Natural Hazards Observer

VOLUME XXIII NUMBER 1

September 1998

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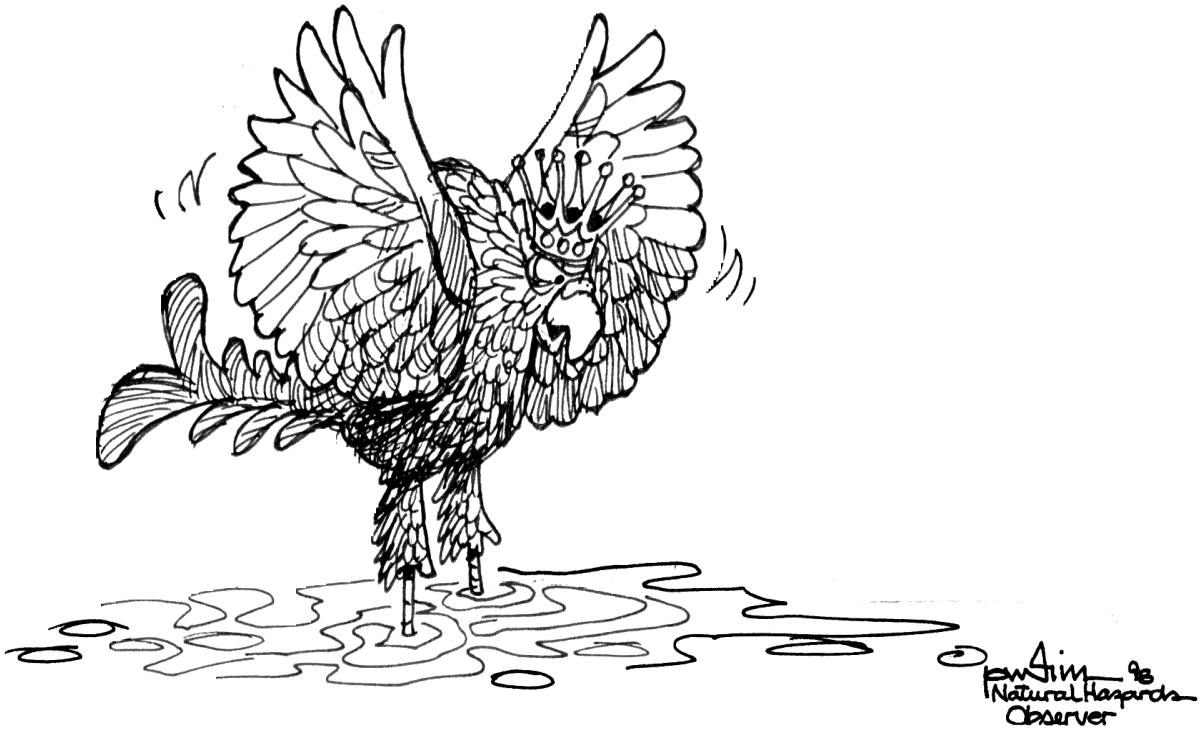

The Flood Aid Fair in Poland: A Method to Promote Information Exchange

--an invited comment

Background

The flood that affected Poland in July 1997 was called the Flood of the Millennium. The scale of this natural disaster was enormous and unusual for this part of the world--about 10% of the total land area in Poland was flooded. The waters inundated about 46,000 houses--equal to the number of housing units built during the entire year of 1997 in Poland. The flood also caused extensive infrastructure damage: 3,100 kilometers of road were affected; 180,000 telephone connections were damaged; 245 bridges were destroyed; and 56 water treatment plants were rendered inoperable. While the extent of financial loss caused by the flood was difficult to determine, a government estimate issued in March 1998 placed losses at about$2.4 billion. The flood (which also affected the Czech Republic and Eastern Germany) was the single most costly disaster in 1997 worldwide.

The initial response to the flood was, of course, humanitarian. Polish counties and municipalities not affected by the flood donated immediate financial assistance or gifts in-kind to the victims. In addition, nongovernment organizations (NGOs), such as the Catholic church, mounted a massive campaign to collect and distribute funds and gifts to flood-affected areas. After the initial response, foreign governments and multinational donors also gave goods, equipment, and financial assistance to the victims.

Flood-related reconstruction in Poland proceeded at a slow pace. Though there had been assistance directed at the flood-affected region of Poland, the need for flood reconstruction persisted eight months after the disa ster. Financial resources for reconstruction were scarce. To make matters worse, due to poor communication systems and organization, victims of the flood did not have access to information regarding sources of aid supplied by donors, the government, or commercial firms. This resulted in the inefficient and inequitable distribution of aid.

The World According to GARP

To help municipal staff and their communities (known in Poland as *gminas*) address postflood problems, the United States Agency for International Development (USAID), working with municipal staffs, NGOs, national municipal associations, contractors, and other organizations, developed the Gmina Assistance and Reconstruction Program (GARP). GARP had three major components: 1) technical assistance, 2) finance, and 3) information facilitation.

The information facilitation component of GARP adopt-ed a comprehensive approach to promote communication exchange. The major goal was to foster interaction between those that had something to offer toward flood reconstruction and the victims of the flood (municipalities, small-to-medium size enterprises, and homeowners). The methods were diverse, including seminars and a model flood aid information system, but the most unique approach under this component was the Flood Aid Fair.

The Flood Aid Fair

The Flood Aid Fair was modeled after commercial trade fairs, but with an orientation toward reconstruction needs in the flood-affected area. As mentioned above, the goal of the fair was to create an event where an intensive exchange of information could take place between donors (bi- and multilateral, humanitarian, financial, and commercial) and the victims of the flood. Foremost, the fair was designed to promote the market response to demand for goods and services created by the flood.

The Flood Aid Fair was organized in collaboration with the municipality of Raciborz--one of the hardest hit municipalities. GARP also solicited the assistance of five Polish NGOs for organizing the event. In addition, the government of Poland, through its Ministry of Flood, lent its patronage to the fair. Thus, the Flood Aid Fair was organized at relatively little expense compared to standard trade fairs.

The fair addressed different dimensions of outstanding flood-related needs. It included a Flood Aid Needs Board, to which victims could contribute ideas, a series of seminars on flood reconstruction techniques, and a survey administered to both exhibitors and participants. In total, there were 146 exhibitors--a group assembled to meet the diverse needs of the victims of the flood. Exhibitors at the fair, held in a converted school building provided by the municipality of Raciborz, were organized according to the following groups: flood aid organizations, government institutions, municipal associations, consulting firms, building materials firms, new technology firms, financial institutions, and others. Many exhibitors had never before participated in a fair and were new to this type of information

exchange.

Summary

While the fair lasted only eight hours, much information was exchanged between fair exhibitors and participants. More than 4,000 individuals representing NGOs, municipalities, regional development agencies, commercial firms, governments, and homeowners attended the fair. Based on survey results, participants and exhibitors both felt that the event was a success. Conclusions about this event include:

- The Flood Aid Fair met its goal of facilitating information exchange among the victims of the flood (gminas, enterprises, and homeowners) and those that had something to contribute toward reconstruction. This exchange resulted in additional (unmeasurable) resources becoming available for the victims of the flood in terms of product discounts, access to new technologies, donor program assistance, information about finance, credit availability, etc.
- Information collected at the Flood Aid Fair exposed gaps in available resources to meet existing needs among the victims of the flood.
- The Flood Aid Fair helped to build capacity among indigenous organizations and was positively viewed by GARP's organizing partners, especially the city of Raciborz, which benefitted from the Flood Aid Fair through media attention.
- The collaboration of a foreign-government-sponsored program, a municipality, and select Polish NGOs was unique and contributed to the success of the fair.
- The Flood Aid Fair helped to strengthen relationships among NGOs, municipal institutions, the government of Poland, and other donor organizations involved in the flood relief effort.
- Unlike other flood relief efforts, the Flood Aid Fair was able to help gauge and promote the market response to existing needs.
- Lastly, the Flood Aid Fair raised the visibility of outstanding needs still present in the flood-affected region six months after the flood. In particular, it led to the creation of a multimedia flood aid information system, through which victims from across Poland could obtain flood recovery information.

Maris Mikelsons and Krzysztof Chmura, The Urban Institute, Washington, D.C.

The Natural Hazards Center's Quick Response Program

It's that time of year again! The Natural Hazards Center is soliciting proposals for its 1999 Quick Response (QR) program, which enables social scientists to conduct short-term research immediately after a disaster.

If you have a burning question that can only be answered by being at the scene of a disaster within the first hours or days following the event, we encourage you to submit a brief proposal describing that

research. If your proposal is approved, you are then eligible to receive funding to carry out your investigation should an appropriate disaster occur in the coming 12 months. Grants average between $1,000 and $3,000 and essentially cover travel and per diem only. In return, grantees must submit reports of their findings, which are published by the Natural Hazards Center both electronically and in hard copy.

Details about proposal submission requirements can be obtained by requesting a 1999 QR Program Announcement from *Mary Fran Myers, Co-Director, Natural Hazards Center, Campus Box 482, University of Colorado, Boulder, CO 80309-0482; (303) 492-2150; fax: (303) 492-2151; e-mail: myersmf@colorado.edu*. The program announcement is also available from the center's World Wide Web site at the URL below. The deadline for proposal submission is October 15, 1998.

In the meantime, to obtain a list of Quick Response reports and all our other publications, along with their prices, send $3.00 to the *Publications Clerk at the address above*. This list, as well as full text copies of recent QR reports, are available at no charge from the center's home page on the World Wide Web: *http://www.colorado.edu/hazards*.

A Letter to the Editor

Map of Disaster Declarations Needs Further Examination

Editor:

The map of disaster declarations included in the July 1998 ***Observer*** tells a truly remarkable story and one quite at variance to your comment that it shows hazards happening everywhere (see Vol. XXII, No. 6, p. 5). It shows the distribution of declared disasters to be highly concentrated in certain parts of the country: western Washington; the California coast and southern California; the lower Mississippi; southwestern Florida; Appalachia; the New England coast; North Dakota, and, to an even greater extent, the eastern part of North Dakota; along with northwestern Minnesota. In some of these counties disasters are declared in half the years. Many counties, perhaps the majority, have had none or less than three disasters in the 34-year period covered.

An interesting commentary would address the implications for this highly skewed distribution of federal disaster assistance. Clearly, some counties are disaster-prone. Is there a political dimension that makes some counties more successful than others in receiving federal assistance? Does disaster assistance increase the likelihood of subsequent disaster assistance? If there were no federal disaster assistance, would these heavily assisted counties be substantially less populated and less developed? Would that be a desirable consequence?

My conclusion: this map calls for an essay. You are to be congratulated for picking it up.

Robert K. Davis, Institute of Behavioral Science, University of Colorado-Boulder

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Annual Hazards Workshop Returns to Boulder

1998 Session Summaries Now Available

In July, hazards professionals from around the world gathered in Boulder, Colorado, for the 23rd Annual Hazards Research and Applications Workshop. There was lively debate and healthy discussion during the four days of the workshop on topics as diverse as network news coverage of natural disasters, the International Decade for Natural Disaster Reduction, preparing for terrorist incidents with weapons of mass destruction, measuring disaster losses, and using new technologies in natural hazard management. The participants were as diverse as the program topics, as federal, state, and local government officials, researchers, representatives of nonprofit organizations and private industry, and others talked, listened, and learned from one another.

To ensure that these ideas and discussions are not limited to participants who attended the workshop, the Natural Hazards Center publishes brief summaries of each session, abstracts of the hazards research presented, and descriptions of the projects and programs discussed at the meeting. A set of all workshop materials, including the agenda and participant list, costs $20.00, plus $5.00 shipping. (For orders beyond North America, contact the Publications Clerk at the address below for shipping charges or access the publications ordering information on our Web site at *http://www.colorado.edu/hazards/puborder.html*.) Currently, the list of all session summary and abs tract titles is available on our Web site at *http://www.colorado.edu/hazards/ss.html*. In November, the complete text of all session summaries will also be available at that site, although abstracts of hazards research, programs, and projects will not.

To order these materials, send your payment (checks should be payable to the University of Colorado) to the *Publications Clerk, Natural Hazards Research and Applications Information Center, Campus Box 482, University of Colorado, Boulder, CO 80309-0482; (303) 492-6818; fax: (303) 492-2151; e-mail: jclark@spot.colorado.edu; WWW: http://www.colorado.edu/hazards*. Visa, Mastercard, America n Express, and Diner's Club cards are also accepted.

A Gem of a Meeting

As the second millennium comes to a close, many people are looking for new ideas and ways of handling the same old problems in the future. The Association of State Floodplain Managers (ASFPM) is no different. During their annual meeting, held in April 1997 in Little Rock, Arkansas, participants looked forward to the 21st century and a more enlightened approach to flood loss reduction. ***Floodplain Management in a Multifaceted World*** (1998, 366 pp., $20.00), the proceedings from that meeting, is now available from the Natural Hazards Center.

The papers in the volume cover every aspect of flood loss reduction, including national policy, state and local planning and land use, watershed management, coastal issues, problems associated with Hurricane Fran, hydrology and hydraulics, mapping, structural flood control, geographic information systems, floodplain resource protection, project evaluation, international approaches, and the overall practice of floodplain management.

Copies of ***Floodplain Management in a Multifaceted World*** are available from the *Publications Clerk* at the address above. Be sure to add $5.00 for shipping.

Announcing the First Publications from the Second Assessment

Cooperating with Nature and *Paying the Price*

Since 1994, the Natural Hazards Center has overseen the Second U.S. Assessment of Research and Applications for Natural Hazards, a multidisciplinary effort to evaluate existing knowledge about hazards and disasters from the perspectives of the physical, social, natural, behavioral, and engineering sciences. This research has been undertaken by staff at the Natural Hazards Center and over 100 nationally and internationally recognized experts who volunteered their time to evaluate the United States' relationship to hazards.

A select group of experts were invited to expand upon their contributions to the Second Assessment by developing individual works on major themes in hazards research, including insurance, risk assessment, disaster preparedness and response, and mapping. The first two publications of this effort were recently released: ***Cooperating with Nature: Confronting Natural Hazards with Land-Use Planning for Sustainable Communities***, edited by Raymond J. Burby (1998, 368 pp., $47.95), and ***Paying the Price: The Status and Role of Insurance Against Natural Disasters in the United States***, edited by Howard

Kunreuther and Richard J. Roth, Sr. (1998, 320 pp., $47.95).

Cooperating with Nature

Cooperating with Nature is about natural disasters and sustainability--the capacity of our planet to provide a high quality of life for present and future generations. Believing that disasters signal a serious breakdown in sustainability because, although they have always been present, they can now wreak havoc that goes far beyond the ability of a society to take them in stride, the contributors to this volume suggest that planning for and managing land use can enhance sustainability by reducing or eliminating vulnerability to disasters. They chronicle the long evolution of land-use planning and identify key components of sustainable planning for hazards. Contributors describe the promise of land-use management for achieving sustainability, explore the reasons why this promise is not being realized uniformly by government at various levels, and propose ways to foster sound land-use decision making. They also explain why sustainability and land use have not been taken into account in the formulation of public policy and provide concrete suggestions for policy reform, calling for a new National Hazardous Area Management Act and a program to foster improved planning and management at state and local levels.

Paying the Price

When this study was begun four years ago, the insurance and reinsurance industries were reeling from the catastrophic losses many firms experienced following Hurricane Andrew in Florida in 1992 and the Northridge earthquake in California in 1994. Many insurers had grave doubts about whether they would be able to continue to provide insurance protection against wind damage from hurricanes and shake losses from earthquakes. This volume contains the results of an effort to bring together the country's

leading experts on insurance and reinsurance to examine how this industry can provide protection against such devastating natural disasters.

Paying the Price discusses insurability conditions for natural disasters; the changing demand for residential disaster insurance in the U.S.; the challenges insurers face in providing insurance against damage due to earthquakes, hurricanes, and floods; and the functions of state insurance regulators. It examines various types of state and federal involvement in insurance programs, such as the California Earthquake Authority, the Florida Hurricane Catastrophe Fund, and the National Flood Insurance Program. Collectively, the contributors believe that the economic costs of natural disasters are likely to soar even higher in the future unless steps are taken to change recent trends. They discuss the role that insurance and mitigation can play together in reducing future losses and propose a program for reducing losses and financing recovery through joint efforts among insurers and other stakeholders. They also suggest strategies that combine insurance with monetary incentives, fines, tax credits, well-enforced building codes, and land-use regulations.

Both volumes can be purchased from the *National Academy Press, 2101 Constitution Avenue, N.W., Lockbox 285, Washington, DC 20055; (800) 624-6242 or (202) 334-33313; fax: (202) 334-2451; WWW: http://www.nap.edu/bookstore*. Please add $4.00 shipping for the first book and 50¢ shipping for each additional book.

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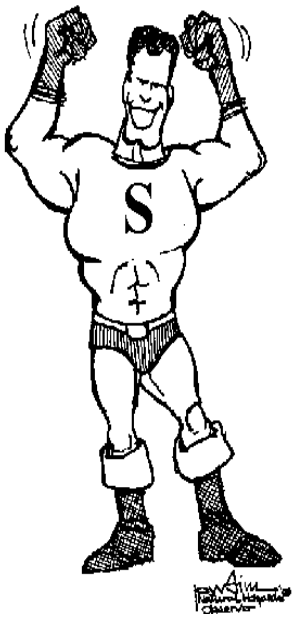
On the Line

Another Job for Super Emergency Manager

The recent Natural Hazards Research and Applications Workshop plenary session on counterterrorism signaled another new challenge for the emergency management community (see page 4 of this ***Observer***). But it's not really new in the sense that emergency management principles and practices are adaptable to many of the potential needs that terrorist actions could create. Certainly, planning for such incidents fits into the responsibilities Congress had in mind when it amended the Superfund law to require the establishment of State Emergency Response Commissions and Local Emergency Planning Committees. A workshop session inviting representatives of the FBI and the military seemed to startle some of those present, and I am sure that in addition to those who did speak out there were others who felt uncomfortable with the concept of the natural hazards world being allied with agencies more usually seen as involving law enforcement, intelligence and counter-intelligence, and the world of TV shows like the *X-Files*. For the research and planning communities, this concept will undoubtedly require some getting used to. Making peace with it will not come easily for many.

The comments and informal discussions that followed the plenary session in Boulder reminded me of earlier hazards workshop controversies about sessions on dual use of emergency planning for both disaster and civil defense crisis relocation planning, and about the inclusion of so-called technological disasters within the natural hazards purview. The purists resisted, but, ultimately, such emergency planning activities became a part of the Boulder workshop landscape, albeit not a very large part.

Whether or not emergency planning related to counterterrorism is perceived by some as having a never-never land or *X-Files* aspect is basically irrelevant. Years ago, while working with the Red Cross Disaster Service, I helped develop a contract the Red Cross had with the Defense Civil Preparedness Agency (later the Federal Emergency Management Agency) to develop a shelter management training course for the Crisis Relocation Program. This required buying into two widely-thought-to-be-incredible concepts--that there could be a nuclear attack on the United States and that tens of millions of people could be safely evacuated ahead of the attack and sheltered until it was safe to come out. It meant putting on blinders, developing tunnel vision (so as not to be distracted by the scoffing and nay-saying of one's colleagues and friends) and doing the best one could to apply basic disaster-related shelter management principles to the starkest possible circumstances with limited supplies, no possibility of quick resupply of needed items, minimal medical support, etc. We did it, and when the course was field tested with a group of initially skeptical county officials, state people, Red Cross personnel, and academics and school principals in Port Angeles, Washington, they agreed our adaptation of normal disaster shelter practices could work. I say could advisedly. Thankfully, we never had to find out if it really would!



There is ample precedent for relating emergency management planning to some of the scenarios of counterterrorism. In 1962, for example, a chlorine barge (loaded with the equivalent of as much of the poison gas as was used during the first World War) sank in the Mississippi River between Natchez, Mississippi, and Vidalia, Louisiana. There was the possibility of a leak that could spread lethal gas over the area during the month-long salvage effort. A special task force was formed that included the Mississippi National Guard; the Louisiana State Police; the Department of Health, Education, and Welfare; the Red Cross; county agencies; local hospitals; the National Weather Service; the Corps of Engineers; and others. We planned for and had in place facilities to support an instant evacuation of everyone living within three to five miles of the salvage site (and arranged unique special protection for patients in the Natchez hospital and operators at the local telephone exchange who had to stay in place). There were drills in which schools were emptied and children were tagged and loaded on buses in less than three minutes. The plan would have worked, if needed, and it was all created from basic emergency management and disaster response principles. Similarly, when a train wreck in Ontario created a five-day hazardous materials (hazmat) danger, half a million people were evacuated from the city of Mississauga outside of Toronto. Evacuations related to hazmat incidents are not all that unusual, and they are handled by normal emergency management forces (police, fire, health department, Red Cross, etc.) with the support and, if needed, technical direction of environmental agencies like the EPA.

When cryptosporidium got into Milwaukee's water supply, killing 100 people and causing tens of thousands to fall ill, emergency medical forces were rallied. Water supply problems can be difficult to handle, but whether or

not they are related to terrorist activities would not diminish the need for a community's normal emergency management and public works procedures, augmented by state and federal help (including, perhaps, military tanker trucks) to be put in place.

X-Files notwithstanding, counterterrorism planning should use the existing experience and know-how of the emergency management community. Emergency managers will, of course, need to rely on experts from the EPA and state or local environmental agencies, just as they did when dioxin was discovered in the floodwaters at Times Beach, Missouri. They will have to follow whatever restrictions are placed on what they do, by those with hazmat know-how and by law enforcement officials involved in counterterrorist investigations. Undoubtedly there are ways in which appropriate systems research could support such efforts; thus, the research community must also become part of the effort.

Roy Popkin, Popkin Associates, Silver Spring, Maryland

On International Cooperation in Disaster Telecommunications

The Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations was adopted by the Intergovernmental Conference on Emergency Telecommunications (ICET-98) held in Tampere, Finland, June 16-18, 1998. The International Telecommunications Union (ITU) has made the complete text and related documents available in English, French, and Spanish on the ICET-98 Web site:

http://www.itu.int/newsroom/projects/ICET.html
http://www.itu.int/newsroom/projects/ICET/tampereconvention.html

The June 18 press release regarding the agreement is available at:

http://www.itu.int/newsroom/press/releases/1998/98-24.html

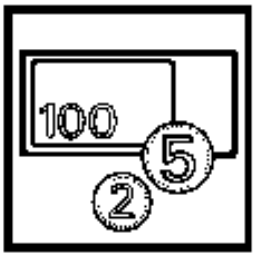
The Tampere Convention is a unique document. While it is a treaty among states, it also covers the activities of nonstate entities, in particular nongovernmental organizations and the International Committee of the Red Cross. In addition, certain privileges and immunities are extended specifically to others who are not representatives of governments and international organizations. Thirty-three countries signed the Tampere Convention on June 18, 1998.

For additional information, see the above Web sites, or contact *Hans Zimmermann, United Nations Office for the Coordination of Humanitarian Affairs (OCHA), Palais des Nations, CH-1211 Geneva 10, Switzerland; tel: +41 22 917-3516; fax: +41 22 917-0208/0023; e-mail: hans.zimmermann@ties.itu.int*.

Mark Your Calendar

World Disaster Reduction Day October 14, 1998

Prevention Begins with Information is the slogan of the 1998 World Disaster Reduction Campaign, whose theme is Natural Disaster Prevention and the Media. The International Decade for Natural Disaster Reduction (IDNDR) campaign will culminate with special activities in local communities around the world on UN World Disaster Reduction Day, October 14, 1998. For more information, contact the *IDNDR Secretariat, United Nations, Palais des Nations, CH-1211 Geneva 10, Switzerland; tel: +41 22 740-0377; fax: +41-22 733-8695; e-mail: idndr@dha.unicc.org*.



Contracts and Grants

Employing Psychological Principles of Social Influence to Increase Household Seismic Hazard Adjustment Activity, National Science Foundation, $92,206, 24 months. Principal Investigator: *Robert D. Ridge, Brigham Young University, P.O. Box 25383, Provo, UT 84602-5383; (801) 378-7867; e-mail: robert_ridge@byu.edu*.

This project focuses on factors that influence the adoption of seismic adjustments. Field experiments will examine three strategies: 1) engaging reciprocity norms through a process of reciprocal concessions, 2) engaging commitment and consistency motivations through a process of sequential requests, and 3) engaing normative pressures through a process of comparative feedback. The research will demonstrate the power of social influence on household seismic safety; it will be the first experimental research that systematically manipulates aspects of social influence to investigate their effects on compliance and the level of earthquake preparedness in a vulnerable population.

Determinants of State-Level Disaster Policy Change, Improvement, and Learning, National Science Foundation, $125,112, 24 months. Principal Investigator: *Thomas A. Birkland, State University of New York-Albany, P.O. Box 9, Albany, NY 12201-0009; (518) 442-3827; e-mail: birkland@csc.albany.edu*.

This research seeks to define the factors that contribute to variation in states' roles in mitigating losses from and preparing for disasters. The research will examine the diffusion of lessons among states that have learned about effective measures in the aftermath of recent disasters, including the adoption of land-

use planning, building practices, and preparedness legislation. The project will construct a 50-state data set to isolate determinants of improved policy, followed by a more detailed qualitative study of disaster policy making in a sample of states.

Seismic Safety of Federal-Aid Highways, Bridges, and Tunnels, U.S. Department of Transportation, $12 million, six years. Principal Investigator: *George C. Lee, Multidisciplinary Center for Earthquake Engineering Research, State University of New York at Buffalo, Red Jacket Quadrangle, Buffalo, NY 14261-0025; (716) 645-3391; fax: (716) 645-3399; e-mail: mceer@acsu.buffalo.edu; WWW: http://mceer.buffalo.edu.*

Although the U.S. transportation system is the world's largest, very little of it has been designed and constructed with earthquakes in mind, despite 39 states having either moderate or significant earthquake risk. There are currently no national guidelines or requirements for the seismic design of transportation systems other than those for highway bridges. The goal of this project is to develop national seismic-design methods and guidelines for new systems and to determine the most cost-effective techniques for retrofitting existing ones.

PERI Announces Grant and Research Program

The mission of the Public Entity Risk Institute (PERI--see ***Observer***, Vol. XXII, No. 2, p. 20) is to serve public, private, and nonprofit organizations as a dynamic, forward-thinking resource for the practical enhancement of risk management. PERI has specifically included natural hazards among the risks to be addressed. To accomplish its objective, the institute has initiated a grant and research program to stimulate creative thinking, generate original research, and promote the practical application of research in order to advance risk management. PERI recently published a guide to this program that describes its goals and strategies, areas of interest, eligibility requirements, essential elements, and application procedures. To obtain a guide or more information, contact *Gerard J. Hoetmer, Executive Director, PERI, 11350 Random Hills Road, Suite 800, Fairfax, VA 22030; (703) 934-6046; fax: (703) 352-7085; WWW: http://www.riskinstitute.org.*

WSTB Creates Committee to Evaluate Corps Risk-Based Analysis

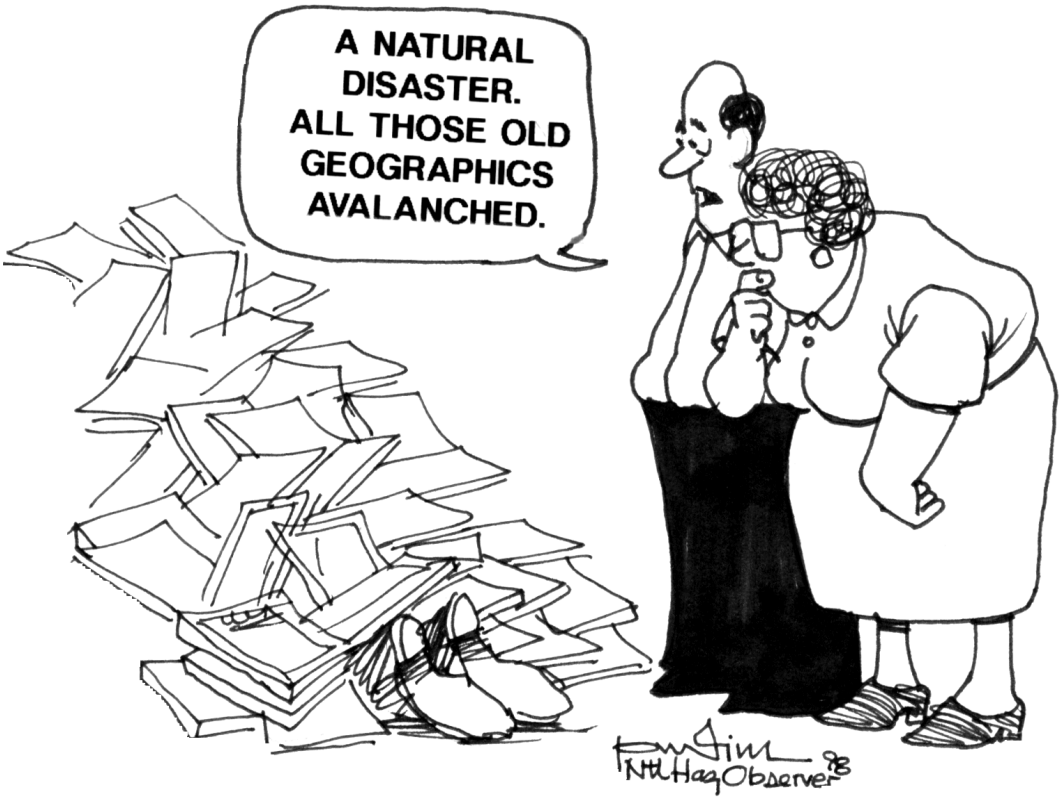
Flood-damage reduction is one of the primary missions of the U.S. Army Corps of Engineers (USACE). The USACE maintains a vast infrastructure of civil works projects and continues to carry out congressional directives to plan, design, construct, and operate various flood-damage reduction projects throughout the nation. In planning and designing flood-damage reduction projects, the USACE evaluates information about flood discharge versus frequency, flood level (or stage) versus frequency, and stage versus damage relationships. Such information is calculated from observed or measured data, or

sometimes it is estimated from synthetic or modeling techniques. Often the information is derived from small samples or contains other inherent limitations. Thus, the information and values are often imprecise, resulting in uncertainty in variables and key decision making parameters.

For decades, to estimate risks and potential benefits, the USACE and other agencies have applied discharge versus frequency statistical methods, watershed models, and hydraulic water surface profile calculations, combined with stage versus damage relationships, in order to determine alternative flood protection schemes at a site. Decisions about project implementation are usually based on the concept of maximizing net flood-damage reduction benefits.

In recent years, however, there has been movement toward risk-based analysis (RBA). RBA is similar to traditional approaches, but these new techniques allow uncertainties in data to be quantified and explicitly included in the evaluation of project performance. Using the RBA framework and improved capabilities to account for uncertainties in fundamental data and statistical relationships, project performance is stated in terms of reliability of achieving stated goals. Design decisions thus incorporate and reflect uncertainties inherent in data underlying the analysis.

An 18-month review and assessment of the USACE's use of RBA techniques, "Risk Based Analysis for Flood Damage Reduction Studies," will be conducted by an expert committee appointed by the National Research Council's Water Science and Technology Board (WSTB). Committee members will be chosen from the disciplines of engineering, hydrology and hydraulic engineering, decision sciences, and economics. The committee is currently being assembled and will hold its first meeting later this year. For more information on the project, contact the study director, *Jeffrey Jacobs, Water Science and Technology Board, National Research Council, 2101 Constitution Avenue, N.W., Washington, DC 20418; (202) 334-3422.*



National Geographic Looks at Natural Hazards

The July 1998 issue of ***National Geographic*** magazine contains a feature article on natural hazards and disasters in North America. The article, Living with Natural Hazards, by Michael Parfit, looks at the phenomena of ice storms, tornadoes, floods, wildfires, and earthquakes as well as how these events affect the lives of people who live where they strike. Copies of the magazine are available by subscription only. To subscribe, contact the *National Geographic Society, Online Store, P.O. Box 11303, Des Moines, IA 50340; (800) 437-5521; fax: (813) 979-6831; WWW: http://www.nationalgeographic.com/media/ngm*.

In addition to the article, ***National Geographic*** also included a 24" x 20" map, ***Natural Hazards of North America***, the result of a cooperative effort between government officials and researchers in the U. S., Canada, and Mexico, including the Co-Director of the Natural Hazards Center, Mary Fran Myers. The map depicts sites of major natural disasters as well as regions most affected by hurricanes, floods, wildfires, tornadoes, earthquakes, volcanoes, and ice storms. Readers of the ***Observer*** can obtain a free copy of the map by writing *Hazards Coordinator, U.S. Geological Survey, MS 107, Reston, VA 20192.* Maps are available in English in either folded or flat format, and in Spanish in folded format only.

Washington Update

Congress Passes National Drought Policy Act

On July 16, 1998, President Clinton signed the National Drought Policy Act of 1998 (Public Law 105-199), establishing the National Drought Policy Commission to advise Congress on the creation of an integrated, coordinated Federal policy designed to prepare for and respond to serious drought emergencies.

The commission includes 16 representatives from federal agencies; the National Governors' Association; the United States Conference of Mayors; and groups acutely affected by drought emergencies, such as those interested in agriculture, credit, water, Native American concerns, and fishing and environmental issues.

The commission is to conduct a study and report to Congress within 18 months on national drought policy. Specifically, Congress has asked the commission, in consultation with the National Drought Mitigation Center at the University of Nebraska-Lincoln, to:

- identify what needs exist to prepare for and respond to drought emergencies;
- review existing laws and programs relating to drought;
- determine what differences exist between the needs of those affected by drought and the laws and programs intended to help them;
- collaborate with the Western Drought Coordination Council and others to consider regional drought initiatives and their application at the national level;
- make recommendations on how laws and programs can be integrated into a comprehensive national policy without diminishing the rights of states to control water or hampering environmental protection;
- make recommendations on improving public awareness for drought mitigation and prevention; and
- recommend whether all federal drought preparation and response programs should be consolidated under one federal agency.

The complete text of the bill can be obtained from most *federal depository libraries* or via the Internet at *http://thomas.loc.gov*, the Library of Congress Web site. For more information on drought, contact the *National Drought Mitigation Center, Department of Agricultural Meteorology, 239 L.W. Chase Hall, University of Nebraska-Lincoln, Lincoln, NE 68583-0749; (402) 472-6707; fax: (402) 472-6614; e-mail: ndmc@enso.unl.edu; WWW: http://enso.unl.edu/ndmc.*

National Research Council Examines Role of USGS

After nearly being eliminated by Congress in 1995 and surviving substantial budget cuts while being given additional responsibilities, the U.S. Geological Survey (USGS) is working hard to revise its role in order to ensure that it responds to critical national needs. Recently, the agency requested that the National Research Council (NRC) convene a committee of experts to assist in this effort, and an NRC project, Assessment of Future Roles, Challenges, and Opportunities for the U.S. Geological Survey (#CGER-U-97-0-2-A) has been initiated.

Specifically, the agency wants the NRC committee to provide guidance on:

- the major societal needs the USGS should address;
- significant emerging scientific and technical issues that appear especially important in terms of their relevance to the mission of the agency as well as options for addressing multidisciplinary issues;
- opportunities for improving partnerships and other cooperative arrangements with other federal agencies, universities, and the private sector, along with appropriate international functions for the USGS; and
- the balance of agency activities, including data acquisition and management, regional studies, and fundamental research.

The first meeting of the committee was held in July, and the project is expected to last 18 months. More details on this endeavor can be found at the National Academy of Sciences Web site: *http://www2.nas.edu/besr/2362.html*. To view the USGS strategic plan, see *http://www.usgs.gov/strategic/index.html.*

From Us to You Via the World Wide Web

Two New Working Papers from the Natural Hazards Center . . .

As we mentioned in the last ***Observer*** (Vol. XXII, No. 6, p. 12) hazards researcher Elliott Mittler is conducting a series of case studies of state initiatives in disaster mitigation and management in order to

clarify why states undertake such programs, determine how other states can be encouraged to follow suit, and define an appropriate role for the federal government in supporting these activities. Mittler's third study is now available from the Natural Hazards Center Web site, *http://www.colorado.edu/hazards/wp/wp.html*:

- **WP98:** ***A Case Study of Florida's Emergency Management Since Hurricane Andrew***, by Elliott Mittler

For hazards managers and researchers interested in what the new millennium might bring, we have added another paper to the site:

- **WP99:** ***What Hazards and Disasters Are Likely in the 21st Century--or Sooner***, by Claire B. Rubin

Rubin summarizes the emerging threats we face in a world that is growing increasingly urban, complex, interconnected, and reliant on sophisticated technologies. She not only summarizes the risks but also outlines some new ways of conceptualizing these problems and new strategies and organizational arrangements that will be necessary to deal with them.

For people without access to the World Wide Web, printed copies of these Working Papers are available for $9.00, plus $3.00 domestic shipping and handling. To order, or to determine overseas costs, contact the *Publications Clerk* at the address below or consult the Hazards Center on-line publication order form: *http://www.colorado.edu/hazards/puborder.html*.

. . . And Five Quick Response Reports

With funds provided by the National Science Foundation, the Natural Hazards Center sponsors "Quick Response" research--studies of the effects of and responses to disasters (see page 3 of this ***Observer***). Upon completing their work, researchers submit brief reports of their findings to the center, which publishes them as quickly as possible via the World Wide Web. The center has five new full-text Quick Response reports available on-line:

http://www.colorado.edu/hazards/qr/qr104.html

QR104: ***Dissociative and Posttraumatic Reactions to the Northern California Flooding of 1997***, by Lynn C. Waelde, Cheryl Koopman, and David Spiegel

http://www.colorado.edu/hazards/qr/qr105.html

QR105: ***Towards a Theory of Coordination: Umbrella Organization and Disaster Relief in the 1997-98 Peruvian El Niño***, by David A. McEntire

http://www.colorado.edu/hazards/qr/qr106/qr106.html

QR106: ***Risk Factors for Death in the 22-23 February 1998 Florida Tornadoes***, by Thomas W. Schmidlin, Paul S. King, Barbara O. Hammer, and Yuichi Ono

http://www.colorado.edu/hazards/qr/qr107.html

QR107: ***El Niño and Perceptions of the Southern California Floods and Mudslides of 1998***, by Christine M. Rodrigue and Eugenie Rovai.

http://www.colorado.edu/hazards/qr/qr108/qr108.html

QR108: ***The Emergency Aid in the Aftermath of the Italian Earthquake of September 26, 1997***, by Ino Rossi

The entire list of Quick Response reports is available at *http://www.colorado.edu/hazards/qr/qr.html*. In addition, printed copies can be purchased for $5.00 each, plus shipping charges ($3.00 per report for the U.S., Canada, and Mexico; $4.00 for international surface mail; and $5.00 for international air printed matter). Orders must be prepaid and should be directed to the *Publications Clerk, Natural Hazards Research and Applications Information Center, Campus Box 482, University of Colorado, Boulder, CO 80309-0482, (303) 492-6819; fax: (303) 492-2151; e-mail: jclark@spot.colorado.edu*. Checks should be made out to the University of Colorado: Visa, Mastercard, American Express, and Diner's Club cards are also accepted.

The Internet Page(s)

Below are some notable Internet resources we've encountered of late. An extensive, annotated list of useful hazard Internet sites is posted on the Hazard Center's World Wide Web page:

http://www.colorado.edu/hazards/sites/sites.html

All Hazards

http://www.nationalgeographic.com/media/ngm
The July 1998 issue of ***National Geographic*** magazine features an extended article on natural hazards (see the page 9 of this ***Observer***), along with a supplemental map depicting North American hazards. The ***National Geographic*** Web site offers background material on the article and an on-line forum through which readers can discuss the issues raised. The introductory forum piece, by ***Natural Hazards Observer*** editor, Sylvia Dane, attributes growing disaster losses in the U.S. not to increasingly severe "acts of God," but to poor choices by human beings concerning where and how they live.

http://www.fema.gov/EMI/edu
http://www.colorado.edu/hazards/colleges/colleges.html
At these Web sites, the Federal Emergency Management Agency and the Natural Hazards Center maintain extensive lists of institutions offering higher education courses in emergency and disaster management. The indexes cover graduate, undergraduate, associate, and certificate courses, as well as individual courses offered by various schools and training institutions. Both lists have recently been updated.

http://www.erlink.com
Following difficulties communicating during the 1994 Northridge, California, earthquake, the Office of the Manager, National Communications System (OMNCS), in conjunction with the Federal Emergency Management Agency (FEMA), examined ways to improve the communication process. One result was the creation of the Emergency Response Link (ERLink), designed to support the Federal Response Plan as well as state and local agencies responding to natural disasters and other domestic emergencies. ERLink is intended to be a focal point of information sharing within the emergency response community.

ERLink is a controlled access Web site from which information can be quickly retrieved and to which information can be easily added. It hosts operational information such as situation reports, which, while not classified, are often sensitive and require security precautions due to privacy issues regarding casualties, contract funding, and unsubstantiated reports requiring confirmation. To achieve a balance between sharing and securing information, ERLink uses both authentication and encryption functions, thus providing the response community with a private network within which it can conduct operations.

Agreements with FEMA and the National Weather Service's National Hurricane Center (NHC) have resulted in supplemental information that has improved the quality and value of data uploaded to ERLink. The FEMA "Daily Report" is published via ERLink, and NHC information (such as weather conditions, storm intensity, and storm tracks) are now mirrored on ERLink.

The ERLink program office continues to work with the response community to improve this service and is soliciting user feedback. More information about ERLink and an account application form can be found at the demonstration ERLink Web site listed above. Additional information about the National Communications System is available at *http://www.ncs.gov*.

http://www.ppbi.org

This is the home page of a new nonprofit agency--Private and Public Business, Inc. The organization was created to link the private and public sectors in effective emergency management and disaster recovery planning and serves as a clearinghouse for recovery, training, and standards-setting information. The site includes background material as well as sections on education and training, white papers, links, and a glossary.

http://www.sustainable.doe.gov/wingspread2

http://www.sustainable.doe.gov/disaster/disintrhttp://www.colorado.edu/hazards/o/

"The Wingspread Principles" are a set of guidelines designed to enhance the sustainability of disaster-prone communities. They were developed at a workshop on sustainable redevelopment entitled, "Communities in Harm's Way: A Leadership Dialogue on Designing Disaster-Resistant Settlements," held in early January of this year in Wisconsin. That meeting of national leaders in disaster mitigation resulted not only in the principles (available from the U.S. Department of Energy's Center of Excellence for Sustainable Development Web site above), but also a "Sustainable Recovery Checklist"--practical guidance for disaster-prone communities on how to plan and implement sustainable redevelopment; a "Policy Action Framework"--suggested changes in federal, state, and local policies and practices needed to support the principles and checklist; and an "Action Plan"--specific actions by agencies and organizations necessary to institute these changes.

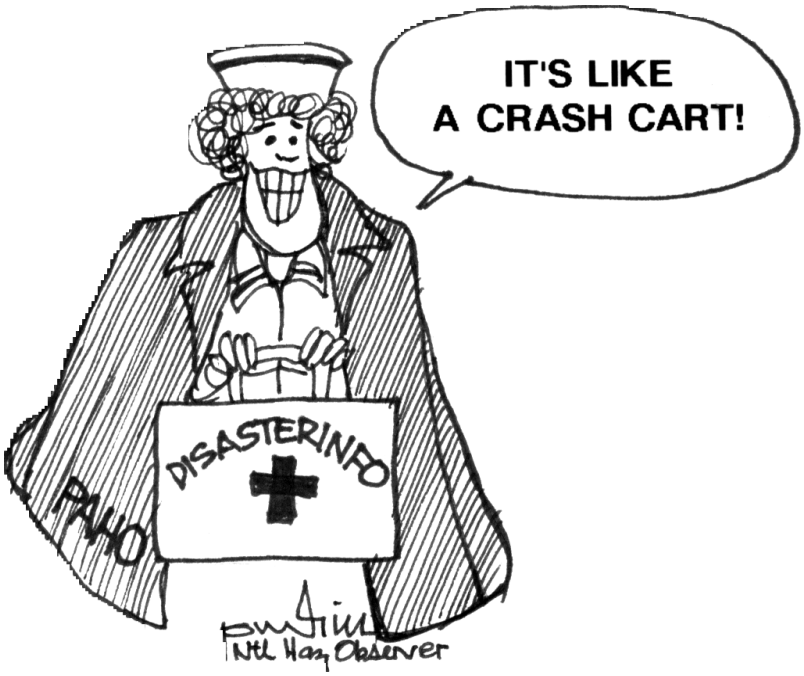
http://www.emsa.cahwnet.gov/heics3.htm

This is the Web site of the HEICS III Project--an effort to update and create a third edition of the Hospital Emergency Incident Command System (HEICS). HEICS features a flexible management organizational chart that allows individual hospitals to customize their responses.

In 1992, a generic disaster response plan was released and tested, and a second edition was developed and distributed throughout the United States, Canada, and across the globe. Following the 1994 Northridge, California, earthquake, HEICS was used successfully by some of the hospitals damaged in the quake. The plan has also been used in individual hospital emergencies and in many disaster exercises. From these experiences additional insight has been gained, and, with support from the California Emergency Medical Services Authority, San Mateo County Emergency Medical Services is updating the plan. This Web site provides the second edition of the HEICS plan, and interested persons are encouraged to take a critical look at the document and return their comments to the team working on the update. In addition, the site offers the executive summary of the third edition, a list of FAQs (frequently asked questions) about HEICS, the system's organizational chart, and other information about the project.

http://www.disaster.info.desastres.net

The Pan American Health Organization (PAHO) recently created this "DisasterInfo" Web site to serve as a one-stop source of disaster management information from and about Latin America and the Caribbean. Dozens of emergency and disaster organizations in that region have posted "mirror sites" of their Web pages on this reliable, high-speed server. These Web pages, with information in both Spanish and English, thus enable users to retrieve information quickly from numerous sources. Additionally, it includes information about PAHO's Supply Management (SUMA) program, as well as downloadable SUMA software and a SUMA users manual.



http://www.ccep.ca

The Canadian Centre for Emergency Preparedness (CCEP) has begun distributing a free weekly "E-Zine" (e-mail magazine) on the Internet. Each issue presents a case study of a recent, real-life major disaster or related topic from the fields of emergency management, business continuity, or emergency health care. CCEP publishes a quarterly print magazine ***CCEP NEWS*** that is also reproduced on this site.

Severe Weather

http://iwin.nws.noaa.gov

Through the Interactive Weather Information Network--IWIN--the National Weather Service lists all the areas across the country that are currently under watch or warning for thunderstorms, tornadoes, hurricanes, flash flooding, and other extreme weather. This site also provides local weather updates and outlooks, world weather, and in-depth information about short- and long-term weather conditions.

http://meted.ucar.edu

http://www.comet.ucar.edu

http://www.comet.ucar.edu/resources/cases/

The National Weather Service Training Center and Operations Training Branch, along with the Cooperative Program for Operational Meteorology and Education and Training (COMET) recently established the Meteorology Education and Training (METED) home page as the principal location for all Web-based materials produced by the three training facilities. The site includes sections on professional development, instruction on the Web, course materials on-line, tele-training and course schedules, case studies, meteorology and hydrology education links, conferences and education, as well as instructional design techniques. COMET provides the case studies, which include such recent weather events as the "1993 Storm of the Century," Hurricane Erin, several major snow storms, the 1996-97 California floods, and the 1997 Jarrell, Texas, tornado. Information and schedules of other training and education are also posted here.

http://www.nws.noaa.gov/om

As one might suspect, the National Weather Service (NWS) Office of Meteorology Web site is a trove of useful meteorological hazard information. It includes information about the office, notices about the ongoing changes and modernization of the Weather Service, complete "Disaster Surveys" (evaluations of NWS performance before, during, and following disasters), a list of meetings and conferences, natural hazards statistics, a link to the hurricane watch office, a 1998 disaster map, and a list of the *many* NWS publications and hazard awareness materials available on-line.

http://www.alertnet.org

A new Web site--the El Niño Information Forum--has been established by the U.K. National Committee for the International Decade for Natural Disaster Reduction (IDNDR) and the Reuter Foundation. The forum is intended to provide a "gateway to El Niño information on the World Wide Web"; it directs the visitor to the most important Web sites in a structured manner, with comments on the sites and host organizations. The site also consolidates current information from electronic and printed sources--including valuable unpublished literature on El Niño's socioeconomic impacts and the steps needed to deal with them. It is also intended to provide a forum for expert debate.

The site is hosted by the Reuter Foundation's AlertNet Web site, *http://www.alertnet.org*, a noncommercial service offering Reuters news and a medium for voluntary organizations to exchange

information in order to improve the speed and effectiveness of emergency relief operations. The first pages of the El Niño Forum are now being pilot tested and can be viewed in the AlertNet "Crisis" section. The site will be expanded further during the coming months. Feedback is welcome, as is new material for the site; interested persons are invited to use the feedback section on the AlertNet site or to contact *John Twigg, U.K. National IDNDR Committee: twigg.glynn@virgin.net;* or *Cassie Knight, The Reuter Foundation: cassie.knight@reuters.com*.

Flooding

http://www.nws.noaa.gov/oh
http://www.nws.noaa.gov/oh/hic/
http://www.nws.noaa.gov/oh/hic/flood_stats/index.html
Not surprisingly, the National Weather Service's Office of Hydrology (OH) and its Hydrological Information Center offer much information on floods and other aquatic disasters. Besides facts about the various components of the office, the OH Web pages offer current and historical data, including an archive of past flood summaries, information on current hydrologic conditions, water supply outlooks, as well as an ***Automated Local Flood Warning Systems Handbook***, Natural Disaster Survey Reports, and other scientific publications on hydrology and flooding. The site also provides information and order forms for the office's video on the dangers of ***Low Water Crossing***.

The Hydrological Information Center subsection describes the mission of the center, provides much additional information on flood impacts, and offers extensive flood impact data (deaths and economic losses) via the third URL above.

Earthquakes

http://www.ualr.edu/~earthquake
The Arkansas Earthquake Center Web site provides information about the center, news of recent seismic events in the region, quake statistics, general information about earthquakes, a background history of the New Madrid seismic zone, maps, and preparedness and response material. It also covers earthquake engineering; safety codes and laws; publications; school educational materials; recent earthquake research; and includes earthquake catalogs, abstracts, and bibliographies. More information is available from the *Arkansas Earthquake Center, University of Arkansas-Little Rock, College of Science and Technology, 2801 South University, Little Rock, AR 72204; (501) 569-8223; e-mail: tmlee1@ualr.edu*.

http://www.isc.ac.uk
The International Seismological Centre (ISC) is a nongovernmental organization in the United Kingdom charged with the collection, analysis, and publication of standard earthquake information from all over the world. The center prepares a global seismicity ***Bulletin*** that includes event locations and magnitudes and has recently created this new Web site to publish its information more broadly. The site contains information about the ISC, including contents and analyses from the ***Bulletin***, as well as searches of

recent issues of that periodical. Indeed, some data sets are now searchable on-line. In the future, the ISC plans to post its entire 30-year ***Bulletin*** and 90-year ***Catalogue*** of major earthquakes on this site. More information about the center is available from the *ISC, Pipers Lane, Thatcham, Berkshire, U.K. RG19 4NS; tel: +44 (0) 1635 861022; fax: +44 (0) 1635 872351; e-mail: seismo@isc.ac.uk*.

Lightning

The Lightning-Safety Mailing List

A new "Lightning Safety" e-mail list is currently being organized, and the founders have issued an invitation to any interested persons to join this unmoderated discussion regarding lightning and lightning safety issues. Through this site participants can post information and discuss subjects such as new data about lightning behavior, personnel safety, protection of all types of facilities and structures, favorite World Wide Web lightning resources, and problems and solutions to difficult lightning situations. To join, go to *http://www.findmail.com/list/lightning-safety* or *http://www.lightningsafety.com* and sign up. Anyone with questions, should contact the list manager by e-mail: *rich@lightningsafety.com*.

Project Impact Update

The Federal Emergency Management Agency's (FEMA's) Project Impact is an effort to build disaster-resistant communities through partnerships with local government, states, other federal agencies, private enterprise, and nonprofit organizations (see the ***Observer***, Vol. XXII, No. 3, p. 10).

In the past 10 years, FEMA has spent $20 billion to help people repair and rebuild their communities after natural disasters. Beyond that, insurance companies have spent billions more in claims, businesses have lost revenue, employees have lost jobs, and other government agencies have spent millions more. Worst of all, thousands of human lives have been lost. Now, however, with Project Impact, FEMA is trying to change the way America deals with disasters by promoting farsighted action by communities to reduce disruption and loss.

To achieve this end, FEMA has identified target communities in each state to model activities that other communities concerned about reducing disaster's toll can adopt. Some examples of recent Project Impact activities include:

Fannie Mae Loan Pilot Program

As a contribution to Project Impact, Fannie Mae, a congressionally chartered, shareholder-owned company and the nation's largest source of funds for home loans, is joining with FEMA to make consumer installment loans at competitive interest rates available to American homeowners so that they can undertake disaster prevention improvements. The loans will be offered at a competitive interest rate,

for terms up to 10 years, and amounts up to $15,000. Initially, the loans will be available to one- to two-family homeowners in Florida (one of Project Impact's pilot territories). More information is available by calling Fannie Mae at *(800) 732-6643*. Interested persons can also contact the *Fannie Mae Washington Office, 3900 Wisconsin Avenue, N.W., Washington, DC 20016; (202) 752-7000*.

National Association of Broadcasters Disaster Preparedness and Relief Effort

The National Association of Broadcasters (NAB), which earlier this year became a Project Impact partner, recently announced that it would publish a disaster relief and damage prevention resource guide to support the project. The guide, to be developed in partnership with FEMA, the American Red Cross, and the Salvation Army, will offer radio and television stations ideas on how to develop coverage and provide education about disaster prevention and postdisaster relief in local communities. It will include news and other programming ideas, public service announcements, and community outreach suggestions.

Washington, D.C., TV Station Model Broadcast Initiative

NBC4 (WRC-TV) in Washington, D.C., has become the first broadcast station to partner with FEMA on Project Impact. The station will conduct a pilot program to explore ways in which broadcasters can help communities minimize the personal and economic costs of disasters and will focus on educating viewers about how to protect themselves, their homes, businesses, and communities by taking action before severe weather strikes. The activities will include an on-air public awareness campaign and a series of community meetings. At the end of the six-month pilot program, NBC4 will share its experience and suggest "what works" to other NBC-owned and affiliated stations. The best of the methods and messages will then be made available to other broadcasters who may want to join Project Impact.

For Project Impact News . . .

A Project Impact Web page, chronicling all of the project's latest developments including the items above, is now available from the FEMA World Wide Web site at *http://www.fema.gov/impact*. Additional information about Project Impact, is available from the *FEMA Office of Emergency Information and Public Affairs, 500 C Street, S.W., Washington, DC 20472; (202) 646-4600; e-mail: eipa@fema.gov*.

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Return to the Natural Hazards Center's Home page

Conferences And Training

Below are some of the recent conference announcements received by the Hazards Center. A comprehensive list of hazard/disaster meetings is posted on our World Wide Web site:

http://www.colorado.edu/hazards/conf.html

1998 International Snow Science Workshop. Sponsors: U.S. Department of Agriculture Forest Service, Washington State Department of Transportation, and others. Bend, Oregon: September 27-October 1, 1998. The Snow Science Workshop features a merging of theory and practice between the research and operational arms of the snow science community. Presentations cover topics ranging from avalanche mechanics, control, and accidents, to weather instrumentation and forecasting. More information is available from *ISSW'98, Northwest Weather and Avalanche Center, C-15700, 7600 Sandpoint Way N.E., Seattle, WA 98115-0070; (206) 526-6164; fax: (206) 526-6094; e-mail: nwac@seawfo.noaa.gov; WWW: http://www.issw.noaa.gov*.

1998 Flood Warning and Mitigation Strategy Conference: ALERT/FLOWS East Coast Users Group Conference. Nashville, Tennessee: October 5-8, 1998. The Automated Local Evaluation in Real Time (ALERT) and Automated Flood Warning System (FLOWS) Users Group is concerned about effective use of flood warning systems to save lives and protect property. Through their annual meeting, members share experiences and investigate new knowledge and technology to improve local systems. For more information about this meeting, contact *Douglas Glowacki, Department of Environmental Protection, Inland Water Resources Division, 79 Elm Street, Third Floor, Hartford, CT 06106; (860) 424-3706; or Tim Scrom; (518) 435-9571; fax: (518) 435-9587; e-mail: Tscrom@aol.com, or timothy.scrom@noaa.gov*.

Eleventh Annual Emergency Preparedness Conference. Sponsors: British Columbia Ministry of Human Resources and others. Vancouver, British Columbia, Canada: October 20-22, 1998. This annual meeting is held to raise the level of emergency preparedness among local, provincial, and Canadian national organizations by promoting awareness; providing information, tools, and solutions to emergency preparedness problems; encouraging the sharing of experiences; showcasing technologies;

and creating networking opportunities. Preconference workshops will cover emergency telecommunications, community health care during a disaster, "marketing" an emergency plan, and airport emergency tabletop exercises. For more information and/or a conference flyer, contact *Emergency Preparedness Conference, 700 West 57th Avenue, Vancouver, British Columbia, Canada V6P 1S1; (604) 322-8365; fax: (604) 321-7833; e-mail: ccox@bcrehab.bc. ca; WWW: http://142.58.200.36/epc/*.

Second Canada/Australia/U.S. Wildland Fire Safety Summit. Sponsors: International Association of Wildland Fire and others. Winthrop, Washington: October 26-29, 1998. The goal of the Fire Safety Summit is to bring together wildland fire professionals from different countries, agencies, and professional levels to discuss common problems and determine a variety of approaches to solving them. Topics will range from cultural differences affecting firefighter safety to equipment and technology, training, resource sharing, media management, political issues, and numerous other aspects of wildfire management. A conference brochure is available from the *International Association of Wildland Fire, East 8109 Bratt Road, Fairfield, WA 99012; (509) 523-4003 or (509) 283-2397; fax: (509) 523-5001; e-mail: greenlee@cet.com*.

Eleventh Annual Conference of the Southwestern Association of ALERT Systems. Austin, Texas: October 28-30, 1998. For a description of ALERT systems, see the October 5 meeting description above. For details on this conference, contact *Brian McCallum, U.S. Geological Survey, Louisiana District Office, 3535 South Sherwood Forest Boulevard, Suite 120, Baton Rouge, LA 70816; (504) 389-0234, ext. 3122; e-mail:bemccall@fs1dlabrg.er.usgs.gov; WWW: http://www.alertsystems.org/saas*.

Virtual Fire/Rescue Expo. Produced by: ***National Fire and Rescue*** *magazine and others. The Internet: November 1-5, 1998*. Following a highly successful Internet exposition earlier this year, ***National Fire and Rescue*** magazine is again hosting a week of exhibits, presentations, interactive workshops, real-time discussions, and other educational programs offered by public and private organizations involved in fire and rescue. For details, see *http://www.vfre.com*.

International Conference on Marine Disasters: Forecast and Reduction. Sponsored and Organized by: Chinese National Marine Environment Forecast Center; Chinese State Oceanic Administration; in Cooperation with the U.S. National Oceanic and Atmospheric Administration. Beijing, China: November 2-5, 1998. Presentations at this conference will cover monitoring, modeling, prediction and forecasting, and impact assessment of coastal storms and storm surge, large waves, and sea ice. They will also address algal blooms, disaster reduction, disaster impacts on offshore facilities, seawater intrusion, and disaster education. The conference will be conducted in English. For more information, contact *Jihui Yan, National Marine Environment Forecasting Center, P.R. China; tel: (86) (10) 6217 3598; fax: (86) (10) 6217 3620; e-mail: Yanjh@axp800.nmefc.gov.cn*; or *Max Coon, NorthWest Research Associates, Inc., 14508 N.E. 20th Street, Bellevue, WA 98007-3713; (425) 644-9660; fax: (425) 644-8422; e-mail: max@nwra.com; WWW: http://www.nwra.com/nwra/mar_dis_conf98/*.

Forum of Local Authorities Confronting Disasters and Emergencies (LACDE) 1998 Annual Conference.

Vina del Mar, Chile: November 30-December 3, 1998. This third annual LACDE conference will feature a panel on the El Niño phenomenon and its consequences; workshops on development planning, social involvement in disaster, reconstruction, disasters and the environment, and new technologies for local management; field trips to examine local hazards; and other lectures and presentations. A conference booklet is available from the *Conference Secretariat, Av. Carlos Antunez 2610, Providencia, Santiago, Chile; tel: +56-2 335-5450; fax: +56-2 234-1437; e-mail: transver@entelchile .net; WWW: http://www.achm.cl/LACDE*; or *LACDE, Union of Local Authorities in Israel, 3 Heftman Street, Tel Aviv 61200, Israel P.O.B. 20040; tel: 972-3-695-5024; fax: 972-3-691-6821; e-mail: ulais@netvision.net.il; WWW: http://www.ladpc.gov.il*.

Second Meeting and Symposium of the Asian Seismological Commission (ASC98) on Earthquake Hazard Assessment and Related Topics. Sponsors: National Geophysical Research Institute; Department of Science and Technology, Government of India; Indian National Science Academy; and others. Hyderabad, India: December 1-3, 1998. This meeting will cover earthquake prediction, hazard assessment, lithospheric processes, physics of earthquakes, induced seismicity, seismic disaster mitigation, network development, and related topics. More information is available from *S.C. Bhatia, Organizing Secretary, ASC98, National Geophysical Research Institute, Hyderabad 500007, India; tel: +91-40-7170141; fax; +91-40-7171564; e-mail: asc98@csngri.ren.nic.in; WWW: http:/ /www.ngri.com/asc98.htm*.

79th American Meteorological Society (AMS) Annual Meeting. Dallas, Texas: January 10-15, 1999. The AMS conference includes numerous sessions on severe weather. In particular, the Inter-American Institute for Global Change Research (IAI--see the ***Observer***, Vol. 22, No. 6, p. 16) has been asked to host a special session dedicated to global change science themes as part of the conference's "10th Symposium on Global Change Studies." For details, contact *Bradford P. Wilcox, IAI, Av. Astronautas 1758, 12227-010, Sco Josi dos Campos, SP, Brazil; tel: 55-12-345-6860; fax: 55-12-341-4410; e-mail: bwilcox@dir.iai.int*; or *Thomas R. Karl, NOAA/NCDC, 151 Patton Avenue, Asheville, NC 28801-5001; fax: (704) 271-4328; e-mail: tkarl@ncdc.noaa.gov*.

Second Conference on Applications of Remote Sensing and GIS for Disaster Management. Sponsors: National Aeronautics and Space Administration, Federal Emergency Management Agency, and The George Washington University. Washington, D.C.: January 19-21, 1999. This year's GIS disaster management conference will offer five tracks: 1) Information Requirements for Disaster Management, 2) Remote Sensing Systems for Disaster Management, 3) Remote Sensing/GIS-Based Models in Disasters, 4) Geographical Information and Database Systems for Disaster Management, and 5) Disaster Information and Data Communications Systems. Abstracts and proposals are currently being solicited and are due October 1. For details, contact *Greg Shaw, Institute for Crisis, Disaster, and Risk Management, The George Washington University-Virginia Campus, 20101 Academic Way, Suite 220B, Ashburn, VA 20147-2604; (703) 729-8271; fax: (703) 729-8272; e-mail: glshaw@gwu.edu; WWW: http://www.gwu.edu/~cms/gis/*.

National Floodproofing Conference. Presented by: Association of State Floodplain Managers (ASFPM), with support from the Federal Emergency Management Agency and the U.S. Army Corps of Engineers. Baton Rouge, Louisiana: February 1-5, 1999. The National Floodproofing Conference will offer presentations on the whole spectrum of issues affecting floodproofing: new cons truction and retrofitting, materials, engineering, aesthetics, sustainability, liability, emergency measures, planning, regulation, certification, benefit/cost analysis, insurance incentives and disincentives, and financing. In addition, the meeting includes workshops covering such on-site flood protection methods as structural elevation, levees and floodwalls, wet and dry floodproofing, and basement protection. More information is available from the *ASFPM Executive Office, 4233 West Beltline Highway, Madison, WI 53711; (608) 274-0123; fax: (608) 274-0696; e-mail: asfpm@floods.org; WWW: http://www.floods.org*.

Disaster '99 International Disaster Management Conference: "Examining Your Disaster Readiness." Sponsors: Florida Emergency Medicine Foundation and others. St. Petersburg, Florida: February 11-14, 1999. The Disaster '99 conference is designed to expand and improve local preparedness and response by enhancing knowledge of real experiences, promoting communication among experts directly involved in incident response, demonstrating new opportunities for interagency coordination, and showcasing resources for improving local disaster management. Conference specifics are available from the *Florida Emergency Medicine Foundation, 3717 South Conway Road, Orlando, FL 32812; (800) 766-6335* or *(407) 281-7396; fax: (407) 281-4407; WWW: http://www.fcep.org*.

Fifth Annual California GIS (Geographic Information Systems) Conference. Sponsor: California chapters of the Urban and Regional Information Systems Association (URISA). Oakland, California: February 17-19, 1999. Topics to be addressed include emergency management and risk mitigation, urban and regional planning, facilities management, utilities inventory and management, and environmental preservation. For details, contact *Stephanie King, Technical Program Chair, Blume Earthquake Engineering Center, Stanford University, Stanford, CA 94305-4020; (650) 725-0360; fax: (650) 725-9755; e-mail: sking@ce.stanford.edu*; or see the conference Web site: *http://www.calgis.org*.

Third Annual American Wetlands Month Conference and Roundtables: "Communities Working for Wetlands." New Orleans, Louisiana: February 18-20, 1999; San Francisco, California: March 18-20, 1999; Indianapolis, Indiana: April 8-10, 1999; and Boston, Massachusetts: May 6-8, 1999. The organizers of these meetings are currently seeking presenters, moderators, and assistant moderators to conduct discussions regarding all aspects of wetland preservation at the local level. The deadline for presentation proposals is September 25. For proposal guidelines and other conference information, contact the *Terrene Institute, 4 Herbert Street, Alexandria, VA 22305; (703) 548-5473; fax: (703) 548-6299; e-mail: terrinst@aol.com; WWW: http://www.terrene.org*.

Seventh Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst with an Introductory Course on Applied Karst Geology and Hydrology. Presented by: P.E. LaMoreaux & Associates, U.S. Environmental Protection Agency, and others. Harrisburg/Hershey, Pennsylvania: April 10-14, 1999. Geologists and geographers study how and where karst develops and how sinkholes form, but engineers and others must apply this information to build and maintain

infrastructure and protect the environment. Hence, communication among these various disciplines emphasizing practical application and case studies is critical to the effective management of this natural hazard. Besides promoting such dialogue, the conference will include an optional one-day introductory course on the fundamentals of karst as they relate to real-world applications. For additional information and registration forms, contact *Gayle Herring, P.E. LaMoreaux & Associates, Seventh Multidisciplinary Conference, 106 Administration Road, Oak Ridge, TN 37830; (423) 483-7483; fax: (423) 483-7639; e-mail: pelaor@usit.net; WWW: http://www.uakron.edu/geology/karstwaters/7th.html*.

North American Snow Conference. Sponsor: American Public Works Association (APWA). Duluth, Minnesota: April 18-21, 1999. The North American Snow Conference is an annual meeting of professionals seeking to improve their management of severe winter weather hazards. The conference features exhibits of leading snow and ice removal companies, as well as three days of educational and technical sessions. It also provides an opportunity for peers to discuss innovative, efficient, and economical solutions to common challenges. For more information, contact *APWA, 2345 Grand Boulevard, Suite 500, Kansas City, MO 64108-2625; (816) 472-6100; fax: (816) 472-1610; e-mail: apwa@mailworks.pubworks.org; WWW: http://www.pubworks.org*.

Natural Disaster Medical System (NDMS) Annual Conference. Washington, D.C.: May 7-12, 1999. The 1999 NDMS conference will offer practical information on implementing domestic and international strategies for preventing or reducing the health and medical consequences of all types of disasters. It will feature programs on counterterrorism and updates on clinical techniques, as well as sessions on extreme environmental events, disaster team development, information management systems, mass gathering events, critical incident stress management, sheltering and mass care, health system emergency planning, mass fatality operations, and new standards in emergency management. The program will offer approximately 20 hours of continuing education credit for a wide range of health practitioners and administrators. For additional information, contact the *Office of Emergency Preparedness/National Disaster Medical System, Department of Health and Human Services, 12300 Twinbrook Parkway, Suite 360, Rockville, MD 20857; (800) 872-6367 (press the "star" key) or (301) 443-1167; fax: (301) 443-5146; e-mail: ndms@usa.net; WWW: http://www.oep_ndms.dhhs.gov*.

Public Risk Management Association (PRIMA) Annual Meeting. San Diego, California: June 6-9, 1999. The PRIMA annual conference is one of North America's principal meetings for state and local government risk management practitioners. The issues addressed include emergency management. For a detailed program, contact *PRIMA, 1815 North Fort Myer Drive, Suite 1020, Arlington, VA 22209; (703) 528-7701; fax: (703) 528-7966; e-mail: primahq@aol.com*.

Sixth Annual Conference of the International Emergency Management Society--TIEMS '99: "Contingencies, Emergency, Crisis, and Disaster Management: Defining the Agenda for the Third Millennium." Delft, The Netherlands: June 8-11, 1999. The annual TIEMS conference brings together professionals from the many fields related to contingency, emergency, crisis, and disaster management. Prospective participants in the 1999 meeting are encouraged to present a paper, organize a session or panel discussion, or offer a workshop. Special arrangements can be made for demonstrations of software

and equipment. All papers will be reviewed and published in the conference proceedings, and a special issue of ***Safety Science***, based on the presented papers, will also be published. Areas to be covered include research and recent developments in information systems, applications (from case studies to organizational issues in mitigation and preparedness), and education and training. Abstracts are due December 1. For more information, contact, *TIEMS, SEPA, TU Delft, P.O. Box 5015, 2600 GA Delft, The Netherlands; Express Mail: TIEMS, SEPA, Jaffalaan 5, 2628 BX Delft, The Netherlands; tel: +31 15 278 34 08; fax: +31 15 278 34 22; e-mail: tiems@sepa.tudelft.nl; WWW: http://www.sepa.tudelft.nl/tiems.htm*.

Second International Symposium on Earthquake Resistant Engineering Structures (ERES) '99. Organizers: University of Catania, Italy, and Wessex Institute of Technology, U.K. Catania, Italy: June 15-17, 1999. The objective of this symposium is to promote discussion concerning both basic and applied research in the various fields of engineering relevant to seismic analysis and design of structural systems. It will involve scientists and engineers from both academia and industry. Abstracts are due October 6. For details, contact *Liz Kerr, Conference Secretariat, ERES99, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, U.K.; tel: 44 (0) 1703 293223; fax: 44 (0) 1703 292853; e-mail: liz@wessex.ac.uk; WWW: http://www.wessex.ac.uk/conferences/1999/eres99/*.

1999 International Union of Geodesy and Geophysics (IUGG-99) XXII General Assembly, Inter-Association Symposium on "Geophysical Hazards: Risk Assessment, Mitigation and Warning Systems." Birmingham, U.K.: July 22-27, 1999. The aim of this Inter-Association Symposium is to stimulate dialogue and cooperation among all geophysicists with an interest in natural hazards, especially aspects that cross disciplinary boundaries. The symposium will seek to identify technical and scientific progress made during the last 10 years related to geophysical hazards and the accomplishment of the goals of the International Decade for Natural Disaster Reduction. Among topics specifically to be addressed are risk assessment, the application of effective preparedness and mitigation approaches, and the development and use of scientific knowledge to improve warning systems. The deadline for submission of abstracts is January 15, 1999. Instructions for abstract submission and format can be obtained from the IUGG Web site: *http://www.bham.ac.uk/IUGG99/, or by writing Mohammed I. El-Sabh, Centre Océanographique de Rimouski, Département d'océanographie, Université du Québec-Rimouski, 310 Allée des Ursulines, Rimouski, Québec, Canada G5L 3A1. Please specify the symposium code, JSP23, and the symposium title.*

Ninth World Conference on Disaster Management. Organizer: Canadian Centre for Emergency Preparedness. Hamilton, Ontario, Canada: June 20-23, 1999. A call for abstracts, due October 31, has been issued. Proposals should focus on the conference theme: "Real Events . . . Real Leaders . . . Real Solutions," and thus should address useful lessons obtained from practical experience. For submission guidelines and other information, contact the *Canadian Centre for Emergency Preparedness, P.O. Box 2911, Hamilton, Ontario, Canada L8N 3R5; (800) 965-4608, (905) 546-3911; e-mail: info@wcdm.org; WWW: http://www.wcdm.org*.

Fifth U.S. Conference on Lifeline Earthquake Engineering. Sponsor: American Society of Civil

Engineers (ASCE) Technical Council on Lifeline Earthquake Engineering. Seattle, Washington: August 12-14, 1999. The theme of this conference is "Optimizing Post-Earthquake Lifeline System Reliability." It will provide a means for the presentation of research, practice, and public policy regarding lifeline earthquake engineering, and will include sessions on traditional lifeline topics (water, transportation, electric power, bridges, etc.), as well as on seismic risk and socioeconomic issues. Lessons from the Northridge and Kobe quakes will inform many of the discussions. The sponsors encourage the presentation of findings from abroad, particularly from Pacific Rim nations involved in U.S./ international collaborative research and technology exchange programs. For information on the conference programs contact *Don Ballantyne, EQE International, 1411 4th Avenue Building, Suite 500, Seattle, WA 98101; (206) 442-0695; fax: (206) 624-8268; e-mail: dbballan@eqe.com*; or *Tom O'Rourke, School of Civil and Environmental Engineering, Cornell University, 273 Hollister Hall, Ithaca, NY 14853-3501; (607) 255-6470; fax: (607) 255-9004; e-mail: tdo1@cornell.edu*. Questions regarding conference registration and logistics should be directed to *Andrea Dargush, Multidisciplinary Center for Earthquake Engineering Research (MCEER), Red Jacket Quadrangle, State University of New York at Buffalo, Buffalo, NY 14261-0025; (716) 645-3391; fax: (716) 645-3399; e-mail: dargush@acsu.buffalo.edu*.

International Public Works Congress and Exposition. Sponsor: American Public Works Association (APWA). Denver, Colorado: September 18-23, 1999. The APWA meeting includes sessions on emergency preparedness and response. Presentation proposals are due September 30, 1998. For guidelines, contact *APWA, 2345 Grand Boulevard, Suite 500, Kansas City, MO 64108-2625; (816) 472-6100; fax: (816) 472-1610; e-mail: apwa@mailworks.pubworks.org; WWW: http://www.pubworks.org*.

Twelfth World Conference on Earthquake Engineering. Sponsor: New Zealand Earthquake Commission and others. Auckland, New Zealand: January 30-February 4, 2000. The deadline for submission of program proposals for this conference has been extended to October 15, 1998. For details about the conference, contact the *Conference Secretariat, 12WCEE Organizing Committee, c/o Convention Management, P.O. Box 2009, Auckland, New Zealand; tel: 64-9-529 4414; fax: 64-9-520 0718; e-mail: 12wcee@cmsl.co.nz; WWW: http://www.cmsl.co.nz/12wcee; also see http://www.eeri.org/ Meetings/12WCEE. html*. For information on abstract submission, contact the *Secretary, 12WCEE Technical Program Committee, c/o Department of Civil Engineering, University of Canterbury, Private Bag 4800, Christchurch, New Zealand; fax: 64-3-364 2758; e-mail: 12wcee@civil.canterbury.ac.nz*.

OAS Hosting Virtual Conference on Disaster Reduction in the Education Sector

The Organization of American States' Unit of Sustainable Development and Environment, along with the United Nations International Decade of Natural Disaster Reduction Secretariat and the United Nations Development Program, is hosting a "Virtual Conference on the Hemispheric Plan for Disaster Reduction in the Education Sector" October 19-23, 1998, via the Internet. The objective of the

conference is to promote the implementation of the "Hemispheric Action Plan for Vulnerability Reduction in the Education Sector to Socio-Natural Disasters." Topics to be addressed include "Academic Aspects," "Public Participation," and "Physical Infrastructure." For information about the conference or to register, contact the *Natural Hazards Project, Unit of Sustainable Development and Environment, Organization of American States, 1889 F Street, N.W., Washington, DC 20006; (202) 458-6295; fax: (202) 458-3560; e-mail: natural-hazards-project@oas.org.*

Recent Publications

All Hazards

The Gendered Terrain of Disaster: Through Women's Eyes*. Elaine Enarson and Betty Hearn Morrow, Editors. 1998. 288 pp. $65.00. To order, contact Greenwood Publishing Group, 88 Post Road West, Box 5007, Westport, CT 06881-5007; (800) 225-5800; fax: (203) 222-1502; WWW: http://info.greenwood.com/books.*

Traditional paradigms employed in disaster studies have, for the most part, left women's lives largely unexamined. Those who plan for and respond to disasters correspondingly fail to consider the significance of gender, although they often may account for income and racial differences among victims. ***The Gendered Terrain of Disaster*** contains contributions that examine the existing literature, theoretical gaps, ongoing developments, and field-based themes in gender disaster studies. These papers are followed by a discussion of the social construction of gendered vulnerability that examine such factors as age and poverty, land ownership, family structure, domestic violence, and community organization. Finally, several contributors report on original fieldwork and examine the complex responses to crisis and recovery of women in diverse political, economic, and cultural settings. The volume also contains policy recommendations and research questions for future study.

Special Issue on Emergency Management and Engineering, ***IEEE Transactions on Engineering Management****, Vol. 45, No. 2 (May 1998). $10.00/copy, members of the Institute of Electrical and Electronics Engineers, Inc. (IEEE); $20.00/copy, nonmembers; plus $4.00 shipping. To obtain a copy, contact the IEEE, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331; (732) 981-0060.*

This special issue departs from this journal's usual subject matter, the editors noting that the topic of emergency management and engineering does not fit in any of our editorial departments but spans all of them. They add that it is the responsibility of the engineering community to be prepared for emergencies and to be able to respond quickly when such events occur, and that emergency management thus involves every aspect of engineering management. This issue contains articles on the dissemination of weather information to emergency managers, emergency response of electric utility companies, decision support for forest fire prevention and fighting, electronic message management in emergency response, response and decision making simulations, disaster recovery planning in automated manufacturing, earthquake risk reduction, building evacuation system components, and evacuation modeling.

The International Emergency Management Society Conference (TIEMS '98)--Disaster and Emergency Management: International Challenges for the Next Decade*. John R. Harrald and Gregory L. Shaw, Editors. 1998. 660 pp. $35.00, plus $6.00 shipping. A limited number of copies are available from Greg Shaw, Institute for Crisis, Disaster, and Risk Management, The George Washington University-Virginia Campus, 20101 Academic Way, Suite 220B, Ashburn, VA 20120; (703) 729-8271; fax: (703) 729-8272; e-mail: glshaw@gwu.edu.*

Natural hazards will always occur and shape the environments on which our societies depend, but there is much that scientific knowledge, appropriate public policies, and professional skills can do to prevent them from becoming human disasters. With that notion in mind, the fifth meeting of the International Emergency Management Society looked at the future of disasters and emergencies. This volume contains the papers presented at that meeting. Topics include international partnerships, societal factors in crises and disaster, risk management, information management, industrial and environmental accidents, the medical dimensions of preparedness and response, new hazards, regional considerations, urban emergency preparedness and response, organizational continuity, decision making, training and education, terrorism, and local emergency management issues.

Disasters, Environment, and Development*. R.B. Singh, Editor. 1996. 600 pp. $95.00, plus $5.95, shipping. Available from Ashgate Publishing, Old Post Road, Brookfield, VT 05036; (800) 535-9544; fax: (802) 276-3837; e-mail: orders@ashgate.com; WWW: http://www.ashgate.com.*

This book looks at disasters in terms of how they hinder development and growth. The enormous economic losses and massive relief expenditures caused by such events make disaster reduction a necessary condition for sustainable development. The volume contains papers presented at the International Seminar on Disasters, Environment, and Development, addressing such topics as disaster mitigation, anthro-pogenic interferences associated with environmental disasters, efforts to reduce the impacts of disasters in India and Africa, geomorphic and mountain hazards, floods, earthquakes, coastal and cyclone disasters, desertification and drought, human-caused disasters, land use in disaster-prone regions, and risk perception.

Exploring the Concept of Climate Surprises: A Review of the Literature on the Concept of Surprise and How it is Related to Climate Change*. M.H. Glantz, D.G. Streets, T.R. Stewart, N. Bhatti, C.M. Moore, and C.H. Rosa. Publication No. ANL/DIS/TM-46. 1998. 85 pp. Free. A limited number of copies are available from David Streets, Argonne National Laboratory, DIS/900, 9700 South Case Avenue, Argonne, IL 60439; (630) 252-3448; fax: (630) 252-5217; e-mail: dstreets@anl.gov.*

Although most models of climate change deal with average values of change, it is usually the extreme events, or surprises, that cause the most damage to human health and property. This report examines the concept of climate surprise and its implications for environmental policy making. It examines ways surprise is discussed in other areas of life and society, including psychology, the military, health care, humor, and agriculture. How policy makers have reacted to climate change or surprise in the past is considered, particularly with regard to the proactive and reactive choices they made. Finally, the report discusses techniques used in current models and suggests ways to include climate surprises in future models.

Living with Disaster. *1998. 20 pp. Free. To obtain copies, contact the Information Officer, Intermediate Technology, Bourton Hall, Bourton-on-Dunsmore, Rugby CV23 9QZ, U.K.; tel: +44 (0) 1788-560631; fax: +44 (0) 1788-540270; e-mail: itdg@itdg.org.uk; WWW: http://www.oneworld.org/itdg.*

In this booklet, 10 people from Bangladesh, Colombia, Peru, the Phillipines, and Zimbabwe describe the impacts of natural disasters on their lives. They also explain measures they are taking to make themselves more secure in the future. Because disasters create particularly severe consequences for the poor, this booklet was created to reveal how community projects are helping individuals from this segment of society enhance their ability to withstand future events. The stories are abstracts from much longer accounts that were recorded for a series of four 10-minute videos, funded by the British Government's Department of International Development. Information on how to obtain the videos is available from the *Television Trust for the Environment, Prince Albert Road, London, NW1 4RZ, U.K.; tel: +44 (0) 171-586-5526; fax: +44 (0) 171-586-4866; e-mail: tve-dist@tve.org.uk; WWW: http://www.oneworld.org/tve*.

Operational Risk Management: The Integration of Decision, Communications, and Multimedia Technologies. *Giampiero E.G. Beroggi and William A. Wallace. 1998. 224 pp. $125.00. Copies can be purchased from Kluwer Academic Publishers, Book Department, P.O. Box 322, 3300 AH Dordrecht, The Netherlands; tel: +31-78-6392392; fax: +31-78-6546474; e-mail: services@wkap.nl.*

Traditional approaches to risk management focus on strategic issues, such as the development of emergency response plans and the designation of specific routes for hurricane evacuation or hazardous material shipment. Two major questions in risk management are: 1) Is the system safe enough? and 2) Which of the options is the best one? Operational risk management complements risk management by focusing on safety considerations *during* hazardous operations. Advanced communications and information technologies are essential tools for operational risk management, supporting managers in real-time risk assessment and decision making. However, these technologies must be accompanied by appropriate logic and reasoning. This book discusses decision support models that incorporate the information gained from using these technologies and examines the need for operational risk management based upon advances in remote sensing, mobile communications, and satellite technologies. It also illustrates the integration of logic into hypermedia, multimedia, virtual reality systems, and the Internet. Finally, it provides examples of the use of the resultant integrated framework for hazardous material transportation, emergency response, air raid command, and nuclear emergency preparedness.

Earthquakes and Atmospheric Hazards: Preparedness Studies. *Mohammed I. El-Sabh, Srinivasan Venkatesh, Cinna Lomnitz, and Tad S. Murty, Editors. 1998. 206 pp. $140.00. Copies can be purchased from Kluwer Academic Publishers, Order Department, P.O. Box 322, 3300 AH Dordrecht, The Netherlands; +31-78-6392392;+31-78-6546474; e-mail: orderdept@wkap.nl; WWW: http://www.wkap.com.*

This volume contains 11 papers presented at the Sixth International Symposium on Natural and Man-Made Hazards, held in Toronto, Canada, July 1996. The papers deal with the scientific and management issues associated with the Northridge, California, and Kobe, Japan earthquakes; recent volcanic activity in the Phillipines; cyclones and related storm surges in Bangladesh; and heavy flooding in North

America and Europe. All papers emphasize preparedness. In addition, ***Earthquakes and Atmospheric Hazards*** contains a summary report of the meeting, as well as the recommendations adopted by the participants.

Floods

Higher Ground: A Report on Voluntary Property Buyouts in the Nation's Floodplains*. 1998. 199 pp. Free. To obtain a copy, contact the National Wildlife Federation, Customer Services, 8925 Lessburgh Pike, Vienna, VA 22184-0001; (703) 790-4100. Substantial portions of the report are also available on-line at http://www.nwf.org/pubs/higherground/index.html.*

The National Wildlife Federation is dedicated to restoring landscapes, including natural wetlands, floodplains, and habitat of species that thrive along rivers and streams. ***Higher Ground*** focuses on efforts to restore floodplains through voluntary property buyouts of and relocations of homes and other structures from high-risk flood zones and presents a detailed analysis of National Flood Insurance Program (NFIP) data. It includes sections on the history of buyout programs in the U.S. and the 1993 Midwest floods, an analysis of repetitive losses in the NFIP, and conclusions and recommendations. One notable finding is that less than 1% of all NFIP insured properties received 49.8% of all NFIP repetitive loss payments ($1.3 billion) and 20% of all NFIP loss payments nationwide ($6.4 billion). Additionally, for almost 10% of homes with repetitive losses, cumulative flood insurance payments exceeded the building's value.

Model State Dam Safety Program: March 1998*. FEMA 316. 1998. 234 pp. Free. To obtain a copy, contact the FEMA Publications Distribution Facility, 8231 Stayton Drive, Jessup, MD 20794; (800) 480-2520 or (202) 646-3484; fax: (301) 497-6378.*

Noting that there is great variance in the effectiveness of existing state dam safety programs, the Association of State Dam Safety Officials prepared this guide for state officials in initiating or improving state programs. It covers existing legislation and regulations, permitting, approval of plans, authorization to impound, inspection, enforcement, emergency response, program staffing and funding, dam owner education and training, and public relations. Appendices contain a model state law, example permit requirements from three states, examples of inspection checklists, case studies of penalties for violation, emergency action plans, information on training courses and materials, a sample database design, guidance on budget preparation, public outreach tools, sample fee structures, and a description of the National Performance of Dams Program.

Guidance on Estimating Substantial Damage Using the NFIP Residential Substantial Damage Estimator*. FEMA 311. 1997. 104 pp. Free. This document includes three 3½" diskettes containing the* ***Residential Substantial Damage Estimator*** *software. Copies are available from the FEMA Publications Distribution Facility, 8231 Stayton Drive, Jessup, MD 20794; (800) 480-2520 or (202) 646-3484; fax: (301) 497-6378.*

Communities that participate in the National Flood Insurance Program (NFIP) often have difficulty determining whether structures meet the NFIP definition of being substantially damaged. This is particularly true after a major flood or other disaster in which large numbers of buildings have suffered

damage and there is a pressing need to provide damage determinations so that reconstruction can begin. Structures in Special Flood Hazard Areas that are substantially damaged must be brought into compliance with the minimum requirements of that community's laws or ordinances and the NFIP. To assist communities in making such determinations, FEMA developed the ***Residential Substantial Damage Estimator*** software, which provides guidance in estimating building value and damage costs for both single family and manufactured homes. Based on the regulatory requirements of the NFIP, it is intended to be used in conjunction with industry-accepted residential cost estimating guides. The guidance document provides information on how to use the software as well as how to collect data and conduct field inspections.

Flood of 97: Hazard Mitigation Team Report in Response to DR-1186-CO, Flood Disaster in Colorado Declared August 1, 1997*. 1997. 48 pp. Free. Individual copies can be requested from Fred Sibley, Colorado Office of Emergency Management, 15075 South Golden Road, Golden, CO 80401-3979; (303) 273-1622; e-mail: fred.sibley@state.co.us.*

On the evening of July 28, 1997, part of Fort Collins, Colorado, received over 10 inches of rain in less than five hours, causing a flash flood that resulted in five deaths and substantial property damage. The next day, cities and counties further east received large amounts of rainfall from slow-moving storms and also experienced substantial flooding. This report describes the impacts on these areas, surface and hydrology characteristics of the events, damage, the history of flood mitigation in Colorado, Fort Collins floodplains, mitigation objectives and accomplishments, the Colorado Natural Hazards Mitigation Council, the Colorado Smart Growth and Development Initiative, and recommendations for preventing future damages.

Battling the Inland Sea: Floods, Public Policy, and the Sacramento Valley*. Robert Kelley. 1998. 420 pp. $16.95, plus $3.75 shipping. Copies can be purchased from the University of California Press, c/o California/Princeton Fulfillment Services, Inc., 1445 Lower Ferry Road, Ewing, NJ 08618; (800) 777-4726; fax: (800) 999-1958; e-mail: orders@cpfs.pupress.princeton.edu; WWW: http://www.ucpress.edu.*

In January 1997, the largest flows ever recorded on the Sacramento River resulted in massive flooding of farmland and several hundred homes. Farther south, the San Joaquin River and several tributaries overtopped both natural and human-made channels and caused more widespread damage. These were only the most recent events in a long history of flooding in the region. In ***Battling the Inland Sea***, Robert Kelley recounts the history of flood control in the Sacramento Valley, chronicling the history of settlement of the valley, the public debates over how to cope with the widespread flooding in the last century and the early years of this century, the interplay of American political culture and reclamation policy during the 1850s, the history of levee building in the region, conflicts over dam construction, the Progressive Era and the revival of planning, the Sacramento Flood Control Project, and American political culture and the policy process.

Hurricanes

North Carolina's Hurricane History*, Revised and Updated. Jay Barnes. 1998. 246 pp. $34.95, clothbound; $18.95, paperback. To order, contact the University of North Carolina Press, P.O. Box*

2288, Chapel Hill, NC 27515-2288; (800) 848-6224; WWW: http://sunsite.unc.edu/uncpress/hurricanes.

The Tar Heel state may be relatively invulnerable when it comes to basketball, but hurricanes are another matter. This chronicle describes the long and rich history of hurricanes in North Carolina, beginning with a storm in 1524 and followed by each major hurricane since that time. In addition, the various chapters describe how hurricanes form, their impacts, how storms are monitored, early hurricanes from 1524 to 1861, storms that occurred from 1875 to 1900, hurricanes that struck the state during the first half of the 20th century, the particularly active hurricane period between 1950 and 1960, the modern era from 1960 to the present, nor'easters, the affects of recent hurricanes on animals, the next great storm, and tips for how to survive a hurricane.

Earthquakes

Promoting the Adoption and Enforcement of Seismic Building Codes: A Guidebook for State Earthquake and Mitigation Managers*. FEMA 313. 1998. Free. To obtain a printed copy, contact the Department of Urban and Regional Planning, 111 Temple Buell Hall, 611 Lorado Taft Drive, University of Illinois at Urbana-Champaign, Champaign, IL 61820; (217) 244-5374; fax: (217) 244-1717; e-mail: seismiccode@uiuc.edu. An on-line version of this document is also available at http://www.urban.uiuc.edu/seismiccode.*

As part of a FEMA effort to attract and support a group of advocates interested in advancing seismic building codes and their enforcement, the University of Illinois Department of Urban and Regional Planning is promoting dissemination and active use of this new guidebook by providing advocates with a free copy along with guidance on how to best use the material for outreach. This resource document brings together much information about seismic risks and what various communities have done to incorporate seismic provisions into their building codes. It includes sections on how to use the book; the need for adopting building and seismic codes; how state, county, and local governments can adopt these codes; and how to improve code enforcement. Appendices provide a discussion of the principles of seismic design, examples of state building codes, examples of code administration by local governments, a list of model code organizations, an index of seismic safety organizations, recommended readings and additional resources, a sample workshop presentation, a sample press release, and sample brochures.

PEER Center News*. Published quarterly. Free. To subscribe, contact the Pacific Earthquake Engineering Research Center (PEER), University of California-Berkeley, 1301 South 46th Street, Richmond, CA 98404-4698; (510) 231-9554; fax: (510) 231-9461; e-mail: eerclib@eerc.berkeley.edu; WWW: http://peer.berkeley.edu.*

Recently, in a major earthquake research initiative, the National Science Foundation (NSF) created the Pacific Earthquake Engineering Research (PEER) Center to conduct and coordinate earthquake engineering research (see the ***Observer***, Vol. XXII, No. 2, p. 19). The PEER Center, a consortium of nine institutions, will undertake research in five basic areas: 1) policy, planning, and economics; 2) seismic hazards; 3) performance assessment; 4) systems reliability; and 5) innovative technologies. The center will develop a business and industry partnership program, conduct urban demonstration projects to test research, and provide education programs for both K-12 students and undergraduates. In an effort

to inform interested individuals of its activities, the center has begun publishing ***PEER Center News***. The inaugural issue contains articles on a workshop on social sciences and earthquake engineering, engineering research, the ignition of fires following earthquakes, ground deformation, and recent publications.

Earthquake Insurance: Public Policy Perspectives from the Western United States Earthquake Insurance Summit. *1998. 254 pp. $40.00. Copies are available from the Western States Seismic Policy Council, 121 Second Street, 4th Floor, San Francisco, CA 94105; fax: (415) 974-1747; e-mail: wsspc@wsspc.org; WWW: http://www.wsspc.org.*

This volume is a comprehensive collection of articles and abstracts from the presenters at the Western United States Earthquake Insurance Summit, held in Sacramento, California, in June 1998. Papers address such topics as the public policy aspects of earthquake insurance, the role of public-private partnerships, mitigation, regulation, legislation, the California Earthquake Insurance program, claims, financial markets, earthquake science and engineering, hazard risk estimation, and building codes.

Earthquake Basics: Insurance. *Earthquakes Basics Brief #3. 1997. 14 pp. Free. Printed copies can be obtained from the Earthquake Engineering Research Institute, 499 14th Street, Suite 320, Oakland, CA 94612-1934; (510) 451-0905; fax: (510) 451-5411; e-mail: eeri@eeri.org. Copies are also available from the EERI Web site at http://www.eeri.org/EQ_Basics/INS/INS3.html.*

This brief provides an introduction to the business of insurance and the problems associated with insuring against earthquakes. It draws heavily on California's extensive, well-documented experience with earthquake insurance. It describes how property is insured in general, basic insurance terms and concepts, reinsurance, earthquake insurance, California residential earthquake insurance coverage, the California Earthquake Authority, what insurers need to know from engineers and earth scientists, and the potential for mitigation.

Seismic Guidelines for Ports. *Stuart D. Werner, Editor. 1998. 376 pp. $51.75, American Society of Civil Engineers (ASCE) members; $69.00, nonmembers. Copies can be ordered from ASCE, Book Orders, P. O. Box 831, Somerset, NJ 08875-0831; (800) 548-2723; fax: (703) 295-6211; WWW: http://www.asce.org.*

Earthquakes can cause substantial damage to ports, resulting in significant loss of operations and economic disruption. Despite this, there are currently no established seismic design and strengthening provisions for port structures in the U.S. Additionally, seismic risk reduction measures have not been undertaken in existing ports at risk due to earthquakes. Prepared by the Ports Committee of the ASCE Technical Council on Lifeline Earthquake Engineering, ***Seismic Guidelines for Ports*** is intended to be a first step in the development of a national recommended seismic risk reduction practice for ports. It contains material on the lessons from past earthquakes; a summary of current knowledge and practice; sections on risk reduction planning through design, analysis, and material components; and guidelines for response and recovery at ports.

Central United States Earthquake Map Catalog and Reference Guide. *1998. 51 pp. Free. A limited number of copies are available from the Central United States Earthquake Consortium (CUSEC), 2630*

East Holmes Road, Memphis, TN 38118; (901) 544-3570; e-mail: cusec@ceri.memphis.edu.

This catalog is the result of a commission to the Center for Earthquake Studies at Southeast Missouri State University by CUSEC to develop a catalog of geological and seismotectonic maps of the New Madrid Seismic Zone. It includes 56 small reproductions that demonstrate what the original maps depict. Information provided for each map includes the title, author, date of publication, contact agency and availability, map size and scale, and descriptive characteristics.

***Earthquake Hazard and Risk**. Vladimir Schenk, Editor. Advances in Natural and Technological Hazards Research 6. 1996. 300 pp. $140.00. Copies can be ordered from Kluwer Academic Publishers Group, Order Department, P.O. Box 322, 3300 AH Dordrecht, The Netherlands: tel: +31-78-6392392; fax: +31-78-6546474; e-mail: services@wkap.nl.*

This book presents selected papers delivered at the 27th General Assembly of the International Association of Seismology and Physics of the Earth's Interior in Wellington, New Zealand, in 1994. The papers examine seismicity, stress fields, and focal mechanisms; earthquake hazards and seismic risk; and strong ground motion and seismic zonation.

***Update on the Seismic Safety of Steel Buildings: A Guide for Policy Makers**. Publication No. SAC 98-PG. 1998. 20 pp. $15.00. To order a copy, contact the Applied Technology Council, 555 Twin Dolphin Drive, Suite 550, Redwood City, CA 94065; (650) 595-1542; fax: (650) 593-2320; e-mail: atc@atcouncil.org.*

This document examines problems related to the seismic safety of steel buildings, as well as accompanying social, economic, and public policy issues. Following the Northridge earthquake in 1994, the Federal Emergency Management Agency funded the SAC Steel Project, a collaboration among the Structural Engineers Association of California, the Applied Technology Council, and the California Universities for Research in Earthquake Engineering to study these issues. The Northridge quake caused unexpected damage to welded steel moment frame buildings, which had been constructed (their builders thought) to provide the strength and stiffness necessary to resist the tremendous forces created by quakes. Brittle fractures were detected in more than 200 welded steel frame buildings, and, as a result, numerous changes have taken place in the way the structures are designed and constructed. This publication describes the problem, why the problem was unexpected, how to tell if a building is damaged and whether it is possible to repair, and how the risk compares to that in other structures. It also discusses the feasibility of retrofitting buildings, the costs of upgrading, incentives and disincentives for retrofit, and the SAC project generally.

***The Northridge Earthquake of January 17, 1994: Report of Data Collection and Analysis, Part B. Analysis and Trends**. 1997. 179 pp., including 27 color maps of varying size. $85.00. To order a copy, send payment to Lisa Saunders, EQE International, Inc., 4590 MacArthur Boulevard, Suite 400, Newport Beach, CA 92660-2027; (714) 833-3303.*

The Northridge earthquake is a milestone for the many disciplines that study the physical and societal effects of disasters. Not only was this earthquake one of the most costly natural disasters in the U.S., it was also one of the most studied. This report is the second publication resulting from a joint effort between the California Governor's Office of Emergency Services and EQE International to preserve the

information gathered in these studies regarding economic and social losses. It emphasizes key lessons in several important areas and includes sections on building inventory data, direct capital losses, individual assistance, and sheltering. The first report, ***The Northridge Earthquake of January 17, 1994: Report of Data Collection and Andalysis, Part A: Damage and Inventory Data*** (1995. 202 pp. $60.00) is also available from *EQE* at the above address. It contains narrative information, tabular data, numerous illustrations, and data overlays on color maps, and includes sections on seismotectonic and ground motion data, building inventory, building damage, associated databases, and building damage trends.

Earthquake Fears, Predictions, and Preparations in Mid-America*. John E. Farley. 1998. 240 pp. $50.00, clothbound; $21.95, paperback; plus $3.50 shipping. Available from the Order Department, Southern Illinois University Press, P.O. Box 3697, Carbondale, IL 62902-3697; (800) 346-2680 or (618) 453-6619; fax: (800) 346-2681 or (618) 453-3787.*

In 1811 and 1812, the New Madrid Seismic Zone in the central U.S. generated the strongest earthquakes ever observed in the lower 48 states. When self-proclaimed climatologist Iben Browning predicted that another major earthquake would strike this seismic zone on December 2 or 3, 1990, residents reacted with varying degrees of preparation and concern. The author of ***Earthquake Fears, Predictions, and Preparations in Mid-America*** headed a team of researchers who examined the impacts of the Browning prediction and reports those findings in this book, along with research from other studies that have examined awareness and preparedness in the region. Farley addresses both why unfounded scares like that produced by the Browning prediction occur and how information can be provided to the public in ways that encourage rational action to protect life and property. His book covers the history of the Browning prediction; who believed Browning and how they reacted; trends in awareness, concern, and preparedness during the Browning episode and after; recommendations for linking concern with preparedness; and maintaining and enhancing earthquake preparedness in the central U.S.

Tsunamis

Perspectives on Tsunami Hazard Reduction: Observations, Theory, and Planning*. Gerald Hebenstreit, Editor. Advances in Natural and Technological Hazards Research 9. 1997. 224 pp. $96.00. To order a copy, contact Kluwer Academic Publishers, Order Department, P.O. Box 322, 3300 AH Dordrecht, The Netherlands; tel: +31-78-6392392; fax: +31-78-6546474; e-mail: services@wkap.nl.*

As the recent disaster in Papua-New Guinea illustrates, tsunamis remain an ever-present threat to lives and property along most of the world's coastlines. This volume, comprising papers presented at the 17th International Tsunami Symposium, highlights critical advances in key areas of tsunami hazard reduction. One group of papers describes reconstruction and measurement of specific tsunami events; another addresses tsunami generation, propagation, and the prediction of tsunami effects in coastal zones; and the final section examines evolving efforts to provide rapid, accurate, and comprehensive warnings to coastal populations.

Tsunami Hazard Mitigation Symposium: Proceedings Volume. November 4, 1997, Ocean Pointe Resort, Victoria, British Columbia*. 1998. 78 pp. $15.00. Copies can be obtained from the Western States Seismic Policy Council, 121 Second Street, Fourth Floor, San Francisco, CA 94105; (415) 974-*

6435; fax: (415) 974-1747; e-mail: wsspc@wsspc.org; WWW: http://www.wsspc.org.

As the title suggests, this document contains the proceedings of a meeting held in 1997 to examine the ways to mitigate the impacts of tsunamis. Papers address the National Tsunami Hazard Mitigation Program; the Pacific Tsunami Warning Center; the West Coast/Alaska Tsunami Warning Center; efforts in mitigation, public awareness, and emergency response; state-level programs; reporting of earthquakes and tsunamis; and Internet resources.

The Natural Hazards Center

The NATURAL HAZARDS RESEARCH AND APPLICATIONS INFORMATION CENTER was founded to strengthen communication among researchers and the individuals and organizations concerned with mitigating natural disasters. The center is funded by the National Science Foundation, Federal Emergency Management Agency, National Oceanic and Atmospheric Administration, U.S. Geological Survey, U.S. Army Corps of Engineers, U.S. Forest Service, Environmental Protection Agency, U.S. Department of Transportation, National Aeronautics and Space Administration, the Institute for Business and Home Safety, and the Public Entity Risk Institute. Please send information of potential interest to the center or the readers of this newsletter to the address below. The deadline for the next ***Observer*** is *September 23, 1998*.

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Cartoons for the ***Observer*** are drawn by Rob Pudim.

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The ***Observer*** is free to subscribers within the U.S. Subscriptions beyond the U.S. cost $15.00 per year. Back issues of the ***Observer*** are available for $2.00 each, plus shipping and handling. Orders must be prepaid. Checks should be payable to the University of Colorado.

Copies of the ***Observer*** and the Hazards Center's electronic newsletter, ***Disaster Research***, are also available from the Natural Hazards Center's World Wide Web site:

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August 31, 1998

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