

Network Newsletter

and

Issue #25



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1 October–31 December 2003

Editorial

What to Do When the Pacific Is “pacific”

We have recently emerged from a relatively weak El Niño (2002–03), and speculation and “guesstimates” by various researchers have suggested that there would be a shift toward La Niña. This shift has not yet happened. For El Niño impacts researchers, this is rather *boring*. While the Pacific Ocean is “pacific,” it is difficult to write about something that seems to be boring in an exciting way.

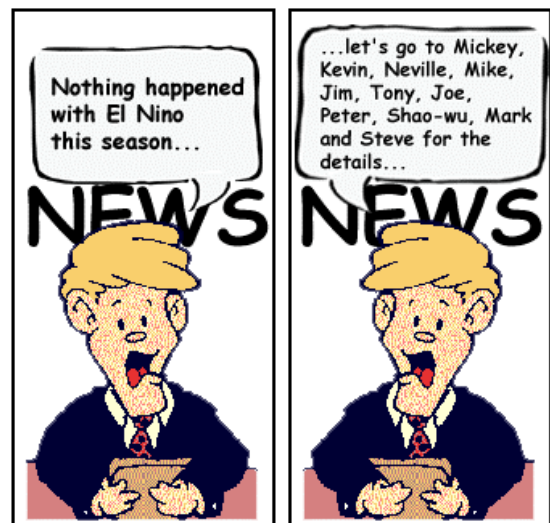
Researchers have shown that together El Niño events and La Niña events occur about 55% of the time. This means that the sea surface temperatures in the equatorial Pacific are in a so-called “neutral” phase 45% of the time. That seems to be the phase of the El Niño-Southern Oscillation (ENSO) cycle at the present time. So, what are forecasters to do? What might impacts researchers do? What can the media write or discuss about El Niño or La Niña? Not much, apparently.

The truth is that this is a great time to learn about what we know and what we do not know about the *entire* ENSO cycle. As we are now between events, the time is right for societies to improve their understanding of the phenomenon and to devise ways to better cope with the potential direct and indirect effects of the extremes of the ENSO cycle, El Niño and La Niña.

This is also a good time to build capacity at the local level, while there is some opportunity, i.e., breathing space, to do so. Knowledge about El Niño and its potential impacts is needed at the most basic levels of social and political organization in order to enhance the likelihood of effective responses to El Niño’s impacts. Once an El Niño has passed, there is good reason and ample time to look back at the event, the forecasts of it, its impacts, to review the economic aspects, and so forth.

In the heat of an El Niño event, there is usually a lot of speculation about its impacts. This is understandable and newsworthy. Yet, the expected or projected costs are often based on, at best, educated guesses. After the event, though, those who provided the original estimates tend not to take the time to look back to correct their estimates for the record.

Researchers could also use the time between events to update the various El Niño-related impacts maps for their regions, or for the entire globe. The public and media in different locations around the world take these maps seriously, viewing them as authoritative. These maps should be updated at regular intervals – say between El Niño events, as researchers gather new insights with each new warm event. Between El Niño, such as the present time, researchers could compare societal responses to the recent El Niño forecast (2002–03) with those for the 1997–98 event.



Another activity that could be undertaken during the “neutral phase” relates to the following: I fear that lessons we believe we have learned as a result of impacts and responses to recent El Niño episodes have not really been learned, but have only been identified. What is lacking are the *actions* needed to reduce the weaknesses and to reinforce the strengths of societal response to El Niño and La Niña. Most societies, rich and poor, apparently continue to live in a “culture of response,” as opposed to a “culture of prevention.” To many readers of this editorial, this is the time when you have a real window of opportunity. *Carpe diem* (seize the day)!

--Michael H. Glantz



Environmental & Societal Impacts Group (ESIG)
National Center for Atmospheric Research (NCAR)
PO Box 3000, Boulder, CO 80307
www.esig.ucar.edu/newshp • jan@ucar.edu

LET'S HEAR FROM YOU!!

This newsletter depends on YOUR input. Please send relevant information that comes across your desk, whether it is a news item, meeting, job opening, or publication, to the address on the back cover. Information to be included in the next newsletter must be received by **31 December 2003**. If you prefer to receive the newsletter on line, please let us know at www.esig.ucar.edu/newshp and you will be reminded when a new issue is released. Thanks again for your contributions!

CAPaBLE

The Asia-Pacific Network for Global Change Research (APN) has launched a new initiative, Scientific Capacity Building/Enhancement for Sustainable Development (CAPaBLE), to develop and enhance scientific capacity in developing countries in order to improve decision-making in areas related to climate change, water resources, and food security that are directly linked to sustainable development. The initiative will run from September 2003 to March 2006. The focus will be concentrated in two parts, by (1) capacity enhancement for experienced leading scientists, and (2) capacity building for young and aspiring scientists. The APN is an inter-governmental network whose primary purposes are to foster global environmental change research in the Asia-Pacific region, increase developing country participation in that research, and to strengthen links between the science community and policy makers. The 21 APN member countries include Australia, Bangladesh, Cambodia, China, Fiji, India, Indonesia, Japan, Korea, Laos, Malaysia, Mongolia, Nepal, New Zealand, Pakistan, Philippines, Russia, Sri Lanka, Thailand, US, and Vietnam. For more information, contact the APN Secretariat, Linda Stevenson at l Stevenson@apn.gr.jp or website at www.apn.gr.jp

GIS DAY 2003

GIS (Geographic Information Systems) Day is a grassroots event that formalizes the practice of GIS users and vendors to open their doors to schools, businesses, and the general public to showcase real-world applications of this technology. GIS Day 2003 will be held on 19 November 2003. In 2002, thousands of people participated in open houses, educational seminars, GPS scavenger hunts, and more, to learn how

important GIS technology is used in analyzing information, making important decisions, and ultimately sustaining our planet. GIS Day is part of the National Geographic Society's new initiative, Geography Action, a year-long initiative encompassing key educational achievements. To get involved in this initiative, or to learn more about GIS Day 2003, see the website at www.gisday.com



GEO DATA PORTAL

The GEO (Global Environmental Outlook) Data Portal of the UN Environment Programme has recently been developed to give easy access to a wide range of statistical and geo-spatial data sets. Through the Portal's database, which now holds more than 400 variables on environmental and socioeconomic themes such as population, economy, forests, water use, and air emissions, one can easily create maps, graphs, or tables and download the data in several popular formats. Created mainly for the GEO user community, most of the data and information are free and available to the general public. For more information, see website at geodata.grid.unep.ch or write to UNEP/DEWA Europe, 11 Chemin des Anémones, CH-1219, Chatelaine, Switzerland; email geo@grid.unep.ch

CSD-12 NEWS

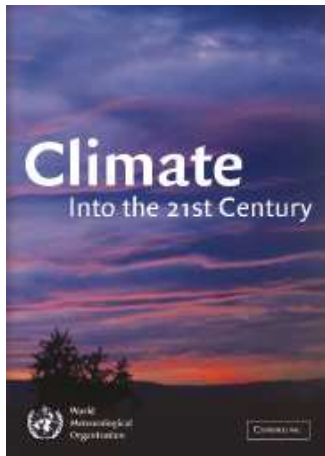
The 12th Session of the UN Commission on Sustainable Development (CSD-12) will be held 16–30 April 2004 in New York. As agreed upon at CSD-11, the CSD has set several two-year Implementation Cycles beginning in 2004 until 2017 to focus on particular activities. The beginning of the first two-year cycle (2004–2005) will focus on **water, sanitation, and human settlements**. H.E. Børge Brende, elected as Chairman of CSD-12 in May 2003, has been the Norwegian Minister of the Environment since 2001 and a Member of the Norwegian Parliament since 1997. He stated that he will make it a priority to uphold the political momentum that was begun at the World Summit on Sustainable Development (WSSD) held August–September 2002 in Johannesburg. Progress in the areas of water, sanitation and human settlements will help to reach sustainable development in health, education, gender equality, biodiversity, and poverty eradication. For more information on CSD-12 or to view the full program of work for the CSD until 2017, see the website at www.un.org/esa/sustdev/csd/csd12/csd12.htm

WORLD'S LARGEST CLIMATE PREDICTION EXPERIMENT?

Climate change is an issue of global importance that can affect food production, water resources, ecosystems, energy demand, insurance costs, and much more. Computer users anywhere in the world can join a massive effort to predict how the global climate will change in the 21st century. A collaboration between the universities of Oxford and Reading in the United Kingdom, along with the UK's Hadley Centre, allows a PC owner to download a state-of-the-art climate model from the website onto a home, school, or work computer. Each computer will then run a unique version of the UK Met Office's climate model, simulating several decades of global climate at a time. The model will run as a background process on ordinary desktops without affecting other computing tasks. The results will go back to the organizers via the Internet when the experiment ends. The official launch of the experiment was held 12 September 2003 at the Science Museum in London and the British Association for the Advancement of Science in Salford, UK. For more information or download the software, visit the website at www.climateprediction.net

CLIMATE: INTO THE 21ST CENTURY

The World Meteorological Organization (WMO) has just released *Climate: Into the 21st Century*, edited by William Burroughs and published by Cambridge University Press. Compiled with input from an international team formed under the auspices of the WMO and with direction from the World Climate Programme, this collection of chapters by leading meteorological experts provides a perspective of the



global climate system across the twentieth century. It is written for a broad audience in user-friendly language and contains abundant illustrations. Amazon.com is currently advertising a 30% discount off the book price. For more information about ordering, visit www.amazon.com or Cambridge University Press at

titles.cambridge.org/catalogue.asp?isbn=0521792029

Burroughs, W., 2003: *Climate: Into the 21st Century*. Cambridge, UK: Cambridge University Press. 240 pp.

GLOBAL WATER PARTNERSHIP (GWP)

The Global Water Partnership, involving countries around the world, includes all those concerned with water management: government agencies, public institutions, private companies, professional organizations, multilateral development agencies, and others committed to supporting countries in the sustainable management of their water resources. The GWP needs additional funding to meet increasing demands upon it, consolidate its regional structures, and move to greater local engagement. The Stockholm-based GWP was established in 1996 as a donor initiative to promote integrated water resources management. In July 2002, it became an independent inter-governmental organization, known as the Global Water Partnership Organization (GWPO). In June 2003, Australia joined the GWP by creating the Australia Water Partnership (AWP) to promote integrated water resources management in Australia and the Asia-Pacific region in general. The AWP ensures that water stakeholders in Australia can link with other GWP players. For more information on the GWP, please visit the website at www.gwpforum.org and visit the AWP at www.gwpaustralia.org

DATA SETS AVAILABLE: ICE STORMS & FREEZING RAIN IN USA

A dilemma facing research climatologists, the natural hazards community, emergency response managers, weather forecasters, and the weather insurance industry has been the lack of quality historical data on the incidence of freezing rain and ice storms across the United States. A two-year project, funded by NOAA's Office of Global Programs to develop long-term historical databases of these phenomena as well as ice storm losses, has recently reached completion. A final report entitled "Developing Data Sets for Assessing Long-Term Fluctuations in Freezing Rain and Ice Storms in the United States" is available free of charge from the Midwestern Regional Climate Center. A CD containing four quality-controlled data sets is also currently available for US\$25. These can be requested by sending an email to the Secretariat at mcc@sws.uiuc.edu or write to the Midwestern Regional Climate Center, 2204 Griffith Drive, Champaign, IL 61820.

MOURA NEW INMET DIRECTOR

Antonio Divino Moura, former Director of the International Research Institute for climate prediction (IRI) at Columbia University (1996–2003), was installed as the new Director of INMET (Instituto Nacional de Meteorologia) in Brasilia, Brazil on 7 August 2003. The

INMET weather station network supplies data to the World Meteorological Organization's Weather Watch program, which provides information to national meteorological institutes worldwide. INMET also provides timely weather information to the region, which is occasionally subjected to severe droughts. Antonio Moura brings considerable expertise to build a team of scientists in order to improve food production and agriculture in the region. For more information (in Portuguese), see the website at www.inmet.gov.br

WATER 2025

In 2001, the US Bureau of Reclamation began preparation of an assessment of whether existing water supplies will be adequate to meet water demands in the western United States over the next 25 years. *Water 2025* provides a basis for public discussion of the realities that face the US West in order to avoid a future water supply crisis. The report is now available in its entirety on a website at www.doi.gov/water2025 with links to potential water supply crises by 2025, the entire PDF version of the report, fact sheets, and more. For more information please write to US Department of the Interior, OS/OCIO, MS-5312, 1849 C St. NW, Washington, DC 20240 USA; tel: 1-202-208-6194.

POVERTY MAPS

Poverty maps are used by governments and organizations to target environmental problems that are linked to poverty. These maps combine census data with ground surveys compared over time in order to help visualize the incidence and magnitude of poverty across space. Such maps can help decision makers to distribute funds more equitably for schools, health care, and transportation. The maps also provide easy-to-understand tools for poor communities to show that they deserve a fair share of resources. The World Bank, for example, is using poverty maps to develop a road-building plan in Guatemala. Overlaying poverty maps of the country with road data reveals a close correlation between the lack of roads and poverty. The World Bank has constructed a website, PovertyNet, as a resource for people working to understand and alleviate poverty. The website contains links to poverty data, newsletters, and other information about how to use poverty maps. See www.worldbank.org/poverty for more information or write to poverty@worldbank.org

CENSUS OF MARINE LIFE (CoML)

Scientists from 45 nations have begun a ten-year project to assess the diversity, distribution, and abundance of ocean life and to explain how it changes over time. The

CoML contains six elements: (1) OBIS (Ocean Biogeographic Information System), a repository for new information and analysis that links marine databases around the world; (2) HMAP (History of Marine Animal Populations), historical and biological documentation of marine biodiversity up to 500 years ago; (3) the Scientific Committee on Oceanic Research monitors and recommends advanced marine technologies; (4) CoML field projects to develop and calibrate these technologies; (5) FMAP (Future of Marine Animal Populations) to make sure that OBIS data is suitable for modeling and predicting changes in global biodiversity; and (6) help to define the Known, Unknown and Unknowable (KUU) about marine populations and ecosystems. This project is funded by the Alfred P. Sloan Foundation as well as governments. For more information, see the website at www.coml.org or write to coml-info@omp.gso.uri.edu

WORLD'S PROTECTED AREAS NOT SO PROTECTED

Since the establishment of Yellowstone National Park in the US in 1872, there are now 102,101 protected terrestrial areas covering 18.8 million square kilometers. Experts from the World Resources Institute (WRI) warn that global changes such as climate change, population pressures, and invasive alien species are threatening the parks and protected areas worldwide that today cover nearly 13% of the world's land area. At the World Conservation Union's (IUCN) Fifth World Parks Congress on Protected Areas, held in Durban, South Africa during September 2003, 3,000 delegates developed the Durban Accord, a statement about the future of protected areas, an Action Plan, a set of 32 specific recommendations, and prepared a message for the 2004 meeting of the Convention on Biological Diversity that protected areas are important for sustainable development and poverty eradication. Six new protected areas were added, totaling a geographic area equivalent to the size of Belgium or Costa Rica. More information as well as the full text (available in English, French, and Spanish) is available on the website at www.iucn.org/themes/wcpa/wpc2003/ or write to Headquarters IUCN, World Conservation Union Rue Mauverney 28, 1196 Gland, Switzerland; email mail@iucn.org

NEW GTOS PROGRAM DIRECTOR

The Global Terrestrial Observing System (GTOS) of the UN Food and Agriculture Organization (FAO) has a new Program Director, John Latham. GTOS is a program for observations, modeling, and analysis of terrestrial ecosystems to support sustainable development. GTOS facilitates access to information on terrestrial

ecosystems so that researchers and policy makers can detect and manage global and regional environmental change. John Latham has over 22 years of experience in remote sensing, national spatial data infrastructures, and geographic information systems development. He is presently developing the Global Land Cover Network (GLCN), which aims to provide improved information on land cover/dynamics to support global, regional, and local initiatives. GLCN will be the first operational land cover program and will provide direction, focus, and guidance for harmonization of land cover mapping and monitoring. For more information, please see the website at www.fao.org or write to John Latham, GLCN Coordinator, SDRN, FAO, Viale delle Terme di Caracalla 00100 Rome, Italy; email GLCN@fao.org



INTERNATIONAL YEAR OF RICE

In December 2002, the UN General Assembly declared 2004 to be the International Year of Rice (IYR). IYR promotes improved production and access to this vital food crop, which feeds more than half the world's population, while providing income for millions of rice producers. A sustainable increase in rice production will reduce hunger and poverty and contribute to environmental conservation and a better life for present and future generations. The IYR website is presently under the auspices of the UN Food and Agriculture Organization (FAO), but the UN will have a website developed in early October 2003 that will contain links to all the activities to be scheduled for IYR 2004. Visit the website at www.rice2004.org or write to rice2004@fao.org

CALIFORNIA CLIMATE ACTION REGISTRY

The California Climate Action Registry is a nonprofit public/private partnership that serves as a voluntary greenhouse gas (GHG) Registry to protect, encourage, and promote early action to reduce GHG emissions. California is the world's 13th-largest contributor to climate change pollution and could suffer significantly if

global warming becomes more severe. The state is the first in the US to develop government-sponsored initiatives to study potential climate impacts and develop response strategies. California recently passed legislation to regulate GHGs from cars and light trucks. At present, more than 35 organizations and companies are participating in the Registry. The first issue of a quarterly newsletter (*Climate Action News*, August 2003) brings the reader information on climate change policy, science and GHG accounting and reduction strategies. A comprehensive website also provides basic information about climate change and much more. Visit the site at www.climateregistry.org or write to California Climate Action Registry, 515 S. Flower St., Suite 1305, Los Angeles, CA 90071; email info@climateregistry.org

DROUGHT NETWORK NEWS SUSPENDED

Publication of the Drought Network News has been suspended due to budget constraints and a lack of article submissions. The staff is currently reviewing the possibility of an on-line version formatted as an informational bulletin page. Past issues and articles are still available at drought.unl.edu/pubs/dnn.htm. Please contact the staff with any articles or announcements you may have for this on-line version at ndmc@drought.unl.edu or write to Kim Klemsz, National Drought Mitigation Center, University of Nebraska-Lincoln, 241 Chase Hall, Lincoln, NE 68583.

THE VIRTUAL FOUNDATION

The Virtual Foundation is a unique online philanthropy program that supports grassroots initiatives around the world. The Foundation tries to minimize borders and geographic restrictions and actively seeks transboundary projects that increase cooperation among different ethnic groups and nationalities. Carefully screened community improvement projects in environment, health, and sustainable economic activity are posted on the website. They can be read and funded by online donors. The focus of the Virtual Foundation is twofold: (1) to encourage private philanthropy among people from all walks of life, and (2) to support local projects initiated by nongovernmental organizations in the fields mentioned above. For example, the September 2003 featured project is designed to reduce the environmental impact of coffee production in Nicaragua by promoting an alternative use of waste products using earthworms. To learn more about the Virtual Foundation, visit the website at www.virtualfoundation.org or write to Virtual Foundation, 2 Mill St., PO Box 268, Middlebury, VT 05753 USA; tel: 1-802-388-8075; email cschmidt@ecologia.org



ENSO = El Niño–Southern Oscillation

CURRENT STATE OF THE TROPICAL PACIFIC

(From the Climate Prediction Center's *ENSO Diagnostic Discussion*) www.cpc.ncep.noaa.gov (as of 11 September 2003)

Current atmospheric and oceanic conditions in the tropical Pacific are near average and do not support the development of either La Niña or El Niño in the next few months. Equatorial sea surface temperature (SST) anomalies greater than +0.5°C persisted in the region west of the date line, while near-zero anomalies dominated the equatorial Pacific. During August, very little net change was observed in the SST anomalies in the Niño regions. Some atmospheric indices, such as the Southern Oscillation Index, have displayed considerable month-to-month variability since May 2003, and no consistent trend towards either La Niña or El Niño. A majority of the statistical and coupled model forecasts indicate near-neutral conditions for the remainder of 2003 and early 2004. This is consistent with current conditions and the lack of any consistent trends in the suite of oceanic and atmospheric indices.

HOW PREDICTABLE IS EI NIÑO?

A group of scientists at Princeton University have analyzed computer models of past El Niño events and have published a paper concluding that the effects of “noise” as opposed to “signal” may fundamentally limit how precisely El Niño events can be predicted. For example, the authors conclude that occurrence of the 1997–98 El Niño was predicted, but its intensity was not anticipated. In the case of daily weather forecasting, the initial conditions used in the complex numerical model calculations have a tremendous impact on the model outcome or forecast. For the models that run El Niño predictions, errors in initial conditions are crucial in predicting the event. The authors suggest that predictions should be probabilistic, showing a range of possible outcomes, by running a combination of numerical models all using the same starting conditions, but each superimposed with different atmospheric noise to show a range of outcomes. The paper was published in a recent issue of the *Bulletin of the American Meteorological Society*. For more information, you may contact Dr. Alexey Federov, Princeton University, at alexey@princeton.edu

Federov, A.V., S.L. Harper, S.G. Philander, B. Winter, and A. Wittenberg, 2003: How predictable is El Niño? *Bulletin of the American Meteorological Society*, **84**(7), 911-919.

WHAT IS ASOF?

The Arctic-Subarctic Oceanic Fluxes (ASOF) program aims to measure and model the variability of fluxes between the Arctic Ocean and the Atlantic Ocean, with a view to implementing a longer-term system of critical measurements needed to understand the high-latitude ocean's role in decadal climatic variability. In the US, ASOF is a program of the Study of Environmental Arctic Change (SEARCH), and in Europe it is a program of EC Framework 5. In order to organize research to meet the available funding on either side of the Atlantic, the ASOF domain and its Steering Group are also organized into ASOF-East and ASOF-West. The ASOF domain is defined in terms of six main regional tasks. The focus of these tasks is to understand the broad range of upstream influences that may inflict change on the Deep Western Boundary Current. ASOF will attempt to cover all of the main ocean fluxes that connect the Arctic Ocean to the North Atlantic through these waters. ASOF has just published the first issue of its newsletter, which is available on the website, or is free of charge upon request to rbos@iim.csic.es. For more information, visit asof.npolar.no or email r.r.dickson@cefas.co.uk

ARCTIC ICE SHELF DISINTEGRATING

According to researchers Warwick Vincent and Derek Mueller of Laval University in Canada, and Martin Jeffries of the University of Alaska, the Ward Hunt Ice Shelf on the north coast of Ellesmere Island in Canada's Nunavut territory, broke into two main parts over the period 2000 to 2002, causing freshwater to pour out of the 20-mile-long Disraeli Fjord into the ocean, affecting communities of freshwater and marine species of plankton and algae. The northern coast of Ellesmere Island is the northernmost land mass of North America, and as recently as a hundred years ago had a continuous ice shelf, of which only 10% remains. Records indicate an increase of four-tenths of a degree C every ten years since 1967. For more information, please contact the authors at Laval University, warwick.vincent@bio.ulaval.ca about the forthcoming article.

Mueller, D.R., W.F. Vincent, and M.O. Jeffries, 2003: Break-up of the largest Arctic ice shelf and associated loss of an epishelf lake. *Geophysical Research Letters*, **30** (forthcoming).

TRMM SATELLITE, EI NIÑO, AND RAINFALL

(from *NASA News Archive*) Scientists using data from the TRMM (Tropical Rainfall Measuring Mission) satellite have found that El Niño events appear to produce more

of a steady rain in the central Pacific Ocean than is usual for that area. A recent paper by Courtney Schumacher and Robert Houze, atmospheric scientists at the University of Washington, indicates that stratiform rains, rather than the expected convective precipitation, appear to occur more often in the central Pacific during El Niño events. These findings suggest that climatologists and meteorologists might be able to use this information to make better rainfall forecasts in other areas of the world during an El Niño event.

Schumacher, C., and R.A. Houze Jr., 2003: Stratiform rain in the tropics as seen by the TRMM precipitation radar. *Journal of Climate*, 16(11), 1739–1756.



ARGO UPDATE

Argo consists of an array of floats that drift with the currents at depth and come to the surface every ten days. As they rise, they measure the upper 2000 meters of ocean temperature and salinity. The data and the float's position are then transmitted to a satellite and after that the float dives again to start a new cycle. Argo will build up to 3,000 floats by the year 2006. Float deployment began in 2000, and as of August 2003, Argo had deployed 869 active floats throughout the world's oceans. Argo data are publicly available in near real-time from either of two global data assembly centers. Argo data will be available from all deep ocean areas of the ice-free oceans, which will help scientists to understand the behavior of the oceans in winter at high latitude, where data are currently sparse. The Argo Project Office has begun an experimental newsletter, *Argonautics*, and invites feedback on content and layout. See the website for a link at www.argo.ucsd.edu or write to the International Argo Project Office, Scripps Institution of Oceanography, La Jolla, CA; email argo@ucsd.edu

JOB AND FELLOWSHIP OPPORTUNITIES

The University Corporation for Atmospheric Research (UCAR) announces the continuation of the **NOAA Postdoctoral Program in Climate and Global Change**. UCAR manages this NOAA-sponsored program, which pairs recently graduated postdoctorates with host scientists at US institutions to work in an area of mutual interest. The objective of this program is to

help create the next generation of researchers needed for climate studies. The NOAA Climate and Global Change Program seeks to provide an effective national climate service based on the development and application of global and regional climate forecast information. The Program focuses on observing, understanding, modeling, and predicting the climate system on seasonal to centennial time scales and assessing the regionally specific socioeconomic consequences of climate variability. The Program offers two-year postdoctoral fellowships. The deadline for applications is 15 January 2004. Applications should be sent as email attachments to vsp@ucar.edu. If unable to send electronically, please mail to Meg Austin, Director, UCAR/VSP, PO Box 3000, Boulder, CO 80307-3000 USA. Full text is available on the website at www.vsp.ucar.edu

UCAR is recruiting **postdoctoral scientists and short-term senior visitors** to work in Princeton, New Jersey, at NOAA's Geophysical Fluid Dynamics Laboratory (GFDL) as part of the Climate Change Research Initiative (CCRI). GFDL conducts fundamental and applied oceanic and atmospheric research on a variety of problems of importance to society and central to NOAA's mission. GFDL has recently reorganized to develop a new generation of climate and earth system models to support its research for the coming decade. GFDL expects some of these new positions to evolve into permanent civil service hires as it expands its staff. These positions are intended to expedite the development of this new generation of climate models, as well as the climate change research conducted with them. Applications are viewed twice yearly by a Steering Committee on 14 May and 15 November. Details and full text announcement are available at www.vsp.ucar.edu or write to Meg Austin, Director, UCAR/VSP, PO Box 3000, Boulder, CO 80307-3000 USA. Email vsp@ucar.edu for further information.

Past Meetings

Earth Observation Summit

When: 31 July 2003

Where: Washington, DC

Contact: Richard Ohlemacher, Policy Advisor, Office of Undersecretary of Commerce for Oceans and Atmosphere, US Dept. of Commerce; tel: 202-482-1567; fax: 202-482-4116; email Richard.Ohlemacher@noaa.gov; www.earthobservationsummit.gov

Eleventh Environment Congress for Asia and the Pacific

When: 7–8 June 2003

Where: Kanagawa, Japan

Contact: email ecoasia@eic.or.jp; web www.ecoasia.org/main/new.html

Athens Water Conference

When: 6–7 May 2003

Where: Athens, Greece

Contact: GWP Med Secretariat, c/o MIO-ECSDE, 28 Tripodon St., 10558 Athens, Greece; tel: +30210-3247490; fax: +30210-3317127; email secretariat@gwpmed.org; www.gwpmed.org/athens_may_2003/concept_note_athens_may2003.pdf

55th Annual Meeting of the International Whaling Commission

When: 16–19 June 2003

Where: Berlin, Germany

Contact: International Whaling Commission, Red House, 135 Station Rd., Impington, Cambridge, UK CB4 9NP; tel: +44 (0)1223 233971; fax: +44 (0)1223 232876; email secretariat@iwcoffice.org; www.iwcoffice.org/2003_meeting.htm

2010 – The Global Biodiversity Challenge

When: 21–23 May 2003

Where: London, United Kingdom

Contact: Secretariat, Convention on Biological Diversity, World Trade Centre, 393 St Jacques St., Office 300, Montréal, Québec, Canada H2Y 1N9; tel: +1-514-288-2220; fax: +1-514-288-6588; secretariat@biodiv.org; www.iisd.ca/linkages/sd/sdgbcb

USDA Carbon Symposium on Natural Resource Management to Offset Greenhouse Gas Emissions

When: 19–21 November 2002

Where: Raleigh, North Carolina

Contact: Southern Global Change Program, 920 Main Campus Dr., Suite 300, Raleigh, NC 27606; tel: 919-513-2975; fax: 919-513-2978; www.sgcp.ncsu.edu/carbon2002

The 5th State and Local Climate Change Partners' Conference

When: 20–22 November 2002

Where: Annapolis, Maryland

Contact: Andrea Denny, USEPA; tel: 202-564-3467; denny.andrea@epa.gov; www.epa.gov/globalwarming/annapolis

Global Climate Change and Biodiversity

When: 8–10 April 2003

Where: East Anglia, Norwich, UK

Contact: School of Environmental Sciences, University of East Anglia, Norwich, NR4 7TJ, UK; tel: +44 (0)1603 593900; fax: +44 (0)1603 593901; tyndall@uea.ac.uk; www.english-nature.org.uk/pubs/publication/PDF/ImpactsCChange.pdf

XIVth Global Warming International Conference & Expo

When: 27–30 May 2003

Where: Boston, Massachusetts

Contact: GWXIV International Program Committee, PO Box 5275, Woodridge IL 60517-0275, USA. Fax: +1-630-9101561; email gw14@globalwarming.net; www.globalwarming.net

Ecosud 2003: Fourth International Conference on Ecosystems and Sustainable Development

When: 4–6 June 2003

Where: Siena, Italy

Contact: Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK; tel: 44 (0) 238 029 3223; fax: 44 (0) 238 029 2853; email enquiries@wessex.ac.uk; www.wessex.ac.uk/conferences/2003/ecosud03/

Upcoming Meetings

The **Agronomy, Crops, and Soil Science Societies Annual Meetings** will be held 2–6 November 2003 in Denver, Colorado. The yearly meetings of American Society of Agronomy (ASA)-Crop Science Society of America (CSSA)-Soil Science Society of America (SSSA) bring together 4,000+ people from 40 countries representing academia, government and private industry, including a large contingent of undergraduate and graduate students. This year's theme is: "Changing Sciences for a Changing World: Building a Broader Vision." Over 2,800 symposia and paper/oral sessions will cover such topics as plant genomics, turfgrass science, soil mineralogy, and integrated agricultural systems. The event also features exhibits, a career fair, guided tours, companion activities and childcare. For more information, contact: K. Schlesinger, 677 S Segoe Rd, Madison WI 53711; tel: 1-608-273-8080; fax: 1-608-273-2021; email kschlesinger@agronomy.org; www.asa-cssa-sssa.org/anmeet

The **Conference on Water for the Poorest** will be held 4–5 November 2003 in Stavanger, Norway. Organized by the International Water Academy and sponsored by the Norwegian Ministry of Foreign Affairs, this conference will look at lessons learned from relief and development work in areas of drought and unrest. This conference aims to produce a program of actions for consideration by governments, donor and relief organizations on sustainable water supply and sanitation for the poorest. For more information contact the International Water Academy, c/o HOSACO A/S, PB 352 Sentrum, NO 4002, Stavanger, Norway; tel: 47-22-42-81-00; fax: 47-22-42-81-06; email: thewateracademy@thewateracademy.org; www.thewateracademy.org/stavanger/inforpage.html

The **Asian Conference on Environmental Education: Environmental Education and Civil Society** will be held 7–9 November 2003 in New Delhi, India. The conference will provide an insight into the latest

developments in the field of environmental education, which is an essential element for sustainable development and conservation programs in all countries. Topics will include the role of civil society in environmental education; people's participation in environmental issues; biodiversity conservation; sustainability and wetland conservation; atmospheric change and global warming; and trade and environment. Scientists, policy makers, national and international NGOs, students and interested citizens are invited to participate. For more information, contact Dr. Desh Bandhu, Indian Environmental Society, U-112, 3rd Floor, Vidhata House, Vikas Marg, Shakarpur, Delhi, 110092, India; tel: 91-11-220-46824; fax: 91-11-225-23311; email iesenro@del2.vsnl.net.in; www.iesglobal.org

The International Conference on Estuaries and Coasts will be held *9–11 November 2003* in Hangzhou, China. The conference will provide a forum for the discussion of relevant problems among researchers, scholars, engineers and decision-makers from various countries. The latest results and information will be reported and exchanged. Topics include the evolution of estuaries and coastal zones; the regulation of waterways and harbors; regulation projects of estuaries; saltwater intrusion and coastal water pollution; natural environment protection in estuaries; and simulation techniques in estuary study. For more information contact Secretariat, Liang Guoqian, Zhejiang Institute of Hydraulics & Estuary, 50 Fengqi Dong Rd., Hangzhou 310020, China; tel: 86-571-86438009; fax: 86-571-86438009; email: icec@cnzj.org; www.irtces.org/issuhu/icec/index.htm

The 30th **International Symposium on Remote Sensing of Environment (ISRSE): Information for Risk Management and Sustainable Development** will be held *10–14 November 2003* in Honolulu, Hawaii. The overall theme of this conference is the use of Earth observation systems in understanding and managing our planet's environment with particular emphasis on natural hazards and sustainability. Major themes include hazards & disasters, global change, natural resources, and technology and infrastructure. For more information, contact the secretariat via email: 30isrse@eastwestcenter.org; tel: 1-808-944-7557; or fax: 1-808-944-7399 with attention to: 30th ISRSE November 2003; isrse.pdc.org

The **Business for Social Responsibility 2003 Annual Conference: Building and Sustaining Solutions** will be held *11–14 November 2003* in Los Angeles, California. The conference invites participants to explore and share innovative strategies and practical methods for implementing and maintaining successful "Corporate Social Responsibility" structures and management systems. With a focus on exploring practical, proven approaches and exchanging innovative ideas, the

conference will enable conference participants to: identify ways of devising and implementing effective strategies and policies for the long term; share methodologies and tools that they can take back and apply at their own companies; and find partners and peers who can help them succeed. For more information, contact BSR Conference, 609 Mission Street, 2nd floor, San Francisco, CA 94105; fax: 415-537-0889; email conference@bsr.org; www.bsr.org/BSRServices/2003/index.cfm

The **First Southeast Asia Water Forum** will be held *17–21 November 2003* in Chiang Mai, Thailand. The main theme of the Forum is to strengthen regional capacity through best practices in integrated water resources management. Examples of best practices will be derived from various programs, projects, and cases that are being or have been conducted in the region. Themes include water and sanitation services for health; conflict resolution and basin organizations; community and local management of water resources; water, environment and ecosystems; integrated coastal area and river basin management: linking management of rivers and coastal waters; and water and food. For more information contact Southeast Asia Regional Water Forum Secretariat, c/o GWP SEATAC, WR 104 WEM/SCE, Asian Institute of Technology, PO Box 4, Klong Luang, Pathumthani, 12120 Thailand; tel: +66 2 524 6067; fax: +66 2 524 5550; email gwp_seatac@ait.ac.th; www.gwpseatac.org

The **Sixth Regional Symposium PACON 2003 Ocean Capital Year** will be held *30 November–3 December 2003* in Kaohsiung, Taiwan. The role of marine science and technology in the economic development of the Pacific Basin resources is of vital concern to planners, policy makers, administrators, educators and scholars. PACON 2003 brings together scholars and resource people to address key issues concerning marine technology related to the ocean's economic potential from a multi-disciplinary perspective. The symposium facilitates an exchange of views and ideas among representatives of all nations, thereby, strengthening the global exchange of information and collaborative research linkages. For more information, contact PACON International, PO Box 11568, Honolulu, HI 96828-0568; tel: 808-956-6163; fax: 808-956-2580; email pacon@hawaii.edu; www.hawaii.edu/pacon/2003Table.html

The **Berlin Conference on the Human Dimensions of Global Environmental Change** will be held *5–6 December 2003* in Berlin, Germany. The conference calls for papers that address the theme of "Governance for Industrial Transformation." The objective of the event is to identify innovative policy strategies for industrial transformation towards a sustainable economy, and to actively introduce them into the political process. The

2003 Berlin Conference features parallel panel sessions and plenary presentations. Panelists are drawn from a variety of fields, including political science, policy studies, environmental science, international relations, environmental economics, science and technology studies, sociology, and international law. For more information contact Bianca Barth, Manager, 2003 Berlin Conference, c/o Environmental Policy Research Centre, Ihnestr. 22, 14195 Berlin, Germany; fax: 49-30-838 566 85; email BC2003@zedat.fu-berlin.de; www.fu-berlin.de/ffu/akumwelt/bc2003/

Spawning Habitat and Assessment of Small Pelagic Fish: Workshop and Meeting will be held 12-16

January 2004 in Concepción, Chile. The Small Pelagic Fish and Climate Change Program, SPACC, of GLOBEC International, will sponsor a workshop and meeting on the spawning habitat and daily egg production method of assessment of small pelagic fish. Anchovy, sardine, mackerel, and similar fish are important worldwide within ecosystems and as fisheries. Objectives of the workshop and meeting are to present current methods and results of analyzing the spawning habitat and dynamics of small, pelagic fish and current status of the daily egg production method for estimating spawning stock biomass of such fish. Particular attention will be paid to the use of contemporary methods of data collection and analysis and comparative results. For more information, contact Dr. Carl van der Lingen at vdlingen@mcm.wcape.gov.za or Dr. Leonardo Castro at lecastro@udec.cl; www.pml.ac.uk/globec/Structure/RegProgs/SPACC/concepcion.htm

The **2004 Ocean Sciences Meeting** will be held 26–30 January 2004 in Portland, Oregon. Themes for the 2004 meeting include: observing systems and technology; paleoclimatology and paleoceanography; coastal ocean processes; ecosystem modeling; ocean physics; climate influences; and education. For more information, contact the AGU Meetings Dept., 2000 Florida Ave., NW, Washington, DC 20009; tel: 800-966-2481, ext. 333 or 1-202-777-7333; fax: 1-202-328-0566; email meetinginfo@agu.org; www.agu.org/meetings/os04/

The **4th National Conference on Science, Policy and the Environment: Water for a Sustainable and Secure Future** will be held 29–30 January 2004 in Washington, DC. The conference will explore the role of science in achieving sustainable relationships among water, people, and the environment. The many essential roles water plays in our lives today – maintaining human health and survival, protecting sensitive ecosystems, producing an ample food supply, promoting overall economic prosperity, enhancing recreation and aesthetics, and providing long-term security of individuals and nations will be addressed. For more information, contact NCSE, 1707 H Street NW, Suite 200, Washington, DC 20006; tel: 202-530-5810; fax:

202-628-4311; email: conference@ncseonline.org; www.ncseonline.org/NCSEconference/2004conference/

The **Fourth Delhi Sustainable Development Summit 2004: Partnerships For Sustainable Development - Addressing the Wehab Agenda** will be held 4–7 February 2004 in New Delhi, India. This meeting will essentially focus on, analyze, and assess innovative partnerships in the post-WSSD scenario. It will feature contributions by enlightened leaders and thinkers of the world, representing a wide range of constituencies: government, business and industry, NGOs, scientific community, media, bilateral and multilateral community, and diplomatic corps. For more information, contact the Summit Secretariat, TERI, Darbari Seth Block, Habitat Place, Lodhi Road, New Delhi, 110 003, India; tel: 91 11 2468 2138; fax: 91 11 2468 2144; dsds@teri.res.in; www.teriin.org/dsds/index.htm

The **2004 Ocean Research Conference** will be held 15–20 February 2004 in Honolulu, Hawaii. The conference will provide a forum for researchers to highlight recent advances with an emphasis on the integration of aquatic sciences as well as the breadth of ocean research including engineering, industrial, public policy and marine research. Topical themes of the conference will include: biogeochemical cycles, coral reefs, coupled physical-biological processes, mid- and high-latitude oceanography, molecular ecology, observing systems, ocean color observations, pacific and fisheries/census of marine life. For more information contact: Helen Schneider Lemay, ASLO Business Office, 5400 Bosque Blvd., Suite 680, Waco, TX 76710-4446; tel: 254-399-9635; fax: 254-776-3767; email business@aslo.org; www.aslo.org/honolulu2004

North-South Analysis of Global Change Impact on Watersheds will be held 1–3 March 2004 in Bonn, Germany. The main objective of the conference is to analyze the challenges that are encountered in the integrated assessment and management of water resources in large river basins. By bringing together scientists and managers from North and South, it is expected that the present international research efforts concerning water-related issues can be translated into practical methods and coherent approaches. The following themes will be addressed: data, stakeholders, scaling, integration, and policy. For more information, contact Nick van de Giesen, Center for Development Research, Bonn University, Walter-Flex-Str. 3, D-53113 Bonn, Germany; email nick@uni-bonn.de; www.zef.de/watershed2004

The **34th Arctic Workshop** will be held 11–13 March 2004 in Boulder, Colorado. This workshop has grown out of a series of informal annual meetings sponsored by INSTAAR and other academic institutions worldwide. In keeping with this tradition, there are no formalized

topics, and the workshop is organized around themes developed from abstracts submitted for presentation and poster display. This year, the organizers hope to build upon the increasing interdisciplinary breadth of previous years by encouraging contributions in glaciology and snow sciences as well as in the wide variety of Arctic research themes traditionally well represented. For more information, contact the organizers via email at ArcticWS@colorado.edu; instaar.colorado.edu/meetings/AW2004/

The **8th International Coastal Symposium (ICS) 2004** will be held *14–19 March 2004* in Itajai, Santa Catarina, Brazil. This multidisciplinary international symposium is convened as a forum for scientists, engineers, planners and managers to discuss recent or new advances in scientific, technical, and socioeconomic understanding of environmental issues related to coastal processes. Traditionally the ICS provides a high level forum for exchange of information among related fields of study. For more information, contact Andre Silva Barreto, ICS 2004 Conference Secretariat, UNIVALI-CTTMar CP 360, Itajai, SC, Brazil, 88302-202; tel: 55 47 341 7718; fax: 55 47 341 7715; email: ICS2004@cttmar.univali.br; www.cttmar.univali.br/~ics2004/index.html

The **International Conference on High-Impact Weather and Climate: Understanding, Prediction, and Socio-Economic Consequences (ICHWC2004)** will be held *22-26 March 2004* in Seoul, Korea. The conference will consist of three sub-conferences: Weather, Climate, and Socio-Economic Impacts. Themes include understanding of high-impact weather systems; numerical prediction for high-impact weather systems; integrated observing systems; observation and monitoring of climate system; climate variability and predictability; global climate change and its uncertainties; consequences of high-impact weather and extreme climate; assessment of socio-economic damage and its adaptability; and value of weather and climate information. For more information, contact Dr. Nam, Jae-Cheol, Director, Remote Sensing Research Lab, Meteorological Research Institute (METRI), 460-18 Sindaebang-dong, Dongjak-gu, Seoul, 156-720, Republic of Korea; tel: 82-2-841-2786; fax: 82-2-841-2787; email jcnam@metri.re.kr; www.metri.re.kr/ICHWC2004

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WEBSITES OF INTEREST

nextwave.sciencemag.org/jobsnet.dtl

Science's Next Wave is a weekly online publication that covers scientific training, career development, and the science job market. The Next Wave is published by *Science* magazine and the American Association for the Advancement of Science. JobsNet is a free network of science job listings compiled by the Next Wave staff.

www.sprep.org.ws

As part of a continuing communications strategy, SPREP has launched a completely new website to provide a much-needed center of information on Pacific environmental activities, for the Pacific as well as an international audience. The site is also building up links to other web sites dealing with the Pacific, from local institutions to international bodies.

www.worldwater.org/conflictIntro.htm

In an ongoing effort to understand the connections between water resources, water systems, and international security and conflict, the Pacific Institute for Studies in Development, Environment, and Security initiated a project in the late 1980s to track and categorize events related to water and conflict. This project is now online and can be accessed on this site.

sealevel.jpl.nasa.gov

NASA's Ocean Surface Topography from Space site contains a wealth of information including sea level rise, El Niño and La Niña, current satellite mission information, news, photos, etc. The site contains information in Spanish as well.

www.gwpforum.org/servlet/PSP?iNodeID=2394

This toolbox collates the experience of IWRM experts. Its aim is to support water professionals and policy makers by offering easy access to practical, non-prescriptive advice, information on how to establish integrated water resources management in the real world.

swiki.esig.ucar.edu/EarlyWarningWorkshop

During the Early Warning Systems Do's and Don'ts Workshop in Shanghai, China, people can visit this site and submit questions to the workshop participants. The questions will be discussed during the workshop and answers posted on the site. Summaries of the day's discussions will be posted here as well. The workshop website can be found at www.esig.ucar.edu/warning

www.noaa.gov

NOAA's home page was redesigned in April 2003 to help users find information quickly. They have broken up information using "theme" pages, broad categories where it is hoped the user will find the subject matter they are seeking with the fewest clicks possible.

www.worldrevolution.org

The World Revolution is an idea for a new, global grassroots social movement for progressive social change. Major issue areas of the World Revolution include: peace, human rights, the environment, and world poverty. The site contains in-depth research and resources categorized according to topic.

www.worldrevolution.org/guide/climatechange

The climate change resources guide includes an introduction and overview of the current issues associated with climate change as well as key resources. This site also contains an in-depth resource guide with articles, literature, websites and organizations.

www.pembina.org

The Pembina Institute is an independent, not-for-profit environmental policy research and education institute that works in the areas of sustainable energy, climate change, environmental governance, and more.

The NETWORK NEWSLETTER is intended for those interested and involved in climate-related impact assessment. It is hoped that it will serve to foster a growing network by keeping the community up to date on the many activities in this wide and varied field. Your involvement in supplying relevant information is essential to the success of this endeavor.

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tel: 1-303-497-8134; fax: 1-303-497-8125

E-mail: jan@ucar.edu

www.esig.ucar.edu/newshp

Michael H. Glantz Editor

D. Jan Stewart Managing Editor

Jan Hopper Associate Editor

Anne Oman Webmaster, Associate Editor

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