

Issue #15

September 2000

Editorial

Research in the Midst of Turmoil

While I was sitting in my office in Boulder, Colorado (an affluent, progressive and politically stable society) reviewing the final drafts of the findings of the 16-country case studies on El Niño impacts and response strategies, one often-overlooked consideration emerged loud and clear.

What was going on in some of those countries, *not* during the El Niño event (March 1997–June 1998), but during the project's research phase (May 1999–August 2000)?

The countries in this particular study were drawn from three regions: Latin America and the Caribbean, sub-Saharan Africa, and Southeast and East Asia (please see the Web site at www.esig.ucar.edu/un/). I realized that investigators seldom note the difficult conditions under which they do research. But, what was going on during their assessments? Some examples:

Fiji: A coup d'etat followed a democratic election in 1999 and the Prime Minister and members of the Fiji Parliament were held hostage for several months.

Ecuador: The president of the country was replaced by his vice president, who was in turn replaced by others; the local currency was replaced by the US dollar; access to research funds in Ecuadorian banks became unavailable.

Indonesia: This country experienced increasing demands by separatist

groups, marauding militia in West Timor, and a return to above-normal rainfall, among other things, helped to reduce interest in the last El Niño.

Peru: Fujimori's presidential campaign generated violence in the streets because of an unprecedented third term which violated Peru's constitution.

Ethiopia: A war with neighboring Eritrea existed during most of the study period in addition to droughts and floods. El Niño took a back seat to conflict.

Mozambique: Early in 2000, it suffered one of its worst floods in recent history. The country's researchers became involved in emergency relief, recovery, and reconstruction activities.

China: The scientific community's interest in El Niño continued to grow while the country's political interest in El Niño was emerging but uncertain.

Kenya: The government remained under pressure to curtail corruption or lose access to sorely needed development funds from donor countries.

Cuba: The US and Cuba were involved in a protracted conflict over custody rights of a little boy (Elian Gonzalez) who survived a boat wreck in which his mother perished while escaping from Cuba to seek political asylum in the US.

At any given point in time, a government's decision makers are likely to be distracted by issues other than those related to the forecasts or impacts of an El Niño (or La Niña). Aside from having to cope with the chronic problems of water shortages or power

and telephone blackouts, researchers must also cope with unstable political and economic situations that impinge upon their ability to carry out their tasks. We need to be aware of these difficult conditions and assist our colleagues in other countries as best we can.

--Michael H. Glantz

LET'S HEAR FROM YOU!

Please send news items, publications, Web sites, and articles of interest to our readers to the address below by **31 December 2000**. This newsletter values input from its readers, which has now reached over 2,000. If you are interested in receiving the newsletter only on line, please subscribe there. You will be notified electronically when a new issue is released. Feedback is encouraged!

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EL NIÑO AFFECTS CALIFORNIA FISHERIES

In the September 15 issue of *Geophysical Research Letters*, Mati Kahru and Greg Mitchell use satellite-derived time series in the California Current system to show that the 1997–98 El Niño event was associated with a two-fold increase in the extent of mesotrophic waters off Baja California. This El Niño is also associated with a reduction of eutrophic areas in the

California Current System and of mesotrophic areas off Southern California, due possibly to the reduction in upwelling of cold, nutrient-rich waters. The authors argue that one of El Niño's effects on the California Current ecosystem is a more uniform distribution of phytoplankton, thus reducing the occurrence of high-concentration patches of phytoplankton that may be necessary for the production and survival of zooplankton and larval fish. (Some of the data for this article was gathered by the SeaWiFS project.)

Kahru, M. and B.G. Mitchell, 2000: Influence of the 1997-98 El Niño on the surface chlorophyll in the California Current. *Geophysical Research Letters*, **27**(18), 2937-2940.

GET A WIF OF THIS

The SeaWiFS (Sea-Viewing Wide Field-of-View Sensor) project is part of NASA's Earth Science Enterprise that intends to provide data on ocean color to the earth science community. Subtle changes in ocean color indicate various types and number of marine phytoplankton that are affected by ENSO variations. SeaWiFS was launched in August 1997 to examine oceanic factors that affect global change and to assess the role of the oceans in the global carbon cycle over a five-year period. Satellite data are sent to the Goddard Space Flight Center (GSFC) EOS Data and Information System (EOSDIS) Distributed Active Archive Center (DAAC), which archives and distributes SeaWiFS data to the scientific community. For more information on the project, contact the SeaWiFS Project, Code 970.2, NASA Goddard Space Flight Center, Greenbelt, MD 20771 USA; tel: 1-301-286-9676 or visit the Web site at seawifs.gsfc.nasa.gov/SEAWIFS.html

ENSO, HAIL AND INSURANCE

The Natural Hazards Research Centre (NHRC) at Macquarie University in Sydney, Australia, utilized its extensive natural peril data bases for the development of a probabilistic hail loss model for major metropolitan areas in eastern Australia. By incorporating into the model results of earlier NHRC research on ENSO, the simulations of annual hail loss aggregates can be driven by two different types of annual hailstorm frequency modes (experimental and optional), each of them relating to a different type of the annual Southern Oscillation (SOI) cycle. High annual hailstorm numbers in Australia tend to be reached during years marked by positive values of a multifactor index, which correspond to rising values of the SOI up to November, and falling SOI values thereafter. (It should be noted that the index correlates well with the frequency of hail events but does not show any relationship with the severity

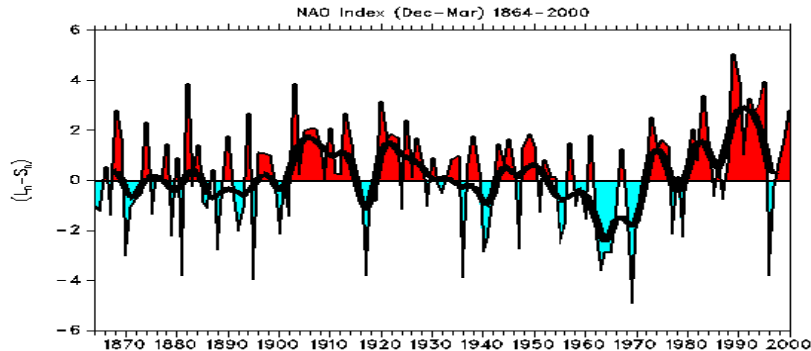
of the events; i.e., the amount of damage.) The purpose of this ENSO feature is to inform the end users of the loss model (e.g., the insurance industry sector) to the various types of ENSO-related climatic variability and to highlight their potential impacts on annually aggregated loss profiles. For more information, contact Ivan Kuhnel at ikuhnel@laurel.ocs.mq.edu.au or visit the NHRC Web site at www.es.mq.edu.au/NHRC or see the following articles:

Leigh, R., and I. Kuhnel, 2000:

Hailstorm loss modeling and risk assessment in the Sydney region, Australia. *Natural Hazards* (in press).

Kuhnel, I., 1998: The use of a multifactor Southern Oscillation Index for the estimation of annual hailstorm frequencies in the Sydney area. *International Journal of Climatology*, **18**, 841-858.

NORTH ATLANTIC OSCILLATION



One of the most prominent patterns of teleconnections is the North Atlantic Oscillation (NAO). The NAO Index is defined as the anomalous pressure difference between the Icelandic Low and the belt of high pressure that extends across the subtropical Atlantic. Sir Gilbert Walker first wrote about the oscillation in 1932. It affects the circulation of seas at the margins of the North Atlantic Ocean. James Hurrell carried out a study published in

1995 that showed that the NAO contributes to the global warming that has been seen in the past few decades. Both the positive and negative phases of the NAO are associated with basin-wide changes in the intensity and location of the North Atlantic jet stream and storm track, which in turn results in changes in temperature and precipitation patterns often extending from eastern North America to western and central Europe. Strong positive phases of the NAO tend to be associated with above-normal temperatures in the eastern United States and across northern Europe, and below-normal temperatures in Greenland, southern Europe and the Middle East, as well as above-normal precipitation in northern Europe and below-normal precipitation over southern and central Europe. Opposite patterns of temperature and precipitation are typically observed during strong negative phases of the NAO. (Graphic courtesy of James Hurrell) For more information on the NAO, see the collection of Web sites on p.15 of this newsletter, as well as these articles:

Walker, G.T. and E.W. Bliss, 1932:
Memoirs of the Royal Meteorological Society, **44**, 53–65.

Hurrell, J.W., 1995: Decadal trends in the North Atlantic Oscillation: Regional temperatures and precipitation. *Science*, **269**, 676-79. (also available on line with updates: www.cgd.ucar.edu/cas/papers/science1995/sci.html)

NEW NESDIS DATA SETS

During 1999, NESDIS (National Environmental Satellite, Data, and Information Service) scientists received new paleoclimate data sets on the past variability of El Niño and drought and led field expeditions to collect new records

from land and ocean sites. Scientists demonstrated that at least two major droughts in the past two millennia significantly exceeded the severity, length, and spatial extent of twentieth-century droughts. New data sets included a paleo record of the North Atlantic Oscillation derived from ice cores, the 15,000-year record of El Niño, and many other new time series. For more information, see www.ngdc.noaa.gov (from *NESDIS Highlights of 1999*, US Department of Commerce, NOAA/NESDIS, Washington, DC) or see the Web site at www.nesdis.noaa.gov

NEW FISHERIES SCIENCE BOOK

A little more than two years ago, P.J. Harrison and Tim Parsons convened a small group interested in applied fisheries oceanography to make presentations on various aspects of the state of knowledge in the field. The publication from this event has just been released and contains many novel ideas and observations on the state of ocean science, fisheries biology, and applied oceanography. It is available in paperback and can be ordered on line at www.blackwell-science.com/~cgilib/bookpage.bin?File=10012072 (Blackwell Science).

Parsons, T.R. and P.J. Harrison (Eds.), 2000: *Fish Biology and Aquatic Resources*. UK: Blackwell Science Ltd. 362 pp.

AUSTRALIA: EYE OF THE STORM

The Australian Broadcasting Company (ABC) is producing a four-part series about Australia's extreme climate variations, focusing particularly on the adaptation of plants and animals to

climate extremes. Using satellite images and computer graphics, each program traces the development of one extreme climatic event. The four parts feature El Niño, La Niña, Monsoons, and weather of the Southern Ocean. The program will air in Australia's *Storm Chasers* in October 2000. The Web site is available at abc.net.au/storm/ and is in itself very informative.



Guest Editorial
Victor O. Magaña

El Niño and Its Impacts in Mexico

In Mexico, the word “El Niño” means a lot more than simply “the child.” People think of it in terms of negative alterations in climate, such as droughts, floods, hurricanes, and even socioeconomic problems. Politicians frequently use El Niño to blame it for problems in our country. However, not everyone is clear about what El Niño really is or what it really does. That includes several meteorologists as well as non-meteorologists who issue seasonal precipitation forecasts based on an El Niño signal.

On average, El Niño means more winter precipitation in northwestern Mexico, whereas La Niña means less than normal. During summer, El Niño results in less precipitation than normal, while La Niña sometimes means more rainfall than average or simply a return to normal conditions, depending on other factors such as hurricane activity. There are some regions in Mexico where summer climate is not even predictable based on the El Niño signal alone. Given the demand for climate prediction, many people construct seasonal rainfall predictions based on scientific information and on not-so-scientific

elements. The availability of predictions that pointed in different directions has created confusion among forecast users. Part of the problem is that there are only a few specialists in this field who can translate climate information for decision makers.

In a recent visit to Mexican institutions involved in agriculture, environment, or water management, ***I heard all sorts of interpretations of what El Niño is and what it means for Mexico, most of them incorrect.*** There is definitely a gap between the science of climate and the decision-making process. Such a gap has opened the door to all kinds of opportunists who sell various methods to face extreme climate conditions. For example, in Mexico we have “scientists” selling expensive antennas to ionize the atmosphere to produce rain in arid regions; shamans who know the secrets of rain in the desert; priests who pray for rain on poor farms; and US companies selling weather and climate predictions with whatever characteristics that a rich rancher in northern Mexico may demand.

This would not be such a big problem, had not so many people been affected by El Niño. I would like to see everyone in Mexico (at least scientists, decision makers, the media) responsibly playing their role in their respective field of expertise. Hopefully, this would result in the communication of information on climate that is more reliable. This may be a utopian condition, but it is worth trying to achieve it before the next intense El Niño comes along.

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ENSO CLIPER

Chris Landsea of NOAA's Hurricane Research Division and John Knaff of the Cooperative Institute for Research in the Atmosphere (CIRA) at Colorado State University have written a guest editorial for the *WeatherZine* on "How much 'skill' is there in forecasting El Niño?" The editorial describes the development of the ENSO CLIPER and PERSistent model (CLIPER) as a simple statistical tool that takes advantage of the climatology of past El Niño events, persistence, and contemporary trends. This is available on line at www.esig.ucar.edu/socasp/zine/guest.html. For more information on the ENSO CLIPER, contact Landsea at NOAA/AOML/Hurricane Research Division, 4301 Rickenbacker Causeway, Miami, FL 33149 USA; tel: 1-305-361-4357; fax: 1-305-361-4402; email landsea@aoml.noaa.gov

TIME FOR A LOOK BACK?

This period between ENSO events gives us a chance to look back at previous research on ENSO and learn from it. A good place to begin is an informative Web site on "Effects of El Niño on Streamflow, Lake Level, and Landslide Potential" by Richard Reynolds, Michael Dettinger, Daniel Cayan, Doyle Stephens, Lynn Highland and Raymond Wilson of the US Geological Survey. See geochange.er.usgs.gov/sw/changes/natural/elnino/

EXTREME CLIMATE EVENTS PROGRAM IN VIETNAM

The Asian Disaster Preparedness Center (ADPC), in collaboration with NOAA, has undertaken a project on the impacts of extreme climate events such as El Niño in Vietnam. A report based

on the input of experts constituted the background paper for the National Consultation Workshop held in May 2000. The initiative successfully brought together the climate science community and users of climate information. A Climate Forecast Producers and Users Workshop will be held in September 2000 on receipt of a wet season forecast. Another workshop will be held in March 2001 to evaluate the experiences of the September 2000 forecast and application, and to use the dry season forecast for resource management. Based on the experience of the two workshops, a work plan will be formulated to further institutionalize climate forecast and application systems in Vietnam. For more information, contact the ADPC, Asian Institute of Technology, PO Box 4, Klong Luang, Pathumthani 12120, Thailand; email adpc@ait.ac.th (from *Asian Disaster Management News*, www.adpc.ait.ac.th/infores/newsletter/newsletter.html)

EI NIÑO IMPACT STUDY RESULTS AVAILABLE SOON

The major findings from a 19-month, 16-country study focused on improving early warning mechanisms and general preparedness for extreme El Niño-related climate events are to be released soon. The project, "Reducing the Impact of Environmental Emergencies through Early Warning and Preparedness: The Case of the 1997-98 El Niño", is funded by the UN Foundation for International Partnerships. It is implemented by the UN Environment Programme (UNEP) in collaboration with the National Center for Atmospheric Research (NCAR, USA), the UN University (UNU), World Meteorological Organization (WMO) and the International Strategy for Disaster Reduction (ISDR). Participating country study teams are from Bangladesh, China, Costa Rica, Cuba, Ecuador,

? POINT / COUNTERPOINT ?



Trenberth, K.E. and T.J. Hoar, 1996: The 1990–1995 El Niño–Southern Oscillation event: Longest on record. *Geophysical Research Letters*, **23**, 57–60.

Allan, R.J. and R.D. D'Arrigo, 1999: 'Persistent' ENSO sequences: How unusual was the 1990–1995 El Niño? *The Holocene*, **9**(1), 101–118.

Ethiopia, Fiji, Indonesia, Kenya, Mozambique, Panama, Papua New Guinea, Paraguay, Peru, the Philippines and Vietnam.

Nolan, Lead Outreach Coordinator at tom.nolan@jpl.nasa.gov or go to the Web site at topex-www.jpl.nasa.gov

The study findings are focused on lessons for governments, international agencies, scientific community, NGOs, popular media, and general public. The summary of these lessons will be released at the end of October under the auspices of the UN University at the UN Headquarters in New York. The summary and detailed country reports will become available through the project Web site: www.esig.ucar.edu/un in December. For more information, please contact Michael Glantz, Principal Investigator, ESIG/NCAR, PO Box 3000, Boulder, CO USA 80307; tel: 1-303-497-8119; fax: 1-303-497-8125; email glantz@ucar.edu

OCEAN ENVOYS

NASA's Jet Propulsion Laboratory is offering to provide materials to lecturers for formal and informal educational presentations and to the general public. The program is *Ocean Envoys* and is an international effort; however, all materials are in English. Educational and informational CD-ROMs about El Niño and physical oceanography, posters, lithographs, Powerpoint presentations, activities, bookmarks, stickers, etc. are offered. If you are interested in this program and becoming an Ocean Envoy, please contact Tom

EMPLOYMENT OPPORTUNITIES

Applications are being accepted for a postdoctoral position in the **Physical Oceanography Research Division of Scripps Institution of Oceanography**. Research will focus on Southern Ocean response to wind forcing and could include analysis of wind data, numerical modeling of the Southern Ocean system, or a combination of the two. This work is part of a 4-year project supported by NASA. Applicants should have a Ph.D. in physical oceanography, meteorology, or a related field. Applicants should include a letter stating research interest, current CV, including publications, and names of 3 references. Send to Professor Sarah Gille, Scripps Institution of Oceanography 0230, University of California at San Diego, 9500 Gilman Dr., La Jolla, CA 92093-0230 USA; email sgille@ucsd.edu (from www.SCIENCEnet.com).

The **Climate Modeling Group at Lamont-Doherty Earth Observatory** has two postdoctoral positions available, one in physical oceanography, meteorology, or applied mathematics. The position will have application to practical prediction of ENSO. The

second is a paleoclimate position to work on reconstruction of the climate of the past 1000 years. This requires some background in high-resolution paleoclimate proxies like corals, tree rings, ice cores, etc., and a good knowledge of statistical methods and exceptional writing skills. Applicants should include a CV, a publication list, a short statement of research interests, and names of 3 referees. Applications received by 1 November will receive full consideration. Applications should be addressed to Climate Modeling Group, c/o Ms. Virginia Diblasi-Morris, Lamont-Doherty Earth Observatory, Columbia University, Palisades, NY 10964 USA; email virginia@ldeo.columbia.edu (from www.SCIENCEnet.com).

The **Center for Atmosphere-Ocean Studies (CAOS)** within the Courant Institute of Mathematical Sciences, New York University, Greenwich Village, NY is seeking postdoctoral applicants to participate in work on ocean mixed-layer parameterizations in the context of coupled ice-ocean general circulation models. The project will involve the analysis, integration, and assimilation of observational ice-ocean data collected during the Surface Heat and Energy Balance of the Arctic Ocean (SHEBA) field experiment into an existing large-scale ice-ocean model. A Ph.D. in physical oceanography, atmospheric sciences, applied mathematics, or a related discipline required. Applicants should include a letter stating research interest, current curriculum vitae including a publication list, and names of 3 references including one thesis adviser. Please send applications to Professor David M. Holland, Center for Atmosphere-Ocean Studies (CAOS), Courant Institute of Mathematical Sciences, New York University, 251 Mercer St., MC 0711, New York, NY 10012 USA; tel: 1-212-998-3245; fax: 1-212-995-4121; email holland@cims.nyu.edu

SUMMARIES OF PAST MEETINGS

A **Workshop on the Impacts of the 1997/99 ENSO** was held at the Central Weather Bureau in Taipei, Taiwan from 5-7 October 1999. Sponsored by the National Center for Ocean Research, the Central Weather Bureau, and the International Research Institute for Climate Prediction, the workshop reviewed such topics as prediction and societal impacts of ENSO events, as well as ENSO observation and theory. A workshop summary contains summaries of three presentation sessions and two discussion sessions. The workshop summary, agenda, list of participants, and presentations are available at the following web address: iri.ldeo.columbia.edu/news/TWWS1999/ or contact the International Research Institute for Climate Prediction at PO Box 1000, Palisades, NY 10964; tel: 1-914-680-4468; fax: 1-914-680-4866.

Beyond El Niño: A Conference on Pacific Climate Variability and Marine Ecosystem Impacts from the Tropics to the Arctic was held 23-26 March 2000 at the Price Center, University of California San Diego, La Jolla, California. The sessions looked at interannual, decadal, and interdecadal scales of variability in the Pacific from the tropics north to the Arctic. In each case, the evidence for variability, the ecosystem consequences of such variability, the mechanisms of interaction with the ecosystems, and the implications for fishery production and management were reviewed. The impacts of human activities on our ability to detect and interpret these effects were also examined.

The conference consisted of four sections: Evidence for variability; Ecosystem consequences of variability; Mechanisms of interaction with ecosystems; and Implications for fisheries management of climate forcing of marine ecosystems. Selected papers

will be published in a special issue of *Progress in Oceanography*, scheduled to be published by early 2001. For more information, please contact the PICES Secretariat, c/o Institute of Ocean Sciences, PO Box 6000, Sidney, BC, Canada. V8L 4B2; tel: 1-250-363-6366; fax: 1-250-363-6827; email: pices@ios.bc.ca; web: pices.ios.bc.ca

ANNOUNCEMENTS OF UPCOMING MEETINGS

COSU 2000, the International Conference on Coastal and Ocean Space Utilization will be held this year in Cancun, Mexico, from *1-4 November 2000*. The theme this year will be North American and European Perspectives on Ocean and Coastal Policy: Building Partnerships and Expanding the Technological Frontier. Discussion topics will include establishment of integrated coastal management (ICM) programs around the world, the emerging role of NGO's in the implementation of ICM's, partnerships between nations, and the increasing possibilities provided by advances in information technology. For more information contact Evelia Rivera Arriaga, Conference Coordinator, Center for the Study of Marine Policy, 301 Robinson Hall, University of Delaware, Newark, DE 19716; tel: 1-302-831-8086; fax: 1-302-831-3668; email: evelia@udel.edu; web: www.udel.edu/CMS/csmp/cosu2000

A Chapman Conference on **The North Atlantic Oscillation** will be held at the University of Vigo, Galicia, Spain, on *28 November-1 December 2000*. This conference will bring together atmospheric scientists, oceanographers, and paleoclimatologists with interests in interannual to multidecadal climate variability and its predictability, and scientists who study the socioeconomic impacts of climate variability. The focus will be on the North Atlantic Oscillation, which is a poorly understood yet

dominant pattern of atmospheric circulation variability. Conveners are James Hurrell (NCAR, tel: 1-303-497-1383; email jhurrell@ucar.edu), Yochanan Kushnir (LDEO, Columbia University, tel: 1-914-365-8669; email kushnir@ldeo.columbia.edu); and Martin Visbeck (LDEO, Columbia University; tel: 1-914-365-8531; email visbeck@ldeo.columbia.edu). Additional information is available at www.agu.org/meetings/cc00ccall.html

A Workshop on Interannual Climate Variability and Pelagic Fisheries will be held in Noumea, New Caledonia *6-24 November 2000*. Interannual climate variability and associated environmental changes have profound effects on marine ecosystems and fisheries. Better prediction may contribute to more efficient sustainable management of regional stocks. The focus of this workshop is on pelagic fish stock variations. The goals of the workshop are to review the ability to model and observe (1) the climate system, (2) the evidence for climate impacts on marine ecosystems, and (3) the use of climate information in fisheries and ecosystem models, to name a few. For more information, contact Climate and Pelagic Fisheries Workshop, c/o Yves Tourre, 61 Rt. 9W, Monell Bldg., Lamont-Doherty Earth Observatory, Palisades, NY 10964-8000 USA; tel: 1-845-680-4468; fax: 1-845-680-4864; email tourre@iri.ldeo.columbia.edu

A conference titled **Coastal GeoTools '01** will be held *8-11 January 2001* in Charleston, South Carolina. The goal of this meeting is to improve coastal management by promoting the understanding of technologies such as remote sensing, GIS (geographic information systems), GPS (Global Positioning Systems), and the Internet. Conference topics include: hazard mitigation, shoreline change, watershed planning, habitat characterization, regional restoration planning, land use and community development, port and

waterfront planning, spatial modeling, application of new remote sensing technologies, and Coastal National Spatial Data Infrastructure. For more information contact Steve Meador and Mark Jensen, Coastal GeoTools '01 Coordinators, NOAA Coastal Services Center, Charleston, SC 29405; tel: 843-740-1200; email: GeoTools@noaa.gov; web: www.csc.noaa.gov/GeoTools

The **81st Annual AMS Meeting**, set to convene *14-19 January 2001*, will be divided into two main symposia this year: "Precipitation Extremes: Prediction, Impacts, and Responses" will explore all aspects of quantitative precipitation forecasting, and will attempt to answer questions such as how to forecast events more accurately and, what is the value of improved forecasting and information to users. The discussions will be centered around winter storms, severe convective weather, and hurricanes. "Climate Variability, the Oceans, and Societal Impacts" will focus on societal impacts produced by the interaction between climate variability and the ocean, and will include discussion topics such as future ocean observing systems, areas of research that need further development, and interactions between climate information users and producers. The two symposia will hold a joint session on the last day, to discuss past hurricane activity, as well as the ramifications of global climate change on future hurricane activity. For more information contact AMS Headquarters, 45 Beacon Street, Boston, MA 02108-3693, USA; tel: 1-617-227-2425; fax: 1-617-742-8718; internet: www.ametsoc.org/AMS/meet/index.html

The ASLO Aquatic Sciences Meeting 2001 will be held in Albuquerque, New Mexico from *12-16 February 2001*. The main theme of the conference is "**Making Connections in the 21st Century.**" It will be organized around four sub-themes: environmental

connections, spatial and temporal connections, disciplinary connections, and science and society connections. The goal is to encourage strong professional and personal connections between scientists, and those in scientific disciplines. For more information contact ASLO Business Office, 5400 Bosque Blvd., Suite 680, Waco, Texas 76710-4446; tel: 1-254-776-3550; e-mail: business@aslo.org; web: aslo.org/albuquerque2001/

SWICA-M³ is the title of **The First International Conference on Salt Water Intrusion and Coastal Aquifers – Monitoring, Modeling, and Management**, scheduled to convene from *23-25 April 2001* in Essaouira, Morocco. It will bring together hydrogeologists, geochemists, geophysicists, numerical modelers, and policy makers to discuss integrated approaches to monitoring, modeling, and management issues. Two 2-day tutorial workshops will also be held before the conference, from April 18-21, to provide theoretical and hands-on computer modeling training. For more information contact Prof. Driss Ouazar, Laboratoire d'Analyse de Systèmes Hydraulique, Ecole Mohammadia d'Ingénieurs, Université Mohammed V, B.P. 765, Agdal Rabat, Morocco; tel: 1-212-7-670579; fax: 1-212-7-778853; email: ouazar@emi.ac.ma

An International Conference titled **Detecting Environmental Change: Science and Society**, will be held in London, UK, from *16-20 July 2001*. The goal of this conference is to bring together researchers, scientists and stakeholders who deal with monitoring in freshwater, marine, terrestrial, atmospheric, and social systems. Discussion topics will focus on understanding and improving change detection in natural and disturbed systems; by developing new monitoring techniques, observation networks, modeling and analysis, and methods of using resulting scientific information to

best serve the needs of users and policy makers. For more information contact Dr. Catherine Stickley, Environmental Change Research Centre, Department of Geography, University College London, 26 Bedford Way, London, WC1H 0AP, UK; web: www.nmw.ac.uk/change2001/

The Fourth International Symposium on Ocean Wave Measurement and Analysis will be held in San Francisco, California from 3-5 September 2001. Sponsored by the American Society of Civil Engineers in cooperation with other institutions, the conference is designed to promote technology transfer, communication, and solutions to wave measurement and analysis. Conference topics will include laboratory generation and standardization, tsunamis, storm surges and application to maritime operations, application to sediment, wave measurement and analysis, wave forecasting and calibration, application to structural design, wave theory and statistics, extreme wave kinematics, numerical wave tanks, wave transformation, sea level change, research needs, remote sensing, coastal flooding, and wave climate. Anyone who is interested in these topics, including researchers, professionals, and the public, are welcome to participate. For more information contact WAVES 2001, c/o Prof. Billy L. Edge, Ocean Engineering Program, Department of Civil Engineering, Texas A&M University, College Station, TX 77843-3136; web: edge.tamu.edu/waves2001

RECENT PUBLICATIONS

Books

Arnold, C., 2000: **El Niño: Stormy Weather for People and Wildlife**. Scholastic, Inc., 555 Broadway, New York, NY 10012: 1-212-343-6100.

Couper-Johnston, R., 2000: **El Niño: The Weather Phenomenon that Changed the World**. London, UK: Hodder & Stoughton, 338 Euston Rd., London, NW1 3BH, UK.

Dijkstra, H.A., 2000: **Nonlinear Physical Oceanography: A Dynamical Systems Approach to the Large Scale Ocean Circulation and El Niño**. Kluwer Academic Publishers, PO Box 17, 3300 AA Dordrecht, Netherlands.

Glantz, M.H., 2001: **Currents of Change: El Niño and La Niña Impacts on Climate and Society**. Cambridge, UK: Cambridge University Press. Second edition. Paperback available in October from Cambridge University Press, www.cup.org

Gold, S.D., 2000: **Blame it on El Niño**. Austin, Texas: Raintree Steck-Vaughn; tel: 1-800-531-505.

MacDonald, F., 2000: **El Niño**. Oxford University Press, Great Clarendon St., Oxford OX2 6DP, UK; www.oup.co.uk

Reports

Cardenas-Perez, P.A., 2000: **Impacto de ENOS en la Lluvia para la Region del Gran Caribe**. Trade Convergence Climatic Complex. Available from TC3Net, c/o CATHALAC, Antigua Base de Clayton, Ciudad del Saber, Bldg. 801, Panama City, Panama.

Huebner, R.S., 2000: **Hydrologic Impacts of the 1997-98 El Niño and La Niña on Central and South Florida**. West Palm Beach, Florida: Environmental Monitoring & Assessment Dept., South Florida Water Management District; sfwmd.ces.fau.edu/techpub/

Nagle, S.R., 2000: **An Investigation of the Relationship between ENSO and U.S. Tornado Climatology**. M.S.

Thesis, Texas Tech Univ., Lubbock, TX;
www.lib.ttu.edu/

National Environmental Satellite, Data,
and Information Service, 1999:
Highlights of 1999. Washington DC:
National Oceanic and Atmospheric
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The Bureau of Meteorology in Australia has a Christmas party Olympic Games (yes, we are besotted with the Olympics here in Australia at present), with 6 teams competing. The teams have names indicating extraordinary sporting prowess, such as Fog, Blizzard, Sunshine and Cloud. Such stunning events as best Christmas decoration with a weather theme, fastest person to trash the old Budget and Program

document, count the lightning strikes on the lightning strike map, weather trivia quiz, and team Christmas carol are delivered at the party. Last year, one event was a poem with a weather theme (plagiarism allowed). Hence the penning of "El Niño." Apologies to Shakespeare!

--Mary Voice
(M.Voice@bom.gov.au)

EL NIÑO

by
Mary Voice

Niño, or not Niño; that is the question
Whether 'tis nobler in the mind to suffer
The swings and roundabouts of erratic climate,
Or to take arms against a sea of weather,
And by smoothing, damp them?

To seek the Signal;
Oh vain; perhaps by research to say we end
the heart-ache and the thousand natural shocks
That forecasters are heir to, 'tis a consummation
Devoutly to be wish'd
To research, to sleep,
To research: perchance to dream; aye, there's the rub;
For in that dream what insights may come
When we have shuffled off this operational toil,
Must give us pause.

For who would bear the whips and scorns of time,
The insolence of office and the spurts
That impatient users of the forecast makes.

Does conscience thus make cowards of us all;
And thus the forecaster of resolution
Is hindered by the niggling doubt in thought,
And forecasts of great pith and moment?
With this regard their currents turn awry,
And lose the name of action.

-- Soft you now!
Oh foul El Niño or fair La Niña, in thy vagaries
Be all my sins remember'd.

WEB RESOURCES

In keeping with our brief North Atlantic Oscillation article (on pp. 3–4), here are some Web resources on this phenomenon, as well as a few other sites sent to us by our readers.

www.ideo.columbia.edu/NAO/

This Web site contains numerous links and some very interesting graphics to explain the NAO to the lay person.

cgd.ucar.edu/cas/climind/

Winter, monthly, seasonal, and annual values of the NAO, as well as other indices available from Climate and Global Dynamics Division at NCAR.

www.cpc.noaa.gov/data/teledoc/nao.html

The Climate Prediction Center's page on the NAO, complete with references and graphics.

www.cru.uea.ac.uk/tiempo/floor2/data/nao.htm

This link takes the reader to *Tiempo's* Climate Cyberlibrary, which defines major variations in global and regional climate.

www.bom.gov.au/climate/c20thc/

This site links 8 Australian climate extremes of the 20th century from an archive compiled by the Bureau of Meteorology.

www.enn.com/specialreports/elnino/

The Environmental News Network (ENN) Web site on El Niño.

www.eurocoast.org/

A Web site of subjects relating to the protection, development, and management of the coastal zone, providing a network for scientific and technical cooperation within and outside Europe.

orbit35i.nesdis.noaa.gov/arad/fpdt/nwasat.html

A list of Internet sites providing original, current satellite images or derived products, arranged by region and sector.

www.pml.ac.uk/globec/

GLOBEC (Global Ocean Ecosystem Dynamics) is the International Geosphere-Biosphere Programme (IGBP) core project responsible for understanding how global change will affect the abundance, diversity and productivity of marine populations.

THE ENSO SIGNAL

The ENSO Signal will be published four times a year by the Environmental and Societal Impacts Group at the National Center for Atmospheric Research, with financial support from the National Oceanic and Atmospheric Administration's Office of Global Programs. It is available both in hard copy and an electronic version.

The *ENSO Signal* is intended for those interested in the ENSO cycle and its impacts on ecosystems and societies. We intend to provide news items, publications, web sites, and articles of interest to our readers. Please give any feedback about the Signal to the Managing Editor. It is published quarterly free of charge. Subscribe on line or at the address below. For the next issue, please send any materials for inclusion by **31 December 2000**.

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