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## New Look Coming to the NBII Web Site

One day this summer, NBII users will arrive at <www.nbii.gov> only to discover that the site they knew, is no longer. In its place will be a completely redesigned NBII that will offer users a cleaner interface and more efficient access to the expanding world of biological resources.

After several months of planning, design, and data migration, the NBII redesign team expects to make the new site available to users by July 1.

The driving force behind the decision to redesign the site was the realization that the NBII had outgrown its original structure. “We knew we wanted a more contemporary ‘look and feel’ to the NBII, one that emphasized the intersections of biology and informatics,” explains Tom Hermann, NBII Outreach Manager and the leader of the redesign team. “But perhaps more importantly, we recognized that the current structure

could not continue to efficiently organize and manage the ever-growing number of resources available on the site.”

The redesign team focused on providing a more intuitive navigational structure that would facilitate user access to these resources. One goal was to make all of the NBII resources more immediately available to users. This was achieved by re-engineering the site architecture to enable access to

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## NBII Selected for Digital Dozen

The Eisenhower National Clearinghouse (ENC) featured the National Biological Information Infrastructure (NBII) <www.nbii.gov> among the “Digital Dozen” outstanding math and science Internet sites in April 2000. Each month, the ENC <http://www.enc.org/classroom/index.htm> chooses a baker’s dozen of Web sites to highlight. The selected sites must have current and accurate math and/or science content, support school improvement efforts, and offer useful multimedia features or helpful navigation.



ENC lauded the NBII for its initiative to scan the Internet for the best sources of biological data and information and carefully organize them on the NBII. In addition, ENC referred to the Educators Area that covers several topics, including

human biology, microbes, reptiles and amphibians, and biodiversity/environment. ENC noted that the NBII Web site’s Hot Topics leads to items of recent notable study, such as amphibians as indicators of significant environmental changes.

The NBII is a broad, collaborative program to provide increased access to data and information on the nation’s biological resources. The NBII links diverse, high-quality biological databases, information products, and analytical tools maintained by NBII partners and other contributors in government agencies, academic institutions, non-government organizations, and private industry. NBII partners and collaborators also work on new standards, tools, and technologies that make it easier to find, integrate, and apply biological resources

information. Resource managers, scientists, educators, and the general public use the NBII to answer a wide range of questions related to the management, use, or conservation of this nation’s biological resources. 

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## New Metatag Tool Enhances NBII's Visibility on the Web

The scenario is all too familiar — you've submitted a carefully constructed query to a search engine, only to stare in disbelief at the thousands of "hits" that the engine returned to you, most of which have little relevance to your information needs.

Meanwhile, on the other side of the information network, scientists and information professionals scratch their heads in frustration as their magnificent biological resource data and information goes unused by its target audience.

Why are information resources and their users having such difficulty finding each other? The locus of the problem is often the search engine, which

frequently fails to match an information request with the relevant data. The solution? In a word, metatags.

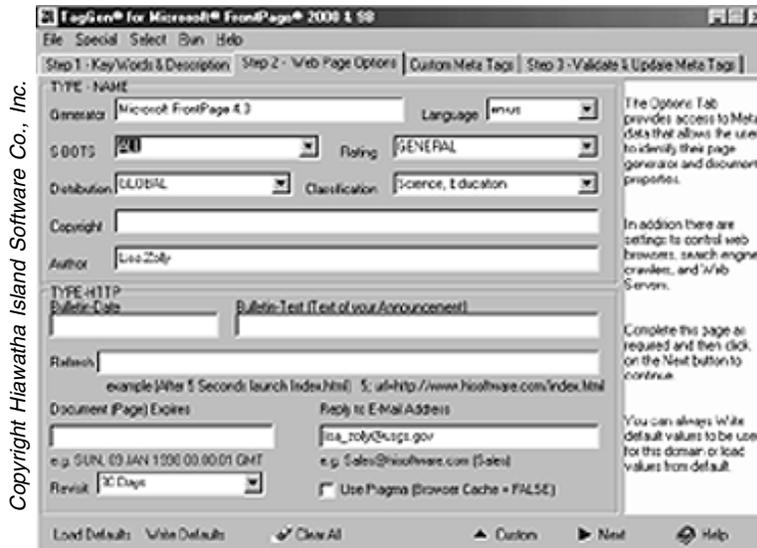
As search engines spider the Web, they index pages according to various algorithms created by programmers. Because most Web pages contain a great deal of text,

the search engines must index many keywords on every page. Metatags provide Web developers with a way of drawing a search engine's attention to specific terms that describe the contents of a Web page. When the search engine matches a Web page's metatags to terms entered by a user, the effect is usually a highly-ranked search result that meets the user's information needs.

To unite current and prospective NBII users with the valuable biological resources information they need, the NBII has partnered with Hiawatha Island Software Company to offer TagGen, a powerful metatag creation tool, free to NBII partners developing biological information products for the Web. TagGen, a licensed product, allows

Web developers to compose both standard metatags including keywords, site description, author, and language, as well as site-specific metatags such as species names and scientific discipline. TagGen can be applied to multiple pages simultaneously, enabling partners to quickly and easily incorporate metatags into their thematic nodes. The software also features handy tools such as a thesaurus and a tag verifier, to ensure that tags are being utilized to the greatest extent possible.

The NBII's implementation of metatags has introduced thousands of new users to the NBII. Providing innovative tools such as TagGen to partners helps the NBII maintain its commitment to serving the biological information needs of its diverse user community.



TagGen, a powerful metadata creation tool, is now available to NBII partners.



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Be sure to check out Access on the Web at <<http://www.nbii.gov/datainfo/pubs/news/>> (as of July 1).

Please direct your general questions about the NBII, including partnership opportunities, to:

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

*New Look Coming to the NBII Web Site  
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*Here is an advance look at the top and bottom screens of the new home page of the NBII.*

any thematic area or data product in two mouse clicks or less. Utilizing innovative graphical “pointers,” the site provides constant feedback to users to situate them visually within the site. This virtual “bread crumb trail” is intended to alleviate that sensation, familiar to most Web users, of being lost in a wilderness of information.

“The NBII has experienced tremendous expansion of content over the last two years,” observes Hermann. “For a large information system, this can be both a blessing and a curse. Even though it may provide fabulous content, a system is only as good as the access it provides. We want the NBII’s users to enjoy the amazing collection of resources we provide, so it’s up to us to make those resources easy to find on our site.”



The home page of the new NBII interface will provide access to basic program information, including the identities and roles of the many partners participating in the NBII, recent program news, and NBII publications. “Biology in the News” will bring together links to online news-feeds, press releases, electronic journals, and highlights of NBII partner activities.

“Current Biological Issues” will be home to “hot topics” that pose potential threats to or concern for ecosystem and/or human health. “Biological Disciplines” will provide information on comprehensive subjects such as botany and genetics. “Geographic Perspectives” will include access to various resources and tools that organize or access information geographically or geospatially.

The “Education” category will offer K-12 and undergraduate teachers access to hundreds of links to online materials, projects, curricula, references, and resources for a variety of biological topics.

Users and creators of biological metadata will find the NBII Metadata Clearinghouse and related tools within the “Data and Information Products” area, which will also include links to specific standards, electronic references, and images. Important resources for systematics and collections will also be offered in this section.

Finally, the “Search” area will provide users with a multiple means for accessing data and information within the NBII and across the Web. Of particular note, the new BioBot search agent will be accessible through this section.

As the redesigned site nears its launch date, Hermann is mindful that the project itself cannot be declared complete. “The Web is, by design, always ‘under construction’ — so we don’t view the new interface as a finished product. But we do feel that it’s a strong statement of our dedication to enhancing user access to the NBII and its resources.” 

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## Customers Meeting Generates Support for the NBII

From March 22 to 23, the U.S. Geological Survey (USGS) held a series of Conversations with Customers meetings at its headquarters in Reston, VA. The “listening” meetings featured a number of USGS customers who spoke on behalf of various USGS programs to Director “Chip” Groat and other USGS senior staff. The customers spoke about the value of USGS programs (of which the National Biological Information Infrastructure [NBII] is one) and why they should be allowed to request budget increases for the FY 2002 budget. Many of the speakers on the docket expressed their strong support for the NBII.

Other speakers discussed the value of the Gap Analysis Program (GAP), which is also a part of the NBII. GAP identifies “gaps” in the protection of biodiversity on a state by state basis. The key components of this program are the mapping of land cover by dominant plant groups, mapping of the distribution of vertebrate animal species, and delineation of the level of protection within a state. Display of this information using a geographic information systems (GIS) format, and analysis of the data collected, provide a snapshot of the status of plant and animal communities and provides land and resource managers key information they need for making scientifically-based resource decisions. Data and information developed through GAP projects are made available through the NBII and are made more useful through NBII analytical tools, user support, and through integration with other available data sets.

Speaking on behalf of the President’s Committee of Advisors on Science and Technology

(PCAST), John Schnase of NASA said, “Our fate and economic prosperity are completely linked to the natural world. As a result, information about biodiversity — as well as the infrastructure that supports it — is vital to a wide range of scientific, educational, commercial, and government uses. In the United States, the NBII is the primary mechanism whereby biodiversity and ecosystem information is made available to all sectors of society.” Schnase remarked that a recent review of the NBII by PCAST found that “the NBII plays a critical role in the mobilization of biological information and has made significant achievements since its creation.” These findings were supported by the positive contributions that the NBII has made to natural resource management, biodiversity information resources (through NBII standards), teaching of biological sciences, further research in bioinformatics and biodiversity, and global information dissemination.

“EPA considers the NBII to be an important initiative,” said Steve Young of the Environmental Protection Agency (EPA). “EPA needs better information about biological conditions to help it respond to the mandate of the Government Performance and Results Act to measure environmental outcomes of its programs. Biological data can show that ecosystems are improving. Organisms integrate environmental stressors, so they give more insights about outcomes of environmental protection programs,” he continued. “Using the ‘canary in a coal mine’ analogy,” Young said, “organisms can give early warning about environmental problems that may be

threats to human health. It is looking more and more like biomonitoring will be the key holistic environmental monitoring tool we will use, for example, to characterize the health of water systems.”

Young also referred to the importance of the Integrated Taxonomic Information System (ITIS): “Getting names right is important for synthesizing data from other sources. We are relying on ITIS as the means to link using a consistent identifier.” ITIS <<http://www.itis.usda.gov/itis>> is the first comprehensive, standardized reference for the scientific names of the flora and fauna of North America and surrounding oceans. Finally, Young said that partnerships are important to the EPA — partnerships with the NBII, USGS, and academia — and that the NBII provides a good example of building partnerships.

“Through the inspiration of the PCAST document, *Teaming with Life*, and the encouragement of the USGS Biological Resources Division, we’ve been working to build a coalition to help develop the NBII through a node centered in the East Tennessee/Southern Appalachian region,” said Bonnie Carroll, President, Information International Associates, Inc. She spoke of her hopes for the next-generation NBII: “In the end, we’ll hope that the NBII-2 will be our national resource of biodiversity and ecosystems information, a kind of information commons shared by all sectors of the economy and serving research, education, as well as policy-making needs. Then our national NBII will be a U.S. contribution to the growing interest in and need for sharing biodiversity information across geographical and political boundaries and at various

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### COP-5 Meets in Nairobi

Delegates from over 150 countries convened in Nairobi, Kenya, in May, at the Fifth Conference of Parties to the Convention on Biological Diversity (COP-5). The report of the pilot phase of the CHM, and recommendations concerning the CHM developed at the recent meeting of the Subsidiary Body on Scientific, Technical and Technological Advice, were presented to the COP. While the CHM itself was not scheduled to be discussed at length during this meeting, the draft decisions of COP-5 direct the parties to use the CHM to disseminate information on a variety of subjects from inland water biological diversity, coral bleaching, and invasive species, to the ecosystem approach and the global taxonomy initiative.

Dr. Hamdallah Zedan, CBD Executive Secretary, informed the CHM Informal Advisory Committee (IAC) that the IAC will not meet in conjunction with COP-5, due to the heavy work which will engage the Secretariat staff before and during the meeting. However, Dr. Zedan has stated that he intends to convene a meeting of the IAC after COP-5 to



discuss outstanding issues as well as seek IAC guidance with regard to the implementation of the new program of work in light of the decisions adopted by COP-5. The United States represents the Inter-American Biodiversity Information Network (IABIN) on the IAC.

The CHM, an international initiative of the Convention on Biological Diversity (1992), is designed to facilitate technical and scientific cooperation among countries and to provide global access to and exchange of information on biological diversity. Additional information is available



### Biosafety Clearing-House To Be Established

After five years of talks, ministers and senior officials from over 130 governments meeting in Montreal in January finalized a legally binding agreement for protecting the environment from risks posed by the transboundary transport of living modified organisms (LMOs) created by modern biotechnology. Under the Cartagena Protocol on Biosafety, so named for the location at which negotiations on the final text began, governments will signal whether or not they are willing to accept imports of agricultural commodities that include LMOs by communicating their decision to the world community via an Internet-based Biosafety Clearing-House. The protocol was developed as a result of a decision of the Second Conference of Parties to the Convention on Biological Diversity (CBD), and the Biosafety Clearing-House will be closely linked to the CBD Clearing-House Mechanism (CHM). While the protocol will not enter into force until 90 days after the fiftieth country ratifies it, efforts to design and implement the Biosafety Clearing-House may begin as early as this summer.

### Customers Meeting Generates Support for the NBII (continued from page 4)

geospatial levels. I applaud the work currently being done and encourage the USGS to continue to support the importance of the NBII and its full evolution into NBII-2.”

Jim McGinty, President of Cambridge Scientific Abstracts (CSA), asserted, “It is very important for the government to stimulate development of this biological

information infrastructure in partnership with organizations in all sectors of society, including the private sector, which my company, CSA, is a part. We and other private sector companies provide knowledge integration services in support of scientific research. These services are especially effective when they include data from both public and

private sources.” In support of joint public/private sector partnerships, McGinty spoke of an illustrative project that the CSA has been involved in for almost 20 years. CSA has partnered with the Food and Agriculture Organization (part of the United Nations) and 26 countries to create the world-renowned Aquatic Sciences and Fisheries Abstracts database.



## Partners in the Spotlight

*“Partners in the Spotlight” highlights the activities and contributions of a wide range of NBII partners. We are pleased to welcome Paul Bradford and the USDA Forest Service as this issue’s Partner. If you’re interested in producing a similar article about your organization, please contact Ron Sepic, Access Editor, at [ron\\_sepik@usgs.gov](mailto:ron_sepik@usgs.gov).*

### USDA Forest Service Teams Up With NBII for Key Biological Information

Managing almost 200 million acres of national forests sustainably requires the best available science and the best available information. The USDA Forest Service <<http://www.fs.fed.us/>> collects a wide range of data on vegetation, soil, water, air, and the animals that make up forest ecosystems. Managers rely on these data, and combine them with information on forest uses and values of people, to plan long-term strategies and conduct everyday actions.



To meet the information demands of the future, the Forest Service is developing a comprehensive Natural Resource Information System (NRIS) <<http://www.fs.fed.us/emc/nris/>> that will serve as the inventory and monitoring information backbone to support decisions on forest planning and site-specific projects. NRIS provides a data store that managers can use to collect, manage, and interpret resource information. Cost savings and improved performance are expected as NRIS replaces many home-grown data systems scattered throughout the agency.

NRIS consists of six modules that cover terrestrial ecology, air and water resources, fauna (wildlife), field-sampled vegetation, and human dimensions. Development teams also support geographic information system (GIS)

integration, portable data recorders, and analysis tools. NRIS meets user needs with designs driven by the core business requirements of the agency. The system assures that data of known quality are entered and documented; that data are accessible in forms needed by managers; that information can be shared; and that data are secure.

From the beginning, it was clear that working with the National Biological Information Infrastructure (NBII) had a lot to offer that could save money, shorten the time needed to design database systems, and help assure consistency with other agencies.

The NBII coordinates a network of talented experts in data standards and sharing who can help address common issues. NRIS specialists work with the NBII to coordinate biological information strategies, research needs, and public data access. Metadata standards, species lists from the Integrated Taxonomic Information System (ITIS), and Web access to federal biological data are all key elements for NRIS. The NBII hosts an important Internet portal that provides access to wide-ranging biological data. Forest Service information contained in NRIS will eventually be available through this node.

Fauna Branch Chief Chris Frye says: “We need a common language to share biological information with other agencies and the public. The NBII serves as the clearinghouse for basic biological information like species names. If it

were not for the NBII and the ITIS database, we would have to work with dozens of organizations to compile all the information we need. The NBII provides one-stop



shopping for a lot of the species information we deal with.”

Other agencies and the public expect Forest Service data to be well documented. Spatial data have to meet standards established by the Federal Geospatial Data Committee (FGDC) including metadata. Just like a store catalog, metadata is a list of elements available in the data store and their descriptions. The NBII wrote the book (with help from their friends) on FGDC metadata standards for biological information. Wanda Hodge, Resource Information Technology Coordinator for the NRIS team, says: “Using the NBII metadata format for NRIS assures our biological data meet FGDC standards. The public and our partner agencies expect no less than accurate and complete documentation of our data sets.”

Building the next generation information system to serve the resource information needs of the

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*Partners in the Spotlight*  
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Forest Service is a big task. Without partners like the NBII, our job would be a lot tougher. Jim Fenwood, Forest Supervisor on the Mendocino National Forest in northern California, has this to say about the NBII: “If we’re going to do our job well to manage forests across many boundaries and involve the public, we’ve got to share our data. The kind of standardized approach to biological data championed by the NBII makes this possible. Ultimately, it will lead to fundamental changes in the way we involve communities and other organizations in our decision making.”

Chris Risbrudt, Director of Ecosystem Management Coordination for the Forest Service, sums it up: “The American people care greatly about their national forests. By working together with the NBII, the Forest Service can develop better information leading to better decisions for the American people.”

For more information on NRIS, contact: Paul Bradford, USDA Forest Service, Ecosystem Management Coordination Staff, PO Box 96090, Washington, DC 20090. Phone: 202/205-1772; e-mail: pbradford@fs.fed.us. 



*Portable data recorders programmed with species lists and sampling methods streamline field inventories on national forests. Data from field records are transferred directly into corporate databases for analysis and secure storage.*

## New NBII Partner Announced

**In April, the NBII welcomed a new partner, the USDA’s National Agricultural Library (NAL).**

**Thanks to joint funding from the NBII, the U.S. Geological Survey, and the U.S. Department of Agriculture, NAL will develop <[invasivespecies.gov](http://invasivespecies.gov)>, an invasive species information system for researchers, land managers, policy makers, and concerned citizens. The site, which will be hosted by the NBII, fulfills the mandate for an online data and information repository outlined in Executive Order 13112 on Invasive Species. The prototype for the site debuted to favorable reviews at the recent meeting of the President’s Invasive Species Council, which will participate in its development.**

**The NBII-NAL partnership is a fine example of the collaborative possibilities available to science agencies and organizations to join the NBII program in building a national biological information infrastructure.**

## Metadata Training Update

### Metadata Training Roundup

The USGS Great Lakes Science Center welcomed Jennifer Gaines and Sharon Shin during the Center's recent Earth Day event. On April 17-18, eighteen Center employees completed the computer-based workshop covering the Biological Data Profile. Information on the Center's research created robust metadata during the workshop. Participants created metadata and shared information about their work through the Clearinghouse mechanism.

The USGS Lake Superior Biological Station requested a two-day computer-based Biological Data Profile Metadata training workshop for Station personnel. The workshop was held April 20-21. Among the seven staff members learning about metadata was Station Chief Owen Gorman. The small but energetic group handily applied their database information into what was originally intended to be a geospatial data information resource.

On May 16, an NBII Metadata Training Workshop was conducted at Eglin Air Force Base in Niceville, FL. The base's Geospatial Information System Development



*USGS Great Lakes Science Center staff learned about MetaMaker software, a Windows application designed to aid in the capture of metadata information into a standardized format.*

Team is currently focusing efforts on populating a metadatabase for the wealth of generated geospatial/biological data.

Eglin is the largest Air Force base in the United States and is home to two endangered species, the red-cockaded woodpecker and the Okaloosa darter. The area also features a sizeable black bear population. The Air Force conducts major military maneuvers on the base, while trying to manage the land through fire ecology and timber practices. The metadata training was the first for a military installation and included a mixed audience of biologists, foresters, geographers, project managers, and administrators. The workshop was presented by Helena Schaefer, a

geographer stationed at the USGS National Wetlands Research Center in Lafayette, LA.

*The newly acquired knowledge of Eglin Air Force Base metadata workshop attendees will help in the management of black bear and a wide variety of other creatures that populate the region in and around the base.*



*Metadata instruction at the USGS Lake Superior Biological Station included an examination of metadata and clearinghouses, how they are used, and their benefits.*



## NBII to Y2Y GIS & Data Management Workshop

In April, Jennifer Gaines, an NBII Metadata Trainer, conducted a seminar by invitation on data documentation standards and tools at the Yellowstone to Yukon (Y2Y) Conservation Initiative's GIS & Data Management Workshop in Calgary, Alberta, Canada.

The Y2Y Initiative represents a bi-national effort between the United States and Canada to conserve the beauty, health, and natural diversity of the Rocky Mountains from the Greater Yellowstone Ecosystem in the south to the Yukon's Mackenzie Mountains in the north. The

initiative is not only about wildlife, but also about our quality of life, health, and economy. Y2Y envisions a future where protected areas and corridors are in place to ensure the survival and perpetuation of all native wildlife alongside human communities.

Y2Y brings together scientists, conservationists, rural community councilors/county commissioners, land use planners, First Nations/ Native Americans, and others from more than 120 groups who recognize that scientifically informed, long-range plans are

necessary to maintain healthy populations of diverse species and overall biological health in the Y2Y region. As part of this endeavor, participants in the GIS workshop agreed to use NBII metadata standards and set up a searchable metadata clearinghouse for improving data sharing and access within the entire Y2Y region. NBII staff will assist the Y2Y group in their upcoming efforts to serve metadata and data on clearinghouses in the United States and Canada. 🌿



*Combining science and stewardship of precious biological resources (such as those pictured here), Y2Y brings people together to maintain and restore the unique natural heritage of the Yellowstone to Yukon region for current and future generations.*



*The Y2Y Initiative includes the Rocky Mountains from the Grand Tetons (Wyoming) north to the Yukon border, adjacent ranges in Idaho and British Columbia (the Cabinet Yaak, the Selkirks, Purcells, Monashees) and the Mackenzie Mountains in Yukon and the Northwest Territories.*

### World Bank-Funded IABIN Projects Near Completion

In 1999, the World Bank awarded almost half a million dollars to projects supporting the implementation of the Inter-American Biodiversity Information Network (IABIN).

As detailed below, these projects are now nearing completion and promise some interesting products — and possibilities — for the biodiversity community. Results will be available through the IABIN Web site <<http://www.iabin.org>>, another product funded in part by the World Bank.

#### Species Analyst Community Expands

The Species Analyst is a software tool that predicts species distribution based on information from distributed databases on museum collection specimens. With funding from the World Bank, the University of Kansas Museum of Natural History sponsored a two-week course on Species Analyst and related technology for linking biodiversity.

Seven participants — from Argentina, Brazil, Colombia, Costa Rica, Honduras, and Mexico — studied the nature of biodiversity information and what information is relevant to biodiversity studies; how to predict geographic distribution based on point occurrence data; how Z39.50 technology is used to connect biodiversity data sources to Species Analyst; and how to develop applications to improve information sharing within a distributed network (Z39.50 is a communications standard used by

scholarly and scientific communities to provide Internet access to information in remote databases). Students returned to their institutions with a copy of the software, an

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*IABIN is an international initiative to promote greater coordination among Western Hemisphere countries in the collection, sharing, and use of biodiversity information.*

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appreciation of the possibilities, and a network of professional contacts on which to build.

#### Group Works Toward Harmonized Metadata

Metadata experts from North, Central, and South America met in Hollywood, FL, in April to discuss national efforts on metadata for biological information. The group drafted recommendations to IABIN concerning minimum metadata requirements, capacity building, and development of regional clearinghouses throughout the hemisphere. A report containing these recommendations, the results of a survey on metadata in the Americas, and the experiences in establishing clearinghouse nodes in Central America will be available on the IABIN Web site by early summer.

#### UCDavis Leads Invasives Information Effort

The University of California at Davis (UCDavis) is developing new information resources to support invasive species research and management. UCDavis is developing prototypes of an experts

registry, a data registry, a species of concern list, and a species occurrence database for IABIN, as well as a strawman multi-lingual database-thesaurus for the data system which will be distributed to six participating country nodes for review.

Project participants will convene at a workshop in late June to test the prototypes and implement the online data system at their nodes.

#### New World Biodiversity in Old World Collections Surveyed

A project to identify collections of specimens of vertebrates from the Americas held in European institutions is being conducted for IABIN by Geoplan International, a Netherlands firm. Museums and other institutions responding positively to an initial query were sent questionnaires to gather information on the number of specimens and geographic origin of the collections. The results will be compiled in a database, "Directory of New World Holdings in European Collections," and will be accessible through the IABIN Web sites, with linking from other sites encouraged.

IABIN is an international initiative to promote greater coordination among Western Hemisphere countries in the collection, sharing, and use of biodiversity information. Information on IABIN can be found at <[www.iabin.org](http://www.iabin.org)> (international site) and at <[www.nbio.gov/iabin](http://www.nbio.gov/iabin)> (U.S. site). 

## Frame Raises Awareness of New NBII Initiatives

Mike Frame, NBII Technology Manager, recently discussed and demonstrated several technology initiatives currently being undertaken by the NBII Program at both the SAS Institute's Government Executive Forum (May 2) and the U.S. Department of Energy 2000 INForum (May 3). At these events, Frame examined such leading edge NBII efforts as the USGS/NBII Data Mining Prototype, BioBot, and the expanding list of NBII Regional Nodes. Several hundred federal and private sector information management and technology executives attended each conference.

The Data Mining Prototype explores new ways to integrate various U.S. Geological Survey and NBII science and information systems. BioBot, the only tool of its kind, is a biological search engine for the Internet available through the NBII. Regional Nodes are a key component of the next generation NBII that are being developed to ensure the program features broad partnerships and information from all sectors of society.

For additional information, please contact Mike Frame at 703/648-4164.

## See You at Snowbird!

**The Ecological Society of America's Annual Conference in Snowbird, Utah, which is being held from August 6-10, is fast approaching. Feel free to stop by the NBII exhibit and say hello. We'll be offering a variety of NBII handouts, demonstrations, and special prize drawings.**

## Upcoming Events of NBII Interest

2000

Annual Meeting of the Animal Behavior Society, Atlanta, GA	August 5-9
Ecological Society of America Annual Meeting, Snowbird, UT	August 6-10
Global Wetlands in the Millennium, Quebec, Ontario, Canada	August 6-12
10th Annual National Gap Analysis Program Meeting, San Antonio, TX	August 13-17
International Federation of Library Associations (IFLA) General Conference, Jerusalem, Israel	August 13-18
American Fisheries Society (AFS) Annual Meeting, St. Louis, MO	August 20-24
Society of American Archivists Meeting, Denver, CO	August 28-September 3
Biotechnology 2000, Berlin, Germany	September 3-8
Wildlife Society: 7th Annual Conference, Nashville, TN	September 12-16
KMWorld 2000, Santa Clara, CA	September 13-15
Online World, San Diego, CA	September 18-20
2000 International Conference on Virtual Communities, London, England	September 19-20
EDUCAUSE 2000, Nashville, TN	October 8-11
CODATA 2000: "Data and Information for the Coming Knowledge Millennium - Science and Technology in the Quest for a Better World," Baveno, Italy	October 15-19
Global 2000: The Information Age Challenges & Opportunities, Brighton, England	October 16-19
"National Libraries: Interpreting the Past, Shaping the Future," Washington, DC	October 23-27

## NBII Metadata Training

A metadata training workshop is usually a full two-day course in which participants engage in in-depth discussions, and receive hands-on training, on metadata activities related to the Federal Geographic Data Committee's

metadata standard and the NBII biological metadata profile, MetaMaker (the NBII metadata data entry tool), and the NBII Clearinghouse.

For the latest information regarding locations and dates of

metadata training classes, just check <<http://www.nbii.gov/metadata/training/index.html>> or contact:

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### Training Schedule

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Denver Federal Center (National Park Service and U.S. Geological Survey), Denver, CO. 2 day workshop.	July 18-19
Ecological Society of America Annual Meeting Snowbird, UT. 1 day workshop.	August 5

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NBII National Program Office  
U.S. Geological Survey, 302 National Center  
Reston, VA 20192

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