

SELECTED U.S. RESOURCES ON HAZARDS AND DISASTERS

prepared by
Claire B. Rubin, Consultant
U.S. Environmental Protection Agency

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I. SELECTED DOCUMENTS ON DISASTERS AVAILABLE FROM U.S. GOVERNMENT AND OTHER SOURCES:

The following documents were selected as a representative sampling of general interest, recent, and readily available publications in several major categories of hazards and disasters. For the most part, the emphasis is on natural hazards and disasters, although some references to technological hazards and emergencies have been included. Ordering information is provided on page 11.

GENERAL

Advisory Committee on the International Decade of Natural Disaster Reduction (IDNDR). Confronting Natural Disasters: An International Decade for Natural Hazard Reduction. Washington, D.C.: National Academy Press, 1987.

Advisory Committee on the IDNDR. Reducing Disasters' Toll: The United States Decade for Natural Disaster Reduction. Washington, D.C.: National Academy Press, 1989.

Bernknopf, Richard L. et al. "Societal Value of Geologic Maps." U.S. Geological Survey Circular 1111. Washington, D.C.: U.S. Government Printing Office, 1993. [Free copy available from Books and Open-File Reports Section, USGS, Federal Center, Box 25425, Denver, CO 80225.]

Hays, Walter W. (ed.) "Facing Geologic and Hydrologic Hazards." U.S. Geological Survey, Professional Paper 1240-B, 1992. Washington, D.C.: U.S. Government Printing Office.

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U.S. Geodynamics Committee. "Mount Rainier: A Decade Volcano." Washington, D.C.: National Academy Press, 1994.

U.S. National Committee for the Decade for Natural Disaster Reduction. A Safer Future: Reducing the Impacts of Natural Disasters. Washington, D.C.: National Academy Press, 1991.

USGS. Special publications: Water and Waste Water posters (set of six posters); "Geographic Information Systems" (pamphlet); Volcanoes (pamphlet); and Earthquakes (pamphlet); and numerous monographs on geologic hazards.

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EARTHQUAKES

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EQE, Inc. Structural Concepts and Details for Seismic Design. Prepared under contract to the U.S. Dept of Energy. LLNL Report UCRL-CR-106554; 1991.

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FEMA. "Earthquakes-Safety Tips," Washington, D.C. FEMA E-110, Item # 8-0821. July 1983. (leaflet)

FEMA. "National Earthquake Hazards Reduction Program," Washington, D.C. FEMA-230, Item # 8-1012. June 1992. (leaflet)

FEMA. "Reducing the Risks of Non-Structural Earthquake Damage: A Practical Guide," Washington, D.C. FEMA-74, # 8-0486, June 1985; # 8-0919, February 1990. (booklet)

FEMA. "Guidebook for Developing a School Earthquake Safety Program," Washington, D.C. FEMA-88, Item # 8-0511. January 1990.

FEMA. "Comprehensive Earthquake Preparedness Planning Guidelines: Large City," Washington, D.C.: FEMA-146, Item # 8-0651. September 1987.

FEMA. "Earthquake Damaged Buildings: An Overview of Heavy Debris and Victim Extrication," Washington, D.C. FEMA-158, Item # 8-0715. September 1988.

FEMA. "Rapid Visual Screening of Buildings for Potential Seismic Hazards: A Handbook," Washington, D.C. FEMA-154, Item # 8-0696. July 1988.

FEMA. "Rapid Visual Screening of Buildings for Potential Seismic Hazards: Supporting Documentation," Washington, D.C. FEMA-155, Item # 8-0714. September 1988.

- FEMA. "Establishing Programs and Priorities for the Seismic Rehabilitation of Buildings" (A Handbook), Washington, D.C. FEMA-174, Item # 8-0813. May 1989. "A Handbook for Seismic Evaluation of Existing Buildings," Washington, D.C. FEMA-178, Item # 8-0817. June 1989.
- FEMA. "Non-Technical Explanation of the NEHRP Recommended Provisions," Washington, D.C. FEMA-99, Item # 8-0563. October 1990. (book)
- NIST. "List of Publications 1969-1991; Panel on Wind and Seismic Effects." NIST Special Publication 835, 1992. Washington, D.C.: U.S. Government Printing Office.
- USGS. "A Guide to the Products and Services of the National Earthquake Information Center." Washington, D C.: GPO; 1994. (pamphlet)
- USGS. "National Earthquake Hazard Reduction Program (NEHRP) Post-Earthquake Investigations." Open-File Report 93-528. Washington, D.C.: GPO, 1993.
- USGS. "The Next Big Earthquake--Are You Prepared?" Reston, VA: USGS; 1990. (pamphlet)
- USGS. Procedures for Estimating Earthquake Ground Motions, Professional Paper 114, Washington, D.C.: GPO. 1980.
- USGS. "Parkfield, California Earthquake Prediction Scenarios and Response Plans," Open-File Report 87-192, Washington D.C.: GPO; 1987.
- USGS. The San Andreas Fault System, California, Professional Paper 1515, Washington, D.C.: GPO; 1990.
- USGS. "U.S. Earthquakes: Earthquake Geology and Geotechnical Effects," Open-File Report 94. Washington, DC, 1994.
- USGS. Geologic Principles for Prudent Land Use-- A Decision-Makers Guide for the San Francisco Bay Region, Professional Paper 946, Washington, D.C.: GPO, 1983.
- USGS. "Lessons Learned from the Loma Prieta, California, Earthquake of October 17, 1989." Circular 1045. Washington, D.C.: GPO; 1989.

EMERGENCY MANAGEMENT

ICMA. Emergency Management: Principles and Practices for Local Government.

Washington, D.C.: International City/County Management Association, 777 No. Capitol St., S.E., Washington, DC. 20002. 1991.

FEMA. "Are You Ready?" Washington, D.C. FEMA H-34, Item # 8-0908, September 1991. (handbook)

FEMA. "Disaster Planning Guide for Business and Industry," Washington, D.C. FEMA-141, Item # 8-0628. (manual)

FEMA. "Emergency Preparedness Checklist," Washington, D.C. FEMA L-154, Item # 8-0872; Braille, #0-0223; Recorded, 0-0224. (leaflet)

Organization of American States (OAS). "Primer on Natural Hazard Management." Prepared by the OAS Natural Hazards Project, with support from the Office of Foreign Disaster Assistance, U.S. Agency for International Development (AID). Washington, D.C.: Organization of American States, 1990.

OAS. "Disasters, Planning, and Development: Managing Natural Hazards to Reduce Loss." Prepared by the OAS Natural Hazards Project, with support from the Office of Foreign Disaster Assistance, U.S. Agency for International Development (AID). Washington, D.C.: Organization of American States, 1990.

OAS. "Course on the Use of Natural Hazards Information in the Preparation of Investment Projects." Prepared by the OAS Natural Hazards Project, with support from the Office of Foreign Disaster Assistance, U.S. Agency for International Development (AID). Washington, D.C.: Organization of American States, 1987.

ENVIRONMENTAL AND HEALTH EFFECTS

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CDC. "CDC and American Red Cross Natural Disaster Health Impact Surveillance System." Report No. 4, July 1993.

French, J.G., H. Falk, and G.C. Caldwell. "Examples of CDC's Role in the Health Assessment of Environmental Disasters," in The Environmental Professions; 1982; Vol 4, pp 11-14.

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Environmental Protection Agency;" Report to Congress. Policy Planning and Evaluation (PM-219); EPA-230-R-93-005; June 1993. Washington, D.C.: U.S. GPO.

U.S. EPA. "Hazardous Substances In Our Environment: A Citizen's Guide to Understanding Health Risks and Reducing Exposure."

FLOODS

FEMA. "A Unified National Program for Floodplain Management." FEMA 100; March 1986.

FEMA. "Coastal Construction Manual," Washington, D.C. FEMA-55, Item # 8-0373. February 1986.

FEMA. "Design Manual for Retrofitting Flood Prone Residential Structures," Washington, D.C., FEMA-114, Item # 3-0127. September 1986.

FEMA. "Emergency Action Planning Guidelines for Dams," Washington, D.C. FEMA-64, Item # 8-0459. February 1985.

FEMA. "Floodproofing Non-Residential Structures," Washington, D.C. FEMA-102, Item # 3-0126, May 1986.

FEMA. "Reducing Losses in High Risk Flood Hazard Areas: A Guidebook for Local Officials," Washington, D.C. FEMA-116, Item # 3-0131.

FEMA. "Retrofitting Flood Prone Residential Structures," Washington, D.C. FEMA L-153, Item #3-0132. June 1987. (brochure)

Federal Interagency Floodplain Management Task Force. "Floodplain Management in the United States: An Assessment Report." Vol. 1: Summary, 69 pp; Vol. 2: Full Report, 475 pp. 1992. Available from FEMA, Washington, D.C. 20472.

HIGH WINDS/HURRICANES

FEMA/Flood Insurance Administration (FIA). "Building Performance: Hurricane Andrew in Florida: Observations, Recommendations and Technical Guidance." Washington, D.C.: FEMA. Publication Number FIA-22. February 1993.

FEMA/FIA and State of Hawaii Office of Civil Defense and Kauai County. "Building Performance: Hurricane Iniki in Hawaii: Observations, Recommendations, and Technical Guidance." Washington, D.C. FEMA. Publication Number FIA-23. March 1993.

FEMA/FIA. "Learning From Hurricane Hugo: Implications for Public Policy. Washington, D.C., FEMA/FIA. June 1992.

FEMA. "Hurricane—Floods," Washington, D.C. FEMA L-107, Item # 8-0864. March 1990. (leaflet)

FEMA. "Hurricane—Safety Tips," Washington, D.C. FEMA L-105, Item # 0-0017. May 1991. (leaflet)

FEMA. "Protecting Manufactured Homes from High Winds," Washington, D.C. FEMA TR-5, Item # 8-0248. July 1986.

FEMA. "Tornado Protection—Selecting and Designing Safe Areas in Buildings," Washington, D.C. FEMA TR-83B, Item # 8-0164. June 1990.

FEMA. "Tornado Safety Tips," Washington, D.C. FEMA L-148, Item # 0-0164. (leaflet)

Grazulis, Thomas P. "Significant Tornadoes 1680-1991; A Chronology and Analysis of Events." St. Johnsbury, Vermont: Environmental Films, Inc. 1993.

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National Research Council, Panel on the Assessment of Wind Engineering Issues in the United States. "Wind and the Built Environment: U.S. Needs in Wind Engineering and Hazard Mitigation." Washington, D.C.: National Academy Press. 1992.

National Institute of Standards and Technology (NIST). "Wind Load Provisions of the Manufactured Home Construction and Safety Standards--A Review and Recommendations for Improvement." Prepared by Richard D. Marshall of NIST; published May 1993. NIST Document # NISTIR 5189.

NIST. "How Houses Can Better Resist High Wind." NSBIR 77-1197. 1977.

NIST. "Building to Resist the Effect of Wind." Vol. 1 Overview. NBS Building Science Series 100. 1977.

NIST. "List of Publications 1969-1991; Panel on Wind and Seismic Effects." NIST Special Publication 835, 1992. Washington, D.C.: U.S. Government Printing Office.

MEDICAL AND PUBLIC HEALTH

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Binder, S. and Sanderson, L.M. "The Role of the Epidemiologist in Natural Disasters," in Annals of Emergency Medicine, Vol. 16, pp. 1081-1084, 1987.

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CDC. "Beyond the Flood: A Prevention Guide for Personal Health and Safety." Atlanta, GA: CDC; 1993.

CDC. "Injuries and Illnesses Related to Hurricane Andrew -- Louisiana, 1992." Morbidity and Mortality Weekly Report. Vol. 42, pp. 271-292; 1993.

Noji, E.K. "Lessons Learned from International Earthquakes for U.S. Earthquake Preparedness," in Proceedings of the Fourth National Environmental Health Conference. Atlanta, Georgia: Agency for Toxic Substances and Disease Registry, 1990. Pages 127-135.

Noji, E.K. "Medical Consequences of Earthquakes: Coordinating Medical and Rescue Response." in Disaster Management, Vol. 4, pp. 32-40, 1991.

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Noji, E.K. "The Role of Epidemiology in Natural Disaster Reduction: An Interdisciplinary Approach. In Proceedings of the 2nd U.S.- Japan Natural Disaster Reduction Workshop, September 23-27, 1991. Tokyo: Japan Science and Technology Agency, 1992; pp. 327-345.

MITIGATION

FEMA. "Disaster Mitigation—Reducing Losses of Life and Property through Model Codes," Washington, D.C. FEMA-209, Item # 3-0163. (brochure)

FEMA. "Making Hazard Mitigation Work—A Practical Handbook for State Officials," Washington, D.C. FEMA/DAP-12, Item # 8-0569. September 1990.

Lawrence Livermore National Laboratory. Proceedings of Dept. of Energy (DOE) Natural Phenomena Hazards Mitigation Conferences: 1985; 1989; 1991. LLN Reports No. CONF-8510118; CONF-89010192; and CONF-9110122.

TECHNOLOGICAL HAZARDS AND EMERGENCIES

Environmental Health Center, National Safety Council. "Chemicals, The Press, and The Public; A Journalist's Guide to Reporting on Chemicals In The Community." 1989. Available from EHC/NSC, 1050 17th St, N.W. (#770), Washington, D.C. 20036.

National Research Council. "Guidelines for Developing Community Emergency Exposure Levels for Hazardous Substances." Washington, D.C. National Academy Press, 1993.

National Response Team. "Oil Spill Contingency Planning: National Status." A Report to the President. Washington, D.C.: National Response Team; October 1990. Available from EPA (5101), Washington, D.C. 20460.

Organization for Economic Co-Operation and Development. "Guiding Principles for Chemical Accident Prevention, Preparedness and Response." Paris: OECD, 1992. Monograph No. 51. Order from OECD Environment Directorate, Environmental Health and Safety Division, 2, rue Andre-Pascal, 75775 Paris Cedex 16, France.

U.N. Environment Programme (UNEP). "APELL: Awareness and Preparedness for Emergencies at Local Level; A Process for Responding to Technological Accidents." 1989. France, Paris: Industry and Environment Office, UNEP, Tour Mirabeau-39-43, Quai Andre Citroen, 75739 Paris, Cedex 15-France.

[These last two citations are products of international organizations; the U.S. was a contributor or sponsor of the document cited.]

U.S. EPA. "Developing a Hazardous Materials Exercise Program: A Handbook for State and Local Officials." NRT-2. Sept 1990. Available from EPA (5101). Washington D.C. 20460.

U.S. EPA. "Hazardous Materials Emergency Planning Guide." National Response Team, NRT-1; March 1987.

U.S. EPA. "Hazmat Team Planning Guidance. Washington, D.C.: EPA; EPA/540/G-90/003, August 1990. Single copies are available at no charge from ORD Publications, Center for Environmental Research Information, 26 W. Martin Luther King Drive, Cincinnati, Ohio 45268. Tel: (513) 569-7562.

U.S. EPA. "Risk Communication About Chemicals In Your Community;" A Manual for Local Officials. EPA 230/09-89-066. December 1989. Available from EPA (5101) Washington, D. C. 20460.

U.S. EPA, FEMA, and U.S. Dept of Transportation. "Technical Guidance for Hazards Analysis;" Emergency Planning for Extremely Hazardous Substances. December 1987. Washington, D.C.: U.S. Government Printing Office, 1991.

WEATHER AWARENESS AND WARNINGS

A brief list of documents produced by the National Oceanic and Atmospheric Administration (NOAA) is as follows:

"Survival in a Hurricane" (wallet card); NOAA publication # 70027. Also available in Spanish (NOAA PA 85006).

"NOAA Weather Radio" NOAA PA 76015

"Spotter's Guide for Identifying and Reporting Severe Local Storms," NOAA PA 81011

"Watch Out, Storms Ahead" NOAA PA 82004

"Heat Wave: NOAA PA 85001

"Natural Hazard Watch/Warning Poster" NOAA PA 86001; English/Spanish

"Winter Storms...The Deceptive Killers" NOAA PA 91002/ARC 4467

"Are You Ready for Winter Storms?" NOAA PA 91003/ARC 4464. Also available in Spanish, NOAA PA 91004/ARC 4464S; and a Poster (English/Spanish) NOAA PA 91005/ARC Poster 947

"Flash Floods and Floods...The Awesome Power!" NOAA PA 92050/ARC 4493

"Are You Ready for a Flood or a Flash Flood?" NOAA PA 92059. Also available in Spanish, NOAA PA 92060/ARC 4458S; and Poster (English/Spanish) NOAA PA 92062/ARC Poster 945.

"Tornadoes ... Nature's Most Violent Storms" NOAA PA 92052/ARC 5002.

"Are You Ready for a Tornado?" NOAA PA?ARC 4457. Also available in Spanish, NOAA PA 92085/ARC 4457-S; and a Poster (English/Spanish) NOAA PA 92061/ARC Poster 944.

"Thunderstorms and Lightning... the Underrated Killers!" NOAA PA 92053? ARC 5001.

"Are You Ready for a Thunderstorm?" NOAA PA 93051/ARC 5009. Also available in Spanish, NOAA PA 93052/ARC 5009S; and a Poster (English-Spanish) NOAA PA 93053/ARC Poster 4001.

"Advanced Spotter's Field Guide: NOAA PA 92055.

"Mariners's Guide to Marine Weather Services." NOAA PA 92056.

OTHER PUBLICATIONS

Heyman, B.N., C. Davis, and P.F. Krumpe. "An Assessment of Worldwide Disaster Vulnerability," in Disaster Management: A Journal of Contingency Planning for Large-Scale Emergencies [published in U.K.]; Vol 4, No. 1; 1991; pp. 3-14.

NIST. "NIST Structural Research Publications, 1984-1989." (Robert D. Dikkers, Editor). NISTIR 90-4297. May 1990.

U.S. Dept. of Agriculture, Forest Service. "Annual Forest Fire Statistics."
Prepared by Forest and Aviation Management Unit, P.O. Box 96090, Washington, D.C. 20090-6090.

A number of relevant publications in the fields of hazards and disasters have been supported by Federal agencies, but were produced and/or distributed by universities or non-profit organizations. A representative sampling of such organizations is as follows:

- The Organization of American States (OAS) - products supported by Office of Foreign Disaster Assistance (OFDA), Agency for International Development, Dept. of State.

- Disaster Research Center (DRC), University of Delaware - products supported by the National Science Foundation, FEMA and others.
- Natural Hazards Research and Applications Information Center (NHRAIC), University of Colorado at Boulder - supported by several Federal agencies.
- Earthquake Engineering Research Institute (EERI) in Oakland, CA - products supported by NSF, FEMA and other agencies.
- Wind Engineering Research Center at Texas Tech. University, Lubbock, TX - products supported by the National Science Foundation.
- National Center for Earthquake Engineering Research (NCEER) at the State University of New York at Buffalo-supported by the National Science Foundation, primarily.

II. MAIN SOURCES OF FEDERAL AND FEDERALLY-SPONSORED DOCUMENTS:

NATIONAL TECHNICAL INFORMATION SERVICE (NTIS)

NTIS maintains a vast collection of federally-funded documents and other products, such as software and CD-ROM disks; it issues numerous catalogs and lists of products and operates a remote bulletin board system, called FEDWORLD.

Many of NTIS holdings deal with hazards and disasters. For example, NTIS provides lists of environmental publications and of "U.S. Government Software for Microcomputers." NTIS is an important source of readily-available documents and other media regarding research and technology. All documents and services are available on a cost basis. Contact by mail: NTIS, Springfield, VA 22161. Telephone: (703) 487-4630.

SUPERINTENDENT OF DOCUMENTS, U.S. GOVERNMENT PRINTING OFFICE

Address: P.O. Box 371954, Pittsburgh, Pennsylvania, 15250-7954. This also is a major source of documents that are produced by Federal agencies.

CENTERS FOR DISEASE CONTROL

A sizeable number of publications on the topics of medical and public health needs and issues are available from the Centers For Disease Control, National Center for Environmental Health, Atlanta Georgia, 30333. Contact the CDC for a list of publications and other resources, such as software programs.

III. COMPUTER-BASED BULLETIN BOARDS, DATA BASES, AND NETWORKS ON HAZARDS AND DISASTERS:

Among the many technical assistance resources available related to environmental concerns and hazards and disasters of all types, there are many electronic-access forms of assistance available. This is just a brief description of some of the main sources, and new sources are appearing almost daily. The two main categories are federal and private sources.

FEDERAL DATA BASES

There are a large number of federal data bases, many of which can be accessed through the remote bulletin board system called FEDWORLD, which is maintained by the National Technical Information Service (U.S. Dept. of Commerce). FedWorld serves as a gateway that allows you to connect electronically to many Federal departments and agencies. From FEDWORLD, you can access more than 100 computer bulletin board systems operated by the U.S. Government. To connect to FEDWORLD, you need is a personal computer and a modem. Use your communications software package to dial FEDWORLD at (703) 321-8020. Set your parity to NONE, Data Bits to 8 and Stop Bit to 1 (N,8,1). Set your terminal emulation to ANSI or VT-100. If you have technical problems or questions, please call (703) 487-4608 weekdays, 10:00 a.m. to 4:00 p.m.

Some of the potentially pertinent databases and bulletin board systems are those of the Federal Emergency Management Agency (FEMA), U.S. Environmental Protection Agency (EPA), U.S. Geological Survey (USGS) and National Oceanic and Atmospheric Administration (NOAA). They are highlighted on the printed list on the following pages.

The Federal Emergency Management Agency (FEMA) maintains a bulletin board called State and Local Emergency Management Data Users Groups (SALEM-DUG), which can be accessed by modem at (202) 646-2887 at (N,8,1). SALEM-DUG includes pertinent software and shareware that can be downloaded; conferencing capability to facilitate information exchanges on current disasters and other topics; and message exchanges. It is an interactive bulletin board system.

OTHER GOVERNMENTAL AND PRIVATE BULLETIN BOARD SYSTEMS (BBS)

There are several major international electronic mail services, most of which involve a fee for accessing the network as well as costs for phone calls. Two such services are BITNET, which is an international services used mainly by universities, and Internet, which is a fast-growing service used by businesses, government agencies, academic researchers, and others.

Two non-U.S., English-language BBSs are Canada's Emergency Information Preparedness Exchange (EPIX) at (604) 291-4921 or FIDO 1:153/162 and Australia's Disaster Management Information Exchange (ADMIX) at (054) 262-594 or FIDO 3:632/387 and the Wireless Institute Civil Emergency Network (WICEN) at 03 802-0913 or FIDO 3:532/404. All systems operate at 2400 baud, no parity, 8 data bits, 1 stop bit.

The Natural Hazards Center of the University of Colorado at Boulder produces an electronic newsletter called Disaster Research (DR). DR, which is updated at least monthly, provides a variety of information about natural hazard and disaster research, including research projects proposed or underway, special requests from researchers or practitioners, and forthcoming conferences.

DR currently is sent directly via Internet to approximately 500 individual researchers, research centers, hazards managers, government officials, international organizations, and other interested persons in the U.S., and abroad. In addition, it is re-posted on several other networks and bulletin board systems around the world, which means it reaches a considerably larger number than those on the direct mailing list.

DR is sent to numerous international organizations, including DHA/UNDRO in Geneva, where it is posted on UNINET; VITA where it is posted on VITANET; the Australian Emergency Management Institute and the Center for International Research on Communications and Information Technology (CIRCIT) in Melbourne, where it is posted on the Australian Disaster Management Information Exchange; the Centre for Resources and Environmental Studies, Australian National University; the Asian Disaster Preparedness Center in Bangkok; Disaster Preparedness Resource Center, University of British Columbia, Canada; Disaster Prevention Research Institute, Kyoto University; Katastrophenforschungsstelle, University of Kiel, Germany; the Centre for Research on the Epidemiology of Disasters, University of Louvain, Belgium, and numerous academic research centers in the United Kingdom, Europe, the Americas, New Zealand, Africa, and Asia.

The Natural Hazards Center also has available on-line a complete publications list (of approximately 200 items), a list of sources of information (non-governmental organizations, university programs and centers, government agencies, and overseas organizations) regarding hazards and disasters, as well as a list of useful periodicals regarding disasters. To obtain any of these lists, send a request to Mr. David Butler, NHRAIC, Campus Box 482, University of Colorado, Boulder, CO 80309-0482. The E-mail address is: hazards.@vaxf.colorado.edu.

Volunteers in Technical Assistance (VITA), in Arlington, Virginia, supports a remote bulletin board system called VITANET, which is free to users. VITANET can be

accessed by modem at (703) 527-1086 (N,8,1). VITA is an international service organization that provides situation reports and other timely information regarding non-U.S. hazards and disasters.

State Systems. At the State level, there is a Colorado HazardNet BBS (303) 465-5013, and in California, the State Office of Emergency Services maintains a number of electronic services, mainly for use of state and local government officials within the state of California. For additional information, call Mr. Art Botterell at the California Office of Emergency Services in Sacramento via voice phone (916) 262-1600 or via Internet at: ACB@OES.CA.GOV.

Internet is a worldwide collection of thousands of computer networks that can intercommunicate. Users of any of the Internet networks can reach users on any of the other networks. For example, BITNET, which is a network system used by universities worldwide, is tied to the Internet but is not an integral part of it.

This global web of networks is having a revolutionary impact on communications among researchers and professionals in a wide range of disciplines, including those involved in natural hazards mitigation. Internet users can seek information, disseminate information, and communicate with each other.

Although this is not the place for a full description of Internet and how to access it, it is worth noting that several sources of earthquake information are available via Internet. One is an earthquake information source that is available on Internet via a server called "gopher." (The gopher server provides access to organized information menus and directories.) This service is provided by National Information Service for Earthquake Engineering (NISEE) at the University of California at Berkeley, California. Access to the Earthquake Information menu requires gopher client software on your computer and an Internet connection. At the prompt, type "gopher nisee.ce.berkeley.edu." If you use Internet and have only electronic mail capability and not gopher service, you may direct E-mail correspondence to "eercclib - @eerc.berkeley.edu."

Another useful earthquake information source available on the Internet system is the QUAKELINE data base, which is an on-line earthquake library catalog. The ability to search and browse through this extensive data base is available at no cost to the Internet community. However, one must have access to system capability beyond basic E-mail capability -- i.e., to have access to the TELNET system. For additional information, send E-mail correspondence to: NERNCEER@UBVM.cc.buffalo.edu. Or contact the National Center for Earthquake Engineering Research Information Service, 304 Capen Hall, State University of New York at Buffalo, NY 14260-2200, Telephone: (716) 645-3377; FAX: (716) 645-3379.

IV. U.S. HAZARD/DISASTER INFORMATION AND DATA CENTERS:

The following is a selected list of sources of information and data that are of general interest and utility to persons responsible for natural hazards and disasters. This is not an exhaustive list, since there are many specialized centers throughout the United States.

DROUGHT

The International Drought Information Center (IDIC) collects, analyzes, packages, and disseminates information on current episodes of drought; response, mitigation, and planning activities of governments and international organizations; and new technologies relating to drought management and planning. Contact Donald A. Wilhite, International Drought Information Center, Department of Agricultural Meteorology, 241 L. W. Chase Hall, University of Nebraska, Lincoln, Nebraska 68583-0728, U.S.A.; phone: (402) 472- 6707; fax: (402) 472-6614.

EARTHQUAKES

The U.S. Geological Survey (USGS) supports the National Earthquake Information Center (NEIC), which operates a 24-hour-a-day service that rapidly determines the location and magnitude of earthquakes worldwide and communicates this information to interested groups. (Contact Bruce Presgrave, National Earthquake Information Center, U.S. Geological Survey, P.O. Box 25046, MS 967, Denver Federal Center, Denver, Colorado 80225-0046, USA. Phone: (303) 273-8500; fax: (303) 273-8450; Dial-a-Quake phone: (303)273-8516).

The National Strong Motion Program, also part of USGS, collects analog and digital data from a network of over 1000 accelerograph instruments in the U.S. and Central America. All the accelerograms are archived, and copies can be obtained from USGS Contact Gerald Brady, Branch of Earthquake and Geomagnetic Information, U.S. Geological Survey, 345 Middlefield Road, MS 977, Menlo Park, California 94025, U.S.A.; phone: (415) 329-5163; fax: (415) 329-5163.

The National Geophysical Data Center (NGDC) of the National Oceanic and Atmospheric Administration (NOAA) also provides many products and services related to earthquakes and earthquake engineering. Contact Paula K. Dunbar, National Geophysical Data Center, NOAA, E/GC1, 325 Broadway, Boulder, Colorado 80303-3328, U.S.A.; phone: (303)497-6084; fax: (303)497-6513; E-mail via Internet: info@mail.ngdc.noaa.gov).

Other sources of earthquake information are the National Center for Earthquake Engineering (NCEER) and the National Information Service for Earthquake Engineering (NISEE). The NCEER and NISEE serve as clearinghouses of literature in the

fields of earthquake engineering and earthquake hazard mitigation; and they both maintain bibliographic databases of their holdings. Contacts:

Ms Dorothy Tao or Ms Patricia Coty, National Center for Earthquake Engineering Research, NCEER Information Service, State University of New York at Buffalo, c/o Science and Engineering Library, 304 Capen Hall, Buffalo, New York 14260-2200, U.S.A.; phone: (716) 645-3377; fax: (716) 645-3379; E-Mail via Internet: nernceer@ubvm.cc.buffalo.edu.

Ms Katherine Frohmberg, National Information Service for Earthquake Engineering, Earthquake Engineering Research Center, University of California, 1301 South 46th Street, Richmond, California 94804-4698, U.S.A.; phone: (510)231-9401; fax: (510)231-9471; E-mail Internet: katie@eerc.berkeley.edu).

FLOODS

Floodplain mapping--Federal Emergency Management Agency (FEMA) maps floodplains for Flood Insurance Rate Maps (FIRMs) for the National Flood Insurance Program. Contact the National Flood Insurance Program, ATTN: Public Affairs Coordinator, P.O. Box 99, Lanham, Maryland 20703, U.S.A.; or Contact Gary Oran, FEMA/Federal Insurance Administration, 500 C Street, S.W., Washington, D.C. 20472, U.S.A.; phone: (301) 731-5300, ext. 2130; fax: (301) 731-9121).

Topographic mapping--The USGS has mapped most of the continental U.S. with contour intervals of 1.5 to 3.0 meters. Contact the Information Specialist, U. S. Geological Survey, Earth Sciences Information Center, National Center, Reston, Virginia 22092, U.S.A.; phone: (703)648-6892; fax: (703)648-5548).

Flood forecasting, warning, and response--National Weather Service (NWS) developed, through its River Forecast Centers, hydrologic models for large river systems called the Automated Local Evaluation in Real Time (ALERT) for smaller streams. (Contact Kevin Stewart, Urban Drainage and Flood Control District, Floodplain Management Program, 2480 West 26th Avenue, #156-B, Denver, Colorado 80211, U.S.A.; phone: (303)455-6277; fax: (303)455-7880).

Streamflow data--The vast majority of stream gages in the U.S. are operated by USGS. Contact the U.S. Geological Survey, National Water Data Exchange (NAW-DEX), MS 421, National Center, Reston, Virginia 22092, U.S.A.

GENERAL

Natural Hazards Research and Applications Information Center

The Natural Hazards Center was founded in 1976, as a clearinghouse for information on the economic loss, human suffering, and social disruption caused by earthquakes, floods, hurricanes, tornadoes, and other natural disasters. The center's main goal is to link producers and users of hazards research data and policy information. It concentrates on answering queries and provides information about natural hazards in a variety of formats. In this way, the center helps practitioners learn about and use the latest research to improve policy at the local, state, and national level.

The center publishes a bi-monthly newsletter, the Natural Hazards Observer, that provides current information on natural hazards to over 12,000 subscribers in the U.S. and abroad. In addition, the center has a library with an extensive collection of hazards and disaster literature. Further, the center operates an electronic newsletter/bulletin board. Disaster Research is a forum for researchers and practitioners to communicate and discuss issues regarding hazards. The newsletter is distributed via several computer networks. Contact the Natural Hazards Research and Applications Information Center, Institute of Behavioral Science #6, Campus Box 482, University of Colorado, Boulder, CO 80309-0482, U.S.A.; phone: (303) 492-6818; fax: (303) 492-2151; E-mail Internet: hazards@vaxf.colorado.edu;

Disaster Research Center

The Disaster Research Center (DRC) was established at Ohio State university in 1963 and moved to the University of Delaware in 1985. The Center engages in a variety of sociological and social science research on group and organizational preparations for, responses to, and recovery from community-wide emergencies, particularly natural and technological disasters. Since its inception, the center has engaged in about 500 field studies.

Contact the DRC at the University of Delaware, Newark, Delaware 19716.
Center Director: Prof. Joanne M. Nigg (301) 831-1984; Research Director: Prof. Kathleen Tierney. (302) 831-4203. Fax: (302) 831-2828.

Centers for Disease Control and Prevention

The Centers for Disease Control (CDC) have a new, comprehensive on-line public health information system called Wide-ranging Online Database for Epidemiologic Research (WONDER), which links all field CDC personnel globally and many local government health departments with CDC staff and scientific resources bases at CDC's headquarters in Atlanta. Via WONDER, public health professionals around the world use WONDER to speed the access, analysis, and exchange of public health

information. WONDER is a software-program for microcomputers that facilitates information exchange at three levels: data, reports and guidelines, and people (contacts). The software is available to appropriate professionals at no cost. For more information contact CDC WONDER Customer Support, Centers for Disease Control , 1600 Clifton Rd. NE, Mail stop F-51, Atlanta, Georgia 30333. Phone: (404) 332-4569; Fax: (404) 488-7593.

The American Red Cross (ARC) and the U.S. Public Health Service Centers for Disease Control and Prevention (CDC) maintain a natural disaster morbidity and mortality surveillance system. Contact Eric K. Noji, M.D., Centers for Disease Control and Prevention, Disaster Assessment and Epidemiology Section, Health Studies Branch, Division of Environmental Hazards and Health Effects, MS F46, 4770 Buford Highway, N.E., Atlanta, Georgia, 30341-3724, U.S.A.; phone: (404)488-7350; fax: (404)488-7335).

HURRICANES

NOAA's National Hurricane Center is responsible for monitoring tropical disturbances and hurricanes in the North Atlantic, Caribbean Sea, Gulf of Mexico, and eastern North Pacific. Contact Mr. Miles Lawrence, National Hurricane Center, National Weather Service (NOAA) 1320 So. Dixie Highway (#631), Coral Gables, Florida 33146. Phone: (305) 536-5547; fax: (305) 536-6881. For information about hurricane data bases and publications, contact Mr. Tom Ross, National Climatic Data Center, NOAA, Research Customer Service Group, Room 121, Federal Building, 37 Battery Park Avenue, Asheville, North Carolina 28801-2696, U.S.A.; phone: (704) 271-4994; fax: (704) 271-4876; E-mail Internet: tross@ncdc.noaa.gov.

LANDSLIDES

The National Landslide Information Center (NLIC) collects, analyzes, and distributes information on all aspects of landslides worldwide. Contact Lynn Highland, National Landslide Information Center, U.S. Geological Survey, P.O. Box 25046, MS 966, Federal Center, Denver, Colorado 80225-0046, U.S.A.; phone: (303) 273-8588; fax: (303) 273-8600; E-mail via Internet: highland@gldvxa.cr.usgs.gov. The Branch of Western Regional Geology of USGS has digital files relating to landslide hazards in western states. Contact Earl E. Brabb, U.S. Geological Survey, 345 Middlefield Road, MS 975, Menlo Park, California 94025, U.S.A.; phone: (415) 329-5140; fax: (415) 329-4936; E-mail: ebrabb@isdmnl.wr.usgs.gov.

SEVERE STORMS

The National Severe Storms Forecast Center (NSSFC) is responsible for forecasting tornadoes and severe thunderstorms throughout the contiguous U.S. Contact John Halmstad or Hugh Crowther, National Severe Storms Forecast Center, National Weather Service, NOAA, Room 1728, Federal Building, 601 East 12th Street, Kansas City, Missouri 64106-2877, U.S.A.; phone. (816)426-3367; fax. (816)426-3453).

The National Climatic Data Center (NCDC) collects all U.S. weather records and is the largest climatic center in the world. Contact Tom Ross, National Climatic Data Center, NOAA, Research Customer Service Group, Room 121, Federal Building, 37 Battery Park Avenue, Asheville, North Carolina 28801-2696, U.S.A.; phone: (704) 271-4994; fax: (704) 271-4876; E-mail via Internet: tross@ncdc.noaa.gov.

TSUNAMIS

The National Geophysical Data Center (NGDC) provides a variety of products regarding tsunamis. Contact Patricia A. Lockridge, National Geophysical Data Center, NOAA, E/GC1, 325 Broadway, Boulder, Colorado 80303-3328, U.S.A.; phone: (303)497-6446; fax: (303)497-6513; E-mail Internet: info@mail.ngdc.noaa.gov.

VOLCANOES

Volcanic activity is monitored by the Volcanic Hazards Assessment Program of USGS and by the Global Volcanism Network of the Smithsonian Institution. Contact Mr. William E. Scott, Cascades Volcano Observatory, U.S. Geological Survey, 5400 MacArthur Blvd., Vancouver, Washington 98661, U.S.A.; phone: (206) 696-7909; fax: (206) 696-7866; E-mail via Internet: wescott@pwavan.wr.usgs.gov. Or, contact Mr. Tom Simkin, Global Volcanism Program, National Museum of Natural History, MRC 129, Washington, DC 20560, USA; phone: (202) 357-2786; fax: (202) 357-2476; E-Mail via Internet: mnhms.017@sivm.si.edu.

WILDFIRE

The International Association of Wildland Fires maintains a library and databases related to wild fires. Contact Jason M. Greenlee, International Association of Wildland Fire, P.O. Box 328, Fairfield, Washington 99012-0328, U.S.A.; phone: (509) 283-2397; fax: (509) 283-2264). E-mail via Internet: jgreenlee@igc.apc.org.

The National Interagency Fire Center in Boise, Idaho, maintains records of numbers of wildfires per year by size, class, and ignition cause. Contact National Intelligence Section, National Interagency Fire Center, 3905 Vista Ave, Boise, Idaho; Tel: (208) 387-2604; Fax: (208) 387-2797.