Natural Hazards Observer

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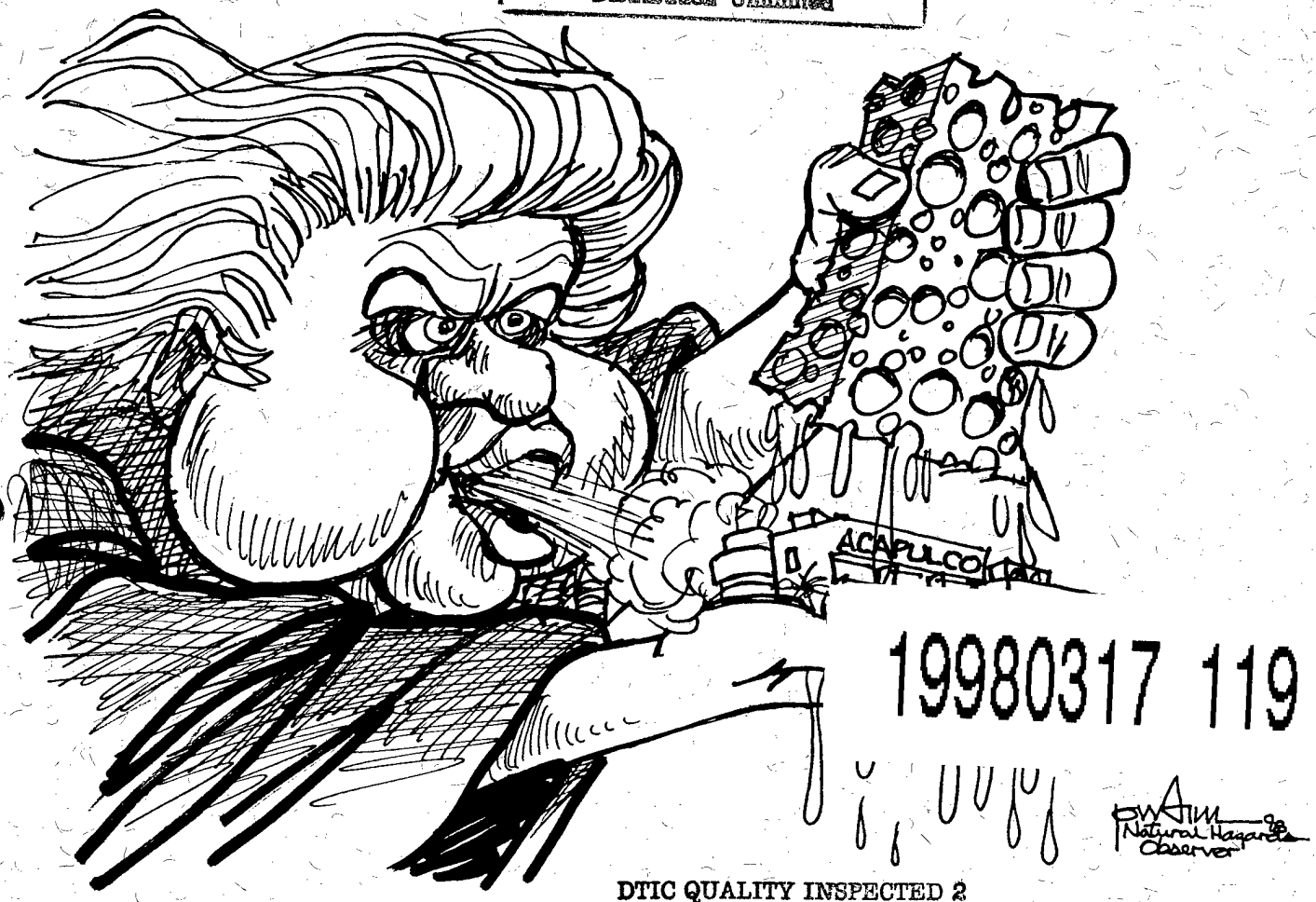


Damage in Acapulco by Hurricane Pauline

—an invited comment

Hurricane Pauline hit the Pacific coast of Mexico approximately 200 miles south of Acapulco on October 8, 1997. It caused significant damage along the coast and penetrated inland, losing strength but producing heavy rains. In its path, parallel to the coast, it caused severe damage due to floods in the highlands of the state of Oaxaca and the southern part of the state of Guerrero.

When Pauline reached Acapulco in the early hours of October 9, the storm had lost most of its strength in terms of wind speed, sea wave height, and storm surge. Nevertheless, it produced extraordinary rainfall in Acapulco Bay. The precipitation amounted to more than 350 mm (13.65 inches) in four hours—about one-fourth of the average annual rainfall for the city. The heavy rain caused a flash flood with debris flows that produced the worst natural disaster in Acapulco in the last 30 years.

The city's population has been increasing at a significant rate over the last 40 years and is presently more than 700,000. The poorest human settlements are located in the highest elevations of the bay, and many of them have

expanded into the gullies that drain seasonal heavy rains.

Damage took place when intermittent streams started to develop in the highest part of the mountain range that surrounds Acapulco Bay; the flow ran down with enough force to drag rocks, sand, and debris. Flash floods occurred in several gullies where human settlements existed.

Huge rocks, up to two meters in diameter, were dragged from high to middle ground and destroyed houses (some of which helped to stop these rocks from rolling further). In lower regions, sand deposits covered the ground floors of houses and led to further flooding. The violent currents unveiled and eroded building foundations, causing the collapse of several homes. Cars, rocks, furniture, and other objects were carried by the flood through the riverbeds and streets. Seventy-five persons died because they were caught in the debris flow.

The maximum flow has been estimated as 300 cubic meters per second, and mean velocity in the highest part of the catchments as four meters per second.

Acapulco had been affected by floods several times in the past, but never in recent history has rainfall caused the granite rocks of the upper part of the bay to dislodge and produce debris flows. No protection work had been provided against this kind of event. The path of the hurricane was well established at least 24 hours in advance and an alert was issued to the population—but without any specific warning about the risk of flash flood and debris flow.

In conclusion, the damage in Acapulco was caused by several factors: an extraordinary rainfall, the geological conditions of the terrain (rocks dispersed in the highest part of the sierra embedded in loose soil), the topographic conditions (many gullies and steep slopes), the expansion of the human settlements into the riverbeds of the intermittent streams, and the lack of proper drainage for heavy rains, of protection works against debris flows, and of warning about the specific risk of a flash flood with debris flow. Prior to the storm, attention was given only to the impacts of ocean waves on navigation and of storm surge on the coastline.

The resort area of the city, along the sea shore, suffered very little damage, and, after a few days, was ready to receive the influx of winter tourists. The most affected lifelines were coastal roads between Acapulco and Oaxaca, and especially, water supply pipelines. It took more than one month to restore the full water supply to the city.

Unfortunately, the situation remains critical for thousands of people living in the highly vulnerable gully areas in the highest part of the city. Some of them have been relocated, but many still live in the same places, exposed to future floods. To help remedy this problem, a comprehensive project for the regulation of flash floods and debris flows is being prepared. However, the necessary works will be extremely expensive and time consuming. On a short-term basis, an alert system is being implemented to warn people living in areas exposed to flooding to evacuate when heavy rainfall starts to develop. The plan is being jointly prepared by the National Water Commission, CENAPRED, and the Acapulco Municipal Authority.

Roberto Meli
Centro Nacional de Prevencion des Desastres
(CENAPRED)
Mexico

Recommendations

A more detailed account of the impacts of Hurricane Pauline can be found in the CENAPRED quarterly publication, ***Prevencion*** Number 19 (August-December 1997). Among the information in that article, which is in Spanish, are the following recommendations, which have been translated and adapted for our readers.

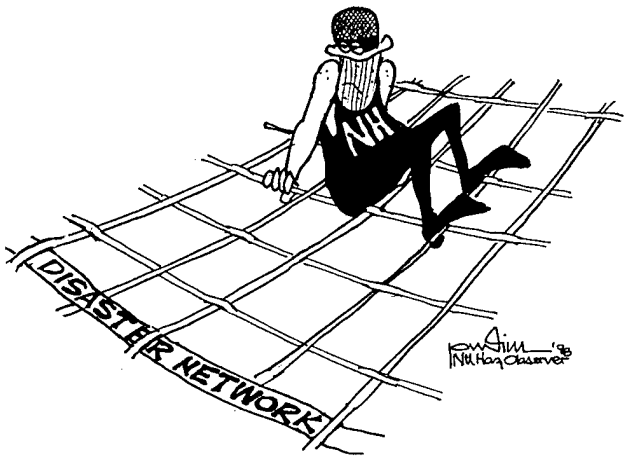
For better understanding of this kind of event, it is important to undertake a more thorough study of the phenomenon in order to:

- determine risk conditions relating to flash floods that involve extensive debris flows of large material down existing slopes;
- determine drainage and flood protection improvements needed to protect against flash floods in the mountains around Acapulco Bay;
- develop step-by-step models of the drainage of each ravine using various rainfall scenarios;
- create flood risk maps for each ravine; and
- determine steps that could minimize the dislodging of rocks, sand, and stone from ravines in heavy rainfall.

NOAA Chief Outlines Proposed National and Global Disaster Information Networks

In a speech to the National Emergency Management Association (NEMA) on February 9, 1998, D. James Baker, administrator of the National Oceanic and Atmospheric Administration (NOAA), discussed the need for a national and international information system to deal with disasters. He indicated that to save more lives and reduce disaster costs, accurate information must be placed in the hands of those who make critical life and property decisions. "We have the best opportunity ever, right now, to solve this problem, by bringing people and information together through the use of technology," Baker said.

Baker described the work of an interagency task force that he co-chaired over the previous six months, which studied the feasibility of creating national and global disaster information networks.



Responding to the task force's recommendations, the Office of Management and Budget recently included $15 million in the U.S. Geological Survey (USGS) budget request for FY 99 to support "a multi-agency program for the integration of natural disaster-related information and its dissemination to emergency managers and others who can take action to reduce disaster losses." Along with robust computer and broadcast networks that can operate during all phases of disaster management, the program will establish a public/private partnership to bring all stakeholders together to develop a truly comprehensive disaster network.

Baker indicated that disasters currently cost the nation more than $52 billion per year and costs are rising. More and more people are moving into densely populated urban areas at risk and the required infrastructure is growing rapidly in complexity and cost. There are many ways to reduce disaster costs, particularly through long-range planning and development. However, in the short term, a particularly effective way is through an improved information network.

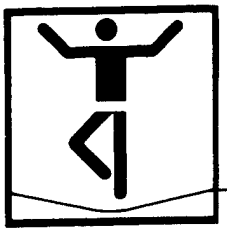
The task force found that the required technology exists, but that significant coordination and integration of information providers, disseminators, and users are required. Baker indicated that the problem is finding what you need, when you need it, in a form that is useful for making critical decisions. Under the plan recommended by the task force the USGS will host an Integrated Program Office (IPO) that will include members from each of several key federal agencies in order to integrate and coordinate federal disaster information. At the same time, the Administrator of NOAA will chair an executive committee that will oversee the office and set policy. The IPO will work with other interested groups to form the public/private partnership that will design and implement the national disaster information system. In addition, global partners will be sought to develop ways to expand this National Disaster Information Network (NDIN) to form a Global Disaster Information Network (GDIN).

These networks will be used during all phases of emergency management—mitigation, preparedness, response, and recovery—and it will provide information from all types of sources. The information will be made available rapidly and reliably to decision makers and to others who are charged with taking action to reduce the loss of life and property damage before, during, and after a natural disaster. Once established, the NDIN/GDIN will be available on the World Wide Web. When disaster strikes, the network will support the high volume of requests for information that are sure to come, with critical users having access to government "Intranets" (limited access, proprietary networks) where use can be restricted to minimize overloading. Access may also be provided by satellite to avoid the flow of information being cut off by damage on the ground.

Federal groups participating in the feasibility study included the Federal Emergency Management Agency; the Departments of Commerce, Defense, Interior, State, and Agriculture; the Environmental Protection Agency, National Economic Council, National Science Foundation, National Aeronautics and Space Administration, Central Intelligence Agency, Office of Science and Technology Policy, and Office of Management and Budget.

For further information about the formation of the NDIN and GDIN, contact *Peter Ward, U.S. Geological Survey, 106 National Center, Reston, VA 20192; (703) 624-6264; fax: (703) 325-3282.*

In addition, a NDIN/GDIN Web site has been established at *http://www.disasterinfo.net*. The site explains the current status of the project and will be the eventual homesite of the network. It now describes in detail the project's organization; provides a downloadable copy of the project's recently released 125-page feasibility study, ***Harnessing Information and Technology for Disaster Management: The Global Disaster Information Network—Disaster Information Task Force Report, November, 1997***; frequently asked questions about the project; current transition team plans; and press releases about the NDIN/GDIN.



ON THE LINE

The Montserrat Volcano Emergency
Use of the Internet in Public Awareness

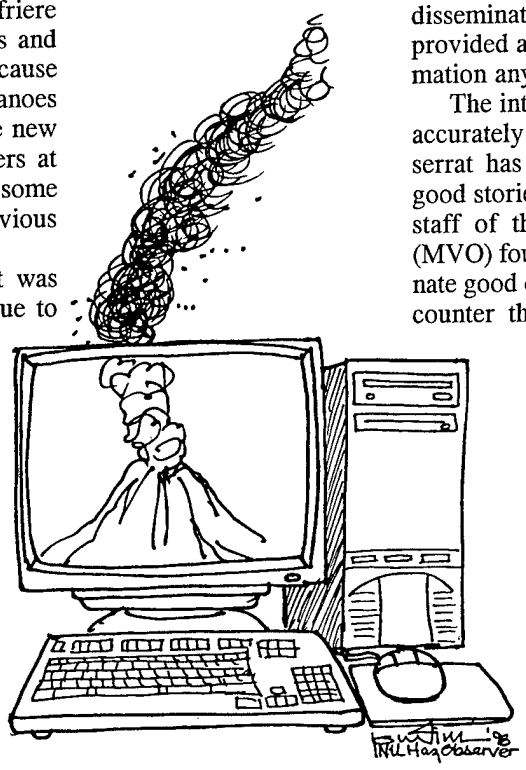
Soufriere Hills, a stratovolcano on the island of Montserrat, began erupting on July 18, 1995—the first recorded eruption of this volcano in historic time. Since then, the volcano has generated considerable international attention due to its ongoing activity, including a major eruption on December 26, 1997, when its dome collapsed, creating a large and destructive pyroclastic cloud with an ash plume that rose to 47,000 feet. Many inhabitants have been forced to relocate off the island due to the continuing danger. This article describes the use of the Internet to inform interested parties of current conditions regarding the volcano.

Introduction

The Montserrat volcanic crisis started in July 1995 after some long- and shorter-term warning signs. The long-term warning signs comprised three volcano-seismic crises in the previous 100 years, none of which led to surface eruptions, but all of which indicated the high potential for further eruptions.

The main hazards of the Soufriere Hills volcano are pyroclastic flows and explosions, but ash fall can also cause health hazards. Both active volcanoes and the hazards they produce were new to most administrators and islanders at the onset of the eruption, despite some public education programs in previous years.

The community on Montserrat was very vulnerable to any eruption due to the proximity of housing, industry, and infrastructure to the volcano. The capital town, Plymouth, lay just 4.5 km from the summit crater, and principal income generation was from farming, which took place on the upper flanks of the volcano.



Need for Internet Usage

The Soufriere Hills volcano changes its style of activity often, and assessments of risks can change on a daily or even hourly basis. Thus, the rapidly changing situation on Montserrat required constant updating of information.

At the same time, a large and ever-increasing overseas Montserratian population wished to stay informed of ongoing events in their homeland. The non-computer-mediated communications methods from Montserrat soon became slow and fragile so that the only effective way of prompt international information dissemination was through the Internet, which provided an excellent medium for posting information any time of the day or night.

The international media often do not fully or accurately report disaster situations, and Montserrat has been no exception. The number of good stories have been extremely small, and the staff of the Montserrat Volcano Observatory (MVO) found that it had to produce and disseminate good quality information rapidly in order to counter the often misleading articles that appeared in the press.

Methods of Dissemination

Public information is disseminated mainly through a World Wide Web site for the government of Montserrat, which includes MVO pages (*http://www.geo.mtu.edu/volcanoes/west.indies/soufriere/govt/*). This site is currently constructed and administered off-island for greater efficiency and lower cost (by Mike Dolan at Michigan Tech University, to whom

we are most grateful), although as the MVO stabilizes its structure, it is likely that a Web site will be run from Montserrat in the future.

E-mail is vital in getting information to the Web server and to limited groups, if not for general dissemination, and e-mail usage at the MVO is very high. Most importantly, this method is considerably less expensive than conventional phone, fax, or courier services.

Scientific Usage

In addition to general public communications, the Internet is vital to the scientists working at the MVO. Most day-to-day communications between scientists on and off island is done by e-mail. This provides a method for effective discussion and pooling of knowledge and has enabled a very large number of scientists to be involved in analysis of the eruption without necessarily being on Montserrat at all times.

Rapid transfer of scientific information and large data sets is possible over the Internet, with anonymous FTP sites being especially useful for making large data sets available. The Web site is also used for posting scientific information, although this usage could be expanded significantly.

Lessons to Be Learned

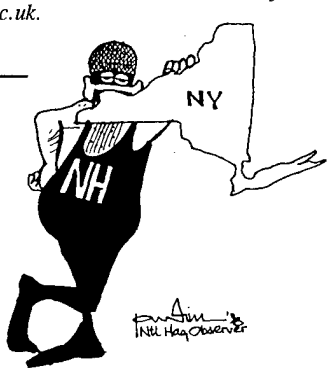
Some lessons that we can share from our experiences include:

- The Internet has provided a cheap and effective way of disseminating a wide variety of information very rapidly in an ongoing volcanic crisis. The very nature of a natural disaster means that new information is constantly being generated and scientific work is undertaken hand in hand with public awareness. Consequently, the Internet is the perfect tool for sharing information.
- Good links to the net and server support are vital for effective Internet usage. In a disaster situation, lack of communication can be interpreted as bad news, and loss of Internet services and the failure to post regular information bulletins can lead to undue concern among the world-wide audience.
- We have found that having a good Web site can generate a great deal of unwanted attention from an "interested" public, which can be very time-consuming. We have abundant conventional correspondence from school children and college students, job seekers and cranks, and it is only our protection of our e-mail addresses that has prevented the flood gates from opening.
- Finally, the Internet should not replace human interaction, especially in crisis situations. Head-to-head discussions outweigh any amount of relatively impersonal Internet correspondence.

Simon Young and MVO Staff
Montserrat Volcano Observatory
Mongo Hill
Montserrat, West Indies

Dr. Young can be contacted at the *British Geological Survey, West Mains Road, Edinburgh EH9 3LA, U.K.; tel: 44 131 50 0438; fax: 44 131 668 1535; e-mail: sry@bgs.ac.uk.*

State of New York Launches Disaster Mitigation Partnership



To make homes and businesses in New York more disaster resistant, the New York State Emergency Management Office has established a State Joint Loss Reduction Partnership that comprises a cross-section of the state's business leaders and key federal, state, and local government officials, all of whom are familiar with business disruptions and their potentially devastating consequences for communities.

To carry out this project, a State Joint Loss Reduction Partnership Committee has been established that, as a whole, is dedicated to training, planning, and public awareness. Subcommittees have been established to address several specific areas: commercial practices, emergency access, financial support, legislation, partnership clearinghouse technology, and business facility mitigation. The solutions generated by the partnership will provide a blueprint for improvement at the community level of corporate and home emergency preparedness throughout the state.

One element of this initiative is to identify how the banking, construction, real estate, code enforcement, and insurance industries can promote mitigation through incentives and other business practices. A number of leading businesses and financial institutions in New York are involved in the effort. For more information, see the Joint Loss Reduction Partnership Web site: *http://www.nysemo.state.ny.us/Joint*; or contact *Susan Schneider, Project Manager, New York State Emergency Management Office, State Office Campus, Building 22, Albany, NY 12226; (518) 457-9968; e-mail: schneiders@nysemo.state.ny.us.*

Witt Announces Red River Flood Recovery Plan

On December 12, 1997, Federal Emergency Management Agency (FEMA) Director James Lee Witt issued a final federal task force report detailing the delivery of nearly $2 billion in assistance for long-term flood recovery in Minnesota, North Dakota, and South Dakota.

Under a plan drawn up last May by the Federal Interagency Task Force appointed for the flood relief effort, President Clinton directed FEMA and other federal agencies to make available a wide range of options in order to ensure three long-term recovery objectives: mitigating flood hazards, providing housing assistance, and re-establishing community sustainability.

The ***Final Report of the President's Long-Term Recovery Task Force for Minnesota, North Dakota, and South Dakota*** (1997, 36 pp., free) outlines the long-term recovery plan developed by cabinet agencies, under the direction of FEMA Director Witt, and details the types and amounts of assistance provided by these agencies. Areas of greatest concern include:

- comprehensive flood mitigation;
- housing repairs, rehabilitation, reconstruction, and replacement financing;
- the National Flood Insurance Program, floodplain management, and floodplain mapping;
- planning and programs for economic recovery;
- agriculture;
- infrastructure;
- health and mental health; and
- special needs, including those related to tribal nations, education programs, and historic preservation.

The report identifies the assistance programs the federal government offers for each of these areas. Specific needs are still in the process of being identified both at the state and local levels, although federal agencies continue to assist in the recovery effort. In all, the report details the delivery of nearly $2 billion in assistance, including $587 million in disaster loans; $389 million in aid to rural areas for agricultural damage and losses; more than $130 million for repair or replacement of road systems; more than $10 million in disaster unemployment aid; and $8 million for community, social, and health services.

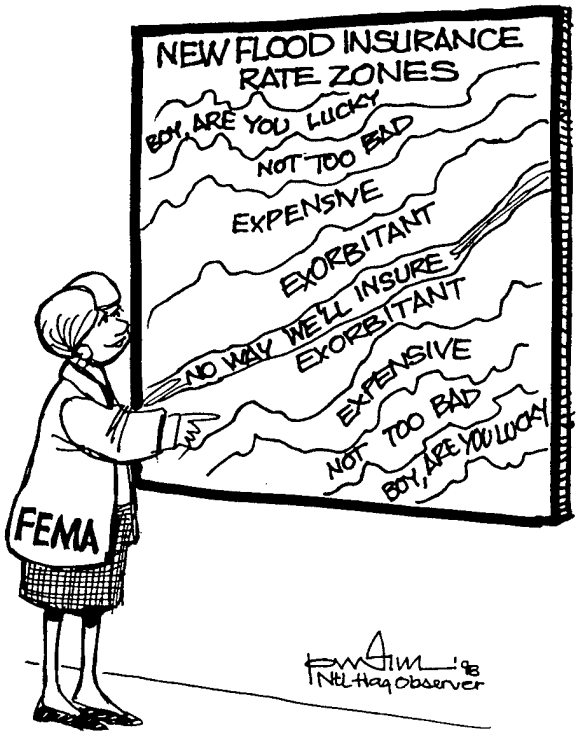
The report can be viewed on the FEMA Web site at *http://www.fema.gov/fema/frmwrk2.htm.* For further information on this effort, contact the *FEMA Office of Emergency Information and Media Affairs, 500 C Street, S.W., Washington, DC 20472; (202) 646-4600; e-mail: eipa@fema.gov.*

FEMA Establishes New Flood Insurance Rate Zone

In a recent issue of the ***Federal Register*** (Volume 62, No. 207, p. 55705), FEMA published a final rule establishing a new flood insurance rate zone, known as the flood control restoration zone or Zone AR, to delineate special flood hazard areas on Flood Insurance Rate Maps (FIRMS). This new designation covers areas for which a flood protection system is being restored and reduces flood insurance costs and elevation requirements for properties that will be exposed to an increased risk during restoration.

Periodically, FEMA, other federal agencies, and private contractors restudy flood risks and revise flood maps when there is sufficient change to warrant such action. For example, following completion of such a study, the agency may determine that a levee no longer provides protection against a flood; thus, the agency will decertify the flood control structure. Because flood insurance premiums are calculated on actual flood risk, such actions can result in substantial increases in insurance costs. However, in some cases, while communities are re-establishing protection, this increased risk is temporary and will be remedied when the system is restored.

In October 1992, Congress enacted the Housing and Community Development Act (Public Law 102-550), which created the Zone AR designation. Under this legislation, Congress reduced elevation requirements for new construction, eliminated elevation requirements for substantial improvements to existing structures, and capped the flood insurance rate for such structures while the flood protection system is being restored. At the same time, Congress realized that the federal government would accept additional costs due to increased insurance liability and potential costs for disaster assistance during the reconstruction. Congress also specifically prohibited the designation of Zone AR in coastal high hazard areas.



The final rule outlines the procedures for remapping of areas for both projects that involve federal cost-sharing and those that do not. It describes the steps communities can take to receive such a designation, limitations of the designation, and other procedures. Copies of the ***Federal Register*** can be found at your *local government depository library* or can be perused via the Internet: *http://www.access.gpo.gov.*

For further information about the final rule, contact *Michael Buckley, Hazard Identification and Risk Assessment Division, Mitigation Directorate, FEMA, 500 C Street, S.W., Washington, DC 20472; (202) 646-2756.*

TMAC Submits Recommendations

As most flood professionals know, floodplain mapping is an essential tool for making land use, insurance, and other decisions regarding flood risk. The Technical Mapping Advisory Council (TMAC) was created by Congress in the 1994 Flood Insurance Reform Act to evaluate Flood Insurance Rate Maps (FIRMs) and other mapping products prepared by FEMA for the National Flood Insurance Program (NFIP). TMAC is also mandated to make recommendations to the FEMA director regarding improvements in FIRMs, setting standards and guidelines for preparing and revising these maps and other products, and evaluating their effectiveness. The council must report to FEMA yearly, and its second report was recently submitted. In it, TMAC recommends that FEMA:

- shorten the contract process for flood insurance studies and generally streamline the process;
- improve base maps and review and update existing standards as well as ensure strict adherence to these standards;
- pursue base mapping partnerships with other public, private, and nonprofit entities, such as the Census Bureau, the U.S. Geological Survey, and state, local, and regional agencies, to achieve cost-effectiveness and exchange technical expertise;
- produce all future maps digitally; and
- hold community meetings before, during, and after preparing new map products to enable community and state participation in mapping activities.

There are a limited number of copies of the report available. They can be requested from *TMAC, FEMA, 500 C Street, S.W., Washington, DC 20472-0001; (202) 646-4600.* Further information on TMAC is available on-line at *http://www.fema.gov/MIT/mitmac.htm.*

[Adapted from ***National Lender's Insurance Council*** newsletter, Volume 3, No. 1 (January 1998), p. 1.]

Readers interested in learning more about the TMAC can obtain a copy of the council's first annual report, ***Technical Mapping Advisory Council 1996 Annual Report to the Honorable James Lee Witt, Director of the Federal Emergency Management Agency*** (1997, 45 pp., free), from the *FEMA Publications Distribution Facility 8231 Stayton Drive, Jessup, MD 20794; (800) 480-2520 or (202) 646-6378.*

FEMA Issues Final Rule on Replacing Damaged Structures

Following a presidential disaster declaration, public and private entities often receive disaster assistance to repair and/or replace damaged buildings. However, on occasion, confusion has arisen concerning whether a structure should be rebuilt to existing building codes or should be required to meet updated standards that were adopted as a consequence of the disaster.

In the February 5 ***Federal Register*** (Volume 63, No. 24, pp. 5895-5897), FEMA issued a final rule stating that assistance will be based only on construction standards in writing and formally adopted by a state or local government on or before the date of a disaster declaration. The rule takes effect on January 1, 1999, for local governments and January 1, 2000, for state governments. It declares that eligible costs will be those associated with state and local repair or replacement standards (building codes, specifications, or standards required for the construction of facilities) that are found reasonable and are in effect at the time of the disaster.

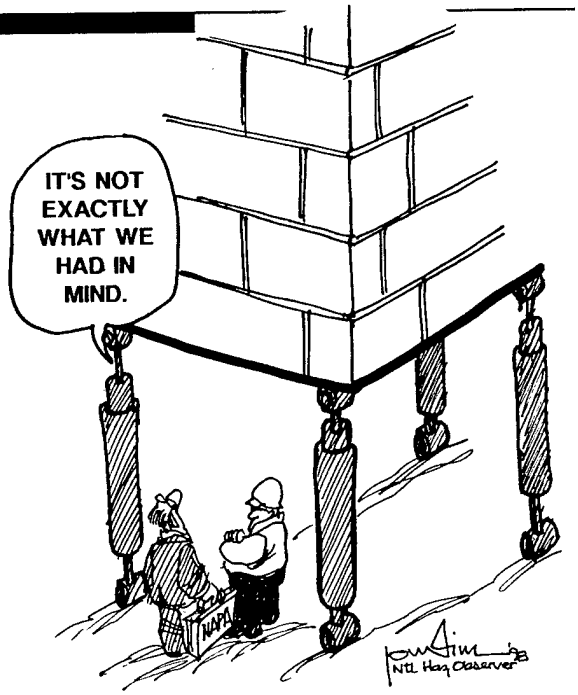
For more information on this final rule, contact *Melissa Howard, Infrastructure Support Division, FEMA, Room 713, 500 C Street, S.W., Washington, DC 20472; (202) 646-3243.*

NAPA Examines Ways to Make Existing Buildings Seismically Safer

Congress recently requested that the National Academy of Public Administration (NAPA) assist FEMA in identifying ways in which federal standards for improving the seismic safety of existing federally owned and leased buildings can be applied to other existing buildings. In particular, NAPA examined ways to apply these standards to buildings for which federal financial assistance has been obtained through grants, loans, financing guarantees, or loan or mortgage insurance programs, as well as buildings whose structural safety is regulated by a federal agency. Congress requested this study under the National Earthquake Hazards Reduction Program (NEHRP) Reauthorization Act of 1990.

In its report, ***Reducing Seismic Risks in Existing Buildings*** (1997), the panel convened to conduct this study determined that there are many ways in which such standards can be applied. Among its conclusions:

- The federal government should make these federal standards a condition for receiving and using over 200 federal aid programs. Of these programs, 174 could help fund acquisition or improvement of existing buildings, while the other 30 could fund associated planning, research, or technical assistance.
- As part of these programs, the federal government could require that any building purchased or improved must comply with the minimum standard of life safety in the current federal standards.
- As a condition of the associated planning, research, and technical assistance programs, the federal government could require the collection and analysis of information to develop strategies for assessing and enhancing the seismic safety of large numbers of existing buildings.
- Funds could be made available to help cover the costs of federally required seismic evaluations of existing buildings and the costs of improvements to bring them into compliance.
- Alternatively, these federal programs could be used to provide information about the federal standards to recipients, simply allowing or promoting their use without requiring compliance.
- Combinations of these options are also feasible.



The full report describes the purpose of the study; seismic risks and various approaches to mitigate them; the federal standards for seismic safety in existing buildings; options for using federal aid and regulations to help improve seismic safety; state and local perspectives; and panel findings, conclusions, and recommendations.

The full report is no longer available. However, copies of the summary can be requested by sending a fax to *Bruce McDowell, NAPA, 1120 G Street, N.W., Suite 850, Washington, DC 20005-3821; (202) 347-3190; fax: (202) 393-0993; WWW: http://www.napawash.org.*

A Letter to the Editor

Of GOES and Space Jalopies

Editor:

As the head of the agency responsible for the Geostationary Operational Environmental Satellites (GOES), I take exception with the article in your November 1997 issue titled "GAO Says GOES Needs More Attention," in which you compare the GOES satellites to another "aging space jalopy Mir" [see the ***Observer***, Vol. XXII, No. 2, p. 12]. The GOES state-of-the-art satellites provide timely images and soundings of North and South America and neighboring environs of the Atlantic and Pacific Oceans to monitor the earth's clouds, surface temperature, water vapor fields, and the atmosphere's vertical thermal and moisture structure. GOES observes severe storms that threaten life and property. By continuously observing and measuring meteorological phenomena, GOES dramatically improves short-term weather forecasting and space environmental monitoring, and supports atmospheric research and numerical weather prediction modeling.

Five GOES satellites were procured, with the first launched in 1994 and stationed above the East Coast of the United States, and the second launched in 1995, now positioned above the West Coast. Each satellite has a five-year design life and is currently fully operational. A third GOES was launched in 1997 and is currently stored in orbit as a "hot spare" if either of the other two fail. Our current plans call for launches in 1999 and 2002 on an as-needed basis.

We are currently procuring two more GOES satellites, with options for two additional that meet all of today's known requirements. We adhere to a strict yet on-going requirements process with our major customer, the National Weather Service. This procurement philosophy allows us to perform cost-benefit analyses and make changes, where required, to continue to fly operational satellites that meet our nation's goals and objectives.

Robert S. Winokur
Assistant Administrator for Satellite and Information Services
National Oceanic and Atmospheric Administration

USGS Seeks NEHRP Proposals

Under the National Earthquake Hazards Reduction Program (NEHRP), the U.S. Geological Survey (USGS) is currently soliciting applications to research earthquake hazards prediction; provide earth science data and information essential to determine seismic hazards in the U.S.; and gather information needed to mitigate earthquake damage. The application deadline for FY 99 is April 1.

The NEHRP supports research related to evaluating national and regional hazards and risk; evaluating urban hazard and risk; understanding earthquake processes; providing real-time hazard assessment; and providing geologic hazards information services. The Survey has $8 million available for up to 125 awards. Grants typically range from $10,000 to $75,000, and average $55,000. The project period is one year, though some grants may be renewed for a second year. Educational institutions, private firms, private foundations, individuals, and state and local government agencies are eligible. For more information, contact *John Sims, Earthquake Hazards Reduction Program, U.S. Geological Survey, Mail Stop 905, 12201 Sunrise Valley Drive, Reston, VA 20192; (703) 648-6722*. The full announcement is available on-line at *http://www.usgs.gov/contracts/nehrp*; refer to 1434-HQ-99-PA-00061.

To speed the application process, the Survey recently announced that its External Research Program now offers on-line registration of proposals via another Web site: *http://erp-web.er.usgs.gov/register.htm*. For additional information, visit that Web site; e-mail *Keith Estes, kestes@usgs.gov*; or *fax: (703) 648-6642*. For more information about the NEHRP External Research Program, see *http://erp-web.er.usgs.gov*.

Decade for Natural Disaster Reduction

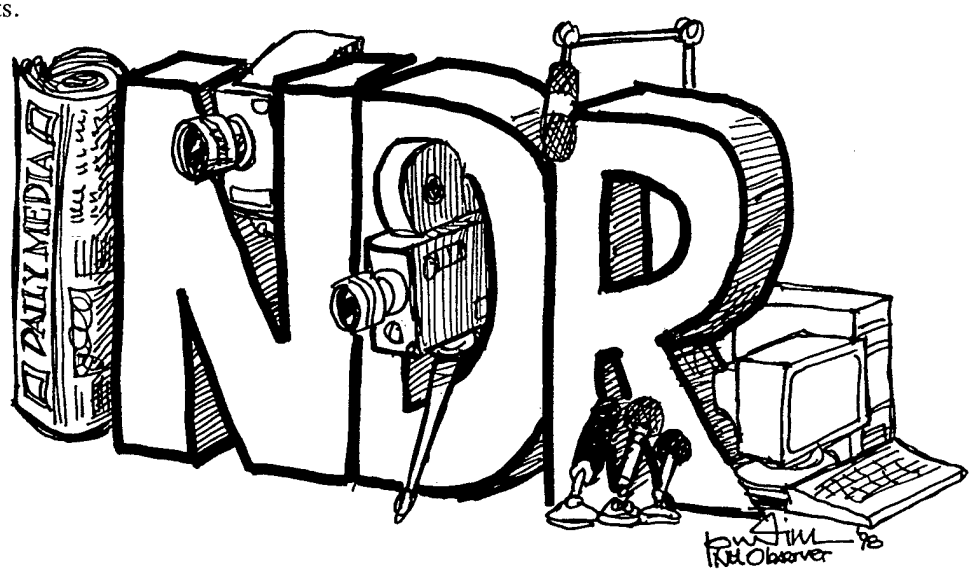
Another IDNDR Update

Latin and Central America and the Caribbean

The International Decade for Natural Disaster Reduction (IDNDR) Secretariat is now supporting a one-year pilot project for disaster prevention at the local level in Costa Rica. This joint initiative with the U.N. Development Program and UNICEF is being implemented together with the National Emergency Commission of Costa Rica and local authorities and communities in three Costa Rican regions.

Promotion and Public Awareness

The secretariat is currently developing the 1998 World Disaster Reduction Campaign entitled "Natural Disaster Prevention and the Media." Various activities are being planned, together with support material. The campaign will go beyond traditional discussions of the role of the media in disasters by placing a special emphasis on building active partnerships with different types of media and promoting community-based risk assessments.



RADIUS Project

The IDNDR Secretariat has selected nine case study cities for the RADIUS urban earthquake hazard mitigation project (see the ***Observer***, Vol. XXI, No. 5, p. 7; Vol. XXII, No. 2, p. 14): Addis Ababa, Ethiopia; Antofagasta, Chile; Bandung, Indonesia; Guayaquil, Ecuador; Izmir, Turkey; Skopje, TFYR Macedonia; Tashkent, Uzbekistan; Tijuana, Mexico; and Zigong, China. The secretariat will offer financial assistance for the case studies thanks to a substantial financial contribution from the government of Japan. The studies will be conducted from February 1998 until July 1999 and will lead to the development of practical tools for seismic risk assessment in urban areas.

In order to promote widely the work accomplished under RADIUS, the IDNDR Secretariat is inviting more cities to participate as either "associate" cities or "member" cities. Cities that have carried out a similar seismic risk assessment or are in the process of doing so can participate as associate cities. They are expected to share their valuable experience with other cities while obtaining useful information from the network. Cities that are not carrying out a similar study can nevertheless participate in RADIUS information exchange as member cities. They will be incorporated into a comparative study—"Understanding Urban Seismic Risk Around the World."

Applications for either associate or member status will be accepted until the end of March 1998. For more information on RADIUS, visit the RADIUS Web site: *http://pangea.stanford.edu/~tucker/Radius/RADIUS.html.*

IDNDR and Disaster Reduction Institutions

To promote the exchange of information and institutional collaboration, and to support research, training, and the application of disaster reduction at the local and regional levels, the IDNDR Secretariat has created, together with the University of Geneva, a Web site entitled "Directory for Disaster Reduction Institutions." It provides an inventory of scientific, technical, and research institutions active in disaster preparedness, prevention, and mitigation. By early 1998, almost 250 institutions from around the world had registered. The site's address is *http://www.unige.ch/idndr.*

IDNDR and El Niño

In mid-December 1997, the IDNDR Secretariat and other U.N. organizations hosted a press conference in Geneva to highlight a U.N. resolution on international cooperation related to the El Niño phenomenon, to emphasize the cross-sectoral approach to this issue within the U.N., to encourage dialogue with the press, and to facilitate contacts with various organizations. The resolution, entitled "International Cooperation to Reduce the Impact of the El Niño Phenomenon," calls upon relevant intergovernmental bodies and others involved in the IDNDR to actively support Decade activities to reduce the impact of the current El Niño and also asks the Secretary General to promote an international strategy for preventing, mitigating, and rehabilitating damage caused by this and future El Niño phenomena.

Subsequently, the IDNDR Secretariat convened the second meeting of the United Nations Inter-Agency Task Force on El Niño in late January 1998. Participants agreed to assemble an international meeting of experts on El Niño to determine preventive strategies for future El Niño occurrences. They also discussed an action plan that would address both medium- and long-term El Niño problems, as well as the specific needs formulated in the U.N. resolution. The action plan comprises five stages: data collection and analysis, hazard predictions, the formulation of user-oriented products, the development of communication media with users, and the generation of effective user applications and, thus, direct-user benefits. The participants agreed to produce a consolidated information/press kit that would concentrate on specific country situations and requirements. For a copy of the final report of the meeting, please contact the *IDNDR Secretariat at the address below.* The press kit, which provides an overview of United Nations actions regarding El Niño, is accessible via the United Nations Reliefweb Web site: *http://www.reliefweb.int* (click on "The Latest on El Niño").

For additional information on any of these developments, or to receive regular IDNDR updates via e-mail, contact *Scott Weber, IDNDR Secretariat, United Nations, Palais des Nations, CH-1211 Geneva 10, Switzerland; tel: (41-22) 740-0377, 798-6894; fax: (41-22) 733-8695; e-mail: scott.weber@dha.unicc.org.*

An IDNDR/STC Update

The Ninth Session of the Scientific and Technical Committee (STC) of the IDNDR was held in Geneva, October 13-17, 1997. The agenda focused on the finalization of the IDNDR Action Plan for 1998-1999 and on future arrangements for disaster reduction beyond 1999. Hence, the STC endorsed an "IDNDR Action Plan for the Final Phase of the Decade," which identifies priority actions at the national, regional, and international levels and identifies key events in the coming year (such as the Early Warning Conference to be held in Potsdam, Germany, September 1998—see the ***Observer***, Vol. XXII, No. 2, p. 17) and possible concluding events for the Decade. It outlines both thematic and regional approaches and also establishes parameters for overall evaluation of IDNDR programs.

The committee also decided to produce a final report on the Decade, which will contain an independent appraisal of the program's achievements and will recommend further development and practical application of science and technology for disaster reduction in the 21st century.

For additional information about this meeting and the work of the STC, as well as a copy of the STC's "Final Statement" from the October meeting, contact *Nicole Appel, United Nations IDNDR Secretariat, Palais des Nations, CH-1211 Geneva 10, Switzerland; tel: (41-22) 798 6894; fax: (41-22) 733 8695; e-mail: nicole.appel@dha.unicc.org.*

The Internet Page(s)

Below are some interesting Internet resources we've come across lately. A more extensive, annotated list of useful hazard/disaster Web pages is posted on the Hazard Center's World Wide Web page:
http://www.colorado.edu/hazards/sites/sites.html

http://www.colorado.edu/hazards
The Natural Hazards Center has two new full-text Quick Response reports available on-line:

http://www.colorado.edu/hazards/qr/qr102.html
QR102: ***First Aid Response to the Kobe Earthquake, January 17, 1995***, by Sharlene Adamson

http://www.colorado.edu/hazards/qr/qr103.html
QR103: ***Children's Response to Traumatic Events***, by Richard D. Allen and William Rosse

Quick response reports offer the findings of researchers who examine the immediate aftereffects of disasters. 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 for the U.S., Canada, and Mexico; $4.00 for international surface mail; and $5.00 for international air printed matter). Orders 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.*

Hurricanes, Tropical Storms, and Flooding

http://www.floods.org
The Association of State Floodplain Managers (ASFPM) is an organization of professionals involved in floodplain management; flood hazard mitigation; the National Flood Insurance Program; and flood preparedness, warning, and recovery. The group has become a respected and influential voice concerning floodplain management practice and policy in the U.S., representing flood hazard specialists from across jurisdictions and disciplines. ASFPM supports comprehensive nonstructural and structural management of the nation's floodplains and related water resources and believes that, through coordinated, well-informed efforts, the public and private sectors can reduce loss of human life and property damage resulting from flooding, preserve the natural and cultural values of floodplains, and avoid actions that exacerbate flooding. To help reach these goals, ASFPM fosters communication among those responsible for reducing flood losses; provides technical advice to governments and other entities about proposed actions or policies that will affect flood hazards; and encourages flood hazard research, education, and training.

The new ASFPM Web site includes information on how to become a member, the organization's constitution and bylaws, directories of officers and committees, a publications list, information on upcoming conferences, a history of the association, and other useful information and Internet links.

http://elnino.noaa.gov
Yet another El Niño page from the National Oceanic and Atmospheric Administration (for others, see the ***Observer***, Vol. XXII, No. 2, p. 8), this excellent Web site is titled "NOAA: El Niño Forecasts, Observations and Research." It provides forecasts and status reports regarding current conditions, a "threats assessment" for the entire U.S. and individual states, as well as information on El Niño preparedness. It includes sections entitled, "About El Niño," "What is El Niño?" "Frequently Asked Questions," "Glossary of Terms," "The Atmosphere During El Niño," and "NOAA's Role." It also covers El Niño impacts regionally, nationally, and globally; provides copious links to other research institutions and publications; and summarizes NOAA research on this phenomenon.

http://tropical.atmos.colostate.edu/forecasts/index.html
This site provides the latest forecasts from the Colorado State University climatology team headed by William Grey. The forecasts cover the 1998 Atlantic hurricane season, precipitation in the African Sahel region, and El Niño effects. Past predictions are also evaluated.

http://www.bbsr.edu/rpi
The Risk Prediction Initiative (RPI) is a research and educational program within the Atlantic Global Change Institute (AGCI) of the Bermuda Biological Station for Research. Its overall goal is to bring the international science and business communities closer together. Initially, RPI is concentrating on insurance and reinsurance on the business side and climate research on the science side, because the insurance industry is affected at all levels by climate variability and extremes,

and because the international science community is becoming more and more capable of realistic climate forecasts for some parts of the climate system. Hence, the focus of the initial RPI efforts is on the effective transfer of climate forecast information from the academic community to business, based on the creation of a greater appreciation in the business community of the utility of climate science, and further research within academia on the implications of climate forecasts for all levels of the insurance industry.

The RPI Web site includes background information about the initiative; frequently asked questions about the reinsurance industry; explanations of climate processes; forecasts of El Niño events, hurricanes, and climate change; a climate and hazard bibliography; and, of particular note, a recently published document entitled, ***Tropical Cyclones and Climate Variability: A Research Agenda for the Next Century***. A short booklet summarizing this latter publication and additional information about RPI is available from the *Risk Prediction Initiative, Bermuda Biological Station for Research, Ferry Reach GE 01, Bermuda; tel: (441) 297-1880; fax: (441) 297-2890; e-mail: rpimail@bbsr.edu.*

http://www2.nas.edu/wstb

The site of the National Research Council's Water Science and Technology Board (WSTB) provides the mission statement of the board, information about current and past projects—many of which deal with flooding and other water-related hazards—and on-line reports and other publications. The site also includes the WSTB newsletter, with current project updates and contact information.

Earthquakes and Other Geologic Hazards

http://geohazards.cr.usgs.gov/landslide.html
http://geohazards.cr.usgs.gov/eq
http://geohazards.cr.usgs.gov

To make citizens more aware of landslide hazards, the U.S. Geological Survey (USGS) recently published a digitized landslide map of the conterminous United States. The 1: 3,750,000 map shows both landslide susceptibility and incidence. The map can be viewed at the first URL above, and high resolution image files can also be downloaded from this Web site. In addition, the site offers a paper on the possible influence of the current El Niño on landslides in the West.

The Survey has also recently announced several new products related to the USGS national seismic hazard mapping program. Many new features have been added to the program's Internet Web site: *http://geohazards.cr.usgs.gov/eq*. For example, users can now look up the seismic hazard in any part of the continental U.S. by zip code, and the Survey has added a custom mapping feature through which the user can specify latitude and longitude bounds and produce customized hazard maps of the selected area. Additionally, large versions (24" x 36") of the national and western U.S. seismic hazard maps can be ordered using forms available from the Web site.

The landslide and earthquake sites are part of the USGS Central Region Geologic Hazards page—the final URL above—which also covers geomagnetism. For each topic there are images, lists of publications, fact sheets, and lots of other information.

http://wwwneic.cr.usgs.gov
http://wwwneic.cr.usgs.gov/neis/epic/epic.html

The National Earthquake Information Center (NEIC) Web site, which we've mentioned before, offers details about the center, access to its products and services, current quake information, general earthquake facts, and access to other earthquake data sources. In addition, users can now search the National Earthquake Information Services (NEIS) historical database at the second URL above. Anyone can search a given geographical area for a range of earthquakes using several, user-defined parameters (such as magnitude, dates of occurrence, etc.). The database includes earthquakes occurring from 2100 B.C. to the present.

http://peer.berkeley.edu

The new Pacific Earthquake Engineering Research (PEER) Center (see the ***Observer***, Vol. XXII, No. 2, p. 19), is a consortium of nine institutions conducting earthquake research regarding: 1) policy, planning, and economics; 2) seismic hazards; 3) performance assessment; 4) systems reliability; and 5) innovative technologies. The PEER Web site contains information about each of the collaborating institutions and about the PEER Information Services program; the PEER business and industrial partnership program; and PEER's other research, education, and outreach efforts.

http://nceer.eng.buffalo.edu/enews

The National Center for Earthquake Engineering Research (NCEER) Information Service recently added "Express News" (ENews) to the NCEER Web site. ENews is a customized electronic service that, based on a reader's self-defined interest profile, alerts readers to earthquake/hazards information selected from the most recent issue of the service's newsletter, ***NCEER Information Service News***. ENews will provide e-mail notification when the latest newsletter is posted on the Web; present a list of article titles, publications, and meetings from the newsletter that pertain to the reader's interests; and create and update a personal ENews Web page for each subscriber. The ENews personal page will contain the full text of the selected news items. Persons with questions or comments on this new service should e-mail the NCEER Webmaster, *Michael Kukla* at *nceeris@acsu.buffalo.edu*. To subscribe to ENews, just go to the Web address above.

http://vflylab.calstatela.edu/edesktop/VirtApps/VirtualEarthQuake/VQuakeIntro.html

This nifty "Virtual Earthquake" site was created by California State University–Los Angeles, students as part of an electronic desktop project. The simulation allows students and others to use seismic data to calculate the epicenter and magnitude of an imaginary earthquake in any of four geographic areas. Virtual Earthquake carefully guides the student through the calculations and then shows the actual epicenter and magnitude.

All Hazards

http://www.state.fl.us/comaff/hcd/programs/ltr/index.html
http://www.state.fl.us/comaff/hcd/index.html

Last fall, the Florida Department of Community Affairs published a booklet entitled ***Residential Construction Mitigation Program: Helping Floridians Harden Their Homes Before Disaster Strikes***. This model program guide is now available on the Web at the first address above. The Community Affairs Web site also includes information and guidelines for developing a local mitigation strategy that could be adapted by any community; see the second URL above.

http://www.metro-region.org/drc/nathaz/nathaz.html

Portland/Metro, the regional government of the Portland, Oregon, metropolitan area, is a national leader in comprehensive regional planning for hazards. This site offers insight into this program, which could serve as a model for other regions.

www.usc.edu/dept/puad/ijmed

The tables of contents of all issues of the ***International Journal of Mass Emergencies and Disasters*** (Volume 1, No. 1 [March 1983] to the present) are now available on the journal's Web site, along with other information about the journal, including descriptions of upcoming articles and special issues.

http://www.riskinstitute.org

This is the Web site of the recently established Public Entity Risk Institute (PERI) (see the ***Observer***, Vol. XXII, No. 2, p. 20), an organization whose mission is to promote better risk management—including management of risks associated with natural hazards. PERI is charged with serving public-sector organizations, as well as small nonprofit organizations and businesses. The Web site includes extensive information about the organization, its plans and programs, and links to other useful risk information on the Web.

http://www.turningpointgroup.com

Turning Point Group, Inc., an emergency management product and service company in Edmonton, Alberta, Canada, recently announced that it had established "Canada's first fully accessible bulletin board focusing on the complete range of emergency management topics." The bulletin board is intended to cover any issue related to emergency management—emergency preparedness, disaster response, and business recovery—and is open to anyone. Located on the Turning Point Web site, the bulletin board is a forum for dialogue and exchange of ideas among emergency practitioners from across Canada and the world; it will be managed by three members of Turning Point Group, Inc., all of whom have extensive experience in emergency management.

http://www.mitigation.com
hazmit-request@mitigation.com

A new mailing list called HAZMIT has been established for the global hazard mitigation community. The list is in English and both natural and anthropogenic disasters will be covered. To subscribe, send the command "subscribe" in either the

subject or body of a message to *hazmit-request@mitigation.com*. Alternatively, you may subscribe via the Web page *http://www.mitigation.com/listserv.htm*. The *mitigation.com* Web site is still under construction, but the creators intend to include sections covering news, articles and editorials, resources, discussion boards, listserves, and employment.

listserv@zipcode1.office.aol.com

The EMERGENCY-MANAGEMENT e-mail discussion list is intended for anyone interested in the protection of local communities from hazards and resulting emergencies. To subscribe, send e-mail to *listserv@zipcode1.office.aol.com*, with no subject in the subject line, and the message "subscribe emergency-management <your real name>" in the body of the message. The list is owned by Public Safety America—America Online's new all-public safety information service. However, you do not need to be an AOL member to subscribe to the EMERGENCY-MANAGEMENT list.

http://www.uwo.ca/emerg/list.html
emerg-univ@julian.uwo.ca
emerg-univ-request@julian.uwo.ca

The University and College Emergency Planning List (EMERG-UNIV) is an e-mail discussion list for persons concerned about emergency planning and management at institutions of higher education. By simply sending a note to the list address, *emerg-univ@julian.uwo.ca*, anyone can communicate with peers involved in campus emergency planning. This is a manual process, not controlled by listserve software. The list managers ask that anyone participating please post an introduction note when subscribing; to subscribe, simply send a note to *emerg-univ-request@julian.uwo.ca*, with the subject: "subscribe," and a short note stating your full name and signature information in the body of the message. Complete details about this new campus emergency management list are available from *http://www.uwo.ca/emerg/list.html*.

http://www.fiu.edu/orgs/IHC/gender/

An initial Gender and Disaster Network Web page has recently been established at Florida International University. The creators urge any persons with knowledge and interest in this area to submit information; the page is intended to be a dynamic resource for the entire community of scholars and other interested persons concerned about gender issues in disaster management.

http://www.unex.ucr.edu/EMEN/EMEN.html

EMEN—the Emergency Management Education Network—is a Web-based resource that addresses a broad range of issues regarding emergency management, including business continuity and disaster recovery. Developed by the University of California Extension, Riverside, which offers courses in these fields, EMEN offers information about the Riverside program and in-depth information on emergency management for all interested persons. It also provides links to lessons learned from previous disasters; approaches taken by various organizations to lessen the impact of disasters; and future directions the discipline might take.

http://inform.dia.govt.nz:8080/mocd

The New Zealand Office of Civil Defense deals with natural and technological hazards and emergencies, providing national co-ordination and a range of support for local government and other emergency services. The office's Web site describes the agency, its programs, and available training; offers tips on personal preparedness as well as an overview of New Zealand hazards and disasters, particularly volcanoes; provides updates on ongoing emergencies; and furnishes an on-line version of the office's fine periodical, ***Tephra Magazine***.

Something Nifty from AltaVista

Have you ever found just the information you were looking for on the Internet . . . except that it was in French (or Spanish or German), a language you hadn't read or spoken since those faded freshman days decades ago? Or have you ever wanted to send some information to a colleague in Brazil (or Mexico or Italy), but wished that you could provide it in her or his native tongue?

Well, AltaVista—the search engine company that seems to index *everything* on the Net—now provides a translation engine:

http://babelfish.altavista.digital.com

that will translate documents in English to French, Spanish, German, Italian, or Portuguese and vice-versa. You can submit plain text or refer the translator to a Web page, which it will then tackle. The translations can be somewhat crude, but they can also help make sense of an article that would otherwise remain opaque. Give it a try . . .

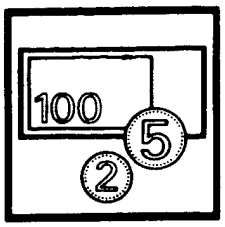
Tufts University Offers Masters Program in Humanitarian Assistance

Beginning in September 1998, the Tufts University School of Nutrition Science and Policy (SNSP) and the Fletcher School of Law and Diplomacy will offer a one-year Masters of Arts in Humanitarian Assistance degree for mid-career professionals with significant field experience in the areas of famine, conflicts, and complex emergencies. This new degree program fills a real academic need in the United States; it is a unique program with a focus on relief and development that will enable participants to learn and contribute to innovative theory, research, and policy in this expanding field. The program will reflect changes in the traditional ways of looking at relief and development brought about by recent experiences in Afghanistan, Bosnia, Burundi, Haiti, Rwanda, Somalia, and Sudan; and it reflects the growing appreciation of humanitarian assistance as a discipline in itself.

The M.A. in Humanitarian Assistance will consist of two semesters of academic work, totaling eight semester courses. Students are expected to complete the following core courses: 1) Humanitarian Aid in Complex Emergencies, 2) Applied Nutrition for Humanitarian Crises, 3) Independent Seminar in Humanitarianism, and 4) one course selected from other core courses offered by the program. The remaining four courses can be chosen from SNSP/Fletcher offerings. Students are required to write a thesis, which would typically apply theory and analytical skills learned in the program to the professional's previous experience.

This program is available to officials from government and professionals from international and private agencies. It expects to attract individuals with varied backgrounds from different countries to enhance cross-discipline and cross-cultural learning.

The program will be administered academically by a joint Fletcher-SNSP Academic Affairs Committee. Prospective students must apply to this committee through the Feinstein International Famine Center, whose director also directs this program. For further information, contact the *Admissions Committee for Masters in Humanitarian Assistance, Feinstein International Famine Center, Tufts University, 96 Packard Avenue, Medford, MA 02155; (617) 627-3423; fax: (617) 627-3428; e-mail: jhammock@infonet.tufts.edu.*



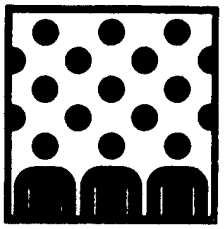
Contracts and Grants

Subsidized Inequities: The Spatial Patterning of Environmental Risks and Federally Assisted Housing, Funding agency: U.S. Department of Housing and Urban Development, $50,000, 12 months. Principal Investigators: *Susan Cutter, Michael Hodgson, and Kirstin Dow, Department of Geography, University of South Carolina, Columbia, SC 29208; e-mail: uschrl@ecotopia.geog.sc.edu.*

This research will examine three issues: 1) Are facilities handling toxic materials disproportionately located in areas with federally assisted housing? 2) Which was located in the community first—the industrial facility or the federally assisted housing? and 3) What is the relative risk from these facilities to the health and well-being of subsidized housing residents? The results of the research will provide a baseline for assessing whether federally assisted housing is disproportionately located in areas with substantial environmental risks for a selected number of metropolitan areas. It will also establish criteria for siting affordable housing.

GIS-Based Hazards Assessment for Georgetown County, South Carolina. Funding agency: South Carolina Emergency Preparedness Division, $15,000, four months. Principal Investigator: *Susan Cutter, Department of Geography, University of South Carolina, Columbia, SC 29208; e-mail: uschrl@ecotopia.geog.sc.edu.*

This project will develop a method for conducting a hazards vulnerability assessment using geographic processing techniques. It will be tested for Georgetown County, South Carolina, and will examine seismicity, flood risk, storm surge inundation, and toxic facilities. This information will be compared to demographic and socioeconomic data to determine social vulnerability. Following its development, the method will be transferable to other counties in the state.



CONFERENCES AND TRAINING

Below are 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

Lessons from the 1997 Colorado State University Flood: Emergency Preparedness at Colleges and Universities. Colorado Springs, Colorado: March 20, 1998. On July 28, 1997, Colorado State University (CSU) experienced a disastrous flash flood. All the books ordered for the fall semester were destroyed; 22 buildings were rendered uninhabitable; the lifework of hundreds of people was destroyed; the library suffered immense damage—more than 425,000 books were ruined; and more than $120 million in losses were incurred by CSU. Intending to promote the lessons of this disaster, the organizers of this conference state, "We can anticipate some problems, and if we cannot prevent catastrophes, our preparation will help us cope during and after an emergency." For more information, contact *Eve Gruntfest, Department of Geography, 1420 Austin Bluffs Parkway, P.O. Box 7150, University of Colorado, Colorado Springs, CO 80933-7150; e-mail: ecg@mail.uccs.edu; WWW: http://www.uccs.edu/~geogenvs/conference.html.*

14th International Meeting on Prevention, Preparedness, and Response to Hazardous Material Spills: "Risk Management: Closing the Loop." Sponsor: U.S. Environmental Protection Agency. Chicago, Illinois: April 5-9. 1998. Hazardous materials management includes several disciplines: hazards analysis, planning, education regarding response tools, and others. This conference will attempt to explore and integrate all these aspects of risk management and will offer a wide range of sessions on comprehensive plan development, international cooperation, transportation information and management, training, counter-terrorism, accident investigation, emergency response, and other aspects of hazardous materials response. To obtain registration information, contact *Tom Crane, Great Lakes Commission, Argus Building, 400 4th Street, Ann Arbor, MI 48103-4816l; (313) 665-9135; fax: (313) 665-4370; e-mail: tcrane@gld.org; WWW: http://www.nrt.org/nrt/hazmat98.nsf,* or *http://www.epa.gov/ceppo/pubs/postcard.html.*

Third Harvard Symposium on Complex Humanitarian Disasters: "Disaster Medical Response: Current Challenges and Strategies." Sponsors: Harvard Medical School, Harvard Forum for Disasters, and Massachusetts General Hospital. Boston, Massachusetts: April 6-7, 1998. Disasters follow few rules. In many cases, no one can predict their time, place, or magnitude, and many are now complex humanitarian emergencies occurring within austere environments and/or conflicts affecting large populations. This course will present a multidisciplinary approach to the difficult medical and public health challenges of natural and human-caused disasters and conflicts and will emphasize the unique demands of disasters involving weapons of mass destruction or terrorist attacks. The course will focus on practical approaches to disaster medicine, disaster management, and pertinent public health issues. A conference brochure is available from *Harvard MED-CME, P.O. Box 825, Boston, MA 02117-0825; (617) 432-1525; fax: (617) 432-1562; e-mail: hms-cme@warren.med.harvard.edu; WWW: http://www.feltco.com/hmscme/.*

Effective Disaster Recovery Techniques—American Public Works Association (APWA) Video Conference. April 15, 1998. APWA's educational programs include a series of video conferences that sometimes address disaster management. These satellite programs enable large audiences to share concrete ideas and practical information with highly knowledgeable speakers, while requiring minimal travel and time away from work. For information on this and other upcoming video conferences, contact *APWA, 2345 Grand Boulevard, Suite 500, Kansas City, MO 64108-2625; (816) 472-6100, ext. 3511; fax: (816) 472-1610; WWW: http://www.pubworks.org.*

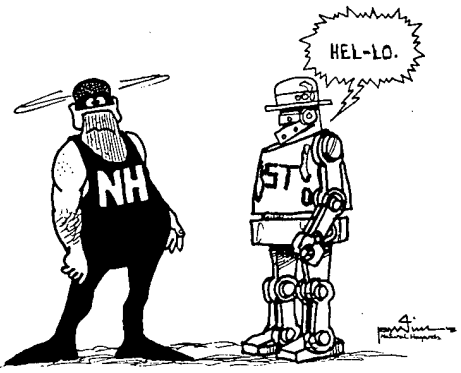
North American Snow Conference. Sponsors: American Public Works Association (APWA) and others. Edmonton, Alberta, Canada: April 19-22, 1998. The North American Snow Conference is an annual meeting of professionals seeking opportunities to gather information and improve their management plans for meeting the challenges of severe winter weather. The conference features three days of educational and technical sessions as well as opportunities to discuss innovative and efficient solutions to common chal-

lenges. Details are available from *APWA, P.O. Box 27-296, Kansas City, MO 64180-0296; (816) 472-6100; fax: (816) 472-1610; e-mail: snow@mail.pubworks.org; WWW:http://www.pubworks.org.*

Hazards and Sustainability: "Contemporary Issues in Risk Management." Sponsor: Centre for Risk and Crisis Management, Durham University Business School. Durham, U.K.: May 26-27, 1998. This is the fourth in a series of conferences intended to promote a multidisciplinary approach to risk and to consider the implications for risk management. This new conference will seek to raise managerial awareness of risk and environmental sustainability and explore issues involved in risk perception and hazard identification, the management of risk, and crisis/disaster prevention and recovery. For further information, contact *Eve Coles, Centre for Risk and Crisis Management, Durham University Business School, Mill Hill Lane, Durham City, DH1 3LB, U.K.; tel: +44 (0)191 374 1220/7326; fax: +44 (0)191 374 3386; e-mail: EveColes@durham.ac.uk.*

American Institute for Conservation of Historic and Artistic Works (AIC) 26th Annual Meeting: "Disaster Preparedness, Response, and Recovery." Arlington, Virginia: June 1-7, 1998. This AIC annual meeting will address preparedness for disasters affecting cultural property and historic structures. It will cover the latest information regarding what can be done to safeguard and recover irreplaceable cultural artifacts; resources available to save and restore damaged archival records, products, or heirlooms; the protection and restoration of paintings, sculpture, documents, and other important historical artifacts; and other issues concerning the protection of cultural property from disasters. For registration materials or other information, contact *AIC, 1717 K Street, N.W., Suite 301, Washington, DC 20006; (202) 452-9545; fax: (202) 452-9328; e-mail: infoaic@aol.com; WWW: http://palimpsest.stanford.edu/aic/.*

Space Technologies for Disaster Mitigation and Global Health. Sponsor: Institute of Electrical and Electronics Engineers—United States of America (IEEE-USA). Washington, D.C.: June 2-3, 1998. Use of communications, broadcasting, remote sensing, and global positioning satellites



offers great potential to improve our response to natural disasters and global health crises. Hence, national and international disaster and health organizations need to understand better how these technologies can benefit their missions. The goal of this two-day symposium is to explore the applicability of space technologies to disaster mitigation and global health advancement, examine the government's role and policies affecting the useful application of these technologies, and investigate private-sector opportunities to promote and provide these applications. The symposium will include demonstrations of pertinent technologies and products. Persons interested in attending should contact *Bernadette Concepcion, IEEE-USA, 1828 L Street, N.W., Suite 1202, Washington, DC 20036-5104; (202) 785-0017, ext. 335; fax: (202) 785-0835 e-mail: b.concepcion@ieee.org; WWW: http://www.ieee.org/usab/CONFERENCES/techpol98.html.*

The ABCs of Business Continuity Planning. Offered by: Survive! Business Continuity Group. Oxfordshire, England: June 15-17, 1998. This three-day residential course provides a solid background to those new to business continuity planning and a thorough review for experienced professionals. For a conference brochure, contact the *Survive! Secretariat, The Chapel, Royal Victoria Patriotic Building, Fitzhugh Grove, London SW18 3SX, U.K.; tel: 0181-874 6266; fax: 0181-874 6446; e-mail: surviveuk@cityscape.co.uk; WWW: http://www.survive.com.*

Intergovernmental Conference on Emergency Telecommunications (ICET-98). Sponsors: Government of Finland and others. Tampere, Finland: June 16-18, 1998. Delegates from all United Nations and International Telecommunication Union member states, as well as other representatives of international, national, local, and nongovernmental organizations, are invited to participate in ICET-98. The conference is expected to adopt a "Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations"—a follow-up to the Tampere Declaration of 1991, which will promote the use of telecommunications in delivering humanitarian assistance and supporting the safety and security of relief workers in the field. The complete text of the proposed document is available at *http://www.unog.ch/freq.* A brochure on ICET-98 is available from the *Secretariat of the Working Group on Emergency Telecommunications, United Nations (OCHA), Palais des Nations, CH-1211 Geneva 10, Switzerland; tel: (41 22) 917-1455/3516; fax: (41 22) 917-0208/0023; e-mail: goli.farrell@itu.int; WWW: http://www.itu.int/newsroom/projects/ICET/index.html.*

Western United States Earthquake Insurance Summit. Sponsors: Western States Seismic Policy Council (WSSPC) and Council of State Governments–West. Sacramento, California: June 25-26, 1998. The role of hazard insurance is currently a major concern among legislators, industry representatives, consumer advocates, hazards professionals, homeowners, and others concerned about the consequences of disasters. This conference will attempt to clarify the issues and develop comprehensive public policy options to address the role of insurance in mitigating earthquake hazards. The organizers anticipate preparing a volume of policy session papers to be distributed to participants before the meeting to serve as a basis for discussion. More information is available from *WSSPC, 121 Second Street, 4th*

Floor, San Francisco, CA 94105; (415) 974-6435; fax: (415) 974-1747; e-mail: wsspc@wsspc.org.

Second Annual Search and Rescue/Disaster Response Conference and Expo—SR/DR 98. Nashville, Tennessee: June 25-28, 1998. The 1998 SR/DR conference will include 110 sessions on diverse aspects of search and rescue and disaster management. The program also includes live demonstrations, a large exhibit hall, and other hands-on training. For a conference brochure, contact *SR/DR 98, 2413 West Algonquin Road, Suite 411, Algonquin, IL 60102; (888) 633-6674; fax: (847) 458-0421; e-mail: support@srdr.com; WWW: http://srdr.com.*

National Association of EMS Physicians (NAEMSP) Mid-Year Meeting and Scientific Assembly. Incline Village, Nevada: July 8-10, 1998. The National Association of EMS Physicians is now accepting abstracts for review for oral and poster presentations at the NAEMSP mid-year meeting. The full spectrum of out-of-hospital and resuscitation research will be considered, including basic science, clinical and health services research, as well as epidemiological, operational, economic, and educational studies. Physicians, research scientists, out-of-hospital care providers, and administrators are all encouraged to submit their work. All selected abstracts will be published in ***Prehospital Emergency Care***, the official journal of NAEMSP. Abstracts are due March 16. Questions and requests for abstract submission forms should be directed to the *NAEMSP Executive Office, (800) 228-3677.* Abstract forms and complete submission rules can also be found in the January 1998 issue of ***Prehospital Emergency Care***, while additional information is available via the NAEMSP Web site: *http://www.naemsp.org.*

Summer Colloquium on Hurricanes at Landfall. Offered by: The Advanced Study Program and Mesoscale, Microscale Meteorology Division of the National Center for Atmospheric Research (NCAR), and the Hurricane Research Division of the National Oceanic and Atmospheric Administration (NOAA). Boulder, Colorado, and Miami, Florida: July 13-24, 1998. This two-week colloquium, intended for graduate students and recent Ph.D. recipients, will examine the structure, dynamics, and predictability of hurricanes as they make landfall. The first week of the course will be held in Boulder, the second in Miami. The program will include lectures and exercises involving use of the extensive data sets maintained by NCAR and NOAA. The lectures will cover such topics as theoretical and numerical modeling; observation of hurricane structure, including wind, rainfall, and storm surge; hurricane interaction with land and sea environments; hurricane landfall forecasting; and societal impacts of hurricanes and hurricane forecasts. Applications are due March 16. For complete details, contact *Barbara Hansford, Advanced Study Program, National Center for Atmospheric Research, P.O. Box 3000, Boulder, CO 80307-3000; e-mail: barbm@ucar.edu.*

FEMA 1998 Technology Partnerships for Emergency Management Workshop and Exhibition. Sponsors: Federal Emergency Management Agency and others. Chicago, Illinois: July 20-23, 1998. With the theme "Technology Solutions for Emergency Management Challenges," this workshop will include presentations, discussions, and demonstrations of new, innovative products, services, and training that support emergency management. Additional information is available from the *FEMA Workshop Information Line: (800) 752-6367; WWW: http://fema.dis.anl.gov/*; or *http://fema.dis.anl.gov/info.html.*

Eleventh International Disaster Management Course. Offered by: The Disaster Management Centre (formerly, Disaster Preparedness Centre), Cranfield University. Faringdon, Oxfordshire, U.K.: July 28-September 3, 1998. The 1998 Cranfield Disaster Management Course will reflect current and future needs in disaster management by providing state-of-the-art training in the discipline through the direct transfer of current knowledge, the examination of case studies, practical student involvement in fact-based exercises, and "hands-on" training. The course increasingly emphasizes the importance of disaster reduction and the close relationship between disaster management and the processes of development. For a course brochure, contact the *Disaster Management Centre, Cranfield University, RMCS, Shrivenham, Swindon, Wiltshire SN6 8LA, U.K.; tel: +44 1793 785287; fax: +44 1793 785883; e-mail: disprep@rmcs.cranfield.ac.uk.*

Climate and History: Past and Present Variability—A Context for the Future. Norwich, U.K.: September 7-11, 1998. This Second International Conference on Climate and History will cover climate variability over the last few millennia, human adjustments to those changes, and the prospects for the future. For more information, contact *Susan Boland, Climatic Research Unit, University of East Anglia, Norwich NR4 7TJ, U.K.; tel: 01603 456161; fax: 01603 507784; e-mail: s.boland@uea.ac.uk; WWW: http://www.cru.uea.ac.uk/cru/conf.*

American Public Works Association (APWA) Annual Congress and Exposition. Las Vegas, Nevada: September 14-17, 1998. To fulfill its mission, APWA provides education to its members through a wide variety of programs (see the April 15 video conference and April 19 snow conference above). At its annual congress and exposition, for example, APWA offers more than 100 seminars on a variety of topics, including emergency management. For complete information, contact *APWA, 2345 Grand Boulevard, Suite 500, Kansas City, MO 64108-2625; (816) 472-6100; fax: (816) 472-1610; e-mail: apwa@mail.pubworks.org; WWW: http://www.pubworks.org.*

Western States Seismic Policy Council (WSSPC) 20th Annual Conference. Pasadena, California: September 15-18, 1998. The mission of WSSPC is to provide a forum to advance earthquake hazard reduction programs throughout the West and to develop, recommend, and present seismic policies and programs through information exchange, research, and education. The council promotes regional cooperation among emergency management and geoscience agencies; attempts to raise overall awareness of earthquake hazards and mitigation techniques; serves as a resource for

earthquake-related materials, information, and activities; and provides advice to all policy-implementing bodies on issues related to earthquake hazards. This year's WSSPC conference will focus on issues surrounding the development of seismic policy and will feature a field trip to seismic sites in the Los Angeles area. More information is available from *WSSPC, 121 Second Street, 4th Floor, San Francisco, CA 94105; (415) 974-6435; fax: (415) 974-1747; e-mail: wsspc@wsspc.org.*

DMIT'98—International Conference on Information Technology and Disaster Management. Sponsors: University College London and others. London, England: September 21-24, 1998. This conference will focus on the relationship between disaster management and information technology. Its aim is to forge cross-disciplinary links among people working on various aspects of natural hazard prediction, disaster mitigation, and catastrophe management, and it will address the entire spectrum of information provision—from forecasting through decision support to public education. Two parallel tutorial sessions on the impact of rare and frequent hazards will be offered in conjunction with the conference. For a conference brochure, contact *C.R.J. Kilburn, Benfield Grieg Hazard Research Centre, Department of Geological Sciences, University College London, Gower Street, London WC1E 6BT, U.K.; WWW: http://www.cs.ucl.ac.uk/staff/S.Sorensen/DMIT98.htm.*

1998 Association of State Dam Safety Officials (ASDSO) Annual Conference. Las Vegas, Nevada: October 11-14, 1998. The ASDSO invites all persons involved in ensuring dam safety to attend this year's annual conference and share their experiences. More information about the conference is available from *ASDSO, 450 Old Vine Street, Second Floor, Lexington, KY 40507; (606) 257-5140; fax: (606) 323-1958; e-mail: damsafety@aol.com.*

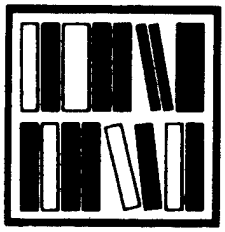
Society for Risk Analysis–Europe (SRA–E) 1998 Annual Conference: "Risk Analysis: Opening the Process." Organizers: Institut de Protection et de Sureté Nucléaire. Paris, France: October 11-14, 1998. Despite the maturation of the field of risk analysis in the last three decades, recent events have challenged the discipline's constructs, revealing how a deficit in stakeholder involvement and democratic procedures can undermine risk management decisions. The process of risk analysis itself may be radically questioned. With major political and institutional changes underway in Europe, the creation of new structures to address newly defined risks is important; however, equally important is the evolution of risk analysis so that stakeholders can have better insight and more involvement in the process. This conference will address this central issue for European risk analysis. Details are available from *Philippe Hubert, Conference Director, IPSN DPHD SEGR "SRA Paris Conference," BP 6 92265 Fontenay aux Roses Cedex-France; tel: +33 (0)1 46 54 79 11; fax: +33 (0)1 46 54 88 29.*

National Coordinating Council on Emergency Management (NCCEM) 1998 Annual Conference and Exhibit. Norfolk, Virginia: November 7-10, 1998. NCCEM, a professional organization of emergency managers, hosts an annual conference that addresses cutting-edge issues in the profession. The organizers invite interested persons to submit presentation proposals on any issues in general administration, response, planning, or recovery currently facing emergency managers. For a copy of the call for presentations or additional information about the conference, contact *NCCEM Annual Conference, 111 Park Place, Falls Church, VA 22046-4513; (703) 538-1795; fax: (703) 241-5603; e-mail: nccem@aol.com; WWW: http://www.nccem.org.*

First China-Japan Conference on Risk Assessment and Management (CJCRAM'98). Organizers: Beijing Normal University, Society for Risk Analysis-Japan, and others. Beijing, China: November 23-26, 1998. This conference will include sessions on risk analysis of natural disasters. The abstract submission deadline is April 30. Further information is available from *Huang Chongfu, CJCRAM'98 Secretary General, Institute of Resource Science, Beijing Normal University, Beijing 100875, China; tel: +86-10-62208144 or +86-10-62207656; fax: +86-10-62208178; e-mail: cjcram98@bnu.edu.cn;* or *Saburo Ikeda, CJCRAM'98 Secretary of Japan Section, Institute of Policy and Planning Sciences, University of Tsukuba, Tsukuba, Ibaraki 305, Japan; tel: +81-298-53-5380; fax: +81-298-55-3849; e-mail: srajapan@ecopolis.sk.tsukuba.ac.jp.*

American Geophysical Union (AGU) Fall Meeting. San Francisco, California: December 6-10, 1998. AGU conferences offer a wide array of programs, providing an opportunity for researchers and students to share their latest research. AGU's spring and fall meetings are unique in their interdisciplinary structure and typically involve numerous sessions on various natural hazards. For a conference brochure, contact *AGU, Meetings Department, 1998 Fall Meeting, 2000 Florida Avenue, N.W., Washington, DC 20009; (800) 966-2481 or (202) 462-6900; fax: (202) 328-0566; e-mail: meetinginfo@kosmos.agu.org; WWW: http://www.agu.org.*

Third International Conference on Seismology and Earthquake Engineering. Sponsor: International Institute of Earthquake Engineering and Seismology (IIEES). Tehran, Iran: May 17-19, 1999. As the world's urban structures and population have increased, the global seismic risk has grown correspondingly. At the same time, trade and technological interdependency among nations has also grown, and protecting our common interests against natural hazards requires all nations to share knowledge, skills, and experience. The aim of this conference is to bring together scientists and engineers from around the world to share their knowledge regarding seismology, earthquake engineering, and other aspects of earthquake risk mitigation. The organizers have issued a call for proposals, with abstracts due June 15, 1998. For a conference brochure, contact the *International Institute of Earthquake Engineering and Seismology, P.O. Box 19395/3913, Tehran, I.R. Iran; tel: (98 21) 229 5085; fax: (98 21) 229 9479; e-mail: see3@dena.iiees.ac.ir.*



RECENT PUBLICATIONS

All Hazards

Restless Earth: Disasters of Nature. *H.J. de Blij, Michael H. Glantz, Stephen L. Harris, Patrick Hughes, Richard Lipkin, Jeff Rosenfeld, and Richard S. Williams, Jr. 1997. 300 pp. For price and ordering information, contact the National Geographic Society, Online Store, P.O. Box 11303, Des Moines, IA 50340; (800) 437-5521; fax: (813) 979-6831. Copies can also be ordered on-line: WWW: http://ngsstore.nationalgeographic.com.*

As populations grow, risks increase because humans are moving into marginal lands and are more densely packed into regions prone to floods, droughts, severe storms, and other natural hazards. The first section of ***Restless Earth*** provides an overview of the types of forces that affect our planet, including severe weather of all kinds, mass earth movements, and volcanoes, then discusses briefly human habitation of at-risk areas and our response to disasters. The second section, "Severe Storms: Rain, Snow, and Wind," provides a more detailed look at severe weather, explaining storm fronts, storm movement, superstorms, lake-effect snows, thunderstorms, flash floods, lightning, tornadoes, and hurricanes. The next section, "Unstable Lands: The Terror of Temblors and Volcanoes," discusses seismic, volcanic, and other geologic phenomena. The final section, "Climatic Shifts: Omens of Global Warming?" looks at climate variability, El Niño, and other climate changes, then examines the natural and human causes of these phenomena.

Perils of a Restless Planet: Scientific Perspectives on Natural Disasters. *Ernest Zebrowski, Jr. 1997. 320 pp. $24.95, plus $4.00 shipping. Purchase from the Customer Services Department, Cambridge University Press, 110 Midland Avenue, Port Chester, NY 10573-4930; (800) 872-7423; fax: (914) 937-4712; e-mail: orders@cup.org; WWW: http://www.cup.org.*

Drawing on actual disasters from ancient to present times, ***Perils of a Restless Planet*** examines basic scientific inquiry, technological innovation, and public policy as determinants of how we view natural disasters. Noting that "science is not technology," but rather a process of seeking answers to questions, Zebrowski presents his perspectives on a selection of historical natural disasters, the scientific progress that has been made in understanding them, the scientific challenges that remain, the socioeconomic factors that influence what scientific questions may be pursued in the future, and the prospects for achieving a level of scientific understanding that may someday permit us to predict, and ideally mitigate, natural disasters. The chapters cover life on earth's crust, the evolution of science, hazards of shelter, death and life, restless seas, mass earth movements, volcanoes and asteroid impacts, deadly winds, and science and the irreproducible phenomenon. Appendices provide information on notable tsunamis, earthquakes, hurricanes, and "killer" tornadoes as well as scientific measurement units.

Disasters: The Journal of Disaster Studies, Policy and Management, Vol. 21, No. 4 (December 1997). Published four times a year. Subscriptions: $50.00, individuals; $209.00, institutions. Purchase from Journals Marketing Department, Blackwell Publishers Limited, 108 Cowley Road, Oxford, OX4 1JF, U.K.; tel: +44 (0)1865 791100; fax: +44 (0)1865 791347; WWW: http://www.blackwellpublishers.co.uk.

For 21 years, ***Disasters*** has provided peer-reviewed articles on all aspects of disaster research, policy, and management. To mark this anniversary, the editors commissioned a series of papers and reviews on developments and changes over the lifetime of the journal. The first three of these papers and reviews are included in this issue. They are: "The Study of Natural Disasters, 1977-1997: Some Reflections on a Changing Field of Knowledge," by David Alexander; "Disasters and the Information Technology Revolution," by Robin Stephenson and Peter S. Anderson; and "The Historical Development of Public Health Responses to Disasters," by Eric K. Noji and Michael J. Toole. These articles are joined by "Uncertainty and Information Flows in Humanitarian Agencies," by Aldo Benini and "Household Behavior in Response to Earthquake Risk: An Assessment of Alternative Theories," by Ali Asgary and K.G. Willis.

International Journal of Mass Emergencies and Disasters, Vol. 15, No. 3 (November 1997). Individual subscriptions to Mass Emergencies cost $20.00/year; library and organizational subscriptions are $48.00. For subscription information, contact David Neal, Department of Sociology, University of North Texas, P.O. Box 13438, Denton, TX 76203.

The entire November 1997 ***Mass Emergencies*** is a special issue devoted to a review of "Adoption and Implementation of Hazards Adjustments"—one section of the Second Assessment of Research and Applications for Natural Hazards, a massive NSF-funded study currently nearing completion (see the ***Observer***, Vol. XXII, No. 1, p. 1). The hazards adjustments portion of the assessment involved 16 academic researchers and leading disaster professionals, who here offer both an exhaustive review of existing research and an assessment of current mitigation strategies—including a comparison of adjustments based on hazard awareness programs and adjustments based on sanctions. The 20 pages of findings and recommendations are intended to help define the hazards research agenda for the next several decades.

Responding to Domestic Violence and Disaster: Guidelines for Women's Services and Disaster Practitioners. *Elaine Enarson.*

1997. 26 pp. Free. Copies can be requested from the author, Disaster Preparedness Resources Centre, University of British Columbia, 4225 Glenhaven Crescent, North Vancouver, BC, Canada V7G 1B8; (604) 929-6062; fax: (604) 929-4535; e-mail: enarson@unixg.ubc.ca.

This paper discusses emergency planning and response in 77 Canadian and U.S. domestic violence programs that responded to such disasters as the cross-border flooding in the Red River Valley in 1997, floods in Quebec, the floods along the Mississippi in 1993, and the Northridge earthquake in California in 1994. The study found that women experiencing violence are particularly vulnerable during disasters and that domestic violence programs affected by major disasters experienced diminished resources and increased demand for services for six months to a year following these events. The study also found that many of these grassroots women's services were generally poorly prepared for disasters but showed a high interest in increasing their disaster readiness. The report includes two sets of standards: *Disaster Planning Guidelines for Shelters* and *Women, Disaster and Domestic Violence: Planning Guidelines for Programs, Coalitions and Disaster Practitioners.*

Emergency Planning on the Internet. *Rick Tobin and Ryan Tobin. 1997. 230 pp. $49.00, plus $6.00 shipping. Copies can be purchased from Government Institutes, Inc., 4 Research Place, Suite 200, Rockville, MD 20850; (301) 921-2355; fax: (301) 921-0373; e-mail: giinfo@govinst.com; WWW: http://www.govinst.com.*

Emergency Planning on the Internet was written to assist emergency professionals in locating and learning to use the vast resources available on the Internet. It also describes how they can benefit from information on these sites in their day-to-day work. Chapters look at available information, tools of choice, Internet emergency databases, how to locate information, using the Internet for exercises, creating a Web site, and the future of emergency management on the Internet. The authors have compiled, evaluated, and categorized emergency management sites that address such diverse issues as business recovery, climate change, emergency communications, warnings, emergency management in general, insurance, and transportation.

Disaster Recovery Yellow Pages. *1998. 320 pp. $98.00, plus $3.00 shipping. An update is also available six months after purchase for $24.95, plus $2.95 shipping. Purchase from the Order Department, Systems Audit Group, Inc., 25 Ellison Road, Newton, MA 02159; (617) 332-3496; fax: (617) 332-4358.*

The ***Disaster Recovery Yellow Pages*** is a directory of recovery services throughout the United States and Canada, including over 3,000 vendors in 350 categories of service. The directory is divided into six sections: "Services and Consulting"; "Hotsites, Mobile Sites and Teller Facilities"; "Emergency Equipment Sources"; "Software for Planning, Data Recovery, etc."; "Training, Publications, Supplies, Associations"; and "Alphabetic Listing." It also includes a tutorial on preparing disaster recovery plans.

Ready to Respond: A Disaster Preparedness Manual for Volunteer Centers. *34 pp. $10.00.*

Ready to Respond: Volunteer Centers—Partners in Disaster Response. *33 pp. $10.00.*

Both documents can be purchased as a set for $14.95 from the Points of Light Foundation, 1737 H Street, N.W., Washington, DC 20006; (800) 272-8306 or (703) 803-8171; e-mail: volnet@aol.com; WWW: http://www.pointsoflight.org.

The Points of Light Foundation works with over 500 volunteer centers nationwide that address various social problems. The first document, which notes that these centers will always have a role whenever disaster strikes, was created to share recent lessons learned by these centers and to offer guidance on preparing for and responding to disasters. Underwritten by funding from the Allstate Foundation, it contains sections on determining level of preparedness for both a center and a community, strengthening relationships with other organizations, arranging mutual assistance with neighboring volunteer centers, preparing in advance, recruiting and supporting volunteers, understanding what to do during a disaster, and implementing long-term disaster recovery.

The companion volume, also underwritten by the Allstate Foundation, outlines steps for creating a collaborative disaster response effort among volunteer centers and local agencies and for creating a disaster response plan, including designating a disaster response coordinator, becoming part of the community disaster response plan, developing a response activation checklist, creating a disaster preparation and evacuation plan, developing a public information plan, establishing a volunteer referral plan, and maintaining a disaster preparedness training program.

The 30-Minute Quick-Response Guide to Managing Walk-In Disaster Volunteers. *1995. 48 pp. $5.50 (Canadian), plus shipping; $4.00 per copy if 20 copies or more are ordered. Available from the Canadian Red Cross, 400-4710 Kingsway, Burnaby, BC, Canada V5H 4M2; (800) 565-8000; fax: (605) 431-4275.*

The ***30-Minute Guide*** is an operations manual for volunteer coordinators who must organize large numbers of walk-in volunteers during a disaster. Some disasters, such as a flood that is predicted several days in advance, allow time to organize. Others, such as a sudden earthquake, tornado, or flash flood, give little or no warning. Each incident requires a different management strategy. The first section of this book deals with sudden events and outlines strategies for getting started, conducting a needs assessment, screening and placing volunteers, and providing orientation. The second section deals with slow-onset events and includes information on recruitment as well as the activities in the first section. The third section, entitled "Staying on Track," provides strategies for training, scheduling, providing orientation to service supervisors, recognizing the work of volunteers, conducting evaluations, and keeping records.

The Long Road to Recovery: Community Responses to Industrial Disaster. *James K. Mitchell, Editor. 1996. 307 pp. $30.00, plus $4.00 shipping. Copies can be purchased from Brookings Institution Press, Publications Order Department, Department 029, 1775 Massachusetts Avenue, N.W., Washington, DC 20036; (800) 275-1447 or (202) 797-6258; fax: (202) 797-6004; e-mail: bibooks@brook.edu; WWW: http://www.brook.edu.*

This book examines community responses to industrial disasters that produced unprecedented consequences—phenomena that seem to be occurring more frequently and lasting longer than ever before. It is the result of long-term case studies of seven industrial disasters that occurred between 1949 and 1989: the mercury contamination in Minamata, Japan; underground fires in Centralia, Pennsylvania; an airborn dioxin release in Seveso, Italy; the toxic gas release in Bhopal, India; the nuclear reactor fire at Chernobyl, Ukraine; the destruction of oil facilities during the Gulf War; and the Exxon Valdez oil spill. Contributors stress the need for long-term postdisaster assessment and the creation of information clearinghouses that focus on industrial disasters.

Emergency Preparedness in Health Care Organizations. *Linda Young Landesman, Editor. 1996. 194 pp. $35.00, plus $7.95 postage and handling. Available from the Joint Commission on Accreditation of Healthcare Organizations, P.O. Box 75751, Chicago, IL 60675-5751; (630) 792-5800; fax: (800) 676-3299.*

Emergency Preparedness in Health Care Organizations is designed to help hospitals and other health care organizations get ready to face major disasters and emergencies. It covers how to: develop a proactive emergency management plan; gain a clear understanding of key disaster planning issues, including command center operation, communications, community interaction, and emergency department operation; make critical decisions regarding

implementation of the disaster plan; train staff; and comply with accreditation standards. Almost half of the book recounts various actual hospital emergency response situations.

Working Bibliography on Hazards and Geographic Information Processing Techniques. *Compiled by Richard F. Collins, Michael S. Scott, Deborah Thomas, and Michael E. Hodgson. Hazards Research Laboratory Discussion Paper #10. 1997. 18 pp. $2.00. Available from the Hazards Research Laboratory (HRL), Department of Geography, University of South Carolina, Columbia, SC 29208; (803) 777-1699; fax: (803) 777-4972; e-mail: uschrl@ecotopia.geog.sc.edu; WWW: http://www.cla.sc.edu/geog/hrl/home.html.*

This working bibliography is divided into general works, remote sensing (natural hazards, technological hazards, hazards in general), geographic information systems (general, natural hazards, technological hazards, social responses), and spatial modeling and simulation. A complete list of HRL publications is available from the Web site above.

The Department of Defense on Disasters

Expanded Emergency Management Roles and Missions for the National Guard. *Ronald R. Henley. NTIS Product ID: AD-A326 565/9INF. 1997. 44 pp. $21.50, paper; $10.00, microfiche.*

The Use of DOD Medical Assets in International Humanitarian and Disaster Relief Operations. *David E. Gilliland. NTIS Product ID: AD-A325 429/9INF. 1996. 101 pp. $28.00, paper; $14.00, microfiche.*

Enhancing the Strategic Roles of the National Guard: Domestic Support Operations. *Isaac D. Pickering. NTIS Product ID: AD-A326 775/4INF. 1997. 39 pp. $21.50, paper; $10.00, microfiche.*

Allowing Access to the Selected Reserve for Domestic Disaster Relief Operations. *Lee W. Freund. NTIS Product ID: AD-A326 496/7INF. 1997. 34 pp. $21.50, paper; $10.00, microfiche.*

Domestic Support Operations: Military Roles, Missions, and Interface with Civilian Agencies. *Stanley W. Johnston, Jr. NTIS Product ID: AD-A326 931/3INF. 1997. 36 pp. $21.50, paper; $10.00, microfiche.*

Interagency Cooperation: FEMA and DOD in Domestic Support Operations. *C.E. Fischer. NTIS Product ID: AD-A331 147/9INF. 1997. 58 pp. $21.50, paper; $10.00, microfiche.*

A Post-Hurricane Andrew Review of Trends in Department of Defense Disaster Relief Operations. *Terry R. Youngbluth. NTIS Product ID: AD-A309 018/0INZ. $21.50, paper; $10.00, microfiche.*

Any of these publications can be ordered from the *National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161; (703) 487-4650; fax: (703) 321-8547; e-mail: orders@ntis.fedworld.gov.*

Abstracts of these papers are available from the NTIS Ordernow Web page: *http://chaos.fedworld.gov/ordernow.*

Floods

Designing the Bayous: The Control of Water in the Atchafalaya Basin, 1800-1995. *Martin Reuss. 1998. 490 pp. $25.00. Copies of the book can be purchased from the U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954; (202) 512-1800; fax: (202) 512 2250; e-mail: gpoaccess@gpo.gov; WWW: http://www.access.gpo.gov. Specify stock number 008-022-00312-6.*

Designing the Bayous, written by U.S. Army Corps of Engineers Senior Historian Martin Reuss, discusses the conflicts, natural forces, and human interventions that have shaped the Atchafalaya Basin. This swamp, home to the largest floodway in the world, figures significantly in the plan to prevent catastrophic flooding in New Orleans, Baton Rouge, and other population centers along the lower Mississippi River. Not surprisingly, this region has spawned intense engineering, legal, and political disputes. Reuss examines local, state, and federal efforts to reconcile overlapping and conflicting purposes in the development of the basin. He explores the impact of the Flood Control Act of 1928, the development of the Old River Control Structures, and the Corps of Engineers' evolving approach to water resources planning, particularly in the context of the challenges presented in the environmental era.

Red River Flooding: Short-Term Measures. *1997. 65 pp. Free. Copies can be obtained from the International Joint Commission, United States Section, 1250 23rd Street, N.W., Suite 100, Washington, DC 20440; fax: (202) 736-9015; e-mail: bevacquaf@ijc.org.inter.net. The complete text of the report is also available on the commission's Web site: http://www.ijc.org.*

Recognizing the devastation caused in both the U.S. and Canada by the 1997 Red River flood, the governments of the two nations asked the International Joint Commission to examine the causes and effects of this damaging event. This interim report identifies measures that can be implemented in the near-term to reduce future flood damage. It presents historical information on floods in the basin; describes existing flood protection works, emergency structural works, and measures taken to prepare for the floods; and highlights some of the social and environmental impacts of the flooding. The report also contains a draft plan of remaining work to be done by the International Red River Basin Task Force, including 40 recommendations for short-term actions to ensure better preparedness for the spring of 1998.

Mandatory Purchase of Flood Insurance Guidelines. *Publication No. FEMA 186. 1997. 180 pp. Free. Copies can be requested from the Federal Emergency Management Agency, Publications Distribution Facility, 8231 Stayton Drive, Jessup, MD 20794; (800) 480-2520 or (202) 646-3484; fax: (301) 497-6378.*

Title V of the Riegle Community Development and Regulatory Improvement Act of 1994 substantially amends the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973, tightening the mandatory purchase provisions for flood insurance. Most significantly, this legislation imposes substantial new obligations on lenders and their services. These guidelines provide the information needed for lenders to meet those requirements, describing the National Flood Insurance Program, coverage availability, the mandatory purchase law, its affects on condominiums and cooperatives, and key provisions.

Floods: Causes, Effects and Risk Assessment. *1997. 102 pp. Free. Copies can be requested from Celia Luthi Powell, Corporate Relations, Partner Re, P.O. Box HM KX, Bermuda; (441) 292-0098; fax: (441) 292-5588; e-mail: celia_luth@partnerre.com.*

Partner Re, a specialized catastrophe reinsurer, created this document to encourage the insurance industry to tackle the problem of flooding, asserting that "the vast majority of insurance clients—homeowners and businesses—expect and deserve solutions from our industry, especially as they become more aware of the true exposure and the enormous risk river floods in particular pose to their livelihoods." ***Floods*** provides a guide for assessing flood risks, particularly those associated with rivers. It notes that today, scientific knowledge in meteorology and hydrology can be used by insurers for fair ratings and risk mitigation. Further, it notes that government regulation of construction and land use, as well as protection and precaution by the individual, must complement insurance in providing protection. The report also describes recent significant floods, types of hazard, types of vulnerability, flood

protection, insurance and reinsurance aspects, and other causes of flood. Appendices provide rainfall data for selected places, a checklist of risk factors, a list of major historical floods, and a directory of flood-related Web sites.

When the Waters Recede: Rescue and Recovery During the Great Flood. *Dan Guillory. 1996. 110 pp. $14.95. Copies can be purchased from Iowa State University Press, 2121 South State Avenue, Ames, IA 50014-8300; (800) 862-6657 or (515) 292-0155; fax: (515) 292-3348.*

When the Waters Recede is a collection of essays about the impacts of the Great Flood of 1993 along the Mississippi River. Guillory's essays look at natural disasters, provide a primer on floods, discuss causes and consequences of the floods, talk about identification with the river and its sense of place, examine the impacts on many small communities; and describe the individuals he met who were willing to share their experiences with him.

A Flood of Reports

The Natural Hazards Center recently received several reports from the National Weather Service (NWS) regarding severe weather events and the role of the NWS in forecasts and warnings. Printed reports include:

- ***The Fort Collins Flash Flood of July 28, 1997: Service Assessment Initial Report.*** *1997. 76 pp. Free.*
- ***Disastrous Floods from the Severe Winter Storms in California, Nevada, Washington, Oregon, and Idaho: December 1996-January 1997.*** *Natural Disaster Survey Report. 1997. 118 pp. Free.*
- ***Evaluation of the Reported January 11-12, 1997, Montague, New York, 77-Inch, 24-Hour Lake-Effect Snowfall.*** *Special Report. 1997. 58 pp. Free.*

They can be obtained from *your local National Weather Service Office* or the *Customer Service Core, National Weather Service Headquarters, 1325 East West Highway, Silver Spring, MD 20910.*

The following three reports can also be obtained at the address above or accessed via the Internet at *http://www.nws.noaa.gov/om/nwspub.htm*. They are in PDF format and require an Adobe Acrobat™ viewer, which can be downloaded at the site:

- ***Hurricane Fran: August 28-September 8, 1996.*** *Service Assessment. 1997. 52 pp. Free.*
- ***Hurricane Bertha: July 5-14, 1996.*** *Service Assessment. 1997. 68 pp. Free.*
- ***March 1, 1997, Arkansas Tornado Outbreak.*** *1997. 25 pp. Free.*

Subdivision Design in Flood Hazard Areas. *Planning Advisory Service Report Number 473. 1997. 62 pp. $32.00. Reports can be ordered from the American Planning Association, 122 South Michigan Avenue, Suite 1600, Chicago, IL 60603; (312) 431-9100; fax: (312) 431-9985; e-mail: bookservice@planning.org; WWW: http://www.planning.org.*

The best way to reduce flood damage and protect the environment is to avoid building in floodplains. But economic, political, and market pressures, as well as the legal limitations of some government-imposed prohibitions on development, make building in floodplains the only option in some communities. This report advocates an approach to residential subdivision design in flood hazard areas that uses the full range of available land-use planning techniques to reduce flood damage and minimize impacts on floodplains. The first chapter offers an overview of the environmental and policy contexts within which floodplain management and subdivision planning, regulation, and design take place. The second describes the natural functions of the floodplain and the range of tools available to protect them. Chapter three characterizes land-use planning activities and their relationship to floodplain management, while chapter four provides detailed descriptions of useful site design and planning techniques, including a design hierarchy that recommends four approaches to subdivision development in or near floodplains. The report also includes additional details on how the National Flood Insurance Program and the Community Rating System relate to land-use and site planning.

Climate Change

Does the Weather Really Matter? The Social Implications of Climate Change. *William James Burroughs. 1997. 242 pp. $24.95, plus $4.00 shipping. Purchase from the Customer Services Department, Cambridge University Press, 110 Midland Avenue, Port Chester, NY 10573-4930; (800) 872-7423; fax: (914) 937-4712; e-mail: orders@cup.org; WWW: http://www.cup.org.*

In ***Does the Weather Really Matter?*** Burroughs explores how weather impacts our lives. He combines historical perspective and economic and political analysis to determine the relevance of weather and climate change. He begins by analyzing whether the frequency of extreme weather events is changing and then discusses the consequences of those changes, as well as the chaotic nature of climate and how this unpredictability can impose serious limits on how we plan for the future. Finally, Burroughs asks, "What types of serious, even less predictable changes are around the corner?"

Climate Change Information Kit. *Information booklet, 20 pp. Information sheets, 60 pp. 1997. Free. To obtain copies or additional information materials, contact the United Nations Environment Programme, Information Unit for Conventions, Geneva Executive Center, C.P. 356, 1219 Châtelaine, Switzerland; tel: (41 22) 979-9244/9196/9111; fax: (41 22) 797 3464; e-mail: iuc@unep.ch; WWW: http://www.unep.ch.*

Noting that "the 1990s have been a time of international soul-searching about the environment," this kit provides general information on the issues related to global climate change. It describes basic concepts of global warming and outlines how the United Nations Global Climate Change Convention attempts to deal with these issues. The information sheets discuss the climate system, including the greenhouse effect, climate change, and past climates; the consequences of predicted changes, including food security, sea level rise, and climatic disasters and extreme events; the Climate Change Convention; and activities to limit greenhouse gas emissions.

Hurricanes

Hurricanes: Their Nature and Impacts on Society. *Roger A. Pielke Jr. and Roger A. Pielke Sr. 1997. 279 pp. $79.95, plus $2.50 shipping. Copies can be ordered from John Wiley & Sons, U.S. Distribution Center (USDC), 1 Wiley Drive, Somerset, NJ 08875-1272; (732) 469-4400; fax: (732) 302-2300; WWW: http://www.wiley.com.*

Have hurricanes in the U.S. become more severe in the last decade? Losses due to hurricanes in the 1990s total more than those incurred in the 1970s and 1980s combined, even after adjusting for inflation. The fact is, however, in the past few decades, the U.S. has experienced a decrease in the frequency of severe storms, although we are growing increasingly more vulnerable to hurricane impacts due to demographic changes. This book defines and assesses the hurricane problem in the U.S. to enable decision makers to formulate and implement effective public policies. The authors use the concept of vulnerability to define the problem as a joint function of extreme environmental phenomena and human exposure to them. ***Hurricanes*** looks at the complementary roles of

science and policy; discusses difficulties in defining the hurricane problem; describes the tropical cyclone phenomenon; explains hurricane forecasts; examines hurricane impacts; discusses societal responses; and evaluates the Hurricane Andrew forecast, impacts, and responses. Appendices suggest additional reading, provide economic and casualty data for the U.S., include data on tropical storm and hurricane incidence in the Atlantic Ocean, list names of tropical cyclones around the world, offer a guide for local hurricane decision makers, and explain scientific units of measure.

Florida Hurricanes and Tropical Storms. *Revised Edition. John M. Williams and Iver W. Duedall. 1997. 148 pp. $12.95. Order from the University Press of Florida, 15 Northwest 15th Street, Gainesville, FL 32611-2079; (800) 226-3822 or (352) 392-1351; fax: (352) 392-7302; e-mail: mv@upf.com.*

This volume details the 181 tropical cyclones that have struck Florida since 1871, including 72 hurricanes and 78 tropical storms. It explains the terminology used by meteorologists, demonstrates the use of the Saffir/Simpson scale, and examines the historical and geographical contexts of each hurricane and tropical storm. ***Florida Hurricanes and Tropical Storms*** provides statistics for each storm, eyewitness accounts, photos, 10-year tracking charts, and a hurricane preparedness checklist. It also explains evacuation procedures and types of property damage produced by these storms and includes references and a list of Internet sites for further information.

Effects of Hurricane Andrew on Natural and Archeological Resources: Big Cypress National Preserve, Biscayne National Park, Everglades National Park. *Technical Report NPS/NRGCC/NRTR/96-02. $14.00, microfiche; $35.00, paper. Order from the National Technical Information Service; 5285 Port Royal Road, Springfield, VA 22161; (703) 487-4650; fax: (703) 321-8547; e-mail: orders@ntis.fedworld.gov; WWW: http://www.ntis.gov.*

This report describes the conditions of the natural resources—timber, water, wildlife, etc.—located in the National Park System in south Florida following Hurricane Andrew. It also recommends the immediate and long-term protection of threatened resources and the collection of data that will provide better understanding of the effects of humans and natural disturbances on the parks. The eye of Hurricane Andrew passed through the three parks, and although some effects on natural resources appeared drastic, initial ecosystem responses seemed normal. Many trees sustained severe damage, although many defoliated trees resprouted leaves within weeks. There were no massive die-offs of wildlife, although nonnative plants were undoubtedly spread into natural areas.

Windstorms

Windstorm Mitigation Manual for Light Frame Construction. *1997. 104 pp. Free. Copies can be requested from the Illinois Emergency Management Agency, Mitigation Section, 110 East Adams, Springfield, IL 62701; (217) 782-8719; fax: (217) 782-2589; e-mail: jhorton@pop.state.il.us.*

On April 19, 1996, several tornadoes cut through Illinois, causing widespread damage and destruction. A partnership of government and commercial interests produced this manual to improve mitigation against these storms. Written for homeowners and contractors, it describes wind, construction connections, light frame construction, the "wind uplift chain," the stability of the total residence, miscellaneous problems, and wind-resistant design. The manual notes that the cost of incorporating basic windstorm mitigation construction techniques adds only 1% to 3% to the cost of new residential construction. Numerous drawings illustrate the construction techniques discussed.

Avalanches

Proceedings of the International Snow Science Workshop: ISSW '96. *1997. 327 pp. $30.00, plus $7.50 shipping. Copies can be purchased from the Canadian Avalanche Association, Box 2759, Revelstoke, BC, Canada V0E 250; (604) 837-2435; e-mail: canav@avalanche.ca; WWW: http://www.avalanche.ca.*

The 1996 International Snow Science Workshop was held in Banff, Alberta, Canada, and this document contains the proceedings from that meeting. Sessions were held on the management and analysis of snow, avalanche, and climate data; hazard management and public warning; mountain weather and snowpack; snow cover stability, avalanche initiation, and forecasting; blowing snow; instruments and methods; ski and backcountry operations; avalanche dynamics and defense; case histories; and avalanche control, rescue, and education.

Earthquakes

The Recovery and Reconstruction Plan of the City of Los Angeles: Evaluation of Its Use after the Northridge Earthquake. *1997. 46 pp. $10.00.*

The Recovery and Reconstruction Plan of the City of Los Angeles: Evaluation of Its Use after the Northridge Earthquake—Appendices. *1997. 95 pp. $15.00.*

Both documents are available from Spangle and Associates, Urban Planning and Research, 3240 Alpine Road, Portola Valley, CA 94028-7592; (415) 854-6001; fax: (415) 854-6070. A summary report and the full appendices are also available on the World Wide Web: http://www.batnet.com/spangle/.

According to the authors, this study is the first to evaluate the actual postdisaster effectiveness of planning in advance for long-term recovery and reconstruction. This type of planning is now mandated by the state of Florida for communities subject to hurricane damage and is proposed for most communities by the American Planning Association and the Federal Emergency Management Agency in an upcoming report. The study, which draws on interviews with city officials, found that after the Northridge earthquake Los Angeles benefited from the preparation of a recovery and reconstruction plan because city staff knew what to do and proceeded with recovery tasks with a minimum of confusion. The report describes the Los Angeles Recovery and Reconstruction Plan, lead agency responsibilities, the Northridge earthquake and use of the plan as a postearthquake guide, actual actions taken and those outlined in the plan, postearthquake revisions to the plan, evaluation of the plan, and general findings. The appendices contain summaries of interviews with key public officials.

WSSPC Annual Conference Policy Session Papers. *1997. 123 pp. $20.00. Available from the Western States Seismic Policy Council (WSSPC), 121 Second Street, 4th Floor, San Francisco, CA 94105; (415) 794-6435; fax: (415) 974-1747; e-mail: wsspc@wsspc.org; WWW: http://www.wsspc.org.*

The theme of the 1997 WSSPC annual conference, held in Victoria, British Columbia, May 4-7, 1997, was "development of seismic policy." Three policy sessions were held: building codes and seismic zonation, hazard loss estimation and scenario development, and earthquake and hazards insurance. The policy session papers examine these topics.

Illusions of Safety: Culture and Earthquake Hazard Response in California and Japan. *Risa Palm and John Carroll. 1998. 136 pp. $35.00, plus $3.00 shipping. Available from HarperCollins Academic Home Page, Order Fulfillment Center, c/o Westview Press, 5500 Central Avenue, Boulder, CO 80301-2877; (800) 386-5656; fax: (303) 449-3356; e-mail: academic.orders@harpercolllins.com; WWW: http://www.hcacademic.com/westview.*

Illusions of Safety surveys cultural influences on earthquake risk response in both the United States and Japan. The attitudes of Japanese and California respondents are compared and analyzed to determine their effects upon individual responses to earthquakes. Survey responses and the authors' firsthand experience of the reactions to the Kobe, Japan, earthquake in 1995 and the Northridge, California, earthquake in 1994 are presented. Results indicate that the Japanese generally prefer a communal approach to earthquake response, whereas Americans (more specifically Californians) place more emphasis on household self-sufficiency. The authors examine how these reactions influence public policy for earthquake preparedness and response in each country.

Critical Decisions: Evacuating Hospitals After the 1994 Northridge Earthquake. *Robert A. Olson, Carl H. Schultz, Kristi L. Koenig, and Eric Auf der Heide. 1998. 67 pp. $10.00, plus $3.00 shipping. Copies can be purchased from Robert Olson Associates, Inc., 4164 Los Coches Way, Sacramento, CA 95864; (916) 978-7300; fax: (916) 978-7301; e-mail: robtatroa@aol.com.*

This report examines evacuation decision-making processes in hospitals following the 1994 Northridge, California, earthquake. While many evacuation studies have been conducted, very few have examined medical facilities and the problems administrators face in deciding to fully or partially evacuate a facility. Among the principal findings of this study were that pre-event emergency plans and procedures were important, but little use was made of them at the height of the crisis; emergency response training was important for instilling knowledge of appropriate actions; the perception of damage by on-duty personnel was the driving force in deciding to evacuate; and clear delegations of authority and procedures for decision making during off-hours facilitated rapid actions.

Hospital Earthquake Preparedness Guidelines. *Publication #PB97002BAR. 1997. 196 pp. $10.00, plus $6.00 shipping.*

Living and Lasting on Shaking Ground: Earthquake Preparedness for People with Disabilities. *Publication #P97001BAR. 1997. 150 pp. $6.00, plus $4.00 shipping.*

Both publications can be purchased from the Association of Bay Area Governments, P.O. Box 2050, Oakland, CA 94604; (510) 464-7900.

The first document, produced by the California Office of Emergency Services Earthquake Program, is a revision of a 1991 publication that reflects recent regulatory changes for hospitals in California and incorporates studies of medical facility performance in the Northridge earthquake. Developed with extensive contributions from health care professionals across the state, the guidelines discuss all phases of preparedness: hazard mitigation, response planning, and business resumption. They address both a hospital's ability to resist damage and respond to disaster, and a hospital's role in larger community emergency planning and exercises. A series of checklists assists in developing plans and in training personnel according to the California Standardized Emergency Management System. Appendices provide supplemental information on structural and nonstructural performance categories, communications options, and the Hospital Emergency Incident Command System. Completing the volume are an extensive bibliography on emergency planning for hospitals and a list of additional resources.

Living and Lasting on Shaky Ground was originally created by the Independent Living Resource Center San Francisco with two purposes—first, to be used as a preparation tool for people with disabilities and their friends and service providers; second, to be employed as a training tool for organizations or neighborhood groups that include people with disabilities. The California Office of Emergency Services Earthquake Program adapted the document for wider use because of the guide's useful compendium of suggestions for meeting the needs of a broad and inclusive range of disabilities. General information on earthquakes and their effects is followed by before and after checklists for specific disabilities. Other sections discuss reducing hazards in living environments and stockpiling supplies. Also included are neighborhood planning strategies, materials for use in earthquake readiness workshops and training sessions, and lists of resources available to those involved in preparedness activities.

Social, Economic, and System Aspects of Earthquake Recovery and Reconstruction: First Year Report. *James Beck, Anne Kiremidjian, George Mader, and Robert Reitherman. 1997. 236 pp. For price and availability, contact the California Universities for Research in Earthquake Engineering (CUREe), 1301 South 46th Street, Richmond, CA 94804-4698; (510) 231-9478; fax: (510) 231-5664; e-mail: parsh@nisee.ce.berkeley.edu.*

The CUREe-Kajima Cooperative Research Program includes two research areas: structural implications of ground motions; and the social, economic, and system aspects of earthquake recovery and reconstruction. This report outlines the latter effort. Section 1 addresses research on business recovery after earthquakes. Section 2 examines decision support, geographic information systems, damage distribution analyses, and other tools in the recovery process. Section 3 provides perspectives on governmental and business recovery after earthquake, and Section 4 discusses innovative methods and technologies for earthquake recovery and reconstruction.

California Earthquake Loss Reduction Plan: 1997-2001. *Publication No. SSC 97-02. 1997. 49 pp. $15.00. To order a copy, contact the California Seismic Safety Commission, 1900 K Street, Suite 100, Sacramento, CA 95814; (916) 322-4917; fax: (916) 322-9476; e-mail: sscbase@aol.com; WWW: http://www.seismic.ca.gov.*

Under the California Earthquake Hazards Reduction Act of 1986, the California Seismic Safety Commission is required to update the state earthquake loss reduction plan and recommend new policies for managing that state's earthquake risk. This plan is designed to guide the state executive and legislative branches in determining priorities and overall implementation strategies for seismic safety. It incorporates lessons gained from the Northridge earthquake in 1994 and the Kobe, Japan, quake a year later, and focuses on 11 elements: geosciences, research and technology, education and information, economics, land use, existing buildings, new construction, utilities and transportation, preparedness, emergency response, and recovery. It identifies 44 strategies and 120 initiatives to be accomplished by the private sector and state and local governments.

Earthquakes and Their Interpretation: The Campaign for Seismic Safety in California, 1906-1933. *Dissertation. Carl-Henry Geschwind. 1996. 262 pp. For students and faculty: $32.50, microfilm/microfiche; $36.00, paperbound; $46.50, hardbound. For nonacademics: $46.00, microfilm/microfiche; $57.50, paperbound; $69.50; hardbound. Order from University Microfilm International, 300 North Zeeb Road, Ann Arbor, MI 48106; (800) 521-3042.*

In 1906, San Francisco and its surrounding area were devastated by a major earthquake; yet, Californians did not view earthquakes as an ongoing hazard. After a milder quake hit in 1933 in the southern part of the state, Californians reacted differently, rapidly enacting local and statewide building codes that required earthquake-resistant construction. This doctoral dissertation traces what happened between 1906 and 1933 to produce this profound shift in public attitudes toward seismic hazards in the state. Geschwind outlines the seismic policy events following 1906, when a small number of scientists and engineers developed a new understanding of earthquake risk in California, gradually acquiring the means to prevail in the public policy arena after 1933. He argues that hazards and their implications for human action are never obvious, but rather open to interpretation and debate. At the same time, he maintains that the occurrence of natural disasters

profoundly affects the persuasiveness of opposing interpretations of risks.

Other Geological Hazards

Landslides Hazard Mitigation with Particular Reference to Developing Countries. *1995. 124 pp. £10. Available from the House Services Manager, Royal Academy of Engineering, 29 Great Peter Street, Westminster, London SW1P 3LW, U.K.; tel: 0171 222 2688; fax: 0171 233 0054; WWW: http://www.raeng.org.uk.*

In 1993, the Royal Academy of Engineering held a conference that brought together Britain's landslide experts to examine that hazard within the context of the International Decade for Natural Disaster Reduction. In particular, the participants sought to define opportunities for the alleviation of rapid-onset landslide hazards. The papers in this proceedings volume cover "The Relevance of Landslide Hazard to the International Decade for Natural Disaster Reduction," "Landslides and Local Geology," "Water and Landslides," "The Assessment of Sub-Aerial Landslide Hazards," "Submarine Landslides," "Volcanic Landslides and Related Phenomena," "Landslide Hazard Assessment," and "Possible Actions to Help Developing Countries Mitigate Hazards Due to Landslides."

Slide Mountain or the Folly of Owning Nature. *Theodore Steinberg. 1995. 220 pp. $13.95, paperback; $30.00, hardbound; plus $3.95 shipping. Copies can be purchased from Fulfillment Services, CPFS, P.O. Box 7780-4721, Philadelphia, PA 19182-4721; (800) 822-6657; fax: (800) 999-1958; e-mail: orders@cpfs.pupress.princeton.edu; WWW: www.ucpress.com.*

The name of this book is derived from a fictional legal dispute, recounted by Mark Twain, over land in Nevada named Slide Mountain. It describes an attempt by a group of practical jokers to convince a U.S. attorney that a landslide had caused one person's land to slip down on top of another's, burying the former's land to a depth of 38 feet. They convinced the attorney to plead the case of the owner of the buried land, while the owner of the land that slid was claiming title to both pieces of property. Heeding the absurdity of this tale, Steinberg concludes that real estate is not as real, or lasting, as it may seem. In short, nature can at times make ownership a precarious, even unreal affair, leaving us all in the shadow of Slide Mountain. Steinberg studied case law to uncover important lessons in property ownership relating to nature and our ability to control it. He discusses land disputes in the Blackbird Hills of Nebraska along the Missouri River, legal wrangling to define what makes a lake different from a stream in order to determine who owned a stretch of oil-rich land that bordered the hard-to-define body of water, ownership of desert underground water rights, cloud seeding and claims of ownership of weather, and claims of ownership of the air in New York City.

NYU Press Seeks Disaster Essays

Steven Biel of Brandeis University is currently editing a collection of essays for NYU Press on the cultural history of disasters and would like to hear from potential contributors. The volume will focus on the U.S. and will feature essays that explore the ways in which disasters have revealed or shaped social and political conflicts, beliefs, ideologies, and myths. The goal is to reach scholars in a variety of disciplines as well as nonacademic readers. Please send brief descriptions (500 words) of proposed essays to *Steven Biel, American Studies Department, Brandeis University, MS 005, Waltham, MA 02254; e-mail: sbiel1030@aol.com.* The deadline for proposals is April 15, 1998.

CD-ROM for Disaster Educators Available

With a click of a mouse, emergency managers, fire safety educators, and community volunteers can now gain instant access to brochures, fact sheets, activity guides, and other resources for raising awareness and educating the public about disasters. The ***Disaster Preparedness and Mitigation Library*** from the Federal Emergency Management Agency (FEMA) is now available on CD-ROM. FEMA's CD offers:

- Ready-to-print materials on floods, earthquakes, hurricanes, winter storms, wildland fire, and other disasters—many of the documents have been co-produced with the American Red Cross and the National Oceanic and Atmospheric Administration;
- Information on disaster preparedness, mitigation, response, and recovery, including new brochures on how to reduce financial hardship caused by disasters;
- Emergency planning guidance for businesses and manufacturers—FEMA's "Good Ideas Book"—with activities, case studies, and resources for educating children, homeowners, and others.

In addition to PDF files, which are similar to images printed from the Internet, the ***FEMA Disaster Preparedness and Mitigation Library*** on CD-ROM includes high-resolution printer files and instructions for producing high-quality color brochures at a professional print shop. PC and Mac computer discs are included in the package.

This CD is specifically designed for disaster educators who provide information about multiple hazards and who want to produce high-quality educational materials for large audiences. People wanting single copies of materials can obtain them from the FEMA Web site: *http://www.fema.gov.* To order the ***FEMA Disaster Preparedness and Mitigation Library*** on CD-ROM, call *(202) 736-1648; fax: (202) 331-3003; or e-mail valca_valentine@oar-wash.com.*

These materials are being made available by FEMA's Community and Family Preparedness Program, which also recently published ***Practical Ideas for Strengthening Community & Family Disaster Preparedness Programs—A Report on FEMA's Community & Family Preparedness Conference, July 1997.*** This report is also available from *http://www.fema.gov.* People without access to the Web or others desiring more information about the Community and Family Preparedness Program, can contact the program manager, *Ralph Swisher, FEMA, Training Division, Preparedness, Training, and Exercises Directorate, Room 625, 500 C Street, S.W., Washington, DC 20472; e-mail: ralph.swisher@fema.gov.*

THE 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, and the Institute for Business and Home Safety. 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 *March 20, 1998.*

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http://www.colorado.edu/hazards

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