Issue #19 **November 2001**

Editorial
Attribution

Perhaps the most commonly cited climate impact on the course of history has been Napoleon's march on Moscow in 1812. An extremely cold winter decimated his invading army.

There has been a spate of articles and books in the last few years attributing major turning points to El Niño or El Niño-related impacts. For example, El Niño has been alleged to have influenced: the course of the French Revolution in the late 1780s, the making of the Third World, famines in colonies of major European powers, the collapse of empires, and the defeat of the Incas by Spanish conquistadors. Perhaps these associations with El Niño through atmospheric or oceanic teleconnections in the past are plausible – at least to some degree. Yet, although these suggestions make for interesting reading, I am not really sure how valid they are or how much faith one can put in those linkages.

The reason I raise this issue is the following: many researchers have spent the past 4 years or so trying to identify with some degree of confidence the impacts on ecosystems and on socio-economic systems of the 1997–98 "El Niño of the Century." That event was the most monitored, modeled, and forecast of all previous El Niño events. Yet, many of our studies are filled with caveats because of the difficulty in isolating causal relationships between El Niño in the central equatorial Pacific and adverse or positive impacts around the globe. Although there is often convincing evidence to support some of these proposed linkages, given the many factors that influence the behavior of a society or an economy, only preliminary findings can be offered. Our vision about such impacts of an El Niño of extraordinary magnitude remains cloudy, even though they occurred recently.

When reading about the assertions of El Niño's impacts on previous civilizations or on political changes hundreds of years ago, it appears that our vision and powers of analysis seem to have improved greatly. In fact, to the unsuspecting eye, that vision of El Niño's past impacts appears to be 20/20 vision or better, whereas today's vision remains somewhat blurred.

I would contend that many attributions of socioeconomic impacts to specific climate-related episodes fall into the category of educated speculation. This is not to say that speculation is a bad thing, but that degrees of uncertainty as well as of confidence should accompany that speculation. This applies in general to our attempts to identify climate and climate-related impacts on economy, environment, and society today, as well as in the past.

We (and I include myself) need to be more careful in making such attributions. Perhaps we need to include qualitative error bars with those attributions as we continue to blame climate variability on climate change and weather or climate extremes for the impacts that they seemingly (plausibly) cause. But, not all plausible scenarios will turn into reality.

--Michael H. Glantz

THANKS FOR YOUR INPUT!

Please send news items, publications, websites, and articles of interest to our readers to the address below by **31 January 2002**. 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!

D. Jan Stewart
Managing Editor
ENSO Signal
ESIG/NCAR
PO Box 3000
Boulder, CO 80307 USA
1-303-497-8134 (voice)
1-303-497-8125 (fax)
enso@ucar.edu
www.esig.ucar.edu/signal/

CURRENT STATE OF THE TROPICAL PACIFIC

(from the Climate Prediction Center's *Climate Diagnostics Bulletin*) www.cpc.ncep.noaa.gov

Most oceanic and atmospheric indices reflect ENSO-neutral conditions. However, there are indications that a warm episode may develop during the next several months. Since late June 2001, sea surface temperatures (SSTs) have become anomalously warm in the central equatorial Pacific, with anomalies near 1°C in the vicinity of the date line. During the same period, subsurface temperature anomalies have remained positive in the central equatorial Pacific between 170°E and 120°W, indicating a deeper-than-normal thermocline in that region. This pattern has been observed during the early stages of past El Niño events. . . . There is no clear consensus among the latest statistical and coupled model predictions. However, several of these predictions indicate that positive SST anomalies will continue in the central equatorial Pacific during the remainder of 2001 and into the first half of 2002. The impacts that this warming will have on global temperature and precipitation patterns depend to a large degree on its intensity. At the moment, it seems most likely that the intensity of any warming will be weak or moderate.

MEETINGS POSTPONED

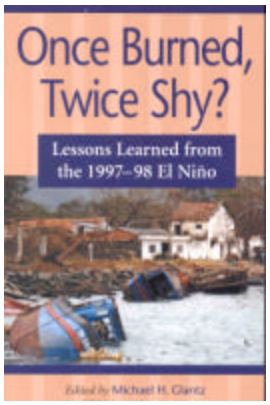
The Third Oceanology International Pacific Rim Conference, which was scheduled for 4–6 December 2001 in Singapore, has been postponed until further notice. For more information, contact Angela Pederzolli, Project Executive, tel: 44-20-8949-9839; fax: 44-20-8949-8186; email angela.pederzolli@ spearhead.co.uk; website: www.oipacificrim.com/

JAMSTEC (Japan Marine Science and Technology Center) has postponed its 30th Anniversary Event until the international situation turns favorable. For more questions, please contact Kazuo Kotani, International Affairs Division, Planning Dept., JAMSTEC, 2-15 Natsushima-cho, Yokosuka-city, Kanagawa, Japan 237-0061; tel: 81-468-67-5587; fax: 81-468-66-3061; email kotanik@jamstec.go.jp

DECVAR VIRTUAL CENTER

The first phase of the Virtual Center for Decadal Climate Variability Studies (DecVar) has been developed with the capabilities of the current and next-

generation Internet to enable individuals, or groups of researchers, to make faster progress toward a common set of decadal climate variability research and applications goals via an international web-based center. DecVar belongs to the decadal climate variability community and solicits feedback. To become a member, fill out a membership form on the Help Desk at www.DecVar.org and you will receive a username and password and instructions on how to use the facility. The Virtual Center has many interactive capabilities where one can upload files of various types and post messages on bulletin boards. The first issue of the Center's quarterly newsletter, *Subtle Signals*, about various aspects of decadal variability, including societal impacts, was published in August 2001. For more information, write to mehta@eos913.gsfc.nasa.gov or see the website at www.DecVar.org



UN STUDY RESULTS AVAILABLE

A number of UN agencies and NCAR (National Center for Atmospheric Research) undertook a 19-month-long evaluation of 16 countries to find ways to improve early warning mechanisms by looking at the general preparedness in each country for the 1997–98 El Niño event. The study results suggest ways for countries to improve response strategies for future events. The book was prepared from the Executive Summaries of the 16 countries by the UN University Press, which has also released a CD-ROM with the entire report from each country. To receive a copy of the book if you are within the US, please send an email to enso@ucar.edu with your mailing address. For overseas requests or to receive the CD, write to adeel@hq.unu.edu. For requests from Africa, contact alex.alusa@unep.org. For more information on the project, see the website at www.esig.ucar.edu/un

Glantz, M.H. (Ed.), 2001: *Once Burned, Twice Shy: Lessons Learned from the 1997–98 El Niño.* Tokyo, Japan: UN University Press, 294 pp.

CLIMATE VARIABILITY AND MARINE FISHERIES

The Pacific Fisheries Environmental Laboratory recently developed a website to provide a starting point for investigating the issue of climate and marine fisheries. It contains general information on climate, examples of how climate variability affects fisheries, and more specifics on research for those seeking more information. The site is at www.pfeg.noaa.gov/research/climatemarine/ and encourages user feedback. For more information, contact George Boehlert, NOAA/NMFS, PFEL, 1352 Lighthouse Ave., Pacific Grove, CA 93950; email gboehlert@pfeg.noaa.gov

CORAL NETWORK – ICRAN

The International Coral Reef Action Network (ICRAN) is a collaborative effort designed to reverse the decline of the world's coral reefs. This newly implemented program combines

management action, assessment, and communication to achieve its goals. The UN Foundation is providing initial support to ICRAN, with additional support planned for ICRAN's four-year Action Phase (2001-2005). The next ICRAN Steering Committee Meeting will be held 24–25 November 2001 in Maputo, Mozambique. For a copy of the complete ICRAN Strategic Plan or for more information, visit the website at www.icran.org or write Kristian Teleki, ICRAN Project Officer, c/o UNEP World Conservation Monitoring Centre, 219 Huntingdon Rd., Cambridge CB3 0DL UK; tel: 44-1223-277314; fax: 44-1223-277136; email icran@icran.org

NEW CORAL REEF ATLAS

The *World Atlas of Coral Reefs* provides the first detailed and definitive account of the current state of the planet's coral reefs. It contains 84 full-page newly researched color maps, together with more than 200 color photos of reefs, reef animals, and images taken from space by NASA astronauts during the 2000 and 2001 Space Shuttle flights. Prepared at UNEP's World Conservation Monitoring Centre in Cambridge, UK, the *Atlas* can be used by scientists, students, policymakers, and planners at local, national, and international levels. To order, see the website at www.ucpress.edu

Spalding, M.D., C. Ravilious, and E.P. Green, 2001: *World Atlas of Coral Reefs*. University of California Press, 424 pp., US$45 clothbound.

FIRST NANCY FOSTER SCHOLARSHIP AWARDS

Five outstanding graduate-level researchers in the fields of oceanography, marine biology, and maritime archaeology were selected to receive the first Dr. Nancy Foster awards from a pool of more than 500 applicants. Dr. Foster was a marine biologist known for her science-based conservation of coastal aquatic life. This scholarship encourages independent graduate-level research, particularly by female and minority students. The program is administered through NOAA's National Ocean Service. A call for applications for the 2002–2003 school year will be released soon. To find information about the recipients or for more information, see the website at fosterscholars.noaa.gov

EL NIÑO AND THE ANTARCTIC

Scientists have found that El Niño is primarily responsible for determining the strength of the Antarctic Circumpolar Wave (ACW). During El Niño events, there is a massive buildup of warm water in the equatorial central Pacific Ocean, according to Peter Baines of CSIRO in Australia. The ACW involves large regions of warmer and cooler water within the Southern Ocean slowly rotating around Antarctica. "The irregular pattern of El Niño events during the past few years has weakened the Wave," says Dr. Baines (from *Atmosphere*, newsletter of CSIRO Atmospheric Research. Available on line at www.dar.csiro.au/publications/atmosphere.htm). To see a graphic representation of the ACW, see the website at acw.ucsd.edu

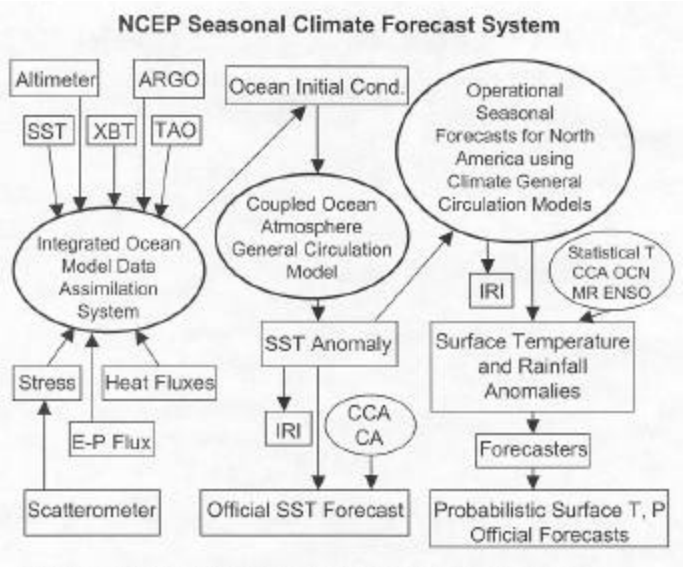
WINTER DROUGHT IN IRAN: ASSOCIATION WITH ENSO

An article in the *Drought Network News* (Vol. 13, No. 1) by M.H. Nazemosadat shows that autumn rainfall in Iran is negatively correlated with the Southern Oscillation Index (SOI). This

relationship was found to be strong over the southern foothills of the Alborz Mountains, northwestern, and central areas. Most parts of Iran experienced exceptional drought during 1998–2000, which extended into winter 2001 in some areas. Further research is recommended by the author to evaluate the impact of intense ENSO events on Iranian rainfall. To see the article, go to the website at enso.unl.edu/ndmc or write to the author at jafar@hafez.shirazu.ac.ir

NEW SEASONAL CLIMATE FORECAST MODEL

On 6 November 2001, the Environmental Modeling Center of the National Weather Service (NWS) National Center for Environmental Prediction (NCEP) will implement the climate atmospheric general circulation model and associated software and data sets. This model is the first of a new three-component operational seasonal climate forecast suite. The two other future components will be an ocean data assimilation system and a coupled ocean–atmosphere model for forecasting sea surface temperature anomalies up to 9 months in advance. This model has been running in an experimental mode on the NCEP computer. It was approved at the 5 September meeting of the NWS Committee on Analysis and Forecast Techniques Implementation (CAFTI). A copy of that presentation is on line at www.emc.ncep.noaa.gov/cmb/cafti/presentation. Slide 5 is reproduced here. For more information on the model, contact Dr. Hua-lu Pan, NCEP/NOAA W/NP23, 5200 Auth Rd., Room 204, Camp Springs, MD 20746; tel: 1-301-763-8000 Ext. 7234; email hualu.pan@noaa.gov



Slide 5 from NWS Committee Meeting on Analysis and Forecast Techniques Implementation (CAFTI): 5 September 2001.

LAUTENBACHER NOMINATED TO HEAD NOAA

Dr. Conrad C. Lautenbacher, Jr., retired Vice Admiral, has been nominated by President Bush to be Under Secretary of Commerce for Oceans and Atmosphere and head of NOAA. Lautenbacher is currently the President of CORE (Consortium for Oceanographic Research and Education). CORE is an association of 66 US oceanographic research institutions. For more information on CORE, visit the site at www.COREocean.org and for more information on the nomination, see www.whitehouse.gov/news/releases/2001/09/20010919-13.html

CLIMATE AND PACIFIC SALMON MANAGEMENT

Effective management of marine fisheries often requires cooperation among nations who jointly exploit transboundary or migratory fish stocks. Maintaining cooperation can become difficult if sharing arrangements have not anticipated effects of climate variations, such as ENSO events or longer-term changes in the marine environment. Cooperation between Canada and the US broke down on Pacific salmon management, when increasing Alaskan salmon abundance coincided with sharp declines in west coast US salmon. These opposite trends left the 2 nations unable to achieve a balance in interceptions of one another's salmon stocks under the 1985 Pacific Salmon Treaty. A paper published by Kathleen Miller in *Climatic Change* describes the period of conflict and the process leading to the new Agreement. A related paper with collaborators Gordon Munro, Ted McDorman, Robert McKelvey and Peter Tydemers will be published soon. Both papers are available on line at www.esig.ucar.edu/HP_kathy.html

Miller, K.A., 2000: Pacific salmon fisheries: Climate, information, and adaptation in a conflict-ridden context. *Climatic Change*, **45**(1), 37–61.

NCDC CELEBRATES 50 YEARS

NCDC (National Climatic Data Center) is the world's largest active archive of weather data. In October 2001, NCDC celebrated its 50th anniversary of providing climate information. As NOAA's primary data storehouse, NCDC archives nearly 98% of all NOAA environmental data and annually processes millions of requests for climate data. This information is applied to the design and construction of buildings, bridges, transportation systems, and remote sensing systems. Visit the website at lwf.ncdc.noaa.gov/ to learn more about NCDC.

TRMM SATELLITE GETS A BOOST

The Tropical Rainfall Measuring Mission (TRMM) satellite has been recording rainfall data in the tropics since it was launched in 1997. After the satellite's successful first three years, scientists realized they could extend the mission's life and gather further vital information by raising TRMM's orbit from 350 km to 402 km above the Earth. The satellite was gently nudged to its new orbit altitude under the control of NASA engineers at Goddard Space Flight

Center in Maryland. This orbital change could extend the lifespan of TRMM to somewhere between 2005 and 2007. Researchers are just now beginning to test TRMM data in weather forecast models, and an extension of TRMM mission life has potential future benefits in weather prediction. For more information on the TRMM mission, visit trmm.gsfc.nasa.gov

EMPLOYMENT OPPORTUNITIES

UCAR Postdoctoral Scientist Program at IRI. UCAR announces the continuation of a postdoctoral program in the application of seasonal-to-interannual climate forecasts located at the International Research Institute for climate prediction (IRI) on the campus of Columbia University's Lamont-Doherty Earth Observatory in Palisades, NY. The objective is the development of an integrated forecast decision support system. Contact Carolyn Mutter, Assistant Director for Science Management at czm@iri.columbia.edu regarding the development of proposed research activities. Projects involving climate issues in global food security, health, hazards, and information management are particularly encouraged. Application deadline is *15 January 2002*. Send applications to UCAR/Visiting Scientist Programs, PO Box 3000, Boulder, CO 80307-3000 USA. For more information, call 1-303-497-8649, email vsp@ucar.edu or website at www.vsp.ucar.edu. *UCAR is an Equal Opportunity/Affirmative Action Employer.*

Director, International CLIVAR (Climate Variability and Predictability) Project Office, University of Southampton, UK. CLIVAR was envisaged as a program that seeks to describe and understand the physical processes responsible for climate variability and predictability on seasonal to centennial time scales. Candidates should have demonstrated the ability to conceive, organize, and manage interdisciplinary and international science activities and have a PhD or equivalent and considerable experience in climate-related science. Deadline is *31 December 2001.* For more information, contact Personnel Dept., University of Southhampton, Highfield, Southampton SO17 1BJ, UK; tel: 44-23-8059-2750; email recruit@soton.ac.uk or web at www.clivar.org

A Tenure-Track Position in Physical Oceanographic Modeling is being offered at the Assistant Professor level in the Department of Physics and Physical Oceanography at Memorial University in Newfoundland. Anticipated starting date is 1 September 2002. The successful applicant will be expected to develop an active research program and to teach at the graduate and undergraduate levels. Applications, including a CV, names of 3 references, and a statement of research interests should be submitted to Dr. J.P. Whitehead, Dept. of Physics and Physical Oceanography, Memorial University of Newfoundland, St. John's, NF, A1B 3X7. Consideration of applications will begin on 1 January 2002. For more information, see the website at www.physics.mun.ca

CLS Space Oceanography Division, Postgrad Researcher Positions. Three postgraduate research positions are being offered by the CLS Space Oceanography Division in Toulouse, France. The positions are funded through the European Commission Marie Curie Industry Host fellowships. Candidates should be from a member state or an associate member state of the European Community (excluding France). Applicants should have a PhD in physical oceanography, meteorology or a related field. Preference will be given to those with experience in data analysis and remote sensing

techniques. The positions are opened from 1 November 2001 up to 31 January 2002 for a period of up to 18 months. Applications, including CV and names and addresses of two referees, should be sent or emailed to Dr. P.Y. Le Traon, CLS Space Oceanography Division, 8-10 rue Hermes Parc Technologique du Canal, 31526 Ramonville Saint-Agne, France; tel: 33-56-139-4758; fax: 33-56-139-3782; email Pierre-Yves.Letraon@cls.fr; web: www.cls.fr

SUMMARIES OF PAST MEETINGS

A **Workshop on Interannual Climate Variability and Pelagic Fisheries** was held 6–24 November 2000 in Nouméa, New Caledonia. The workshop reviewed the current ability to model and observe the climate system and the marine ecosystem as it relates to pelagic fisheries, and aimed to review the evidence for climate impacts on marine ecosystems and fish populations, and to review the climate information in fisheries and ecosystem models. For more information, contact Dr. Neil Ward, International Research Institute for Climate Prediction, Columbia University, 61 Rt. 9W, Monell Building, LDEO, Palisades, NY 10964-8000; tel: 1-845-680-4468; fax: 1-845-680-4864; email nward@iri.columbia.edu or website: iri.columbia.edu/outreach/training/course/noumea2000/index.html

A workshop entitled **Remote Sensing and Environmental Treaties: Building More Effective Linkages** was held 4–5 December 2000 in Washington, DC. The workshop was organized to address the growing needs for data and information to support the negotiation and implementation of multilateral environmental agreements (MEAs). Specifically, the workshop sought to explore the potential for enhancing the effectiveness of MEAs through the appropriate application of remote sensing data and technology. Participants recommended that a coordinated suite of environmental monitoring instruments be developed; that an international institution be mobilized to promote coordination among agencies; and that MEA constituencies be educated about the capabilities of remote sensing instruments. For more information, contact CIESIN at Columbia University, PO Box 1000, 69 Route 9W, Palisades, NY 10960; tel: 1-845-365-8988; fax: 1-845-365-8922; website: www.ciesin.columbia.edu

A **Workshop on Risk-Benefit Assessment of Observing System Decision Alternatives** was held 18–19 June 2001 in Boulder, Colorado. This NASA-sponsored workshop was designed as input to NASA's decision-making process about the termination of the Tropical Rainfall Measurement Mission (TRMM). Workshop participants concluded that the 3 years of additional on-orbit operations that would be provided by boosting TRMM would be valuable and that NASA should revisit the TRMM de-orbiting decision in late 2004. For more information on this workshop, contact Roger Pielke Jr., Center for Science and Technology Policy Research, University of Colorado, 1333 Grandview Ave. Campus Box 488, Boulder, CO 80309-0488; tel: 1-303-735-3940; fax; 1-303-735-1576; email: pielke@cires.colorado.edu

A meeting entitled **Challenges of a Changing Earth: IGBP Global Change Open Science Conference** was held 10–13 July 2001 in Amsterdam, The Netherlands. The meeting was attended by over 1,300 scientists from more than 100 countries. The most significant outcome of the meeting was the "Amsterdam Declaration" which was drafted by the leadership of the four international global change research programs. The Declaration is being

used to alert the world about the reality of global change and the urgent need for action. For more information on this meeting, visit the conference website at www.sciconf.igbp.kva.se/fr.html or contact Will Steffen, International Organizing Committee, will@igbp.kva

A **UN Environment Programme Workshop on Coral Reef Monitoring and Data Acquisition in the Eastern Caribbean** was held 11–13 July 2001 in Soufrière, St. Lucia. The workshop was intended to promote the establishment of sustainable coral reef education, monitoring and management programs, focusing on the Eastern Caribbean. The factors limiting implementation are a lack of equipment and trained personnel, and some confusion over the purpose of some of the available survey and monitoring protocols. Marine area managers and government agencies would benefit from clarification of what each provides and the differences in expertise, time and resources that each requires. The workshop was intended for people directly involved in monitoring programs, either in their planning and design or in implementation. For more information, contact CANARI, tel: 1-758-454-6060; fax: 1-758-454-5188; email canari@ candw.lc or see the website at www.smma.org.lc/News/bulletins/RCWorkshop.htm

A **Workshop on Climate Information and the Media** was held 24–25 August 2001 in Jinja, Uganda. The workshop was sponsored by the International Research Institute for climate prediction (IRI) and the Drought Monitoring Centre of Nairobi. It was designed for journalists working in print, radio, or television broadcasting, and was intended to improve reporting on the subject of climate and climate forecasting. The goals included: improve understanding of the media regarding climate variability, seasonal climate forecasting and El Niño; improve the skills of the media in communicating climate issues and seasonal forecasts to the lay public; and develop strategies by which the climate community can improve its information delivery to the media. For more information, contact the IRI Secretariat, Columbia University, Lamont-Doherty Earth Observatory, 61 Route 9W, Palisades, NY 10964; tel: 1-845-680-4468; fax: 1-845-680-4866; email: info@iri.columbia.edu or website: iri.columbia.edu/outreach/meeting/MediaWS2001/index.html

ANNOUNCEMENTS OF UPCOMING MEETINGS

The **82nd American Meteorological Society Annual Meeting** will be held *13–17 January 2002* in Orlando, Florida. The meeting is being organized around the theme of generating environmental information and services. One symposium will focus on processes through which observations are assimilated and used to produce useful datasets and forecasts in the atmospheric, oceanic, and hydrologic sciences, with special emphasis on ensemble predictions. The meeting will also feature a president's symposium entitled "Society and the Society," which will address how the AMS can help to further develop and communicate societal impacts research and mechanisms to support researchers, policymakers, and users of weather and climate information. For more information, contact AMS Headquarters, 45 Beacon Street, Boston, MA 02108-3693; tel: 1-617-227-2425; fax: 1-617-742-8718; email: amsinfo@ametsoc.org; website www.ametsoc.org/AMS/

The **3rd Online Workshop for Educators on Conservation and the Coral Reef World** is scheduled for early February 2002. Registration is taking place now for this online workshop designed to bring explorers, scientists,

and teachers together for four weeks of learning about the wonders of coral reefs. All activities are web-based. Some of the program's highlights include Coral Reefs 101 for the Classroom; Status of Coral Reefs and Threats; Uses and Abuses of Coral Reefs; and Education Programs and Conservation Practices for Australian Reefs. Breakout sessions include field reports from Mexico, American Samoa, and the Florida Keys. For more information and to register online, visit www.coexploration.org/sse/coral/htmlflyer.html

The **2002 Ocean Sciences Meeting** will be held *11–15 February 2002* in Honolulu, Hawaii. Some of the special sessions include: Coupled Biophysical Processes, Fisheries Resources, and Climate Variability in Coastal Ecosystems of the Northeast Pacific Ocean; Reforming Education in the Ocean Sciences for All Citizens; Coral Reef Habitats: New Insights From Integrated Coastal Science; and Multidisciplinary Ocean Observations and Observatories. For additional information, contact AGU Meetings Dept., 2002 Ocean Sciences Meeting, 2000 Florida Avenue, NW, Washington, DC 20009; tel: 1-202-462-6900; fax: 1-202-328-0566; email meetinginfo@agu.org; website: www.agu.org/meetings/os02top.html

Solutions to Coastal Disasters 2002 will be held *24–27 February 2002* in San Diego, California. The four main conference themes are Coastal Storms, e.g., hurricanes, cyclones, extra-tropical storms and coastal flooding; Seismic Effects, e.g., tsunamis and coastal landslides; Impacts on Climate Change, e.g., rising sea levels, ocean temperature changes and El Niño; and Shoreline Change. The conference aims to bring together coastal researchers, scientists, and managers to exchange information about coastal disasters and to identify gaps in information exchange between researchers and managers. For more information, contact: Lesley Ewing, California Coastal Commission, 45 Fremont Street, Suite 2000, San Francisco, CA 94105; tel: 1-415-904-5291; fax: 1-415-904-5400; email: lewing@coastal.ca.gov or website: www.asce.org/conferences/cd2002/index.html

Oceanology International 2002 will be held *5–8 March 2002* in London, UK. The conference brings together those involved in every aspect of oceanography to address present and future trends in Marine Environmental Sciences, Ocean Observing and Modeling, Measurement and Instrumentation, Data Harvesting, Marine Survey and Engineering, Marine Pollution Monitoring and Control, and Meteorology. For more information, contact Angela Pederzolli, Project Executive; tel: 44-20-8949-9839; fax: 44-20-8949-8186; email angela.pederzolli@spearhead.co.uk or contact PGI Spearhead Worldwide Exhibitions, Coombe Hill House, 3rd Floor Beverley Way, London, SW20 0AR, UK; tel: 44-20-8949-9839; email: oilondon@spearhead.co.uk; web site: www.oceanologyinternational.com

The **7th International Coastal Symposium** will be held *25–29 March, 2002* in Templepatrick, Northern Ireland. This multidisciplinary international symposium is for scientists, engineers, and managers to discuss the latest advances in scientific understanding, engineering and environmental issues of coastal processes. The symposium provides a forum for the following themes: coastal change, contemporary coastal processes, coastal engineering and management, and coastal ecosystems. For more information, contact the Coastal Research Group, School of Environmental Studies, Faculty of Science, University of Ulster, Coleraine, BT52 1SA, Northern Ireland; tel: +44 (028) 70324429; fax: +44 (028)

70324911; email: ics2002@ulst.ac.uk; website: www.science.ulst.ac.uk/ ics2002/

The **25th Conference on Hurricanes and Tropical Meteorology** will be held *25 April –3 May 2002* in San Diego, California. Some of the topics covered will be climate processes in Tropical America and the eastern Pacific, convection, extended range prediction, hurricane impacts in the Americas, hurricanes, intraseasonal variability, monsoons, ocean–atmosphere coupling, and short-range prediction. The deadline for abstract submission is November 15. For more information, contact AMS Headquarters, 45 Beacon Street, Boston, MA 02108-3693; tel: 1-617-227-2425; fax: 1-617-742-8718; email: amsinfo@ametsoc.org; website: www.ametsoc.org/AMS/

A conference entitled **Managing International Shared Waters: Towards Sustainable Transboundary Coastal Ecosystems** will be held *24-28 June 2002* in Hamilton, Canada. The conference will bring together representatives from groups engaged in management of transboundary coastal waters and those seeking practical, positive and integrated solutions to coastal issues. The conference is aimed at representatives from government, academia, business, non-government organizations, indigenous peoples, women, and youth. For more information, contact Dr. Ralph Daley, UNU/UNWEH, McMaster U., JHE Bldg., #A416, 1280 Main Street West, Hamilton, ON Canada, L8S 4K1; tel: 1-905-525-9140 ext. 24517; email: contact@inweh.unu.edu; website: www.inweh.unu.edu/ inweh/msw.htm

The **International Tropical Rainfall Measuring Mission (TRMM) Science Conference** will be held *22–26 July 2002* in Honolulu, Hawaii. The conference is sponsored by NASA and NASDA (the National Space Development Agency of Japan). Papers are solicited on all aspects of TRMM research, including satellite data analysis, climate diagnostics, model evaluation, algorithm development, field experiments, validation and application. Titles and abstracts (not to exceed 500 words) in English must be received by 1 February 2002 and may be submitted to abstracts@agnes.gsfc.nasa.gov. For more information, contact Dr. Marshall Shepherd at shepherd@agnes.gsfc.nasa.gov or visit the website: trmm.gsfc.nasa.gov/publications_dir/ trmm_conference.html

The **GLOBEC Second Open Science Meeting** will be held *15–18 October 2002* in Qingdao, PR China. The meeting is expected to focus on how to engage the increasing number of national, multinational and regional GLOBEC (Global Ocean Ecosystem Dynamics) activities in the structures of the program and pave the way towards the GLOBEC synthesis. More specific information will be released at the beginning of 2002. For more information or to register, contact GLOBEC IPO, Plymouth Marine Laboratory, Prospect Place, Plymouth, PL1 3DH, United Kingdom; tel: +44 (0) 1752 633401; fax: +44 (0) 1752-633101; email: globec@pml.ac.uk; Web site: www.globec.org

RECENT PUBLICATIONS

Books

Caviedes, C.N., 2001: **El Niño in History: Storming Through the Ages**. To order, contact University Press of Florida, 15 Northwest 15th Street, Gainesville, FL 32611-2079 USA; tel: (in US) 1-800-226-3822; tel: (outside US) 1-904-277-3350; fx: 1-904-261-1896; web: www.upf.com

McKinnell, S.M., R.D. Brodeur, K. Hanawa, A.B. Hollowed, J.J. Polovian,

and C.I. Ahang, 2001: **Pacific Climate Variability and Marine Ecosystem Impacts**. Special Issue of *Progress in Oceanography*, **49**(1–4). 639 pp.

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Reports

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www.fisheries.org

The mission of the American Fisheries Society is to improve the conservation and sustainability of fishery resources and aquatic ecosystems by advancing fisheries and aquatic science and promoting the development of fisheries professionals.

www.oceanportal.org

Ocean Portal is a high-level directory of Ocean Data and Information related web sites. Its objective is to help scientists and other ocean experts in locating data & information.

www.sea-search.net

An effective navigation tool to oceanographic data and information sources in Europe, managed by European centers, and to centers in Europe with expertise and skills in oceanographic and marine data and information management.

nsipp.gsfc.nasa.gov/enso/

General information, views from space, images, animations and related research about El Niño and the current state of the tropical pacific.

calcofi.org

CalCOFI (California Cooperative Oceanic Fisheries Investigation) boasts a history encompassing hundreds of thousands of ocean measurements and net tows taken during 300 cruises.

www.DecVar.org/newsletter/vol1.1/

A scholarly newsletter to disseminate news and views about decadal climate variability, predictability, and societal impacts.

www.pbs.org/wgbh/nova/elnino

Nova's online anatomy of El Nino, chasing El Nino, and El Nino's reach.

www.ecpc.ucsd.edu

Experimental Climate Prediction Center's goal is to develop experimental global to regional predictions of the atmosphere, ocean, and land. The Scripps ECPC is a NOAA Applied Research Center.

www.inocar.mil.ec

INOCAR (Instituto Oceanográfico de la Armada) of Ecuador produces a periodic bulletin in collaboration with the Comisión Permanente del Pacífico Sur to update researchers on current conditions in the central Pacific (in Spanish).

THE ENSO SIGNAL

The El Niño-Southern Oscillation (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 January 2002**.

STAFF

Editor.....Michael H. Glantz
Managing Editor.....D. Jan Stewart
Associate Editor.....Jan Hopper
Associate Editor.....Anne Oman
Web Editor.....Jennifer Oxelson

Environmental & Societal Impacts Group
National Center for Atmospheric Research
PO Box 3000
Boulder, CO 80307 USA
Tel: 303-497-8134
Fax: 303-497-8120
Email: enso@ucar.edu

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