



Disaster Myths...Fourth in a Series

Looting After a Disaster: A Myth or Reality?

This special article in the Disaster Myths series presents a point-counterpoint on the significance and prevalence of looting after disasters. Both authors were asked to answer, independently, a series of questions, including whether looting after disasters is a myth, what evidence supports that opinion, what previous research has established about looting, and how the myths (and realities) about looting influence disaster planning and response. While the previous articles in this series were meant to help dispel disaster myths, this article demonstrates the debate surrounding the controversial issue of looting and explores it in greater depth. Together these positions reveal the arguments and evidence for both sides of the debate. The editors hope that this point-counterpoint will provoke thought

among those concerned with public safety and response in disasters.

The first author, E.L. Quarantelli, provides a historical overview of looting in disaster research to help elucidate the myth. The findings of previous disaster research are used to support the argument that looting, in fact, is not prevalent after disasters. In the end, there is a lack of evidence showing that this behavior is commonplace. This article can be found on page 2.

As a counterpoint, Kelly Frailing focuses on the events following Hurricane Katrina as evidence that looting is not a myth, but a reality of disasters. This position is also supported by experience during previous events, such as Hurricane Betsy, and by crime statistics. Turn to page 3 to read this article.

The Myth and the Realities: Keeping the “Looting” Myth in Perspective

Not all findings about looting reported by disaster researchers have been correctly understood. Important distinctions and qualifications about the phenomena have sometimes been ignored. Thus some demythologization of the looting myth is necessary.

The word “looting,” which comes from Sanskrit (*lut*, to rob) entered into European languages centuries ago to refer to the plundering undertaken by invading armies. But until recently, contemporary and historical accounts of disasters have not used the term. The first systematic professional use of the word appears to have been in a well-known National Opinion Research Center (NORC) study of the 1952 Arkansas tornado.

This modern usage probably developed because the U.S. military, which initially sponsored social science studies of disasters in the early 1950s, was concerned that, in the face of atomic bombing, America would socially disintegrate and people would engage in antisocial behavior. This ignored the findings of the strategic bombing surveys of wartime Germany and Japan, as well as of British studies of their civilian populations, which showed that looting was not a serious problem after massive air bombings.

Although no formal definition of looting was ever advanced by the earliest researchers, the NORC studies, field work by Harry Moore, and research supported by the National Academy of Sciences did look at looting phenomena, generally viewed informally as the illegal taking of property. The conceptual problem of studying looting has been compounded by the fact that “looting” is not a criminal category in American penal codes, except in a handful of states that have legally formalized the term relatively recently.

A consistent observation of the early studies was that instances of looting in the disasters examined (few of which occurred in metropolitan areas) were nonexistent or numerically very rare. This contrasted with a parallel observation that stories about looting were widespread in mass media accounts and among affected populations (58% reported hearing such stories and 6% thought they had been looted in the Arkansas disaster—a finding repeated over and over again in other studies).

In the 1960s, the many civil disturbances in large American cities were studied by disaster researchers. While to this day there is no agreement that riots should be conceptualized as conflict or willful disasters, the researchers found that looting was very pervasive in the riots studied and that the pattern of the looting behavior significantly differed. In natural disasters looting was very rare, covertly undertaken in opportunistic settings, done by isolated individuals or very small groups, and socially condemned. In contrast, looting in the riots was frequent, overtly undertaken, aimed at specific targets, participated in by very large numbers of individuals often in social networks, and was socially supported.

Semi-systematic studies of looting that continued into the 1970s in the United States did not challenge the over-

all picture that researchers had earlier developed. Mostly anecdotal reports in other developed countries were consistent with the American experience. This view was later generalized to the proposition that looting was not a problem in modern, developed countries and that in the rare instances when it occurred it had the distinct social characteristics found by the pioneer disaster researchers. However, absent systematic studies in developing countries to this day, and using mostly anecdotal accounts and mass media reports, the best that can be said is that major looting in developing countries sometimes appears on a massive scale, such as after the recent earthquake in Pakistan, but that at other times, such as after the 1985 Mexico City earthquake, looting is an infrequent problem.

Furthermore, from the 1970s to the present day there have been occasional large-scale community crises after which researchers studied mass looting. One was the 1977 New York City blackout during which selective neighborhoods experienced massive looting illustrating the distinctive conflict situation pattern found in the 1960s. However, before “obvious” implications are drawn, one should note that similar blackouts in 1968 and in 2003 did not generate mass looting.

Crucial to any discussion of looting is what happened in St. Croix in the U.S. Virgin Islands when that city was hit by Hurricane Hugo in 1985. After that event, the University of Delaware’s Disaster Research Center undertook three different field studies, including a systematic quantitative survey of all businesses in the major shopping centers. The looting in St. Croix was massive. Not only were all consumer goods in sight taken, but there was even stripping of electrical and wall fixtures and of carpets. The largest mall (with about 150 shops) and two others were heavily hit, with less than 10% of the businesses reporting they were not totally looted.

The looting was initiated by pre-impact organized gangs of delinquent youths who first targeted stores with large quantities of consumer goods. A second stage occurred when other participants with noncriminal lifestyles began looting other kinds of stores (e.g., hardware stores). Finally, an even larger number of people joined, targeting stores with basic necessities (e.g., food supermarkets) and generally not looting items taken by the first two categories. Overall, the looting pattern was what earlier researchers had found in civil disturbances. However, contrary to widespread rumors, there was not a single authenticated case of the looting of private residences, schools, hotels, the one industrial complex with valuable equipment, or even resort restaurants. The looters used no physical force and, at worst, made only unfulfilled verbal threats.

A possible explanation for this atypical occasion of mass looting was that it involved a major catastrophe rather than a lesser disaster—with a concentration of disadvantaged persons exposed to everyday perceptions of major differences in lifestyles; a subculture tolerant of everyday minor stealing along with everyday organized

youth gangs engaged in serious crime, such as drug dealing; and a local police force widely seen as corrupt and inefficient (early in the event, officers themselves had openly engaged in looting—not the usual pattern in civil disturbances).

A case can be made that what happened in New Orleans after Hurricane Katrina repeated, on a smaller scale, what had happened in St. Croix. The New Orleans event was smaller because in St. Croix a majority of the population probably participated in the looting, the looting did not last as long in New Orleans, and percentage-wise, far more stores were looted in St. Croix. But the overall

pattern of mass looting, as well as the social conditions generating it, were the same in both cases.

To conclude, looting of any kind is rare in certain kinds of disasters in certain types of societies. The pattern of looting in natural disasters is different from what occurs in civil disturbances. There are occasional atypical instances of mass lootings that only emerge if a complex set of prior social conditions exist.

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The Myth of a Disaster Myth: Potential Looting Should Be Part of Disaster Plans

Hurricane Katrina was an unprecedented disaster that will have long-lasting effects on the people and the city of New Orleans. There are valuable lessons to be learned by emergency personnel, officials, and researchers that can aid planning for future disasters, whether natural or human-induced. Because of Katrina's unique place in American disaster history, it is the main focus of the following discussion of the looting controversy.

Why Looting is no Myth

An argument in the disaster literature contends that looting does not occur after natural disasters, such as hurricanes or earthquakes, but that it does happen during civil disturbances. Looting during civil disturbances is construed as a message of protest against the conditions that facilitated the civil disturbance in the first place.^{1,2} An implication of this assertion is that when people take property after a natural disaster, they do so because they need those items to survive the aftermath. Police use the term "commandeer" to justify taking vehicles and other property, arguing that those items are essential to carry out their duties. The property, however, must be returned in good order. Taking property that has only a tenuous link to survival after a natural disaster—plasma televisions in a city without electricity; firearms, alcohol, and narcotics from businesses; and other items including silverware and jewelry from private residences—can legitimately be construed as looting. To make a distinction between natural disasters and civil disturbances on the basis of whether or not looting occurs is fatuous. Some examples in the literature describe looting after natural disasters: the earthquake that struck San Francisco in 1906;³ the earthquake that struck Tangshan, China, in 1976;⁴ the flood caused by Hurricane Agnes in Wilkes Barre, Pennsylvania, in 1972;⁵ and the flood that devastated Buffalo Creek, West Virginia, in 1972.⁶ Finally, there is substantial evidence of looting in New Orleans in the wake of Hurricane Katrina.

Current Research on Looting

The reports of looting in New Orleans after Hurricane Katrina were ubiquitous, almost to the point of

being inescapable. Newspapers, the Internet, and especially 24-hour cable news networks reported widespread looting beginning shortly after Katrina's landfall. In a study of the emergent behavior that followed the storm, researchers acknowledge that antisocial behavior occurred in New Orleans. However, they take care to characterize Katrina and its aftermath not as a "natural disaster," but as a "catastrophe"—an overwhelmingly devastating event, which they contend allows for the emergence of both prosocial and antisocial behavior. Prosocial behavior, which those researchers maintain was far more prevalent than antisocial behavior, included activities such as rescuing those stranded by the storm and acquiring food and clean water.⁷ The contention that prosocial behavior was far more prevalent than antisocial behavior after Katrina is not disputed here. To give just one example of prosocial behavior, the Eighth District New Orleans Police Department Homeless Outreach van, with its wheelchair lift, was used to rescue over 3,000 people in the five days after the storm.

Recasting Katrina as a catastrophe does not change the fact that looting occurred in New Orleans. Using burglary as a legitimate proxy variable for looting, researchers examined the socioeconomic conditions of the city and burglary rates surrounding three different storms. The economic conditions of the city fairly accurately predicted burglary rates before and after each storm. Hurricane Betsy, a powerful and devastating storm, struck New Orleans in 1965 when the city was close to its peak population and economically booming. The burglary rate was 9.0 per 100,000 in the month after Hurricane Betsy. In contrast, the burglary rate, as measured by police reports, in the month after Hurricane Katrina was 245.9 per 100,000. Moreover, the burglary rate after Katrina was calculated using only those losses that were definitely determined to be due to burglaries. A majority of the post-storm losses were coded by the police as "21K," which indicated the losses could have been due either to the hurricane or to looting. It is conceivable, then, that the post-Katrina burglary rate may actually have been even higher than 245.9 per 100,000.⁸

It was not just the lack of social control that facilitated post-Katrina looting. It was the confluence of that factor and the historically evolving socioeconomic conditions that have produced a largely minimum-wage economy

and a population of which nearly one-third was living in poverty. These conditions increased the probability of significant looting. Hurricane Katrina simply intensified and worsened the conditions of deprivation and crime that have plagued New Orleans for many years.

Influence of the Looting Myth in Disaster Planning and Response

To write off even the possibility of looting as a myth in the context of natural disasters is irresponsible at best. It is crucial that disaster response planners anticipate looting in the wake of natural disasters and design their responses accordingly. Many retailers in New Orleans, perhaps acting in their own best interests, freely gave food, water, and other needed supplies. In order to avoid property damage, a number of merchants left their doors unlocked to accommodate people's needs. Some people were less than grateful and repaid the merchants' generosity by sacking the establishments. An examination of loss claims by stores in post-Katrina New Orleans would provide a clearer picture not only of what was taken, but also of what volume of survival supplies are necessary for a disaster of that magnitude and of what types of businesses may be able to provide them most readily.

Anticipating looting is also a proper policy for law enforcement. When search and rescue operations are taken over by other first responders, there is less need for police involvement in these activities. Therefore, the police could concentrate their efforts on maintaining law and order and protecting property. There is nothing to be gained by private citizens' taking the law into their own hands and endangering their lives in the process. Looting after disasters

is not a myth. It is a well-documented phenomenon and to minimize it by recasting a disaster as a "catastrophe" is not useful. Disaster response planners need to anticipate and design effective responses to antisocial behavior, help meet people's basic needs, and move as quickly as possible into the recovery phase of the disaster.

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Mary Fran Myers Gender and Disasters Award: 2007 Nominees Sought by April 15

The Gender and Disaster Network and the Natural Hazards Center invite nominations of those who should be recognized for their efforts to advance gender-sensitive policy, practice, or research in disaster risk reduction. Established in 2002, the Mary Fran Myers Award recognizes that vulnerability to disasters and mass emergencies is influenced by social, cultural, and economic structures that marginalize women and girls and may also expose boys and men to harm. The award was named to recognize Myers' sustained efforts as co-director of the Natural Hazards Center to launch a worldwide network promoting women's opportunities in disaster-related professions and supporting research on gender issues, disasters, emergency management, and higher education.

The intent of this award is to recognize women and men whose advocacy, research, or management efforts have had a lasting, positive impact on reducing disaster vulnerability. The award committee is especially interested in soliciting nominations from outside the United

States and strives to enable award recipients with high travel costs to attend the Natural Hazards Center Workshop in Colorado.

There are three steps to nominate someone, and all materials should be submitted electronically:

- Submit your full name and contact information (mailing address, e-mail, telephone, fax) and that of the nominee;
- Attach the nominee's current resume or curriculum vitae;
- Write a letter of nomination detailing specifically how this individual's work fits the award criteria as described above.
- Optional: A one-page letter of support from another person or organization may also be submitted.

Please direct any questions and submit nomination materials to Elaine Enarson at enarson@brandonu.ca; (204) 571-8575. More information about the Mary Fran Myers Award is available at www.colorado.edu/hazards/mfaward/.

New Quick Response Reports from the Natural Hazards Center

With funds from the National Science Foundation, the Natural Hazards Center offers social scientists small grants to travel to the sites of disasters soon after they occur to gather valuable information concerning immediate impact and response. Grant recipients are then required to submit reports of their findings, which the Center posts online. Two new Quick Response reports are now available at www.colorado.edu/hazards/qr/qrrpts.html.

QR187 Providing for Pets During Disasters, Part II: Animal Response Volunteers in Gonzales, Louisiana, by Leslie Irvine. 2006. Using Hurricane Katrina as a case study, this researcher examined how emergency responders provide for pets after a disaster. Irvine used participant observation to note the emotional needs of volunteers who help rescue, feed, shelter, and care for animals in a disaster. Irvine also notes that animals, because they are central to many families, cannot be left behind, and emergency response plans must account for pets.

QR188 An Assessment of the Personal and Emotional Barriers to Effective Disaster Response on the Part of Healthcare Professionals, by Laura L. Banks, Michael E. Richards, and Mark B. Shah. 2006. Using face-to-face interviews and surveys from hospital employees in Martin County, Florida, the researchers catalog numerous barriers to the provision of quality patient care immediately after two back-to-back hurricanes in 2004 (Frances and Jeanne). The research team found that more planning and preparation at hospitals is needed for adequate storm recovery.

PERI Announces Challenge Grant to Support Mary Fran Myers Scholarship Fund

The Public Entity Risk Institute (PERI) and the Natural Hazards Center have launched the 2007 PERI Challenge Grant Campaign to increase the Mary Fran Myers Scholarship Fund.

Mary Fran Myers Scholarships provide financial support to worthy participants who would otherwise not be able to attend the Annual Hazards Workshop in Boulder, Colorado. The scholarship was established in 2003 and, since then, funds have been used to bring students, international participants, and local practitioners to the workshop to further their research, community service, and careers. However, the grant oversight committee quickly recognized that far more qualified people applied for scholarships than could be accommodated. Hence PERI has agreed to help increase the fund's endowment to allow more people to attend the workshop.

As part of the campaign, PERI has offered to match up to \$10,000 in contributions made to the scholarship fund before July 1, 2007. To manage grant campaign contributions, the Natural Hazards Center has established a gift account with the University of Colorado Foundation.

The Center is asking all members of the hazards community to consider contributing to that fund — both to support the advancement of hazards management across the nation and globe and to honor the memory of the Center's former co-director and hazards mitigation pioneer. To help meet the goal of raising \$10,000 before July 1, 2007, please send your check, made out to the "University of Colorado Foundation," to the Mary Fran Myers Scholarship Fund, Natural Hazards Center, University of Colorado, 482 UCB, Boulder, CO 80309-0482, USA.

Meeting of Hazards and Disasters Researchers: Call for Abstracts

The Hazards and Disasters Researchers Meeting, immediately following the 32nd Annual Hazards Research and Applications Workshop in Boulder, Colorado, on July 11-12, is requesting submissions of scholarly research on all aspects of hazards and disaster research from all disciplinary perspectives. Please submit extended abstracts for papers electronically to HDRMeeting@gmail.com with "HDRM Abstract" in the subject line.

As a new feature of this year's meeting, accepted papers will be compiled and published as proceedings to be sent to all attendees. More information will be provided upon acceptance.

The submission should include the following information for each paper:

- Author's (and co-authors') name, address, telephone number, and email address. Indicate the person that will present the paper.
- Title of the paper.
- Three or more keywords that signal the topic area of the paper.
- An extended abstract of two pages, single-spaced, and not more than 1,000 words describing the research.
- Indicate whether you are willing to serve as a chairperson and/or discussant.

The deadline for abstracts is April 15, 2007, with notification of inclusion in the program by May 1, 2007. If an earlier decision is required to arrange travel, please indicate so with the submission.

IPCC: The Earth's Getting Warmer – and It's Our Fault

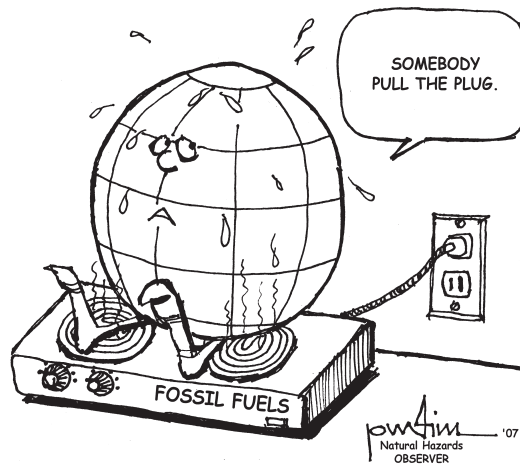
Stronger Hurricanes, More Intense Precipitation, Severe Drought Cited as Potential Consequences

Editors' note: We encourage those interested to read the online summary of this report, available at www.ipcc.ch. The original report is, of course, much more detailed and sophisticated than the articles that appear in the mainstream media. The media summaries not only focus on selected details, but also often give a false impression of the contents; in some cases they are simply incorrect. The IPCC summary report is only 11 pages long, with another nine pages of tables, graphs, and other illustrations. It is well worth reading.

Global warming is “unequivocal [and] evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global mean sea level.” Moreover, “most of the observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations.” These and other compelling conclusions are offered by the Intergovernmental Panel on Climate Change (IPCC) in a much-heralded report released February 2—*Climate Change 2007: The Physical Science Basis—Summary for Policymakers*. “Very likely,” in IPCC speak, means that the panel considers its conclusion to be 90% certain.

The *Summary for Policymakers* is only a brief synopsis of the first of four parts of a much larger report from the IPCC on global climate change, the fourth such report by the panel since 1988. In the third, published in 2001, the IPCC said that it was only “likely” that humans were responsible, “likely” meaning 66% certain. The latest report states, “The atmospheric concentration of carbon dioxide in 2005 exceeds by far the natural range over the last 650,000 years. The primary source of [this increase] since the pre-industrial period results from fossil fuel use.” Moreover, the report concludes that the increase in temperature so far is “unprecedented in more than 10,000 years,” and global temperatures are likely to rise about 0.2°C in each of the next two decades. Additionally, “Continued greenhouse gas emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would very likely be larger than those observed during the 20th century.” At the same time the report suggests that ocean levels could rise as much as two feet in the next century, but the authors are quick to acknowledge the uncertainty of that estimate, because the interactions of the many processes leading to higher sea levels are not well understood.

As a result of the report's nearly unequivocal conclusion that human activity is heating the planet, IPCC leaders and others around the world have called for governments, businesses, and individuals to take immediate action to combat climate change.



The report states, “At continental, regional, and ocean basin scales, numerous long-term changes in climate have been observed. These include changes in Arctic temperatures and ice, widespread changes in precipitation amounts, ocean salinity, wind patterns and aspects of extreme weather including droughts, heavy precipitation, heat waves, and the intensity of tropical cyclones.”

Thus, compounding the problems of warming and consequent sea-level rise, the panel notes that global warming could induce future water shortages, intensify heat

waves, and increase the magnitude of hurricanes and related storm surge in some parts of the world, as well as increase and alter the distribution of heavy precipitation and other climate-related hazards. Consequently, both floods and droughts could increase.

In one of its more controversial statements, the panel notes, “There is observational evidence for an increase of intense tropical cyclone activity in the North Atlantic since about 1970, correlated with increases in tropical sea surface temperatures. [However,] there is no clear trend in the annual numbers of tropical cyclones.” The report also suggests that the locations of hurricanes will probably move “poleward, with consequent changes in wind [and] precipitation.”

The report drew from thousands of pieces of research and an array of climate models that employ scenarios that vary greatly in their assumptions about human population growth, adaptation, and change.

The *Summary for Policymakers* presents the work of only one of three IPCC working groups. This first working group was charged with assessing physical science analyses of the climate system and climate change. The findings of the second group, which is assessing the vulnerability of socioeconomic and natural systems to climate change, consequences, and adaptation options, are due in April. The report of the third group, assessing options for limiting greenhouse gas emissions and otherwise mitigating climate change, will be published in May.

A “Synthesis Report” integrating the findings of all three working groups will be published later this year. The complete study draws on research by more than 2,500 climate scientists, involves more than 800 contributing authors from over 130 countries, and will have taken six years to complete.



Homeland Security Appropriations Passed— Bill Mandates FEMA Restructure

In October, President Bush signed Public Law 109-295, which appropriated \$34.8 billion for Department of Homeland Security (DHS) spending in fiscal year 2007. The bill included \$31.9 billion in discretionary funds as well as \$1.8 billion in emergency funds. (Most of the emergency funding—\$1.2 billion—is for construction of a fence and related security measures along the U.S.-Mexico border.) The money represents an increase of approximately 10% over 2006 spending.

The law also addresses an issue with which Congress has wrestled since Hurricane Katrina: the structure of the Federal Emergency Management Agency (FEMA) and the agency's status both within DHS and relative to the White House. There had been considerable debate and argument on whether or not to remove FEMA from DHS and re-establish it as an independent agency.

Under the new law, FEMA will remain within DHS but with more autonomy. Additionally, the legislation increased the status and role of the FEMA director, giving that person the power to advise the president directly concerning disasters. The responsibilities for disaster preparations as well as recovery operations were returned to the agency. Acknowledging criticism by emergency management professional associations and others, the bill also requires that the FEMA director have five years of executive administrative experience and a background in emergency management. (In a signing statement, President Bush took exception to this provision and stated that he was free to disregard that requirement.)

The bill also establishes FEMA regional office "strike teams" to respond quickly to disasters, creates a National Advisory Council through which state and local disaster responders can advise FEMA, and authorizes 10% funding increases for the agency in fiscal years 2008-2010.

The final version of this bill is available online at <http://thomas.loc.gov/cgi-bin/query/z?c109:H.R.5441.ENR>.

DHS Announces \$1.7 Billion for Local Homeland Security Programs . . .

On January 5, DHS released guidance and application kits for five fiscal year 2007 grant programs that will provide roughly \$1.7 billion in funding for state and local counterterrorism efforts.

The five programs, which make up the Homeland Security Grant Program (HSGP), encourage a regional approach to homeland security. Funding priorities include reducing the risks from improvised explosive devices and radiological, chemical, and biological weapons, and emphasize interoperable communications, information sharing, and citizen preparedness. For 2007, HSGP funding includes:

- State Homeland Security Program (SHSP): \$509.3 million;
- Law Enforcement Terrorism Prevention Program (LETPP): \$363.8 million;
- Urban Areas Security Initiative (UASI): \$746.9 million;
- Metropolitan Medical Response System (MMRS): \$32.0 million; and
- Citizen Corps Program (CCP): \$14.6 million.

DHS refined its grants programs over the past year to increase transparency and provide a more streamlined and interactive application process. In addition, the department now ranks certain core programs according to risk. The HSGP risk-assessment method considers a variety of factors, including intelligence assessments, population size and density, economic impacts, and proximity to nationally critical infrastructure such as international borders. The six highest-risk UASI cities will be permitted for the first time to apply up to 25% of their award toward current state and local personnel dedicated exclusively to counterterrorism field operations.

More than 100 law enforcement, emergency management, and homeland security experts from federal, state, and urban areas will form peer-review panels to assess this year's grant applications, and DHS expects to announce grant awards by this summer. For more information and a link to the grant guidance document, see www.dhs.gov/xnews/releases/pr_1168010425128.shtm.

. . . and Another \$445 Million to Secure Critical Infrastructure

In early January, DHS also released guidance and application kits for the five grant programs that compose the department's Infrastructure Protection Program (IPP). In fiscal year 2007 the program will award about \$445 million to support state, local, and private industry infrastructure protection initiatives—\$46 million more than last year. The grants are intended to strengthen security at critical facilities ranging from chemical plants to mass transit systems and seaports. Specific totals include:

- Port Security Grant Program: \$201.2 million;
- Transit Security Grant Program: \$171.8 million;
- Buffer Zone Protection Program: \$48.5 million;
- Intercity Bus Security Grant Program: \$11.6 million; and
- Trucking Security Grant Program: \$11.6 million.

Approximately 60% of the Port Security Grant Program funds will go to eight port areas considered to be at highest risk. These "Tier I" ports include New York-New Jersey, New Orleans, Houston-Galveston, Los Angeles-Long Beach, Seattle-Tacoma, Philadelphia-Wilmington-Southern New Jersey, San Francisco Bay, and Port Arthur-Beaumont, Texas. Funding priorities for these areas include training, exercises, activities to mitigate the risk of

improvised explosive devices, and employee credentials and access controls.

Similarly, eight major urban areas qualify for Tier I status within the Transit Security Grant Program. They include New York-Connecticut-New Jersey, the National Capital Region, Boston, the San Francisco Bay Area, Chicago, Philadelphia, Greater Los Angeles, and Atlanta. These metropolitan areas will receive roughly 90% of the Transit Security funds available for rail and bus systems this year. Grant funding priorities include securing underground and underwater systems; reducing the risks of improvised explosive devices and radiological, chemical, and biological weapons; and training, exercises, and public awareness campaigns. In addition, Amtrak will receive \$8 million to support work on intercity passenger rail security and to better coordinate with local and regional transit systems. Transit Security Grants will also fund enhanced security for 19 ferry systems in 14 regions.

For the first time, Transit Security Grants will allow award recipients the flexibility to decide where they can better focus their resources. In the past, these awards were allocated in specific amounts for rail versus bus transit.

The IPP grant program will also provide \$11.6 million each for the Intercity Bus Security Grant Program and the Trucking Security Grant Program, as well as \$48.5 million for the Buffer Zone Protection Program. DHS expects to award the IPP grants this spring. For more information, see www.dhs.gov/xnews/releases/pr_1168366069190.shtm.

NOAA Improves Tsunami Warning System for Most Threatened Parts of the United States

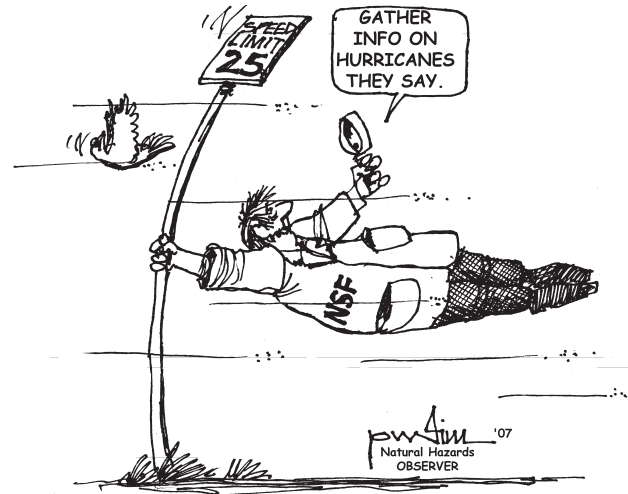
In December, the National Oceanic and Atmospheric Administration (NOAA) announced the deployment of six new Deep-ocean Assessment and Reporting of Tsunami (DART) stations in the southwest Pacific. The new stations provide real-time tsunami detection as waves travel across open waters and thus, afford increased lead time for tsunami warning to the U.S. coastal areas most at risk from tsunamis traveling long distances. Those areas include the coastlines of Hawaii, Alaska, Washington, Oregon, and California.

The buoys are part of an effort underway since the devastating Indian Ocean tsunami in December 2004 to improve tsunami detection and warning programs at home and abroad. Over the last two years, NOAA has expanded the U.S. warning system to include the Atlantic coast, Gulf of Mexico, Puerto Rico, and the U.S. Virgin Islands. The agency has deployed a total of 25 DART stations in U.S. waters, installed 15 new and upgraded 33 existing tide stations, completed inundation models for 17 communities (see the *Observer*, Vol. XXXI, No. 3, p. 3), and recognized 26 new "TsunamiReady" communities. NOAA has also hired new employees to fully staff its two tsunami warning centers in Honolulu, Hawaii, and Palmer, Alaska.

Further, in December NOAA joined the government of Thailand in launching the first DART station in the Indian Ocean. That DART station is the first of 22 envi-

sioned for an Indian Ocean regional tsunami warning system being established under the auspices of the UNESCO Intergovernmental Ocean Commission. The stations are part of a larger, end-to-end warning system that includes tide gauges, communications upgrades, inundation models, and dissemination systems.

For details about NOAA's tsunami detection and warning efforts, see www.noaanews.noaa.gov/stories2006/s2765.htm.



National Science Board Recommends Major National Hurricane Research Initiative

In 2004 and 2005, approximately 2,000 U.S. citizens lost their lives due to hurricanes. In addition, financial losses from the four hurricanes and tropical storms that hit Florida and the Atlantic Coast in 2004, and from Hurricane Katrina and other storms in 2005, were an estimated \$168 billion (in constant 2006 dollars). In the final tally that figure could be markedly higher.

To address these grim facts, in late 2005 the National Science Board (NSB)—an independent advisory body to the President and Congress on science and engineering policy and the oversight and policy setting body of the National Science Foundation (NSF)—established a Task Force on Hurricane Science and Engineering with the mandate to 1) summarize current activities, 2) identify gaps and opportunities, and 3) recommend priorities for action within a national agenda.

In December 2006 the NSB posted a draft report for public comment that proposes a major new national program of hurricane research. The report, *Hurricane Warning: The Critical Need for a National Hurricane Research Initiative*, is available online at http://www.nsf.gov/nsb/committees/hurricane/pre_publication.pdf.

The report warns that, relative to the tremendous damage and suffering caused by hurricanes, the federal investment in hurricane science and engineering is woefully inadequate. It then calls for a "National Hurricane Research Initiative"—a broad, coordinated interdisciplinary and interorganizational program to address the questions that must be answered if the nation is to become more resilient to hurricanes. The envisioned research pro-

gram would cover everything from the physical science of hurricanes, to engineering studies to enhance building and infrastructure storm resistance, to social science research into the economic and human impacts of such disasters and approaches for ameliorating those impacts. These new efforts notwithstanding, the authors also emphasize that “*more effective application of existing knowledge* to reduce the enormous public outlays, loss of life, and the associated societal disruption caused by hurricanes may be as important as the creation of new knowledge” [emphasis in the original].

The proposed initiative comprises four broad approaches and identifies specific high-priority and medium-priority items in each: 1) understanding and prediction, 2) impacts (on structures, humans, and natural ecosystems), 3) preparedness and response measures (for both structural systems and human populations), and 4) crosscutting activities (including such areas as enhanced computational ability and training and education). In addition, to complement the new initiative, the NSB calls for the establishment of a National Infrastructure Data Base to characterize the physical, social, and natural infrastructure in order to establish a baseline for developing standards, measuring modification and loss, and formulating public policy. It also proposes a National Hurricane Research Test Bed to conduct integrative research and facilitate the transfer of research knowledge to operational applications and decision makers. Finally, the report includes a set of recommendations that NSF itself should adopt to support the hurricane research and proposals offered in the report.

The NSB suggests that this interagency effort be led by the National Science Foundation, the National Oceanic and Atmospheric Administration, and the National Aeronautics and Space Administration, although other agencies should be considered and the program should be as inclusive as possible. It further states that \$300 million will be needed to adequately fund the work.

The final report of the NSB Task Force on Hurricane Science and Engineering, as well as background information concerning the task force’s preliminary workshops, findings, and recommendations, are available at www.nsf.gov/nsb/committees/hurricane/index.htm.

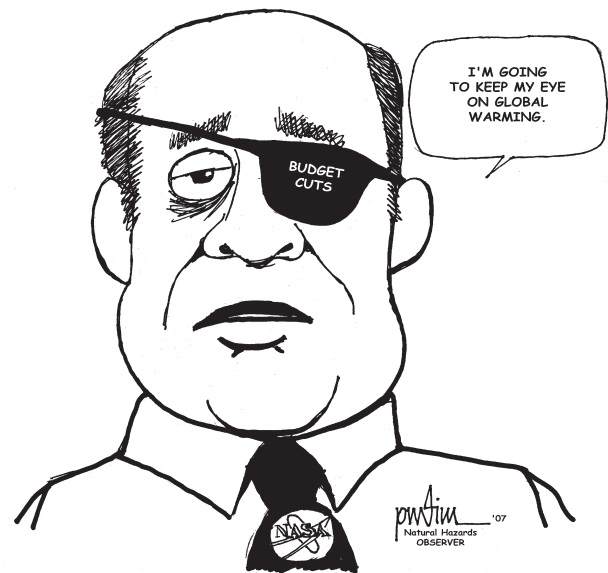
Budget Cuts Could Affect Global Monitoring

Severe cutbacks in the budgets for programs of the National Aeronautics and Space Administration (NASA) that monitor Earth from space could have serious social and economic impacts, warns a report released by the National Research Council (NRC) of the National Academy of Sciences.

The report, *Earth Sciences and Applications from Space: National Imperatives for the Next Decade and Beyond*, cautions that the ability to monitor ice sheets, droughts, tropical storms, and climate change of all kinds will be sacrificed if the funding trend is not reversed. At current levels of funding, the report states, the number of Earth-observing instruments in space will drop by 40% in the next three years.

The NRC recommends funding 17 new missions over the next decade, including 14 from NASA, two from the National Oceanic and Atmospheric Administration, and one joint mission of the two agencies. In addition, about \$7.5 billion should be spent on instruments and satellite missions through 2020, the report’s authors propose. This would keep annual costs, as a percentage of the economy, the same as in 2000.

The 400-page report, authored by a committee of 50 leading scientists and chaired by Richard Anthes of the University Corporation for Atmospheric Research, was released January 15 at the annual meeting of the American Meteorological Society. It can be accessed at www.nap.edu/catalog/11820.html.



6 of 75 Cities Get Top Rating in DHS Interoperable Communications Assessment

Only six of 75 U.S. cities received top grades in an assessment of the ability of their law enforcement, fire, and emergency medical services to effectively communicate within one hour of an incident.

The Department of Homeland Security’s Interoperable Communications Assessment did, however, find that all 75 urban and metropolitan areas surveyed have policies in place for smooth and rapid communication after a disaster. Using scorecards, the report illustrates the current capability for each area and provides recommendations for improvement.

The six cities and surrounding areas netting the highest scores are Washington, D.C.; San Diego, California; Minneapolis-St. Paul, Minnesota; Columbus, Ohio; Sioux Falls, South Dakota; and Laramie County, Wyoming. Chicago, Illinois; Cleveland, Ohio; Baton Rouge, Louisiana; Mandan, North Dakota; and American Samoa received the lowest ratings.

To view the interoperable communications report and its findings, see www.dhs.gov/xnews/releases/pr_1167843848098.shtm.

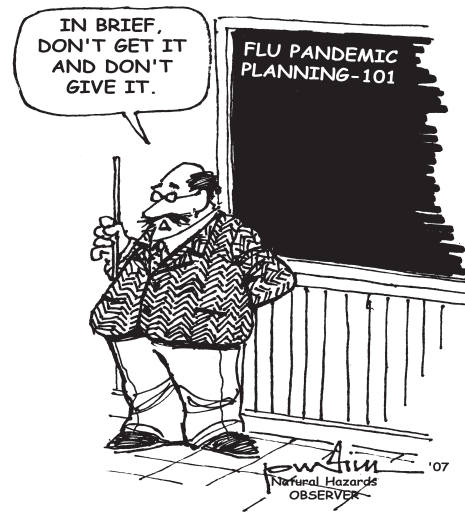
HHS Unveils Guide to Aid Pandemic Flu Planning and Preparedness

On February 1, the Department of Health and Human Services (HHS) and its Centers for Disease Control and Prevention (CDC) released new guidance on community planning strategies that state and local decision makers, as well as individuals, can use to improve their preparedness for an influenza pandemic.

Potential strategies vary based on the severity of the pandemic, but all are important because the best protection against pandemic influenza—a vaccine—is not likely to be available in the early stages of such an event. Community strategies that delay or reduce the impact of a pandemic (referred to as “non-pharmaceutical interventions”) may help reduce the spread of disease until a vaccine that is well-matched to the virus becomes available.

In order to help authorities determine the most appropriate actions to take, the guidelines incorporate a new pandemic influenza planning tool—the Pandemic Severity Index (PSI). The PSI, modeled after the scale used to characterize hurricanes, establishes five different categories of pandemics, with category 1 representing moderate severity and category 5 the most severe. The severity of a pandemic is primarily determined by its death rate, or the percentage of infected people who die.

The community planning guidance, *Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States— Early Targeted Layered Use of Non-Pharmaceutical Interventions*, is available online at www.pandemicflu.gov.



The Contracts and Grants section will return in the May *Observer*.

The Natural Hazards Center Welcomes New Staff

Welcome Corey

The Center welcomes Corey Reynolds, who joined the staff at the beginning of the year as the Center’s Program Associate. In that position, Corey will compile and edit the *Disaster Research* e-newsletter, manage the Center’s Web site, assist in the coordination of special projects and publications, and manage the Center’s Quick Response Research Program.

Corey holds a bachelor’s degree in journalism and political science from the University of Colorado, where he worked in communications and outreach at the nation’s largest student-run environmental center. Before joining the Natural Hazards Center, he was a reporter for newspapers in central and northern Colorado.

His interests include the role of the media before, during and after disaster; the effect of trauma reporting on media organizations and individuals; risk communication; and emergency management public policy.

Welcome Laurie

The Natural Hazards Center is happy to welcome Laurie Schmidt, who joined the staff in early February as the Center’s Editor. In that position, Laurie will compile and edit the *Natural Hazards Observer* newsletter and assist with coordination of special projects and publications.

Laurie holds a M.S. degree in science communication and a B.A. in English. Before joining the Natural Hazards Center, she worked on the *Phoenix* Mars Lander mission in Tucson, Arizona, developing educational content for the mission’s Web site. Prior to that, she served as editor of NASA’s DAAC Alliance Annual publication from 2001-2005, based at the National Snow and Ice Data Center in Boulder.

Her interests include communicating earth science concepts to lay audiences, particularly with regard to correcting public misconceptions about geologic processes and natural hazards.

2007 Summer WAS*IS Call for Applications

The National Center for Atmospheric Research Societal Impacts Program (NCAR/SIP) is seeking applications for its summer 2007 Weather and Society Integrated Studies (WAS*IS) workshop. The WAS*IS program works to fully integrate social science into meteorological research and practice by creating an interdisciplinary community of practitioners, researchers, and stakeholders. Participants explore new tools, methods, and concepts to improve weather products.

For more information and to apply for the 2007 WAS*IS workshop, visit www.sip.ucar.edu/wasis/. Applications are due Monday, March 26, 2007. Please contact Eve Gruntfest (ecg@uccs.edu) or Julie Demuth (jdemuth@ucar.edu) with questions.

Below are brief descriptions of some of the resources on hazards and disasters that have recently come to the attention of the Natural Hazards Center. Direct Web links are provided for items that are available free online. Other materials can be purchased through the publisher and/or local and online booksellers.

Publications, Reports, and More

All-Hazards

Simplified Guide to the Incident Command System for Transportation Professionals. Document #FHWA-HOP-06-004. 2006. 64 pp. Free online. U.S. Department of Transportation, Federal Highway Administration (FHWA); www.ops.fhwa.dot.gov/publications/ics_guide/index.htm.

The FHWA has published this guide to introduce the Incident Command System (ICS) to the many participants potentially involved with major transportation accidents and disasters—from law enforcement and fire personnel to tow truck operators. Besides chapters that cover organizational structure under the ICS, unified command, advance planning and coordination, and implementation, the book includes a useful glossary keyed to the important concepts of each chapter.

Disaster Resilience: An Integrated Approach. Douglas Paton and David Johnston. ISBN 0-398-07663-4. 2006. 344 pp. \$68.94 (hardcover); \$48.95 (paper). Charles C. Thomas, Publisher; (800) 258-8980; www.ccthomas.com.

This volume discusses how risk can be managed over the long term by identifying those factors that influence a society's capacity to co-exist with periodically hazardous natural processes. Resilience is examined in terms of individual and household preparedness, protection of vital infrastructure, and religious and other support networks. The book also addresses the role of the media, economic and ecological resiliency, and planning for mitigation. Introductory and summary chapters set the separate contributions in context and highlight links between them to arrive at overall observations about what is needed to create disaster-resilient communities: a conscious effort on the part of people, communities, and social institutions to develop resources to adapt to changed realities—and to make that adaptation sustainable for the future.

Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies. Jörn Birkmann, editor. ISBN 92-808-1135-5. 2006. 524 pp. \$39.00. United Nations University Press; (202) 963-6387; www.unu.edu.

An assessment of vulnerability to natural hazards and their impacts—preferably in quantified terms—is essential when estimating the potential consequences of all manner of disasters and should be a cornerstone of effective disaster preparedness worldwide, particularly in this era of changing climate and increasing frequency of extreme natural events. Assessing a population's vulnerability and using that information in policy and decision

making would be simplified if such indicators of vulnerability were developed and agreed upon. Toward that end, this book's 24 chapters explore 1) the various definitions, proposed indicators, and conceptual frameworks of vulnerability; 2) the relationship between human vulnerability and environmental change; 3) existing techniques for measuring vulnerability at global, national, and sub-national scales; 4) some qualitative and participatory approaches used at local levels; and 5) ways to assess institutional capacity for reducing vulnerability, using flood disaster risk as an example. A concluding chapter offers overarching observations and describes research that is still needed.

World Disasters Report: Focus on Neglected Crises. International Federation of Red Cross and Red Crescent Societies. ISBN 92-9139-122-0. 2006. 252 pp. Free online. Kumarian Press, Inc.; (860) 243-2098; www.kpbooks.com.

Which people are missing out on humanitarian aid because no journalists report their plight, no donors are interested in them, no agencies have assessed their needs, or their governments ignore them? The latest entry in this Red Cross series, published annually since 1993, ventures behind the more publicized disasters of 2005-2006. It combines reporting from the field with critical analysis of aid flows and donor preferences to highlight those places and issues starved of attention after (and during) such natural disasters as drought in Africa and Hurricanes Stan and Katrina. Special chapters examine gender issues, analyze the reasons some needs are habitually neglected, and document trends in overall humanitarian aid over the past decade. The report calls on aid organizations, journalists, governments, and academics to work together to address the symptoms—and causes—of neglected humanitarian crises.

Fractal Analysis for Natural Hazards. G. Cello and B.D. Malamud, editors. Geological Society Special Publication 261. ISBN 1-86239-201-3. 2006. 172 pp. £75.00. The Geological Society; +44 (0)1225 445046 (U.K.); www.geolsoc.org.uk.

The concept of self-similarity and fractals—the idea that an object's pattern will repeat itself at multiple scales—is well-recognized in many natural objects such as sand dunes, rock fractures and folds, and drainage networks. However, the use of these concepts for spatial and temporal analysis has been less used in the study of natural hazards. This book brings together 12 contributions that explore the role of fractal analysis in natural hazard research on landslides, wildfires, floods, catastrophic rock

fractures, and earthquakes. The papers apply a variety of spatial and temporal fractal-related approaches and concepts (probabilistic hazard analysis, cellular-automata models, spatial analysis, temporal variability, prediction, and self-organizing behavior) to historical data, experimental data, and computer simulations. The aim is to present current research on fractal analysis as applied to natural hazards and to stimulate further interest and research in this field.

Global Environmental Assessments: Information and Influence. Ronald B. Mitchell, William C. Clark, David W. Cash, and Nancy M. Dickson, editors. ISBN 978-0-262-13468-2. 2006. 344 pp. \$27.00. The MIT Press; (800) 405-1619; www.mitpress.mit.edu.

The number and variety of methods for making large-scale scientific assessments of environmental problems and for determining possible solutions to them has expanded rapidly in recent decades. Too often, however, scientific information has not been transformed into effective and appropriate policies to protect the global environment. In this, the third synthesis volume growing out of the Global Environmental Assessment Program, a multidisciplinary project launched in 1995, scholars use a comparative analytic framework and supporting case studies to evaluate the impact of global environmental assessments and examine how, and under what conditions, such assessments influence political and economic decision makers. They find that global environmental assessments are more likely to be influential if the process is perceived not only as scientifically credible but also as salient to policy concerns and as generated through legitimate means. The studies show that, although the content of the assessment clearly matters, its influence is often determined more by the process that generated it, especially ongoing interactions among scientists, stakeholders, and policymakers, and by external factors affecting the receptiveness of different audiences. The case studies that form the basis for the conclusions range from global assessments of climate change and acid precipitation to assessments of sea-level rise in Maine and Hawaii to climate forecasting in Zimbabwe.

Lessons of Disaster: Policy Change after Catastrophic Events. Thomas A Birkland. ISBN 978-1-58901-121-2. 2006. 216 pp. \$26.95. Georgetown University Press; (202) 687-5889; <http://press.georgetown.edu>.

To determine when and how a catastrophic event serves as a catalyst for true policy change, the author of this book examines four categories of disasters: aviation security, homeland security, earthquakes, and hurricanes. He explores lessons learned from each, focusing on three types of policy change: change in the larger social construction of the issues surrounding the disaster, including the nature and appropriateness of government action and attitudes toward that action; instrumental change, in which laws and regulations are made; and political change, in which alliances are created and shifted. Birkland's argument is that the type of disaster affects the types of lessons learned and that certain conditions are

necessary to translate awareness into new policy, including media attention, salience for a large portion of the public, the existence of advocacy groups for the issue, and the pre-existence of policy ideas that can be drawn upon. He concludes with a series of observations about why true "learning from lessons" does or does not occur, and also why learning fades over time.

Emergency Management Magazine. Free online. www.emergencymgmt.com.

Emergency Management is a new quarterly magazine published by e.Republic, Inc. that describes itself as the first all-hazards leadership publication to address the entire intergovernmental community of stakeholders in emergency management. *Emergency Management's* editorial mission is to provide stories and case studies to help the emergency management community with the prevention, preparedness, response to, and recovery from a disaster. Three issues of the magazine were published in 2006, with articles looking at media effectiveness in disaster response, hurricane preparedness, public education, problems plaguing the Federal Emergency Management Agency, and other relevant and timely topics.

Earthquakes and Tsunamis

Earthquake Spectra Special Issue Reconnaissance Report: The Great Sumatra Earthquakes and Indian Ocean Tsunamis of 26 December 2004 and 28 March 2005. Special Issue III, Vol. 22 (June). 2006. 900 pp. 43.00€. UNESCO; http://upo.unesco.org/details.aspx?Code_Livre=4495#. Individual articles can also be purchased and viewed online. <http://scitation.aip.org/EarthquakeSpectra/>.

The earthquake and tsunami of December 26, 2004, and the resulting tragic loss of life across the Indian Ocean created global awareness of tsunamis and their destructiveness across political borders and ocean basins. An estimated 230,000 people lost their lives, and more than a million people were displaced, making the 2004 event the worst tsunami catastrophe in recorded history. Conceived as a definitive reference work on that disaster, this comprehensive volume, a special issue of the journal *Earthquake Spectra*, co-published by the Earthquake Engineering Research Institute and UNESCO, addresses seismology, geology and geophysics, tsunami field surveys and analyses, performance of structures and lifelines, preparedness, societal impacts, and recovery and reconstruction. The diversity of contributions reflects the unique nature and magnitude of this event. The volume features a survey of tsunami run-up measurements across the Indian Ocean, as well as individual tsunami field surveys from 12 countries. Comprehensive discussions of the seismologic and geologic aspects are also included, as well as analyses of the impacts on communities throughout the region.

Earthquake ABC, A Child's View of Earthquake Facts and Feelings. Lucy Jones. 2006. Free online. <http://home.earthlink.net/~torg/eqindex.html>. A paperback version is available for \$10.00 (\$8.00 for educational institutions)

from Sirius Productions; <http://home.earthlink.net/~torg/index.html>.

The heart of this book is a series of illustrations—one or two for each letter of the alphabet—prepared by second- and third-grade students in a single classroom in Pasadena, California. One of those students was the child of Dr. Lucy Jones, a seismologist with the U.S. Geological Survey, who provided weekly earth science lessons to the class. The Northridge earthquake, which struck during the time Jones was teaching at the school, presented a special opportunity to observe and practice the lessons the children had learned about earthquakes. The students subsequently shared what they had learned with their parents through this alphabet book. It has been updated and remains a useful tool for teaching grade school children about earthquakes. The book includes both a parents' and a teacher's guide with in-depth discussions and definitions of the various terms illustrated.

Advances in Earthquake Engineering for Urban Risk Reduction. S. Tanvir Wasti and Guney Ozcebe, editors. Volume 66 in the NATO Earth and Environmental Sciences Series. ISBN 1-4020-4570-0. 2006. 552 pp. plus CD. £54.00 (paper). Springer; +49 6221 487 0 (Germany); www.springer.com.

The papers in this book, which constitute the proceedings of the NATO Science for Peace Workshop on Advances in Earthquake Engineering for Urban Risk Reduction, held in Istanbul, Turkey, in May 2005, chart new directions of research and application in the assessment and rehabilitation of buildings in seismically active regions, with an emphasis on dense, urban settings. Several papers discuss probabilistic prediction and quantification of structural damage as an aid to the appraisal of damaged and/or vulnerable buildings in order to determine whether structural rehabilitation and upgrading are feasible. Others present approaches for on-site and occupant-friendly upgrading of buildings and propose a range of economical and practical techniques to address the problem. The intended audience includes earthquake engineers, building officials and contractors, municipal authorities, and graduate students.

Tsunami and Disaster Management: Law and Governance. C. Raj Kumar and D.K. Srivastava. ISBN 962-661-306-8. 2006. 274 pp. \$52.00. Sweet and Maxwell Asia, Publisher; www.sweetandmaxwellasia.com.

Highlighting issues in disaster management and their implications for governmental reform in Asia and beyond, the 15 researchers and practitioners who contributed to this book examine legal and governance issues in emergency response, including victims' rights after a disaster. In addition, the book contains an assessment of the level of preparedness in the countries affected by the Southeast Asia earthquake and tsunami.

Hurricanes and Coastal Hazards

Performance of Physical Structures in Hurricane Katrina and Hurricane Rita: A Reconnaissance Report. NIST Technical Note 1476. 2006. 270 pp. Free online. National Institute

of Standards and Technology (NIST), Building and Fire Research Laboratory; www.bfrl.nist.gov/investigations/investigations.htm.

Soon after Hurricane Katrina's landfall on August 29, 2005, NIST launched a two-phase reconnaissance to study and document damage to major buildings, infrastructure, and residential structures. The first phase involved the study of roofing, structural, and floodwall/levee damage immediately after the disaster. The broader second phase in October 2005 examined in greater depth the damage in the Mississippi coastal area, New Orleans, and southeast Texas (the area affected by Hurricane Rita). The resulting report documents the observations and subsequent analysis of damage. It concludes with 23 recommendations for 1) improvements in practice that will have an immediate impact on the rebuilding of structures damaged or destroyed by the hurricanes; 2) improvements to construction standards, codes, and practice; and 3) further study or research and development. Two prominent findings are that stricter adherence to standards and codes and the recognition of storm surge are keys to minimizing structural damage from hurricanes. The Web site above also provides links to a press release, FAQs, an executive summary of the report, and a set of briefing slides.

Rebuilding Urban Places after Disaster: Lessons from Hurricane Katrina. Eugenie L. Birch and Susan M. Wachter, editors. ISBN 978-0-8122-1980-7. 2006. 375 pp. \$34.95. University of Pennsylvania Press; (215) 898-6261; www.upenn.edu/pennpress/.

Disasters have a disproportionate effect on urban places. Dense by definition, cities and their environs suffer great damage to their complex, interdependent social, structural, environmental, and economic systems. The plight of New Orleans and several smaller Gulf Coast cities exemplifies this phenomenon. This volume focuses on four major issues in the rebuilding of metropolitan areas after a disaster: making cities less vulnerable to future disaster, re-establishing economic viability, responding to the permanent needs of the displaced, and re-creating a sense of place. Contributors address how to set priorities cooperatively, how issues of race and class intersect with these priorities, and whether the purpose of rebuilding should be restoration or reformation. Other essays provide thoughtful perspectives (looking back several centuries) on urban disasters, cultural preservation, the role universities (present in all urban areas) can play, environmental conditions, economic imperatives, social welfare concerns, and mapping for sustainability analysis and sustainable rebuilding.

"Katrina—The Failures of Success." *WorldWatch Magazine*. Volume 19, No. 5, September/October 2006. Worldwatch Institute; \$4.50 (hard copy), \$6.00 (PDF available online). www.worldwatch.org/epublish/1/.

This special issue of *WorldWatch*, the bimonthly publication of the Worldwatch Institute, looks at failures in the response to Hurricane Katrina and includes articles from geographers, disaster researchers, reporters, a science-fiction author, and a poet. The articles examine the impact

Katrina had on national security, the possibility for more large storms hitting the coastal United States, the economic effects of the disaster, and more.

Current Housing Unit Damage Estimates: Hurricanes Katrina, Rita, and Wilma. 2006. 45 pp. Free online. U.S. Department of Housing and Urban Development; www.huduser.org/publications/pdf/GulfCoast_HsngDmgEst.pdf.

Using data from the Federal Emergency Management Agency and the Small Business Administration, the U.S. Department of Housing and Urban Development's Office of Policy Development and Research analyzed the extent of housing damage resulting from Hurricanes Katrina, Rita, and Wilma. The report, which presents detailed, local-level data on the severity and location of residential damage, finds that 204,737 housing units in Louisiana suffered serious damage, along with 61,386 in Mississippi, 23,199 in Florida, 12,103 in Texas, and 3,684 in Alabama. The data gathered were used to help allocate \$11.5 billion in federal disaster recovery funds to the affected states.

Hurricane Safety Flyer: Before, During and After a Hurricane. 2006. 2 pp. Free online. National Weather Service; www.weather.gov/os/hurricane/pdfs/hurricane-safety_flyer.pdf.

A new brochure from the National Weather Service details important steps to take when a hurricane or tropical storm is nearing. Included are suggestions of what to do before, during, and after a hurricane; what to bring to an evacuation shelter; and an explanation of differences between a hurricane watch and warning. The brochure is also available in Spanish, entitled "La Seguridad de Tiempo: Los Huracanes," and accessible at www.weather.gov/os/hurricane/pdfs/hurricane-flyer-esp.pdf.

Flood

Flood Risk Management: Hazards, Vulnerability and Mitigation Measures. Jochen Schanze, Evzen Zeman, and Jiri Marsalek. Volume 67 in the NATO Earth and Environmental Sciences Series. ISBN 1-4020-4597-2. 2006. \$79.95 (paper). Springer; +49 6221 487 0 (Germany); www.springer.com.

This volume comprises the proceedings of the NATO Advanced Research Workshop on Flood Risk Management: Hazards, Vulnerability and Mitigation Measures, held in Ostrov, Czech Republic, in October 2004. The participants in that meeting sought to develop a framework for integrated and sustainable flood risk management. Accordingly, the papers cover a range of pertinent topics, including risk assessment, weather forecasting, modeling, vulnerability assessment, risk reduction strategies, and management techniques. The papers reflect both research on and practical experience gleaned from flooding in central Europe in 2002 and before.

Floods in Bangladesh: History, Dynamics and Rethinking the Role of the Himalayas. Thomas Hofer and Bruno Messerli. ISBN 92-808-1121-5. 2006. 468 pp. \$38.00. United Nations University Press; (202) 963-6387; www.unu.edu.

An often-repeated assumption about the increasingly severe flooding on the plains of Bangladesh is that

it is caused by deforestation and the land use practices of Himalayan farmers. This book, the product of multidisciplinary, international research begun in 1992 under the auspices of the United Nations University Mountain Programme, presents new evidence about floods in Bangladesh and the importance of highland-lowland linkages. Although there is no statistical evidence that the frequency of flooding in Bangladesh has increased during the 20th century, there are indications that the inter-annual variation of floods and the areal extent of the larger events have increased since 1950. This trend, however, can be related to similar trends in rainfall and discharge patterns. In fact, the hydro-meteorological processes in the Himalayas are not the main causes of floods in Bangladesh. Rather, the combination of simultaneous discharge peaks of the big rivers, high runoff from the Meghalaya Hills, heavy rainfall in Bangladesh, high groundwater tables, and spring tides creates particularly favorable conditions for large-scale flooding, regardless of the activities in the highlands. In addition, lateral river embankments (such as for roads and railways) and human encroachment onto natural water storage areas in the lowlands appear to be having a significant impact on the flooding processes. The book concludes that both the myth about deforestation's creating big floods and the habit of blaming mountain dwellers for the flood catastrophes must be abandoned, although this does not relieve the mountain inhabitants of their responsibility to use and manage the environment sustainably.

Climate

2006 Annual Climate Review: U.S. Summary. National Climatic Data Center, U.S. Department of Commerce. 2006. Free online. www.ncdc.noaa.gov/oa/climate/research/2006/ann/us-summary.html.

The 2006 average annual temperature for the contiguous United States was the warmest on record according to this, the latest in a series of annual summaries of climate data produced by the National Oceanic and Atmospheric Administration. Precipitation in the United States during 2006 was variable throughout much of the country, with periods of excessive rainfall across the Northwest, Great Lakes, and the Northeast, and persistent and developing drought in other areas. There were 23 very strong to violent tornadoes during the 2006 official tornado season, well below the 1971-2000 mean. The 2006 Atlantic basin hurricane season was near the 1950-2000 average with nine named storms, of which five were hurricanes. Snow cover was below average for the North American continent as a whole, consistent with a decades-long trend towards reduced spring snow cover. Much additional information, including graphs, maps, and tables, is contained in this report.

Public Health

Mental Illness and Suicidality after Hurricane Katrina. Ronald C. Kessler, Sandro Galea, Russell T. Jones, and Holly A. Parker. 2006. 21 pp. Free online. *Bulletin of the World*

Health Organization; www.who.int/bulletin/volumes/84/10/06-033019.pdf.

After Hurricane Katrina, instances of mental disorders in the affected population nearly doubled, this new study shows. Before the storm, 6% of the Gulf Coast population surveyed exhibited signs of mental illness requiring immediate treatment, while after the hurricane that number reached 11%. Surprisingly, however, 8% of the population contemplated suicide before the storm, while suicidal thoughts were seen in only 1% of the surveyed population after Katrina hit. The study's authors found that people affected by the hurricane were depressed about their loss and worried for the future, but showed a great sense of inner strength and optimism.

Predicting the Global Spread of H5N1 Avian Influenza. A.

Marm Kilpatrick, Aleksei A. Chmura, David W. Gibbons, Robert C. Fleischer, Peter P. Marra, and Peter Daszak. 2006. 7 pp. Free online. Proceedings of the National Academy of Sciences; <http://intl.pnas.org/cgi/content/short/103/51/19368>.

By analyzing both migratory bird movements and the poultry trading industry, this study's authors concluded that the avian flu will most likely enter the western hemisphere through the trade of infected poultry. Because of lax regulation and quarantine systems in Brazil and Mexico, diseased poultry could infect migrating birds who would then enter the United States. Importantly, this study presents overwhelming evidence that both wild bird migration and poultry trade could be involved in the spread of the H5N1 strain of avian flu in the western hemisphere, implying that strict U.S. regulations on poultry trading may not be enough to prevent the spread of the virus.

Risk

The 2006 Risk Management Yearbook. 2006. 232 pp. \$29.00. Public Entity Risk Institute and the Nonprofit Risk Management Center; (703) 352-1846; www.riskinstitute.org/PERI/PTR/2006+Risk+Management+Yearbook.htm.

This annual publication looks at trends in risk management over the past year and projects how changes in the discipline will affect the years to come. Taking a lessons-learned approach, the 2006 yearbook examines such recent events as Hurricane Katrina to determine how to improve the ability of communities to plan for and respond to the uncertainties they face. Among the topics examined are flood risk education, local recovery efforts, planning for wildfire mitigation, the levee failures in New Orleans and national levee policy, and community resilience. The appendices contain almost 300 additional resources regarding the topics discussed.

Government Accountability Office Reports

The following Government Accountability Office (GAO) reports are available free online at www.gao.gov. Printed copies are also available (first copy is free, additional are \$2.00 each). To order, contact the GAO: (202) 512-6000, TDD (202) 512-2537; www.gao.gov/cgi-bin/ordtab.pl.

Hurricane Katrina: Status of Hospital Inpatient and Emergency Departments in the Greater New Orleans Area. 2006. GAO-06-1003. 44 pp.

Transportation-Disadvantaged Populations: Actions Needed to Clarify Responsibilities and Increase Preparedness for Evacuations. 2006. GAO-07-44. 71 pp.

Hurricanes Katrina and Rita Disaster Relief: Continued Findings of Fraud, Waste, and Abuse. 2006. GAO-07-252T. 23 pp.

Web Sites of Interest

The Public Entity Risk Institute

www.riskinstitute.org

This site has recently been redesigned and now offers an improved link and access system, better menus, and continual updating of information, resources, and news from PERI and partner organizations.

PERI Presidential Declarations

www.peripresdecusa.org/mainframe.htm

This page of the Public Entity Risk Institute's Web site features a searchable list of presidentially declared disasters and emergencies in the United States, information about the number and type of declarations made by each of the last 10 presidents, data on requests for disaster declarations that were denied, and links to related publications and other information. The site also allows users to compile a customized summary table of disaster declarations, by jurisdiction, hazard, costs, or year.

Avian Influenza

www.nwhc.usgs.gov/disease_information/avian_influenza/index.jsp

The U.S. Geological Survey's National Wildlife Information Center Web site posts updates on suspected and verified occurrences of avian flu (H5N1) in wild birds, domestic animals, and humans throughout the world.

National Avalanche Center

www.fsavalanche.org

Besides offering plenty of useful information about the hazard, this U.S. Forest Service site advises users how to recognize avalanche threats and explains how people can more safely navigate in avalanche terrain, whether on foot, snowshoes, snowboards, skis, or snowmobiles. An "interactive backcountry tour" allows users to test their understanding of the avalanche hazard.



Conferences and Training

Below are the most recent conference announcements received by the Natural Hazards Center. A comprehensive list of hazards and disasters meetings is available at www.colorado.edu/hazards/resources/conferences.html.

Gulf Coast Floods Recovery: Mission Mitigation—New Orleans, Louisiana: April 9-12, 2007. Offered by: The Association of State Floodplain Managers (ASFPM). This training workshop will identify mitigation measures that Gulf Coast states and communities can undertake to minimize future damage as they cope with recovery and reconstruction. The target audience is flood hazard management staff at all levels of government and decision makers from flooded communities. The topics will include flood mitigation planning and program options, sources of funding, construction standards, lessons learned, success stories, insurance issues, recovery mapping, grant applications, coastal challenges, legal implications, and more.

Association of State Floodplain Managers
(608) 274-0123; asfpm@floods.org
www.floods.org/Conferences,%20Calendar/MissionMitigation.asp

5th Annual Homeland and Global Security Summit—Washington, D.C.: April 11-12, 2007. Organizer: Equity International. This invitational, business-oriented summit combines breakout sessions and networking opportunities with an exhibit showcasing the latest information on programs and funding in emergency response, public safety, border protection, and other areas related to domestic security.

Equity International
(202) 756-2244
www.globalsecurity.bz

2007 American Planning Association (APA) National Planning Conference—Philadelphia, Pennsylvania: April 14-18, 2007.

Organizer: APA. Those who attend this annual conference—the premier event in the planning field—include key decision makers: agency directors, CEOs, senior managers, and planning commissioners and other government officials as well as planners working at all levels in both the public and private sectors. There will be sessions on planning for transportation, transit, and transit-oriented development; affordable housing; planning technologies including GIS, remote sensing, and GPS; historic preservation; tourism; community development; revitalization of small towns; and dozens of other topics.

American Planning Association
(312) 334-1250
www.planning.org/2007conference

World Continuity Congress—Singapore: April 17-18. Organizers: Disaster Recovery Institute (DRI) Asia and the Business Continuity Management Institute. Formerly known as the DRI Asia Conference, the World Continuity Congress will bring together management officials from

international companies to share their insights on successful business continuity planning.

DRI Asia
+65 6323 1500 (Singapore);
info@worldcontinuitycongress.com
www.worldcontinuitycongress.com/

5th Annual Medical Reserve Corps (MRC) National Leadership and Training Conference—Providence, Rhode Island: April 17-20, 2007.

Each MRC community is invited to send a representative to this development conference, which will feature knowledge sharing among federal government and nongovernmental organizations, emergency response and public health experts, and MRC members.

Medical Reserve Corps
www.medicalreservecorps.gov/Conference/2007

2007 AIR Spring Conference—Boca Raton, Florida: April 22-25, 2007.

Organizer: Applied Insurance Research (AIR) Worldwide Corporation. At this meeting, guest speakers from the business and scientific communities will review the latest research on the influence of climate on hurricane frequency and severity, discuss best practices in catastrophe modeling, and provide perspectives on changes in the risk modeling industry over the past two decades. Executives from the major risk rating agencies also will discuss the impact of new ratings models.

AIR Worldwide Corporation
airconference@air-worldwide.com
www.air-worldwide.com/_public/html/2007_Spring_Conf.asp

American Institute of Hydrology Annual Meeting and International Conference—Reno, Nevada: April 22-25, 2007.

Organizer: American Institute of Hydrology (AIH). "Integrated Watershed Management: Partnerships in Science, Technology, and Planning" is the theme of this year's AIH conference, intended to provide an opportunity for scientists and managers in all water-related disciplines to share research and project case studies. A wide range of technical topics will be covered, including social and legal issues. The effects of urbanization, agriculture, industry, and forestry will also be discussed.

American Institute of Hydrology
www.aihydro.org/conference.htm

Continuity Insights Management Conference—New Orleans, Louisiana: April 23-25, 2007.

Offered by: *Continuity Insights* magazine. Discussions of continuity strategies take center stage at this conference, with presentations of recovery strategies from leading corporations such as Wal-Mart, NIKE, Expedia, Toyota, Reuters, Fidelity, Dell, and Wells

Fargo. The conference offers networking opportunities, along with a display of relevant products and technology for business and information technology continuity.

Continuity Insights
(215) 230-9556; shelley@continuityinsights.com
www.continuityinsights.com/Conference.html

International Symposium on Seismic Risk Reduction—Bucharest, Romania: April 26-27, 2007. Organizers: Japan International Cooperation Agency (JICA) and the (Romanian) National Center for Seismic Risk Reduction (NCSRR). Virtually all topics related to seismic risk will be discussed at this gathering, from seismic ground motion and ground conditions to risk evaluation, structure rehabilitation, and the education of affected populations. The conference stems from a partnership between Japan and Romania to improve earthquake mitigation in the latter country.

National Center for Seismic Risk Reduction
+40 21 2429722 (Romania); issrr2007@utcb.ro
<http://cnrrs.utcb.ro/issrr2007/issrr2007.html>

9th Annual Midwest Emergency Preparedness and Response Conference—Rockford, Illinois: May 9-11, 2007. Organizers: Winnebago County, Illinois, Local Emergency Planning Committee (LEPC) and Rock County, Wisconsin, LEPC. This conference will cover elements associated with emergency and disaster planning, preparedness, and response. Sessions will discuss how a local church managed sheltering flood victims, hazardous materials response, how preplanning saved all workers in a factory building hit by a tornado, pandemic influenza, special needs planning, and more.

Winnebago County, Illinois
www.winn-lepc.org

2007 Conference of the Association of State Dam Safety Officials (ASDSO) West Region—Omaha, Nebraska: May 20-22, 2007. Organizer: ASDSO. The ASDSO provides a unified voice for and promotes effective programs and policies on behalf of those involved in dam safety. This educational conference is geared toward dam safety officials, engineers, and dam owners and operators in the western states.

Association of State Dam Safety Officials
<http://damsafety.org>

Storms Over the Urban Forest National Conference—Atlanta, Georgia: May 21-22, 2007. Organizer: The National Arbor Day Foundation. This conference focuses on the planning, response, and recovery processes necessary to address storms affecting urban and community trees. Nearly 20 speakers will cover topics that will prepare communities to protect the urban landscape and to more effectively respond when disaster hits.

National Arbor Day Foundation
(888) 448-7337
www.arborday.org/STORMS/

Risk Communication Challenge: Theory, Tools, and Practical Skills for Communicating About Risk—Boston, Massachusetts: May 21-23, 2007. Offered by: Harvard School of Public

Health. Making wise choices requires understanding risks and benefits, and risk communication is a key tool for creating that understanding. This conference will demonstrate the scientific foundations for effective risk communication by featuring the latest findings on risk perception, highlighting case studies from around the world, and introducing practical tools for communication.

Harvard School of Public Health
(617) 384-8692
www.hsph.harvard.edu/ccpe/programs/RCC.shtml

Amsterdam Conference on the Human Dimensions of Global Environmental Change—Amsterdam, Netherlands: May 24-26, 2007. Organized by: The Institute for Environmental Studies (IVM) at the Vrije Universiteit Amsterdam. This year's conference, the seventh in a series, will address the theme of "Earth System Governance: Theories and Strategies for Sustainability." Earth system governance is defined as the ability to generate development that meets the needs of present generations without compromising the ability of future generations to meet their own needs. This topic is emerging as an important subject of research in the social sciences, and conference attendees will discuss both research on and practical applications of this concept.

Institute for Environmental Studies
ac2007@ivm.vu.nl
www.2007amsterdamconference.org

High Reliability Organizations: Bridging the Gap Between Theory and Practice—Normandy, France: May 29-31, 2007.

A high-reliability organization is one that functions in a high-risk environment with fewer than average accidents or losses. This gathering of researchers, managers, regulators, and practitioners will focus on sharing experiences and academic expertise in risk management, particularly among high-reliability organizations. Conference participants will discuss and design bottom-up management models capable of identifying risk and solutions that involve power sharing, authority migration, and continuous problem solving to address uncertainty, danger, and time pressure faced by managers across industries.

+02 31 46 78 78 (France);
HRO-conference@ecole-management-normandie.fr
www.ms-risques.fr/HRO/home.html

2007 International Association for Impact Assessment (IAIA) Annual Conference—Seoul, South Korea: June 2-9, 2007.

Organizer: IAIA. This conference, with its theme of "Growth, Conservation, and Responsibility—Promoting Good Governance and Corporate Stewardship through Impact Assessment" will bring together diverse practitioners to answer a major question: How do we reconcile economic growth with conservation of the environment? Through discussion and case studies, attendees will develop valuable impact assessment skills.

International Association for Impact Assessment
(701) 297-7908; info@iaia.org
www.iaia.org/Non_Members/Conference/conference.htm

2007 Conference of the Association of State Dam Safety Officials (ASDSO) Northeast Region—Manchester, New Hampshire: June 5-7, 2007. Organizer: ASDSO. This educational conference is geared toward dam safety officials, engineers, and dam owners and operators in the northeastern states.

Association of State Dam Safety Officials
<http://damsafety.org>

14th Annual Conference of The International Emergency Management Society (TIEMS)—Trogir, Croatia: June 5-8, 2007. Founded in 1993, TIEMS is a nonprofit society dedicated to developing modern emergency management tools and bringing their benefits to society. This conference, "Disaster Recovery and Relief: Current & Future Approaches," will address numerous issues and developments in emergency management, including GIS, terrorism, the media, health emergencies, business continuity, and more.

The International Emergency Management Society
+47 91 69 30 12 (Belgium); khdrager@online.no
www.tiems.org

2007 National Conference on Community Preparedness: Partnerships and Collaboration Through Citizen Corps—Alexandria, Virginia: June 10-13, 2007. Organizers: The International Association of Emergency Managers (IAEM) and the National Emergency Management Association (NEMA). Citizen Corps was created to help coordinate volunteer activities that will make communities safer, stronger, and better prepared to respond to any emergency situation. It provides opportunities for people to participate in a range of measures to make their families, their homes, and their communities safer from threats of crime, terrorism, and disasters of all kinds. The Corps is coordinated nationally by the Department of Homeland Security, which works closely with other federal entities, state and local governments, first responders and emergency managers, the volunteer community, and the White House Office of the USA Freedom Corps. Conference attendees will share best practices regarding community preparedness, examine how to reach out to specific populations, and learn innovative approaches to funding and program implementation.

International Association of Emergency Managers
www.iaem.com/NCCC2007.htm

7th Hydrologic Warning Conference—Savannah, Georgia: June 11-14, 2007. Organizer: The National Hydrologic Warning Council. This conference is the largest in the United States devoted specifically to real-time hydrologic warning systems and how this technology can assist local officials with storm readiness, flood emergency response, and disaster recovery.

Mariana Leckner
(609) 538-6006; Leckner.Mariana@gw.njsp.org
<http://nhwc.udfcd.org>

13th International Symposium on Society and Resource Management (ISSRM)—Park City, Utah: June 17-21, 2007. Organized by: International Association for Society and Natu-

ral Resources (IASNR). The IASNR is an interdisciplinary professional association whose members bring social science and natural science backgrounds to their research on environmental and natural resource issues. The theme for their annual meeting is "Landscape Continuity and Change—Social Science Perspectives and Interdisciplinary Conversations." The ISSRM has become the premier scientific meeting for academic and government researchers, students, land managers, and NGO representatives who are interested in the human dimensions of natural resources and the environment.

Douglas Jackson-Smith
(435) 797-0582; issrm2007@usu.edu
www.issrm2007.org

Australasian Natural Hazards Management Conference 2007: From Warnings to Response and Recovery—Brisbane, Australia: July 3-4, 2007. For emergency managers, planners, risk assessors, asset and utility managers, natural hazards researchers, and scientists, this conference offers a forum to discuss the integration of hazard information into effective risk management. The conference emphasizes the application of recent scientific research and other hazard information to create best practices, develop effective warning systems, improve disaster response and recovery, and build resilient communities.

ahm07@hazards-education.org
www.hazards-education.org/ahm07/

17th World Conference on Disaster Management—Toronto, Canada: July 8-11, 2007. Organizer: The Canadian Centre for Emergency Preparedness (CCEP). The theme for this conference will be "Emergency Management and Business Continuity Working Together." It will feature speakers from many parts of the world and provide opportunities for both training and networking with experts and practitioners in all areas of emergency and risk management.

Alyson Will
(416) 595-1414; coord@wcdm.org
www.wcdm.org

Americas' Fire and Security Expo—Miami Beach, Florida: July 24-26, 2007. Organizer: The National Fire Protection Association (NFPA). For anyone involved with fire protection systems and equipment, special hazards, chemical and hazardous material storage and handling, building fire protection, life safety, electrical installations, or security products, this conference offers sessions and workshops presented by leading professionals in those areas, as well as opportunities for global sharing of questions, answers, problems, and solutions.

National Fire Protection Association
(630) 271-8210; info@rocehibitions.com
www.americasfireandsecurity.com

2007 UCOWR/NIWR Conference: Hazards in Water Resources—Boise, Idaho: July 24-26, 2007. Organizers: Universities Council on Water Resources (UCOWR) and the National Institutes for Water Resources (NIWR). Floods,

droughts, hurricanes, sabotage, toxic spills, mechanical breakdowns, and other hazards pose similar policy, management, scientific, and technical challenges for water resource systems and water resource managers. This meeting will facilitate the exchange of research, education, policy analysis, and management experience in order to understand, prepare for, and mitigate the consequences of water resources hazards. It will feature special sessions about the contributions of Gilbert F. White to the management of water resources and natural hazards.

Universities Council on Water Resources

www.ucowr.siu.edu/Boise.CFP.2007.pdf

AOGS 2007: Asia Oceanic Geosciences Society (AOGS) 4th Annual Meeting—Bangkok, Thailand: July 30-August 3, 2007.

The mission of AOGS is to promote geophysical science for the benefit of humanity in Asia and Oceania. Geoscientists from around the world will gather at this conference to present their work and ideas. There will be multiple sessions on atmospheric, hydrologic, and terrestrial hazards such as typhoons, urban flooding, tsunamis, earthquakes, and volcanoes.

Asia Oceanic Geosciences Society

info@asiaoceania-conference.org

www.asiaoceania-conference.org

Association of Public Safety Communications Officials (APCO) Annual Conference and Exposition—Baltimore, Maryland: August 5-9, 2007.

This meeting will feature presentations on homeland security and public safety communications technology will and include tracks on management and planning, interoperability, and legislative and regulatory issues.

Association of Public Safety Communications Officials

www.apco2006.org

International Conference on Lightning and Static Electricity—Paris, France: August 28-31.

Organizer: Université Pierre et Marie Curie. The conference will address all aspects of lightning, lightning interactions, and protection of

ground, air, and sea systems and human beings. Among many other topics, conference attendees will discuss the protection of buildings from lightning, lightning detection, and warning modeling and simulation.

info@icolse.org

www.icolse.org

Dam Safety '07—Austin, Texas: September 9-13, 2007.

Organizer: Association of State Dam Safety Officials (ASDSO). This conference is dedicated to dam safety engineering and technology transfer. State, local, and federal officials; engineers; geologists; hydrologists; dam owners; industry representatives; and others involved with dam safety are invited to share their experiences in all aspects of the field. Presentations will be designed to heighten awareness, share experiences and case studies, advance technology transfer, improve communication, and demonstrate state-of-the-art practices.

Association of State Dam Safety Officials

www.damsafety.org

The 4th International Conference on Debris Flow Hazards Mitigation: Mechanics, Prediction, and Assessment—Chengdu, China: September 10-13, 2007.

Organizer: The Institute of Mountain Hazards and Environment. This conference will offer a forum for debris-flow researchers in the international community to exchange ideas on how to cope with debris flow. Advanced, state-of-the-art science and technology in debris-flow mechanics, hazard prediction, and risk assessment will also be presented and discussed.

Dr. Peng Cui

+86-28-85214421 (China); dfhm@imde.ac.cn

<http://4thdfhm.imde.ac.cn>

The Center thanks David Butler and Jacki Monday for their help with this issue of the *Observer*. Their mentorship, advice, and patience in getting our new staff up to speed has been invaluable and much appreciated.

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Copies of the *Observer* and the Natural Hazard Center's electronic newsletter, *Disaster Research*, can be downloaded free from the Center's Web site:

www.colorado.edu/hazards/

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The success of the Natural Hazards Center relies on the ongoing support and engagement of the entire hazards and disasters community. The Center welcomes and greatly appreciates all financial contributions. There are several ways you can help:

- 1. Support Center Operations**—Provide support for core Center activities such as the *Disaster Research* e-newsletter, annual workshop, library, and the *Natural Hazards Observer*
- 2. Build the Center Endowment**—Leave a charitable legacy for future generations
- 3. Help the Gilbert F. White Endowed Graduate Research Fellowship in Hazards Mitigation**—Ensure that mitigation remains a central concern of academic scholarship
- 4. Boost the Mary Fran Myers Scholarship Fund**—Enable representatives from all sectors of the hazards community to attend the Center’s annual workshop

To find out more about these and other opportunities for giving, visit:

www.colorado.edu/hazards/about/contribute.html

Contact Greg Guibert at greg.guibert@colorado.edu or (303) 492-2149 to discuss making a gift.

A U.S.-based organization, the Natural Hazards Center is a nonprofit, tax-exempt corporation under Section 501(c)(3) of the Internal Revenue Code.

The Natural Hazards Center

The mission of the Natural Hazards Center at the University of Colorado at Boulder is to advance and communicate knowledge on hazards mitigation and disaster preparedness, response, and recovery. Using an all hazards and interdisciplinary framework, the Center fosters information sharing and integration of activities among researchers, practitioners, and policy makers from around the world; supports and conducts research; and provides educational opportunities for the next generation of hazards scholars and professionals. The Natural Hazards Center is funded through a National Science Foundation grant and supplemented by contributions from a consortium of federal agencies and nonprofit organizations dedicated to reducing vulnerability to disasters.

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