



ENSO SIGNAL

Network Newsletter



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Editorial

***What is the Value of a Human Life?
It Depends...***

Various groups in society, such as the EPA (Environmental Protection Agency) and insurance companies, put a value on human life, making age- and income-dependent calculations.

A major moral issue was raised in the mid-1990s by some economic researchers working on the IPCC (Intergovernmental Panel on Climate Change) Second Assessment, which calculated the value of a human life in the name of “economic efficiency” as part of the cost-benefit analysis of global warming. The value was to be expressed in quantitative terms. They calculated that a life in the industrialized world was worth about \$1.5 million, while a life in a developing country was worth a fraction of that number (between \$150,000 and \$300,000). According to the Global Commons Institute, “these values were calculated on the basis of asking people’s ‘willingness to pay’ to avoid the risk of damage. People in rich countries, it was assumed, would be willing to pay 15 times more than people in poor countries. In other words, your right to live depended on your income.”

This assessment, as well as the numbers it generated, sparked considerable debate. It raised many questions, including the appropriateness of calculating such numbers, and the assumptions used to derive them. However, a basic question remains: should they have made such a calculation in the first place to determine the cost-benefit ratio for greenhouse gas abatement?

Many people participated in a debate over these calculations. Their views can be found at the Global Commons Institute (GCI) website, which captures the essence as well as the spirit of the heated debate. According to GCI (www.gci.org.uk/vol/vol.html),

Are the lives of 15 Bangladeshis worth the same as only one American? What about 15 trees or birds or beetles in China for every one in Britain? This was the assumption of the economists who created the global cost-benefit analysis of climate change for the IPCC. GCI led the campaign to defend the value of life by rejecting this crazy analysis.

Let’s put the calculation of the value of human life into a larger context. Poverty and hunger are known to be rampant worldwide. It is a fact that in some countries, 20 to 30 percent of children will die by the age of five. It is also known that, in some countries, war is a preferred approach to resolving disputes. We know that innocent bystanders (non-combatants) are viewed as “collateral damage.” The point is that each person has in his or her mind a different calculation for the costs related to the loss of human life.

Why has there never been a future cost to an economy (that is, a dollar value) placed on the loss of life of children under the age of five who perish every year because of malnutrition or famine? Why is it that governments do not calculate the cost to their future financial well-being of the loss of life that could (or does) result from a climate-related disaster (or, for that matter, any disaster)? If such calculations are considered to be useful in planning for how to respond to the possibility of a warmer world, why haven’t they been done for climate-related disasters??

Perhaps by viewing the loss in dollar terms in potential contributions of people who are likely to perish as a result of a foreseeable climate-related disaster, governments might be more encouraged to work harder at disaster preparedness and prevention for economic reasons, if not for humanitarian ones.

--Michael H. Glantz



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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 March 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 for your input!

SPECIAL COMBINED ISSUE

Network Newsletter and ENSO Signal

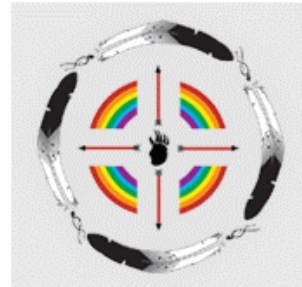
As an experiment to reduce costs, we have combined two newsletters into one. Let us know whether you think such a joint newsletter is useful. You will note that it is somewhat longer than the usual *Network Newsletter*. Pages 8–9 of this special issue contain articles relating specifically to the El Niño currently under way. Is this information of interest to the regular readers of the *Newsletter*? In this issue, we have indicated meetings of special interest to ENSO (El Niño-Southern Oscillation) researchers with the biplane logo. The publications portion contains articles, books, and reports in one section. Write to address on back, or email jan@ucar.edu

PROGRAMS FOR RECENT PHDs

DISCCRS (Dissertations Initiative for the Advancement of Climate Change Research) is a new program to bring together recent PhDs across the atmospheric, terrestrial, aquatic, and social sciences who are interested in climate change. The first DISCCRS symposium will be held in March 2003. Contingent on continued funding, the DISCCRS II symposium will be open to PhDs completing degrees after 1 October 2002, and whose work in any discipline is relevant to the understanding of climate change and its impacts. Individuals from all nations are eligible for consideration. A committee will select participants based on applications submitted. Selection will favor those who plan to establish careers in the area of climate change research and who wish to transcend traditional disciplinary boundaries. Graduates are encouraged to register as soon as they complete their last graduation requirements. Information is on the website at aslo.org/phd.html or direction questions to C. Susan Weiler, disccrs@whitman.edu; tel: 1-509-527-5948.

WORLD SUMMIT ON THE INFORMATION SOCIETY

The UN System Chief Executive Board and the International Telecommunication Union have decided to hold a Summit in two phases, with the first phase in December 2003 in Geneva, Switzerland, and the second in 2005 in Tunis, Tunisia. The World Summit on the Information Society (WSIS) will provide a unique opportunity to assemble a high-level gathering to better understand the global information society, which is evolving quickly, to allow examination of the myriad changes in knowledge dissemination, social interaction, economic and business practices, political processes, media, education, and health. To benefit the world community, the successful and continued growth of this new dynamic requires global discussion and harmonization in appropriate areas. The Summit in Geneva will be the outcome of a wide variety of inputs, including previous meetings, Action Plans, and inputs from the Preparatory Committees of the Summit (PrepComs). The PrepComs will be attended by government representatives, as well as other concerned parties. To learn more about the WSIS, dates of PrepComs, and the preparatory process, contact the WSIS Executive Secretariat, World Summit on the Information Society, International Telecommunication Union, Place des Nations, 1211 Geneva 20, Switzerland; web: www.itu.int/wsisis/



NATIVE NATIONS INSTITUTE

The Udall Center's Native Nations Institute for Leadership, Management, and Policy (NNI) serves as a self-determination, development, and self-governance resource to indigenous nations in the United States, Canada, and elsewhere. NNI's operations depend on frequent consultation with its International Advisory Council, which is made up of Native leaders and professionals. NNI provides Native nations with comprehensive, professional training and development programs designed to meet the educational needs of indigenous leadership and management. NNI has partnered with other Native organizations to evaluate the Comprehensive Indian Resources for Community and Law Enforcement (CIRCLE) Program, a demonstration project designed to explore the benefits of more integrated federal funding for tribal justice programs and

of more comprehensive and strategic program planning at the tribal level. Funding comes through the National Institute of Justice's Department of Justice. The evaluation is expected to begin in early 2003. For more information on this project, contact NNI's research director, Miriam Jorgensen at Miriam_Jorgensen@harvard.edu or see NNI's website at udallcenter.arizona.edu/nativenations/nni_programs.htm



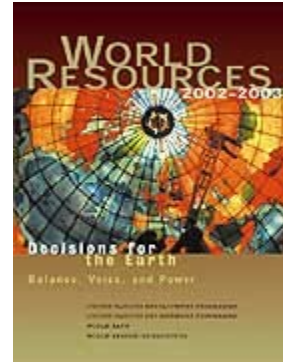
WORLD FOOD SUMMIT: FIVE YEARS LATER

The Food and Agriculture Organization of the United Nations (FAO) reaffirmed a pledge, made five years ago at the World Food Summit in 1996, to address worldwide hunger and food security at a follow-up Summit, which was held in June 2002. It also unanimously adopted a declaration calling on the international community to fulfill an earlier pledge to cut the number of hungry people to less than 400 million by 2015. The FAO is one of the largest specialized agencies in the United Nations system, and is the lead agency for agriculture, forestry, fisheries, and rural development. Food production has increased at an unprecedented rate since FAO was founded in 1945, outpacing the doubling of the world's population over the same period. A specific priority of FAO is encouraging sustainable agriculture and rural development. The FAO website contains more than a dozen statistical databases and a huge "virtual library" on line. For more information about the Summit or the library, please see www.fao.org or email FAO-HQ@fao.org or write to FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy.

ECOSYSTEM INFORMATICS

The field of "informatics" involves the design of information systems with respect to complex explanatory and management needs, the preparation of metadata for locating and assessing available information, development of new kinds of data products, and ecological modeling. NOAA's Satellite and Information Services and the National Geophysical Data Center (NGDC), with the University of Colorado's Cooperative Institute for Research in the Environmental Sciences (CIRES), are developing a program of research and application in Ecosystem Informatics. It is increasingly clear that natural processes, human activity, and environmental change all affect ecosystems in ways sometimes difficult to predict. Innovative information technologies and advanced methodologies are required to meet this challenge. A website has been created by

NGDC with a Global Ecosystems Database, which is available on line and on CD-ROM, as well as a Global Vegetation Index. For more information about content, contact Meghana Joshi at meghana.joshi@noaa.gov or for information regarding Global Ecosystems, contact John Kineman at john.j.kineman@noaa.gov or visit the website at www.ngdc.noaa.gov/seg/eco/ecosys.shtml



WORLD RESOURCES 2002-2004

This is the tenth biennial *World Resources* book in the series on the global environment. It defines environmental governance in everyday terms, with reference to case studies. It assesses the state of environmental governance in nations around the world and summarizes results from the Access Initiative, the first-ever attempt to systematically measure government performance in providing access to environmental information, decision-making, and justice. The report also presents national statistics on current environmental, social, and economic trends in more than 150 countries. It also differs from earlier editions in the series by making the full *World Resources* database freely accessible and searchable online in the companion website, EarthTrends (earthtrends.wri.org). The *World Resources* series is produced through a collaboration of the UN Development Programme, the UN Environment Programme, the World Bank, and the World Resources Institute. The guidebook was prepared for the World Summit and highlights issues that will be developed more fully in the main volume of the report, due in February 2003. For ordering information, please visit www.wristore.com for *World Resources 2002-2004: Decisions for the Earth: Balance, Voice, and Power*.

CANADA: 100th COUNTRY TO RATIFY KYOTO PROTOCOL

Formal ratification of the Kyoto Protocol by the Canadian Parliament is a major boost for the 1997 treaty that commits participating countries to reduce greenhouse gas emissions by an average of 5.2 percent below 1990 levels by the year 2012. Canada's implementation plan

calls for changes throughout society on energy use and the use of more fuel-efficient cars. To take effect, the Kyoto Protocol must be ratified by at least 55 countries, including those responsible for 55 percent of the world's emissions in 1990. Canada's ratification brings the Protocol's total membership to 100. The rejection of the treaty by the United States means that every other industrial country must agree to the threshold. Russia has indicated that it will ratify the treaty, which would bring the treaty into effect. Canada will attempt to obtain its reductions by using the three Kyoto Mechanisms, which are (1) *The Clean Development Mechanism*, a way to earn credits by investing in emission reduction projects in developing countries; (2) *Joint Implementation*, a way to earn credits by investing in emission reduction projects in developed countries that have taken on a Kyoto target; and (3) *International Emissions Trading*, which permits developed countries that have taken on a Kyoto target to buy and sell emission credits among themselves. For more information on the Kyoto Protocol, see the UN Framework Convention on Climate Change website at unfccc.int/resource/convkp.html

CLIMATE AFFAIRS: A PRIMER

Michael Glantz has completed a "primer" to address questions surrounding the impacts of climate variability, climate change, and extreme climate-related events. It outlines a way to address the interactions among climate, society, and the environment. The book considers the full range of climate-related topics, including climate science, impacts, policy and law, politics, economics, and ethics. It can be a key resource for decision makers, as well as for students and scholars working in climate and related fields.

The book is scheduled for publication in Spring 2003 by Island Press. For more information about the book, please contact Michael Glantz at glantz@ucar.edu, or order the book online at www.islandpress.org

TIDAL ENERGY: RENEWABLE RESOURCE?

Waves, currents, and tides have often proved too costly or difficult to harness, when compared to wind or solar power in efforts to cut national reliance on fossil fuels or when compared to nuclear power. However, the world's most northerly town, Hammerfest, Norway, will soon be the first to get electricity from a sub-sea power station

run on tidal currents. Tidal power exploits the gravitational pull of the moon and sun, as well as the earth's revolution. The turbine will power approximately 1,000 homes by its completion in 2004. Tidal power has the potential to generate significant amounts of electricity at certain sites around the world. Although tidal power cannot supply the majority of electricity needs, it can be a valuable source of renewable energy, since the negative environmental impacts of tidal barrages are probably smaller than those of other sources of electricity. At this time, these factors are not well understood. For more information about tidal energy, see the Energy Fact Sheet at www.iclei.org/efacts/tidal.htm

PERENNIAL SEA ICE DISAPPEARING?

A study by J.C. Comiso (NASA/Goddard) appeared in the October issue of *Geophysical Research Letters* that shows a significant decrease of perennial sea ice (the floating ice that remains year-round near the Arctic Circle). Comiso used satellite data to track trends in Arctic sea ice cover and temperature over the Arctic from 1978 to 2000. Prior to the data provided by satellites, most records came from ocean buoys, weather stations, and research vessels. Comiso compiled all available data to obtain overall annual values of perennial sea ice. He concludes that if current melting rates continue, there may be no sea ice left in the Arctic by 2099. The rate of decline is expected to accelerate due to ocean-atmosphere interactions. Comiso recently analyzed the ice cover data up to the present and discovered that this year's perennial ice cover is the least extensive observed during the era of satellite data. For more information, please see the paper (below). The paper was cited as an "Editor's Choice" in the 15 November issue of *Science*. Contact Comiso at josefino.c.comiso@nasa.gov

Comiso, J.C., 2002: A rapidly declining perennial sea ice cover in the Arctic. *Geophysical Research Letters* **29**(20), 1956, doi: 10.1029/2002GL015650.



UNEP SASAKAWA ENVIRONMENT PRIZE

In November, Dr. Ashok Khosla won the 2002 UNEP Sasakawa Environment Prize. Khosla has worked tirelessly to demonstrate both the theory and practice of sustainable development through his teaching and fostering of environment-friendly and commercially viable technologies. Much of his recent work has been

achieved through Development Alternatives, a nonprofit organization in New Delhi, India, which he founded in 1983 to help bring people and nature directly into the design and implementation of India's development strategies. The objective of Development Alternatives is to "disseminate the means to create sustainable livelihoods on a large scale, and thus to mobilize widespread action to eradicate poverty and regenerate the environment" (from the website). For more information on Development Alternatives, see the website at www.devalt.org. To nominate a candidate for the 2003 Sasakawa Prize (due April 2003), see the website at www.unep.org or write to Elisabeth Guilbaud-Cox, UNEP Sasakawa Environment Prize, UNEP, Division of Communications and Public Information, PO Box 30552, Nairobi, Kenya; email Elisabeth.guilbaud-cox@unep.org

ISAR CASPIAN PROGRAM

ISAR (Initiative for Social Action and Renewal in Eurasia) is a nonprofit organization whose mission is to strengthen the ability of citizens and social change organizations in Eurasia and their colleagues in the United States to influence decision-making, advance social justice, and promote environmentally sound stewardship of the earth's resources. ISAR's Caspian Program has decided to become a separate and independent organization in order to concentrate on advocacy-based efforts to protect the environment of the Caspian basin, a more specific and focused goal than that of the other parts of the ISAR network. ISAR supports this view. Those who will launch the new organization include Kate Watters, Michelle Kinman, and Megan Lee in ISAR's Washington office; Alexey Knizhnikov in the Moscow office; Enver Safar-zade in the Baku office, and Timur Berkeliyev in Turkmenistan. ISAR considers the new Caspian organization an exciting and positive outgrowth of ISAR's work over the last decade. For more information, contact Kate Watters, Deputy Director, ISAR, at kwatters@isar.org or write to ISAR, 1600 Connecticut Ave. #301, Washington, DC 20009; web www.isar.org



ROLLING STONES "TURN UP THE HEAT"

The Natural Resources Defense Council (NRDC) and the Rolling Stones are staging a free concert to "Turn Up the Heat on Global Warming." This special concert is intended to raise public awareness about global warming

and will be held February 6, 2003 in Los Angeles, California. NRDC president John H. Adams said "the Rolling Stones' commitment will help build unprecedented support for NRDC's efforts to fight global warming. The Rolling Stones deserve a standing ovation for putting the environment on center stage." Visit rollingstones.nrdc.org/globalwarming/ for information on the concert and to find out what you can do.

INFORMATION SOCIETY INTEGRATED SYSTEMS (ISIS)

ISIS is a new project being led by the International Pacific Research Center (IPRC) Director Lorenz Magaard. Realizing the significance of developing models that consider interactions between societal parameters and climate change, he met with Wolf Grossmann (UFZ Center for Environmental Research in Germany) to investigate Grossmann's ISIS model, which describes interactions between such societal elements as economy, environment, human knowledge, and human attitude. ISIS provides an analysis of past economic developments and transitions. It differs from other concepts of the society-climate interaction, in that society is not passively responding to climate and climate change, but is in the driver's seat. Environmental change is relevant as a constraint within which certain social and economic developments may emerge. For more information, contact the IPRC, School of Ocean and Earth Science and Technology, University of Hawaii at Manoa, 2525 Correa Rd., Honolulu, Hawaii 96822; tel: 808-956-5019; email speidel@soest.hawaii.edu (from *IPRC Climate*, web: iprc.soest.hawaii.edu).

US DELEGATION TO CUBAN CONVENTION

Global Exchange and its partners are organizing a 200-person delegation of US environmentalists and development specialists to participate in Cuba's Fourth International Convention on Environment and Development, to be held in Havana, Cuba, in June 2003. Global Exchange is a human rights organization dedicated to promoting environmental, political, and social justice around the world. Since its founding in 1988, they have been striving to increase global awareness among the US public while building international partnerships around the world. For more information, see www.globalexchange.org or write to Global Exchange, 2017 Mission St. #303, San Francisco, CA 9410; tel: 1-415-255-7296; email info@globalexchange.org. More information on the Convention is available at www.globalexchange.org/tours/auto/2003-05-30_thInternationalConventiononEn.html

AUSTRALIA'S WORST DROUGHT

A report just released by the World Wildlife Fund (WWF) Climate Change Programme implicates global warming in the severity of the 2002 drought in Australia. The report, *Global Warming Contributes to Australia's Worst Drought*, compares the 2002 drought with the four other major droughts in the country since 1950 and has found higher temperatures caused a marked increase in evaporation rates from soil, watercourses, and vegetation. The report states that in 2002, Australia recorded its highest-ever average March–November daytime maximum temperature. One of the authors stated that although the 2002 drought was related to natural climate variations associated with El Niño, the higher temperatures cannot be attributed solely to this factor. The report contains new data on evaporation rates and shows that low rainfall and higher evaporation has adversely impacted agricultural productivity. The report is available on line at www.wwf.org.au. Print quality graphs can be accessed at www.maths.monash.edu.au/~ris/drought.shtml

IN MEMORIAM F. KENNETH HARE, 1919–2002

Kenneth Hare, a distinguished environmental scientist, climatologist, and biogeography researcher, passed away 3 September 2002. Dr. Hare was a meteorologist with the British air ministry during World War II, and emigrated to Canada in 1945. He earned his PhD as an arctic climatologist. Hare believed that the most urgent environmental challenge facing Canada in the coming century is climate change created by consumption of fossil fuels. He had a long and distinguished career at McGill University and Trent University and was awarded 11 honorary degrees, as well as the 1989 International Meteorological Organization Prize from the WMO, among many other honors.

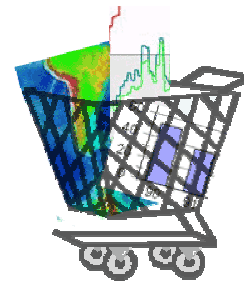
LAND-COVER CHANGE: FACTOR IN CLIMATE

A new NASA-funded study shows that land surface changes may have a greater impact on climate than the combined effects of greenhouse gases. Land surface changes, including urban sprawl, deforestation, reforestation, and agricultural and irrigation practices redistribute heat and alter regional surface temperatures, precipitation, and large-scale atmospheric circulation. Roger Pielke Sr., lead author of the study, notes that land-cover changes over the last 300 years may have already altered the climate more than the radiative effects of doubling carbon dioxide. Land-use changes in the tropics could dwarf the effects of El Niño, since most

cumulus cloud development occurs over land, and the area affected is much greater than the comparable ocean area affected by El Niño. The paper was published in a recent issue of the *Philosophical Transactions* of the Royal Society of London. The paper is available on line at Dr. Pielke's website at blue.atmos.colostate.edu/newsreleases/index.shtml

MULTI-HAZARD MAPPING INITIATIVE

A website designed to give the public access to nationwide coverage of multi-hazard maps and supporting data is now available. The Multi-Hazard Mapping Initiative (MMI) is an initiative of FEMA (US Federal Emergency Management Agency). MMI will maintain a "living atlas" of hazards data and map services for the United States supplied from a network of hazard and base map providers. The maps are available on the Internet at www.hazardmaps.gov and can be viewed by typical web browsers. The user can view maps by hazard theme or create a custom view showing areas of hazard overlap. State or local government technicians can also download Geographic Information Systems (GIS) files for land-use planning, hazard mitigation, and disaster preparedness and response. For more information, see the website or contact FEMA, 400 C St. SW, Washington, DC 20472; tel: 1-202-566-1600.



GO DATA SHOPPING!

More and more data for research on climate variability and change are becoming available. The data, however, are often difficult to access and surprisingly underused. To remedy this situation, the IPRC (International Pacific Research Center) has established the APDRC (Asia Pacific Data Research Center), which has four parts: (1) data server system; (2) data management and archive building, (3) value-added data-intensive research projects, and (4) coordination and collaboration. The APDRC aims to increase understanding of climate variability in the Asia-Pacific area and make data resources readily accessible and usable by researchers, who have a choice of software applications and a "shopping cart." If you have an Asia-Pacific climate project, go shopping for data at apdrc.soest.hawaii.edu and let the ADPRC team know what works for you and what does not! (from *IPRC Climate Newsletter*, University of Hawaii at Manoa)

GUEST EDITORIAL

The Prestige Disaster and the Weather Connection

Lino Naranjo Diaz
Santiago de Compostela, Spain

On November 13, 2002, a severe storm hit the Galician coast in Spain along the northwestern tip of the Iberian Peninsula. Heavy rains and high winds of over 120 km/h were observed over the region, and especially over the maritime area near the Atlantic coast of Galicia. This was not unusual for that time of the year. Autumn and winter in this part of the world are usually characterized by a high frequency of winter storms that have heavy rainfall and high gusty winds, and navigation in this region becomes especially risky.

In ancient times, Romans called the northwestern tip of this land "Cape Finisterrae" (End of the World), and in modern times this coastal area is known as "A Costa da Morte" (The Dead Coast). Severe storms have destroyed many ships over the centuries. However, November 13, 2002, was special: a single-hulled tank steamer named Prestige, bound for Singapore with more than 77,000 metric tons of fuel oil on board, suffered from the high winds and turbulent sea very near the Spanish coast and began to spill fuel. This was the start of one of the worst ecological disasters ever recorded in Galicia, in Spain, in Europe, and even worldwide. The Prestige was transporting twice as much oil as the infamous Exxon Valdez, which went aground in Alaskan waters in 1989.

Various factors contributed to the increasing magnitude of the disaster, but the most important one was undoubtedly the "weather connection." On November 14, the Spanish government made the decision to move the vessel westward, away from the coast. They believed such a movement would prevent the fuel from spreading to any part of the Iberian coast. However, when the ship began to move away from Costa da Morte, it was surprisingly carried southward toward Portuguese waters, spreading the oil spill into a long "fuel front" exactly to the west, exposing almost the entire Atlantic coastline of Galicia. This was a terrible mistake, because it did not take into account the climate factor. The winds in autumn normally blow from the west, and forecasts from many sources indicated that changes for westerly (eastward-flowing) winds over the area for the next few days was practically assured. As a consequence, "black tides" of highly toxic fuel oil began to reach the coastal areas, driven by high westerly winds during the next two weeks.

The oil slick virtually destroyed one of the most beautiful and richest areas for fishing in Europe, affecting the economy and the basis of many fishermen's livelihood. Hundreds of beaches were destroyed, and the wildlife has been severely damaged, which affects crucial economic activities such as tourism.

Are individuals, institutions, or governments to blame for this environmental tragedy? Searching for reasonable explanations about why weather and climate factors were not adequately taken into account is currently almost impossible. However, some lessons have to be learned. On a national level, Spain did not have a preparedness plan for this kind of disaster. Although these kinds of events are not unusual in Galicia, the magnitude of this event forced the national government to take urgent action. It had to improvise under strong regional pressure and, consequently, obstructed the development of faster relief measures. This increased the chances for making severe mistakes.

For the first time, a "human-made" disaster has had a harsh impact on all stages of Galician social life, and even in all of Spain. The political consequences in the long term are very difficult to predict. The capacity of the European Union (EU) to exert a leadership role in environmental protection, following the US withdrawal from the Kyoto Protocol process, has also been called into question. The EU has maintained a very weak policy about ocean transportation of dangerous cargo, a policy forced by the economic interests of some EU members.

Currently, the Prestige is an ecological time bomb. Sunk 3,000 meters deep in the Atlantic Ocean, with 40,000 tons of fuel oil remaining in its tanks, it continues to represent a serious threat not only to Galicia, but to other locations in the Atlantic as well. Living marine resources in this part of the Atlantic could be damaged by the toxic waste; fishing industries of several countries could be impacted in a wider sense. The Prestige disaster might, for example, prove to be the beginning of the end for many parts of the rich fishing industry based in Galicia. It is also the beginning of the end of the old EU policy regarding the security of transportation in European seas and coastal areas. In any event, what the Prestige disaster MUST be the beginning of the end of a worldwide policy that relegates the environment to being held hostage to the economic interests in the name of human well-being. Back home, thousands of Galician fishermen remain at risk, and the world must pay attention.

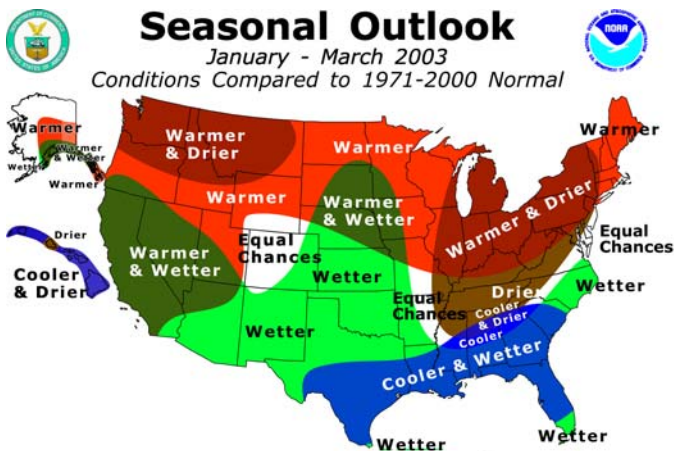
–Lino Naranjo Diaz
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CURRENT STATE OF THE TROPICAL PACIFIC

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

El Niño conditions dominated the tropical Pacific during December 2002. Equatorial sea surface temperature (SST) anomalies were greater than +1°C throughout most of the Pacific between the date line and the South American coast, and exceeded +2°C at several locations. Collectively, oceanic and atmospheric indices are indicative of a moderate El Niño episode. Most coupled model and statistical model forecasts indicate that El Niño conditions will continue through the northern spring of 2003. Thereafter the forecasts are more uncertain, during a time when all current techniques have difficulty in making skillful forecasts. Expected global impacts of the current event include: (1) drier than average over most of Indonesia, Micronesia, and northern/northeastern Australia continuing during the next three months; (2) drier than average over southeastern Africa through March; (3) drier than average over Northeast Brazil and northern South America through April; (4) see the map below for expected impacts over the United States for January–March 2003.



Source: NOAA

1969 ALL OVER AGAIN?

Joe D'Aleo, chief meteorologist at Intellicast.com, maintains a column of "Dr. Dewpoint" articles. He speculates that this year's atmospheric, oceanic, and solar conditions are most similar to those in 1969–70

and 1957–58. Both of those winters turned out colder than normal in much of the east and south of the United States. In addition, there were three "blockbuster" East Coast storms in those two winters that affected major cities. D'Aleo cites the following similar conditions: ongoing El Niño event, the PDO (Pacific Decadal Oscillation) in its cool phase; westerly QBO (Quasi-Biennial Oscillation); and moderately high solar activity. By the time the next newsletter is issued, it will be clear whether or not Dr. Dewpoint was correct. Please visit www.intellicast.com/DrDewpoint for the full articles.

NEW EL NIÑO RESEARCH CENTER IN ECUADOR – CIIFEN

The International Research Center on the El Niño Phenomenon (CIIFEN) was inaugurated in mid-January 2003 in Guayaquil, Ecuador, as a result of a long process of cooperative efforts between the World Meteorological Organization (WMO) and the Government of Ecuador, under the framework of the United Nation's ISDR (International Strategy for Disaster Reduction). The ISDR contributed significantly by facilitating the regional consultations and contributed to the coordination of activities at the international level. The WMO, ISDR, and the Government of Ecuador are part of the Planning Committee for CIIFEN. Dr. José Luis Santos, Director of the Research Center for Science and Technology in Guayaquil, will act as the interim director. The aim of CIIFEN is to establish a bridge between the scientific, socioeconomic, and political communities concerned with El Niño-related events. For more information, please contact Dr. Kenneth Davidson, Director, World Climate Programme, WMO, 7 bis, avenue de la Paix, 1211 Geneva, Switzerland; email davidson_k@gateway.wmo.ch or contact the ISDR representative, Pedro Basabe, at basabe@un.org

UNITED NATIONS ATLAS OF THE OCEANS

The UN Atlas of the Oceans, developed by UN agencies and their partners, is a sophisticated Internet portal containing a wealth of information relevant to the sustainable development of oceans. Detailed information on oceans is available for policymakers, resource managers, industry workers, nongovernmental organizations, the media, scientists, and students. The Atlas has four main entry points: (1) About the Oceans; (2) Uses; (3) Issues; and (4) Geography. Development of the Atlas, a joint project of the UN agencies responsible for matters relating to ocean issues, is an initiative of the UN Subcommittee on Oceans and Coastal Areas and is funded by the UN Foundation (Washington, DC). Detailed information is available at www.oceansatlas.org

LABORATORY FOR ATMOSPHERIC RESEARCH

The Department of Physics and Materials Science at the City University of Hong Kong formed the Laboratory for Atmospheric Research to consolidate research efforts related to the earth's atmosphere. Research is currently focused in three main areas: (1) meteorology and climate; (2) atmospheric remote sensing and measurements; and (3) computational environmental modeling. Prof. Johnny Chan maintains a website of seasonal forecasts of tropical cyclone activity over the western North Pacific. According to Chan, this is the third consecutive year in which the forecasts were nearly perfect. The 2002 El Niño event apparently controlled most of the variability of tropical cyclone activity over the western North Pacific and the South China Sea during the year. Forecasts for 2003 will be issued in April and updated in June. For more information, see the website at aposf02.cityu.edu.hk/~mcg/ and click on "Seasonal forecasts of tropical cyclone activity." Email Chan at Johnny.Chan@cityu.edu.hk

EL NIÑO DUMPS SNOW ON ANTARCTICA

The International Trans-Antarctic Science Expedition (ITASE) of 2003–03 crossed Antarctica to the South Pole in the first overland sled trek in 45 years. The team of 13 scientists reached the South Pole on 2 January 2003. The goal of the expedition and the whole ITASE program is to change Antarctica from being the most poorly understood continent when it comes to climate and bring it up to date. The expedition encountered heavy storms and were forced to halt for some time. They made a first attempt in early November, but were forced to turn back by deep snow. In January, they used wider tractor treads and sled runners. The moderate El Niño event under way is being blamed for the unusually heavy snowfall encountered by the expedition. For more information about the expedition, see www.thepoles.com

CORAL REEF INFORMATION SYSTEM (CoRIS)

NOAA has announced the release of the CoRIS, a website which serves as a single point of access for online data and information on coral reefs. The site was developed by NOAA's Ocean Service and the National Oceanographic Data Center to serve data and information derived from NOAA programs and projects. Before CoRIS, users faced an array of more than fifty NOAA coral reef websites. Visit the website at coris.noaa.gov or the National Ocean Service at www.nos.noaa.gov

JOB OPPORTUNITIES

Florida State University seeks a PhD-level **biological oceanographer** for a 9-month, tenure-track appointment at the assistant professor level to begin as soon as August 2003. The position involves research, teaching (primarily at the graduate level), and service. Area of specialization is open, but of particular interest is one who studies the role of nekton in ecological processes. Send letter of application, curriculum vitae, and contact information for 3 referees to Nancy H. Marcus, Dept. of Oceanography, Florida State University Tallahassee, FL 32306; tel: 1-850-644-5498; fax: 1-850-644-2581; email: marcus@ocean.fsu.edu

The Department of Oceanography at Texas A&M University invites applications for a **Paleoceanographer/Climate Change assistant professor** tenure-track faculty position to be part of a new initiative to link the Ocean Drilling Program (ODP) and Integrated Ocean Drilling Program (IODP) to the academic mission of the university. Applicants interested in using elemental, isotopic, uranium series, or other geochemical and paleontological methods to understand the histories of oceanographic and climatic conditions on both short and long time scales and the processes that determine these conditions are encouraged to apply. Applicants should possess a PhD in Oceanography, Geology & Geophysics, or a related field. The position carries teaching duties at the graduate and undergraduate levels, including the mentoring of MS and PhD graduate students. Contact Dr. Niall C. Slowey, Search Committee Chair, Dept. of Oceanography, Texas A&M University, College Station, TX 77843-3146, USA; email: slowey@ocean.tamu.edu; web: www.oceanography.tamu.edu

The University Corporation for Atmospheric Research in cooperation with the National Oceanic and Atmospheric Administration is seeking a **research meteorologist** to work at the **Tropical Prediction Center** of the National Centers for Environmental Prediction in the area of satellite-derived ocean surface vector wind data. The position is located in Miami, Florida and is anticipated to be for three years with possible extension. The application deadline is February 15. Send applications to UCAR/VSP, PO Box 3000, Boulder, CO 80307-3000. Contact VSP/UCAR at tel: 303-497-8649; email: vsp@ucar.edu; www.vsp.ucar.edu

UPCOMING MEETINGS



The **Workshop on the South Atlantic Observing System (SACOS)** will be held 6–8 February 2003 in Rio de Janeiro, Brazil. The workshop is motivated by the belief that the South Atlantic circulation influences the variability of the regional and global

climate, yet remains one of the more poorly sampled portions of the World Ocean. The meeting will provide a unique opportunity to assess the role of the Tropical and South Atlantic Ocean as an entity. For more information, contact Gisleine Cunha (CPTEC / INPE), Rodovia Presidente Dutra, km 39, 12630-000 Cachoeira Paulista, Sao Paulo, Brazil; tel: 55 (12) 560-8495; fax: 55 (12) 561-2835; email giscunha@cptec.inpe.br; web: tucupi.cptec.inpe.br/pirata/index.shtml



The **2003 Symposium on Marine Environment and Climate Change** will be held 17–21 February 2003 in Beihai, China. Topics include large-scale air-sea interaction; oceanography in the South China Sea; oceanic numerical modeling; ocean circulation dynamics; remote sensing application in ocean; and coastal processes. For more information, contact LED/SCSIO/CAS, 164 West Xingang Road, Guangzhou, China 510301; tel: 86-20-89023211; fax: 86-20-89023204; email yqqi@scsio.ac.cn; web: www.scsio.ac.cn



The **International Conference on Advances in Flood Forecasting in Europe** will be held 3-6 March 2003 in Rotterdam, The Netherlands. Conference objectives are to exchange innovative methods on flood forecasting among scientists and operational forecasters and to discuss how to disseminate the results to stakeholders, end-users and decision-makers, and to contribute to reduction of flood risk through early warning and prolongation of the flood lead-time. Conference themes include weather forecasting, ensemble prediction, and use of radar; continental scale and large river flood and flash flood forecasting; flood inundation forecasting and modeling; dissemination of medium-range flood forecasts, model uncertainties and ensembles. For more information, contact Bob van Kappel, WL/Delft Hydraulics, PO Box 177, 2600 MH Delft, The Netherlands; tel: 31 15 285 85 85; fax: 31 15 285 85 82; email info.effs@wldelft.nl; web: www.wldelft.nl/gen/news/effs-conf/

The **2003 International Symposium on Environmental Change in Central Asia: Climate – Geodynamics – Evolution – Human Impact** will be held 10–15 March 2003 in Berlin, Germany. The objectives of the symposium are to focus on ecosystem research in desert areas, high mountains, basins and lowlands of Central Asia comprising the late quaternary to present time. The main research topics are related to natural processes and influences on the landscape, climate and environmental changes during the quaternary with respect to high resolution records, evolution of ecosystems with special focus on biogenic processes, the human impact, and modelling and GIS. For more information, contact Bernd Wünnemann, Ecosystem Dynamics in Central Asia (EDCA), Freie Universität Berlin, Malteserstr. 74-100, 12249 Berlin, Germany; tel:

49 30 838 70 631; fax: 49 30 838 70 438; email: wuenne@zedat.fu-berlin.de; web: www.pages.unibe.ch/calendar/2003/First%20Circular.doc



The **4th Gordon Research Conference on Polar Marine Science** will be held 16–21 March 2003 in Ventura, California. The conference will assess new information on high latitude oceans that documents the recent large-scale, interannual changes that have impacted many aspects of the northern and southern polar ocean systems. The physical bases of these changes and their impacts on physical, chemical, biological and coupled systems will be investigated. Ocean scientists working in the north or south polar oceans are encouraged to attend this conference. Attendance is by invitation following application, and will be limited to 135 persons on a first come-first served basis. For more information, visit the conference website: www.grc.org/programs/2003/polar.htm; email: grc@grc.org; fax: 1-401-783-7644.



The **Fifth International Conference on Environmental Future: Environmental Future of Aquatic Ecosystems** will be held 23–27 March 2003 in Zurich, Switzerland. The conference will assess threats to resilience and likely changes in 21 major aquatic systems over the next 25 years. For this purpose, leading scientists from around the world are engaged to review each of the major marine and freshwater systems. The meeting will offer environmental managers and opinion formers a unique and objective basis for environmental strategy formulation at regional and global levels. For more information, contact Christiane Rapin Nussbaumer, EAWAG, Department of Limnology, Ueberlandstrasse 133, 8600 Duebendorf, Switzerland; tel: 41 1 823 53 36; fax: 41 1 823 53 15; email icfef@eawag.ch; web: www.icfef.eawag.ch



A workshop on **Climate Change at the Very End of a Warm Stage** will be held 24–27 March 2003 in Heidelberg, Germany. It is the second workshop of the DEKLIM-EEM Project, a group proposal from eight universities and research institutes, funded by the German Ministry for Education and Research, to study the natural climate variability at the end of past warm stages and to predict the climate evolution at the end of a warm stage. For more information and a full program, contact Saskia Rudert, Workshop-Secretary, Institute for Geoscience, Johannes-Gutenberg-University Mainz, Johann-Joachim-Becher-Weg 21, 55099 Mainz, Germany; tel: 49 6131 39 23270; fax: 49 6131 39 24769; email rudert@mail.uni-mainz.de; web: www.uni-mainz.de/FB/Geo/Geologie/sedi/



EGS - AGU - EUG Joint Assembly will be held 6–11 April 2003 in Nice, France. The

European Geophysical Society, the American Geophysical Union and the European Union of Geosciences are organizing this event. Topics include ocean and atmospheric sciences, climate, energy, resources and the environment. One particular session invites contributions from scientists who try to understand the dynamics of ENSO, from those who study ENSO impacts on climate, society and ecosystems, and from those who are involved in ENSO forecasting. For more information, contact EGS Office, Max-Planck-Str. 13, 37191 Katlenburg-Lindau, Germany; tel: 49-5556-1440; fax: 49-5556-4709; email egs@copernicus.org; www.copernicus.org/egsagueug/

The 20th Annual Pacific Climate Workshop on Climate Variability of the Eastern North Pacific and Western North America will be held 6–9 April 2003 in Pacific Grove, California. The special theme for the 2003 PACLIM Workshop will be integrated climate research in mountain regions. Special sessions will highlight current climate research of mountain regions in western North America, at scales from paleoclimate to future conditions, including physical, biological, and social aspects. The meeting will focus on analyses that integrate across mountain ranges, scales, and disciplines to arrive at insights about effects of climate variability on upland areas as well as implications to society. For more information, contact Janice Tomson, Long Beach City College, 4901 E. Carson St., Long Beach, CA 90808; tel: 1-562-938-4448; fax: 1-562-938-9253; email jtomson@lbcc.cc.ca.us; web: meteora.ucsd.edu/paclim/

Global Climate Change and Biodiversity will be held 8–10 April 2003 in Norwich, United Kingdom. This international conference will present the findings of the latest scientific research into how the natural world is being affected by climate change and also how the natural world might respond in the future. It will provide a forum for the world's biologists and conservationists engaged in climate change work. The conference is the third in a series for scientists and others working on the impacts of climate change on biodiversity. Individual sessions include a cross section of the planet's major biomes: forests, marine, high latitudes and montane, managed landscapes and coasts. Each will report on observed impacts of climate change and on projections for the future, as well as the ability of biodiversity to adapt to climate change. For more information, contact Carol Roddy, Events Project Manager, The RSPB, The Lodge, Sandy, Bedfordshire, SG19 2DL, UK; web: www.tyndall.ac.uk/biodiversityconf/welcome.html

The 25th Annual National Hurricane Conference will be held 14–18 April 2003 in New Orleans, Louisiana. The conference aims to improve hurricane preparedness, response, recovery and mitigation in order to save lives and property in the United States and the tropical islands of the Caribbean and Pacific. The

conference will also serve as a national forum for federal, state and local officials to exchange ideas and recommend new policies to improve emergency management. For more information, contact the National Hurricane Conference, 2952 Wellington Circle, Tallahassee, FL 32309; tel: 1-850-906-9224; email mail@hurricanemeeting.com; web: hurricanemeeting.com



The 35th International Liège Colloquium on Ocean Dynamics and Advanced Research Workshop: Dying and Dead

Seas will be held 5–10 May 2003 in Liège, Belgium. The meeting will consist of two parts: a poster display and oral presentations of the posters; and a workshop assembling a small group of invited active and eminent scientists from various countries and all disciplines to foster a mutually beneficial exchange of information, including a survey of major recent discoveries, essential mechanisms, compelling question marks and valuable recommendations for future research and management decisions. For more information, contact Professor J. Nihoul, Model-environment, GHER, University of Liège, B5 Sart Tilman, B-4000 Liège, Belgium; fax : 32-4-366-2355; email J.Nihoul@ulg.ac.be; web: modb.oce.ulg.ac.be/Colloquium/2003.html#Introduction

The 14th Global Warming International Conference & Expo: Extreme Events & Energy, Agricultural and Natural Resource Management will be held 27–30 May 2003 in Boston, Massachusetts. The objective of the conference is to provide a comprehensive international and interdisciplinary review forum for resource and technology managers on global warming, its impacts on all economic sectors, effective mitigation, and each nation's mitigation compliance. Sessions include: extreme events and impacts assessment; remote sensing and global surveillance; energy and transportation; ecosystems and biodiversity; international law and mitigation; and state and local government's responses to climate-related disasters. For more information, contact GWXIV International Conference Program Committee, c/o The Global Warming International Center, 22W381 - 75th Street, Naperville, IL 60565; tel: 1-630-910-1551; fax: 1-630-910-1561; email gw14@globalwarming.net; web: www.globalwarming.net

The Fourth International Conference on Ecosystems and Sustainable Development will be held 4–6 June 2003 in Siena, Italy. The meeting will provide a forum for presentation and discussion of recent work on aspects of ecosystems and sustainable development, including engineering and modeling. The aim of the conference is to encourage and facilitate the interdisciplinary communication among scientists, engineers, economists and professionals working on ecological systems and sustainable development. Special sessions will focus on research in ecological modeling, socioeconomic ecology,

conservation, management and recovery, information techniques, health, and development. For more information, contact Gabriella Cosutta, Conference Secretariat, ECOSUD2003, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK; tel: 44 238 029 3223; fax: 44 238 029 2853; email: gcossutta@wessex.ac.uk; web: www.wessex.ac.uk/conferences/2003/ecosud03/

Coastal Zone Management Through Time will be held 13–17 July 2003 in Baltimore, Maryland. Four overarching themes and a number of subthemes will shape the discussions on coastal management past, present, and future. The four overarching conference themes are: port and harbor management, regional land management, management responses to coastal hazards, and management of aquatic resources. For more information, contact Gale Peek, Coastal Zone 03 Conference Manager; tel: 1-843-740-1231; email gale.peek@noaa.gov; web: www.csc.noaa.gov/cz2003



The International Conference on the Impact of Global Environmental Problems on Continental and Coastal Marine Waters

will be held 16–18 July 2003 in Geneva, Switzerland. The conference will provide a forum for the presentation of original research and scientific overviews on major global environmental issues that directly or indirectly impact continental and coastal waters. Quantitative and qualitative aspects of water resources, water-related risk and impact on aquatic habitat are major targets. Topics to be discussed include: impact of global climate change on water resources and the hydrological cycle; water-related environmental risk of global importance; transboundary pollution; species invasions and their impact on aquatic ecosystems; desertification; continental fluxes to the coastal ocean; and impact of increased urbanization on water resources and aquatic ecosystems. For more information, contact Jenny Walker, Liquid Assets, Morawel, Glanmor Terrace, New Quay, Ceredigion, SA45 9PS, UK; email morawel@tinyworld.co.uk; web: www.unige.ch/sciences/near/

The Fifth International Conference on Urban Climate will be held 1–5 September 2003 in Lodz, Poland. The conference aims to provide an international forum where the world's urban climatologists can meet to showcase and discuss modern developments in research, and the application of climatic knowledge to the design of better cities. ICUC-5 caters to the interests of a diverse community of meteorologists, climatologists, hydrologists, ecologists, engineers, architects and planners. For more information, contact the Secretariat of ICUC-5, Dept. of Meteorology and Climatology, University of Lodz, Lipowa 81, 90-568 Lodz, Poland; tel: +48 42 639 0395; fax: +48 42 639 0396; email: icuc5@geo.uni.lodz.pl; web: www.geo.uni.lodz.pl/~icuc5/

The First Conference on Sustainable Planning and Development 2003 will be held 1–3 October 2003 in Skiathos Island, Greece. The conference will address spatial planning and regional development in an integrated way, as well as in accordance with the principles of sustainability. The conference will be of interest to planners, environmentalists, engineers, ecologists, economists, policy makers, researchers and academics involved in the field of sustainability. For more information, contact Rachel Green, Conference Secretariat, Sustainable Planning & Dev 2003, Wessex Institute of Technology Conferences, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK; fax: 44 238 029 2853; email rgreen@wessex.ac.uk; web: www.wessex.ac.uk/conferences/2003/planning03/



The XI World Water Congress: Water Resources Management in the 21st Century

will be held 5–9 October 2003 in Madrid, Spain. This meeting will focus on making the fullest possible use of research in solving water resource problems. Major themes are: water planning under uncertainty (climatic variability and changes); valuing water; impact of new technologies in water management; relevance and sustainability of intensive groundwater developments; water infrastructure development; influence of socioeconomic, cultural, and religious factors in water resources policies; and funding and participation in water management. For more information, contact the XI World Water Congress, Centro de Estudios Hidrográficos, Paseo Bajo Virgen del Puerto, 3, 28005 Madrid, Spain; fax: 34 913357922; email wwater2003@cedex.es; web: www.cedex.es/iwracongress2003/en/hoja2_en.htm

The First Young Scientists' Global Change Conference will be held 16–19 November 2003 in Trieste, Italy. The conference offers a platform for young scientists to present their research findings to leading scientists in the field. It is intended to stimulate competition, encourage excellence, reward outstanding performance, and encourage the development of personal and institutional networks. Submissions of papers and posters are invited from young scientists (age 35 years or less) on the physical, biological and human aspects of global change. For more information, contact Kristy Ross, Climatology Research Group, University of the Witwatersrand; fax: 27 11 717-6535; email: kristy@crg.bpb.wits.ac.za; web: www.start.org/Fellowships/YS_Conference.html

PAST MEETINGS

South Asia Expert Workshop on Adaptation to Climate Change for Agricultural Productivity

When: 1–3 May 2002

Where: New Delhi, India

Contact: Dr. Rita Sharma, Joint Secretary, Ministry of Agriculture, Dept. of Agriculture & Cooperation, Krishi Bhawan, New Delhi-110001, India; tel: 3381045; email rita@krishi.delhi.nic.in; web: www.unep.org/dpdl/IndiaWorkshop

Tenth International Conference on Modeling, Monitoring and Management of Air Pollution

When: 1–3 July 2002

Where: Segovia, Spain

Contact: Wessex Institute of Technology; tel: 44-238-029-3223; fax: 44-238-029-2853; email enquiries@wessex.ac.uk; web:

www.wessex.ac.uk/conferences/2002/air02/

Second International Conference on Urban Regeneration and Sustainability

When: 3–5 July 2002

Where: Segovia, Spain

Contact: Wessex Institute of Technology; tel: 44-238-029-3223; fax: 44-238-029-2853; email enquiries@wessex.ac.uk; web:

www.wessex.ac.uk/conferences/2002/urs02/



Second Biennial GEF International Waters Conference

When: 25–29 September 2002

Where: Dalian, China

Contact: GEF Secretariat, 1818 H St. NW, Washington, DC 20433; tel: 1-202-473-0508; fax: 1-522-3240; email secretariatofgef@worldbank.org; web:

www.iwlearn.net/event/presentations/iwc2002/

GLOBEC Second Open Science Meeting

When: 15–18 October 2002

Where: Qingdao, China

Contact: GLOBEC IPO, Plymouth Marine Laboratory, Prospect Place, Plymouth PL1 3DH, UK; fax: 44-1752-633101; email globec@pml.ac.uk; web: www.globec.org

NOAA's 27th Climate Diagnostics & Prediction Workshop

When: 21–25 October 2002

Where: Fairfax, Virginia

Contact: email ncep.cdworkshop@noaa.gov; web: grads.iges.org/cdwp/home.html

UN Framework Convention on Climate Change: Eighth Session of the Conference of the Parties

When: 23 October–1 November 2002

Where: New Delhi, India

Contact: UNFCCC, Haus Carstanjen, Martin-Luther-King-Strasse 8, D-53175 Bonn, Germany; tel: 49-228-815-1000; fax: email secretariat@unfccc.int; web: unfccc.int/cop8/

Global Mountain Summit

When: 29 October–1 November 2002

Where: Bishkek, Kyrgyzstan

Contact: Andrew Fesenko, Executive Secretary, National Organising Committee, Rm. 307, 255 Chui Ave., 720001, Bishkek, Kyrgyz Republic; tel/fax: 996 312 217 277; email andrewvf@mail.ru
www.globalmountainsummit.org

Climate Change & Winter Tourism in the Great Lakes Region: The Potential Impacts & What We Can Do

When: 8 November 2002

Where: Traverse City, Michigan

Contact: email bisanz@msu.edu; web: www.geo.msu.edu/glra/workshop/05winterwkshop/wkshp.day.htm

Fourth European Conference on Applied Climatology: Climate-Related Risk Assessment and Sustainable Development in the 21st Century

When: 12–15 November 2002

Where: Brussels, Belgium

Contact: ECAC-2002, c/o Royal Meteorological Institute of Belgium, avenue Circulaire 3, B - 1180 Brussels, Belgium; email ECAC-2002@oma.be; web:

www.meteo.be/ECAC-2002

First Annual Regional Environmental Forum for Mainland Southeast Asia

When: 14–15 November 2002

Where: Phnom Penh, Cambodia

Contact: Chris Lagan, World Resources Institute; tel: 1-202-729-7684; email clagan@wri.org; web: www.wri.org

Climate Change and Paths to Sustainability

When: 14–15 November 2002

Where: Berlin, Germany

Contact: Dr. Martin Welp, European Climate Forum, c/o Potsdam Institute for Climate Impact Research (PIK), PO Box 601203, 14412 Potsdam, Germany; tel: 49 331 288 2619; fax: 49 331 288 2640; email martin.welp@pik-potsdam.de; web: www.european-climate-forum.net/events.html

The Fifth State and Local Climate Change Partners Conference

When: 20–22 November 2002

Where: Annapolis, Maryland

Contact: Andrea Denny, USEPA; tel: 1-202-564-3467; fax: 802-496-6035; email denny.andrea@epa.gov; web: icfhosting.net/epa/slccp/slccpReg.nsf/content/

Climate Policy for the Longer Term: From Here to Where?

When: 21–22 November 2002

Where: London, United Kingdom

Contact: The Royal Institute of International Affairs, Chatham House, 10 St. James's Square, London SW1Y 4LE, UK; tel: 44 20 7957 5700, fax: 44 20 7957 5710; email contact@riia.org; web: www.riia.org/riia/

Workshop on the U.S. Climate Change Science Program

When: 3–5 December 2002

Where: Washington, DC

Contact: US Climate Change Science Program, Suite 250, 1717 Pennsylvania Ave. NW, Washington, DC 20006; tel: 1-202-223-6262; fax: 1-202-223-3065; email workshop@climatescience.gov; web: www.climatescience.gov/events/workshop2002/announcement.htm

Conference on the Human Dimensions of Global Environmental Change: Knowledge for the Sustainability Transition: The Challenge for Social Science

When: 6–7 December 2002

Where: Berlin, Germany

Contact: Global Governance Project, Potsdam Institute for Climate Impact Research, PO Box 60 12 03, 14412 Potsdam, Germany; fax: 49-331-2882640; email sabine.campe@pik-potsdam.de; web: www.fu-berlin.de/ffu/akumwelt/bc2002/overview.htm



Pacem in Maribus (Peace on the Ocean)

When: 8–14 December 2002

Where: Cape Town, South Africa

Contact: The Secretariat, PIM 2002, PO Box 2760, Clareinch 7740, South Africa; tel: 27 21 683 5522; fax: 27 21 674 3269; email pim2002@uwc.ac.za; web: www.ioinst.org/pim2002/

Fifth International Climate Outlook Forum for Northeast Region

When: 16–20 December 2002

Where: Fortaleza, Brazil

Contact: Fundação Cearense de Meteorologia e Recursos Hídricos – FUNCEME, Av. Rui Barbosa, 1246 Fortaleza - Ce - CEP 60115-221, Brazil; tel: 55 85 433 1800; fax: 55 85 433 1805; email funceme@funceme.br; web: www.funceme.br

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Books

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Disease. National Academy Press, 2101 Constitution Ave NW, Lockbox 285, Washington, DC 20055 USA; web: www.nap.edu

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WEBSITES OF INTEREST

www.unesco.org/water

The UNESCO Water Portal is intended to enhance access to information related to freshwater available on the World Wide Web. The site provides links to the current UNESCO and UNESCO-led programs on freshwater and serves as an interactive point for sharing, browsing and searching water-related websites.

climatechange.unep.net

This portal is a central source for substantive work and information resources regarding climate change. The site features announcements, major initiatives, and featured resources.

wcs.org/humanfootprint

This site, maintained by the Wildlife Conservation Society, analyzes the human footprint. The site contains maps, as well as downloadable GIS data and other resources.

www.greenpages.org

Co-op America's Green Pages Online is a directory of qualified green companies with demonstrated commitments to social and environmental responsibility.

www.reef.org

REEF was founded in out of concern about the health of the marine environment, and the desire to contribute to the understanding and protection of marine populations. REEF achieves its goals through its volunteer fish monitoring program.

drought.unl.edu/pubs/dnn.htm

Drought Network News is the newsletter of the International Drought Information Center and the National Drought Mitigation Center. The newsletter contains articles relating to worldwide drought issues as well as announcements of meetings and publications.

www.ikat.org

The Central Asia Institute promotes literacy, women's vocational skills, and awareness of public health and environmental issues through community initiated education programs in mountain regions of Central Asia.

www.greenhousenet.org

Green House Network is committed to creating grassroots movement needed to stop global warming through climate training sessions, a college climate response network, a world youth speakers network, and a national volunteer speakers network.

www.usatoday.com/weather/wgraph0.htm

This site contains links to USATODAY.com interactive graphics and photo scrapbooks with captions explaining the photos. These will help people understand weather, climate and some other earth sciences topics.

www.theozonhole.com

The Ozone Hole Inc. is a non-profit group dedicated to preventing the destruction of the ozone layer. The website provides data and information to a global audience.

socioeconomic.unep.net

The UNEP.Net Socioeconomic portal provides major sources of social and economic assessment information used by UNEP and its partners for integrated environment assessments.

www.fragilecologies.com/dec05_02.html

Michael Glantz's editorial about El Niño "hotspots" on his Fragilecologies site.

www.worldweather.org

WMO's pilot project, World Weather Information Service, of forecasts around the world and average climatology.



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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