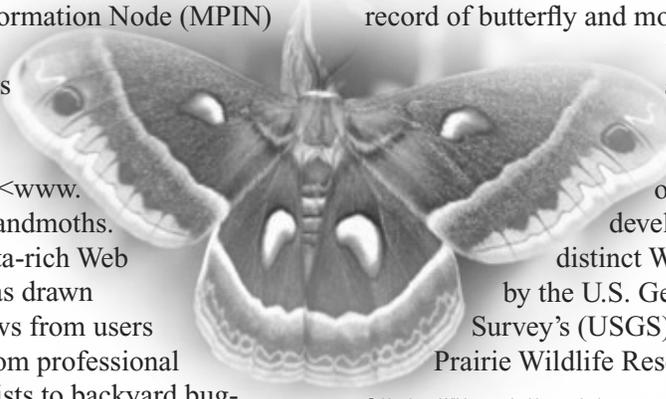




Butterflies and Moths Web Site Draws Rave Reviews

In June 2006, the NBII Mountain Prairie Information Node (MPIN) unveiled “Butterflies and Moths of North America” <www.butterfliesandmoths.org>, a data-rich Web site that has drawn rave reviews from users ranging from professional lepidopterists to backyard bug-catchers. The user-friendly Web site generates 500,000 hits per month and



provides a comprehensive distribution record of butterfly and moth species. The butterfly and moth distributions were originally developed as two distinct Web sites by the U.S. Geological Survey’s (USGS) Northern Prairie Wildlife Research Center

© Harrison Wilde: used with permission
Cecropia silkmoth (*Hyalophora cecropia*) <<http://www.butterfliesandmoths.org/species?l=3281>>.

(NPWRC). NPWRC partnered with MPIN to secure a long-term home for these valuable resources. For a year, MPIN staff worked behind the scenes to tackle the daunting task of putting 200,000 sighting records and nearly 2,800 species accounts into a modern database.

The new site allows users to interact with dynamic distribution maps, checklists, and species accounts that are generated in “real time,” offering users the most up-to-date information with each visit. The site

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The Sage Grouse Local Working Group Locator: A Geographic Perspective to Sage Grouse Conservation Efforts

In June 2006, the NBII Pacific Northwest Information Node (PNWIN), the NBII Great Basin Information Project, and Utah State University released the Sage Grouse Local Working Group (LWG) Locator <<http://greatbasin.nbii.gov/LWG/>

[index.asp](#)>. The LWG Locator is designed to promote information-sharing about sage grouse conservation efforts throughout the western United States, as recommended in the report from the National Conference for Sage Grouse Local Working Groups in February 2005. The site supports a community-based process of LWGs that represents a valuable component of the range-wide sage grouse conservation effort.

Greater sage grouse (*Centrocercus urophasianus*) populations have experienced range-wide declines as a result of habitat loss, degradation, and fragmentation. Population estimates range from 100,000 to 500,000 birds across the West. Although state wildlife agencies are ultimately responsible for the management of

their resident sage grouse populations, much of the remaining sage grouse habitat lies on public and private

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NBII Geospatial Interoperability Framework: Toolkits and Services

The National Biological Information Infrastructure (NBII) works through a distributed network of NBII nodes and NBII partners. Since the technical skills and funding vary across this network, the NBII Geospatial Program has focused on the development of the Geospatial Interoperability Framework (GIF). As part of GIF, the NBII has produced toolkits, services, and templates for improving interoperability among nodes and partners and for significantly reducing development time for geospatial applications.

GIF toolkits can be plugged into *any* new or existing Web site to facilitate geospatial functionality, such as gazetteer (an electronic place-name lookup) or Web-mapping applications. These toolkits can run on a variety of platforms (Windows, Mac, Unix, and so forth), have few limitations, and can be integrated with new or existing geospatial applications with minimum effort and little programming knowledge. Using these toolkits can dramatically reduce the development

time of an ArcIMS application that complies with the GIF used within the NBII from several months to only a few days.

NBII services such as the Catalog of Web Map Services, the Gazetteer service, and the Bounding box service can be used by any application without the overhead of hosting and maintaining the code or the map layers. The NBII provides users with one or more clients to these services, which can be embedded into new or existing Web-enabled geospatial applications.

NBII Catalog service provides a central place for discovering and visualizing published NBII Web map or feature services and their associated map layers. Currently the Catalog service contains about 300 biologically related map services, which comprise the Catalog services holdings of approximately 20,000 data layers for use by the public.

NBII Gazetteer service provides lookup for any place around the world and is based upon the USGS

Geographic Names Information System (GNIS). Users of this service will save time, money, and effort required for hosting and maintaining the huge GNIS database. This service can be connected using an XML as well as an HTTP interface.

Further details about the program's GIF, toolkits, services, and templates can be found at <<http://geospatial.nbii.gov>>. The NBII Geospatial portal is located at <<http://nbii-catalog.ornl.gov>>. Some of the sites using GIF toolkits and services include:

- Millennium Ecosystem Assessment Data Portal <<http://wdc.nbii.gov/ma/>>,
- Seabird Ecological Assessment Network (SEANET), hosted by the NBII Wildlife Disease Information Node (see <<http://wildlifedisease.nbii.gov/mass3>>),
- the NBII Wildlife Disease Information Node EPIZOO Data Viewer <<http://wildlifedisease.nbii.gov/epizoo2>>, and
- the NBII Mid-Atlantic Information Node viewer <<http://128.173.240.47:8080/MainNodeOGC/>>.

For more information about GIF, please contact the NBII's Onkar Chandel by phone (703/648-4185) or e-mail <ochandel@usgs.gov>.

The NBII is a broad, collaborative program to provide increased access to data and information on the nation's biological resources. Coordinated by the USGS, the NBII links 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. 



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

Sage Grouse LWG (continued from page 1)

lands – with the Bureau of Land Management managing almost 50 percent of the area and the rest occurring on other federal, state, tribal, and private lands.

With such a diverse stakeholder group, the involvement of community-based sage grouse conservation teams or LWGs provides a critical element to the success of conserving this species and sagebrush habitat. Sixty-three LWGs have been established in 11 western states and two Canadian provinces. LWG members represent a range of stakeholders, including farmers, ranchers, state and federal agency staff, tribal and local governments, officials of the energy industry, environmental groups, non-government organizations, and other concerned citizens.

The Sage Grouse LWG Locator is a Web-based, geographically-linked database designed to identify who and where LWGs are range-wide, as well as what types of projects and conservation efforts have been identified in a specific

area. The Sage Grouse LWG Locator provides a central resource for LWGs and interested stakeholders to facilitate greater connectivity and information exchange throughout the sagebrush region. The LWG Locator is a place where LWGs can share information about their

projects, accomplishments, photos, lessons learned, and local success stories.

Since its release, the site has provided useful information for the Greater Sage Grouse Comprehensive

Conservation Strategy (currently in review) and for a Sage Grouse LWG Needs Assessment Survey that is being conducted through the Institute of Social Science Research on Natural Resources at Utah State University.

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Welcome to the Sage-grouse Local Working Group Locator

A geographic perspective to Sage-grouse conservation efforts

A valuable component to the range-wide sage-grouse conservation effort is a community-based process using Local Working Groups (LWG). LWG members represent a range of stakeholders including farmers, ranchers, state and federal agency staff, tribal and local governments, energy industry, environmental groups, non-governmental organizations, and other concerned citizens. Although LWGs are in all stages of development throughout the region, each group is responsible for developing a conservation plan to address the threats to sage-grouse populations and habitats in their area. LWGs will lead the implementation of these plans and adapt them as needed locally to be successful.

Sage-grouse Local Working Group boundaries.

Project Description:

The Sage-grouse Local Working Group (LWG) Locator is a web-based, geographically-linked database that describes Local Working Groups and what types of projects and conservation efforts have been identified in their area. The LWG Locator provides a central resource for LWGs and interested stakeholders to facilitate greater connectivity and information exchange throughout the region.

The LWG Locator is a place where LWGs can share information about their:

- accomplishments
- local success stories
- lessons learned
- photos from the field

Click on a state or province for more information about and contacts for Local Working Groups, or use the pull-down menu at the top of the page.

Download the fact sheet!

NBII in the News

■ The September 8 issue of *Science* magazine offered a write-up on the NBII Wildlife Disease Information Node's avian influenza monitoring site, which can be found at <http://wildlifedisease.nbii.gov/ai>. The brief article ("Flu on the Wing") was part of the magazine's "Netwatch" column <http://www.sciencemag.org/cgi/reprint/313/5792/1367e.pdf>, which provides glimpses of interesting science Web sites.



Photo credit: USFWS

■ An article in *Chattanooga.com* http://www.chattanooga.com/articles/article_94423.asp on October 11 titled "UTC Professors Secure Research Funding From U.S. Geological Survey"

mentions four research projects that will be conducted for the NBII Southern Appalachian Information Node by professors at the University of Tennessee – Chattanooga. Each project will utilize the school's Geographic Information Systems (GIS) lab.

■ On October 12, Art Chimes – the host and producer of "Our World," a weekly science and technology show broadcast internationally on Voice of America radio – interviewed Kate Kase, NBII program manager, and Annie Simpson, manager of the NBII Invasive Species Information Node, about the NBII and its features. Art's program includes a

segment on "Web site of the Week." The interview aired the following weekend to different time zones mainly in Asia, Africa, and the Middle East. The show is also available through the "Our World" Web site at <http://voanews.com/OurWorld>.

■ Dr. Michael Ruggiero, Director of the Integrated Taxonomic Information System – a vital NBII component – was interviewed for an article that appeared in the October 19 edition of the *Washington Post* titled "Pollinators' Decline Called Threat to Crops." The article looked at some of the consequences of the declining population of pollinators to plant life in North America and around the globe. The piece featured a quote of Dr. Ruggiero, an entomologist and expert in the field of pollinators.

Supporting Conservation Through Land Trusts

There are many land trusts (land conservation groups) in the Mid-Atlantic region. These groups acquire development rights through purchase or easement for the purpose of cultural preservation, green space protection, and ecological conservation. They especially target lands that provide conservation opportunities for preserving open space, but also complement existing protected land systems, support federal and state conservation programs, and preserve viewsheds from key recreation and historical locations.

Recently, the NBII Mid-Atlantic Information Node (MAIN) worked with the New River Land Trust in Virginia to develop an Internet-based mapping and decision-support system that allows members to identify lands that offer the greatest economy for meeting their – and cooperating agency – objectives.

Users can view spatial data layers and integrate land trust objectives with their own priorities. They can then make their own maps of lands that meet their highest priority for conservation. The Land Trust System allows users to display and query spatial information.

The second phase of the project, which is now complete, allows user input, weighting, and results to be displayed.

This interagency effort integrates biodiversity-related spatial data layers from the Virginia Natural Heritage Program with data sets from the U.S. Geological Survey (USGS), including the National Land Cover Data,



Photo credit: New River Land Trust

Landowners whose property contains streams, rivers, and wetlands are key partners in protecting land.

National Hydrography Data Set, and other layers that relate to development vulnerability. New data layers can be incorporated very easily as they are

identified. The application is intended to allow the primary audience, land trusts, to identify areas that offer the greatest conservation opportunities. While the tool was initially developed for the New River Land Trust, other land trusts have

expressed an interested in using it as well.

Feedback from the partner has been extremely positive: “This map of conservation lands will be a great help in focusing our work and even more in documenting why certain sites are so important... this final version will be so useful for efforts to save

more land,” said Elizabeth Obenshain, Executive Director, New River Land Trust.

MAIN is an NBII regional node encompassing Delaware, Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia. Its primary mission is to facilitate access to and use of the biological resource information that is available for the region.

Scientific and natural resource management professionals are active in the region, resulting in an abundance of data sets that are often computerized but not easily integrated into the public decision-making process. The node’s approach is focused on encouraging coordination and cooperation among these professionals in order to provide the tools for data sharing, integration, and visualization that support the management, conservation, and restoration of the region’s biological resources.

For more information on MAIN, contact Gabrielle Canonico, Node Manager, NBII National Program Office, by phone (703/648-4073) or e-mail <gcanonico@usgs.gov>. 



Photo credit: New River Land Trust

Virginia’s New River region offers abundant natural beauty.

Butterflies (continued from page 1)

has been popular with a wide range of users, attracting approximately 40,000 unique visitors per month. Garden enthusiasts, teachers, parents, amateur lepidopterists, and scientists are consulting the site to identify species, to search for life-history information, to generate checklists of species in their county or state, and to report new sightings. Since the site went live, MPIN staff members have responded to nearly 400 inquiries, suggestions for possible improvements, and other comments.

Partnerships between volunteer

state coordinators and MPIN are central to the ongoing data-collection effort. A team of three national coordinators, including renowned lepidopterist Dr. Paul A. Opler, works with the state coordinators to provide valuable quality control for data collection by reviewing submitted photographs and verifying species identification. Since the new site went live, approximately 1,600 new county records have been added to the database and additional sightings are added regularly.

With support from the NBII Program and MPIN, the Butterflies and Moths of North America team

is building partnerships with state coordinators, scientists, interested volunteers, and database managers. Long-term enhancements include finer-scale mapping of individual points for researchers to integrate with mapping and modeling software, incorporation of data from The Lepidopterists' Society, and collaboration with Discover Life to create an online identification guide. Sustainable connections with NBII partners will provide the long-term maintenance strategy necessary to ensure that up-to-date records will be available to researchers, educators, and the public. 

Upcoming NBII Metadata Events

The NBII Metadata Program has recently had some personnel changes:

Metadata Creation Assistance:

The NBII continues to offer metadata creation assistance for USGS Science Centers, NBII node partners, and other NBII partner organizations with a biological focus. For many years, Cheryl Solomon has been the contact for this service; but she has recently moved on to pursue other interests. The new metadata creation specialist is Arturo Restrepo, who has a strong background in biodiversity and ecology research. If you or your partner organizations need metadata creation services, contact Viv Hutchinson, NBII Metadata Coordinator, at <vhutchison@usgs.gov>, or contact Arturo directly at:

NASA (GCMD)
Biodiversity Informatics Coordinator
USGS-BRD Liaison
Phone: 301/352-4616
Fax: 301/352-0437
E-mail: restrepo@gcmd.nasa.gov

Metadata Training Workshops:

The NBII has been conducting metadata training workshops across the country for years. Terry Giles has been associated with many of those workshops; but Terry has recently taken a new position outside of USGS.

The new metadata trainer will be Tom Burley, who has spent much of the past few years working in association with the Southern Appalachian Information Node (SAIN). Tom, who is a GIS specialist, will continue to work for SAIN, but he will add metadata training workshops to his list of activities.

If you're interested in attending a metadata workshop or arranging one in your area, please contact Viv Hutchison <vhutchison@usgs.gov> for further information. In 2007 there will be at least four NBII metadata workshops in various locations.

Metadata Quality Assurance

(QA)/Quality Control (QC): This service is offered through the NBII for organizations requesting review of their metadata records before making them available on the NBII Clearinghouse. All records housed in the NBII Principal Node of the Clearinghouse are required to be reviewed through this service.

Many people have been familiar with Diane Schneider and Terry Giles at the Fort Collins Science Center in association with this service. Diane continues to oversee the quality control program, and the new contact at the Fort Collins

Science Center as of October 31, 2006, is Colin Talbert. Any records in need of QA/QC can be directed to <metadata_submission@usgs.gov>. Instructions for how to submit a record can be found at <http://www.nbii.gov/datainfo/metadata/clearinghouse/submitting.html>.

NBII Clearinghouse: The NBII Clearinghouse continues to be operated out of the Oak Ridge National Laboratory (ORNL) in Oak Ridge, TN, by the same great team: Tim Rhyne, Chris Lindsley, and Giri Palanisamy. New partner nodes are being added to the Clearinghouse all the time. If you or your partners are interested in contributing metadata records to the Clearinghouse, please contact Viv Hutchison for more information about the process.

Thanks for your interest in the updates to the NBII Metadata Program. There are many exciting things happening in the program, such as the development of the biological profile for the new ISO standard and the creation of an online metadata training program. Feel free to contact Viv Hutchison with any questions, comments, and suggestions you have for the program at <vhutchison@usgs.gov>. 

Do you have news about an invasive species project you'd like to share through this column? The Toolbox is a collection of useful items and highlights related to invasive species information management issues. Please send suggestions for Toolbox columns to <asimpson@usgs.gov> or <esellers@usgs.gov> and cc: the Access editor, <ron_seplic@usgs.gov>.

ISIN Calls for TDWG Invasive Species Information Management Interest Group

Annie Simpson, Invasive Species Information Node (ISIN) manager, has requested that the Taxonomic Databases Working Group (TDWG) convene an Invasive Species Information Management Interest Group. She has also submitted a draft charter to TDWG to develop standard computer-based mechanisms for expressing and transferring information about invasive species, including taxonomies, distributions, terminologies, descriptions, identification tools, pathways, invasiveness, management information, and associated resources, for use by the Global Invasive Species Information Network (GISIN) and the global invasive species science community in general. The topic was discussed at the TDWG annual meeting in St. Louis, MO, on October 14–22, 2006. The meeting also hosted a GISIN invasive species symposium on October 21. For more information about the GISIN symposium, go to <<http://www.gisinet.org/events.html>>.

New Version of Global Invasive Species Database Launched

September 2006 saw the launch of new content and functions for the Global Invasive Species Database

GLOBAL INVASIVE SPECIES DATABASE 100 OF THE WORST HOME

Standard Search Taxonomic Site Index

Species name Country or location Habitat Organism type GO

all all

WELCOME TO THE GLOBAL INVASIVE SPECIES DATABASE

LATEST ADDITIONS

Carpobrotus edulis	Phellinus noxius	Poecilia reticulata
Daphnia lumholzi	Lygodium japonicum	Mimosa pudica
Paratarchardina lobata	Ricinus communis	Mimosa diplotricha

The Global Invasive Species Database (GISD) aims to increase awareness about invasive alien species and to facilitate effective prevention and management activities. It is managed by the Invasive Species Specialist Group (ISSG) of the Species Survival Commission of the IUCN-World Conservation Union. The GISD was developed as part of the global initiative on invasive species led by the Global Invasive Species Programme (GISP) and is supported through partnerships with the National Biological Information Infrastructure, Manaaki Whenua-Landcare Research, the Critical Ecosystem Partnership Fund and the University of Auckland.

The Global Invasive Species Database focuses on invasive alien species that threaten native biodiversity and covers all taxonomic groups from micro-organisms to animals and plants in all ecosystems. Species information is either supplied by or reviewed by expert contributors from around the world. Administrative login. As the database is continually being populated with species information, please check back on a regular basis for updates. See the site index for more information. If you have questions or comments, please contact us.

The Global Invasive Species Database is managed by the Invasive Species Specialist Group (ISSG) of the IUCN Species Survival Commission. It was developed as part of the global initiative on invasive species led by the Global Invasive Species Programme (GISP) and is supported through partnerships with the National Biological Information Infrastructure, Manaaki Whenua-Landcare Research and the University of Auckland. Conditions of use.

(GISD), the world's premier source of free, authoritative information about introduced species that threaten native biodiversity and livelihoods. The GISD, which has been online at <<http://www.issg.org/database>> since 2000 and is mirrored by the NBI at <<http://www.invasivespecies.net/database>>, currently receives more than 900 unique visitors per day (50,000 hits daily). It is also available in CD-ROM format, allowing people to access up-to-date, comprehensive invasive species information even where Internet access is restricted or nonexistent.

National Institute of Invasive Species Science Announces Version 10 of the GODM

The Global Organism Detection and Monitoring (GODM) System is a sophisticated, real-time, online mapping system designed to map, monitor, and predict known and likely locations of invasive species globally. It is part of the National Institute of Invasive Species Science (NISS) at the USGS Fort Collins Science Center. Version 10 of GODM and the NISS

Web site are now available at <<http://www.niiss.org>>. Version 10 highlights include larger file download capability, tools to manage downloading files, improved spreadsheet creation tools, better job-management tools, Web service prototypes, and modeling prototypes.

Forest Inventory and Analysis Database Now Available

Developed by the U.S. Department of Agriculture Forest Service's Southern Research Station, the Forest Inventory and Analysis (SRSFIA) nonnative invasive plant database is a Web application with an emphasis on the delivery of occurrence information. The SRSFIA staff encourages stakeholder feedback. For comments, suggestions, and more specific data requests to be processed in an orderly and timely fashion, please route them first through the SRSFIA customer service representatives, who can be contacted via a link on the Web page <http://srsfia2.fs.fed.us/nonnative_invasive/Southern_Nonnative_Invasives.htm>.

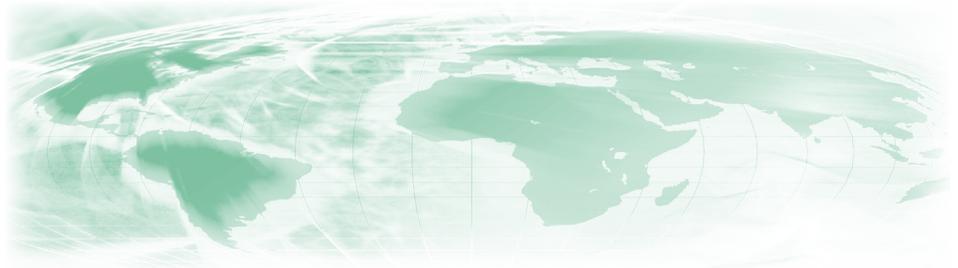
NBII Participates in Global Forestry Workshop

The Global Forest Information Service (GFIS), an initiative to provide high-quality digital forest data over the Internet, hosted a workshop in Beijing, China, October 10-12, 2006, at the Chinese Academy of Forestry.

The GFIS is an initiative of the Collaborative Partnership on Forests, led by the International Union of Forest Research Organizations. Dr. Toral Patel-Weynand, head of the International Bioinformatics Program for the Biological Informatics Office (BIO) at USGS, is a member of the GFIS Implementation group and serves as the Regional Coordinator for GFIS activities.

As USGS-BIO's contribution to the collaborative partnership effort, Viv Hutchinson, NBII's Metadata Coordinator, was invited to present on the value of metadata, federal standards, best practices, and ways in which the USGS-NBII Program will partner with GFIS to support their efforts to create and publish metadata records for information sharing and exchange. There were 33 participants in the workshop, representing 17 countries spanning Southeast Asia. Participants in the workshop were instructed in how to make their data available through GFIS by using data standards adopted by GFIS, such as Dublin Core, RSS (Really Simple Syndication), and the Federal Geographic Data Committee standard for describing geospatial and biological data sets.

The NBII joins the International Union of Forest Research Organizations, the Food and Agriculture Organization of the United Nations, the Center for International Forestry Research, the Center for Agriculture and Bioscience International, the International Tropical Timber Organization, and others in support of this international



data dissemination effort. Further background on the GFIS can be found at <http://www.gfis.net/>.

Coordination with PAIGH

The Pan-American Institute of Geography and History (PAIGH), a hemispheric network dedicated to promoting and strengthening the study and dissemination of cartographic and historic information in the Americas, has recently appointed Andrea Grosse of USGS-BIO and Larry Tieszen of the USGS EROS Data Center to serve four-year terms on the Committee on Institutional Strengthening and Technical Cooperation of PAIGH's Commission on Cartography.

PAIGH, a Specialized Organization of the Organization of American States founded in 1928, lists one of its primary goals as the provision and distribution of geospatially referenced data. A major task of the committee will be to develop and support small grant proposals to assist in coordinating this data in the Americas and to provide capacity building and training in the region. Andrea and Larry's nominations represent an opportunity for USGS and the NBII to help link biological and geographic data in the region and to support institutions in the Western Hemisphere through capacity building in biological informatics as it relates to the geosciences. It also represents another step toward increasing cooperation between PAIGH and the Inter-American Biodiversity Information Network (IABIN), sister institutions with comparable mandates to work with nations and institutions

throughout the Americas in their disciplines.

IABIN and PAIGH have collaborated in the past on a geospatial mapping initiative in Central America and are currently drafting a proposal to create a biological and geospatial center of excellence to bring together U.S. and Latin American geospatial experts and students. To learn more about PAIGH, go to <http://www.ipgh.org> or to the announcement of Andrea and Larry's nomination at http://www.ipgh.org/spanish/noticias-ipgh2006/2006-10-00_tieszen-grosse.htm (available in Spanish only).

ICDL Conference in New Delhi, India

USGS-BIO's Dr. Toral Patel-Weynand will present a paper at the International Conference on Digital Libraries (ICDL) in New Delhi, December 4-8, 2006. The conference is the second in a series of ICDL conferences and the 2006 theme, Digital Libraries: Information Management for Global Access, will focus on the creation, adoption, implementation, and utilization of digitized information. The presentation, titled "The National Biological Information and Infrastructure: A Distributed Biological Digital Library," will highlight a paper coauthored by Dr. Patel-Weynand; Gladys Cotter, USGS Associate Chief Biologist for Information; and Bonnie Carroll, President of Information International Associates, Inc. 

Upcoming Events of NBII Interest

Fishing Technology in the 21st Century: Integrating Fishing and Ecosystem Conservation. Boston, MA.	October 30–November 4	Sixty-seventh Midwest Fish and Wildlife Conference, Omaha, NE.	December 3–6
National Fisheries Data Summit, Salt Lake City, UT.	October 31–November 2	National Environmental Public Health Conference, Atlanta, GA.	December 4–6
American Society for Information Science and Technology 2006 Annual Conference, Austin, TX.	November 3–9	Data Warehouse Technologies in Bioinformatics, Wittenberg, Germany.	December 4–6
Sixtieth Annual Conference of the Southeastern Association of Fish and Wildlife Agencies, Norfolk, VA.	November 5–8	Fifty-seventh Annual Northwest Fish Culture Conference, Portland, OR.	December 4–6
Second Annual Coral Reef Conservation and Management Conference, Miami, FL.	November 8–9	Fourth Annual “One Medicine” Symposium, “Public Health, Agriculture, and Wildlife: The Common Thread,” Research Triangle Park, NC.	December 6–7
Third Annual Bird Flu Summit, Geneva, Switzerland.	November 14–15	National Conference on Coastal and Estuarine Habitat Restoration, New Orleans, LA.	December 9–15
Identification and Management of Invasive Terrestrial and Aquatic Plants Common to Coastal Mississippi, Gautier, MS.	November 16–17	Entomological Society of America’s Annual Meeting, Indianapolis, IN.	December 10–13
		2007 ESRI Federal User Conference, Washington, DC.	January 9–11



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