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Panel Recommends World Data Center for Biodiversity and Ecology Designation for the NBII

The National Biological Information Infrastructure (NBII) <www.nbii.gov> applied for designation as the World Data Center (WDC) for Biodiversity and Ecology in May 2001 and was reviewed by a site visit team on June 17 and 18, 2002. The team – convened by the National Academy of Sciences, National Research Council’s (NRC) Committee on Geophysical and Environmental Data – coordinates with the WDC in America and represents them to the International Council of Scientific Unions (ICSU).



After an extensive review of the NBII and evaluation of its ability to meet guidelines set forth by the ICSU, the site visit team unanimously and enthusiastically recommended that the NBII be designated as the WDC for Biodiversity and Ecology. This endorsement will be presented to the ICSU Panel on World Data Centers for consideration.

The NBII is a Web-based system that provides access to biological data and information on the nation’s biological resources. Through the NBII, information from government agencies, universities, natural history museums, and many others is made available to NBII users, who include resource managers at public agencies, scientists in the public and private sectors, educators at all levels, and the general public. The NBII is coordinated by the U.S. Geological Survey’s Biological Informatics Office, who hosted the WDC

(continued on page 2)

Nodes in the News

The creation of regional nodes has been a significant NBII development. These newsmaking nodes are interconnected entry points that, taken together, are forming the NBII. The nodes are being developed in coordination with various partners around the country. Access has devoted several recent issues to reporting on specific nodes. In this issue, we continue profiling the new NBII nodes.

NBII Wildlife Disease-Human Health Node

Disease has long been recognized as one of the limiting factors on wildlife populations. Now, the rapid spread of established diseases; the emergence of new diseases in humans, domestic livestock, and wildlife; and the threats of bioterrorist attacks have attracted considerable public attention and concern, as well as generated a call for action.

Additionally, convincing evidence has been presented for advocating the use of wildlife as sentinels for potential public health threats, as well as for identifying emerging zoonotic diseases as among the most important health threats facing human populations. Emerging wildlife diseases have become a high-priority concern not only in the United States, but throughout the

(continued on page 4)

In This Issue

My.NBII.Gov Wins Government Solutions Award	3
Toolbar Extends NBII Portal Direct to the Desktop	3
Sage Grouse Get Help From the NBII	5
International Connections NBII To Be Showcased at World Summit	6
Upcoming Events of NBII Interest	7
ITIS Makes Headlines	8
NBII Sponsors Data Summit	8

*Panel Recommends World Data Center for Biodiversity and Ecology Designation for the NBII
(continued from page 1)*

review at its Center for Biological Informatics in Denver, CO.

The WDC System was created over 45 years ago to meet the needs of scientists involved in the International Geophysical Year (IGY). Since that time, it has provided solar, geophysical, and related environmental data to scientists around the world, proving to be a valuable resource even during the Cold War years. The system serves the global scientific community by assembling, scrutinizing, organizing, and disseminating data and information. Today the WDC System is responding to new scientific programs that involve new disciplines, use new technologies, and have a broader international base. To learn more about the WDC System, visit <http://www.ngdc.noaa.gov/wdc/guide/wdcguide_a.html>.


ICSU acknowledges that its programs “in global change, climate, and the environment are placing new requirements on a worldwide system to serve the data needs of the scientific community. These programs involve environmental disciplines that go beyond those of the IGY which, by their nature, require new ways of handling data and information. At the same time, improvements in communications technology, notably the Internet, enable the WDCs to devise additional ways to link with their users and distribute products.”

Technological advances also make feasible the extension of the WDC System into countries that heretofore have not played an active role. The WDC System today is evolving to meet changing conditions while remaining true to the ICSU principle of open,

The designation as a WDC would enable the NBII to share scientific data, develop technologies, and participate in interdisciplinary studies with other WDCs.

non-discriminatory access to the system by scientists in all countries.

To become a WDC, an organization’s data must be available to the world and must apply to several audiences. The organization must also demonstrate expertise in standards and protocol issues surrounding the dissemination of data. WDCs are operated for the benefit of the international scientific community. They collect and catalogue data and information in cooperation with other WDCs and work with originators of data to improve the documentation and preservation of the data.

The NBII proposal to become the WDC for Biodiversity and Ecology comes at a time when the WDC System is undergoing considerable evolution. There are currently 14 WDCs in the United States and 50 WDCs worldwide. The NBII presents the system with an additional discipline – ecology – and a new model – a virtual data center with distributed information. It is hoped that this beginning will encourage other biological scientific/data facilities worldwide to participate. The designation as a WDC would enable the NBII to share scientific data, develop technologies, and participate in interdisciplinary studies with other WDCs. 



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Visit the NBII Home Page at <<http://www.nbio.gov>>.

My.NBII.Gov Wins Government Solutions Award

The NBII has been recognized by the Federation of Government Information Processing Councils (FGIPC) for its innovative portal – My.NBII.Gov. The FGIPC has awarded the NBII its annual Intergovernmental Solutions Award (ISA) for the portal project. ISAs are awarded to those technology solutions that have demonstrated intergovernmental involvement; that is, involving two or more levels of government in delivering services to the citizens. The awards were presented during the XXII Management of Change Conference in New Orleans, held June 3-5, 2002.

Launched in January 2002, the NBII's Internet knowledge portal, My.NBII.Gov, provides high-level user functionalities to resource managers, scientists, educators, and the general public through a single Web-accessible interface. The NBII portal can be used to answer a wide range of questions related to the management, use, or conservation of the nation's biological resources.

My.NBII.Gov was selected by the FGIPC for successfully meeting the following criteria:

- 1) Intergovernmental – provides a service involving two or more levels of government;
- 2) Value Added – is a new-business process reengineering/automated process;
- 3) Existing Components – uses existing applications linked for better “seamless” government processes;
- 4) Tangible – has at least a prototype system that gets results, e.g., provides a new service not presently available;
- 5) Implementation – has been implemented by March 1, 2002;
- 6) Availability – is available and accessible to the public, regardless of economic or disability status;
- 7) Transferable – can be used by Americans regionally, but most favorably, nationally; and
- 8) Use of Technology – uses innovative or emerging technologies that have efficiently improved or changed a business process.

(continued on page 4)

Toolbar Extends NBII Portal Direct to the Desktop

Information sharing just got easier with a new NBII portal toolbar. The NBII has deployed the AtHoc™ Active Portal as a unified gateway for information exchange and delivery among the NBII's extensive network of government, academic and professional personnel. The toolbar extends the capabilities of the My.NBII.Gov portal, providing personalized access to its rich content and services even when users are away from the portal. Features of the toolbar include integrated search functionality for multiple data sources and immediate access to new communications through alerts.

AtHoc's Portal Toolbar extends the NBII knowledge portal to user desktops – providing continuous access to portal services, communications, and collaboration tools. The Portal Toolbar also provides one-click navigation to the publications, scientific news, research folders, expertise databases, communities, and other resources individual users require. Moreover, AtHoc's Enterprise Alert System allows the NBII to publish live content, such as breaking news and recent events, directly to its community in real-time.

“The NBII is excited to extend our portal direct to the desktop using AtHoc's solution,” says Mike Frame, NBII Technology Research and Development Director. “Because our Program is built on partnerships, it's important for us to have the right tools available to exchange and communicate biological information with a broad spectrum of users. We see AtHoc's desktop presence as a key driver increasing usage of NBII resources and stimulating more collaboration through our scientific communities.”



Representatives from the NBII Portal Development Team accept the 2002 Intergovernmental Solutions Award for the My.NBII.Gov portal. Pictured left to right are Ira Hobbs, Acting CIO, USDA (FGIPC); Mike Zavori, NBII; Janice Gordon, NBII; Lisa Zolly, NBII; Jackie Everett, Computer Sciences Corp. (FGIPC); Julie Brewer, NBII; and Ray Carlino, NBII. (NBII Portal Team Members not pictured are Mike Frame, Donna Roy, Vince Wilding, and John Clark.)

*Nodes in the News
(continued from page 1)*

world because of the potential spread of dangerous wildlife diseases to humans, economic losses associated with livestock morbidity and mortality, and harmful effects on natural wildlife populations and ecosystems.

To date, few wildlife disease databases exist on a national or international scale, and *no* central database or information system exists for common access to geospatial wildlife disease information. The lack of this capability hampers rapid identification and response to wildlife disease outbreaks. In response to this urgent need, the Wildlife



Culex mosquito feeding on human.

*My.NBII.Gov Wins Government Solutions Award
(continued from page 3)*

“Being recognized by the Federation of Government Information Processing Councils with its 2002 award for Intergovernmental Solutions is an honor for the NBII Program and provides validation and support for our efforts in the development of the My.NBII.Gov portal,” says Mike Frame, NBII Technology Research and Development Director. “We were very pleased to receive such an honor from various CIOs across government and industry.” 

Disease-Human Health Information Node will develop a Web-based hazard information and delivery system, providing state and federal resource managers, veterinarians, physicians, public health workers, and the public with near real-time data on wildlife mortality events and critical related information. Such a system can be used both to visualize the clusters of morbidity and mortality events, as well as track the spread of diseases. This can lead to the identification of previously unrecognized wildlife-human-domestic animal disease relationships, limit further spread, and prevent future outbreaks.

Designing and building this system will also help answer a number of research questions in the field of information technology and distributed data systems.

This NBII node will initially be located at the USGS National Wildlife Health Center (NWHC) in Madison, WI. However, the node will be decentralized

and eventually incorporate data holdings on geographically dispersed servers. The concept provides broad



Trapping crows for West Nile virus monitoring.



Dead ducks from the 1974 Lake Andes die off.

electronic access to both raw (event database) and derived (maps and other) data products, as well as a direct link to broad information on specific diseases, disease agents, and host species through a link to WILDPro, an electronic wildlife information retrieval system <www.wildlifeinformation.org>.

Initial prototype development will focus on discussions with a collaborator group made up of potential users and data holders, including the Wisconsin Department of Natural Resources, Horicon National Wildlife Refuge (U.S. Fish and Wildlife Service), St. Croix National Scenic Riverway (National Park Service), Wisconsin Division of Public Health, Wisconsin Veterinary Diagnostic Laboratory, and Yale University’s Occupational and Environmental Medicine Program. Information access needs, data availability, and data integration with existing systems will be explored.

The final data structures and input/access tools will represent a consolidated version, permitting later interface between various cooperators’ data sets, and a user-friendly approach to information retrieval.

Data available from collaborators for Chronic Wasting Disease will be the first model for the prototype, followed by that from NWHC’s databases.

(continued on page 5)

Collaboration between USGS biology and mapping personnel will provide ARC/IMS (Internet Map Server) interfaces to permit users to enter and view data, while cooperator access for data entry/modification will be provided using Java. The University of Wisconsin Division of Information Technology will develop a Java-based interface that will allow a direct link to disease, agent, and species information available in WILDPro, maintained by the London-based Wildlife Information Network. The node will provide information and links to information on wildlife health and wildlife-human-domestic animal disease interactions. Historical wildlife disease information and real-time data will be linked to allow



Quails are used as sentinels for arboviruses.

users to conduct some standard data queries including:

- Geographic Queries – providing summarized data from these surveys at various geographic scales, down to the county level;
- Online Mapping – relative density maps for particular diseases, developed in “real time” through user-defined queries of the database; and
- Data Downloads – zipped shapefiles.


Personnel at the Southeastern Cooperative Wildlife Disease Study will evaluate the prototype and information content and participate in planning future directions. Additional state and federal resource management agencies will be

contacted once the system is operational. The new information gathering system will be discussed, and cooperators will be invited to try the system. Evaluation and feedback mechanisms will be in place to help refine the system to meet user needs. Ongoing contacts with various organizations are planned with the aim of publicizing the node and



Necropsy of crow for West Nile virus.

developing potential future partnerships. Since North American migratory species know no national boundaries, we hope to eventually expand the geographic scope of this application to include both Canada and Mexico, as part of the NAFTA agreements. Discussions may be held with international institutions to create or integrate a global reporting system.

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Sage Grouse Get Help From the NBII

Sage grouse have been called an icon of the West – a keystone species that is an indicator of the health of the entire sagebrush–steppe ecosystem. These birds gather on spring mornings before first light to dance in one of nature’s fascinating breeding displays. The strongest males work their way to the center of the breeding ground, called a lek, to “boom” by puffing their chest and displaying large white

air sacs. Female sage grouse fly for miles for the opportunity to breed with the strongest males.

The problem is that the once plentiful sage grouse populations are declining and their range is shrinking. They are falling victim to the changing sagebrush–steppe ecosystem. As some sage grouse populations inch closer to the edge of listing under the Endangered Species Act, most wildlife managers

believe that sage grouse troubles are caused by declining habitats, changed over time by development, fire management practices, grazing, and other factors.

In 2000, the Western Association of Fish and Wildlife Agencies, U.S. Fish and Wildlife Service, Bureau of Land Management, and U.S. Forest Service entered into a Memorandum of Understanding outlining

(continued on page 7)

International Connections

NBII To Be Showcased at World Summit

The NBII will have both a representative and a portion of the U.S. government exhibit at the upcoming World Summit on Sustainable

Development, to be held in Johannesburg, South Africa, August 26-September 4, 2002. The Johannesburg Summit will bring together tens of thousands of participants from around the world to focus attention on the challenges of improving people's lives and conserving our natural resources.

At the 1992 Earth Summit in Rio de Janeiro, the international community adopted Agenda 21, a global plan of action for sustainable development. Most of the objectives of Agenda 21, however, have not been met. The Johannesburg Summit, often referred to as "Rio+10," will provide an opportunity to identify quantifiable targets for better implementing of Agenda 21. "It is time," said Nitin Desai, Johannesburg Summit Secretary-General, "to try new approaches that can improve the lives of everyone without destroying the environment."

Six people from the U.S. Geological Survey, including an NBII representative, will participate in the U.S. delegation to the Summit. Fact sheets, a poster,



and continuous loop presentations viewable at the U.S. exhibit will inform Summit delegates about the NBII and the international initiatives in which the NBII is a partner. Recognizing the Summit themes of sustainability and biodiversity conservation, the NBII materials will include highlighting the Inter-American Biodiversity Information Network (IABIN) partnership for sustainable development, invasive species as a threat to biodiversity, and NBII international programs.

The Johannesburg Summit is expected to result in the announcement of new partnership initiatives aimed at achieving results. While partnering is a major departure from traditional approaches for sustainable development under the Summit plan of action (where governments are responsible for action), partnering is central to the NBII concept. NBII participation in international biodiversity initiatives, including the Convention on Biological Diversity's Clearing-House Mechanism (CHM), the Global Biodiversity Information Facility, IABIN, and the Man and the Biosphere effort, among others, will illustrate the NBII theme, "Partnering for Success."

The CHM <www.biodiv.org/chm/> is an international initiative of the Convention on

Biological Diversity (1992). The CHM is designed to facilitate technical and scientific cooperation among countries and to provide global access to and exchange of information on biological diversity. IABIN, the Inter-American Biodiversity Information Network <www.nbii.gov/iabin> is an international initiative to provide greater coordination among Western Hemisphere countries in the collection, sharing, and use of biodiversity information.

Additional information about the Johannesburg Summit is on the Web at <www.johannesburgsummit.org>.

Clarification


In the Spring 2002 issue of *Access*, the International Connections column should have said that the successful IABIN proposal was developed and submitted to GEF by participating IABIN countries, including the United States. While the NBII provided staff resources to assist proposal development and submission, it was an IABIN proposal. The United States is ineligible for grants from the GEF.



*Sage Grouse Get Help
From the NBII
(continued from page 5)*

conservation strategies for sage grouse and creating the Interagency Sage Grouse Conservation Framework Team.

The NBII, through its partnership with the International Association of Fish and Wildlife Agencies, is working with Western fish and wildlife agencies and the USGS Forest and Rangeland Ecosystem Science Center (FRESA) to deliver critical data to conservation planners working on habitat restoration projects across the sage grouse range.

This project will provide assistance to states so they can deliver data through FRESA's SAGEMAP program. This measure saves states the expense of creating a data delivery system from scratch and helps ensure that critical information can flow quickly to those who need data for conservation planning – even in remote stretches of the West's vast open rangeland. 



Sage grouse

Upcoming Events of NBII Interest

American Society for Plant Biologists 2002 Annual Meeting, Denver, CO.	August 3-7
Botany 2002, Madison, WI.	August 4-7
87 th Annual Meeting of the Ecological Society of America, Tucson, AZ.	August 4-9
IFLA (International Federation of Library Associations) Annual Conference, Glasgow, Scotland.	August 18-24
American Fisheries Society 2002 Annual Conference, Baltimore, MD.	August 19-22
Society of American Archivists (SAA), Birmingham, AL.	August 19-25
Johannesburg Summit 2002: The World Summit on Sustainable Development, Johannesburg, South Africa.	August 26-Sept. 4
Seybold San Francisco 2002, San Francisco, CA.	September 9-12
International Year of Mountains: Ecological and Economic Benefits of Mountain Forests, Innsbruck, Austria.	September 15-18
EUSIDIC (European Association of Information Services) Annual Conference, Lisbon, Portugal.	September 22-25
Web Search University, Washington, DC	September 23-24
TechEd Chicago, Chicago, IL.	September 24-26
12 th National Conference of the Society of Environmental Journalists, Baltimore, MD.	October 10-13
LITA National Forum, Houston, TX.	October 10-13
2 nd Workshop on the Open Archives Initiative (OAI), Geneva, Switzerland.	October 17-29
KMWorld & Intranets 2002, Santa Clara, CA.	October 29-31

ITIS Makes Headlines

The July 25, 2002, issue of *Nature* <www.nature.com> featured two pieces on the advances taxonomy is making in tandem with informatics. The Integrated Taxonomic Information System (ITIS) <www.itis.usda.gov/>, a vital NBII component, was prominently mentioned in both articles (“Taxonomy, at the click of a mouse” and “All living things, online”). ITIS is the first comprehensive, standardized reference for the scientific names – as well as synonyms and common names – for flora and fauna of North America.

The pieces included an examination of ITIS and its collaboration with Species 2000 to develop the Catalog of Life. Within 10 years, the Catalog aims to create a federation of databases that will together describe all of the species currently known to science.

NBII Sponsors Data Summit

The National Fish and Wildlife Database Summit is scheduled for November 1-5, 2002, in Baltimore, MD. Data managers from state, federal, and non-governmental conservation organizations will assemble to address the data needs facing conservation organizations. The NBII is a principal sponsor of this meeting. The event is expected to draw participants from at least 40 state fish and wildlife agencies.

Summit goals:

- Promote improved databases and access to databases.
- Improve coordination and communication between database managers.
- Obtain input about major issues confronting database development at the state and federal levels.
- Discuss methods for enhancing collaboration and exchange of data among state and federal agencies.
- Explore how federal agencies and states can work together to advance fish and wildlife information systems.

Steve Williams, Director, U.S. Fish and Wildlife Service, will deliver the keynote address. Please sign up to participate in this important event. For more information, visit the Organization of Fish and Wildlife Information Managers Web site at <<http://www.ofwim.org>>.



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