboratory, the DOAJ electronic database maintained by the University of Lund in Sweden and at The National Library, The Hague, Netherlands.

More recently, the Society was invited to have "Science of Tsunami Hazards" included in EBSCO Publishing databases, which will give the journal additional global exposure and readership in the databases of 90% of the academic institutions worldwide, including nation-wide access to databases in more than 70 countries

From: drgeorgepc [drgeorgepc@yahoo.com] July 11, 2010

<http://tsunamisociety.org> ♦

FEMA all hazard preparedness campaign continues

Wed, 28 Jul 2010 16:58:48 -0500

SAN JUAN, Puerto Rico -- On July 12, 2010, the Federal Emergency Management Agency (FEMA) launched an All Hazards Preparedness Campaign in hardware stores to advise people on how to rebuild implementing mitigation measures and how to prevent future damages. More than 1,600 persons have been reached and this effort will continue in stores located in the 10 municipalities designated to receive federal aid under FEMA's Public Assistance program for Infrastructure damages, after the May 26-31, 2010 storms and flooding event. ♦

REGIONAL REPORTS

CALIFORNIA

California disaster corps tightens integration of volunteers, first responders

<http://www.emergencymgmt.com/disaster/California-Disaster-Corps-Volunteers.html>

By Corey McKenna, July 14, 2010

Reprinted with permission from *Emergency Management Journal*



[Photo: California Gov. Arnold Schwarzenegger toured volunteer field demonstrations at the launch of the Disaster Corps program. Courtesy of Peter Grigsby/Office of the Governor.]

California Gov. Arnold

Schwarzenegger announced in June the formation of [Disaster Corps](#), a group of highly trained and vetted volunteers tied closely to the state's mutual-aid system. The corps provides a network of volunteers ready to respond to emergencies. The initiative provides \$1.15 million (through U.S. Department of Homeland Security grants) spread over five counties for additional training and FBI/Department of Justice background checks for Disaster Corps applicants, as well as new county staff positions responsible for coordinating volunteers during disasters.

About 1,000 volunteers will be categorized by capabilities, and the corps will initially be fed by programs in San Francisco, Los Angeles, San Bernardino, Riverside and San Diego counties. Background checks will be conducted for each volunteer, and they will be certified in Red Cross CPR and first aid. A new statewide Disaster Volunteer Resource Inventory (DVRI) will house the volunteers' contact information, affiliations and training information to facilitate their utilization during disasters.

Volunteers aren't always included in emergency managers' responses to disasters; and a mutual-aid mechanism for the use of volunteers outside their sponsoring jurisdiction didn't exist in California before the establishment of Disaster Corps, according to the state's Cabinet Secretary for Service and Volunteering Karen Baker.

Nor do volunteers undergo background checks in all cities and counties. "In Los Angeles that was never even something that was thought of when it first started with the CERT [Community Emergency Response Team] program," said Stacy Gerlich, commander of the Los Angeles Fire Department's CERT program. "But for us with 4,500 [CERT trainees] a year, there's no way, even if you just look at the cost involved."

The Disaster Corps creates a set of standards that participating volunteers are expected to meet, so emergency managers who use them know what to expect.

"This enhances [our corps of volunteers] and gives us the ability to have a tighter network, so to speak, of ready-to-go volunteers on short notice that we can reach out to, communicate with on an ongoing basis, train with on an ongoing basis, and also provide assistance for outlying counties," said Wilson Lee, CERT coordinator for the Los Angeles County Sheriff's Department. "What this gives us is sort of the elite volunteers, the ones that understand the Incident Command System, that have some basic knowledge of communications, know the chain of command and know that they might just be doing tasks they've never been trained to do."

It may also make emergency managers more comfortable using volunteers because they will have a clearer idea of who's expected to pay for housing and feeding the volunteers, and who will manage and account for them. "So you as a city administrator, a chief or a county office emergency manager could say, 'Well, at least I know when I request them they're going to come as a package. They're going to come with a management piece. They're going to come with paperwork, and we're going to know how to integrate them. 'I think that's what's important,'" Lee said.

This new initiative will also help channel the efforts of spontaneous volunteers who may have a professional skill they wish to lend to response efforts. These volunteers might be professionals who can lend their services, and the initiative will provide a structure to do that in way that's in line with federal accountability, liability and reimbursement rules relative to disasters.

Elevating volunteers' visibility

In a disaster, local emergency managers could be focused on the immediate response and may overlook the assistance they could receive from properly trained and vetted volunteers, Baker said. "In this case, they would be able to push the DVRI button, immediately see who in their local jurisdiction does debris removal [and] utilize those resources," she said.

Additionally if the local emergency managers had trouble tapping those resources, they could reach out through the Standardized Emergency Management System (SEMS) to request Disaster Corps assistance. In addition to integrating Disaster Corps into SEMS, the next version of the state's emergency plan, which is in the process of being finalized, will define an additional emergency services function for volunteers.

The Disaster Corps is planned for volunteers with experience in mass care feeding and sheltering, law enforcement and radio operations. Other volunteer specialties are planned to be added as the program matures.

Disaster Corps members will have their names, contact information, training and capabilities entered into a

Web-based database, the DVRI, available to all emergency managers, volunteer coordinators, nonprofits and faith-based organizations that want to provide disaster assistance in the state.

The DVRI will include information on each volunteer organization, the service it provides, its capacity and location, how many personnel are sworn disaster service workers and how many volunteers are deployed. Officials in the five counties participating in the program's roll out see the corps as increasing training and coordination between volunteers and first responders.

The Los Angeles Disaster Corps has started selecting approximately 200 volunteers, out of the county's 5,000 CERT members, to be a part of the statewide program. "In the middle of July we're going to have a process that we, internally in our department, will create that will allow our volunteer coordinators the ability to preselect through an application process or through some kind of check-off sheet on whether the volunteer wants to be in it, what skill sets they have [and] when they're available," Lee said.

San Francisco is planning to set up a center to place spontaneous volunteers in positions with the city as well as nonprofits assisting in the response. Amy Ramirez, an emergency planner and Disaster Corps program lead with the San Francisco Department of Emergency Management, said the new volunteer coordinator will have a bird's-eye view of volunteer programs in the city and could identify opportunities, including tapping the many Recreation and Parks Department volunteers for disaster response. "One of the things we're going to do here in San Francisco is to have that person start looking at city departments that use volunteers on a day-to-day basis and figure out if it makes sense to affiliate those volunteers so we can use them in a disaster."

Private-sector organizations earn a seat in the Emergency Operations Center

By David Rath

May 17, 2010

From: <http://www.emergencymgmt.com/disaster/Private-Sector-Organizations-Emergency-Operations-Center.html?page=1&>

The October 2007 Southern California wildfires were a severe test of the state's emergency management capabilities. While 1,500 homes were destroyed and more than 500,000 acres of land burned, almost half a million people were evacuated from their homes. The devastating fires were also a test of the state's new emphasis on public-private partnerships in disaster response.

As the fires began burning across Southern California on Oct. 20, Peter Ohtaki, executive director of the California Resiliency Alliance, and Jill Rulon, senior vice president of the California Grocers Association, made their

way to the State Operations Center (SOC) in Sacramento, Calif., to serve as liaisons between the state emergency management team and their member business organizations.

As representatives of the business community, Ohtaki and Rulon were given access to situation reports twice a day and distributed the highlights to partner business organizations and companies via e-mail. They also relayed requests for information from partners.

"One bank requested the evacuation areas by ZIP code so they could assess the impact on employees and customers to put mortgage payment forgiveness in place," Ohtaki said. "So we were able to put that information together for them." There were many questions about the impact on utilities in San Diego County, and representatives of the California Utilities Emergency Association also were in the SOC to share information on the power grid's status.

Rulon worked with suppliers to send food and 300,000 bottles of water to the shelters that needed them most.

"There was lots of media attention on Qualcomm Stadium, so many organizations just sent relief aid there, but actually there were many other shelters that needed aid directed to them," Ohtaki said. "What went wrong during Katrina went right during those wildfires. People generously donating food and supplies were much better directed."

The change after Katrina

If 9/11 was a cruel awakening to the fact that the United States needed to beef up its domestic security, Hurricane Katrina was the watershed moment when people realized that emergency management officials couldn't respond adequately to major disasters without better coordinating efforts with the private sector. And during Katrina, corporations such as Wal-Mart and other large retailers used their sophisticated logistics infrastructure to help communities bounce back.

"Katrina was a wake-up call to governments that they couldn't handle the response themselves," said Lynne Kidder, senior vice president for public-private partnerships at the Business Executives for National Security (BENS). "There were a lot of 'Aha!' moments during Katrina — for nongovernmental organizations, private businesses and civic leadership."

By improving communications with government agencies, private utilities can speed the repair of power, water and other services. An association of grocers can access its network to provide food, water and other supplies to emergency responders and evacuation centers.

Since 2002, BENS has been working to help establish partnerships between emergency management teams and businesspeople with an interest in the community's resilience. It has established organizations in Colorado, New Jersey, Georgia, Kansas, California, and Iowa.

“Before Katrina, this was really a hard sell,” Kidder said. “The business people would say it wasn’t their job, and the government leaders would say they’ve got this under control. That all really changed after Katrina.”

The drive to improve communications with the private sector has been under way in California for several years.

Legislation that passed in 2005 directed government agencies to set up a voluntary program to integrate private businesses and nonprofit organizations into governmental disaster planning programs. In 2006, Gov. Arnold Schwarzenegger signed Executive Order S-04-06, which called on the California Emergency Management Agency (Cal EMA) to formally make the private sector part of the state’s disaster response system. Cal EMA has signed memorandums of understanding with groups like the California Grocers Association, the California Utilities Emergency Association, Wal-Mart Stores Inc. and Target Corp.

The effort has two main goals, said Tina Curry, assistant secretary of Cal EMA’s Planning, Protection and Preparedness Division. One is to help businesses that have a statewide presence get more situational awareness; the other is to improve resource sharing. Many statewide businesses have sophisticated infrastructure for dealing with disasters and a lot to offer, she said. “The name of the game is becoming more efficient and prompt at prioritizing which things are needed urgently and which can wait. That’s why we have developed a Business and Utilities Operations Center in our Emergency Operations Center,” Curry said. “Every disaster is different and a dynamic situation. We need that ongoing dialog.”

Wal-Mart’s role

One private-sector player that contributed during the wildfire response was retail giant Wal-Mart. With huge truckloads of supplies being sent to Qualcomm Stadium, Wal-Mart volunteered logistical staff to unload and distribute goods.

“Wal-Mart is good at supply-chain issues,” said David Henry, the company’s emergency preparedness and planning manager. “We get the right product to the right place at the right time.”

The company has an emergency management department with positions that mirror those in public-sector emergency management hierarchies. It also has a 40-seat Emergency Operations Center (EOC). “We have subject-matter experts focused on potential disruptions, such as interstate closures or snowstorms, every day,” Henry explained. “Our emergency management department is good at rallying those experts in transportation, logistics and store operations, and making sure they have up-to-date situational awareness to make decisions.”

In 2008, the company played an active role in Texas during Hurricane Ike. In response to the storm, which damaged 79 stores and impacted more than 60,000 Wal-

Mart employees, the retailer donated \$2.5 million in cash and merchandise, and provided trucks and drivers to support relief operations.

Just as important, Henry said, was its effort to get stores reopened as quickly as possible to return communities to a sense of normalcy.

“We had a map in our EOC of the southern part of Texas,” he said. “In the immediate aftermath of the storm, we gave the state GIS folks the location of all open stores in the state, and they plotted those along with the current points of emergency supply distribution. Anywhere they were within five miles of each other, they realized they could close a point of distribution. That’s the kind of coordination that can really help.”

BENS nurtures partnerships

Ohtaki’s group, the California Resiliency Alliance (CRA), started as the Bay Area BENS chapter and recently became a stand-alone nonprofit organization. A sister organization, the Homeland Security Advisory Council, plays a similar role in Southern California.

Approximately 50 companies and business organizations are CRA members. That may not sound like many, but some of those member organizations pull in leaders from multiple companies, such as the Bay Area Response Coalition, which is a coalition of leaders from the financial sector. Other CRA members include representatives from the Business Recovery Managers Association and the Association of Contingency Planners. “It is really a ‘network of networks’ approach,” Ohtaki said.

BENS’ Kidder said building a self-sustaining partnership such as the CRA is a challenge. Some have been formed around a single event or an exercise, and then faded away once it was over.

“We have learned they have to be built from the ground up. We can’t develop a single model, bring it in and impose it on a region, nor can the federal government,” she said, adding, “In order to become sustainable, it must be locally owned and managed and set its own priorities.”

From Wal-Mart’s perspective, the information flow with these groups is improving, Henry said. In some states, such as Texas, the company works directly with state officials and has access to the EOC. In other states, it works through groups like the Florida Retail Federation or a BENS. Henry said Wal-Mart would like to see more uniformity in how these groups communicate with the public sector. “We see so many different models because we work in 50 states and see 50 different ways of doing it.”

Kidder pointed to the Safeguard Iowa Partnership (SIP) as one of the most robust and effective efforts in the country.

“The business community in Iowa has really bought into it,” she said, “and that is the key to effectiveness and sustainability.”

Jami Haberl, SIP's executive director, said the organization had only been in existence a year when serious flooding hit Iowa in June 2008. During a flood, emergency officials are extremely busy and don't have time to be fully engaged with businesses. Her presence in the EOC provides them "one-stop shopping" for private industry, she said.

Besides coordinating the donations of bottled water and plastic sheeting for sandbagging, Haberl e-mailed SIP partners with regular updates from inside the EOC. "If they have to make a decision about evacuating an office building, they don't have to rely on reports from the media," she said. "Or if they have an issue, they can pick up the phone and call me."

She said during the floods, trucking companies got access to up-to-date information from the Department of Transportation about the best routes into and out of Cedar Rapids. "That is critical because one of our goals is to make sure there is still stuff on store shelves," Haberl said.

Iowa government officials were active partners in the development of SIP. "We began to see that if the businesses don't survive, the community wouldn't bounce back," said David Miller, administrator of the Iowa Homeland Security and Emergency Management Division. "And the businesses saw that if the community suffered, its employees couldn't come back to work. So it was in the interest of both to get the whole community back up and running."

Miller said state officials were also driven by the recognition that 65 to 80 percent of critical infrastructure, whether in communications, banking or energy, is privately owned. "We need to understand their emergency response efforts," he said, "and we need to share information more actively."

He said Haberl played a key role in the 2008 flood response. "She understood how we worked because she had a public health background, and she could translate that information to business groups. She could give us information from companies about what might be threatened by flooding and why it was important."

The SIP has teamed with the state to develop an online business resource registry for private-sector volunteer or for-hire assets, Haberl said. "Our biggest goal now is strategic planning about how best to deal with the upcoming flood season," she added. "We are working on solidifying our communications approach to help mitigate the impact of a flood."

CANADA

Annotated bibliography of references relevant to tsunami hazard in Canada

by Leonard, L J; Rogers, G C; Hyndman, R D
Geological Survey of Canada, Open File 6552
2010; 269 pages

<http://geoscan.ess.nrcan.gc.ca/cgi-bin/starfinder/0?path=geoscan.fl&id=fastlink&pass=&search=R%3D285367&format=FLFULL>

An annotated bibliography of references relevant to tsunami hazard in Canada has been compiled. The bibliography lists published papers, books, monographs, theses, and readily available manuscript reports. Conference abstracts are generally included only when the information is unavailable elsewhere. Each entry includes a bibliographic reference as well as either an abstract (where available), summary, conclusions, introduction, preface or contents. The bibliography consists of two main parts. The first part includes the results of a thorough literature search for references pertaining directly to tsunami hazard in Canada. The references are arranged regionally, with different sections for Canada-wide references, and the Pacific, Atlantic, and Arctic coasts. Within each regional section, a list of general references is followed by more specific sections, e.g., for the Pacific coast: earthquake-induced tsunamis, landslide-induced tsunamis, meteorological tsunamis, and Pacific far-field sources. In turn, each regional section may include subsections pertaining to studies of historical and/or potential future tsunamis. Part 2 of the bibliography is a less exhaustive compilation of general tsunami references covering topics of tsunami science, tsunami hazard analysis, and studies of historical and pre-historic tsunamis from elsewhere in the world that may have relevance to studies of Canadian tsunamis.

Submitted by Alan Ruffman

CARIBBEAN

NOAA National Weather Service appoints manager of new Caribbean Tsunami Warning Program



Israel Matos (WFO San Juan, PR, Meteorologist-in-Charge), Christa Von Hillebrandt (Caribbean Tsunami Warning Program Manager), Bill Proenza, and Orlando Bermudez (WFO San Juan Forecasters) at a TsunamiReady presentation in 2009. (photo, WFO San Juan)

Former Puerto Rico Seismic Network Director Christa von Hillebrandt-Andrade has been selected as the manager of the newly created Caribbean Tsunami Warning Program located at the University of Puerto Rico at

Mayagüez. The selection was announced by Bill Proenza, regional director of the National Weather Service Southern Region, which includes 10 southern states and portions of the Caribbean.

"Christa von Hillebrandt-Andrade is an internationally renowned expert in seismology and tsunamis," said Proenza. "This new program represents an important first step in establishing a state of the science tsunami warning center for the Caribbean and adjacent basins."

While some improvements have been made in tsunami preparedness and warnings since the December 26, 2004 Indian Ocean tsunami, von Hillebrandt believes much more is needed to protect the millions of residents and visitors populating island coastlines throughout the Caribbean.

"The Caribbean region is one of the most seismically active regions in the world with a huge potential for death and destruction as evidenced by the recent earthquake in Haiti," von Hillebrandt said. "Almost 100 tsunamis have struck the shores of the Caribbean nations over the past 500 years, with the most recent deadly tsunami generated by the earthquake in Haiti. I am honored by my selection and look forward to the challenge of improving our research, education, warning and forecasting capabilities."

A part of the Southern Region, the Caribbean Tsunami Warning Program will operate in partnership with the Pacific Tsunami Warning Center at Ewa Beach in Oahu, Hawaii and the Alaska Tsunami Warning Center in Palmer, Alaska as a key participant in the NOAA National Weather Service Caribbean Tsunami Warning Program.

"Long before the earthquake and subsequent deadly tsunami in Haiti, the need for a tsunami warning program in the Caribbean was quite clear," said Proenza. "I have often noted the Caribbean Basin poses the highest potential for tsunami-related fatalities - of our own citizens as well as those of our neighbor nations throughout the region. A tsunami may not strike for a generation, but it could happen again tomorrow. Professor von Hillebrandt-Andrade's training, experience and intimate knowledge of the region makes her the ideal choice to lead a tsunami warning program which will eventually evolve into the Caribbean Tsunami Warning Center", he added.

The ranking NOAA official in the region, Proenza also serves as the head of the U.S. Delegation to the Caribbean and western Atlantic Basin's tsunami meetings conducted by the United Nations Education, Science and Cultural Organization (UNESCO).

During her tenure at the Seismic Network (1990-2010) and as a member of the University of Puerto Rico Geology Department, von Hillebrandt-Andrade provided key leadership in the modernization, restructuring, staffing and funding of the seismic network to provide earthquake and tsunami monitoring, warning and education services. Her experience in Puerto Rico, the Caribbean and South America has afforded her a unique familiarity

with a variety of natural hazards such as volcanoes, earthquakes and tsunamis.

The author and co-author of more than 50 journal papers and abstracts on earthquakes and tsunamis, Professor von Hillebrandt-Andrade has also served on the Puerto Rico Earthquake Safety Commission and the Puerto Rico Tsunami Technical Review Committee. She is a member of the Seismological Society of America, the Earthquake Engineering Research Institute, the American Geophysical Union and Geological Society of Puerto Rico. The Seismological Society members twice elected her as a director (2007 and 2010) and as Vice President of the Society (2009).

Since 2005, she has been a member of the United States delegations to the UNESCO meetings on tsunamis and the oceans. In 2008 she was elected Chair of UNESCO Working Group on Tsunami Monitoring and Warning Guidance and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions -- encompassing nearly 30 nations in the Caribbean and Americas.

Upon graduation as a geologist of the University of Delaware, von Hillebrandt-Andrade went to Quito, Ecuador as a Fulbright Scholar (1984-1986) and received a master's degree in Geology from the Escuela Politécnica Nacional. She played an important role in monitoring the active volcanoes of this Andean county and co-authored its first volcanic hazard maps as a Research Engineer with the Nacional's Geophysical Institute (1987-1990).

National Weather Service team visits British Virgin Islands to promote tsunami warning program



(L-R) Governor David Percy, Caribbean Tsunami Program Mgr. Christa von Hillebrandt-Andrade, NWS Southern Region Director Bill Proenza and WCM Rafael Mojica, San Juan, P.R. forecast office (Photo: DDM)

(May 26, 2010) - Bill Proenza, regional director of the National Weather Service Southern Region; Christa von Hillebrandt-Andrade, manager of the Caribbean Tsunami Warning Program; and, Rafael Mojica, warning coordination meteorologist for the forecast office in San Juan, Puerto Rico traveled to the British Virgin Islands on May 20 to promote the tsunami program.

The team met with Governor David Percy and staff members from the Islands' Department of Disaster Management (DDM). The primary goal was to promote understanding and cooperation between the DDM and the Car-

ibbean Tsunami Warning Program as part of an effort to enhance tsunami and earthquake preparedness throughout the Caribbean. Additional talks, aimed at a formal agreement between the National Weather Service and the DDM, are anticipated.

The meeting was held in the British Islands' capital city of Road Town, Tortola. While there, Proenza and the team also made a presentation to the Rotary Club of Tortola highlighting tsunami risks in the Caribbean.

The Caribbean region is one of the most seismically active regions in the world with a huge potential for death and destruction as evidenced by the recent earthquake in Haiti. Almost 100 tsunamis have struck the shores of the Caribbean nations over the past 500 years, the most recent the deadly tsunami generated by the earthquake in Haiti.

Governor Percy also presented an Award of Appreciation to Crista von Hillebrandt-Andrade for years of service in support of the Virgin Islands' Disaster Management Programme. Prior to joining the National Weather Service this year, she served as Director of the Puerto Rico Seismic Network (1994-2010), located at the University of Puerto Rico at Mayagüez.

A part of the National Weather Service Southern Region, the Caribbean Tsunami Warning Program operates in partnership with the Pacific Tsunami Warning Center at Ewa Beach in Oahu, Hawaii and the Alaska Tsunami Warning Center in Palmer, Alaska. It is a key participant in the NOAA National Weather Service Caribbean Tsunami Warning Program.

From:

http://www.srh.noaa.gov/srh/srnews/stories/2010/tsu_war_n.htm

GUAM

Workshop on tsunami awareness concludes

by Nick Delgado

Kuam News;

<http://www.kuam.com/Global/story.asp?S=12771603>

The Tsunami Awareness Workshop wrapped-up today [July 7, 2010] at the Hilton. Homeland Security Advisor Frank Ishizaki says the two-day event is just the beginning of educating the community about tsunami preparedness. The National Weather Service along with experts from the Pacific Tsunami Warning Center have been briefing participants about what to expect in the event of a tsunami hitting this area.

The experts played a huge role in the disasters in Chile and American Samoa, and Ishizaki says if an earthquake were to hit Guam that "we would only have minutes to respond." He says this is why future planning and more public awareness about tsunamis are necessary. A similar tsunami awareness workshop was also scheduled for the CNMI (Commonwealth of the Northern Marianas Islands) on July 13-14, 2010.

See also: Guam hosts 2-day workshop on tsunamis for first responders:

<http://guamnewswatch.com/201007072453/Local-News/Guam-Hosts-2-Day-Workshop-on-Tsunamis-for-First-Responders.html>

HAWAII

Honolulu tsunami maps updated

Portions of Pearl Harbor and Kaneohe Bay are now included among Honolulu's tsunami evacuation zones. Instead of the current 19 maps that can be found in your phone book or online, there will now be 21.

Officials also revised the Waikiki map, expanding the area that would be evacuated in an emergency. "We've chosen those particular areas to be strongly emphasized that they need to be notified and be aware of the safe evacuation zones and not rely on the previous updated information," says Mel Kaku, Department of Emergency Management.

<http://www.khon2.com/news/local/story/City-officials-update-tsunami-maps/bGOHHRjMfEWiE7BU9jSkkw.csp>

Tsunami evacuation zone maps:

<http://www.honolulu.gov/dem/maps.htm>

Replacing older sirens takes priority over filling gap areas

By Brent Suyama, Managing Editor, KITV.com
May 13, 2010

"Honolulu—State Civil Defense officials have plans to replace one third of its siren fleet because they are unreliable in a power outage. In the agency's five-year siren modernization program, these upgrades are prioritized ahead of adding any new sirens in more than 100 areas across the state where the warning is barely audible or silent.

The older electrical-mechanical sirens are 30 to 35 years old and have an audible range of about three-quarters of a mile. New sirens have a shorter audible range of just half a mile, but are solar-powered and would be more reliable in a power disruption like the October 2006 earthquake. Had the quake triggered a tsunami warning, 119 of the state's 364 sirens may not have sounded."

Full story: From:

<http://www.emergencymgmt.com/disaster/Private-Sector-Organizations-Emergency-Operations-Center.html?page=1&>



OREGON

City Planner: Tsunami is survivable

By Amy Moss Strong, Editor, Bandon Western World

Thursday, May 20, 2010

From:

<http://www.bandonwesternworld.com/articles/2010/05/20/news/doc4bf45fceb8846462851612.txt>

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SRI LANKA

Sri Lanka holds tsunami exercises in 14 districts

The Disaster Management Centre of the Ministry of Disaster Management held tsunami drills in 14 districts on July 13, 2010. The event was aimed at preparing the public for any eventuality in tsunami-prone areas including Colombo, Gampaha, Kalutara, Galle, Matara, Hambantota, Ampara, Batticaloa, Trincomalee, Jaffna, Puttalam, Kilinochchi, Mulaitivu and Mannar.

From:

http://www.priu.gov.lk/news_update/Current_Affairs/ca201007/20100713tsunami_drills_14_districts.htm

Sri Lanka - Tsunami warning towers in North

The Disaster Management Centre (DMC) is setting up 25 more tsunami early warning towers along the Northern coastal belt in addition to 55 existing towers, for the benefit of re-settled IDPs in the areas.

"These towers alert people in case of a tsunami or cyclone," said DMC Deputy Director Pradeep Kodippilly. More tsunami early warning towers will be built particularly in Mullaitivu and Kilinochchi districts as the towers in those areas were damaged or destroyed during the war, he added.

Towers will also be built in Jaffna districts and in Delf Island. Around 25 tsunami early warning towers have been built along the coastal line from Puttalam to Trincomalee so far.

From:

http://www.isria.com/pages/24_July_2010_120.php

WASHINGTON

Port Angeles tsunami sirens pass test this time [July 6, 2010]

The Washington Emergency Management Division conducted another tsunami warning test yesterday trying to repair the alert system that failed during a June test. In June, the system warned of impending disaster and even a volcanic event instead of the test.

EMD's earthquake program manager John Schelling says all the loud speakers worked yesterday except for one at Fort Worden, which had a bad battery. At noon Monday, the sirens played the prescribed Westminster Chimes. The system has 49 separate sites around the coastal areas of Clallam, Grays Harbor, Jefferson and Pacific counties.

<http://www.konp.com/local/5921> ♦

NEWS

National Preparedness Month, September 2010

What is National Preparedness Month (NPM)? September is National Preparedness Month! This awareness month is sponsored by the Ready Campaign in partnership with Citizen Corps and the Ad Council. NPM is designed to encourage Americans to take simple steps to prepare for emergencies in their homes, businesses, and communities.

<http://www.ready.gov/america/npm10/index.html>
<http://www.ready.gov/america/>

Sneaker wave

On May 27, 2010, Charles Wallace, Deputy Director of Emergency Management, Grays Harbor County, WA, sent this information:

Here is a great link to a SNEAKER WAVE in Ocean Shores from 2007. According to Cindi Preller from the West Coast and Alaska Warning Center, it is close to the impact of a 1 foot (.3 meters) Tsunami Wave which could occur during a Tsunami Advisory. It is extremely interesting and frightening to see the speed and power of the wave.

<http://www.uscg.mil/d13/audiovideo/default.asp> The link is # 3 on the list.

Also on March 17, 2010, The Daily World published an article in "MY TURN", "Unforgettable Clam Dig", from a couple who were caught in a sneaker wave or rogue wave in Westport WA. It occurred the day after the Feb 27, 2010 Tsunami Advisory. They questioned if it could had been a tsunami wave.

cwallace@co.grays-harbor.wa.us

NTHMP meeting minutes available online

National Tsunami Hazard Mitigation Program, Warning Coordination Subcommittee Meeting Notes, Pasadena, CA., January 26, 2010 are available online: http://nthmp.tsunami.gov/Minutes/2010_01_26_Pasadena-img-615085105-0001.pdf

ISDR launches the 2010-2011 world campaign for disaster reduction

The United Nations International Strategy for Disaster Reduction (ISDR) has launched a Web site for the 2010-2011 global campaign for disaster reduction. The campaign theme is "Making Cities Resilient: My city is getting ready." The site can be accessed at

www.unisdr.org/english/campaigns/campaign2010-2011.

The campaign is based on the previous two campaigns, which focused on disaster reduction in schools (2006-2007) and hospital safety (2008-2009). The aim is to persuade leaders of cities and local governments to commit to a checklist of 10 essentials for developing resilient cities.

From: *Disasters Preparedness and Mitigation in the Americas*, issue 113, p. 4

FEMA administrator Craig Fugate opens up about Haiti, ethics, and technology

Craig Fugate, FEMA administrator since May 2009, gave a rare one-on-one interview with *Emergency Management* magazine and discussed the Haiti earthquake, ethics in emergency management, and technology issues. Full story:

<http://www.emergencymgmt.com/disaster/FEMA-Administrator-Craig-Fugate.html>

Lantex10 and Pacifex10

The annual Tsunami Awareness Week was held from March 21-27, 2010. Several states declared a special proclamation for the week and this year, for the first time, NOAA proclaimed a national Tsunami Awareness Week which received a letter of support from President Obama. Activities for the week included live code Emergency Alert System (EAS) and NOAA Weather Radio (NWR) tests in three regions of the country as well as tsunami response exercises for the Pacific and Atlantic basins.

Live code EAS tests were conducted in the California counties of Humboldt, Mendocino, and Del Norte, as well as in Alaska and Puerto Rico. Test results in Alaska were improved over last year with over 150 people responding to the test site on the web. For the third consecutive year northern California conducted a test with positive results, and also used the test as a venue for general tsunami preparedness activities. This was the first time Puerto Rico conducted a live code test which identified several broadcaster-related problems.

Tsunami response exercises named LANTEX10 and PACIFEX10 organized by NOAA and the National Tsunami Hazards Mitigation Program were held on March 24. The exercises were triggered by notifications from the U.S. Tsunami Warning Centers which advised participants to refer to the exercise handbook that provided a tsunami scenario and Warning Center messages. Varying levels of participation in the exercise occurred throughout the country with especially high levels of participation in Puerto Rico.

Submitted by Paul Whitmore

7th workshop on remote sensing and disaster response

The 7th International Workshop on Remote Sensing and Disaster Response was one of the most diverse workshops to date in this series. Over 30 participants from eight countries delivered 24 presentations on a broad set of topics dealing with rapid response; disaster preparedness and integration with modeling; hurricane, wind-storms, and tsunamis; earthquake effects; advances in analytical techniques, and disaster recovery.

MCEER investigator Chris Renschler discussed his involvement with the Information Products Laboratory

for Emergency Response (IPLER), which was recently formed to address technological challenges in linking remote sensing, GIS and environmental models for decision support in managing disasters.

In addition, two panel sessions were organized: (1) Data issues: Rapid access to remote sensing datasets; and (2) Perspectives of end users: Emergency managers and decision makers.

A special banquet dinner talk by Albert Lin, California Institute for Telecommunications and Information Technology, University of California, San Diego Division, introduced a National Geographic Society study to "Search for the Tomb of Genghis Khan: Using modern tools to hunt for an ancient past."

The workshop, held at the University of Texas at Austin on October 22-23, 2009, was organized by Ellen Rathje, Department of Civil, Architectural & Environmental Engineering, UT at Austin. Additional support was provided by Arleen Hill, Department of Earth Sciences, University at Memphis, and ImageCat, Inc.

The Eighth International Workshop on Remote Sensing will be held at the Tokyo Institute of Technology in Tokyo, Japan, September 30-October 1, 2010. For more details, contact Ron Eguchi at rte@imagecatinc.com or Beverley Adams at bj@imagecatinc.com. Proceedings available at http://mceer.buffalo.edu/research/Remote_Sensing/Workshop_Series/default.asp.

From: *MCEER Bulletin*, v. 24, no. 1, p. 7.

U.S. National Library of Medicine's focus on disaster information

The National Library of Medicine of the U.S. National Institutes of Health recognizes the importance of improving information management and access to information resources about health and disasters as a way to assist national efforts in managing emergencies and disasters. The creation of the Disaster Information Management Research Center (DIMRC) in 2008 reflects strong commitment to that goal.

For more information, visit <http://www.disaster-info.net/newsletter/113/nationallibrary.htm>

From: *Disasters Preparedness and Mitigation in the Americas*, issue 113

A self-assessment tool to reduce disaster risk in the health sector

During discussions at the 2008 Caribbean Health Disaster Coordinators meeting, and in the framework of PAHO's Disaster Strategic Plan, participants rallied around the idea of developing a health sector Self-Assessment Tool for Disaster Risk Reduction to evaluate key aspects of disaster risk management (notably mitigation and preparedness).

From: *Disasters Preparedness and Mitigation in the Americas*, issue 113

PUBLICATIONS

Tsunami evacuation building workshop

The Oregon Department of Geology and Mineral Industries (DOGAMA) has released Open-File O-10-02, Tsunami evacuation building workshop, September 28-29, 2009, Cannon Beach, Seaside, and Portland, Oregon, compiled by Yumei Wang. 35 p. text with 200 p. of PowerPoint slides on CD.

<http://www.oregongeology.org/sub/default.htm>

Disasters Preparedness and Mitigation in the Americas

No. 113, May 2010

<http://www.disaster-info.net/newsletter/index.htm>

To subscribe: disaster-newsletter@paho.org

Disaster Recovery Journal-- Summer Edition

The summer issue of *Disaster Recovery Journal* has been released! Browse the latest edition online in both digital and text format. You will find a variety of helpful articles, columns and other items.

The summer issue contains DRJ's exclusive Executive Pullout section, designed to provide tips on gaining and keeping management commitment for your BC program. Industry experts offer advice on why BC planning is more important than ever and the steps and tools needed to build the program. [View Summer 2010, Volume 23, Issue 3](#)



Service Assessment--South Pacific Basin Tsunami – September 29-30, 2009

[http://www.weather.gov/os/assessments/pdfs/tsunami %20south_pacific10.pdf](http://www.weather.gov/os/assessments/pdfs/tsunami%20south_pacific10.pdf)

NWS conducts Service Assessments to evaluate its performance after significant hydrometeorological, oceanographic, or geological events resulting in warning or other operational activities. Assessments may be initiated when one or more of the following criteria are met:

- *Major economic impact on a large area or population
- *Multiple fatalities or numerous serious injuries
- *Extensive national public interest or media coverage
- *Unusual level of attention to NWS performance

Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters

The World Bank and the Global Facility for Disaster Reduction and Recovery have launched the manual *Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters*. It was prepared to assist policy makers and project managers responsible for rebuilding homes and communities after major disasters.

The book argues that reconstruction after a disaster begins with a series of decisions that must be made im-

mediately and emphasizes the importance of establishing policy that will guide an effective process. Effective rebuilding is possible only after alternatives have been assessed in collaboration with stakeholders, and once standards for reconstruction have been established.

The handbook gives guidelines on developing the content of reconstruction policies, mechanisms for communicating effectively with partners, and adapting and monitoring the implementation of policies. The manual can be downloaded at

www.housingreconstruction.org/housing/toc

From: *Disasters Preparedness and Mitigation in the Americas*, issue 113, p. 10

World Disasters Report 2009

Early warning systems save lives and reduce economic losses at all levels, but they still are not integrated into disaster management and risk reduction globally. This topic is the focus of the new *World Disaster Report, 2009*, of the International Federation of Red Cross and Red Crescent Societies.

This report argues that early warning is not enough without early action; early action can do more to reduce deaths and protect livelihoods than can be achieved through emergency response alone. The report emphasizes that this challenge must be taken by national governments, donors, and other stakeholders.

The document is available in English and Spanish and can be downloaded at:

www.ifrc.org/publicat/wdr2009.

From: *Disasters Preparedness and Mitigation in the Americas*, issue 113, p. 10

It's a Disaster!...and What Are You Going to Do About It?

Agencies looking for an easy way to provide their community members with a disaster information resource need look no further than the book *It's a Disaster!---And What are You Going to Do About It?* With a customizable cover and up to 50 pages of customizable text—which can be outfitted with information like evacuation routes and shelter locations—the book provides crucial local information and tips on how to make emergency action plans and respond to different types of disasters. The book's authors and publishers, Bill and Janet Liebsch, hope to have a Spanish version available by September and said that grants can be used to purchase the book. <http://itsadisaster.net>.

From: *Emergency Management*, v. 5, no. 4, p. 70.

WEBSITES

<http://tsunami.gov/>

National Tsunami Hazard Mitigation Program (NTHMP) link to latest tsunami event information.

<http://www.crid.or.cr/dipecho/herramientas.shtml>

New catalogs available from CRID (Regional Disaster Information Center) include a selection of disaster preparedness tools and information resources on Early Warning Systems, health, education, and strengthening local response capacity. The catalogs have been distributed among the different actors and partners working in disaster risk reduction in Latin America. They are available on the CRID website, URL given above.

From: Disasters Preparedness and Mitigation in the Americas, issue 113, p. 12.

<http://educacionygestiondelriesgo.crid.or.cr>

UNICEF and a group of agencies and organizations working in disaster risk reduction collaborated with CRID to launch a web site that is dedicated to education and risk management. The site expands on efforts to provide information and lessons learned about education and risk management. A wide range of materials can be accessed, including documents, entertainment materials, multimedia resources, informational materials and tools, a directory of institutions, and photographs, among other resources.

From: Disasters Preparedness and Mitigation in the Americas, issue 113, p. 12.

<http://www.honolulu.gov/dem/maps.htm>

21 evacuation zone maps for Honolulu.

CONFERENCES

Sept. 3-Oct. 1, 2010

The 8th International Workshop on Remote Sensing will be held at the Tokyo Institute of Technology in Tokyo, Japan, September 30-October 1, 2010. For more details, contact Ron Eguchi at re@imagecatinc.com or Beverley Adams at bja@imagecatinc.com (See News above about the 2009 Workshop)

Sept. 19-22, 2010

'Conquering the tough challenges' is the theme for Disaster Recovery Journal's 43rd Fall World conference in San Diego, California. Business continuity, business recovery, IT risk management, and related workshops will be featured. Website: www.drj.com Phone: 636-282-5800.

Sept. 21-23, 2010

International Conference on Emergency Preparedness will be held at the Aston Centre for Research into Safety and Security, Birmingham, United Kingdom. This conference will examine current research in and best practices for mass evacuations and emergency preparedness. Conference topics include preparing the public for emergencies, shelter management, and emergency preparedness computer models. For more information:

<http://www.astoncrisis.com/crisiscms/InterCEPt>

From: Disaster Research 549, June 17, 2010

Oct. 1-3, 2010

Second International Conference on Crisis Mapping will be hosted by the International Network of Crisis Mappers, Boston, Massachusetts. This conference will examine the 2010 Haiti earthquake, including the role of crisis mapping and humanitarian technology in response, lessons learned, and technological best practices. Session topics include map sourcing (including natural language processing, mobile phones, and satellite imagery), crisis response and evaluation, and future research and technology. For more information:

<http://www.crisismappers.net/page/iccm-2010-haiti-and-beyond>

From: Disaster Research 549, June 17, 2010

For a more comprehensive list of upcoming hazards-related meetings, visit the Natural Hazards Center web site:

www.colorado.edu/hazards/resources/conferences.html ♦

CLASSES, TRAINING

Virtual journey through a safe hospital

The multimedia training program, *Virtual journey through a safe hospital* is now available on DVD in its English version. The program combines video, animation, three-dimensional images, and sound, and includes technical presentations and publications to create a virtual learning environment about safe hospitals.

The virtual tour is presented in separate modules that can be used independently to explore specific aspects of the subject, or the modules can be used in sequence. The DVD of the virtual hospital includes a library that can be consulted and/or downloaded. This virtual library includes supporting material, text, videos, PowerPoint presentations, etc.

For more information, please contact Ricardo Perez: perezric@pan.ops-oms.org

From: Disasters Preparedness and Mitigation in the Americas, issue 113, p. 10.♦

Antarctica glacier photos look like a frozen tsunami

<http://oursurprisingworld.com/frozen-tsunami-in-antarctica/> 18 amazing photographs.

The blue ice in the pictures occur when snow that falls on a glacier is compressed. The air bubbles left inside are squeezed out, leaving the ice clear and blue.

If you or your agency have emergency management or tsunami reports, maps, articles, books, brochures or any other publications which should be in the NTHMP Library, please send them to:

NTHMP LIBRARY
c/o DNR, Division of Geology and Earth Resources
Room 173
1111 Washington St. SE, MS 47007
Olympia WA 98504-7007

Electronic copies can be emailed to
lee.walking@dnr.wa.gov or the alternate email address:
TsuInfoAlert@gmail.com ♦

Material added to the NTHMP Library

July - August 2010

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.

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Family Emergency Preparedness Plans

These 25-page booklets, developed by the Washington Military Department Emergency Management Division and Group Health Cooperative of Puget Sound provide a fill-in-the-blanks way to create an individualized all-hazard plan for your family. The plan covers aspects of disaster planning a family needs to consider, including emergency contact information, evacuation routes, disaster supplies kit, pets, and medical supplies.

[English](#) (PDF)

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[Ukranian](#) (PDF)

[Vietnamese](#) (PDF)

These booklets are available online at

http://www.emd.wa.gov/publications/pub_index.shtml ♦

Bishop Museum teams up with Pacific Tsunami Warning Center for tsunami spherecast

Honolulu, HI – This Thursday, [July 22, 2010], get a closer look at the destruction and science of tsunamis when staff from Bishop Museum, National Oceanic Atmospheric Administration Pacific Services Center and the Pacific Tsunami Warning Center present a special spherecast that will broadcast at Science on a Sphere sites throughout the nation.

The one-hour session called *Tsunamis--Waves of Destruction* will take place in the lobby of the J. Watumull Planetarium where the museum's Science on a Sphere (SOS) is located. The SOS is a six-foot diameter globe that shows full-color animated imagery of hundreds of data sets including weather, climate change, and tsunamis. The focus of this presentation will be the Chilean tsunami that occurred on February 27, 2010 and will be the debut of newly installed SOS computers and projectors.

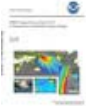
Bishop Museum's Director of Education, Exhibits and Planetarium Mike Shanahan said, "NOAA's Science on a Sphere has been a great asset to Bishop Museum since it opened here in 2006. Spherecasting is an exciting new way of extending the sphere's educational value." <http://www.bishopmuseum.org/media/2010/pr10032.html> ♦

NOAA Center for Tsunami Research - Publications

<http://nctr.pmel.noaa.gov/most-pubs.html>



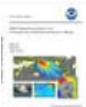
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INFREQUENTLY ASKED QUESTIONS

How many at-risk communities on the U.S. Gulf Coast and East Coast have been recognized as TsunamiReady, as of April 2010?

According to the GAO report, “only 2 of the 64 at-risk Gulf Coast communities and only 13 of 312 at-risk East Coast communities have been recognized as TsunamiReady.” (p. 24, GAO-10-490, April 2010, U.S. Tsunami Preparedness) www.gao.gov.

How much faster are tsunami warnings being generated?

“The time needed for the warning centers to issue a message for a distantly generated tsunami has been reduced from an average of 24 minutes in fiscal year 2005 to 15.7 minutes in fiscal year 2009, and the time needed for a local event has been reduced from an average of 9.9 minutes in fiscal year 2005 to 5.8 minutes in fiscal year 2009.” (p. 20, GAO-10-490, April 2010, U.S. Tsunami Preparedness)

Can you define ‘fragility functions’?

According to the abstract written by authors Shunichi Koshimura; Takayuki Oie, Hideaki Yanagisawa; and Fumihiko Imamura, (2009, Developing fragility functions for tsunami damage estimation using numerical model and post-tsunami data from Banda Aceh, Indonesia: Coastal Engineering Journal, v. 51, no. 3, p. 243-273) “fragility functions are new measures for estimating structural damage and casualties due to tsunami...The fragility functions are expressed as the damage probabilities of structures or death ratio with regard to the hydrodynamic features of tsunami inundation flow, such as inundation depth, current velocity and hydrodynamic force. They lead to the new understanding of the relationship between local vulnerability and tsunami hazard in a quantitative manner.” ♦

Groundbreaking tsunami and flood shelter system is unveiled, receives US patent

San Juan, PR (PRWEB) July 27, 2010

<http://www.prweb.com/releases/2010/07/prweb4307664.htm>

A US inventor unveiled today a revolutionary shelter system that could become the first line of defense for governments against two of the most devastating natural events on the planet, tsunamis and major floods. This novel shelter, capable of floating, could prove to be an invaluable contribution toward emergency preparedness worldwide.

"After watching the devastation and aftermath of the 2004 Indonesian tsunami and hurricane Katrina events, I committed myself to designing a preparedness tool capable of offering an effective level of protection against such catastrophic events" said Miguel A. Serrano, a land development consultant from Puerto Rico. "The end result is a revolutionary shelter system that is both highly effective, and cost efficient", he added.

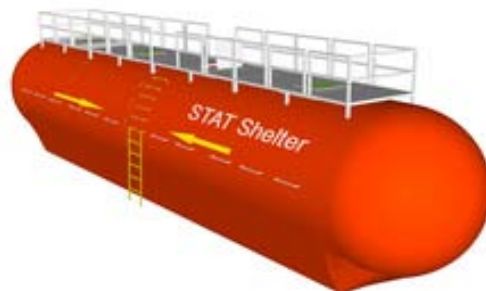
This new system, for which a US patent has been allowed, is called the STATIM (Storm, Tornado And Tsunami Interconnected Modules) Shelter System. In essence, it is an enclosable hull comprised of a series of pre-cast concrete modules, similar to large diameter concrete drainage pipes. Once assembled via gasketed joints, and a post-tensioned cables technique, it provides a water-tight environment with positive buoyancy and self-righting capability. Inside, the shelters are equipped with secure seating arrangements for as many as 50 occupants, ventilation, and various options of survival gear and supplies capable of sustaining the occupants during and after the actual event, until available rescue resources can assist. The STATIM Shelter can be considered the equivalent of an "inland" life boat.

"Concrete is a low cost material readily available worldwide, doesn't require skilled labor, and has a long life cycle. Additionally, it is strong and provides the necessary mass and inertia for the shelters to safely handle the initial event forces." explains Serrano. "The modular concept and post-tensioning technique allows for off-site mass manufacturing, ease of transportability, and rapid final assembly once the modules arrive to the final installation sites".

The system is already receiving rave reviews from governments and other prospective users, such as coastal resorts and industrial facilities operators. Bill O'Leary, an Australian marine industry expert and entrepreneur who has lived for the past 28 years in Phuket, Thailand, regards the STATIM Shelter System as "...an amazing, winning idea, with the potential to become a substantial contribution to many vulnerable communities around the world..." O' Leary is author of the book "Tsunami Stories", a compilation of 2004 Indian Ocean tsunami survival stories, event of which O' Leary is an actual survivor himself.

There are thousands of islands and coastal communities around the world where topography, proximity to seismic faults, remoteness, or lack of vertical evacuation alternatives make them extremely vulnerable to the devastation of such events. The STATIM Shelter brings a feasible solution for the safety and peace of mind of those communities, and the millions of constituents who reside in them. "Our focus now is on advancing the prototype development and testing phase in order to expedite global implementation" stated Serrano. "The STATIM Shelter is a straight forward approach which clearly represents a major breakthrough on how humanity will address these threats from now on."

This webpage also includes a video presentation, the STATIM Shelter section and a rendering of the STATIM shelter.♦



Tremor tracker—Seismic activity network could be key to early warning system during earthquakes

By Russell Nichols

Emergency Management, v. 5, no. 4, July/August 2010, p. 62, 64.

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In Chile, Andres Sepulveda never saw the magnitude 8.8 earthquake coming in February 2010, but his laptop captured the data during the catastrophe.

As an assistant professor at the University of Concepcion, Sepulveda studies oceanography. But just before he left for a vacation in January, he installed a USB motion-sensor device on his 5-year-old laptop. It's part of an expanding seismic network that has the potential to send warnings, save lives and bolster public safety efforts when an earthquake strikes. Called the Quake-Catcher Network (QCN), the project uses inexpensive motion sensors in computers to collect earthquake data in real time.

"I had this instrument as part of scientific curiosity," Sepulveda said. "Chile is a seismic country, so I had the idea that it could get something while I was away. It was just a test, so I left it on top of a box on the floor of my office. And then the earthquake happened."

On Feb. 27, the 90-second Chilean earthquake erupted off the coast of the Maule Region, killing more than 450 people and triggering blackouts and a tsunami. It was the country's strongest earthquake in five decades.

It took days for Sepulveda to get back into his office because shifted furniture blocked his door. Once inside, he found that the USB device connected to his computer remained intact and collected not only the earthquake information, but also about one hour's worth of data on the aftershocks.

"He was really interested in the network," said Elizabeth Cochran, an assistant professor of seismology at the University of California, Riverside, who helped develop the QCN. "Little did he know he would end up recording this earthquake a month later."

Early warnings

Four years in the making, the QCN was developed by Cochran and colleagues at Stanford University to fill gaps in current earthquake monitoring efforts, hampered by 10- to 15-second reporting delays and costly equipment.

By forming a global web of seismic sensors that captures data on the spot, Cochran said, the network can be the key to an earthquake early warning system.

In an earthquake, shock waves rip through the group, but their speed is no match for electronic signals. The QCN could send messages to nearby locations seconds in advance—precious time that could be used to tell residents to find cover or for public safety departments to stop trains and gas lines, which can prevent fires.

"When an earthquake starts, you can quickly determine the magnitude and the location," Cochran said. "Fire stations would love a few seconds' warning to open doors to that fire station so they can easily get equipment out."

A shaky system

Monitoring earthquakes has traditionally been a dirty job. Research included digging into the earth to install new seismometers near fault lines.

"My main frustration is we don't have a huge number of seismometers around," Cochran said, "just because they're so expensive and it takes a lot of work to install them."

The technology in the Information Age has given Cochran another, much cleaner, method for monitoring shaky ground: Rather than installing sensors deep in trenches, users can simply install software on their computers. The seismic network utilizes accelerometers—motion sensors that protect data on the hard drive if a laptop falls down or capture movement in video game controllers. Users can upload the sensor for \$50 with a USB cable or download the program directly. Some newer laptop models have accelerometers already built in.

As more users install the sensors on their computers, seismologists can gather data from anywhere in the world in the event of an earthquake. The idea is to develop a dense network that feeds data to a central computer system to paint a more vivid picture of how an earthquake behaves in a given place and time.

But a sensor on a computer isn't as sensitive as a regular seismometer. It measures ground motion in three directions and can measure an earthquake with a magnitude of 4.0 or higher. Researchers must determine the difference between an actual tremor and somebody banging on a table.

"The main difference is our sensors are not as sensitive," Cochran said, "so you get lower-resolution data."

But when a computer senses a tremor, it shoots a signal to the researchers' servers, Cochran said, and if the server receives multiple pings from the same area, it's probably an earthquake.

Pounding the pavement

Even though generating publicity for the network remains a challenge, the word is spreading, especially in the wake of recent earthquakes.

The QCN has about 1,300 users on any given day logging on around the world, Cochran said, and up to 2,600 over a month. With the cheap price tag and simple installation, it's no surprise how fast the network has been growing. And areas prone to earthquakes and other potential hazards attract new users.

"It's not really us asking them if they can help," Cochran said, "but them asking us how they can help."

In the future, Cochran and her colleagues plan to set up a database, so users can see which earthquakes their sensors recorded and how they contributed.

Since launching, the QCN has received funding from the National Science Foundation, the Southern California Earthquake Center and even UPS. ("They're helping out with the costs of sending sensors overseas," Cochran said.)

In the past few months, it hasn't been a question of demand. In Chile, Cochran opened a Web page for citizens to volunteer to have a sensor installed at their house or office. But she said they had to shut down the site a few days later; some 700 volunteers responded, but they only had 100 sensors available.

"I think when people realize that they live in a place that has earthquakes, they definitely want to do more about it," she said. "Any earthquake raises awareness."♦

Earthquake tests hammer home shaking danger to Aberdeen schools

By Glenn Farley, KING 5 News
July 28, 2010

<http://www.king5.com/news/local/Hammering-home-earthquake-tests-for-Aberdeen-schools-99492884.html>

Reprinted with permission

ABERDEEN, Wash. - If there's a county with a front row seat for the biggest earthquakes known to occur in Washington state, it's Grays Harbor County.

Because coastal counties sit on top of the so-called subduction zone, they can experience magnitude 9-plus earthquakes, typically 300 to 500 years apart, say scientists. It's already been 310 years since the last one. A big question is how will schools hold up in shaking of a magnitude 9.1? To find out, geologists and seismologists with the Washington State Department of Natural Resources are testing the soil under Aberdeen Public Schools.

DNR Chief Hazards Geologist Tim Walsh and Geophysicist Ray Cakir showed us what they're looking for in the field behind the Central Park Elementary School. A string of geophones designed to pick up sound waves coming through the earth are connected to a laptop computer. Scientific tech Christopher Maffucci then slams an 18 pound hammer down onto a steel plate dozens of times at different locations, sending sound waves into the earth. Those sound waves are reflected differently by different soil layers.

By using this and other techniques, DNR will be able to construct a profile of the ground and its susceptibility to shaking. Because of the differences in the different kind of soils underground, two identical school buildings could suffer different levels of damage in a quake.

Next month, engineers will come in and assess the strength of the buildings based on the new shaking data

the geologists will simulate using a sophisticated computer program. A similar program is also being used in Walla Walla which could face a potential magnitude 6.8, according to Walsh.

[The online version contains a video, with brief interview of Tim Walsh].♦

The International Red Cross and Red Crescent Movement





The International Red Cross and Red Crescent Movement is the world's largest humanitarian network. The Movement is neutral and impartial, and provides protection and assistance to people affected by disasters and conflicts.

The Movement is made up of almost 97 million volunteers, supporters, and staff in 186 countries. It has three main components:

- 1) The International Committee of the Red Cross (ICRC)
- 2) The International Federation of Red Cross and Red Crescent Societies
- 3) 186 member Red Cross and Red Crescent Societies.

As partners, the different members of the Movement support communities in becoming stronger and safer through a variety of development projects and humanitarian activities. The Movement also works in cooperation with governments, donors and other aid organizations to assist vulnerable people around the world.

The website is http://www.ifrc.org/who/movement.asp?navid=03_08, and has versions in Spanish and French.

More information :
[The International Red Cross and Red Crescent Movement at a glance](#)  (PDF document, 784 Kb, 8 pages)
[Arabic version](#)  (PDF document 445 Kb, 2 pages)

Recent Red Cross publication:

World disasters Report 2009 - Focus on early warning, early action

While natural hazards cannot be prevented, they only become disasters because affected communities are vulnerable and unprepared. Early warning systems have been proved beyond doubt to save lives and reduce economic losses at all levels, but they are still not an integral part of disaster management and risk reduction globally. This report argues that early warning without early action is not enough. Arabic and Spanish versions. ♦

VIDEO-CD-DVD RESERVATIONS

To reserve tsunami videos, CDs or DVDs, contact Lee Walkling, Division of Geology and Earth Resources Library, 1111 Washington St. SE, MS 47007, Olympia, WA 98504-7007; or e-mail lee.walkling@dnr.wa.gov.
These programs are available to all NTHMP participants, with a 3-week loan period.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Tsunami: Killer Wave, Born of Fire (10 min.). NOAA/ PMEL. Features tsunami destruction and fires on Okushiri Island, Japan; good graphics, explanations, and safety 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)



LIBRARY CATALOG AND BIBLIOGRAPHY OF WASHINGTON GEOLOGY

This database serves as the Washington Geology Library catalog as well as a digital Bibliography of the geology and mineral resources of Washington. It also includes the **National Tsunami Hazard Mitigation Program Library collection**.

SEARCH THE DATABASE (Link to the Search Form)
Updated monthly

If a document is available online, its link will be given.

SEARCH TIPS

The search is not case sensitive; searching on Adams or adams or ADAMS gives the same results.

Punctuation and special characters (such as : " + #) cannot be searched on.

Multiple-word searches without Boolean operators (symbols) will result in a phrase search. For example, maps geologic in the Subject search field will find only those records with the word 'maps' immediately followed by the word 'geologic'; however, maps & geologic will find records with the words 'maps' and 'geologic' anywhere in the field.

The truncation symbol is * (asterisk). For example, in the Subject search field, paleo* would retrieve paleobotany, paleozoic, paleoclimatology, etc.

Be aware that some terms have alternative spellings: archeology (archaeology), paleontology (palaeontology), modeling (USA) and modelling (Eur.), for example. Some authors use 'tsunami' for both singular and plural; Therefore, always use the search term tsunami*.

It is wise to use multiple terms if there are many ways with which to refer to a topic or area (especially in the Title, Geo or Subject fields). For example, in the Geo field, type INDONESIA / SUMATRA/ BANDA ACEH with the Subject field TSUNAMI* to accumulate reports cataloged under one or all of these terms.

BOOLEAN OPERATORS (Search term connectors)

Use the ampersand (&) for **and**; use the forward slash (/) for **or**; and use the exclamation(!) for **not**.
Adams & Brown finds works by both Adams and Brown together.
Adams / Brown finds works by either Adams or Brown.
Adams ! Brown finds works by Adams, but not by Brown

FIELD NAMES

Author: The personal or corporate authors of the work.

Year: The year the work was published.

Title: The title of the work (book or article in a journal).
For papers published in a collected volume (like a proceedings), this field also includes the authors or editors and the title of the larger work.
If the title is followed by [abstract] this means the work is a short summary, not a complete article.

Publisher or Journal name: This names the source of the work—the journal name, volume and issue; or the book publisher. This field also includes pagination.

Call number: This indicates where to find the document in the Washington Geology Library. For example, QE539.2 T4 is the section holding the Tsunami materials.

CONTACTS

Lee Walkling
Senior Librarian
Washington Geology Library
360 902-1473
Fax 360 902-1785
lee.walkling@dnr.wa.gov

RELATED LINKS

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[U.S. Geological Survey library catalog](#)

Geo: This field searches for geographic location (country, county, city, river, mountain) or the formation name. County is abbreviated CO. Mt. is spelled out MOUNT.

Subject: This is the weakest field, because non-geologists chose the terms under which records were cataloged. It is advisable to use the Title field instead, as a keyword search field. Then, if you get hits that are pertinent, see what terms were used for Subject headings and do a Subject search using them to see if you come up with more hits.

Preference is given to broad geologic topics, subdivided by more specific aspects. The major topics include: areal geology, bibliography, earthquakes and seismology, engineering geology, environmental impact statements, geochronology, geophysics, glacial geology, guidebooks, history and archaeology, hydrology, landslides and slope stability, maps, marine geology, mineral collecting, mineral resources, mining engineering, paleontology, petrology, shorelines, soils, stratigraphy, structural geology and tectonics, and tsunamis.

Note: This field offers additional information about the document when it is deemed necessary. Once you've done a Search and have a list of records, go to the upper left corner of the screen (under DIVISION OF GEOLOGY AND EARTH RESOURCES). There is a drop-down box. Click on the arrow and click on With Notes.

RELATED LINKS

Washington Geology Library

<http://www.dnr.wa.gov/ResearchScience/Topics/GeologyPublicationsLibrary/Pages/library.aspx>

U.S. Geological Survey library

<http://library.usgs.gov/>

U.S. Geological Survey Publications Warehouse (many USGS publications have been scanned and are available online)

<http://pubs.er.usgs.gov/>

NOAA Central Library

<http://www.lib.noaa.gov/>

ITIC Library

http://ioc3.unesco.org/itic/categories.php?category_no=162

Major Tsunami Subject subdivisions

In the SUBJECT field, use the term Tsunami and a term below if it helps to narrow the search.

Buoys	Mitigation and preparedness
Catalog	Modeling (or old designation MATHEMATICAL MODELS)
Catalogs and networks	Monitoring
Databases	Myths and legends
Deposits	Networks
Dictionaries	Paleotsunamis
Disaster planning	Pictorial works
Emergency management	Planning and policy
Evacuation	Post-event surveys
Event (year) (Tsunamis & Event 2004)	Prediction (Forecasting)
Eyewitness accounts	Propagation
Field surveys	Public awareness
Induced by asteroids	Public education
Induced by coastal landslides	Recurrence intervals
Induced by explosions	Relief efforts
Induced by submarine landslides	Remote sensing
Induced by volcanism	Risk assessment
Instrumentation	Run-up
Instruments	Scouring
Inundation	Seiches
Inundation mapping	Social aspects
Inventories	Travel time
Landslides	Tsunami earthquakes
Laws and regulations	Warning systems
Mitigation	