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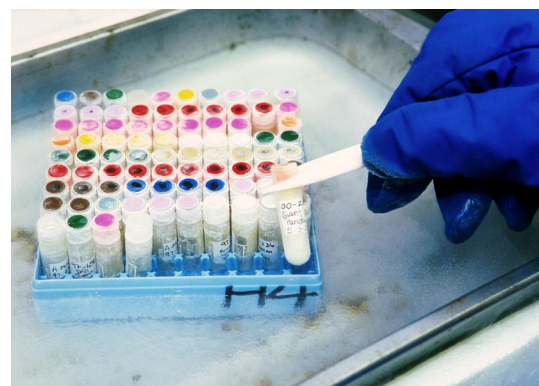
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IBOY Symposium at the 2002 AAAS Annual Meeting and Science Innovation Exposition

Leaders of six IBOY projects will present their latest findings at the symposium *Biodiversity Science and Global Research: The International Biodiversity Observation Year*, February 15, 2002, at the American Association for the Advancement of Science Annual Meeting and Science Innovation, Boston, USA.

Biodiversity loss is the quintessential global problem with local loss of biodiversity having regional and global impacts. Recognition of the interconnections between biodiversity, ecosystems, and economics at local and global scales represents a paradigm shift in our understanding of the world. This symposium demonstrates how IBOY projects are gathering data from across disciplines and scales to advance knowledge and conservation of biodiversity.



Frozen DNA samples, part of the project *DNA Banks for Endangered Species*

Dr. Richard Mack will report the latest findings on the rate of spread, geographic extent and impact of alien plants, as part of the project *Impact of Biological Invasions*.

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Medical and Environmental Organizations Join Forces to Address the Importance of Biodiversity to Human Health

The world's major medical and environmental organizations are coming together for the first time to address the connections between the health of humans and biodiversity loss. Under the auspices of the World Health Organization (WHO) and the United Nations Environment Programme (UNEP), the Center for Health and the Global Environment at Harvard Medical School will compile what is known about the implications for human health from the loss of biodiversity, into the most comprehensive report yet produced, *Biodiversity: Its Importance to Human Health*. The goal of this project is to educate policy-makers and the public about the dependency of human life on the health of other species and on the integrity of global ecosystems, and thereby help them develop the motivation to protect the global environment. The report will be released to the United Nations (U.N.) at the World Summit on Sustainable Development in Johannesburg,

South Africa in September 2002. It will be released to other policy-maker meetings domestically and internationally, and to the general public in 2002 and 2003.

Since this project was initiated, there have been several important developments:

- the project was formally presented to the plenary session of the SBSTTA-7 meetings of the Convention on Biological Diversity on November 12, 2001, introducing human health as a cross-cutting issue before the Convention. The WHO, as a result of the project, requested that it provide input to the Convention on the health impacts of biodiversity loss.
- the *Millennium Ecosystem Assessment* has asked that *Biodiversity: Its Importance to Human Health*

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IBOY Symposium (cont.)

Dr. Walter Reid will describe the initial progress and findings of the *Millennium Ecosystem Assessment*, a four-year, international scientific assessment of the consequences of ecosystem change for human well-being and the response options for addressing undesired change. Dr. Oliver Ryder will examine the role of DNA research in biodiversity monitoring, assessment and conservation, and report the progress of a global initiative to develop *DNA Banks for Endangered Species*. Dr. David Wake will report on *AmphibiaWeb*, a web-based informatics system aiming to provide accurate information on the conservation status of every amphibian species. Dr. Diana Wall will report the preliminary findings of the first world-wide, multi-network collaborative experiment to assess patterns of litter biodiversity across biomes and the latitudinal gradient, the *Global Litter Invertebrate Decomposition Experiment (GLIDE)*. Dr. Thomas Lovejoy will describe the development of the *Amazonia GIS System*, an integrative information source on the environment and development in the Amazon basin.

Together, the presentations provide an overview of diverse efforts that are bringing add-on value to local-scale data, by compiling it to develop urgently needed information on large-scale biodiversity patterns and trends, and innovative approaches to biodiversity conservation.

The latest information from another IBOY Core Network Project, the *Ocean Biogeographical Information System (OBIS)* will be presented by Dr. J. Frederick Grassle at a separate symposium at the AAAS Annual meeting, *The Census of Marine Life: Challenges in Biodiversity*, on February 17, 2002.

More information on the IBOY symposium can be found at <http://www.nrel.colostate.edu/IBOY/aaassymp.html> General information and registration details for the AAAS Annual Meeting and Science Innovation Exposition are available at <http://www.aaasmeetings.org>

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Importance of Biodiversity to Human Health (cont.)

Health be summarized for the *Assessment* as the section on human health impacts.

- the project has led to the WHO and UNEP including "biodiversity and human health" as a key area of mutual interest in their recent historic Memorandum of Understanding on environmental health matters.

Seven working groups, comprised of more than 60 scientists and physicians from developed and developing countries, have been formed to address the following issues:

- I. Status Report on Global Biodiversity, and the Driving Forces of Species Loss
- II. Ecosystem-based Life Support Systems
- III. Medicines from Natural Sources
- IV. The Role of Species in Medical Research
- V. Ecosystem Disruption, Biodiversity, and Human Infectious Diseases
- VI. The Role of Biodiversity in World Food Production
- VII. Policy Options

The task of the working groups will be to report: the most current and best documented scientific data in each of these areas; to include region or country-based case-studies that will illustrate specific examples of the consequences of biodiversity loss to human health; and to discuss projections for the future. Members of each group met at the Pocantico Conference Center, New York, USA

in October, 2001, and submitted first drafts of their chapters.

In addition to the report to the U.N. World Summit on Sustainable Development, there will be four other products developed from this project:

- a book, approximately 300 pages in length, with full color illustrations throughout, and written for a general readership. The book will have a forward by the Director General of WHO, Dr. Gro Harlem Brundtland, and the Executive Director of UNEP, Dr. Klaus Toepfer. Several publishers are interested in publishing the book, which will come out in 2003.
- the Executive Summary, about 30 pages in length and illustrated. This product will contain case studies and the main conclusions from each chapter, and will be distributed to policy-makers.
- a technical report, more comprehensive and written for scientists, which will be placed online on the website of the Center for Health and the Global Environment in late 2003.
- a chapter, summarized from the full report, that will be included in the report of the *Millennium Ecosystem Assessment* in 2004.

More Information on the project *Biodiversity: Its importance to Human Health* see http://www.nrel.colostate.edu/IBOY/goods_services.html#who

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Publications and Presentations

February, 2002

Nakashizuka, Tohru and Nigel Stork. *Biodiversity Research Methods: IBOY in Western Pacific and Asia*

The protocol for an unprecedented international biodiversity assessment in Western Pacific and Asia will be published in February by Trans Pacific Press (Australia) and Kyodai Shupankai (Japan). *DIWPA-IBOY in Western Pacific and Asia* is an intensive three year program to survey biodiversity along a latitudinal gradient from Siberia to New Zealand. The region supports unusually high biodiversity and productivity and is experiencing rapid economic expansion and ecosystem change. The assessment is urgently needed to build capacity and provide a baseline for long-term biodiversity monitoring and conservation. Over 100 research sites in forest, coastal and freshwater ecosystems across more than 20 countries are collaborating and using standardized, comparable protocols. Design

of the standardized protocols for this multinational, integrated assessment began at a workshop in Kyoto, Japan, in 1998 and they have subsequently been developed by international teams of researchers. Copies of *Biodiversity Research Methods: IBOY in Western Pacific and Asia* are available from Trans Pacific Press priced at \$44.95 Australian dollars or US\$29.95 (contact sales@transpacific.com).

More information: on the IBOY project *DIWPA-IBOY Biodiversity Assessment in Western Pacific and Asia* see <http://ecology.kyoto-u.ac.jp/%7Egaku/diwpaindex.html> and http://www.nrel.colostate.edu/IBOY/how_changing.html#greenblue

Contact: Dr. Tohru Nakashizuka, Research Institute for Humanity and Nature, Kitashirakawa Oiwakecho, Kyoto 606-8502, Japan. Phone: (81) 75 753 7771; Fax: (81) 75 753 7753; Email: toron@chikyu.ac.jp

Upcoming Meetings

January 9-11, 2002, Jeju Island, Korea

Workshop to Advance Understanding of Ecosystem Fluxes in Asia

AsiaFlux, the Asian arm of FLUXNET, is holding the *Second International Workshop on Advanced Flux Network and Flux Evaluation* to advance comprehensive Asia-wide studies of ecosystem fluxes. The meeting will also launch the Korean Network *KoFlux*.

FLUXNET is a global network of long-term micrometeorological flux measurement sites, which focus on measuring and interpreting the exchanges of carbon dioxide, water vapor, and energy between the biosphere and the atmosphere. These fluxes comprise an ecosystem's metabolism, and the FLUXNET data is providing valuable information on the functional diversity of ecosystems, including: the metabolic patterns of individual ecosystems, the differences between different ecosystems, and how ecosystem metabolism is controlled by biotic and abiotic factors. The *AsiaFlux* workshop will focus specifically on enhancing understanding of carbon, nitrogen, sulphur,

water and energy fluxes, net ecosystem production, carbon sequestration and water resource management in the key terrestrial ecosystems of Asia. This new information will also be applied to help define current, and enable future predictions of, global carbon dioxide, water and trace gas budgets. Overall, the workshop will improve understanding of the carbon sources and sinks of terrestrial ecosystems, thereby improving predictability and adaptability to current global changes and aiding the decisions of the Asian community in the context of the Kyoto protocol.

More information on the IBOY Project *FLUXNET: The Metabolic Diversity of Terrestrial Ecosystems* see <http://daac.ornl.gov/FLUXNET/> and http://www.nrel.colostate.edu/IBOY/goods_services.html#baldocchi

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IUCN

Russell Mittermeier

Conservation International

Stuart Pimm

Columbia University

Peter Raven

Missouri Botanical Garden

Edward O. Wilson

Harvard University

January 14 – 16, 2002, Kuala Lumpur, Malaysia

Second Millennium Assessment Board Meeting: Reviewing Design and Methodology

The Board of the *Millennium Ecosystem Assessment (MA)* will convene for their second meeting in Kuala Lumpur between January 14 –16, 2002. The Board will review the design and methodology for the MA that, over the past year, have been developed by the Assessment Panel in consultation with the various user groups. The Assessment Panel will also meet in Kuala Lumpur that week to present the design to the Board and discuss agenda items of their own.

The review of the design and methodology marks the transition to the next stage of the assessment, to start in

February, when the MA's working groups will start assessment activities and convening lead authors. A planning meeting on indigenous knowledge by the Sub-Global Working Group is anticipated in February.

More information on the IBOY Project the *Millennium Ecosystem Assessment* see <http://www.millenniumassessment.org> and http://www.nrel.colostate.edu/IBOY/goods_services.html#millenium

Contact: Ms. Valerie Thompson, Millennium Assessment Secretariat – WRI Office, 10 G Street N.E., Washington, DC 20002. Tel: (1) 202 729 7794, Fax: (1) 202 729 7610; Email info@millenniumassessment.org

February 15, 2002

IBOY Symposium at the 2002 AAAS Annual Meeting and Science Innovation Exposition

See story on page 1

February 28, 2002, Hull, United Kingdom

March 2, 2002, Stangford Loch, Ireland

Workshops Launch the *Sacred Seas Project* to Join Faiths and Conservationists in Marine Conservation

The Alliance of Religion and Conservation (ARC) and WWF-UK are launching a series of regional workshops in the UK and Ireland as part of the *Sacred Seas Project*. The first of these will take place on February 28, 2002, in Hull, UK, swiftly followed by a further workshop on March 2, at Castle Espie, Strangford Loch, Ireland. It is hoped a meeting in Wales will take place in March as well.

The purpose of the workshops is to gather conservationists and faith communities in a partnership to increase awareness of the issues concerning coastal and marine conservation. Faith communities are a major environmental constituency, and have often placed great importance upon the seas in their creation stories, symbolism and theology. It is hoped that sharing information on the seas from faith and ecological perspectives will yield a more holistic understanding of their importance, and also increase practical activities for

coastal and marine conservation. The workshops will review faith-based beliefs and traditions related to the marine environment as well as ecological information on marine environments and conservation strategies. Participants will review theological and practical marine projects in coastal environments that faiths are already undertaking or that they could develop. Earlier work on the *Sacred Seas Project* demonstrated that interest centered on local rather than national events, therefore the workshops are being coordinated as a regional series.

More information on the IBOY Project *Sacred Gifts For a Living Planet*, of the World Wide Fund for Nature (WWF) and the Alliance of Religion and Conservation (ARC), see http://panda.org/livingplanet/sacred_gifts/ and http://www.nrel.colostate.edu/IBOY/how_conserve.html#sacred

Contact: Mr. John Smith, Alliance of Religion and Conservation, 3 Wynnstay Grove, Fallowfield, Manchester, M14 6XG, UK. Fax: (44) 161 248 5736; Email: john@icorec.nwnet.co.uk

Upcoming Field Expeditions

January 1–17, 2002, Admiral's Cave, Bermuda Expeditions to Survey Anchialine Cave Fauna

Marine biologist Dr. Thomas Iliffe of Texas A&M University at Galveston, USA, will survey the fauna of the anchialine Admiral's Cave, one of the largest and most significant caves in Bermuda. Anchialine habitats are flooded inland marine caves and ground waters that lack any direct surface connection with the open sea. They are inhabited by remarkable, but poorly known, animals, long-term survivors of ancient lineages, which are threatened by changes in their fragile habitat. Admiral's Cave is threatened by blasting and excavation in an adjacent quarry, and by water pollution from sewage leaking into the Cave's anchialine lakes.

In the first two weeks of 2002, Iliffe will lead a team of graduate students, cave divers and GIS specialists in Bermuda for the first phase of a project to develop a

Bermuda Cave and Karst Information System (BeCKIS). They will survey the dry and wet portions of the caves, and convert and map the data using GIS techniques, measure water quality, and inventory cave fauna. The results of the study will be posted on the Cavebiology.com website.

More information on the IBOY Project *Exploration and Conservation of Anchialine Cave Faunas* see <http://www.cavebiology.com/> and <http://www.nrel.colostate.edu/IBOY/whatandwhere.html#anchialine>

Contact:

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Funding and Collaborative Opportunities

Alliance of Religion and Conservation Seeks Case Studies on Forest Conservation

Sacred Gifts for a Living Planet, a project of the Alliance of Religion and Conservation (ARC) and WWF-UK is developing a series of case studies to help religious owners of forests in North America and Europe develop sustainable forestry practices. The project was launched at a workshop in Assisi, Italy, in October 2001 that brought together representatives from faith communities and conservation agencies working in the field of forestry conservation to establish a set of core principles and templates for sustainable forestry management. ARC would like to hear from any biodiversity researchers

working in forest conservation who have relevant case studies, especially those who have worked with faith groups.

Contact: Mr. John Smith, Alliance of Religion and Conservation, 3 Wynnstay Grove, Fallowfield, Manchester, M14 6XG, UK. Fax: (44) 161 248 5736; Email: john@icorec.nwnet.co.uk

More information on the IBOY Project *Sacred Gifts For a Living Planet*, of the World Wide Fund for Nature (WWF) and the Alliance of Religion and Conservation (ARC), see http://panda.org/livingplanet/sacred_gifts/ and http://www.nrel.colostate.edu/IBOY/how_conserve.html#sacred

Keep the Wild Alive Species Recovery Fund – Call for Proposals

The grant cycle for National Wildlife Federation, Keep the Wild Alive Species Recovery Fund '02 is now open. Ten grants, each between \$3000-\$7000, will be given out this year for on-the-ground projects that directly improve conditions for the endangered species highlighted in the campaign. Projects on declining frogs and toads in North America (U.S., Canada, and Mexico only) are eligible for funding this year. * Deadline for the application is February 15th, 2002 *

More Information: on the Species Recovery Fund is available at <http://www.nwf.org/wildalive> or contact YinLan Zhang at the National Wildlife Federation: Tel: (1) 202 797-6892; Email: zhang@nwf.org with any questions.

From the Secretariat

IBOY Launches the U.S. Biodiversity Month for May 2002

The IBOY Secretariat is pleased to announce plans for an American celebration of biodiversity *Explore Your World! Biodiversity Month May 2002*, in which scientists and public will join forces to celebrate biodiversity through scientific exploration and educational activities. The IBOY Secretariat is coordinating activities and making on-line resources available at <http://www.biodiversitymonth.org>. We invite IBOY Project Leaders in the USA to become founding participants. We also hope that other nations will hold national biodiversity celebrations during 2002 for IBOY. The IBOY Secretariat would be delighted to make its resources available for other national events and help network national events across the world.

The plan for the *Explore Your World! Biodiversity Month* was developed at a meeting sponsored by U.S. National Committee for DIVERSITAS and hosted by the IBOY Secretariat at Colorado State University, Fort Collins, USA, on November 17-18, 2001. Participants included leading educators and researchers from the Biodiversity Project, Biological Sciences Curriculum Study, Connecticut State Museum of Natural History, Denver Museum of Nature and Science, Earth Day Network, National Geographic Society, National Research Council, Smithsonian Institution, and the World Wildlife Fund US. *Explore Your World! Biodiversity Month* will be a contribution to IBOY and the International Day of Biological Diversity (May 22).

Because plans for many events in 2002 are already underway, *Explore Your World! Biodiversity Month* in 2002 will draw together existing events as well as seed new events. It is envisaged that *Explore Your World! Biodiversity Month* will become an annual event. Activities will include:

- BioBlitzes
- Nature Days
- Biodiversity Festivals and Free Days at Museums, Zoos, Botanic Gardens
- Backyard BioBlitzes by schools and community organizations
- Press events at major cities

Explore Your World! Biodiversity Month offers the biodiversity community an opportunity to link their efforts. Simply by registering their activity and reporting their results afterwards, participants can contribute to a broader understanding of biodiversity issues while raising the profile of their local efforts. Benefits of participation include:

- greater media visibility
- inclusion of events on a national calendar of activities
- additional resources such as press kits, fact sheets, and scientific expertise
- opportunities to network and build coalitions with other US and international biodiversity organizations
- inclusion of data with that of other participating groups to produce a nationwide snapshot of biodiversity

More information on *Explore your World! Biodiversity Month May 2002* see <http://www.biodiversitymonth.org>.

More information on national biodiversity events from other countries, including the annual *Australian Biodiversity Month* in September coordinated by the Australian Community Biodiversity Network, and the United Kingdom's *Backyard Biodiversity Day* on June 21 coordinated by the Association for Biology in Education, see <http://www.nrel.colostate.edu/IBOY/biodevents.html>

IBOY Update published in *Biology International*

To mark the half-way point of IBOY, the International Union of Biological Sciences (IUBS) published an article that reviews the evolution and progress of IBOY to date and describes activities being planned for 2002, in the December 2001 volume of *Biology International* (No. 42). Please contact the IBOY Secretariat if you would like copies of the article ***Building Bridges for Biodiversity: Progress of the International Biodiversity Observation Year (IBOY) 2001-2002.***

January 21 – 24, 2002

February 4 – 7, 2002

February 27 – 28, 2002

Radio stories from IBOY Projects to be broadcast world-wide on *Pulse of the Planet*

During January and February, the radio show *Pulse of the Planet*, which broadcasts to over 300 stations around the world, will continue its series of programs on IBOY Projects. The broadcast schedule is: January 21 – 24, interview with Dr. Thomas Iliffe on the project *Exploration and Conservation of Anchialine Fauna*; February 4 – 7, interview with Dr. Mark Dangerfield about the *Global Litter Invertebrate Decomposition Experiment (GLIDE)*; February 27 and 28, interview with Dr. James Hanken about the project *Declining Amphibian Population Task Force (DAPTF)*. Jim Metzner, host of *Pulse of the Planet*, recorded these interviews with IBOY Project Leaders at the “Building Bridges for Biodiversity: The First Meeting of IBOY Project Leaders” which took place at the US Fish and Wildlife Service’s National Wildlife Visitor Center, Maryland, USA, June 14 – 16, 2001. Watch out for more stories about IBOY Projects on *Pulse of the Planet* during 2002.

More information:

After broadcast, the articles can be heard online at <http://pulseplanet.nationalgeographic.com>. Click on Archive and search by keyword. For more information on *Pulse of the Planet* see <http://www.pulseplanet.com>

More information on the IBOY Project *Exploration and Conservation of Anchialine Caves* see <http://www.cavebiology.com/> and <http://www.nrel.colostate.edu/IBOY/whatandwhere.html#anchialine> on the IBOY Project *GLIDE* see <http://www.nrel.colostate.edu/projects/glide/> and http://www.nrel.colostate.edu/IBOY/goods_services.html#bignell on the IBOY Project *DAPTF* see <http://www.open.ac.uk/daptf/index.htm> and http://www.nrel.colostate.edu/IBOY/how_changing.html#daptf

Contact: For more information on these and other activities of the IBOY Secretariat, Gina Adams, Program Director, DIVERSITAS-IBOY, Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, CO 80523-1499, USA. Tel: (+1) 970 491 1984, Fax: (+1) 970 491 3945, Email: gadams@nrel.colostate.edu

About IBOY



The IBOY is an initiative of DIVERSITAS. Intellectual sponsorship is provided by the International Union of Biological Sciences (IUBS), International Union of Microbiological Sciences (IUMS), Scientific Committee on Problems of the Environment (SCOPE), and the United Nations Educational, Scientific and Cultural Organization (UNESCO). IBOY has been endorsed by the Sixteenth International Botanical Congress (IBC) and the Second World Conservation Congress of the World Conservation Union (IUCN). The Fifth Conference of the Parties to the Convention of Biological Diversity (CBD) invited parties to participate in the IBOY. Financial sponsorship of IBOY is provided by the US National Science Foundation (NSF) (under Grant No. DEB-0122141), the International Council for Science (ICSU), Center for Applied Biodiversity Science at Conservation International (CABS), the International Group of Funding Agencies (IGFA), DIVERSITAS, and two anonymous US foundations. We acknowledge the support of the US National Committee for DIVERSITAS and the Board on International Scientific Organizations of the National Research Council.

