



Contents

Volume 14, Number 2 April 2012

<i>Special features</i>		<i>Departments</i>	
April is Tsunami Awareness Month in Hawaii	1	News	7
NOAA issues tsunami debris alert from model	6	Websites	8
International radio conference approves bandwidth to track ocean currents for science and disasters	7	Publications	8
Tsunami phone apps	3, 4	State offices	11
NOAA issues tsunami debris alert from model	6	Classes/Workshops	9
10 th annual Tsunami Story Festival	10	Material added to NTHMP Library	11
New journal: Emergency Management Review	8	IAQ	10
About COMET 4-hr module for students 13-17	3	Video reservations	12
Islands on land could make towns tsunami-proof	7	Regional reports	3
FEMA's Quakesmart Toolkit	8	Conferences	9

REPORT FROM HAWAII

Hawaii State Civil Defense webpage: <http://www.scd.hawaii.gov/>

Take the Tsunami Akamai test online

Take the Tsunami Akamai Quiz. Hit the reset button to change your answers. When you're done click on the button labeled 'Am I Tsunami Akamai?' to see your score. The test is found at: http://www.scd.hawaii.gov/tsunami_quiz.htm

Tsunami Evacuation Zone Mapping Tool: <http://www.scd.hawaii.gov/>

The Tsunami Map Viewer returns a map of areas with tsunami evacuation zones, based on information you enter. Search by address or by island area.

American Red Cross Disaster Response Courses - Hawaii Chapter

By taking FREE disaster response courses with the Red Cross you can help your community. The Red Cross courses teach you how to manage an evacuation shelter, conduct disaster assessment, and provide direct assistance to families in need. Go to Hawaii Red Cross for course information on Adult/Youth/Infant CPR and First aid, Youth lessons, Caregiving and Nurse Aide Competency, and more.

Recommendations for Disaster Preparedness Kit

Emergency preparedness kits should contain the essentials your family needs to survive during a disaster: fresh water, food, cleaning materials, clothing, and blankets. Visit this link for a comprehensive list to help in assembling a kit of your own.

Disaster Assistance Information



Assistance is available for affected individuals and businesses after a Presidential disaster declaration. Individuals or businesses should register with the Federal Emergency Management Agency's National Tele-registration Center at 1(800) 637-3362 or 1(800) 462-7585 (tty). Once an application is processed, further assistance may be coordinated through a Disaster Recovery Center established in declared counties or regionally. Representatives of federal, state, local, and volunteer organizations are made available to help disaster victims who are applying for assistance.

TsuInfo Alert

is prepared by the Washington State Department of Natural Resources
on behalf of the National Tsunami Hazard Mitigation Program,
a State/Federal Partnership funded through the National Oceanic and Atmospheric Administration (NOAA).

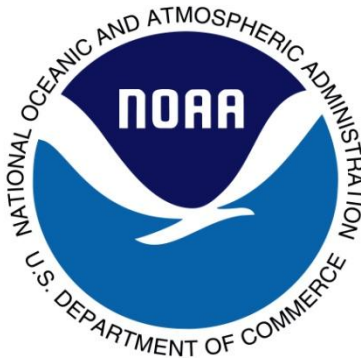
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<http://www.dnr.wa.gov/ResearchScience/Topics/GeologyPublicationsLibrary/Pages/tsuinfo.aspx>
Participants in the TsuInfo program can request copies of reports listed in this issue from:

Washington Geology Library
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

The views expressed herein are those of the authors and not necessarily those of
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TsuInfo Alert.

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

REGIONAL REPORTS

AUSTRALIA

DisasterWatch phone app

From The Australian Journal of Emergency Management, v. 27, no. 1, p. 9.

The [Australian] Attorney-General's Department has released the free DisasterWatch phone app to improve access to disaster information, and help reduce call volumes to Triple Zero [equivalent to U.S. 911] during natural disasters.

Australians currently own more than 4.5 million smartphones. This technology has grown rapidly in Australia in the last twelve months—by 2013 it is expected that more people will access the internet via mobile devices than via desktop computers. Mobile applications can help people access government services and data, creating innovative ways to use information and deliver services to citizens.

CARIBBEAN

The COMET Program

The COMET Program is pleased to announce the publication of *Tsunami Strike! Caribbean Edition*. This ~4-hour module offers a scenario-based learning experience for kids from middle school through high school (approximate ages 13-17). The scenario tasks the learner with researching and compiling information for a feature article about tsunami risks in the Caribbean. Through this research, the students hear from experts and complete sixteen interactive lessons on different aspects of tsunami science, safety, and history. This module includes many graphics and animations, numerous interactions, audio narration, and companion print versions of all components. Because the module is media-intensive, you may find it more convenient to download it from the link provided on the opening screen. Students, teachers, and those doing tsunami education outreach will all find this module useful.

Please follow this link to start the module:
http://www.meted.ucar.edu/tsunami/strike_carib/index.htm.

You may also visit this link to see a detailed description of the module, prior to logging into the MetEd website:

http://www.meted.ucar.edu/training_module.php?id=907

Most COMET modules use JavaScript and Adobe® Flash® for navigation, animation, and/or presentation of multimedia elements. Ensure that you have a browser updated to its latest version with JavaScript enabled and the latest version of the Adobe FlashPlayer installed (<http://get.adobe.com/flashplayer/>). For technical support for this module please visit our Registration and Support FAQs at https://www.meted.ucar.edu/resources_faq.php.

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

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

GUAM

Tsunami preparedness key

Posted: Feb 26, 2012 10:24 PM PST

Updated: Feb 26, 2012 10:24 PM PST

by Nick Delgado

Local law enforcement agencies and Government of Guam employees as well as the public are getting a refresher course on how to be ready in the event of a tsunami. Laura Kong, director of the International Tsunami Information Center, says the training for Guam and the CNMI this week is to ensure preparedness plans are in place.

"There have been a lot of very good questions both from the experience and also that they do have basic knowledge of what a tsunami is so very good questions on details of the impact here," she said.

The next step is for participants to spread the information that they learned...she says tsunamis are unpredictable and could happen anytime of the year.

From:

<http://www.kuam.com/story/17022839/tsunami-preparedness-key>

PHILIPPINES

DOST distributes tsunami alert guides

By Jemin B. Guillermo

Sunday 26th of February 2012

ROXAS CITY, Capiz, Feb. 26 (PIA) -- The Department of Science and Technology (DOST) continues to educate Capiceños in interpreting tsunami alert advisories.

Capiz DOST Provincial head Gerbe Dellava said they are distributing information materials here to explain the government's tsunami alert issuance in case such calamity happens.

Dellava said that the Tsunami Alert Level Zero explains that the advisory is for information purposes only and there is no tsunami threat to the Philippines from the occurrence of the earthquake.

Tsunami Alert Level 1 calls on the public to stand-by for possible evacuation, he said, pointing out that in the Philippine Institute of Volcanology and Seismology

(PHIVOLCS) alert 1, there is no evacuation order yet but communities along the coast of the country or affected places are advised to wait for further information and to prepare for possible evacuation.

During Tsunami Alert Level 2, the concerned public is being advised to be on alert for unusual waves as based on tsunami wave models and early tide gauge records of the tsunami in the Pacific, coastal areas in the Philippine provinces fronting the Pacific Ocean are expected to experience wave heights of at most one meter.

Dellava pointed out that in such alert level, the people are advised to stay away from shorelines during the period and the people should not go to the coast to watch the tsunami.

He stressed that people whose houses are very near to the coastal areas facing the Pacific Ocean are strongly advised to go farther inland in said alert advisory.

He added that boats in harbors, estuaries or shallow coastal water are required to return to shore and to secure the boats and move away from the waterfront.

“Boats that are already at sea during the period should stay offshore in deep waters until further advised,” Dellava said.

On the other hand, immediate evacuation is to be done in Tsunami Alert Level 3, he pointed out.

Dellava explained that the public should be vigilant and prepared on what to do in times of calamities and disasters like earthquake, fire, tsunami and the like. (JSC/JBG-PIA6 Capiz)

From:

<http://www.pia.gov.ph/news/index.php?article=991330214681>

U.S. VIRGIN ISLANDS

U.S. Virgin Islands Governor signs territory’s first tsunami response plan, Feb. 4, 2012



Above: Governor John P. de Jongh, Jr. and VITEMA Director Elton Lewis (front) and Bill Proenza, Regional Director of the National Weather Service, Christa von Hillebrandt-Andrade, Manager of the Caribbean Tsunami Warning Program and retired UVI professor and oceanographer Roy Watlington.

US Virgin Islands Governor John de Jongh has signed a new tsunami response plan, which creates the territory’s first-ever Tsunami Incident Annex. The annex established guidelines for a widely-coordinated response to tsunamis.

“The Tsunami Incident Annex outlines the activities of the government response agencies within the emergency management system in the event a tsunami threatens or impacts the territory,” de Jongh said.

“The devastation that a tsunami can cause makes planning for it one of the highest priorities today in emergency management.”

Elton Lewis, director of the Virgin Islands Territorial Emergency Management Agency, said the plan was a major milestone for the territory and brought it closer to “TsunamiReady” status.

“It is [a] living document that changes as our community grows and expands as our capabilities are enhanced,” he said.

The project is funded by a \$100,000 grant from the Virgin Islands Public Finance Authority. In 2010, the governor wrote to President Barack Obama in support of an initiative to establish a Caribbean Tsunami Warning Centre in Puerto Rico.

From: <http://www.caribjournal.com/2012/02/04/us-virgin-islands-governor-signs-territorys-first-tsunami-response-plan/>

Photo by the Caribbean Journal staff

WASHINGTON

Interactive tsunami evacuation maps now available for the Pacific Northwest (TsunamiEvac, NW app, free) Press release, March 20, 2012

Interactive maps of tsunami evacuation zones in both Oregon and Washington are now available online and as a smartphone app (TsunamiEvac-NW).

The Pacific Northwest Tsunami Evacuation Zones’ online portal and smartphone app provide an at-a-glance view of tsunami hazard zones along the coasts of Oregon and Washington. This tool was developed by the Northwest Association of Networked Ocean Observing Systems (NANOOS) program. The online portal can be found on the web at: <http://nvs.nanoos.org/tsunami>. The maps have also been integrated into a free smartphone app, TsunamiEvac-NW, which allows users to see whether they are in a tsunami evacuation zone, and plan their own evacuation routes. This free app is available from the iTunes App Store and Android Market:

iPhone: <http://itunes.apple.com/us/app/tsunamievac-nw/id478984841?mt=8>

Android:
<https://play.google.com/store/apps/details?id=org.nanoos.tsunami&hl=en>

The coasts of Oregon, Washington, and Northern California are exposed to tsunamis from either distant earthquakes (such as the March 11, 2011, Tōhoku, Japan tsunami) or local earthquake events. The greatest risk to Northwest coastal communities is from very large locally generated tsunamis produced by an earthquake (magnitude 8-9+) occurring immediately offshore of the Pacific Northwest coast on the Cascadia Subduction Zone. The Oregon Department of Geology and Mineral Industries (DOGAMI) and the Washington State Department of Natural Resources (DNR) have mapped the zones that would be inundated by a tsunami. The collaborative effort between NANOOS, DOGAMI, and DNR will serve as an important tool in preparing for a potentially catastrophic tsunami event along the Pacific Northwest coast.

Both the interactive online portal and the smartphone app allow users to view whether their home, workplace, school, etc., are in a tsunami evacuation zone. Visitors to the coast can use the app to learn about tsunami risks before or during their visit. To help users develop and plan their own evacuation routes, the Places feature of this tool allows users to pinpoint a location by either entering an address or clicking on the map to see if that location is in a danger zone. Users can create multiple places with the feature and, if they log in with their myNANOOS account, those places will be saved automatically.

In addition to the maps, the portal and app provide information and resources of critical importance before, during, and following a tsunami event, including: Direct links to tsunami warnings issued by the NOAA West Coast and Alaska Tsunami Warning Center (WCTWC); Information links to WCATWC and the U.S. Geological Survey;

The Markers feature that displays pre-set locations of schools, bridges, assembly areas, and various local government and emergency management buildings; and Downloadable brochures produced by DOGAMI and DNR showing evacuation routes and links to local emergency agencies for many communities along the Washington and Oregon coasts.

Although infrequent, tsunamis are a major threat to both life and property on the Washington and Oregon coasts. Based on sediment deposits, Japanese harbor records and Pacific Northwest tribal oral histories, scientists have identified that the last mega-thrust earthquake (magnitude 8-9+) happened in 1700. Preparation for this type of event is necessary since scientists estimate that there is a 10 percent probability that the next earthquake will occur in the next 30 years.

Tsunamis that result from distant earthquakes, like the 1964 magnitude-9.2 Alaska earthquake or the 2011 magnitude-9.0 Japan earthquake, can cause damage in the Pacific Northwest as well. When the tsunamis from both of these events reached the shores of Washington, Oregon, and Northern California, lives were lost and tens of

millions of dollars' worth of damage was created in several harbors and bays.

To minimize the loss of life and utilizing funding from NOAA's National Tsunami Hazard Mitigation Program, the Oregon Department of Geology and Mineral Industries (DOGAMI) has embarked on a massive effort to map new tsunami inundation zones for the entire Oregon coast by mid 2014. DOGAMI scientists developed new earthquake source models in partnership with researchers at Oregon State University and the Geological Survey of Canada. DOGAMI constructed 3D point clouds using improved bathymetry and high-resolution lidar ground surface elevation data so that numerical hydrodynamic modeling could be performed by the Center for Coastal Margin Observation and Prediction. Upon model completion, DOGAMI staff created two lidar-based tsunami inundation map plate templates to create the Tsunami Inundation Map Series. This map series will span the entire Oregon Coast when complete, and will provide multiple local- and distant-source tsunami inundation scenarios, wave elevation profiles, wave height time series data, and building exposure analysis results.

DOGAMI also manages a comprehensive community outreach program that works to increase earthquake and tsunami preparedness among coastal visitors and residents, to create a local and sustainable grass-roots outreach program, and to create new evacuation brochures in collaboration with county and city officials. This outreach program is also supported by the Oregon Department of Land Conservation and Development and Oregon Emergency Management. For more information visit: www.oregontsunami.org.

In addition to managing more than 5.6 million acres of state-owned lands and serving as the state's wildland fire department, the Washington State Department of Natural Resources (DNR) houses the Washington State Geologist. The department regulates surface mining reclamation and provides technical assistance to citizens, industry and government on geologic hazards, forest stewardship, and other issues. Tsunami modeling was performed by NOAA's Center for Tsunami Research. Inundation mapping was undertaken by staff from the Washington State Department of Natural Resources. Community outreach is provided by the Washington Military Department, Emergency Management Division. For more information visit: www.dnr.wa.gov.

The Northwest Association of Networked Ocean Observing Systems (NANOOS) is the Pacific Northwest Regional Association of the U.S. Integrated Ocean Observing System (IOOS®), a national effort designed to enable the broadest access to ocean data, tools, products, and knowledge. NANOOS and our partners work with stakeholders to provide data and information needed to increase understanding and support decisions about key regional issues. For more information visit: www.nanoos.org.

The U.S. Integrated Ocean Observing System (IOOS®) is a federal, regional and private-sector partnership working to enhance our ability to collect, deliver and use ocean information. IOOS delivers the data and information needed to increase understanding of our oceans and coasts, so that decision-makers can act to improve safety, enhance the economy and protect the environment. For more information visit: www.ioos.gov.

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From:

http://www.dnr.wa.gov/ResearchScience/News/Pages/2012_03_20_tsunami_maps_nr.aspx ♦

NOAA issues tsunami debris alert from model

Posted on December 29, 2011 by Anthony Watts

<http://wattsupwiththat.com/2011/12/29/noaa-issues-tsunami-debris-alert-from-model/>

Federal agencies join forces

To learn more about the tsunami debris, NOAA researchers have been working with the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and other partners to coordinate data collection activities. NOAA and its partners are also coordinating an inter-agency assessment and response plan to address the wide-range of potential scenarios and threats posed by the debris.

“We’re preparing for the best and worst case scenarios — and everything in between,” says Nancy Wallace, director for NOAA’s [Marine Debris Program](#). As the tsunami surge receded, it washed much of what was in the [coastal inundation zone](#) into the ocean. Boats, pieces of smashed buildings, appliances, and plastic, metal, and rubber objects of all shapes and sizes washed into the water — either sinking near the shore or floating out to sea. The refuse formed large debris fields captured by satellite imagery and aerial photos of the coastal waters. The Japanese government estimated that the tsunami generated 25 million tons of rubble, but there is no clear understanding of exactly how much debris was swept into the water nor what remained afloat.

What remains of the debris?

Nine months later, debris fields are no longer visible. Winds and ocean currents scattered items in the massive North Pacific Ocean to the point where debris is no longer visible from satellite. Vessels regularly traveling the North Pacific have reported very few sightings. Only two pieces have been clearly linked to the tsunami.

NOAA is coordinating new interagency reporting and monitoring efforts that will provide critical information on the location of the marine debris generated by the tsunami. Ships can now report significant at-sea debris sightings and individuals or groups can request shoreline monitoring guides at DisasterDebris@noaa.gov.

Where is it?

Computer models run by NOAA and University of Hawaii researchers show some debris could pass near or wash ashore in the Northwestern Hawaiian Islands (in the [Papahānaumokuākea Marine National Monument](#)) as early as this winter, approach the West Coast of the United States and Canada in 2013, and circle back to the main Hawaiian Islands in 2014 through 2016.

Researchers caution that models are only predictions based on location of debris when it went into the water, combined with historical ocean currents and wind speeds. Conditions in the ocean constantly change, and items can sink, break down, and disperse across a huge area.

Because it is not known *what* remains in the water column nor where, scientists can’t determine with certainty if any debris will wash ashore.

Worst- and best-case scenarios

The worst-case scenario is boats and unmanageable concentrations of other heavy objects could wash ashore in sensitive areas, damage coral reefs, or interfere with navigation in Hawaii and along the U.S. West Coast. Best case? The debris will break up, disperse and eventually degrade, sparing coastal areas.

Debris will not go away completely, even in a best-case scenario. Marine debris is an ongoing problem for Hawaii and West Coast states, where garbage and other harmful items regularly wash up on beaches, reefs and other coastal areas.

What else is NOAA doing?

NOAA has convened experts to review available data and information from models and provide their perspectives on debris fate and transport. They are gathering information on significant sighting of marine debris in the North Pacific through NOAA’s [Office of Marine and Aviation Operation](#)’s Pacific fleet, the NOAA [Voluntary Observing Ship Program](#), which includes industry long-haul transport vessels, as well as the NOAA [Pacific Island Regional Observer Program](#) and their work with the Hawaii longline fishing industry. NOAA is also working with the U.S. Fish and Wildlife Service and the State of

Hawaii on shoreline debris monitoring in the Papahānaumokuākea Monument. ♦

International Radio Conference approves bandwidth to track ocean currents for science and disasters

Press Release 12-033

February 21, 2012

Agreement provides specific radio frequency bands for ocean radars

The International Telecommunication Union (ITU), charged by the United Nations with coordinating global radio spectrum use, recently came to an agreement that will foster improvements in ocean radar technology, which may eventually allow near real-time detection and tracking of tsunamis and prediction of the likely paths of oil spills, ocean debris and persons lost at sea.

Global interest in ocean radars increased dramatically in recent years due to events such as the Gulf oil spill and the massive loss of life caused by the Indonesian and Japanese tsunamis. Friday's action by the ITU's World Radio-communication Conference (WRC) provided specific radio frequency bands for ocean radars, which until now operated only on an informal basis and were subject to immediate shut-down if they caused interference with other radio systems.

Ocean radars are small radio systems typically installed on beaches and use radio signals to map ocean currents to distances as great as 100 miles. Users typically employ them for science, including the study of global ocean currents and their role in weather and climate change.

With further technical developments, including a reduction in the time between taking radar measurements and constructing maps of ocean currents, ocean radars could be used to alert authorities to the existence of tsunamis resulting from earthquakes and follow their path in near real time, allowing better warnings of impending dangers. The radars may also be able to predict the likely path of persons or vessels lost at sea and to predict the evolution of debris fields and oil spills after shipwrecks or oil rig disasters.

"The WRC's decision to identify dedicated ocean radar bands will help speed up technological development of these radars," said Andrew Clegg, a radio spectrum manager with the U.S. National Science Foundation (NSF), who chaired the international drafting group at the WRC that developed the ocean radar spectrum solution. "Many countries, particularly those recently devastated by ocean disasters, were particularly interested in reaching a global agreement for the use of ocean radars."

A variety of agencies and institutions in the United States fund or operate ocean radars including NSF, the National Oceanographic and Atmospheric Admini-

stration, the Department of Defense, and a large number of universities and research organizations.

The growing importance of radio spectrum use is due to intense demand for radio spectrum bandwidth by such applications as smart phones, broadband Internet access, GPS and military systems. The recent WRC action sets the stage for improved spectrum access specifically for ocean radars, but each country that desires to operate radars in the identified bands must implement the plan within their own national rules and regulations, which will require additional time.

Over 3,000 delegates representing more than 150 different countries attended the WRC, held in Geneva, Switzerland, from Jan 23-Feb 17. Similar conferences are held every three to four years.

From: National Science Foundation

http://www.nsf.gov/news/news_summ.jsp?cntn_id=123202&WT.mc_id=USNSF_51&WT.mc_ev=click ♦

NEWS

Islands on land could make towns tsunami-proof

"Elevated land-based islands could protect people living in low-lying areas from tsunamis—and archipelagos of them could form entire towns." This is an architect's proposal for the Tohoku region of Japan. Read the complete report by Robert Gilhooly and view the video (New Scientist, Feb. 15, 2012) at <http://www.newscientist.com/article/mg21328525.800-islands-on-land-could-make-towns-tsunami-proof.html>

Tsunami preparedness week

March 25-31, 2012 has been declared Tsunami Preparedness Week. For more information, brochures, public service announcements, tsunami awareness videos, details about LANTEX12 and PACIFEX12, and more, visit the website <http://nthmp.tsunami.gov/taw/tsunami-awareness-week.html>.

NTHMP meeting

Check website <http://nthmp.tsunami.gov/Minutes/minutes.html> for the NTHMP Warning Coordination Subcommittee Meeting Notes for the February 7, 2012, meeting in San Diego, California.

Scientists find signs of ancient tsunamis

Hanoi, Feb. 2, 2012. Scientists found signs that at least three tsunamis have struck the coastal province of Nghe An in ancient times, and another tsunami could strike the coast of Vietnam again, according to Vietnam news agency.

The tsunamis were thought to have occurred 4,500-4,300, 4,100-3,900 and 900-600 years ago, according to a two-year study that was recently completed at Hanoi-based Institute of Geophysics.

For complete report, visit
<http://www.theborneopost.com/2012/02/03/scientists-find-signs-of-ancient-tsunamis-updates/>

PUBLICATIONS

Emergency Management Review

The *Emergency Management Review* is a new international peer-reviewed journal that aims to share knowledge and insights between emergency management practitioners and researchers. Literature reviews, best practices, and case studies will be featured. Visit the journal Web site to read the first issue and learn more about how to submit papers for review.

From: <http://www.epcollege.com/epc/knowledge-centre/emergency-management-review/>

Principles of Emergency Management and Emergency Operations Centers (EOC)

By Michael J. Fagel, editor. 2011. ISBN: 978-1-4398-3851-8. 585 pp., \$89.20 (hardcover). CRC Press.
<http://www.crcpress.com>.

This is a thorough text on the disaster cycle planning and implementation—from assessing vulnerabilities to stress management to exercises to emergency operations center operations and management. The book opens on the “big picture” questions, then gradually narrows its focus to planning teams, exercise options, and response implementation, among many other topics. One topic covered in detail here that may be unique to this book is a focus on the physical composition of an EOC. “It is a common mistake to confuse the emergency operations center with the tasks that are performed in the EOC and to forget that the EOC is a physical location that generates its own demands,” write Lucien Canton and Nicholas Staikos. “For the EOC team to perform effectively, the physical and organizational demands of the EOC as a facility must be met. This EOC management is distinct from the operational management of the incident.” In this spirit, they look at the “facility management” aspects of EOC operations—things like ergonomics, environmental comfort, and the allocation of space to personnel. “By properly considering these as well as other requirements, the designers of the workplace environment will have a significant impact on the operational effectiveness, thus shaping the quality of an entity’s response,” they write. But EOC facility management is only one aspect of this very thorough book. This is a comprehensive, on-the-ground operational text for emergency managers.

From: *Natural Hazards Observer*, v. 36, no. 4, p. 16.

QuakeSmart Toolkit

Earthquake Mitigation Toolkit for Businesses
Actionable and
scalable



guidance and tools to the private sector, its owners, managers, and employees about the importance of earthquake mitigation and the simple things they can do to reduce the potential of earthquake damages, injuries, and financial losses. The QuakeSmart Toolkit (FEMA P-811 DVD) is available for order from the FEMA Library.

Table of Contents:

Welcome
Documents
How Earthquakes Affect Businesses
How QuakeSmart Can Help
Step 1: Identify Your Risk
Step 2: Make a Plan
Step 3: Take Action
Take Action Templates
Other FEMA Earthquake Publications
Recommended FEMA Earthquake Mitigation Training
Valuable Websites and Other Resources
Reviewers and Contributors
Artwork
QuakeSmart Logo
QuakeSmart Banner
QuakeSmart Poster
Videos
Earthquake Mitigation Saves Lives
QuakeSmart Mitigation Training Video for Employees
Mitigation Works For Business
From:
<http://www.fema.gov/plan/prevent/earthquake/qstoolkit/index.shtml>

Prepare in a year

Disasters happen...Are you prepared? The consequences of disaster are largely preventable. One hour of disaster preparedness activity each month will help you be ready for disasters whenever they occur.

For the Washington State Emergency Management (English and Spanish) *Prepare in a Year* booklet, visit http://www.emd.wa.gov/preparedness/prepare_year.shtml

Be Red Cross Ready—Tsunami safety checklist

American Red Cross offers this checklist for tsunami preparedness, at <http://www.redcross.org/www-files/Documents/pdf/Preparedness/checklists/Tsunami.pdf>

WEBSITES

<http://www.google.org/publicalerts>

Google Public Alerts

If you’ve ever searched for news on a looming emergency, you’ve likely been forced to sift through a deluge of results to get the info you need. Now skip all that. Google Public Alerts is a powerhouse of emergency information culled from authoritative sources, easily

searched by category, and mapped. The concept is as simple as it sounds, but for the full skinny on all the bells and whistles, you can read [Google's blog post](#) here.

From: Disaster Research 582, p. 11

http://www.fema.gov/pdf/about/state_of_fema/state_of_fema.pdf

The State of FEMA 2012

After wrapping up a record year for disaster response, the Federal Emergency Management Agency has released *The State of FEMA 2012*, which takes a look at where the agency is heading—but not without a look at where it's been. There are case studies, descriptions of recent FEMA accomplishments and planning efforts, a budget review, and more on the agency's strategic priorities, programs, and missions.

From: Disaster Research 583, Feb. 23, 2012

<http://acds.co.za/index.php?page=register>

Disaster Risk Reduction Knowledge Shop

A wide range of disaster risk management and reduction training modules and information is now available from the African Centre for the Study of Disasters. Sponsored by USAID, the Knowledge Shop has collected a variety of tools to be used by teachers, practitioners, and public officials working to reduce risk at any level.

From: Disaster Research 583, Feb. 23, 2012

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

Japanese Tsunami Debris FAQ

Recent news reports that debris from the March 2011 Japan earthquake and tsunami will wash up on the U.S. West Coast in a couple of years has everyone talking trash. A quick trip to this National Oceanic and Atmospheric Administration Marine Debris page will let you amaze your friends with true facts and debunk the tsunami trash myths. Learn how much debris might really be out there, if they're radioactive, and a slew of other floating garbage trivia.

From: Disaster Research 583, Feb. 23, 2012

http://new.paho.org/disasters/index.php?option=com_content&task=view&id=1637&Itemid=807

Guidelines for Developing Emergency Simulations and Drills

This recent guide from the Pan-American Health Organization will help organizations craft emergency drills that test disaster readiness, identify problems in execution, and better evaluate plans. Included are instructions and objectives for planning drills and simulations, resources for staying organized, and forms to help manage everything from budgets to evaluations.

From: Disaster Research 583, Feb. 23, 2012

<http://www.unisdr.org/we/inform/publications/25129>

Towards a Post-2015 Framework for Disaster Risk Reduction

The UN International Strategy for Disaster Reduction has just released *Towards a Post-2015 Framework for Disaster Risk Reduction*, which takes a look at disaster resilience efforts in the final three years of the Hyogo Framework for Action. The paper contains a background of the Framework, discussion of what type of framework will be needed after 2015, and a timeline of events for the remaining two years.

From: Disaster Research 583, Feb. 23, 2012

CLASSES / WORKSHOPS

Natural Disaster Management, **May 30-June 22, 2012**
University of Iceland Earthquake Engineering Research Centre, Selfoss, Iceland

This course provides an introductory overview of the disaster cycle, and examines local, national, and international roles in disaster management. Topics include multidisciplinary disaster cycle management, risk analysis, cost-benefit analyses of mitigation projects, and contingency planning for rescue, relief, and recovery. Following completion of the course, students will be able to lead or participate in multidisciplinary disaster management projects. www.earthquake.is/academic-program/natural-disaster-management-2012

From: Natural Hazards Observer, v. 36, no. 4, p. 23.

CONFERENCES / SYMPOSIA

April 14-17, 2012

National Planning Conference
American Planning Association, Los Angeles, CA.
www.planning.org/conference/

This conference offers sessions and workshops addressing issue in urban and environmental planning, regional planning, natural hazard risk reduction, and others. Topics include urban forestry, climate change, the cost of sea level rise, urban agriculture, Los Angeles River water quality, hazard mitigation, fire management and ecological restoration and disaster risk reduction.

From: Natural Hazards Observer, v. 36, no. 4, p. 22.

April 16-18, 2012

Australian and New Zealand Disaster and Emergency Management Conference <http://anzdmc.com.au/>
Australian Institute of Emergency Services, Australian and New Zealand Mental Health Association, and the Association for Sustainability in Business, Brisbane, Australia.

This conference looks at a variety of issues surrounding natural and man-made hazards. Topics include postdisaster psychological health in children, the role of systems theory in disaster response, the role of insurance in promoting flood resilience, and an all-hazards information management approach to managing disasters.

From: Disaster Research 582, p. 11

April 22, 2012

Tenth Annual Tsunami Story Festival
"Truly Amazing Tsunami Stories"
Sangha Hall in Hilo at 6:00 p.m.

1) The Hilo Pier story of Antone Correa Aguiar and Tuck Wah Lee

Antone's heroism saves Hilo from further tragedy
Tuck Wah makes an unbelievable escape
Family storytellers - Patrick Petti and Kenneth Lee

2) The Keaukaha Story of Lives Crossed
Paul Tallett rescues neighbors and a young girl tied to a tree

Clarice Wahinealii comes back to her rescue site
Family Storytellers - Willibroad Tallett and Paul Tallett

3) A family separated in the tsunami of 1960
Toshiko Sasaki and sons Alvin and Russell
Family storyteller - Alvin Sasaki

From:

http://www.tsunami.org/whats_new_at_museum.html

April 22-25, 2012

Ninth International Conference on Information Systems for Crisis Response and Management International Community on Information Systems for Crisis Response and Management, Vancouver, B.C., Canada.
www.iscram.org/

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

From: Natural Hazards Observer, v. 36, no. 4, p. 22.

April 22-27, 2012

European Geosciences Union General Assembly,
European Geosciences Union, Vienna, Austria

This conference presents research from geoscientists around the world. Topics include the uncertainty and variability of precipitation, landslides in volcanically active environments, flood risk uncertainty, large earthquakes and tsunami activity, and the economic costs of natural hazards.

From: Disaster Research 584, March 9, 2012

April 30 to May 2, 2012

Coastal Cities Summit, International Ocean Institute, St. Petersburg, Florida

This conference looks at managing coastal resources while addressing the pressures of coastal development, sea level rise, population growth, and ocean acidification. Topics include disaster resilience, coastal energy alternatives, food supply concerns, drought, and building smaller cities and towns.

From: Disaster Research 584, March 9, 2012

April 30 to May 3, 2012

Science Policy Conference, American Geophysical Union, Washington, D.C.

This conference examines the science informing policy decisions related to natural hazards, natural resources, oceans, and the Arctic. Topics include improved natural hazards preparedness and mitigation strategies, severe weather effects on agriculture and food prices, coastal transformations caused by sea level rise and erosion, and local business continuity strategies.

From: Disaster Research 584, March 9, 2012

August 26-30, 2012

International Disaster and Risk Conference
Global Risk Forum, Davos, Switzerland.

http://idrc.info/pages_new.php/IDRC-Davos-2012/831/1/

This conference discusses integrative risk management approaches for mega-catastrophes, country risk management, environmental and ecological risk, urban risk, societal and political risk, and health risk. Topics include disaster recovery and reconstruction, ecosystem services, land use planning, and critical infrastructure protection.

From: Natural Hazards Observer, v. 36, no. 4, p. 23.♦

INFREQUENTLY ASKED QUESTION

Where can you find a list of the world's strongest earthquakes and tsunamis, compiled by the U.S. Geological Survey, Incorporated Research Institutions for Seismology and WHO's International Disaster Database?

A list appeared March 20, 2012 on the website
<http://abcnews.go.com/International/wireStory/worlds-strongest-earthquakes-tsunamis-15964072>

Material added to the NTHMP Library
March - April 2012

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

American Red Cross, 2011, Social media in disasters and emergencies--Online survey of 1,046 respondents and telephone survey of 1, 011 respondents: American Red Cross, 17 p.

URL: <http://www.redcross.org/www-files/Documents/pdf/other/SocialMediaSlideDeck.pdf>

Amir, L.; Cisternas, A.; Vignerese, J.-L.; Dudley, B. McAdoo, 2012, Algeria's vulnerability to tsunamis from near-field seismic sources: Science of Tsunami Hazards, v. 31, no. 1, p. 82-98.

Arnold, Christopher; Lyons, Jack; Munger, James; Quinn, Rebecca C.; Smith, Thomas L.; Line, Philip, 2010, Design guide for improving school safety in earthquakes, floods, and high winds: Federal Emergency Management Agency FEMA P-424, 1 v.

Balcerak, Ernie, 2011, Studies provide new insights into Japan's March 2011 tsunami: Eos (American Geophysical Union Transactions), v. 92, no. 50, p. 467.

Baptista, M. A.; Miranda, J. M.; Omira, R.; Antunes, C., 2011, Potential inundation of Lisbon downtown by a 1755-like tsunami: Natural Hazards and Earth System Sciences, v. 11, no. 12, p. 3319-3326.

Barkan, Roy; ten Brink, Uri, 2010, Tsunami simulations of the 1867 Virgin Island earthquake--Constraints on epicenter location and fault parameters: Bulletin of the Seismological Society of America, v. 100, no. 3, p. 995-1009.

Butler, Rhett, 2012, Re-examination of the potential for great earthquakes along the Aleutian Island arc with implications for tsunamis in Hawaii: Seismological Research Letters, v. 83, no. 1, p. 29-38.

Federal Emergency Management Agency, 2012, The state of FEMA--Leaning forward--Go big, go early, go fast, be smart: Federal Emergency Management Agency, 43 p. http://www.fema.gov/pdf/about/state_of_fema/state_of_fema.pdf

Franchello, Giovanni; Annunziato, Alessandro, 2012, The Samoa tsunami of 29 September 2009--Early warning and

inundation assessment: Science of Tsunami Hazards, v. 31, no. 1, p. 19-60.

Jorstad, Finn A., 1968, Waves generated by landslides in Norwegian fjords and lakes: Norwegian Geotechnical Institute Publication 79, 19 p.

Korolev, Yu. P., 2011, An approximate method of short-term tsunami forecast and the hindcasting of some recent events: Natural Hazards and Earth System Sciences, v. 11, no. 11, p. 3081-3091.

MacInnes, Breanyn T.; Weiss, Robert; Bourgeois, Joanne; Pinegina, Tatiana K., 2010, Slip distribution of the 1952 Kamchatka great earthquake based on near-field tsunami deposits and historical records: Bulletin of the Seismological Society of America, v. 100, no. 4, p. 1695-1709.

Meah, Mohammed Ashaque; Ismail, Ahmad Izani M.; Karim, Md. Fazlul; Islam, Md. Shafiqul, 2012, Simulation of the effect of far field tsunami through an open boundary condition in a boundary-fitted curvilinear grid system: Science of Tsunami Hazards, v. 31, no. 1, p. 1-18.

Muhari, A.; Imamura, F.; Koshimura, S.; Post, J., 2011, Examination of three practical run-up models for assessing tsunami impact on highly populated areas: Natural Hazards and Earth System Sciences, v. 11, no. 12, p. 3107-3123.

Noggerath, Johannes; Geller, Robert J.; Gusiakov, Viacheslav K., 2011, Fukushima--The myth of safety, the reality of geoscience: Bulletin of the Atomic Scientists, v. 67, no. 5, p. 37-46.

Pacific Tsunami Warning Center; NOAA; NWS, 2011, PTWC messages, 11 March 2011: Pacific Tsunami Warning Center, 25 bulletins.

Saxena, Parul; Kumar, Lokendra, 2012, A study of the effect of permeability of rocks in tsunami generation and propagation by seismic faulting using linearized shallow-water wave theory: Science of Tsunami Hazards, v. 31, no. 1, p. 62-81.

Sever, Megan, 2012, Japan tsunami made population more vulnerable: Earth, v. 57, no. 3, p. 14.♦

State offices and agencies of emergency management:

The URL below gives mailing addresses, phone and fax numbers, websites. Does not give personnel names or job titles.

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

VIDEO-CD-DVD RESERVATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Tsunami Evacuation PSA (30 sec.). DIS Interactive Technologies for WA Emergency Management Division. 2000. TsunamiReady Education CD, 2005, American Geological Institute Earth Science Week kit.

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

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

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

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

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

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

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

