



TsuInfo Alert

prepared on behalf of the

National Tsunami Hazard Mitigation Program

by the Washington Department of Natural Resources

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TSUNAMI PROGRAM NEWS

Puget Sound tsunami and landslide hazards studies

A two-day workshop at the National Oceanic and Atmospheric Administration's (NOAA) Pacific Marine Environmental Laboratory revealed a new natural hazard to inner Puget Sound: the tsunami.

"The conference's computer modeling introduced the tsunami risk to Puget Sound," explained George Crawford, earthquake program manager in the State Emergency Management Division's Programs and Recovery unit. "We weren't sure before, but now the modeling supports it."

Computer modeling, based on a map of the Seattle fault that runs from Kitsap County underneath Seattle to Bellevue, showed how a tsunami would be generated from a tremor similar to the one that struck about 1,000 years ago on the Seattle fault.

The computer model depicted a sudden thrust upward on the fault's southern side and a drop on its northern side, producing a 15-20 foot wall of water heading mostly south on Puget Sound. The tsunami would strike Seattle's Elliot Bay, including the industrial area along the Duwamish River, and ...on to hit Tacoma's Commencement Bay a half hour later.

Developers of the model were Shunichi Koshimura, a Japanese postdoctoral researcher on loan to NOAA, and Hal Mofjeld, a senior scientist at NOAA.

Workshop data also pointed out that more than half of the King County shoreline is unstable and susceptible to landslides resulting from earthquakes as well as from heavy

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rainfall runoff. This landslide vulnerability highlights the need for cities and counties to prepare databases to direct planning and development over the long term, according to Eric Holdeman, manager, King County Office of Emergency Management.

"With the new tsunami hazard awareness, several new partnerships have formed to address mitigating damage from Puget Sound earthquakes and tsunamis," said Crawford.

He said the workshop also highlighted the need to share information to improve hazard mapping and local zoning ordinances and to combine the information and work being conducted by numerous researchers.

from: Emergency Responder, January-February 2001

Editors' note: The summary of the Puget Sound Tsunami/Landslide Workshop, January 23 and 24, 2001 is now available at <http://www.pmel.noaa.gov/tsunami/Ws20010123/> We'll be happy to mail you a copy if you can't access it.

NEWS BRIEFS

FEMA Seeks Comments on EMERS

In the March 19, 2001, Federal Register (v. 66, no. 53, pp. 15478-15479) the Federal Emergency Management Agency (FEMA) issued a request for comments on its Emergency Management Exercise Reporting System (EMERS). EMERS was designed in 1992 to collect information on the results of emergency management exercises or actual disaster responses. The revised EMERS 2.0 is an automated data collection Windows-based software program that state and local emergency managers can download from a FEMA web site. EMERS data is used to analyze the capabilities of state and local governments to respond to disasters and to determine areas of strengths and weaknesses and actions that can be taken at the national level to improve programs. State and local governments can also use EMERS data to monitor exercises and to determine lessons for improving their operations.

FEMA is soliciting written comments to a) evaluate whether the proposed data collection is necessary for the

(continued, p. 3)

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The views expressed herein are those of the authors and not necessarily those of the Washington Department of Natural Resources or of the sponsors of *TsuInfo Alert*.



WASHINGTON STATE DEPARTMENT OF
Natural Resources

Doug Sutherland - Commissioner of Public Lands

(continued from p. 1)

proper performance of the agency, including whether the information shall have practical utility; b) evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; c) enhance the quality, utility, and clarity of the information to be collected; and d) minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses.

Written comments should be submitted within 60 days of the date of the notice (March 19) to Muriel B. Anderson, FEMA Information Collections Officer, Federal Emergency Management Agency, 500 C Street, S.W., Room 316, Washington, DC 20472; (202) 646-2625; fax: (202) 646-3524; e-mail: Muriel.Anderson@fema.gov.

Further information about EMERS is available from Bruce Hildebrand, FEMA, Preparedness, Training & Exercises Directorate, Readiness Division, Program Development Branch, 500 C Street, S.W., Washington, DC; (202) 646-3114; e-mail bruce.hildebrand@fema.gov

... **On HMGP, FMAP Impact Survey**

Also in the March 19, 2001, Federal Register (v. 66, no. 53, pp. 15479-15480) FEMA solicited comments on a proposed survey to 1) assess the impact that FEMA's local mitigation planning initiatives have had on local planning; 2) identify communities with successful mitigation plans; and 3) document "best practices" that led to the formulation of successful plans.

There are three FEMA programs that provide either direct funding or insurance incentives in order to promote mitigation planning at the local level. They are the Flood Mitigation Assistance Program (FMA), the Hazard Mitigation Grant Program (HMGP), and the National Flood Insurance Program (NFIP) Community Rating System. Anecdotal information regarding the value of hazard mitigation planning exists, but this has never been studied in a systematic way. This review will attempt to objectively evaluate if and why these programs are effective. The goal of the survey is to determine the extent to which communities are formulating, adopting, and adhering to local mitigation plans, and to review the overall quality of these plans. Again, the aim is to document the "best practices" and identify characteristics of successful planning programs at the local level.

Written comments are being solicited as above, and should also be submitted to Muriel Anderson at the address above.

Additional information about this survey is available from Rosemary Krueger, Program Analyst, FEMA, Mitigation Directorate, Program Support Division, Planning

Branch, 500 C Street, S.W., Washington, DC; (202) 646-4189.

... **On CAR**

In the March 30, 2001, Federal Register (v. 66, no. 62, pp. 17423-17424) FEMA also issued a request for comments on its "Capability Assessment for Readiness" (CAR) evaluation program.

The CAR program was established because both the U.S. Congress and FEMA recognized that an assessment of state capabilities was needed to determine states' readiness to effectively respond to major disasters, and secondarily to ensure that FEMA financial assistance to the states is being effectively used. The answers to these questions are provided through the CAR assessment, which involves detailed programmatic questions on mitigation, preparedness, response, and recovery activities.

In short, CAR is needed by FEMA to report the status of emergency management programs in the nation to the President and Congress. At the same time, states, territories, and insular areas use it for program evaluation, strategic planning, and budgeting.

The data collected through CAR will be summarized in a report to the President and Congress in 2001.

Written comments about CAR are currently being solicited (focusing on the same issues listed above). Comments should be submitted within 60 days of the date of the notice (March 30) to Muriel Anderson at the address above.

For further information, contact: Cassandra Ward, Preparedness, Training, and Exercises Directorate, FEMA, 500 C Street, S.W., Washington, DC; (202) 646-3703.

from: Disaster Research 343, April 4, 2001

Hazards Center Seeks Experts in Disaster Recovery and Sustainability

As part of its project, "Developing Guidance and Expertise on Sustainable Recovery from Disaster," funded by the Public Entity Risk Institute, the Natural Hazards Center is compiling a list of people from throughout the United States who have experience, knowledge, or special expertise in disaster recovery and/or community sustainability. The center envisions developing a central source of information to which a city manager, public works official, citizen activist, or other concerned person could turn to find advice, insight, information, or even on-site assistance with disaster recovery.

Specifically, the database will include experts who can help localities understand, plan for, and execute holistic recovery activities and policies that will enhance a community's sustainability, including resilience in the face of hazards, environmental quality, livability, economic vitality, and social equity. It will include names, contact information, and brief background data (such as area of expertise and prior disaster experience).

Areas in which experts are being sought include: recov-

ery, hazard mitigation, intergenerational equity, social equity, economic development, business recovery, environmental quality, consensus building, public participation, livability, smart growth, and related topics.

Having one's name listed in the database does not constitute a commitment to participate in any future disaster recovery. However, the information may be made accessible, perhaps via a Web site, in the future.

Persons who would like to be listed in the database or who know of other persons or groups who ought to be should e-mail the Hazards Center's Program Manager, Jacki Monday, at jacque.monday@colorado.edu for more information.

From Disaster Research #339, February 5, 2001

Natural Hazards Caucus Work Group: Hazard Mitigation Should Be National Priority

"The time has come for a new national approach to natural hazards."

With these words, the work group supporting the Natural Disaster Caucus of the U.S. Congress recently introduced a call to refocus America's disaster policy. Intended as a transition document to guide the new administration, "A National Priority: Building Resilience to Natural Hazards," notes that, "Today, we possess unprecedented means to anticipate hazards, protect citizens and property, and reduce accompanying disruption. There is a flip side, however: in the aftermath of disasters, today's public officials are rarely held blameless."

The statement cites the increasing costs of disasters in the U.S. and the reasons for those increases--primarily population growth and increased occupancy of hazard-prone areas, combined with our increasing wealth. It then goes on to outline the kinds of issues the current and future administrations will face and lists nine steps to increase national resilience to extreme events:

- Conduct a national assessment of community vulnerabilities
- Develop incentives for pre-event mitigation measures
- Improve hazard detection and warnings
- Build resilience to hazards into every relevant federal government decision
- Create partnerships and put them to work
- Measure progress
- Develop a national culture of learning from mistakes
- Work cooperatively with other nations to reduce hazard vulnerability
- Provide leadership

The work group is composed of representatives from many of the nation's leading professional and scientific societies, relief organizations, higher education associations, institutions of higher learning, trade associations, and private companies involved in disaster reduction.

The complete text of "A National Priority: Building Resilience to Natural Hazards" is available on the World Wide Web at <http://www.ucar.edu/communications/>

[awareness/2001](#).

For further information on the Natural Hazards Caucus Work Group and its activities, see <http://www.agiweb.org/workgroup> or contact the work group co-chairs: David Applegate (703) 379-2480, ext. 228, e-mail: applegate@agiweb.org; and Peter Folger, (202) 777-7509; e-mail: pfolger@agu.org.

From Disaster Research #339, February 5, 2001

Seeking Information on Evaluating Local HazMat Plans

We are looking for information from SERC members from different states throughout the U.S. regarding the criteria they use to evaluate Local Emergency Operation Plans. Do you use a checklist? If so what questions do you ask? We would appreciate any information you can provide.

Christy Thomas, University of Nebraska-Lincoln. E-mail: cthomas3@bigred.unl.edu

from: Disaster Research #341, March 7, 2001

Project Impact Communities Unite

At FEMA's Project Impact Summit conference last November, representatives from over 100 communities involved in this national effort to curb disaster losses established a "National Association of Disaster Resistant Communities--NADRC." The Project Impact coordinators from these communities are all involved in creating local programs to mobilize grassroots public-private partnerships to cut losses from earthquakes, floods, storms, and other disasters--and thus to create more livable communities.

The group's goals are to ensure that Project Impact becomes a sustainable effort; to strengthen the project nationally and locally; to share experiences among, learn from, and aid one another; to establish a forum where ideas can be expressed and the collective voice of Project Impact communities can be heard; and to build bridges to other associations and agencies who share Project Impact goals.

The organization's interim web site is: <http://www.hazmit.net/PIAssoc/PIHome.htm>. To be added to the group's mailing list or to request more information about NADRC, e-mail Ann Patton at: ProjectImpact@ci.tulsa.ok.us.

from: Disaster Research 340, February 20, 2001

FEMA Plans Project Impact "Make an Impact" Week

FEMA's Project Impact "Make an Impact" Week is a national campaign designed to get regional and local Project Impact representatives to conduct media outreach in their local communities. "Make an Impact" week will be conducted May 20-26 with the theme "Planting the Seeds of Prevention." Because this time of year marks the end of flood season, the middle of tornado season, and the approaching hurricane and wildfire seasons, FEMA feels that disaster awareness should be heightened and the media more receptive to prevention messages.

FEMA is inviting all communities participating in Pro-

ject Impact to work with the agency to contact local print, radio, and TV outlets, and actively work to make local citizens aware of the hazards they face and the steps they can take to avoid them. More information about "Make an Impact" week is available from the Project Impact web site: <http://www.fema.gov/impact>.

from: Disaster Research 340, February 20, 2001

FEMA Announces Availability of Project Impact Grants

In the March 30 Federal Register (v. 66, no. 62, p. 17426) FEMA posted a notice of the availability of \$25 million for grants and technical assistance to Project Impact disaster resistant communities and states with Project Impact communities. The funds will also be used for education, training, and partnership development. Approved communities should have received grant application packages by March 31, 2001.

Additional information is available from Carol Transou, FEMA, 500 C Street, S.W., Room 402, Washington, DC 20472; (202) 646-3701; fax: (301) 646-3231; [e-mail: carol.transou@fema.gov](mailto:carol.transou@fema.gov).

from: Disaster Research 343, April 4, 2001

New Format for Tsunami Information Bulletins from West Coast/Alaska Tsunami Warning Center

Effective Thursday February 1, 2001, tsunami watch/warning/advisory bulletins issued by the West Coast/Alaska Tsunami Warning Center in Palmer Alaska will use a new standardized segmented format. See <http://www.nws.noaa.gov/om/notifications/SCN01-07Tufmtcor.txt> or call them at 907-745-4212 for further information.

ISDR Announces 2001 U.N. World Disaster Reduction Campaign

The secretariat for the United Nations International Strategy for Disaster Reduction (the successor program to the International Decade for Natural Disaster Reduction) has announced that the theme of its 2001 World Disaster Reduction Campaign is "Countering Disasters: Targeting Vulnerability." The secretariat will provide campaign information in two parts. First, it will publish a leaflet containing sound generic information and statistics on the major disasters of the past 50 years, projections over the next 50 years if current trends continue, and possible solutions. Second, the secretariat will provide briefs on practical aspects of disaster reduction, under the general heading of "Targeting Vulnerability." These will cover: "The Role of Science and Technology in Disaster Reduction," "Building Disaster Resistant Infrastructures," and "Mobilizing Local Communities in Reducing Disasters." These sub-theme briefs will include suggestions for activities and case-examples from around the world. A special publication on risk mapping and guidelines at the local level will also be developed. The ISDR Secretariat encourages participation by all

interested persons and organizations. Articles and papers can be submitted and will be considered for publication as part of the campaign information. Questions and comments should be sent to Nicole Appel, Promotion and Awareness Issues Officer, ISDR Secretariat, United Nations, Palais des Nations, CH-1211 Geneva 10, Switzerland; tel: 41 22 917 97 06; fax: 41 22 917 97 98; e-mail: appeln@un.org.

from: Disaster Research 340, February 20, 2001

SDR Seeking Examples of Volunteers in Disaster Reduction

The United Nations Secretariat for the ISDR is currently organizing activities and preparing materials for the 2001 World Disaster Reduction Campaign on "Countering Disasters: Targeting Vulnerability" (see DR #340, above). Sub-themes will include: "The Role of Science and Technology in Disaster Reduction," "Building Disaster Resistant Infrastructure," and "Mobilizing Local Communities in Reducing Disasters." The secretariat welcomes suggestions for possible materials to incorporate into the campaign.

The secretariat is also preparing an exhibit for the Geneva-based U.N. Open Doors Day (October 2001), which will focus on the work of volunteers. Thus the secretariat is seeking examples of volunteer work in disaster reduction around the world. The exhibit will not only be used for the Geneva-based U.N. Open Doors Day but will also become a traveling exhibit to be used worldwide. Please send descriptions of volunteer work in disaster reduction by individuals or organizations to Nicole Appel, Promotion and Awareness Officer, ISDR Secretariat, United Nations, Palais des Nations, CH-1211 Geneva 10, Switzerland; tel: (41-22) 917-9706; fax: (41-22) 917-9098; e-mail: appeln@un.org.

from: Disaster Research 342, March 21, 2001

Canada Establishes Office of Critical Infrastructure Protection and Emergency Preparedness

On February 6, Canadian Prime Minister Jean Chretien announced the creation of a new Office of Critical Infrastructure Protection and Emergency Preparedness. The office will be the Canadian federal government's primary agency for ensuring natural civil emergency preparedness, encompassing the existing functions of Emergency Preparedness Canada. It will be under the direction of Associate Deputy Minister, Margaret Purdy. At the same time, the Prime Minister noted that other ministries will collaborate closely to ensure a coherent and comprehensive approach to emergency preparedness and response.

The new organization is charged with developing and implementing a comprehensive approach to protecting Canada's critical infrastructure and is committed to working actively with provinces, territories, and municipalities, as well as the private sector, other countries, and organizations. One emergency management organization in Canada cited this change as a significant strengthening of Canadian government's leadership in reducing losses due to natural

disasters.

Specifically, the goals of the office are to:

- build partnerships at all levels, including with the U.S.;
- promote dialogue among Canada's critical infrastructure - owners and operators and foster information sharing on threats and vulnerabilities;
- provide a focal point for the federal government's own cyber incident analysis and coordination efforts and support federal departments and agencies in meeting their responsibilities for protecting their IT systems and networks;
- promote other areas of cooperation, such as raising awareness, enhancing education and training, and promoting information technology security research and development; and,
- achieve an appropriate level of national civil emergency preparedness.

For more information about this Canadian government reorganization to address disasters, see: <http://www.epc-pcc.gc.ca/whatsnew/index.html>.

from: Disaster Research 340, February 20, 2001

IRCD Seeks Authors

The International Committee on Disaster Research (IRCD) has initiated a series of disaster books that will be produced electronically by Xlibris. One of the volumes focuses on the popular culture of disasters, building on earlier articles published in the "International Journal of Mass Emergencies." However the Xlibris volume will include new chapters; it is scheduled to appear in 2002. Anyone interested in contributing to the book should contact Gary Webb - e-mail: webbgr@okstate.edu - one of the editors of the book.

from: Disaster Research 343, April 4, 2001

FEMA Publishes Guides on Hazard Mitigation and Sustainability

Resistance to disasters is a key characteristic of sustainable communities. To encourage communities to become more disaster-resistant, the Federal Emergency Management Agency (FEMA) recently released two publications. The first, *Planning for a Sustainable Future: The Link Between Hazard Mitigation and Livability* (Publication 364, 2000, 43, pp., free), illustrates how communities, either in plan-

ning for hazard mitigation before disaster strikes or after one has occurred, can become more resilient by integrating the concepts and principles of sustainable development into all phases of natural hazard planning.

This booklet should be helpful to a broad range of individuals and organizations, including local decision-makers, land-use planners, emergency managers, and those concerned with the economic vitality of their communities. It will help each of these individuals understand how the decisions they make and the actions they take in disaster planning, recovery, and mitigation can create a more sustainable community. The booklet provides examples of communities that have successfully implemented sustainable development practices and describes federal programs that can assist in this process. The "Resources" section lists numerous publications, web sites, and sources of technical assistance and funding.

The second publication, *Rebuilding for a More Sustainable Future--An Operational Framework* (Publication 365, 2000, free), is a useful reference for federal, state, and local emergency management officials. It identifies potential resources that can help make communities less vulnerable to disasters and more sustainable. It was created to guide FEMA sustainability planners, who, following a presidential disaster declaration, evaluate and help implement opportunities for sustainable redevelopment.

The document presents standard operating procedures, guidelines for working with communities in creating sustainable plans, ideas for creating sustainability by hazard type, and 18 tools and programs for sustainability. Appendices contain a glossary of disaster terms, a list of acronyms used in the report (and there are lots of 'em!), a helpful catalog of web sites, a bibliography of recommended readings in sustainable development, a guide to federal technical assistance and funding, quotable materials on sustainability, and pertinent FEMA documents.

The first publication is on the FEMA web site: www.fema.gov/mit/planning_toc.htm. The larger volume is only available in printed form. Copies of both documents can be requested by phoning FEMA's Publication Ware-house: (800) 480-2520.

From: Natural Hazards Observer, v. 25, no. 4, p. 7. March 2001

Sustainable Communities/Hazard Mitigation Course to Be Offered On-line

The University of Washington Extension's Continuing Education for Planners Program will be offering a new course beginning in the summer of 2001. URBDP 598 - "Toward More Sustainable Communities Through Hazards Mitigation" is designed to give practicing professionals the skills to recognize and reduce the long-term risks associated with natural disasters. Taught through the University of Washington's Institute for Hazards Mitigation, Planning, and Research, the course is both a survey of the field of natural hazard/disaster planning as well as a practical introduction to the tools available for encouraging disaster-resistant, sustainable communities.

For more information about this new on-line course, contact Trisha Dvorak, (206) 685-6443, e-mail: tdvorak@ese.washington.edu; or see: <http://www.extension.washington.edu> particularly: <http://www.extension.washington.edu/extinfo/arch.asp#urban>

from: Disaster Research #341, March 7, 2001

OPINION

by

Richard Rudman,

National EAS Advisory Chair,

based at KFWB in Los Angeles (March 9, 2001): via Cal-EPI listserv

After working from the broadcast side with emergency managers here in Los Angeles County for over 20 years on what we have come to call EPI (Emergency Public Information), I would like to offer my comments.

Hypothesis:

Information effectiveness is directly proportional to the level of trust, cooperation and planning that is built and maintained between all the partners that are responsible for delivering it to the public.

This hypothesis traces its roots to what we learned when we were overhauling the Emergency Broadcast System (EBS) to what has become the Emergency Alert System (EAS). That's not to say that we or the FCC took all these learned lessons and applied them effectively to what became EAS. That's another story for another time. It is to say that some of us filed these lessons away and managed to find other ways to make use of them.

I base my conclusions that stem from the hypothesis on what our audience here in Los Angeles thanked us for after the Northridge quake in 1994. They did not thank us for putting scared people on the air via telephone to scare them more. They did not thank us for our on-site reports from Caltech.

Their thanks came down to elements that all players, from emergency managers to our on-air talent managed to communicate through their behaviors:

1)Context-sensitive reminders

The desired message: At 4:31 in the morning, a rudely awakened public need to be reminded that there is likely sharp stuff on the floor and they need to put shoes on. In the gospel according to Art, "Panic makes you stupid."

2)Realistic reassurance

The desired message: Competent and caring people are trying to respond and eventually get us all through to recovery.

There are several elements of good EPI for which we were not directly "thanked" by the public when we had sense enough to get it on the air. I do recall receiving thanks from the EM community in several cases where we were able to use EDIS (Emergency Digital Information Service---California State OES Product <http://edis.oes.ca.gov/>) and the FEMA Recovery Channel to advantage for these messages:

1)Emergency management directives

If you can identify behaviors that you want the public

to do (or not do) throughout the emergency and communicate these directives rapidly and clearly to the public, you are more likely to manage the emergency to faster and better (and possibly a less expensive) outcome.

2)Information overload

If you can turn on a steady information flow from the EOC (Emergency Operations Center), it will become a resource to broadcasters that they will learn to rely on and possibly become seduced by. The beneficial byproduct most desired would of course be to give our "talking heads" fewer opportunities for brainless speculation. This is something that NASA Mission Control does very well and why I believe it is a great model to use to build an EPI equivalent.

I submit that you cannot carry out effective EPI along the lines I outline here without first carefully building a partnership between emergency management and the broadcast "conduit" to the public. If this is done carefully, those of us in the conduit will hopefully not add to many bad things to the information flow and with luck add catalytic impact to the emergency management message. Over time, EM's become better broadcasters and broadcasters make fewer mistakes reporting how EM works.

Having seen first-hand what FEMA proved post-Northridge with the Recovery Channel, I have become a proponent for what I call the Response Channel to be in place in major metro areas where we should not and cannot wait for the FEMA troops to arrive and set up field radio systems or "backstage" links. I can also make the case for having this government - to - media Response Channel in place on a 24/7 basis so that state and FEMA just have to "plug in" when their respective resources are requested and brought into the mix. Of course this pre-supposes survival of at least one broadcast facility, but that's yet another story for yet another time.

"Cal-EPI" is an email community for information officers, journalists and others interested in Emergency Public Information in California and beyond. To subscribe, send email to "Cal-EPI-request@incident.com" with the word "subscribe" in the message body. To unsubscribe, send mail to the same address with a body of "unsubscribe".

Feedback to this letter can be emailed to Richard Rudman at RUDMAN@kfwb.cbs.com or mailed to *TsuInfo Alert* at the address given on Page 2.

PETS AND EMERGENCIES

Pets affect evacuation behaviour of people

The author, veterinarian and professor Sebastian Heath (website: <http://www.animaldisasters.com>), found that "the single most important variable that affects people's behavior in evacuation, and one can do something about, is pet ownership. The effect is so large, that even though only pet owners are affected, the potential increase in evacuation rates in the population as a whole could be improved 10 to 20%."

Sebastian suggests that "pre-disaster planning should place high priority on facilitating pet evacuation through pre-disaster education of pet owners and emergency management personnel."

Dr. Heath also authored a book "Animal Management in Disasters."

Human and Pet-Related Risk Factors for Household Evacuation Failure during a Natural Disaster

by

Sebastian E. Heath, Philip H. Kass, Alan M. Beck, and Larry T. Glickman

(published in: American Journal of Epidemiology, v. 153, no. 7, p. 659-665, April, 2001)

(reprinted with permission from Sebastian Heath, Diplomacy Fellow of the American Association for the Advancement of Science at USAID)

Abstract: This study characterized risk factors for household evacuation failure (HEF). A random digit dial telephone survey was conducted of 397 households in Yuba County, California, six months after residents had been under evacuation notice due to flooding. Case households failed to evacuate, whereas control households evacuated. The cumulative incidence of HEF was 19.4%. Fewer households with children (25.8%) failed to evacuate than households without children (45.0%; $p < 0.01$). More households with pets (20.9%) failed to evacuate than households without pets (16.3%; $p = 0.17$). Using multivariate logistic regression, the risk of HEF was lower in households with children (Odds ratio (OR) = 0.4; 95% Confidence Interval (CI) = 0.2, 0.8) compared with households without children. The risk of HEF increased in pet-owning households without children (OR 1.3; CI 1.0, 1.5) compared with pet-owning households with children; the more pets owned, the higher the risk of HEF. Impediments to pet evacuation, including owning multiple pets, outdoor dogs, or not having a cat carrier, explained why many pet-owning households failed to evacuate. Pre-disaster planning should place high priority on facilitating pet evacuation through pre-disaster education of pet owner and emergency management personnel.

Dr. Heath helped FEMA develop two independent study courses on Animals in Disasters.

You will find the two modules posted on the FEMA web site at <http://www.fema.gov/emi/crslist.htm> :

IS10 -- Animals in Disasters: Awareness and Preparedness

IS11 -- Animals in Disasters: Community Planning

(reprinted with permission from email from Marc Wolfson, Marc.Wolfson@fema.gov)

The City of Los Angeles has a new effort concerning pets and overcoming impediments to evacuation.

The City has put together an alliance between their animal control department and their CBO partnership organization, Emergency Network Los Angeles (ENLA). ENLA was started in the days immediately following the Northridge earthquake by the Mayor's office. The easiest way to explain what ENLA does is to compare it to government efforts that deal with convergent volunteers. ENLA deals with convergent 'stuff.' Its job is to get useful 'stuff' to CBO's who know how to distribute it at the street level. Most of ENLA's CBO partners are in business doing exactly that year round. The definition of "stuff" in this context can range from cat carriers to the availability of stable facilities for large animals.

ENLA has identified pets, pet support initiatives, and owner/pet evacuation as high priority emergency issues. I believe ENLA and the Animal Control people are working on sheltering issues when pets (all sizes, and all types) are concerned, and I believe FEMA is aware of what they are doing. If anyone would like more information, let me know and I will put you in touch with ENLA or their ENLA rep. with LA City Animal Control.

(reprinted with permission from email from Richard Rudman, RUDMAN@kfwb.cbs.com)

Humane Society role

Our local Humane Society is quite involved in emergency preparedness and response. They provide information on preparing a pet disaster kit and have numerous supplies available for purchase. More importantly, over the years, they have built up their resources to provide pet shelters adjacent to or near human shelters.

They have been active in a coalition of non-profit organizations. Their role is countywide coordination of agencies and businesses (vets) providing animal welfare services. This includes wild animal rescue.

(reprinted with permission from email from Hank Waschow, HWaschow@marin.org)

Note: The above information above was provided via Cal-EPI, an email community for information officers, journalists and others interested in Emergency Public Information in California and beyond. To subscribe, send email to "Cal-EPI-request@incident.com" with the word "subscribe" in the message body. To unsubscribe, send mail to the same address with the message "unsubscribe."

*April is Earthquake
Preparedness Month!*

A Brief History of Seismology to 1910

This account is loosely based on *The Founders of Seismology*, by Charles Davison, Arno Press, New York, 1978.
<http://www.crustal.ucsb.edu/ics/understanding/history/history1.html> reprinted with permission

Would you believe that giant snakes, turtles, catfish, or spiders live underneath the ground, and it is their movements that create earthquakes? Maybe you wouldn't, but your ancestors did. Ancient peoples had many fanciful explanations for earthquakes, usually involving something large and restless living beneath the earth's surface.

Aristotle was one of the first to attempt an explanation of earthquakes based on natural phenomena. He postulated that winds within the earth whipped up the occasional shaking of the earth's surface.

Empirical observations of the effects of earthquakes were rare, however, until 1750, when England was uncharacteristically rocked by a series of five strong earthquakes. These earthquakes were followed on Sunday, November 1, 1755, by a cataclysmic shock and tsunami that killed an estimated 70,000 people, leveling the city of Lisbon, Portugal, while many of its residents were in church. This event marks the beginning of the modern era of seismology, prompting numerous studies into the effects, locations, and timing of earthquakes.

Prior to the Lisbon earthquake, scholars had looked almost exclusively to Aristotle, Pliny, and other ancient classical sources for explanations of earthquakes. Following the Lisbon earthquake, this attitude was jettisoned for one that stressed ideas based on modern observations. Cataloging of the times and locations of earthquakes and studying the physical effects of earthquakes began in earnest, led by such people as John Michell in England and Elie Bertrand in Switzerland.

The hundred or so years following the Lisbon earthquake saw sporadic but increasing studies of earthquake phenomena. These efforts were often spurred on by earthquake catastrophes like the 1783 Calabrian earthquakes that killed 35,000 people in the southern toe of Italy.

As communication between various parts of the world became more common, earthquake observations from throughout the world could be combined. Following an earthquake in Chile in 1822, the author Maria Graham reported systematic changes in the elevation of the Chilean coastline. Observations of coastline changes were confirmed following the 1835 Chilean earthquake by Robert FitzRoy, captain of the H.M.S. Beagle, while Charles Darwin was onshore examining the geology of the Andes.

In the 1850s, 60s, and 70s, three European contemporaries made cornerstone efforts in seismology. Robert Mallet, an engineer born in Dublin who designed many of London's bridges, measured the velocity of seismic waves in the earth using explosions of gunpowder. His idea was to look for variations in seismic velocity that would indicate variations in the properties of the earth. This same method is still used today, for example in oil field exploration.

Robert Mallet was also one of the first to estimate the depth of an earthquake underground.

At the same time as Mallet was setting off explosions of gunpowder in England, Alexis Perrey, in France, was making quantitative analyses of catalogs of earthquakes. He was looking for periodic variations of earthquakes with the seasons and with lunar phases. And in Italy, Luigi Palmieri invented an electromagnetic seismograph, one of which was installed near Mount Vesuvius and another at the University of Naples. These seismographs were the first seismic instruments capable of routinely detecting earthquakes imperceptible to human beings.

The foregoing work set the stage for the late 1800s and early 1900s, when many fundamental advances in seismology would be made. In Japan, three English professors, John Milne, James Ewing, and Thomas Gray, working at the Imperial College of Tokyo, invented the first seismic instruments sensitive enough to be used in the scientific study of earthquakes.

In the United States, Grove Karl Gilbert, after studying the fault scarp from the 1872 Owens Valley, California earthquake, concluded that the faults were a primary feature of earthquakes, not a secondary one. Until his time, most people thought that earthquakes were the result of underground explosions and that faults were only a result of the explosion, not a primary feature of earthquakes.

Also in the United States, Harry Fielding Reid took Gilbert's work one step further. After examining the fault trace of the 1906 San Francisco earthquake, Reid deduced that earthquakes were the result of the gradual buildup of stresses within the earth occurring over many years. This stress is due to distant forces and is eventually released violently during an earthquake, allowing the earth to rapidly rebound after years of accumulated strain.

The late 1800s and early 1900s also saw scientific inquiry into earthquakes begun by Japanese researchers. Seikei Sekiya became the first person to be named a professor in seismology; he was also one of the first people to quantitatively analyze seismic recordings from earthquakes. Another famous Japanese researcher from that time is Fusakichi Omori, who, among other work, studied the rate of decay of aftershock activity following large earthquakes. His equations are still in use today.

The twentieth century has seen an increased interest in the scientific study of earthquakes, too involved to discuss here. It should be noted, however, that research into earthquakes has broadened and contributions now come from numerous areas affected by earthquakes, including Japan, the United States, Europe, Russia, Canada, Mexico, China, Central and South America, New Zealand, and Australia, among others.

WEBSITES

www.redcross.org
www.redcross.org/services/disaster/

The newly redesigned Red Cross Web site has been reorganized and includes a cleaner design and more user-friendly navigation. The disaster pages are now only one or two clicks away, and the content is organized into a more intuitive format for the general public. The Red Cross invites all persons interested in home and business disaster management to check out the new site.

From: Disaster Research 343, April 4, 2001

<http://www.massey.ac.nz/~trauma/>

This is the web site of the "Australasian Journal of Disaster and Trauma Studies," with full text articles available on-line. The latest issue is a special edition on "Risk Information & Communication" edited by Bernd Rohrmann.

from: Disaster Research 340, February 20, 2001

<http://www.wa.gov/wsem>

The Washington State Emergency Management Division web site offers an extensive section on the recent Washington (Nisqually) earthquake. It includes official government (federal, state, and local) announcements, details about damage, and abundant information for residents about recovery and recovery resources.

from: Disaster Research 342, March 21, 2001

<http://www.fema.gov/emi/edu>

The Federal Emergency Management Agency's Higher Education Project is a major agency effort to promote emergency management training in colleges and universities across the U.S. The project's web site offers details about this program as well as much information about and extensive indexes of available training. For example, the project maintains a list of all colleges offering (or even considering) emergency management/disaster courses, indexed in various ways. In addition to the current listings (by degree offered) it is adding:

- An Alphabetical Listing of Emergency Management Collegiate Programs
- A Listing of Emergency Management Collegiate Programs by State
- A Listing of Emergency Management Collegiate Programs by Type

The program now also offers on-line a compilation of college syllabi from hazards and emergency management courses.

from: Disaster Research 342, March 21, 2001

<http://www.fema.gov/mit/planning.htm>

On January 17, the Federal Emergency Management Agency's Mitigation Directorate unveiled a new Web site for hazard mitigation planning. In launching the site, the agency said, "We believe the information contained here

will be a critical resource for all who are involved in establishing disaster resilient communities throughout our nation. Hazard mitigation planning is a collaborative process whereby hazards affecting the community are identified, vulnerability to the hazards assessed, and consensus reached on how to minimize or eliminate the effects of these hazardsBased on the lessons of the '90s, it became apparent that the nation needed to shift its approach from a disaster-response driven system to a system based on pre-disaster or ongoing risk analysis so that we could become proactive rather than reactive to hazard events.... As a result, a unit for Hazard Mitigation Planning was established within the Directorate in 1998 to provide guidance and resources to States and local communities to promote and support the mitigation planning process. FEMA therefore places much value on the planning process as an approach to mitigation that must be promoted and supported in order to build sustainable, disaster resilient communities!" The site's information is organized into three sections: What's Currently on the Shelf; What's New; and On the Horizon. The developers welcome comments and recommendations. Suggestions should be directed to Gil Jamieson, Chief, Planning Branch, Mitigation Directorate, FEMA, 500 C Street, S.W., Washington, DC 20472; (202) 646-4090; e-mail: gil.jamieson@fema.gov.

From Disaster Research #339, February 5, 2001

<http://www.bghrc.com> (click on "Disaster Management")

The Benfield Greig Hazard Research Centre at University College London has launched a series of Disaster Management Working Papers designed to make new evidence, analysis, and ideas available to researchers and practitioners worldwide. The editors envision five main categories of papers: research papers, case studies, field notes, discussion papers, and guidelines and training materials. The first working paper is a discussion piece entitled "Physician Heal Thyself? The Politics of Disaster Mitigation," by John Twigg of the centre. The paper looks at some of the reasons why so little is being done to reduce people's vulnerability to natural disasters and suggests that part of the problem lies within the so-called disaster "community" and that the problem is political--in the broadest sense of the word.

From Disaster Research #339, February 5, 2001

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

The United States Search and Rescue Task Force is a not-for-profit corporation dedicated to serving communities throughout the nation. The task force Web site is "designed to meet the needs of the search and rescue and disaster response community, public safety agencies and... the public." It provides extensive educational information on search and rescue, guides to search and rescue services, and information a wide variety of hazard-related topics--

from terrorism to tornadoes, earthquakes, and Lyme disease. For in-depth information about this organization, contact the United States Search and Rescue Task Force, P.O. Box 11292, Elkins Park, PA 19027; (215) 922-7225; e-mail: ussartf@ussartf.org.

From Disaster Research #339, February 5, 2001

Three sites that the Natural Hazards Center recently added to their list of tsunami Web pages (<http://www.Colorado.EDU/hazards/sites/tsunamis.html>):

1)- http://observe.ivv.nasa.gov/nasa/exhibits/tsunami/tsun_start.html The National Aeronautics and Space Administration (NASA) offers this on-line guide to tsunamis, with information about the basic science of tsunamis, tsunami warning, what to do when a tsunami strikes, and great historical tsunamis.

2)- <http://walrus.wr.usgs.gov/tsunami> The U.S. Geological Survey Western Region Web site offers information on tsunami research at the USGS as well as basic background information and on-line tsunami animations.

3)- <http://www.nws.noaa.gov/pr/ptwc> Via the Web, the Pacific Tsunami Warning Center offers current bulletins (including estimated times of arrival and maps) as well as historical information concerning tsunamis of the region. From Disaster Research #339, February 5, 2001

<http://www.nws.noaa.gov/om/hazstats>

Annually, the National Weather Service publishes natural hazards statistics on-line for previous years. Recently the service posted numbers for 1999 as well as preliminary statistics for 2000 at the URL above. The statistics cover fatalities due to all hazards, severe weather, lightning, tornadoes, tropical storms, heat, floods/flash floods, cold, winter storms, and high wind.

from: Disaster Research #341, March 7, 2001

http://www.agiweb.org/gap/legis107/hazards_caucus0101.html; <http://www.agiweb.org/workgroup>; <http://www.ucar.edu/communications/awareness/2001/>

On January 22nd, the Congressional Natural Hazards Caucus kicked off its activities in the new 107th Congress with a roundtable event to consider the impacts of the recent earthquake in El Salvador and to discuss the broader natural hazards challenges facing the United States. In conjunction with the event, caucus co-chairs Senator John Edwards (D-NC) and Senator Ted Stevens (R-AK) released a discussion document prepared for the caucus, highlighting why the nation is becoming more vulnerable to natural disasters and what actions Congress could take to address the problem. That paper is available for download at the second URL above. It identifies numerous challenges for Congress, both in the near future and long term, and offers suggestions for dealing with them.

A separate administration transition document was prepared by a working group of the caucus. Entitled "A

National Priority: Building Resilience to Natural Hazards" (see DR #339), it is available at the third URL.

from: Disaster Research #341, March 7, 2001

<http://www.pep.bc.ca> (Click on "Tools for Change: Emergency Management for Women's Services), or go directly to: http://www.pep.bc.ca/management/Women_in_Disaster_Workbook.pdf

The British Columbia Provincial Emergency Program (PEP) web site (see DR #338) has made this entire workbook on disaster preparedness and response among women's services available on-line. "It Can Happen to Your Agency - Tools for Change: Emergency Management for Women's Services," prepared by the B.C. Association of Specialized Victim Assistance and Counselling Programs, focuses on how women's service agencies can prepare to meet the problems and increased demands for services that will accompany any disaster.

from: Disaster Research 342, March 21, 2001

<http://www.emaponline.org>

<http://www.nemaweb.org>

The National Emergency Management Association (NEMA) has announced the launch of a new Web site at the first URL to support its Emergency Management Accreditation (EMAP) program (see DR#s 333 and 334). In addition, individuals who want to be regularly updated on EMAP activities can request such information by e-mailing edemers@csg.org.

from: Disaster Research #341, March 7, 2001

<http://www.icdds.org>

The Institute of Civil Defence and Disaster Studies (ICDDS) is the United Kingdom's oldest international learned society wholly devoted to international disaster studies and research. Originally founded in 1938, the ICDDS recently went through a process of reorganization and renewal. It now has an international multidisciplinary membership, publishes a quarterly journal, and organizes seminars and workshops, usually in collaboration with kindred organizations. In addition, ICDDS will shortly publish the first of an on-going series of disaster research papers relating to various aspects of natural hazards, technological hazards, other human-made hazards, and nuclear, chemical, and biological warfare. For more information about ICDDS, see the Web site above, or contact: G.A. Whitehead, Honorary General Secretary and Journal Editor, ICDDS, P.O. Box 74, Worcester, WR2 4YE, U.K.; e-mail: gw@icdds.fsnet.co.uk.

from: Disaster Research #341, March 7, 2001

<http://www.nerc-bas.ac.uk/tsunami-risks/html/Phy11Freq.htm>

Estimates of the regional and global frequency of tsunamis (especially giant tsunamis) © 2000 Natural Environment Research Council, Coventry University and

University College London

<http://www.massey.ac.nz/~trauma/>

This is the web site of the "Australasian Journal of Disaster and Trauma Studies," with full text articles available on-line.

from: Disaster Research #340, February 20, 2001

<http://aic.stanford.edu/disaster/>

The American Institute for Conservation (AIC) Web site offers an entire section on disaster recovery. It includes tips for the care of water-damaged objects of all kinds--from family heirlooms to books, textiles, and photographs--as well as links to other resources and information on the protection and conservation of valuable and/or historic artifacts.

from: Disaster Research 342, March 21, 2001

www.alertnet.org

Well, AlertNet is not a *new* internet resource, but it deserves to be mentioned again, since, first of all, it is a good resource of information for organizations involved in disaster response, recovery, and other forms of assistance, and also because the information provided changes daily. The site includes articles about current issues and breaking news; situation reports; feature and opinion articles; organization, individual, and country profiles; and an "appeal of the week." AlertNet also hosts on-line discussions and provides databases of relief resources, jobs, training, and aid supplies. One example of the useful information provided is a recently posted article by Paul Day on Mexico's new approach to disaster management--away from a reactive

model to one of increased coordination and information to try to prevent unnecessary death and damage when a disaster strikes.

from: Disaster Research 343, April 4, 2001

LISTSERVS AND DISCUSSION GROUPS

isk-com@listserver.itd.umich.edu

risk-com-request@umich.edu

A new information and discussion list has been established to promote communication and discussion among persons interested in risk communication. This is an unmoderated list. Anyone wishing to subscribe should send an e-mail message to the second address above with the word SUBSCRIBE as the *subject* of the message. An e-mail confirmation will be sent to subscribers.

from: Disaster Research #341, March 7, 2001

emergency-management@yahoogroups.com

emergency-management-subscribe@yahoogroups.com

<http://groups.yahoo.com/group/Emergency-Management>

This new discussion list was established for emergency management professionals and other interested persons. Its goal is to promote communication about all aspects of the profession. One can subscribe by e-mailing the second address above or consulting the Web page at the third address. Additionally, anyone desiring more information can contact the listmaster, Steve Davis, e-mail: steve@davislogic.com.

from: Disaster Research #341, March 7, 2001

TRAINING AND CLASSES

Hazards Center to Offer Training in Sustainable Disaster Recovery

The Natural Hazards Research and Applications Information Center will offer a new course - "Training in Using the Disaster Recovery Period to Build Local Sustainability" in Boulder, Colorado, August 27-31, 2001. The course is intended to help local, state, federal, and private-sector decision makers, planners, emergency managers, building officials, economic development directors, environmental specialists, and others who may be involved in recovery by a disaster-stricken community. It will teach them how to prepare and implement holistic recovery that promotes a sustainable community. By juxtaposing the components of sustainability (economic vitality, livability, environmental quality, disaster resilience, social equity, and participatory decision making) with likely post-disaster problems (damaged infrastructure, inadequate housing, ecosystem degradation, business disruption, etc.) participants will explore opportunities for enhancing a town, city, or county during disaster recovery. For each opportunity, the course will consider various planning options, ways to take action, funding strategies, and sources of further expertise. For details, contact: Jacki Monday, Program Manager, Natural Hazards Center, 482 UCB, University of Colorado, Boulder, CO 80309-0482; (303) 492-2149; fax: (303) 492-2151; e-mail: jacque.monday@colorado.edu.

from: Disaster Research #341, March 7, 2001

Periodicals for Disaster Mitigation and Tsunami Information
(New titles have been added; contact information has been updated)

Information from Hazard/Disaster Periodicals <http://www.wsspc.org/resources/periodcl.html>, the Ocean and Coastal Law Center Collection <http://oceanlaw.uoregon.edu/library/library.html>, and other online sources.

(*) Starred journal titles have been found informative and useful by Colorado's Natural Hazards Center (hazctr@spot.colorado.edu).

Bold titles are held in the Geology Library; underlined titles have been added or updated since the first list appeared.

AEDR Newsletter *

Jim Cohen, American Engineers for Disaster Relief PO Box 684, Princeton, NJ 08550-0684; (609) 730-0510; (609) 730-0511 fax; e-mail: jccpc@msn.com.

Published irregularly; **free**

Alert - The Quarterly Journal for International Disaster Studies and Research

Graham Whitehead, Editor, Institute of Civil Defence and Disaster Studies, P.O. Box 74 Worcester, WR2 4YE, U.K.; tel: +44(0) 1305 767560; e-mail wicdds@globalnet.co.uk; WWW: <http://www.britishcivildefence.org>.

Quarterly; available with membership in the institute; for current rates, see the Web site above.

American Academy on Veterinary Disaster Medicine Newsletter

Cecily Westermann, Editor, 3275 Jasper Park, St. Louis, MO 63139-1708; (314) 647-6917 (hearing impaired); fax: (314) 781-2594; e-mail: runi@aol.com.

Quarterly - \$25.00/year. Available with membership in the American Academy on Veterinary Disaster Medicine. Membership available from Joanne Howl, Secretary/ Treasurer, American Academy on Veterinary Disaster Medicine, 4304 Tenthouse Court, West River, MD 20778; (301) 261-9440; fax: (410) 867-8406; e-mail: jovet@aol.com.

American Emergency Management Response [electronic newsletter]

Created by the Association for National Defense and Emergency Resources and the Department of Political Science at the University of Akron as a public service for individuals, scholars, and decision makers concerned about emergency management. acook@uakron.edu.

American Planning Association Journal

see *Journal of the American Planning Association*

Australian Journal of Emergency Management

Rob Fleming, The Australian Journal of Emergency Management, Australian Emergency Management Institute, Main Road, Mt. Macedon, Victoria 3441, Australia; tel: (03) 5421 5100; fax: (03) 5421 5273; e-mail: rfleming@ema.gov.au.

Quarterly; free.

Bridges: Emergency Management Connections *

National Coordinating Council on Emergency Management, 7297 Lee Highway, Suite N, Falls Church, VA 22042; (703) 533-7672; fax: (703) 241-5603

Annual; single copies are **free**; additional copies are \$5.00 each.

Canadian Journal of Emergency Management

Canadian Journal of Emergency Management, 1121 Newcastle Road, Drumheller, Alberta, Canada T0J 0Y2; (800) 567-0911 or (403) 547-5748; fax: (403) 547-5749; e-mail: cjem@emsnews.com.

Canada: \$32.10 (Canadian)/year; \$53.50/two years. U.S.: \$50.00 (Canadian)/year; \$70.00/two years.

CCEP News

Canadian Centre for Emergency Preparedness, P.O. Box 2911, Hamilton, ON, L8N 3R5 Canada; (905) 546-3911 or 1-800-965-4608; fax: (905) 546-2489; e-mail: programs@ccep.ca.

Quarterly; \$15 (Canadian)/year.

Coastal Management

An International Journal of Marine Environment, Resources, Law and Society; www.taylorandfrancis.com/JNLS/cmg.htm

Coastal Management is a peer-reviewed, applied research journal dedicated to exploring the technical, legal, political, social, and policy issues relating to the use of coastal resources and environments on a global scale. The journal presents timely information on management tools and techniques as well as recent findings from research and analysis that bear directly on management and policy. Current areas of focus include coastal tourism, biodiversity in the coastal environment, seaport and waterfront management and planning, coastal hazards management and sea level rise, ocean policy and coastal state planning, coastal law and administration, water quality in the coastal environment, and international coastal management.

Coastal Zone Management Journal, see *Coastal Management*

The Connection Newsletter [electronic newsletter], available online: <http://www.naem.com/connection.html>

This newsletter "comprises articles written by people from around the country involved in local preparation to mitigate emergencies. It includes profiles of specific local organizations and activities, particularly showcasing Community Emergency Response Teams (CERTs). The editors of "The Connection" welcome article submissions. The deadline for the next issue is February 15, 2001, and guidelines are available from the newsletter's Web site. In addition, the editors are assembling a list of CERT-type community programs with contact information for program coordinators. A submission form for such information is also available from the site. For more about CERTs, see the FEMA Web site: <http://www.fema.gov/emi/cert/>.

from: *Disaster Research* #327, August 24, 2000

***Contingency Planning and Management* ***

Witter Publishing Corporation, 84 Park Avenue, Flemington, NJ 08822; (908) 788-0343; fax: (908) 788-3782; e-mail: WitterPub@aol.com.

Monthly; **free** to qualified subscribers; otherwise, \$99/year, U.S. and Canada; \$150/year, elsewhere. (Library's subscription starts with v. 5, no. 4, July/Aug 2000)

*Disaster Prevention and Management: An International Journal** For subscriptions within the U.S., contact MCB University Press Limited, P.O. Box 10812, Birmingham, AL 35201-0812; (800) 633-4931; fax: (205) 995-1588. Outside the U.S., contact Customer Services, MCB University Press Limited, 62 Toller Lane, Bradford BD8 9BY, U.K.; fax: (0274) 547143.

Quarterly - \$299.95/year.

***Disaster Recovery Journal* ***

System Support, Inc., 11337 St. John's Church Road, St. Louis, MO 63123; (314) 894-0276; fax: (314) 894-7474; e-mail: drj@drj.com; WWW: <http://www.drj.com>.

Quarterly - free to all qualified personnel involved in managing, preparing, or supervising contingency planning; otherwise \$10/year, U.S.; \$24, Canada and Mexico; \$47, elsewhere.

***Disaster Research* [electronic newsletter]**

back issues: <http://www.colorado.edu/hazards/dr/dr.html>
to subscribe: <http://www.colorado.edu/hazards/sub.html>

***Disaster Response Network* ***

Tricia Alvarez, American Psychological Association, Practice Directorate, 750 First Street, N.E., Washington, DC 20002-4242; (202) 336-5898.
Three times per year; free.

***DisasterCom* ***

The Disaster Preparedness and Emergency Response Association, International, P.O. Box 280795, Denver, CO 80228; Kathryn Dunlevy-Wilson, Newsletter Editor; (303) 809-4412; e-mail: dera@disasters.org; WWW: <http://www.disasters.org/dera.html>

Quarterly; \$15-Student/Retired/Volunteer members; \$25-all others.

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

Pan American Health Organization, 525 23rd Street, N.W., Washington, DC 20037; (202) 861-6096; fax: (202) 775-4578; e-mail: disaster@paho.org. (Available in English and Spanish.)

Quarterly; free.

***Disasters: The Journal of Disaster Studies, Policy and Management* ***

Blackwell Publishers Journals, P.O. Box 805, 108 Cowley Road, Oxford OX4 1FH, U.K. tel: +44 (0) 1865 244083; fax: +44 (0) 1865 381381; e-mail: jninfo@blackwellpublishers.co.uk.

Quarterly - Institutions: 137 pounds sterling/year, Europe/U.K.; \$226/year, North America; 137 pounds sterling/year, elsewhere. Individuals: 35 pounds sterling/year, Europe/U.K.; \$50/year, North America; 35 pounds sterling/year, elsewhere. Students: 26 pounds sterling/year, Europe/U.K.; \$43/year,

North America; 26 pounds sterling/year, elsewhere. Developing World Institutions: 69 pounds sterling/year.

A major, peer-reviewed quarterly journal reporting on all aspects of disaster studies, policy and management. It provides a forum for academics, policy-makers and practitioners reporting on high quality research and practice related to natural disasters and complex political emergencies around the world. The journal maintains a balance between academic papers, field reports from relief workers, case studies, and articles of general interest. It also contains book reviews.

Emergency Partner Postings

newsletter of the Emergency Information Infrastructure Partnership (EIIP) <http://www.emforum.org/eiip/news.htm>

***Emergency Preparedness Digest* (Canada) ***

Public Works and Government Services Canada- Publishing, Ottawa, Canada K1A 0S9; (819) 994-1498.

Quarterly - \$20+GST/year, Canada; \$26 (U.S.)/year, U.S. aka: Emergency Planning Digest

***Emergency Preparedness News* ***

BPI, 951 Pershing Drive, Silver Spring, MD 20910-4464; (301) 589-5103 or (800) 274-6737; fax (301) 589-8493; e-mail: bpilhth@bpinews.com; WWW: <http://www.bpinews.com>.

Biweekly - \$357/year, U.S., Canada and Mexico (including shipping); add \$16 for airmail postage outside the U.S.

Emergency Responder

Emergency Management Division of the Washington Military Department, Camp Murray, WA 98430-5122

The Emergency Responder is a bi-monthly publication that focuses on the Washington emergency management community, Staff of Washington Emergency Management, a division of the Washington Military Department, writes the newsletter. It is available in alternative formats upon request. Your comments and suggestions are appreciated. Please call Rob Harper at (800) 562-6108, ext. 7005; (253) 512-7298 TDD; or email him at r.harper@emd.wa.gov. Back issues are online at: www.wa.gov/mil/wsem/pio/news/menu1.htm

GeoCoast

"New online journal on geotechnology in Integrated Coastal of Zone Management (ICZM) targeted at scientists, academics, post-graduates and practitioners. Launched by the hyperactive folks at www.theukcoastalzone.com" At <http://www.geocoast.co.uk>
from: *icoast newsletter, March 5, 2001*

***Hazard (formerly Hazard Monthly)* ***

EIS International, 1401 Rockville Pike, Suite 500, Rockville, MD 20852; (800) 999-5009 or (301) 738-6900; fax: (301) 738-1026.

Quarterly; free within the U.S.; call for pricing outside U.S.

***HELPU Newsletter* [electronic only]**

<http://members.spreed.com/education/helpu/maynews2000.html>
(for May issue)

Serves the disabled community, their caregivers, attendants, fire and rescue personnel, and emergency services departments. Numerous pages with tips on emergency/disaster preparedness for various hazards.

IAEM Bulletin

International Association of Emergency Managers (IAEM),
111 Park Place, Falls Church, VA 22046-4513; (703)538-1795;
fax: (703) 241-5603; e-mail: iaem@aol.com; http://www.
iaem.com.

Monthly; \$100/year, \$110/year, nonmembers.

INCEDE Newsletter *

International Center for Disaster-Mitigation Engineering
(INCEDE), Institute of Industrial Science, University of Tokyo,
7-22-1 Roppongi, Minato-ku, Tokyo 106, Japan; tel: 81-3-3402-
6231, ext. 2660-2663.

icoast newsletter (previously known as ecoast)

www.coastalmanagement.com/icoast.html

International Journal of Mass Emergencies and Disasters *

www.usc.edu/dept/puad/ijmed/about.html David Neal,
Institute of Emergency Administration and Planning, P.O. Box
13438, University of North Texas, Denton, TX 76203.

Three times per year; \$48, institutions; \$20, individuals.

The *International Journal of Mass Emergencies and Disasters* is published triannually during the months of March, August, and November. It is concerned with the social and behavioral aspects of relatively sudden collective stress situations typically referred to as disasters or mass emergencies. All aspects of the life history of such events, both actual and threatened, are examined including mitigation, preparedness, response, and recovery activities. These situations often are created by natural disaster agents, technological accidents, violent intergroup conflicts, shortages of vital resources, acute and chronic environmental threats, and other kinds of major hazards to life, health, property, well-being, and everyday routines. While the focus of the Journal is on work dealing with the human and organizational aspects of mass emergencies, contributions concerning medical, biological, physical engineering, or other technical matters are acceptable if social and behavioral features of disasters are also prominently discussed.

International Journal of the Tsunami Society

see *Science of Tsunami Hazards*

International Society for the Prevention and Mitigation of Natural Hazards

see *Natural Hazards Society*

ITIC Newsletter see *Tsunami Newsletter*

http://www.shoa.cl/oceano/itic/frontpage.html

Journal of American Planning Association

American Planning Association, 122 S. Michigan Avenue,
Suite 1600, Chicago, IL 60603; (312) 431-9100; (312) 431-
9985 fax

Quarterly

Journal of American Society of Professional Emergency Planners

Contact: Robert C. Goldhammer, ASPEP, c/o International
Association of Emergency Managers, 111 Park Place, Falls
Church, VA 22046-4513. www.aspep.org/journal.htm

Committed to the sharing of ideas, research, lessons,
practice, and opinion, as well as serving as a forum for all
disciplines involved in emergency management. Annual

publication.

Journal of Contingencies and Crisis Management *

Blackwell Publishers, 108 Cowley Road, Oxford OX4 1JF,
U.K.; or, Journals Marketing Manager, Blackwell Publishers, 238
Main Street, Suite 501, Cambridge, MA 02142. available online:
http://www.blackwellpublishers.co.uk/journals/JCCM/descript.htm

Quarterly; institutions: \$220, North America; 160 pounds
sterling, elsewhere. individual: \$62, North American; 40 pounds
sterling, elsewhere.

Source of information on all aspects of contingency planning,
scenario analysis, and crisis management in both corporate and
public sectors.

Journal of Disaster Studies and Management

See *Disasters: Journal of Disaster Studies, Policy and
Management*

The Liaison (online)

Published by the Center of Excellence in Disaster Management
and Humanitarian Assistance, c/o Tripler Army Medical Center, 1
Jarrett White Road (MCPA-DM), Tripler AMC, HI 96859-5000;
(808) 433-7035; fax (808) 433-1757; e-mail: pr@coe-dmha.org
http://coe-dmha.org/website/index.htm

Quarterly, print or electronic versions available

Mass Emergencies

See *International Journal of Mass Emergencies and Disasters*

MCEER Bulletin

Multidisciplinary Center for Earthquake Engineering Research
(MCEER), State University of New York at Buffalo, Red Jacket
Quadrangle, Buffalo, NY 14261-0025; (716) 645-3391; fax: 645-
3399; e-mail: mceer@acsu.buffalo.edu

Quarterly; free.

Natural Disaster Loss Reduction Update *

Institute for Business & Home Safety, 175 Federal Street, Suite
500, Boston, MA 02110-2222, attn: Karen Gahagan; (617) 292-
2003; fax: (617) 292-2022.

Quarterly; free.

Natural Hazards: An International Journal of Hazards Research and Prevention

Published by Kluwer Academic Publishers for the International
Society for the Prevention and Mitigation of Natural Hazards,
Natural Hazards Research Centre, Macquarie University NSW
2109, Australia; fax 61-2-9850 9394; NHS@ocs1.ocs.mq.edu.au

Natural Hazards: Journal of the International Society for the Prevention and Mitigation of Natural Hazards *

Journal of the International Society for the Prevention and
Mitigation of Natural Hazards. Kluwer Academic Publishers, P.O.
Box 322, 3300 AH Dordrecht, the Netherlands, or P.O. Box 358,
Accord Station, Hingham, MA 02018-0358.

Bimonthly; \$289/year, members; others, \$431.00 Website:
http://www.es.mq.edu.au/NHRC/NHS

Natural Hazards Observer

Publications Clerk, Natural Hazards Research and Applications
Information Center, IBS #6, Campus Box 482, University of
Colorado, Boulder, CO 80309-0482; (303) 492-6819; fax: (303)

492-2151; e-mail: jclark@colorado.edu.

Bimonthly; free within the U.S.; \$15/year, elsewhere.

Back issues: <http://www.colorado.edu/hazards/o/o.html>

Natural Hazards Review

American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191-4400; online: www.pubs.asce.org

Quarterly, \$38 ASCE members; \$175 US institutions

Cosponsored by Natural Hazards and Research Applications Information Center, University of Colorado

Natural Hazards Society Newsletter (NHS Newsletter)

<http://www.es.mq.edu.au/NHRC/NHS/newsletter/>

Ocean Science News

Nautilus, 1201 National Press Building, Washington, DC 20045; Phone: (202) 347-6643 ISSN:0029-8069

Oregon Coastal Notes

Oregon Coastal Zone Management Association

- Notes)

PEER Center News

Pacific Earthquake Engineering Research Center (PEER), University of California at Berkeley, 1301 South 46th Street, Richmond, CA 94804; (510) 231-9554; fax (510) 231-9461; e-mail: janine@eerc.berkeley.edu; <http://peer.berkeley.edu/news/index.html>

Quarterly; **free**

Science of Tsunami Hazards *

The Tsunami Society, Box 25218, Honolulu, HI 96825.

Biannually; subscription part of membership fee (\$25, individuals; \$100, institutions; \$5, students). Current issue: <http://www.ccalmr.org.edu/STH/current.html>

Shore and Beach

Journal of the American Shore and Beach Preservation Association <http://www.ncsu.edu/asbpa>

U.S. Army Engineer Waterways Experiment Station Coastal and Hydraulic Laboratory, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199

Southern California Earthquake Center Quarterly Newsletter

Southern California Earthquake Center, University of Southern California, Los Angeles, CA 90089-0742; (213) 740-1560; fax (213) 740-0011; e-mail: sceinfo@usc.edu; Internet: www.usc.edu/go/scec

Quarterly; \$25.00 per year

Stop Disasters *

United Nations Secretariat for the International Decade for Natural Disaster Reduction, Palais des Nations, CH-1211, Geneva 10, Switzerland; tel: (41) 22 917-9000; fax: (41) 22 917 9098; or, International Institute Stop Disasters, via di Pozzuoli, 110, 80124 Naples, Italy tel: (39-081) 570-4665; fax (39-081) 575-5423

Quarterly; free.

Survive - The Business Continuity Magazine

Katy-Jo Howliston, LLP Ltd., 69-77 Paul Street, London EC2A 4LQ, England. tel: (44-0) 171-553 1406; fax: (44-0) 171

553 1105; e-mail: khowliston@llplimited.com

Quarterly; 55 pounds sterling (\$95)/year

TsuInfo Alert

<http://www.wa.gov/dnr/htdocs/ger/tsindex.html> DNR, Division of Geology and Earth Resources, PO Box 47007, Olympia, WA 98504-7007; (360) 902-1472; (360) 902-1785 fax Bimonthly; free.

Tsunami Newsletter *

International Tsunami Information Center, Box 50027, Honolulu, HI 96850; fax: (808) 541-1678; e-mail: itic@ptwc.noaa.gov.

Semiannually; free to scientists, engineers, educators, community protection agencies, and governments worldwide.

Unscheduled Events

Newsletter of the International Research Committee on Disasters (International Sociological Association). Dr. Henry W. Fischer, Editor, Dept. of Sociology, PO Box 1002, Millersville University of PA, Millersville, PA 17551-0302; email: hfischer@millersville.edu; fax (717) 871-2429.

Bi-annual, in May and November.

What's New---Mitigation and Preparedness Activities Across the Country (online; PDF format)

Published by the American Red Cross, in support of FEMA's Project Impact and disaster reduction generally.

See also

-- Hazard/Disaster Periodicals (Information for this page provided by the Colorado's Natural Hazards Information Center Calendar hazctr@spot.colorado.edu) which is available online at <http://www.wsspc.org/esources/periodcl.html>
-- Disaster-related Periodicals, at <http://www.colorado.edu/hazards/infosource2.html>

Did you feel the February 28 earthquake? Report it!

The USGS asks that everyone who feels an earthquake report their impressions to

http://pasadena.wr.usgs.gov/shake/pnw/html/unknown_form.html

The website is a form to be filled out by answering specific questions. The only field that **MUST** be filled in is the Zip Code.

JOURNAL TABLES OF CONTENTS

January - April 2001

Circle the title(s) of any article you would like to receive, and mail or email the list to Lee Walkling at the address on page 2.

Australian Journal of Emergency Management, v. 15, no. 4, Summer 2000-2001

- Understanding employee responses to disaster
- Community mapping--an aid to emergency management
- New guidelines aim to support older people in emergencies
- Direct and vicarious experience of volcanic hazards: Implications for risk perception and adjustment adoption

Contingency Planning & Management, v. VI, no. 2, March/April 2001

- Creating a culture of commitment "Contingency planning at The Home Depot benefits from a corporate culture in which associates are encouraged to demonstrate teamwork, communication, and dedication to family, home, company, and community."
- Higher education for emergency management
CIP: IT partners up
- 4 steps to a reliable power program
- Power plays
- Distributed power generation
- Going paperless

Contingency Planning & Management, v. VI, no. 1, January/February 2001

- BCP on the Rise: CPM/KPMG survey points to maturing industry
- Keeping the Process Going: Keys to manufacturing, supply chain, and distribution recovery
- Gearing Up for HIPAA: The role of DRP and BCP in HIPAA compliance
- CIP: What auditing can add
- Rally 'Round the Flag: Using logos to strengthen your recovery team

Emergency Responder, January-February 2001

- Regional energy issues receive scrutiny
- Puget Sound tsunami and landslide hazards studied
- 19 counties eligible for FSA loans
- 2001 Washington legislature has busy agenda

Emergency Responder, November-December 2000

- Duty officers log 3,000 missions for year 2000
- WAVOAD/EMD video to help local communities
- Thurman received six national media awards
- Island County project targets visitors (tsunami)
- Puget Sound regional information website underway:
www.govlink.org

Environmental Geosciences, v. 7, no. 1

- On the state of coastal hazards mapping
- Coastal hazards and the global distribution of human population
- Avoiding coastal hazard areas: Best state mitigation practices
- Shoreline position prediction: Methods and errors
- Monitoring beach morphology changes using small-format aerial photography and digital softcopy photogrammetry
- Radar structure of earthquake-induced, coastal land-slides in Anchorage, Alaska
- Low-cost bluff-stability mapping in coastal Maine; Providing geological hazard information without alarming the public

icoast newletter, December 31, 2000, version 2.12

- The New Wave - A year of the Internet in coastal management: 2000
- CoastalManagement.com regulars
- New or updated content @ coastalmanagement.com

icoast newletter, January 31, 2001, version 3.01

- The New Wave-The year ahead for coastalmanagement.com
- Using the internet for CZM in Washington state
- CoastalManagement.com regulars
- Monthly survey of integrated coastal management websites
- New or updated content @ coastalmanagement.com

icoast newletter, March 5, 2001, version 3.03

- The New Wave--Awards for coastal management websites
- CoastalManagement.com regulars
- Monthly survey of integrated coastal management websites
- New or updated content @ coastalmanagement.com

International Journal of Mass Emergencies and Disasters
v. 18, no. 2 (August 2000)

- Toward a politics of disaster: Losses, values, agendas, and blame
- Pattern differences in disaster-induced employee evacuations
- Household adoption of seismic hazard adjustments: A comparison of residents in two states
- The C-Mississippi scale for PTSD in postearthquake communities
- Book reviews: *The Angry Earth: Disaster in Anthropological Perspective*
- Regions of Risk: A Geographical Introduction to Disas-

- ters
- Origins of Terrorism: Psychologies, Ideologies, Theologies, States of Mind
- International Journal of Mass Emergencies and Disasters*
v. 18, no. 3 (November 2000)
- A study of pet rescue in two disasters
 - Catastrophe in reel life versus real life: Perpetuating disaster myth through Hollywood films
 - Building disaster-resistant communities: Lessons learned from past earthquakes in Turkey and suggestions for the future
 - Developing degree programs in disaster management
- The Liaison* http://coe-dmha.org/Liaison/Vol_2No_1/Index.htm, v. 2, no. 1, April-June 2000, "Water, water everywhere..."
- PDMIN: One piece of the puzzle
 - The Virtual Information Center
 - PDC: Information in Paradise
 - Disaster Management Capacity Building
 - Perspective: Tess Black
- Natural Hazards Observer*, v. XXV, no. 3
- Linking higher education and communities through natural hazard mitigation--an invited comment
 - IBHS unveils new home building program
 - Four new quick response reports, a workshop presentation, a working paper, a new web page and an annual report
 - On the Canadian natural hazards assessment project
 - Emergency Management accreditation program launched
 - CUREe becomes CUREE
 - Washington Update
 - Internet pages
 - Conferences and training
 - Contracts and grants
 - Recent publications
- Natural Hazards Review*, v. 2, no. 1
- The role of *Natural Hazards Review* as an agent for change
 - Safe in the 'Hood: Earthquake preparedness in midcity Los Angeles
 - GIS-based estimation of slope stability
 - Lessons from Grand Forks: Planning structural flood control measures

- Estimation of volcanic hazards from tephra fallout

Science of Tsunami Hazards, v. 18, no. 2

- Twentieth century Ms and Mw values as tsunamigenic indicators for Hawaii
- Source simulation for tsunamis: Lessons learned from fault rupture modeling of the Cascadia subduction zone
- Comparing model simulations of three benchmark tsunami generation cases
- Memorium - Sydney O. Wigen

Science of Tsunami Hazards, v. 19, no. 1

- Lituya Bay Case: Rockslide impact and wave run-up
- Computational technology for constructing tsunami local warning systems
- Analytical solution and numerical model for the interface in a stratified long wave system
- The asteroid tsunami project at Los Alamos

Tsunami Newsletter, v. XXXII, no. 3 December 2000

- Summary of Pacific Basin earthquakes, occurring October-November 2000
- Papua New Guinea, 16 Nov 2000, 4:55 UTC and 7:42 UTC
- New materials at ITIC
- ITIC welcomes visiting scientists

Tsunami Newsletter, v. XXXIII, no. 1 February 2001

- Summary of Pacific Basin earthquakes, occurring December 2000-January 2001
- Meeting of experts from the Caribbean and ITSU initiates organization of Intra-Americas -- -- Sea tsunami warning system
- ITIC News
- 2001 Conferences

Unscheduled Events, v. 18, no. 1, May 2000

- Online cumulative IJMED index coming
- New earthquake strategic partners network--MCEER
- President's column
- New books
- Conferences

CONFERENCES

April 26, 2001

Australian Emergency Management Forum (AEMF). The Internet: April 26, 2001, 7:30 p.m. (Australian time- the site includes a handy time converter). The new AEMF forum supports live discussion about current issues in emergency management. The topic of this session will be "Emergency Management Education and Personal Development into the 21st Century - What Are the Needs?" To participate, register at www.csu.edu.au/faculty/health/aemf/chat.html.

from: Disaster Research 343, April 4, 2001

May 9, 2001

"Mitigation Makes a Difference: Saving Lives and Saving Money" - One Day Seminar. Sponsor: Emergency Preparedness Commission (EPC) of the Cities and County of Los Angeles. City of Industry, California: Contact: Yolanda Pahua, EPC Executive Director, (323) 980-2266, e-mail: ypahua@lacoecoc.org.

from: Disaster Research #341, March 7, 2001

May 23-26, 2001

Underwater Ground Failures on Tsunami Generation, Modeling, Risk and Mitigation. NATO Advanced Research Workshop. Istanbul, Turkey: Abstracts due February 28. See: <http://www.tsunami.metu.edu.tr/> -or- <http://www.natoarw.metu.edu.tr/> for more information and on-line registration. Replies, comments, and applications can be e-mailed to natoarw@metu.edu.tr.

From Disaster Research #339, February 5, 2001

June 13-16, 2001

Critical Incident Stress Management Suite of Workshops. Offered by: International Critical Incident Stress Foundation (ICISF). Seattle, Washington: (San Diego, California: November 29-December 2, 2001) Contact: ICISF, 10176 Baltimore National Pike, Unit 201, Ellicott City, MD 21042; (410) 750-9600; fax: (410) 750-9601; WWW: <http://www.icisf.org>.

from: Disaster Research #341, March 7, 2001

July 19-21, 2001

Safeguarding our Cultural Heritage: Emergency Response Regional Workshops. Offered by: Foundation of the American Institute for Conservation of Historic and Artistic Works (FAIC). Seattle, Washington: the workshop will be limited to 15 participants. To apply or receive more information, contact: FAIC, 1717 K Street, N.W., #200, Washington, DC 20006; e-mail: info@aic-faic.org; or Mary Lee, (860) 927-0178; e-mail: mlee@mohawk.net.

from: Disaster Research 343, April 4, 2001

September 30-October 3, 2001

Disaster and Crisis Management: Prepare, Prevent, Prevail. Throggs Neck, New York: Contact: State University of New York Maritime College, Center for Disaster and Crisis Management, 6 Pennyfield Avenue, Fort Schuyler, New York 10465; (718) 409-7459; <http://www.sunymaritime.edu/ACADEMICS/undergraduate/cdcm.asp>

From Disaster Research #339, February 5, 2001

December 2-5, 2001

Society for Risk Analysis (SRA) 2001 Annual Meeting. Seattle, Washington: Contact: SRA, 1313 Dolley Madison Boulevard, Suite 402, McLean, VA 22101; (703) 790-1745; e-mail: sra@burkinc.com; WWW: <http://www.sra.org>.

from: Disaster Research #341, March 7, 2001

February 24-27, 2002

Coastal Disasters 2002. Organizers: Coasts, Oceans, Ports, and Rivers Institute of the American Society of Civil Engineers; NOAA, the Coastal Zone Foundation; and others. San Diego, CA. lewing@coastal.ca.gov; 415 904-5291 www.coastal.ca.gov/cdsolutions

May 28-30, 2002

Tsecond Tsunami Tsymposium. Sponsor: The Tsunami Tsociety, Honolulu, HI www.ccalmr.ogi.edu/STH/symp2.html

August 2002

World Congress on Disaster Reduction. Sponsors: American Society of Civil Engineers (ASCE) and others. Washington, D.C.: Contact: Walter Hays, ASCE, 1801 Alexander Bell Drive, Reston, VA 20191; (703) 295-6054; fax: (703) 295-6141; e-mail: whays@asce.org; or Michael Cassaro, ASCE; e-mail: macass@aye.net; WWW: <http://www.asce.org/conferences/disaster2002/>. (NOTE: a Pre-World Congress is planned for Washington, D.C, August 18-22, 2001. Contact the individuals above for more information.)

from: Disaster Research #341, March 7, 2001

New Tsunami Mitigation Materials
Added to the DGER Library, February through March, 2001
compiled by
Connie J. Manson

Note: **Free reprints of these materials are available.** (See page 2 for ordering information)

- Atkinson, G. M.; Boore, D. M., 2001, Empirical ground motion relations for subduction zone earthquakes [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 271.
- Atwater, B. F.; Haraguchi, T.; Takada, K.; Satake, Kenji; Shimokawa, K.; Baker, D., 2001, Sand sills in huge cores along the Columbia River, Washington [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 254.
- Bourgeois, Joanne; Johnson, S. Y., 2001, Geologic evidence of earthquakes at the Snohomish delta, Washington, in the past 1200 yr: *Geological Society of America Bulletin*, v. 113, no. 4, p. 482-494.
- Carey, S. N.; Morelli, David; Sigurdsson, Haraldur; Bronto, Sutikno, 2001, Tsunami deposits from major explosive eruptions--An example from the 1993 eruption of Krakatau: *Geology*, v. 29, no. 4, p. 347-350.
- Chubarov, L. B.; Shokin, Y. I.; Simonov, K. V., 2001, Computational technology for constructing tsunami local warning systems: *Science of Tsunami Hazards*, v. 19, no. 1, p. 23-38.
- Fritz, H. M.; Hager, W. H.; Minor, H.-E., 2001, Lituya Bay case--Rockslide impact and wave run-up: *Science of Tsunami Hazards*, v. 19, no. 1, p. 3-22.
- Geist, E. L.; Gelfenbaum, Guy; Jaffe, B. E.; Reid, J. A., 2000, Helping coastal communities at risk from tsunamis--The role of U.S. Geological Survey research: U.S. Geological Survey Fact Sheet 150-00, 2 p.
- Goldfinger, Chris; Nelson, C. H.; Johnson, J. E., 2001, Holocene seismicity of Cascadia subduction zone based on the turbidite event record [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 254.
- Gregor, N. J.; Silva, W. J.; Wong, I. G.; Youngs, R., 2001, Ground motion attenuation relationships for Cascadia subduction zone megathrust earthquakes based on a stochastic finite fault model [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 271.
- Hills, J. G.; Goda, M. P., 2001, The asteroid tsunami project at Los Alamos: *Science of Tsunami Hazards*, v. 19, no. 1, p. 55-
- Hughes, J. F.; Mathewes, R. W., 2001, Weedy colonists of sand from the A.D. 1700 Cascadia tsunami [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 270.
- Imteaz, Monzur Alam; Imamura, Fumihiko, 2001, Analytical solution and numerical model for the interface in a stratified long wave system: *Science of Tsunami Hazards*, v. 19, no. 1, p. 39-54.
- Jacobs, S. E.; Marks, Edward; Brown, A. R., 2001, Fossil hash --A late Pleistocene tsunami deposit at 2nd Street, San Pedro, California [abstract]: *Geological Society of America Abstracts with Programs*, v. 33, no. 3, p. A-54.
- Kayen, R. E.; Barnhardt, W. A.; Monahan, P. A.; Clague, J. J.; Christian, H. A., 2001, A tale of two deltas--Potential impacts of Cascadia-margin earthquakes on the deltas of the Fraser River (Vancouver) and Duwamish River (Seattle) [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 272.
- Kayen, R. E.; Barnhardt, W. A.; Monahan, P. A.; Clague, J. J.; Christian, H. A., 2001, Potential impacts of Cascadia-margin earthquakes on the Fraser (Vancouver) and Duwamish deltas (Seattle) [abstract]. IN Washington State Puget Sound Water Quality Action Team, Puget Sound research 2001; The Puget Sound/Georgia Basin ecosystem--Status, stressors and the road to recovery: Washington State Puget Sound Water Quality Action Team, [Abstracts of Poster Presentations], p. 29.
- Kirby, S. H., 2001, Earthquake hazards appraisal for in-slab earthquakes in Cascadia and Latin America--Challenges and prospects [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 237.
- Koshimura, Shun-ichi; Mofjeld, H. O.; Gonzalez, F. I.; Titov, V. V., 2001, Tsunamis in the Puget Sound region--New program [abstract]. IN Washington State Puget Sound Water Quality Action Team, Puget Sound research 2001; The Puget Sound/Georgia Basin ecosystem--Status, stressors and the road to recovery: Washington State Puget Sound Water Quality Action Team, [Abstracts of Oral Presentations], p. 19.
- Ludwin, R. S., 2001, Searching for native stories about Cascadia subduction zone earthquakes [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 270.
- Noson, L. L., 2001, Cascadia subduction zone earthquake scenario [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 271-272.
- Preston, L. A.; Creager, K. C.; Crosson, R. S.; Van Wagoner, T. M.; Trehu, A. M.; Brocher, T. M.; Fisher, M. A., 2001, Cascadia slab structure and deep earthquakes [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 237.
- Ramachandran, K.; Dosso, S. E.; Zelt, C. A.; Spence, G. D.; Hyndman, R. D., 2001, 3D velocity structure from tomographic inversion of SHIPS data from southwestern British Columbia [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 268.
- Rogers, G. C., 2001, Seismicity at the north end of Cascadia [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 236.
- U.S. National Geophysical Data Center, 2000, Hokkaido Nansei-Oki tsunami, July 12, 1993: U.S. National Geophysical Data Center, 20 slides.
- U.S. National Geophysical Data Center, 2000, Papua New Guinea tsunami, July 17, 1998: U.S. National Geophysical Data Center, 20 slides.
- U.S. National Oceanic and Atmospheric Administration, 1975, Tsunami, the great waves: U.S. Government Printing Office, 12 p.
- Walsh, T. J.; Caruthers, C. G.; Heinitz, A. C.; Myers, E. P., III; Baptista, A. M.; Erdakos, G. B.; Kamphaus, R. A., 2000, Tsunami hazard map of the southern Washington coast--Modeled tsunami inundation from a Cascadia subduction zone earthquake: Washington Division of Geology and Earth Resources Geologic Map GM-49, 1 sheet, scale 1:100,000, with 12 p. text.
- Williams, H. F. L., 1998, Geologic record of late-Holocene earthquakes in coastal marshes; North coast and northern Puget Sound, Washington State; Final technical report: U.S. Geological Survey contract report, 18 p.
- Wong, I. G.; Thomas, P. A., 2001, The challenges of incorporating crustal faults into seismic hazard analysis in the Pacific Northwest [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 255.
- Yeats, R. S.; McNeill, L. C.; Goldfinger, Chris, 2001, Coastal and offshore crustal faulting in Cascadia--Is it real and what are the implications for society? [abstract]: *Seismological Research Letters*, v. 72, no. 2, p. 253-254.
- Zerr, Nicholas; Jol, H. M.; Peterson, C. D.; Woxell, L. K.; Phipps, J. B.; Vanderburgh, Sandy, 1998, Coseismic subsidence preserved in linear dune ridge as reactivated dune surface and buried placer deposits in Ocean Shores, Washington, U.S.A. [abstract]: *Oregon Academy of Sciences Proceedings*, v. 34, p. 35-36.

April is Earthquake Preparedness Month!

Video reservations

Place a check mark (T) beside the video(s) you want to reserve; write the date of the program behind the title. Mail to: TsuInfo Alert Video Reservations, Lee Walkling, Division of Geology and Earth Resources Library, PO Box 47007, Olympia, WA 98504-7007; or email lee.walkling@wadnr.gov

- ___ **Adventures of Disaster Dudes** (14 min.)
Preparedness for pre-teens
- ___ **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 this system.
- ___ **Disasters are Preventable** (22 min.)
Ways to reduce losses from various kinds of disasters through preparedness and prevention.
- ___ **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 the development of warning systems.
- ___ **Killer Wave: Power of the Tsunami** (60 min.)
National Geographic video.
- ___ **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.) **NEW**
Institute for Business and Home Safety, 1997
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. The Institute provides a booklet to use with the video. 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, discussing 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 in California.
- ___ **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.
- ___ **Tsunami Warning** (17 min.)
San Mateo (Calif.) Operational Area Office of Emergency Services. This is a good public service program, specifically made for San Mateo County. Citizens are told what to do in cases of tsunami watches or tsunami warnings, with specific inundation zones identified for the expected 20-foot tall tsunami. An evacuation checklist is provided, as well as locations of safe evacuation sites. This video gives the impression that all tsunamis are teletsunamis (generated at a source more than 1000 km from the coastline) which therefore provide time for warnings. Locally-generated tsunamis are not discussed.
- ___ **USGS Earthquake Videotapes "Pacific Northwest"**
USGS Open-File Report 94-179-E
- ___ **Understanding Volcanic Hazards** (25 min.)
Includes information about volcano-induced tsunamis and landslides.
- ___ **The Wave: a Japanese Folktale** (9 min.)
Animated film to help 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 (Washington) Interpretive Center, this video deals with beach safety, including tsunamis.

Check the title(s) you would like and indicate the date of your program. The video(s) will be mailed one week before the program date. You will be responsible for return postage.

Name:

Organization:

Mailing address:

City, State, Zip:

email:

The Big Wave

by Pearl S. Buck

Illustrated by prints by Hiroshige and Hokusai
Hard copy 1973; paperback 1986; both are in print
For ages 6-12

from the dust jacket:

"Kino lived on a farm on the side of a mountain in Japan. Beneath, on a strip of seashore, was the fishing village where his playmate, Jiya, lived. The boys could swim out to a little island to explore a deep cave, play in the pine forest and feed the tame deer.

When the big tidal wave [sic] came and swept the whole fishing village away, Jiya was the only one of his family who escaped. He came to live with Kino and worked with him on the farm. When he grew older and was ready to marry Kino's sister, he wanted to go back to the old beach and build a home there and be a fisherman. But he knew how to be ready if the big wave ever came again, how to face it and not be afraid.

Adventurous and colorful, the story also has a unique value for children in its explanation to them of the mysteries of life and death. Through clear and simple words of Kino's father they learn that to live in the presence of danger helps us to be brave and makes us now how good life is.

The book is illustrated by authentic Japanese prints showing scenes and incidents such as those in the story, and thus it introduces to boys and girls a popular and delightful branch of world art."

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INFREQUENTLY ASKED QUESTIONS

compiled by Lee Walkling

What is the single most important variable affecting human behavior during disaster evacuations?

The author, veterinarian and professor Dr. Sebastian Heath, found that "the single most important variable that affects peoples behavior in evacuation, and that one can do something about, is pet ownership. The effect is so large, that even though only pet owners are affected, the potential increase in evacuation rates in the population as a whole could be improved 10-20%." (For more information, "Pets and Emergencies" on p.8 of this issue.)

Is there such a thing as a man-made tsunami (anthropogenic tsunami)?

According to the Natural Environmental Research Council of Coventry University and University College London (<http://www.nerc-bas.ac.uk/tsunami-risks/html/HHalifax.htm>):

"An ammunition ship carrying explosive equivalent to 2900 tons of TNT blew up in Halifax harbour on 6 December 1917, destroying much of the town by airblast but also generating [a] tsunami which caused significant damage and a number of deaths outside the blast zone. Wave runups of several metres were recorded in these more distant areas. With explosive cargoes (bulk nitrate fertiliser, Liquefied Natural Gas (LNG), ammunition, etc.) equivalent to up to a few tens of kilotons explosive yield now common, significantly larger explosion-generated tsunami are possible and will cause damage over proportionately larger areas relative to the airblast damage area, because of the different attenuating functions for tsunami and atmospheric body waves."

See also <http://www.region.halifax.ns.ca/community/explode.html> for a complete report on the accident, a collision between a Belgian relief ship and the French ship Mont Blanc. 1900 people were killed immediately; 9000 were injured. The exhibit "Halifax Wrecked" can be seen at the Maritime Museum of the Atlantic, Lower Water Street. The exhibit website is <http://museum.gov.ns.ca/mma/AtoZ/HalExpl.html>.

See also <http://www.sci.port.ac.uk/geology/staff/dpetley/imgs/enggeolprac/vaiont1.html> for a report (with illustrations) of the Vaiont reservoir 'tsunami,' another disaster deemed an anthropogenic tsunami by some.

How many coastal states does the U.S. have?

According to U.S. Geological Survey Circular 1075, there are 30 coastal states in the U.S. They counted states that have ocean *or* great lake coastlines.



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