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## Volume 6, Number 2, April 2004

### Emergency Management and Emergency Response— In Simple Terms by Ray Peña

Emergency management is a continuous process by which the individual, group and community manage hazards and the effects of disaster. The process involves mitigation and preparedness (pre-event/event) and response and recovery (event/post-event). Actions depend partly on risk perceptions and event-generated need(s), effectiveness on how well activities are coordinated. Activities at each level (individual, group, community) affect the other levels

(continued on p. 3)

### EDITOR'S NOTE, by Lee Walkling

The tsunami mitigation community still has work to do! It seems we aren't getting the word out to the broader public. I was happy to see the announcement of World Water Day (March 22, 2004) in the March 19, 2004, issue of *Disaster Research 403*, but disappointed with the website factsheet ([http://www.waterday2004.org/be\\_informed\\_and\\_be\\_prepared.html](http://www.waterday2004.org/be_informed_and_be_prepared.html)). When talking about water-related hazards, there was no mention of tsunamis.

Since the partners sponsoring the World Water Day are the World Meteorological Organization and the International Strategy for Disaster Reduction, it is understandable that the emphasis would be hydrometeorological events. However, the website factsheet did discuss geology and natural hazards. How did tsunamis get totally overlooked?

Apparently the tsunami mitigation folks need to increase their education programs and make tsunami information more visible, not confining it to Pacific coastal states. People who design World Water Days, write books on coastal hazards, and develop emergency management courses in Colorado need to know about tsunamis, even if they don't live on the Pacific Rim. People travel. People move. (All this suggests another question:

why is the newsletter of the *National Tsunami Hazard Mitigation Program* only distributed on the Pacific coast?)

Perhaps the National Tsunami Hazard Mitigation Program needs to become a co-sponsor of World Water Day 2005, or at the very least, participate in the program's development. Additionally, they could push for a *National Natural Hazards Day* to replace the April Earthquake Awareness/Disaster Preparedness Month that Washington and Hawaii commemorate. Each state would participate with mitigation drills, informational kits, and events appropriate for the hazards experienced in their area, but general information about *all* hazards should be included.

The National Tsunami Hazard Mitigation Program should also monitor emergency management courses and college emergency management programs to ensure they include tsunami education. Perhaps that will ensure books entitled *Natural Disasters and Mitigation* (my example, not an actual book) will include a chapter on tsunamis. Because tsunamis are so often, in my experience, overlooked in discussions, events, and publications that should include them, the NTHMP needs a wider, noisier education program.♦

# *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).

It is assembled by  
Lee Walkling, Librarian,  
and is published bi-monthly by the  
Washington Department of Natural Resources, Division of Geology and Earth Resources.

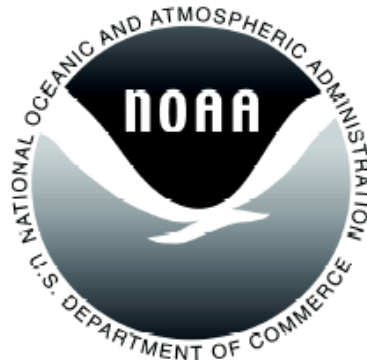
This publication is free upon request and is available in print (by surface mail),  
electronically (by e-mail), and at <http://www.dnr.wa.gov/geology/tsuinfo/index.html>.  
Participants in the TsuInfo program can request copies of reports listed in this issue from:

Washington Geology Library  
Washington Department of Natural Resources  
Division of Geology and Earth Resources  
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The views expressed herein are those of the authors and not necessarily those of  
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WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**  
Doug Sutherland - Commissioner of Public Lands



*(continued from p. 1)*

The police department, fire department and emergency management agency (EMA) are fully committed throughout the process. Other government agencies, non-governmental organizations, businesses, media, citizens, etc. are less committed before an event, much more during and after. The EMA represents commitment to an Integrated Emergency Management System (IEMS). IEMS rests on knowledge and common ground. The EMA creates knowledge (plans, training, exercises, etc.) from community information (demographics, geography, hazards, vulnerabilities, etc.). The community can use disaster common ground (CG) to coordinate disaster response.

CG element #1: Disasters follow a general pattern:

1. After prediction and warning, an event occurs.
2. Police, fire, EMS, public works, utilities, media, passers-by, etc. converge, assess effects, provide services (care for victims, prevent further injury or damage, restore basic services, maintain public order, etc.) and assert control (establish command, stage resources, control access/egress, etc.).
3. Agency representatives activate the Emergency Operations Center, compile information and support emergency operations.
4. Agency representatives access or activate facilities to obtain resources and services.
5. Communication by all available means. Media recording and broadcasting. An unstable information environment.

CG element #2: Response always includes five basic functions:

1. Making decisions (management/command).
2. Doing the work (operations).
3. Planning for the future (planning).
4. Getting who and what you need (logistics).
5. Keeping track (finance/administration).

These functions form the basis of the Incident Command System (ICS).

CG element #3: Disaster responders generally share common priorities:

1. Saving lives.
2. Reducing harm.
3. Meeting basic human needs.
4. Protecting property.

CG element #4: Generally people in crisis:

1. are rational, creative and resourceful, will experiment to find what works.
2. learn and respond quickly—more good information leads to smarter responses.
3. are unified by shared purpose and meaning.

4. want to help others—individual agendas fade.
5. become leaders—leadership behaviors, not roles, appear as needed.

The response below is based on CG elements. Incorporated into community emergency plans, it provides the framework for training and exercises.

Direction and Control/Incident Management:

A. During routine events, agencies will use established procedure to manage incidents. For events requiring coordinated incident site management, agencies will jointly establish a Command Post (CP), supported by established structures.

B. During disaster events, agencies will respond according to established procedures and provisions contained therein. If a conflict arises, provisions set forth herein will govern:

1. The Community will activate the Emergency Operations Center (EOC). Agencies with emergency responsibilities will send a representative to the EOC. Other local, mutual aid and support agencies may be asked to send a representative to the EOC. The EOC will be organized to support basic functions (management/command, operations, planning, logistics and finance/administration).

2. CPs may be established at or near emergency site(s), depending upon the nature of the event. All agencies responding to the site will be represented at the CP. There will be only one CP established per site.

3. Communications will be established between the EOC and Cp(s) in accordance with the provisions previously established. Communications will also be established with other facilities (e.g. 9-1-1) as appropriate.

4. CP and EOC personnel will jointly manage the incident. CP(s) will direct site operations with EOC support. Certain function [coordination of multiple CPs, prioritizing of needs presented by multiple sites, support of shelter operations, joint public information activities, coordination with other EOCs, etc.] will be managed by the EOC. ♦

*About the author: Ray Peña is an Emergency Manager with Dane County Emergency Management, Madison, WI.*

*Source: CPM Global Assurance, February 2004, Reprinted with permission from Witter Publishing Corp. Content contained on <http://www.ContingencyPlanning.com>*

### **Global tsunami database project (GTDB)**

by Paula Dunbar and Viacheslav Gusiakov  
Originally published in *Tsunami Newsletter*,  
v. 35, no. 5, 2003, p. 16-17, 18  
[http://www.prh.noaa.gov/itic/library/pubs/newsletters/nl\\_html/nl\\_2003.html](http://www.prh.noaa.gov/itic/library/pubs/newsletters/nl_html/nl_2003.html)

Earlier this year, the ITIC (Honolulu), the WDC-SEG/NGDC (Boulder) and the NTL/ICMMG (Novosibirsk) collaborated on the development of a plan to compile a unified and comprehensive Global Tsunami Database (GTDB) by merging the two existing tsunami databases currently maintained separately by the WDC/NGDC and the NTL/ICMMG. The first draft of the proposal was developed in June of 2003 during the preparation of the first working meeting on the GTDB Project held on 8 July 2003 in Sapporo, Japan, prior to the IUGG Tsunami Symposium (*Tsunami Newsletter*, June 2003). A general plan of action was discussed at this meeting, including the need for a new database format and a working visit by V. Gusiakov (NTL/ICMMG) to the WDC/NGDC in summer 2004 to merge the databases.

The second meeting was held in Wellington, New Zealand just before the beginning of the International Tsunami Workshop and the XIXth ICG/ITSU Session. This meeting was attended by P. Dunbar (WDC/NGDC), V. Gusiakov (NTL/ICMMG), C. McCreery (PTWC Director), K. Satake (IUGG/TC Chair), N. Nishide (JMA, Japan), N. Puspito (ITB, Indonesia), and P. Wood (IGNS Ltd., New Zealand). The new database format was presented, which includes additional fields for run-up references and numbers of casualties and injuries. After intensive discussion, it was agreed that some of the format details will be resolved during V. Gusiakov's working visit to WDC/NGDC.

The need and procedure for obtaining input from the HTDB Regional Coordinators was also discussed. It was also agreed that there is a need to convene a Regional Coordinators meeting in late 2004 or early 2005 to discuss the new procedures for future maintenance and improvement of the GTDB.

The detailed proposal on the GTDB Project was presented to the ITSU-XIX (under Agenda Item 7.3), and received positive support from the Member States. The resulting recommendation (ITSU-XIX.3 Recommendation) encourages the project participants (ITIC, WDC/NGDC, and NTL/ICMMG) to implement the GTDB Project in 2003-2005 with financial support to be provided jointly by the U.S. National Weather Serv-

ice/Pacific Region (NWS/PR) and the IOC. The official copy of the database will be housed and maintained at the WDC/NGDC using the Oracle RDBMS software; from here, the data can be accessed via Web-based HTML forms and ArcIMS interactive maps, as well as exported in different formats specified by the ITIC for the use of the tsunami warning centers and other potential users.

The offline, stand-alone application (Win-HTDB graphic shell) will continue to be supported, and updated by adding a new software calculation for Tsunami Travel Times (TTT), with funding from the NWS/PR. Support for this application is deemed essential because some users may not have easy access to the Internet, as well as have a need to access the historical data in an "offline" mode. Upon completion of the first phase of the project in late 2004, the WDC/NGDC will provide 100 copies of a CD-ROM containing the database, graphic shell, and TTT software to the IOC Secretariat for distribution to the Member States.



### **New tsunami bulletin board implemented**

In December 2003, the ITIC debuted its new Tsunami Bulletin Board (TBB) software to members after a six month research and development period brought on by a computer failure and several system security breaches.

Originally begun by NOAA's PMEL and transferred to the ITIC in 1995, the TBB listserv provides an open, objective scientific forum for the posting and discussion of news relating to tsunamis and tsunami research by researchers and other technical professionals. The ITIC is offering this service to facilitate the widespread and timely dissemination of information on tsunami events, current research investigations, and announcements for upcoming meetings, publications, and other tsunami-related materials. All members of the TBB are welcome to contribute. Messages are immediately broadcast to all members without modification. The TBB is available both as a regular email service and through the Web. Members also automatically and immediately receive the tsunami bulletins issued by the PTWC and WC/ATWC. The listserv utilizes the U.S. National Weather Service's Infolist service. Currently, there are over 200 international members. For more information, or to subscribe to the TBB listserv, please contact us at [itic.tsunami@noaa.gov](mailto:itic.tsunami@noaa.gov).

from: *Tsunami Newsletter*, v. 35, no. 5, 2003, p. 18

### **FEMA Offers On-Line Course to Help Build Partnerships with Tribal Governments**

In January 2004, FEMA released an on-line, independent study course for those working with tribal governments to protect native people and their property against all types of hazards. The course is available to anyone who has an interest in learning more about building partnerships with tribal communities. Throughout the course, tribal representatives speak about their history, their culture, their way of life, and what those working with them need to know to develop good relationships. Specialists at FEMA's Emergency Management Institute (EMI) developed the course, which is part of the institute's extensive independent study program. *Building Partnerships with Tribal Governments*, IS 650, includes lessons covering historical and legal perspectives, tribal culture, and challenges in delivering government programs. Those who pass the final exercise receive a certificate of completion. The course is available on-line at: <http://training.fema.gov/EMIWeb/IS/is650.asp>.

Additionally, EMI has recently issued its 2004 Catalog of Activities, which lists all the EMI courses available in mitigation, readiness and technology, professional development, disaster operations and recovery, chemical emergency preparedness, and integrated emergency management. The catalog includes both the resident training provided at the National Emergency Training Center in Emmitsburg, Maryland, as well as the dozens of nonresident courses and independent study courses offered by EMI. For a copy, contact EMI, 16825 South Seton Avenue, Emmitsburg, MD 21727; (800) 238-3358, (301) 447-1000; <http://training.fema.gov/emi> web.

from: Natural Hazards Observer, v. 28, no. 4, p. 7

### **FEMA Announces Another \$173.5 Million in Grants to States**

On December 18, 2003, FEMA announced \$173.5 million in grants to help state and local government better respond to all hazards. FEMA describes the Emergency Management Performance Grants (EMPG) program as a step toward achieving comprehensive emergency management at state and local levels that is adaptable to any terrorist attack, human-caused incident, or natural disaster. The EMPG program supports improvement in all phases of hazards management-mitigation, preparedness, response, and recovery. For more information about the Emergency Management Performance Grants program, see <http://www.fema.gov/preparedness/empg.shtm>.

from: Natural Hazards Observer, v. 28, no. 4, p. 6

### **April is Disaster Preparedness Month in Washington**

April 1 will mark the start of Disaster Preparedness Month in Washington. Local emergency managers, public safety answer points, school districts, tribes and state agencies already have been sent the new Emergency Preparedness Campaign 2004 information kit, which

includes a new poster on chemical hazards, an emergency preparedness 2004 calendar, 9-1-1 information and materials, a state roadmap to emergency preparedness, and several activities for children.

Additional packets may be ordered through Barbara Thurman, Emergency Management Division's public education manager, at 253-512-7047 or [b.thurman@emd.wa.gov](mailto:b.thurman@emd.wa.gov).

Major events in Disaster Preparedness Month will include the Partners in Emergency Preparedness conference, the state Local Emergency Planning Committee conference and the April 22 Drop, Cover and Hold Drill from 9:45 to 10 AM.

from: Emergency Responder, Jan/Feb. 2004, p. 4.

### **Virtual Meeting Place to Reunite Families After Disasters**

After the WTC attack, many survivors waited hours, even days, before they could get word to their frantic families. A couple that lived through that ordeal has launched a Web site designed to reunite loved-ones following future disasters: [www.havenpoint.org](http://www.havenpoint.org) from: CONTINUITY e-GUIDE, February 25, 2004 (e-mail)

### **Alaska earthquake**

On Feb. 22, 2004, there was a 4.8 earthquake, 3 miles deep, 70 miles SE of Tok, Alaska. On Feb. 23, 2004 the West Coast and Alaska Tsunami Warning Center/NOAA/NWS issued this statement; "The magnitude and location are such that a tsunami will not be generated. This will be the only bulletin issued."

### **Indonesian earthquake**

The Feb. 6 earthquake (magnitude 7.4) in Irian Jaya Region, Indonesia did not cause a tsunami warning or watch to be issued. "Based on location and magnitude the earthquake was not sufficient to generate a tsunami damaging to California, Oregon, Washington, British Columbia or Alaska. Some areas may experience small sea level changes."

from: West Coast and Alaska Tsunami Warning Center/NOAA/NWS, issued 02/07/2004 at 0259 UTC.

## PUBLICATIONS

*Science News Online* (March 6, 2004, v. 165, no. 10, p. 152 at <http://www.sciencenews.org/articles/20040306/bob8.asp>) published an article by Sid Perkins, "Killer Waves - Scientists are learning how to predict tsunami risk."

*CPM Global Assurance* sent out its first issue in 2004. The journal integrates business continuity, security, and emergency management. For more information: CPM-Global Assurance, Witter Publishing Corp., 20 Commerce Street, Suite 2013, Flemington, NJ 08822, USA; (908) 788-0343; fax (908) 788-3782.

The *Manual for Coastal Hazard Mitigation*, on compact disc, introduces the concept of coastal hazard mitigation through community and individual preparedness and provides information for implementing effective hazard reduction efforts. Broad in scope, and presenting a wide range of mitigation techniques from grassroots initiatives to regional efforts promoted by government, the manual (by T. O. Herrington, 2003) is a comprehensive document that references the underlying coastal processes that form the basis of each coastal hazard mitigation technique.

The CD costs \$2.00 and is available from N. J. Sea Grant Program, New Jersey Marine Sciences Consortium, Building No. 22, Fort Hancock, NJ 07732.

from: Sea Grant Abstracts–Publications from the Nation’s Sea Grant Programs, v. 19, no. 1, p. 15.

[Note: this CD has been added to the National Tsunami Hazard Mitigation Program Library]

The Oregon Department of Geology and Mineral Industries released Interpretive Map Series IMS-23, *Tsunami Hazard Map of the Alsea Bay (Waldport) Area, Lincoln County, Oregon* in January 2004. This map, by George R. Priest, Jonathan C. Allen, and Arun Chawla, may be viewed as an essential tool for evacuation planning in the event of an earthquake and/or tsunami. A detailed evacuation guide for the Waldport area will be published later this year and will be available on the Department of Geology and Mineral Industries website and from the city of Waldport.

*Makai* translates for clients and the general public the results and scope of Sea Grant research and extension activities in the areas of marine and coastal management, industry, and policy. Edited by Priscilla Perez Billig. 4-page monthly; no charge. Order from Sea Grant Communications Office, 2525 Correa Road, HIG 210, Honolulu, HI 96822.

from: Sea Grant Abstracts–Publications from the Nation’s Sea Grant Programs, v. 19, no. 1, p. 30.

*Sea Grant News* covers marine and coastal issues research, education, extension, awards, upcoming events, and publications of both the California Sea Grant Extension Program and the California Sea Grant Program. Edited by Marsha Gear. Published quarterly; free of charge by request to California Sea Grant, University of California, 9500 Gilman Drive, La Jolla, CA 92093-0232. Also available online at <http://www-csgc.ucsd.edu/PUBLICATIONS/SGNewsIndx.html>.

from: Sea Grant Abstracts–Publications from the Nation’s Sea Grant Programs, v. 19, no. 1, p. 29.

*Sea Star* is a quarterly marine events calendar, featuring news stories about Washington Sea Grant Program researchers, programs, and outreach and marine-related events. Includes upcoming events of interest to members of the marine community and those with an interest in it. Compiled and edited by Susan E. Cook. No

*TsuInfo Alert*, v. 6, no. 2, April 2004

charge. Order from Washington Sea Grant Communications, 3716 Brooklyn Avenue NE, Seattle, WA 98105-6716 or email [sgpubs@u.washington.edu](mailto:sgpubs@u.washington.edu).

from: Sea Grant Abstracts–Publications from the Nation’s Sea Grant Programs, v. 19, no. 1, p. 34.

## WEBSITES / LISTSERVS

[http://isis.uwimona.edu.jm/uds/Tsunami\\_Lander.html](http://isis.uwimona.edu.jm/uds/Tsunami_Lander.html)  
Catalogue of Caribbean Tsunami - “*Caribbean Tsunamis— An Initial History*” by James Lander, Boulder, CO, USA

from: Wayne Johnston

<http://training.fema.gov/EMIWeb/pub/register.html>  
Due to demand, FEMA has provided a web site for “G197 Emergency Planning and Special Needs Populations”. The course is not designed for self-study, but the materials are available on-line.

from: Disaster Research 403, March 19, 2004

<http://www.hazardmaps.gov/atlas.php>  
The “Multi-hazard Mapping Initiative” provides an on-line advisory atlas with the goal of fostering the exchange and collection of geospatial hazards data, increasing hazard awareness, and establishing standards for map creation. Maps can be customized in a variety of ways.

from: Disaster Research 403, March 19, 2004

## Disaster and Environment Listserv

The Benfield Hazard Research Center at University College in London has established an Internet listserv to focus on linkages between disasters and the environment. The intent of the list is to support research and discussion on the interactions between disasters (natural and conflict-induced) and the environment with the goal of linking researchers in diverse fields such as geography, ecology, sociology, anthropology, environmental studies, natural resource management, development studies, disaster studies, and refugee and humanitarian assistance.

Benfield Hazard Research has begun this unmoderated list as part of its rapid environmental impact assessment in disasters project (see [www.benfieldhrc.org/SiteRoot/disaster\\_studies/rea/rea\\_index.htm](http://www.benfieldhrc.org/SiteRoot/disaster_studies/rea/rea_index.htm) for information about this project).

To join the group, visit <http://www.jiscmail.ac.uk>, type “environment-disasters” into the “find list name” search function and follow the instructions to join. For further information, contact C. Kelly; e-mail: [72734.2412@compuserve.com](mailto:72734.2412@compuserve.com).

from: Disaster Research 403, March 19, 2004

<http://www.unisdr.org/>  
The web site of the United Nations International Strategy for Disaster Reduction (ISDR) has been recently revised and many new features have been added, including links to numerous publications on disaster mitigation by ISDR and others.

from: Natural Hazards Observer, v. 28, no. 4, p. 15

<http://www.training.fema.gov/emiweb/is/is317.asp>  
The Department of Homeland Security's Federal Emergency Management Agency (FEMA) recently unveiled this on-line, independent study course that can serve as either an introduction to those joining Community Emergency Response Teams (CERTs) or as a refresher for current volunteer team members.

from: *Natural Hazards Observer*, v. 28, no. 4, p. 15

<http://www.disastereducation.org>

The National Disaster Education Coalition (NDEC) has launched a new web site. NDEC is composed of federal government agencies and national not-for-profit organizations that work together to develop and disseminate consistent educational information for the public about disaster preparedness. NDEC member agencies ensure that disaster safety messages are appropriate, accurate, research-based, and crafted appropriately for the audience by using understandable language.

from: *Disaster Research* 401, Feb. 9, 2004

[http://www.ridiproject.org/downloads/annotated\\_bibliography.pdf](http://www.ridiproject.org/downloads/annotated_bibliography.pdf)

The Rhode Island Disaster Initiative, a project to study and analyze various practices in disaster medicine, has an extensive bibliography of disaster medicine resources.

from: *Disaster Research* 401, Feb. 9, 2004

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

This electronic network, hosted by the Lancaster University Management School, is designed to get people who are interested in technical risk assessment together with people interested in human risk perception.

from: *Disaster Research* 401, Feb. 9, 2004

<http://www.noahswish.org/index.htm>

Noah's Wish is an organization devoted to ensuring animal welfare during disasters. The site provides a variety of information and resources, including schedule information and requirements for their extensive national volunteer training program.

from: *Disaster Research* 401, Feb. 9, 2004

## CONFERENCES/CLASSES/WORKSHOPS

### April 19–21, 2004

Disaster Mitigation for Cultural Collections; San Francisco, CA. Collecting institutions have a responsibility to ensure that their collections are preserved for future generations. The importance of this mission can sometimes get lost in the shuffle of day-to-day tasks. However, an unanticipated disaster can quickly remind us how vulnerable these collections are to damage. Disaster planning prepares institutions to respond quickly to emergencies. Disaster mitigation, or the ability to identify risks and halt some emergencies from happening, should always play a key role in an institution's emergency preparedness and planning effort. In addition to large-scale emergencies, institutions should also be aware of the

*TsuInfo Alert*, v. 6, no. 2, April 2004

danger to their collections from roof leaks, pest infestation, mold blooms, theft, and fire.

The Conservation Center for Art and Historic Artifact's disaster mitigation workshop series will provide tools for assessing an institution's vulnerability to disaster; evaluating fire prevention, detection, and suppression strategies; determining security risks; and assessing health and safety factors related to disaster.

The workshops are intended for staff who are involved in collections care activities or have responsibility for the safety of collections. They are appropriate for librarians, archivists, curators, collections managers, stewards of historic house museums, site and facilities managers, and security and safety staff.

Each workshop will cover a significantly different topic applicable to most collecting institutions. Individually, the workshops will provide valuable information, but the full value of the series will be best obtained by attending all three workshops. Through their examination of key issues, these workshops work together to offer a framework for the development of effective and comprehensive disaster mitigation strategies.

The National Endowment for the Humanities and the California Preservation Program have provided subsidies for this workshop. The sponsors of this series are the Conservation Center for Art and Historic Artifacts (CCAHA) and the California Preservation Program (CPP). For additional information, workshop registration forms, information about CCAHA and its programs and services, please visit our Web site at [www.ccaha.org](http://www.ccaha.org) or contact CCAHA's Preservation Services Office at 215.545.0613 or [ccaaha@ccaaha.org](mailto:ccaaha@ccaaha.org).

E-mail from [menges@u.washington.edu](mailto:menges@u.washington.edu), 3-11-2004

### May 3–5, 2004

Disaster-Resistant California. Sponsor: California Governor's Office of Emergency Services (OES). Sacramento, California. With the goal of exploring disaster mitigation, planning, preparedness, response, and recovery, this conference is designed to bring together emergency management professionals, local and state government representatives, and private business partners to share ideas, technology, and resources for the purpose of mitigating disasters. Details about the conference are available from Victoria LaMar-Haas, OES, P.O. Box 419023, Rancho Cordova, CA 95741; (916) 845-8531; e-mail: [victoria.la.mar-haas@oes.ca.gov](mailto:victoria.la.mar-haas@oes.ca.gov); <http://www2.sjsu.edu/cdm/drc04/index.html>.

from: *Natural Hazards Observer*, v. 28, no. 4, p. 12

### May 12–15, 2004

National Conference on Animals in Disaster 2004. Sponsor: The Humane Society of the U.S. (HSUS). Philadelphia, Pennsylvania. This conference will include seminars and workshops geared toward emergency managers and responders, animal care and control personnel, veterinary professionals, and volunteers of all levels and experience who work with animals and disasters. Topics fall into three main areas: preparedness

and planning; national and veterinary issues; and response issues. For more information, contact the Disaster Services Department at HSUS, 700 Professional Drive, Gaithersburg, MD 20879; (301) 258-3063; e-mail [ncad@hsus.org](mailto:ncad@hsus.org); <http://www.hsus.org/ace/20292>.

from: Disaster Research 401, Feb. 9, 2004

#### May 18–21, 2004

TIEMS 2004 Annual Conference. Sponsor: The International Emergency Management Society (TIEMS). Melbourne, Australia. Registration and agenda information are available from Norm Free, TIEMS, Shire of Yarra Ranges, P.O. Box 105 Lilydale, Victoria, Australia 314; tel: 61 03 9294 6703; e-mail: [registration@tiems.org](mailto:registration@tiems.org); <http://www.tiems.org/>.

from: Natural Hazards Observer, v. 28, no. 4, p. 12

#### May 30–June 4, 2004

PACON 2004: New Technologies, New Opportunities will be held in Honolulu, HI. The role of marine science and technology in the economic development of the Pacific Basin resources is of vital concern to planners, policy makers, administrators, educators and scholars. The biennial Congress brings people together to address key issues concerning marine technology related to the ocean's economic potential from a multidisciplinary perspective. The Congress facilitates an exchange of views and ideas between representatives of all nations thereby strengthening the global exchange of information and collaborative research linkages.

For further information contact PACON International, PO Box 11568, Honolulu, HI 96828-0568; e-mail [pacon@hawaii.edu](mailto:pacon@hawaii.edu); [www.hawaii.edu/pacon](http://www.hawaii.edu/pacon).

from: Sea Grant Abstracts—Publications from the Nation's Sea Grant Programs, v. 19, no. 1, p. 35.

#### August 20–28, 2004

32nd International Geological Congress. Sponsors: International Union of Geological Sciences and the member countries of the Mediterranean Consortium. Florence, Italy. This congress will have a special focus on geological processes as they impact natural and human-made hazards, along with an overall emphasis on the links among geological sciences and society, human rights, and sustainability. Complete information about this congress can be obtained from Chiara Manetti, Borgo Albizi, 28-50121 Firenze, Italy; tel: +39 055 2382146; e-mail: [casaitalia@geo.unifi.it](mailto:casaitalia@geo.unifi.it); <http://www.32igc.org/home.htm>.

from: Natural Hazards Observer, v. 28, no. 4, p. 13

#### LESSONS/ACTIVITIES

Emergency Management Institute offers Community Emergency Response Team (CERT) training lessons online at <http://training.fema.gov/EMIWeb/CERT/mtrls.asp>. English and Spanish versions are offered, along with PowerPoint visuals, and photographs of CERT training. Appendix 1-A is entitled Hazardous Lesson Plans; plan number 27 is Tsunamis. ♦

### The State of Public Warnings in the USA

By Richard Rudman, Remote Possibilities Consulting Services

Originally published online: [http://disaster-resource.com/newsletter/subpages/v23/meet\\_the\\_experts.htm](http://disaster-resource.com/newsletter/subpages/v23/meet_the_experts.htm)

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In the rapidly changing wired and unwired world we find ourselves in, many of us are “connected” except while we are asleep. However, are we reliably connected to warnings about all the events that can put us in harm's way?

After September 11, 2001, the *New York Times* and other publications raised serious concerns about public warnings. Government was not able to respond to these warning criticisms effectively for several reasons. The nature of the September 11 domestic terrorist attack was not a threat that we had faced as a nation before.

Meaningful warnings would have required lead time that we now know was not possible on September 11. And, strange as it may seem, the US then and now does not have a nationwide public warning policy.

While the United States had warning systems predating the legendary ride of Paul Revere, the U.S. has never had an overall national warning strategy. Formal national warnings had their roots in World War II when fears of enemy attack on U.S. soil were high. The CONELRAD broadcast warning system was evolved to warn us. It was also designed to thwart radio direction

finders that were the “high tech” on bombers of that era. When bomb dropping technology made CONELRAD's spoofing abilities moot, the system was changed and became the Emergency Broadcast System (EBS).

EBS adopted more of a local and state flavor as the emphasis on Cold War enemy warnings was played down. The good people at the National Weather Service came to the rescue. They were aware that some risk-prone local communities had worked with local radio and TV stations to get warnings out for local weather disasters. One of the best practices cited was identified in Parkersburg, West Virginia. Emergency managers and broadcasters in Parkersburg had put together an effective flash flood warning system. Based on such best practices, EBS added local civil and weather warnings to the less likely but still possible need for national warnings for enemy attacks. FEMA, the FCC and state emergency management conducted a series of meetings across the nation in 1976 to roll out EBS and its new local role to broadcasters and local emergency managers.

The Emergency Alert System (EAS) brought improved technology to the national warning mission in



1997. However, in the opinion of some broadcast warning experts, it still fell short of solving many warning problems. EAS was the result of a multi-year inquiry by the FCC into how EBS could be improved. The EAS as the FCC approved it was built on a much more technically sound platform than EBS. Even so, there was still no national warning strategy in place that spanned all government agencies and levels.

There were other problems. For example, EAS, like EBS before it, still operates separately from warnings issued by the National Weather Service. There was nothing in the new EAS rules to make sure local civil warnings could get back into the National Weather Service's NOAA Weather Radio (NWR) national network of Weather Radio transmitters. These VHF radio channels can be monitored by scanners and marine radios by segments of the public who might not be listening or watching on-air broadcasting.

There is also a very large Catch 22 inherent in the EAS. Participation in the EAS by broadcasters at the local and state level is voluntary. The FCC does mandate compliance for broadcasters to install EAS equipment, maintain it, test it weekly and monthly, relay national level warnings, and keep records. Relaying local and state EAS messages is not mandatory for broadcasters. Making matters worse, while there was once some government funding for equipment and training, that has all but disappeared. This literally makes EAS a voluntary unfunded Federal mandate.

EAS is not the whole warning picture. Despite significant progress, EAS, NWR, and the entire range of warning devices (including sirens) have never been coordinated elements of a national all hazards warning system. Civilian and government warning experts met in November 2001 in McLean, VA, to outline the scope of the warning problem. The Partnership For Public Warning (PPW) that those 120 experts envisioned in late 2001 was incorporated as a not-for-profit in early 2002 to explore the warning issues they identified. PPW's initial challenge: To draft a national warning strategy and its supporting elements.

PPW has since conducted two major warning workshop retreats at the FEMA training facility in Emmitsburg, MD, and convened task forces to write other work products. PPW has so far published major reports based on these workshops available on the PPW website [www.ppw.us]. The PPW reports on the draft strategy and a critical assessment of the Homeland Security Advisory System (HSAS) were requested by the then newly formed Department of Homeland Security. Warning strategy, the need for a common warning protocol, the EAS, and common warning terminology has been key areas of investigation for subsequent PPW's reports. However, without a clear mandate and much needed resources from the Federal government, the public warning function could remain an unfunded voluntary hole in our nation's protective armor.

Looking to a future beyond the hoped-for national warning strategy, some warning experts believe that

emergency information itself should be thought of as a resource to be managed. Most people would agree that at any given point during an emergency response emergency managers would like the public to either do or not do something that could help bring the event to a more rapid satisfactory outcome.

Warnings, in this view, could be thought of as a subset within the entire managed resource of emergency information. Information then can be seen as the overall managed resource from the origination of the initial public warning on to announcements from emergency managers that response has ended.

Conclusion: A major lesson we have learned is that technology by itself is not the answer to effective warnings. We need to include all stakeholders in the public and private sectors in the still evolving process to make sure we have all our warning bets covered. The PPW has been developed as a non-profit and solution-neutral meeting ground to explore and outline all the elements of a viable national warning strategy. PPW has concluded that no one agency is now in charge of the overall warning mission. Fixing responsibility at a high level in government for warnings is a priority for PPW, and should be for all of us. ♦

Note from CONTINUITY e-GUIDE:

The 2004 Disaster Resource GUIDE (free to addresses in the U.S. and Canada) will be published in April. If readers use the link given below, they can sign up for CONTINUITY e-GUIDE, get additional information about the 2004 Disaster Resource GUIDE, and find a link to another article by Richard Rudman.

**WC&ATWC Most Recent Tsunami Message Page**  
(<http://wcatwc.gov/message.shtml>)

NOTICE: This page is updated when a Tsunami Information Message or Tsunami Warning Message is issued. Tsunami Information messages are normally issued when smaller earthquakes (greater than magnitude 4.0, but less than 6.5) may be felt near coastal areas. These messages are issued to assure coastal residents and emergency managers that the earthquake was non-tsunamigenic. If you are seeking information about an earthquake and there is NO information about that event on this page, then the magnitude of that earthquake was below the threshold for the issuance of a Tsunami Message for that area, or the information has been replaced with that of a more recent earthquake. Go to [USGS Earthquakes](#) or [Earthquake Catalogs](#) or [Previous Messages](#) to search for additional earthquake information. Information on this page last updated: Sunday, 28-Mar-2004 05:04:40 AKST

## Recording Disaster

by Jennifer Henion

Originally published in *The Daily Triplicate*, March 27, 2004, Crescent City, California;

[http://www.triplicate.com/news/story.cfm?story\\_no=1362](http://www.triplicate.com/news/story.cfm?story_no=1362)

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It was a full two and a half days before Wally Griffin could go back to bed after answering the phone just after midnight on March 28, 1964.

As publisher of the only operating newspaper during Crescent City's worst disaster, he felt it was his duty to record what happened and inform the residents who suffered it.

He was able to print and deliver an extra edition of the *Crescent City American* a few hours after watching a wall of water nearly swallow his hometown.

Tomorrow is the 40th anniversary of the tsunami that knocked Crescent City on its heels, crippling 289 downtown buildings and killing 11 people.

Griffin, a newspaper man in Crescent City for most of his 80 years, reflected this week on what it was like to chronicle the disaster.

"When you're that involved in what you're doing, you don't have time to think about anything else," he said.

Griffin, who in 1964 was both the owner of the *Crescent City American* and a volunteer firefighter, was asleep when the phone rang that night 40 years ago.

It was Griffin's neighbor Elaine Cherny, who worked at a downtown cafe called The Tides, where Everett's Club now stands at Front and I streets.

In an excited voice, Cherny reported that a tidal wave had just washed in, pushing water up to Third Street and into several businesses.

"So I grabbed my camera and went down to take some pictures," Griffin said, adding that he had no idea the worst was yet to come.

"No one did. That's why a lot of the business owners were in their businesses and trapped when the other one came," he said.

A total of four tsunami surges hit Crescent City that night. The first wave deposited a foot or two of water in the harbor and downtown area at about midnight. The second was smaller than the first. The destruction of the city began when the third wave hit at about 1 a.m. and continued with the fourth surge. The third and fourth waves pounded the city with giant redwood logs and other debris, crashing through walls and knocking buildings off their foundations.

Before that third wave hit, Griffin said he had wandered down Highway 101 South and was photographing the area near the Crescent City Harbor.

"There were fish all over the road. I wandered around down there a while taking pictures, then I decided to head toward town," Griffin said.

"I looked over toward the ocean and I saw the wall of water heading north, so I did a U-turn and went back south."

Griffin said he took the old highway, now Elk Valley Road, all the way north to Highway 199, then drove back to town, avoiding the wave.

"By the time I got back, a big wall of water had come in and gone out," Griffin said.

"I just kept taking pictures until daylight. I didn't have time to interview people," he said, noting that he had a staff of reporters and an editor to gather the news that night.

Griffin said his goal was to take as many pictures of the area as possible, develop the film fast and get the newspaper printed.

"I thought what I had to do was get an extra edition out," he said. "People wanted to know what happened because they couldn't get downtown."

Only those people who owned a business or a home in the damaged area were allowed to go downtown, and then only with a permit from the city police.

Griffin said he spent most of that next day in an airplane getting aerial photographs of the area to better report the damage.

He and his family lived on Fourth Street at the time, one home away from the reach of the wave. "It came to the end of the driveway of the house next door," he said.

His newspaper building at the corner of Fourth and H streets was one block from the water's edge. The community's other newspaper, *The Del Norte Triplicate*, did not print for several days, as its building and presses had been flooded.

In 1964, the *American* was published and delivered on Wednesdays and Fridays. Griffin pushed the printing schedule, despite the hardships and published his extra edition Saturday—the next day after the night-long disaster.

Griffin said he never lost his mental balance, despite all of the destruction he observed over the nearly 72 hours he spent covering the disaster.

"We were too busy to worry about ourselves," he said.

Some of the images Griffin remembers most from that scene were the scattered mannequins from clothing stores, thousands of coins that flowed out of a display room and down the street, and a large two-story building that floated off of its foundation and across the street.



**Wally Griffin peruses old copies of a newspaper in his shop on Third Street. Griffin didn't get any sleep for nearly two days during and after the 1964 tsunami so that he could photograph and document the destruction.**

The Daily Triplicate/Jennifer Henion

“You would walk down the street and see a mannequin sticking its head out of a hole or a sewer,” he said.

Griffin said his newspaper, which ceased publication in 1969, was filled with stories about the tsunami and Crescent City's effort to recover from it for several months afterward.

The effects of the devastating tidal waves topped the news in Del Norte County until Dec. 24 of that same year, when the focus was diverted to the catastrophic flooding of both the Smith and Klamath rivers

“It was a busy year,” Griffin said. ♦

*Thanks to our “foreign correspondent” Wayne Johnston for finding this article*

*Note:* The NTHMP Library has a copy of Mr. Griffin's book: Griffin, Wallace H., 1984, *Crescent City's dark disaster—Crescent City, California, March 27-28, 1964, tsunami and 20 years later*: Crescent City Printing Co., 188 p.



### **Tsunami “firsts” presented at the American Geophysical Union meeting**

by Eddie Bernard, Director NOAA/PMEL

Thirty papers from ten different countries were presented in three sessions at the Fall meeting of the American Geophysical Union (AGU) on December 9, 2003, in San Francisco, California. In addition, three tsunami papers on the September 25, 2003, Hokkaido earthquake/tsunami were presented during a special session on Friday, 12 December. During these four sessions, three “firsts” in tsunami research and mitigation were presented.

*TsuInfo Alert*, v. 6, no. 2, April 2004

For the special session on the 2003 Hokkaido earthquake/tsunami, Dr. Kenji Hirata presented real-time data from two cabled Japanese tsunameter located in the area of earthquake deformation, showing for the first time the “birth of a tsunami”.

For the November 17, 2003, Alaska earthquake/tsunami, Dr. Eddie Bernard presented real-time data from a U.S. portable tsunameter (Deep-Ocean Assessment and Reporting of Tsunamis, or DART buoys) located about 900 km from the earthquake epicenter, showing the deep ocean signal of the tsunami approaching Alaska and Hawaii. These data were used, for the first time, to assist in the decision to cancel a tsunami warning for the U.S. Dr. Vasily Titov presented, for the first time, the results of his real-time forecast for the Hilo Bay using these portable tsunameter data from the Alaska event. Dr. Titov's results showed greater than 90 percent accuracy in amplitude and period for the first three waves. These results are paving the way for real-time tsunami forecasts.

A programmatic first for the U.S. were presentations by Juan Pestana of the National Science Foundation and Dr. Eddie Bernard of NOAA describing the partnership between the Network for Earthquake Engineering Simulations (NEES) and the National Tsunami Hazard Mitigation Program (NTHMP). Dr. Costas Synolakis presented an example of NEES-type research by describing the development of construction guidelines and standards for southern California marine terminals. Dr. Jose Borrero presented an example of NTHMP-type products by describing the development of tsunami inundation maps for California.

In addition, the WC/ATWC's Guy Urban presented new technology for measuring tide levels in harbors in real-time. This technology looks promising as a low-cost tsunami monitoring system. International tsunami mitigation activities were presented by Mexico's Dr. Salvador Ferreras, Puerto Rico's Dr. Victor Huerfano, and Turkey's Dr. Ahmet Yalciner. Results from field surveys of the 2002 Stromboli, Italy, and 2003 Hokkaido, Japan, tsunamis were presented by Dr. Costas Synolakis and Dr. Yuichiro Tanioka, respectively. In short, the 2003 AGU meeting was an opportune venue for presenting historic new firsts in tsunami research and mitigation to the global, earth sciences community. ♦

Originally published in *Tsunami Newsletter*, v. 35, no. 5, 2003, p. 28.

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### **Pasteur, Louis**

(1822–1892) b. Dôle, France

Science knows no country, because knowledge belongs to humanity, and is the torch which illuminates the world. Science is the highest personification of the nation because that nation will remain the first which carries the furthest the works of thought and intelligence.

René Dubos, *T Pasteur and Modern Science*, Doubleday, Garden City, NY, 1960, p. 145.

## VIDEO RESERVATIONS

To reserve tsunami videos, contact TsuInfo Alert Video Reservations, Lee Walkling, Division of Geology and Earth Resources Library, PO Box 47007, Olympia, WA 98504-7007; or e-mail [lee.walkling@wadnr.gov](mailto:lee.walkling@wadnr.gov)

**NEW!!** Business Survival Kit for Earth-Quakes & Other Disasters; What every business should know before disaster strikes. Global Net Productions for the Cascadia Regional Earthquake Workgroup, 2003. 27 min. With CD disaster planning tool-kit and other information.

**NEW!!** Tsunami Chasers. Costas Synolakis leads a research team to Papua New Guinea to study submarine landslide-induced tsunamis. Beyond Productions for the Discovery Channel. 52 minutes.

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

Tsunami Evacuation PSA; DIS Interactive Technologies for WA Emergency Management Division. 2000. 30 seconds.

Cascadia: The Hidden Fire—An Earthquake Survival Guide; Global Net Productions, 2001. 9.5 minutes. 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.

Not Business as Usual: Emergency Planning for Small Businesses, sponsored by CREW (Cascadia Regional Earthquake Workgroup), 2001. 10 min. 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.

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

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

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

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.

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

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

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.)

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. There is an 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.

Tsunami and Earthquake Video (60 min.) Includes "Tsunami: How Occur, How Protect," "Learning from Earthquakes," and "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.) Two versions, one with breaks inserted for discussion time.

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

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.♦

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*(continued on next page)*

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## Infrequently Asked Questions

Compiled by Lee Walkling

### Where can I find information about Tsunami Puzzles?

[http://www.uow.edu.au/science/geosciences/research/tsunami/tsunami\\_7.htm](http://www.uow.edu.au/science/geosciences/research/tsunami/tsunami_7.htm)

If you haven't played Tsunami puzzles before, this is where you can get instructions. Tsunami puzzles are a form of logic puzzle, and therefore require logic to solve them.

### How are areas assessed in order to determine their tsunami vulnerability?

An area that may be vulnerable to tsunamis is assessed by:

- the likelihood of an event that may cause a tsunami
- the expected location and size of an event
- the shape of the seafloor where an event may take place
- the shape of the coastal land that may be affected by a resulting tsunami
- the presence of any headlands or harbours in the region that may cause a tsunami to change direction

This information is used to predict the potential speed, direction, height and destructiveness of any tsunami that may reach the area. Often, coastal areas that are at risk are part of a funnel-shaped bay or harbour. Other factors that influence how destructive a tsunami may be include the effect of backwashing from a preceding wave onto a following one and whether any valleys or canyons are carved into the continental shelf.

from: [http://www.ga.gov.au/urban/factsheets/20010821\\_7.jsp](http://www.ga.gov.au/urban/factsheets/20010821_7.jsp)

### How many detectable earthquakes happen on Earth each year?

It is estimated that there are 500,000 detectable earthquakes in the world each year. 100,000 of those can be felt, and 100 of them cause damage.

from: <http://earthquake.usgs.gov/4kids/facts.html> (12-5-02)



## Rocky Mountain tsunami!

“An improbable tidal-wave warning sent out over the Eagle County [Colorado] emergency broadcast system on Wednesday [March 3, 2004] had residents of Gypsum, elevation 6,334 feet, questioning whether they needed to dig out life preservers or scramble for higher ground”. This is the lead paragraph of an amusing account “Tsunami alert creates wave of dry humor in Gypsum” by Steve Lipsher in the March 4, 2004, issue of the *Denver Post*. Citizens were skeptical; Gypsum is over 1,500 miles from the nearest ocean. The warning was a glitch in the weekly test of the emergency message system. For the full report, with all the humor, go to <http://www.denverpost.com/Stories/0,1413,36~53~1994926,00.html>.

Submitted by Wayne Johnston

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**Material added to the National Tsunami Hazard Mitigation Program Library**  
March–April 2004

Fredericks, Anthony D., 2002, *Tsunami man—Learning about killer waves with Walter Dudley*: University of Hawai'i Press, 79 p.

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**Note:** These, and all our tsunami materials, are included in our online catalog at <http://www.dnr.wa.gov/geology/washbib.htm>

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**ITIC tsunami event data portal**

Information and data, including mareograms and travel time maps, compiled by the ITIC and other organizations on recent events can be found at [http://www.prh.noaa.gov/itic/tsunami\\_events/recent\\_data/recent\\_data.htm](http://www.prh.noaa.gov/itic/tsunami_events/recent_data/recent_data.htm).

The ITIC continues to serve the tsunami community by acting as a clearinghouse for the collection of seismic, sea level and tsunami damage report data after a tsunami event. Member States are encouraged to help in this effort by sending these data to the ITIC for archiving: International Tsunami Information Center, 737 Bishop Street, Suite 2200, Honolulu, Hawai'i 96813 USA.

## STATE EMERGENCY MANAGEMENT OFFICES

Alaska Division of Emergency Services  
Dept. of Military & Veterans Affairs  
PO Box 5750  
Fort Richardson, AK 99505-5750  
(907) 428-7000; toll-free 800-478-2337  
Fax (907) 428-7009  
<http://www.ak-prepared.com/>

California Office of Emergency Services  
PO Box 419047  
Rancho Cordova, CA 95741-9047  
(916) 845-8911; Fax (916) 845-8910  
<http://www.oes.ca.gov/>

Hawaii State Civil Defense  
Dept. of Defense  
3949 Diamond Head Road  
Honolulu, HI 96816-4495  
(808) 734-2161; Fax (808) 733-4287  
rprice@pdc.org; <http://iao.pdc.org>

Oregon Division of Emergency Management  
595 Cottage Street NE  
Salem, OR 97310  
(503) 378-2911, ext. 225; Fax (503) 588-1378  
<http://www.osp.state.or.us/oem/oem.htm>

Washington State Military Dept.  
Emergency Management Division  
Camp Murray, WA 98430-5122  
(253) 512-7067; Fax (253) 512-7207  
<http://www.wa.gov/mil/wsem/>

Provincial Emergency Program  
455 Boleskin Road  
Victoria, BC V8Z 1E7 Canada  
(250) 952-4913; Fax (250) 952-4888  
<http://www.pep.bc.ca>

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### STOP THE PRESSES!

**CREW Spring Quarterly Meeting: April 28, 2004**  
Seattle Mariners/Safeco Field, Suites C and D  
1250 First Avenue South, Seattle, WA.

**Membership Business Meeting:**

10:00 AM  
Welcome and call to order—Zimmerman  
Approval of minutes—Bartoletti  
Financial Report—Walsh  
Project Team Reports  
Business/Homeowners. (The Disaster Resistant Business initiative will be discussed during the afternoon session.—Pearce and Ludeman)  
Emergency Management Organizations (Mazurkiewicz and Ellsworth)  
Scenario Development (A detailed discussion of document and the Seattle Fault Scenario will be held during the afternoon session—Bartoletti)  
Cascadia (Clark)  
Seattle Fault (EERI)  
CREW Business Plan (Zimmerman and Support Team)  
Regional Coordination Project (Dreckman, Savage, White)  
Speakers Bureau (Crawford, McLeod, Dreckman)

National Earthquake Conference (Zimmerman, Weaver)  
Web Site (Presentation by Elman and Amiri)  
Video Marketing (Freitag)  
Quarterly Program Activities (Scofield)

New Business: Board Nominations; Support of EPICC;  
Summer Quarterly Meeting

**Morning Program** 11:30 AM Tour of the Ball Park  
and discussion of seismic considerations

**Lunch** 12:00 Noon (no host lunch \$15 dollars)

**Afternoon Program**

1:00 PM  
Presentation of selected CREW supported projects  
Seattle Fault Scenario—Stacy Bartoletti  
Report on the Seismic risks facing the Cascadia Region—  
Lu Clark  
Report on the concerns of the Washington and Oregon  
Land Use Planning community—Andre LeDuc  
Disaster Resistant Business initiative—Ines Pearce.

**Adjournment – 3:30 PM**