TsuInfo Alert

prepared on behalf of the

National Tsunami Hazard Mitigation Program

by the Washington Department of Natural Resources

Contents

Volume 1, Number 10, October, 1999

Tsunami Program News

Brian's Book is Published!!

Surviving a tsunami--Lessons from Chile, Hawaii, and Japan, by Brian Atwater and others, has been published by the U.S. Geological Survey, as its Circular 1187. **Free** copies are available from the state emergency managers. (See their names and addresses, p. 9.)

Report on the Newport Meeting

The semi-annual meeting of the National Tsunami Hazard Mitigation Program Steering Group was held in Newport, Oregon, Oct. 5-7. Attendees included: Eddie Bernard, Brian Atwater, Craig Weaver, Chris Jonientz-Trisler, Gary Brown, Richard Przywarty, Rich Eisner, Lori Dengler, Brian Yanagi, Mark Darienzo, George Priest, John Beaulieu, George Crawford, Tim Walsh, and Connie Manson. Program activities and accomplishments were reviewed in the first day, future program goals and plans were discussed in the second day, and on the third day they went on a field trip to the Newport area to see progress on the local tsunami mitigation activities there.

Local Activities: California

The Redwood Coast Tsunami Work Group (RCTWG) sponsored an Earthquake/Tsunami Education room at the 1999 Humboldt county Fair August 12 - 22. The purpose of the room was to provide attractive, informative and hands-on experiences to illustrate earthquake and tsunami hazards along California's north coast. The County Fair provided a large room in the main commercial building free of charge and gave admission and parking passes for volunteers who were coordinating the room. $10,906 was donated to the fair project for reprinting the earthquake preparedness magazine "Living on Shaky Ground: How to Survive Earthquakes and Tsunamis on California's North Coast" and donations were solicited from local organizations, businesses and individuals to support acquisition of materials and construction of exhibits. Humboldt State University and the American Red Cross provided funds to reprint " which were made available to fair visitors along with other preparedness information. The room also featured a "Tsunami Gift Shop" with tsunami cups, t-shirts imprinted with the tsunami logo and the names of room sponsors, and disaster kits. Over 6000 people visited the room over the fair's 11-day run. Although no formal evaluation of the project was conducted, the response to the room from fair officials, room volunteers and the comments of visitors was uniformly positive.

Exhibits:

-- Wave Tank: A Plexiglas two-chambered tank driven by a hand crank to illustrate the difference in wave velocity between shallow and deep water.

-- Shake Table: A rheostat-controlled variable shaking platform with model houses and structural elements that illustrate structural and nonstructural hazards.

-- Tsunami Core: A 3 foot long, 2.5 inch diameter tsunami core collected from the fresh water marsh south of Crescent City on August 11, 1999. The core site was within the inundation zone of both the 1960 and 1964 tsunamis generated by the Chilean and Alaskan earthquakes. Both of these events show up as about half inch- thick sand lenses within the fresh water peat deposits. Near the bottom of the core, a 6-inch sand layer is believed to represent the last near-source tsunami event generated by the Cascadia subduction zone.

(continued, p. 3)

TsuInfo Alert

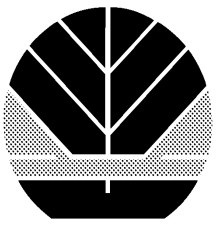
is published monthly by the
Washington Department of Natural Resources, Division of Geology and Earth Resources.
This publication is free upon request and is available in print (by surface mail) and electronically (by e-mail).
TsuInfo Alert and the TsuInfo document delivery program are made possible by a grant from the Federal Emergency Management Agency via the Washington Military Department, Division of Emergency Management.

Participants in the TsuInfo program can request copies of reports listed in this issue from:

Library
Washington Department of Natural Resources
Division of Geology and Earth Resources
P.O. Box 47007
Olympia, WA 98504-7007
ph: 360/902-1472 or 360/902-1473
fax: 360/902-1785
e-mail: connie.manson@wadnr.gov or lee.walkling@wadnr.gov

prepared by
Connie J. Manson, Senior Library Information Specialist
and
Lee Walkling, Library Information Specialist

Readers are encouraged to reproduce materials from these issues for further distribution.
(The suggested credit is, "reprinted from *TsuInfo Alert*, [month, year].")



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Jennifer M. Belcher - Commissioner of Public Lands

(continued from p. 1)

-- Samoa Peninsula Topographic Map: A detailed topographic map at a scale of 1:2,500 illustrating areas of high ground and potential refuge.
-- Seismograph: An MEQ 800 portable seismograph was set up in the room with a sensor located at a hidden location in the room. Visitors (especially children) were encouraged to find the sensor by heavily walking about the room while watching the seismograph response.
-- Tsunami Theatre: An LCD projection system and videotapes on tsunami and earthquakes.
-- Samoa Gates Bridge Project: An explanation of the Samoa Bridge seismically-triggered gate project and retrofit plans.
-- Tsunami Mitigation Projects in Redwood National and State Parks: Native stories and tsunami information program in the park.
-- Earthquake Safety Programs in Humboldt County Schools
-- National Weather Service: How the Tsunami Warning Centers work.
-- Sources of North Coast Seismicity
-- Disaster Safety: Preparedness information in both English and Spanish from the Red Cross.
-- Neighborhood Emergency Services Teams (NEST) Program

For more information on the Fair Project, contact Lori Dengler at lad1@axe.humboldt.edu

******

California Preparedness Guide is Reprinted!!

The earthquake and tsunami preparedness magazine, ***Living on Shaky Ground: How To Survive Earthquakes On the North Coast***, has been updated and reprinted. Copies are available from the Department of Geology, Humboldt State University, Arcata, CA 95521, (707) 826-3931 or email Rosemary Hawkins at: hawkins@laurel.humboldt.edu

Oregon Tsunami Evacuation Maps

Tsunami evacuation maps are now available for nine communities on the Oregon coast. (The first six listed were funded by Oregon Emergency Management/National Tsunami Hazard Mitigation Program money, and the last three were produced by local funds.) A copy of the Florence area map is included in this issue of *TsuInfo Alert.*

city	contact	
Bandon, OR	Dennis Lewis	541-347-2437
Salmon Harbor, OR (Winchester Bay)	Wayne Stinson	541-440-4448
Florence, OR	Skip Passenger	541-997-3212
Yachats, OR	Nancy Otterson	541-547-3565
Waldport, OR area	Bill Grimm	541-563-3121
Lincoln City, OR	Lila Bradley	541-996-1235
Cannon Beach, OR	Al Aya	503-436-2343
Manzanita, OR	Perry Sherbaugh	503-368-7229
Gearhart, OR	Dennis McNally	503-738-5501

******

Editors' note: Please send us advance notice of **YOUR state's tsunami-related events.** *TsuInfo Alert* serves five states and the coverage is meant to be equal. Nice goal. We're sitting in offices in Washington state, with unequal access to mounds of Washington data. Help!

E-mails don't take long. A phone call is easy. Slipping a fact sheet or brochure in the mail is fast. The basic information is: event name, event date, event location, and phone/email/URL addresses for further information. Be as terse or as verbose as you want. Alert us to seminars, conferences, month-long awareness efforts, classes... anything you think is important, anything you would like other emergency managers to know. Our contact information is always on page two.

******

EVENTS

October
Washington State Tsunami Hazard Month

October 13, 1999
International Day for Natural Disaster Reduction (U.N.)
For details about opportunities and activities planned for World Disaster Reduction Day 1999
see http://www.idndr.org/campaign/reday.htm
or email idndr@dha.unicc.org

New Program Participants

Jim Falls
Calif. Dept. Mines & Geology
118 N. Fortuna Blvd.
Fortuna, CA 95540
W - 725-4413 x144 Fax - 725-9827
e-mail: jim_falls@fire.ca.gov

Linda Nellist
NEST Education Coordinator
Humboldt County Area NEST
825 Fifth St.
Eureka, CA 95501
W - 268-2515 Fax - 445-7764
e-mail: lnellist@humboldt1.com

Vicki Ozaki
Redwood National and State Parks
1125 - 16th St.
Arcata, CA 95521
W - 822-7611 x5443 Fax - 822-8904
e-mail: Vicki_Ozaki@nps.gov

Mark Wheetley
Calif. State Coastal Conservancy
619 Second St. #108
Eureka, CA 95501
W - 441-5884 Fax - 441-5897
e-mail: mwheetley@igc.org

Donald Forrest
Dell'Arte School of Physical Theatre
P.O Boxt 816
Blue Lake, CA 95525

Gary Carver
P.O. Box 52
Kodiak, AK 99615

Ken Wilbur
Calif. Dept. of Parks & Recreation
600-A West Clark St.
Eureka, CA 95501
W - 445-6547 x14 Fax - 441-5737
e-mail: ncrd@humboldt1.com

Bob McPherson
Department of Geology
Humboldt State University
Arcata, CA 95521
W - 826-5828 Fax - 826-5241
e-mail: rm4@axe.humboldt.edu

Larry Karstedt
Executive Director
North Coast Emergency Medical Services
86 E Street
Eureka, CA 95501
W - 445-2081 Fax - 445-0443

John Gladding
American Red Cross
Humboldt County Chapter
406 Eleventh St., P.O. Box 3402
Eureka, CA 95502-3402
W - 443-4521 Fax - 443-2746

Glenn Hurlburt
Cal Trans District 1
1656 Union St.
P.O. Box 3700
Eureka, CA 95502-3700
W- 441-5853 Fax - 441-5873
Glen_Hurlburt@dot.ca.gov

Kimberly Comet
Safety/Loss Control Analyst
Humboldt County Office of Education
901 Myrtle Avenue
Eureka, CA 95501-1219
W - 445-7067 Fax - 445-7143
kcomet@humboldt.k12.ca.us

Clark Guzzi
Humboldt County Health Department
529 I Street
Eureka, CA 95501
W - 445-6098 Fax - 445-6097
e-mail: cguzzie@co.humboldt.ca.us

G. Tess Gossage
Cascadia Region Medical/Health Disaster
Preparedness Project
3144 Broadway, Ste #4, PMB 354
Eureka, CA 95501
W-677-0999
e-mail: cascadiaproject@hotmail.com

Patrick Vaughan
Associate Engineering Geologist
North Coast Redwoods District
California State Parks
600A West Clark St.
Eureka, CA 95501
W - 445-6547 ext. 16
email: resource@humboldt1.com

Dennis McBride
Cal Trans District 1
1656 Union St.
P.O. Box 3700
Eureka, CA 95502-3700
W- 441-5878
email: Dennis_Mcbride@dot.ca.gov

Jim Waldvogel
Sea Grant Extension Program
981 H St.
Crescent City, CA 95531
W - 464-4711 Fax - 464-7520
e mail: cedelnorte@ucdavis.edu

Stan Dixon
Humboldt County Couthouse
825 5th St
Eureka, CA 95501

John Woolley
Humboldt County Couthouse
825 5th St
Eureka, CA 95501

Bonnie Neely
Humboldt County Couthouse
825 5th St
Eureka, CA 95501

Paul Kirk
Humboldt County Couthouse
825 5th St
Eureka, CA 95501

Roger Rodoni
Humboldt County Couthouse
825 5th St
Eureka, CA 95501

John McFarland
Eureka Fire Department
533 C St.
Eureka, CA 95501

Steve Wakefield
Crescent City Fire Dept.
520 "I" St.
Crescent City, CA 95531
W - 464-9506 Alt: Fire Dept. 464-9113
Fax - 465-4405

Bruce Buel
McKinleyville Community Services District
1656 Sutter Rd.
McKinleyville, CA 95519

Dave Bazard
Earth Sciences Dept.
College of the Redwoods
7351 Tompkins Hill Rd
Eureka, CA 95501

Greg Crawford
Department of Oceanography
Humboldt State University
Arcata, CA 95521

Alec Arago
Pacific Gas and Electric Company
Humboldt Bay Power Plant
1000 King Salmon Ave.
Eureka, CA 95503

Alistair McCrone, President
Humboldt State University
#1 Harpst St.
Arcata, CA 95521

John Lovegrove
Warning Coordination Meteorologist
U.S. Department of Commerce
NOAA
National Weather Service Office
300 Startare Drive
Eureka, CA 95501
W - 443-0574 Fax - 443-6195
e-mail: john.lovegrove@noaa.gov

RESOURCES

New Tsunami Mitigation Materials, September, 1999

compiled by

Connie J. Manson

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

Natural Hazards and Tsunami Hazard Mitigation

Atwater, B. F.; Cisternas, Marco, V; Bourgeois, Joanne; Dudley, W. C.; Hendley, J. W., II; Stauffer, P. H., compilers, 1999, Surviving a tsunami--Lessons from Chile, Hawaii, and Japan: U.S. Geological Survey Circular 1187, 18 p.

This book contains true stories that illustrate how to survive--and how not to survive--a tsunami. Wonderfully illustrated with photographs and maps. It is meant for people who live, work, or play along coasts that tsunamis may strike.

Our **very highest recommendation** for the entire tsunami community--especially local emergency managers. Multiple, **free** copies are available through your state emergency managers; see their names and addresses on p. __ of this issue.

U.S. Federal Emergency Management Agency; American Red Cross, 1998?, Adventures of the disaster dudes--Presenter's guide; A children's disaster preparedness program: U.S. Federal Emergency Management Agency, 29 p.

This is the companion guide for the video, *Adventures of Disaster Dudes (see p. -- of this issue)*. Recommended for teachers.

National Research Council Committee on Assessing the Costs of Natural Disasters, 1999, The impacts of natural disasters--A framework for loss estimation: National Academy Press, 68 p.

Proposes thorough ways to consistently compile information about the economic impacts of natural disasters. Highly recommended for local emergency managers and government officials.

Technical Research

British Columbia

Zelt, B. C.; Dotzev, N. T.; Ellis, R. M.; Rogers, G. C., 1999,
Coda Q in southwestern British Columbia, Canada: Seismological Society of America Bulletin, v. 89, no. 4,p. 1083-1093.

Mulder, T. L., 1995, Small earthquakes in southwestern British Columbia (1975-1991): University of Victoria Master of Science thesis, 117 p.

Washington

Williams, R. A.; Stephenson, W. J.; Frankel, A. D.; Odum, J.K., 1999,Surface seismic measurements of near-surface P- and S-wave seismic velocities at earthquake recording stations, Seattle, Washington: Earthquake Spectra, v. 15, no. 3, p. 565-584.

Roberts, L.K., 1999, Seismic characterization of the northern
Puget Lowland, Washington: Western Washington University Master of Science thesis, 80 p.

Papua New Guinea

Ripper, I. D.; Letz, H., 1999, The Sissano Lagoon (Aitape) tsunami--Which earthquake was responsible?: Geological Survey of Papua New Guinea Report 99/7, 19 p.

Historical Tsunami Data Base for the U.S.

"The development of the tool continues. Dr. Gusiakov from the Novosibirsk Laboratory spent several weeks in the U.S. during January-February, gathering additional data. The data base now contains information on 208,899 earthquakes dating from 186 BC, 1128 of which (dating from 47 BC) generated tsunamis, and 6904 records of tsunami height data which date from 416 AD. ...When the DOS version is finalized I will distribute another set of CDs.

A work order has been signed with Novosibirsk for this fiscal year where the emphasis will be on producing a pure Windows version. While the DOS version will run under Windows 95 or 98, the pure Windows version will facilitate the use of a number of options."

The 1998 status report said the data base would allow emergency managers to access information on historical tsunamis in their areas and would provide emergency managers with historical data for a specific event in their areas for which a Watch, a Warning, or a TIB/TAB has been issued. (TIB is tsunami information bulletin; TAB is tsunami advisory bulletin. TIB seems to be a designation used in the U.S., whereas TAB is used by Canada.)

(from Richard Hagemeyer, PMEL, NOAA
http://www.pmel.noaa.gov/tsunami-hazard/Hagemeyerapr99rpt.html)

Videos Available for Community Screenings, Training Sessions, Public Education
(see page 2 for ordering information)

Adventures of Disaster Dudes. American Red Cross. 14 min.
Preparedness for pre-teens

The Alaska Earthquake, 1964. Creative Arts Studio, Inc. for the U.S. Geological Survey, 1970.. 20 min.
Includes data on the tsunamis generated by that event.

Cannon Beach Fire District Community Warning System (COWS). Cannon Beach Rural Fire Protection District. 21 min. 1994
An explanation of the warning system selected by Cannon Beach, and why they elected to use cows mooing as the monthly audible test

Disasters Are Preventable. U.S. Agency for International Development. 22 min. 1998.
Ways to reduce losses from various kinds of disasters around the world through preparedness and prevention. Available in both French and English. Free copies (VHS or PAL formats) are available from: Maxx Dilley, U.S. Agency for International Development, Office of Foreign Disaster Assistance, Washington DC 20523-8602; ph: 202/712-5117, mdilley@usaid.gov

Killer Wave: Power of the Tsunami. National Geographic Video, 1997. 60 min.

The Prediction Problem. Ambrose Video, 1990. 58 min.
Earthquakes and tsunamis around the Pacific Rim. (Episode 3 of the PBS series, "Fire on the Rim")

The Restless Planet. Thirteen/WNET and Granada Television, 1998. 60 min.
About earthquakes, with examples from Japan, Mexico, and the 1989 Loma Prieta earthquake in California. (From the "Savage Earth" series)

Tsunami and Earthquake Video. International Tsunami Information Center, 1995. 60 min.
Includes "Tsunami: How occur!? How protect!? Learning from Japan's tsunami disasters" (13 min.), "Learning from earthquakes: Earthquake disaster countermeasures in big cities," (44 min.), and "Computer modeling of alternative source scenarios," (5 min.).

Tsunami: Surviving the Killer Waves. Oregon Department of Geology and Mineral Industries. 13:35 or 14:38 min.
Presented in two versions: one is the straight documentary; the other has Discussion Breaks inserted.

Understanding Volcanic Hazards. International Association of Volcanology and Chemistry of Earth's Interior, 1995. 25 min.
Includes information about volcano-induced tsunamis and landslides

The Wave: a Japanese Folktale. BFA Educational Media. 9 min.
Animated film to help start discussions of tsunami preparedness for children.

Waves of Destruction. Thirteen/WNET and Granada Television, 1998. 60 min.
Tsunamis around the Pacific Rim. (From the "Savage Earth" series)

Websites of the Month

http://cindi.usgs.gov

The U.S. Geological Survey (USGS) extensively monitors and evaluates threats posed by many natural hazards. Its resources include a global seismic network, a national streamflow monitoring program, regional volcano observatories, and long-standing interagency partnerships in disaster mitigation and response. To help synthesize the vast amount of information available on hazards, the USGS has created the Center for Integration of Natural Disaster Information (CINDI), a research facility for: 1) developing and evaluating technology for information integration and dissemination; 2) performing research in data integration, analysis, modeling, and decision support; and 3) supporting the ongoing evolution of the USGS processing and delivery of hazards data. The CINDI Web site provides background information about the center and serves as a "gateway to information about natural hazards and disasters." The center itself selects individual disasters as case studies. The current focus is Hurricane Mitch, and this site incorporates much information about that disaster, including a "Central America Disaster Atlas" with multiple maps and map overlays displaying the effects of the storm.

http://www.esri.com/hazards

Through the Federal Emergency Management Agency (FEMA) Project Impact initiative, FEMA and the Environmental Systems Research Institute (ESRI) have formed a national partnership aimed in part at providing multihazard maps and information to U.S. residents, business owners, schools, community groups, and local governments via the Internet. The information provided via the ESRI Web site is intended to assist the building of disaster-resistant communities across the country by sharing geographic knowledge about local hazards. This Web site allows users to create on-line hazard maps for which they can specify location (by ZIP code, city, or congressional district) and the hazards to be shown. It also directs users to other sources of information, both on the Web and in the real world.

http://www.explorezone.com

This remarkable Web site seems to include all the hazard science news that's fit to print. It covers the latest meteorological, geological, hydrological, and space science news--much of it focusing on natural hazards. With sections on volcanoes, earthquakes, tornadoes, El Nino, global warming, hurricanes, and other natural phenomena, Explorezone provides both the latest news and latest scientific findings. The site includes links to information sources, numerous graphics and videos, book reviews, background information, an easily searchable index of scientific terms, and a special section entitled "the edge" that presents news ideas in science and technology.

from: *Natural Hazards Observer*, September 1999

Online Preparedness Newsletter

The Connection, ,America's Bridge to Preparedness, is an online newsletter from North American Emergency Management, "written by the people from around the country who are involved in community preparedness on a daily basis." The newsletter intends to "support community disaster preparedness efforts through the sharing of information and ideas."

In the first two issues, the emphasis is on CERT programs (community emergency response teams) which stress preparedness of community members who will be the first responders in any emergency. Of the Turkey earth-quake, *The Connection* (v. 2, no. 1) states, "Once again we are reminded that following a major disaster we will be relying on the skills of our 'real first responders,' the community. We will be relying on them for those first few critical hours and maybe even for days until professional rescue teams and the military can mobilize and arrive in sufficient numbers to take over the load. The goal is to make this community response as effective as possible thus minimizing loss of life."

Their is brief synopsis of each article (tagged by state) with the option to go to the full article. The articles can also be downloaded and/or printed in Adobe Acrobat Reader.

Local emergency responders are encouraged to submit articles and photographs about their own programs. Contact them at http://www.naem.com/connection.html

EMI Catalog Available

The Federal Emergency Management Agency's Emergency Management Institute (EMI) in Emmitsburg, Maryland, is a national center for the development and delivery of emergency management training. The institute creates and conducts both resident and nonresident courses for U.S. citizens (and, occasionally, non-U.S. citizens; see the *Observer*, Vol. XXIII, No. 6, p. 19). EMI recently issued its resident course catalog for the fall 1999-summer 2000 academic year, with programs addressing a broad spectrum of emergency management skills. The catalog includes an application form. To obtain a copy, or to receive detailed information about a specific course, contact FEMA/EMI, 16825 South Seton Avenue, Emmitsburg, MD 21727; or see the EMI Web site: http://www.fema.gov/EMI. (from: *Natural Hazards Observer*, September 1999)

BOOK REVIEWS
by
Lee Walkling

Disaster Evacuation and the Tourist Industry, by Thomas E. Drabek. University of Colorado, 1994.

In 1994, Drabek wrote his scholarly study *Disaster Evacuation and the Tourist Industry*, based upon the responses from 185 tourist industry executives. His woeful conclusion was the 1994 levels of preparedness were "highly inadequate." (p. xii)

Dr. V. Chandrasekar's preface addresses the problems with preparedness planning for transient populations: "Tourism, as a business, is boundless. The customers of this industry are a constantly floating population drawn from outside a "host" community. The fact they are "floating" has major implications for the industry's ability to be prepared for disasters. Tourist executives have to be in a constant training mode, since each successive wave of customers only live in the host community for a short duration of time. Other barriers are encountered, since each customer may carry a different cultural and social background. Often this is reflected in linguistic distinctions, as well. Tourists typically have limited knowledge and familiarity with the culture, social values, and geography of the host community. All of this puts tourists into a much more vulnerable position, as compared to resident populations, when disaster strikes." (p. xii)

Dr. Chandrasekar points out another difficulty:"...tourism is a highly behaviorally oriented industry. Tourist psychology is a very important ingredient of this industry. Excessively overt or intensive disaster preparedness activities by any single community has the possibility of conveying a level of risk that potential tourists may not want to take. Such actions could negatively impact the very businesses that we are trying to protect." (p. xiii)

Drabek, a highly regarded sociologist whose speciality is disaster behavior, begins the book with a 5-page Executive Summary, detailing the methods, objectives, findings and conclusions of his study. The next 200 pages deal with his interviews, the answers, and his statistical analyses. Chapter 9 "Future Policy Challenges and Opportunities" changes the emphasis from behavioral studies to policy issues, asking 1) Is there a need? 2) What policy priorities are perceived? 3) Whose job is it? and 4) What policy approaches are desired? (p. 201) Chapter 10 "Disaster Evacuation and the Tourist Industry" deals with lessons learned, future research needs, and a call for action, along with the author's summary and conclusion: "...the tourist industry is a ticking time bomb--a vulnerability of enormous catastrophic potential." (p. 233)

Disaster Evacuation Behavior: Tourists and Other Transients, by Thomas E. Drabek. University of Colorado, 1996.

Disaster Evacuation Behavior: Tourists and Other Transients studies 800 people (tourists and other transients) who had experienced either hurricanes or earthquakes away from home. Drabek defines transient as business travelers, tourists, migrant workers, homeless, and people in the process of relocating. Gary A. Kreps, in his preface, states the central finding of the book, "Simply put, customers expect the tourist industry to be prepared for natural or technological hazards, and failure to be prepared during an actual emergency will not be good for business." (p. xvi)

Again, Drabek begins with an Executive Summary of methods, major findings, research priorities, and an action agenda. His five objectives are "1) to describe the sequence of behavior that culminates in evacuation from disaster sites by persons who are away from their residences;...2) to describe the range of variation among these behavioral sequences for different types of evacuees, events, and locations; 3) to identify factors related to variation in these behavioral sequences; 4) to document perceptions of disaster victims regarding evacuation policies and procedures implemented by private firm executives and government agency representatives; and 5) to formulate relevant policy recommendations for local emergency managers and business executives." (p. 1) In Chapter 9 "Disaster Evacuation Policy" he documents tourists' opinions of and suggestions for the tourist industry's disaster preparedness policies. Chapter 10 "Evacuating Tourists and Other Types of Transients" concludes that "policies and procedures for the timely evacuation of tourists and other types of transients are spotty at best and frequently result in victims rating the performance of those they perceive as responsible as unacceptable; and investments in community disaster planning through active participation in and support of public-private partnerships in emergency management can reduce catastrophic vulnerabilities that are worsening daily." (p. 301)

Together, these two books look at two sides of the situation, disaster preparedness from the tourist business owners' point of view, and from the customers' point of view.

Directories

NATIONAL TSUNAMI HAZARD MITIGATION PROGRAM STEERING GROUP

FEDERAL
Eddie Bernard, Chairman of National
Tsunami Hazard Mitigation Program
NOAA/PMEL
7600 Sand Point Way NE
Seattle, WA 98115-0070
(206) 526-6800; Fax (206) 526-6815
email: bernard@pmel.noaa.gov

Frank Gonzalez
NOAA/PMEL
7600 Sand Point Way NE
Seattle, WA 98115-0070
(206) 526-6803; Fax (206) 526-6485
email: Gonzalez@pmel.noaa.gov

Richard Przywarty
NOAA/NWS
Alaska Region
222 W. 7th Ave. #23
Anchorage, AK 99513-7575
907-271-5136; fax 907-271-3711
email: Richard.Przywarty@ noaa.gov

Craig Weaver
U.S. Geological Survey
c/o Geophysics
Box 351650
University of Washington
Seattle, WA 98195-1650
(206) 553-0627; Fax (206) 553-8350
email:craig@geophys.washington.edu

Richard Hagemeyer
NWS, Pacific Region
Grosvenor Center, Mauka Tower
737 Bishop Street, Suite 2200
Honolulu, HI 96813
(808) 532-6416; Fax (808) 532-5569

Chris Jonientz-Trisler
Earthquake Program Manager
FEMA, Region X
130 228th Street SW
Bothell, WA 98021-9796
(425) 487-4645; Fax (425) 487-4613
email: chris.jonientz-trisler@fema.gov

Clifford Astill
National Science Foundation
4201 Wilson Blvd, Room 545
Arlington, VA 22230
(703) 306-1362; Fax (703) 306-0291
email: castill@nsf.gov

ALASKA
Roger Hansen
Geophysical Institute
University of Alaska
P.O. Box 757320
903 Koyukuk Drive
Fairbanks, AK 99775-7320
(907) 474-5533; Fax (907) 474-5618
email: roger@GISEIS.alaska.edu

Gary R. Brown
Division of Emergency Services
P.O. Box 5750, Suite B-210
Building 49000
Fort Richardson, AK 99505-5750
(907) 428-7036; Fax (907) 428-7009
email: gary_brown@ak-prepared.com

R. Scott Simmons
Mitigation/Earthquake/Tsunami Specialist
Alaska Division of Emergency Services
P.O. Box 5750, Suite B-210, Bldg. 49000
Fort Richardson, AK 99505-5750
907-428-7016; fax 907-428-7009
email: scott_simmons@ak-prepared.com

CALIFORNIA
Richard Eisner, Regional Administrator
Governor's Office of Emergency Services
Coastal Region
1300 Clay Street, Suite 400
Oakland, CA 94612-1425
(510) 286-0888 or 286-0895; Fax (510) 286-0853
email: Rich_Eisner@oes.ca.gov

Lori Dengler
Department of Geology
Humboldt State University
#1 Harpst Street
Arcata, CA 95521
(707) 826-3115; Fax (707) 826-5241
email:lad1@axe.humboldt.edu

HAWAII
Brian Yanagi, Earthquake Program Manager
Civil Defense Division
3949 Diamond Head Road
Honolulu, HI 96816-4495
(808) 733-4300, ext. 552; Fax (808) 737-8197
email: byanagi@scd.state.hi.us

OREGON
Mark Darienzo
Oregon Emergency Management
595 Cottage Street NE
Salem, OR 97310
(503) 378-2911, ext. 237; Fax (503) 588-1378
email: mdarien@oem.state.or.us

George Priest
Oregon Dept. of Geology & Mineral Industries
Suite 965
800 NE Oregon Street #28
Portland, OR 97232
503-731-4100, Ext. 225; fax 503-731-4066
email: george.priest@state.or.us

WASHINGTON
George Crawford
Washington State Military Department
Emergency Management Division
Camp Murray, WA 98430-5122
(253) 512-7067; Fax (253) 512-7207
email: g.crawford@emd.wa.gov

Tim Walsh
Division of Geology and Earth Resources
P.O. Box 47007
Olympia, WA 98504-7007
(360) 902-1432; Fax (360) 902-1785
email: tim.walsh@wadnr.gov

STATE EMERGENCY MANAGEMENT OFFICES

For general emergency management information, contact:

Alaska Division of Emergency Services
Department of Military & Veterans Affairs
P.O. Box 5750
Fort Richardson, Alaska 99505-5750
(907) 428-7039
Fax (907) 428-7009
http://www.ak-prepared.com/

California Office of Emergency Services
2800 Meadowview Road
Sacramento, California 95832
(916) 262-1816
Fax (916) 262-1677
http://www.oes.ca.gov/

Hawaii State Civil Defense
Department of Defense
3949 Diamond Head Road
Honolulu, Hawaii 96816-4495
(808) 734-2161
Fax (808)733-4287
E-Mail: rprice@pdc.org
http://iao.pdc.org

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

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

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

Infrequently Asked Questions

compiled by
Lee Walkling

What is a tide gage?

It's a device for measuring the height of tide. It may be simply a graduated staff in a sheltered location where visual observations can be made at any desired time, or it may be an instrument that automatically makes a continuous graphic record of tide height versus time.

What is a marigraph?

It's an elaborate recording instrument which makes a continuous graphic record of tide height against time. Such an instrument is usually actuated by a float in a pipe communicating with the sea through a small hole which filters out shorter waves.

Suppose someone asked for a tide gage record; where would I get one?

More than 3,000 tide gage records for tsunami events (1850-1983) from U.S. and foreign tide stations are available on microfiche. Each fiche consists of the recording at a given location for a specified tsunami event. Call Pat Lockridge for more information: (303) 497-6221 or pal@ngdc.noaa.gov. (Information found at http://www.ngdc.noaa.gov/seg/hazard/tsu.html)

What is ITIC?

*The **I**nternational **T**sunami **I**nformation **C**enter, located in Hono-lulu, was established in 1965 by the Intergovernmental Oceano-graphic Commission(IOC) of UNESCO (United Nations Educational, Scientific and Cultural Organization). ITIC maintains and develops relationships with intergovernmental organizations, research and academic organizations, scientific community, local authorities, and the general public. To do this, ITIC sponsors or conducts technical training programs, workshops and seminars for professionals, as well as providing lectures, publications, educational materials and disaster preparedness programs for the public. Michael Blackford is the Director.*

ITIC

**monitors the activities of the Tsunami Warning System in the Pacific, utilizing 31 seismic stations, 79 tidal stations and 101 dissemination points across the Pacific.*

**assists the World Data Center (Tsunami) in soliciting and collecting as complete a set as possible of seismic and tsunami wave records for each tsunami. ITIC prepares and disseminates a report of each tsunami. ITIC collects tidal records from selected gauging stations throughout the Pacific that may have recorded a tsunami.*

**maintains a library, which is currently being indexed and catalogued by librarian Linda Sjogren.*

publishes research reports, catalogs, bibliographies and educational materials. The **Tsunami Newsletter, annual, will be distributed on the ITIC website, hopefully starting in 1999.*

**makes available technical information on tsunami warning system equipment, to keep Member States updated on state of the art technologies.*

In 1968, the Intergovernmental Oceanographic Commission (IOC) formed an International Coordination Group for the Tsunami Warning System in the Pacific (ICG/ITSU). In 1999, the Member States are Australia, Canada, Chile, China, Colombia, Cook Islands, Costa Rica, Democratic People's Republic of Korea, Ecuador, Fiji, France, Guatamala, Indonesia, Japan, Mexico, New Zealand, Nicaragua, Peru, Philippines, Republic of Korea, Singapore, Thailand, USSR, Hong Kong, United States, and Western Samoa.

(condensed from the ITIC webpage: http://www.shoa.cl/oceano/itic/itic.html)

What is the National Sea Grant program?

The brief answer is the study of coastal ecosystem health, wise economic growth, and improved environmental quality. Quoting from the Sea Grant web page (http://www.nsgo.seagrant.org/Plan/ Ch2.html), "Threats to continued development of the nation's coastal areas include degradation of the environment due to increased human activities and increased exposure of the populace to marine and coastal hazards. Degradation of coastal habitats and water quality combined with natural processes such as environmental change and severe storms threaten the sustainability of coastal communities. Through the implementation of research related to toxics, nutrient over-enrichment, habitat function and restoration, and prediction and preparedness for severe storms and other coastal hazards, Sea Grant can translate and transfer information to decision-makers and policy makers through its outreach capabilities. These steps will help ensure that proper policies and programs are in place to undergird the sustained economic vitality and safety of coastal communities."

How many people live on U.S. coastlines?

"Demographers estimate that well over half of the U.S. population will reside within 50 miles of the marine and Great Lakes coasts by the year 2000."

.....http://www.nsgo.seagrant.org/Plan/Ch2.html
National Sea Grant web page

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Jennifer M. Belcher - Commissioner of Public Lands

Library
Department of Natural Resources
Division of Geology and Earth Resources
P.O. Box 47007
Olympia, WA 98504-7007