NBII: Searching for — and Finding — Solutions

As anyone knows who spends much time looking for information on the Web, searching is good, but finding is better — much better.

Earlier this year, it became clear that the principal National Biological Information Infrastructure (NBII) search capabilities weren’t as helpful as they needed to be. For instance, some users were having trouble finding the content they needed from our node pages.

What to do? The Search Engine Evaluation (SEE) team was set up in the NBII National Program Office to determine the requirements for a new NBII search engine and to look at what search engines were available from a variety of vendors. The team is headed by Jim Erwin, an NBII Senior System Architect. Additional team members include Nina Chkhenkeli, Mike Frame, Gail Hodge, Hugh O’Connor, Annette Olson, Tim Woods, and Lisa Zolly.

Currently, the SEE team is in the final stages of a long procurement process.

NBII Helps DoD Keep the Environment Healthy

The Department of Defense (DoD) commitment to protecting and preserving our national security is well-known. What may not be so well-known is that DoD is also a committed steward of the environment – and the NBII is glad to help DoD maintain that commitment.

The most recent example of the NBII-DoD partnership for the environment is a new Web site we host and support called the DoD Threatened and Endangered Species (TES) Document Repository <http://dodtes.nbii.gov>. The site went live over a year ago, with major revisions completed by October 1, 2008. It’s aimed at anyone interested in looking at information DoD has related to its high-priority threatened and endangered species. Repository users include researchers, land managers, policymakers, and the general public.

“There’s nothing else like it,” said Mike Frame, NBII Director of Research and Technology. “It’s the only Web site of its kind to offer data and information on threatened and endangered species of greatest interest to DoD. The effort truly demonstrates how a collaborative partnership between agencies can produce outstanding results.”

So how did this unique resource come about? DoD utilizes nearly 30 million acres of land as well as substantial waters and air space to conduct missions vital to national security. These areas provide habitat for a great diversity of plants and animals, some of which are found only in areas within DoD stewardship. Consequently, DoD personnel are responsible for managing an incredibly broad range of TES and species at risk. Of these, the repository focuses on 18 key TES (this number will grow in the months ahead).
NBII involvement grew out of our work with the Defense Environmental Program, sometimes referred to as Legacy (short for The Legacy Resource Management Program). Legacy supports the conservation and protection of the nation’s natural and cultural heritage, assisting DoD in protecting and enhancing resources while supporting military readiness. Through Legacy funds, the NBII and DoD partner HGL developed a number of improvements beyond the initial version of the DoD TES system.

NBII efforts have included overall software development; revising and updating the existing metadata standards; ensuring the system is fully compliant with federal information system Americans with Disabilities Act and National Institute of Standards and Technology security requirements; providing ongoing system maintenance, backup, and system administration technical support; and providing content manager training and user support to the designated DoD federal and contractor staff. The site is significantly leveraging the NBII’s investment in the Oracle Web Center (formerly Plumtree) Portal framework.

The site is easy to navigate. Just go to the box at the top left portion of the home page and you’ll see that users can search for repository documents by document type, keyword, species, or stressor (climate change, fire, habitat fragmentation or loss, invasives, military training, and wildlife disease) using simple drop-down menus. The ability to search full-text or via standardized metadata also exists.

Clicking on “document type” shows the range of documents available: abstracts, biological opinions, directives, environmental assessments, environmental impact studies, fact sheets, INRMPs (Integrated Natural Resource Management Plans), management plans, memoranda of understanding, profiles, summaries, surveys, and technical reports. Click one of those categories and document names pop up, along with related metadata. Click on the link to open the document itself.

To submit a document for inclusion in the repository, send an e-mail to <TESRepository@hgl.com> and the site administrator will respond with information to access the Input Tool.

“The NBII stepped in to help DoD build and create a Web-enabled repository that is available throughout the country,” said Frame. “Through our partnership, DoD is able to use an information infrastructure that’s already paid for by taxpayer dollars. We’re really pleased with that, and we think the site’s visitors will be very pleased with what they find.”

Access, the quarterly newsletter of the National Biological Information Infrastructure, is published by the NBII National Program Office.

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Visit the NBII Home Page at <www.nbii.gov>.
NBII Moving Toward Web 2.0 Technologies to Improve Access to Biological Content

Although there is no hard-and-fast definition of Web 2.0, it is generally considered to be a term describing a “second generation” of the Internet, one that is more interactive, modular, social, and service-oriented.

The interactive and social nature of Web 2.0 makes its application a natural fit for outreach, information sharing, and community building. By supporting user participation and information sharing, Web 2.0 turns Web sites into virtual communities.

The service-oriented architecture lends itself well to applications with flexible and dynamic content delivery, as well as for combining data from multiple sources and enhancing use of existing data. In August 2008, the NBII created a Web 2.0 working group to examine how Web 2.0 technologies can be employed to improve access to biodiversity information and coordinate the implementation of several new Web 2.0 technologies, such as:

- Developing a Web service for the NBII Resource Catalog Database, which contains more than 46,000 biological resources. This Web service would provide a mechanism for sharing this information within the NBII and through partner organizations more readily (see diagram).
- Developing a Web service for the NBII Digital Media Library, which contains more than 10,000 records of images and other media related to biological and natural resources information. A Web service will enable NBII and partner organizations to incorporate images into mashups and other Web 2.0 applications.
- Expanding and enhancing species profile mashups

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Tricolored Blackbird Portal Provides Data Entry, Access, and Sharing Capabilities

The tricolored blackbird (*Agelaius tricolor*), a bird of conservation concern, is nearly endemic to California. More than 95 percent of the world’s population resides in California with additional small numbers of birds in Oregon, Washington, Nevada, and Baja California. The males of these very social songbirds are mostly glossy black with a bright red shoulder patch and a prominent white wing bar beneath. These features distinguish the male tricolor from its much more widespread and abundant relative, the red-winged blackbird, which is not colonial, lacks the tricolor’s glossy plumage, and has an orange-red shoulder patch with a dull yellow wing bar.

Formerly most abundant in coastal marshes, the tricolor’s freshwater marsh breeding habitats have been reduced by conversion to agriculture and urban spaces. Now the tricolor’s largest breeding colonies are located in agricultural areas and the harvest of the grains used by tricolors often conflicts with breeding activities. The production of entire breeding efforts can be lost if the crops are harvested before the young are able to fly. Programs that provide funding to some affected landowners to delay harvest are in place, but longer-term strategies are needed to conserve the species.

The tricolored blackbird was selected in 2005 as a focal species under the U.S. Fish and Wildlife Service (USFWS) Focal Species Strategy <http://focalbirds.nbi.gov> as a result of severe population declines, habitat loss, and species vulnerability. This species represents one of 139 focal species identified in the strategy for which conservation planning and implementation will be undertaken to bring their populations to healthy or sustainable levels.

Under the strategy, the Tricolored Blackbird Working Group was formed as part of a voluntary process to conserve the species, with representatives from state and federal agencies, landowners, nonprofit groups, and academia. The working group produced a conservation plan in 2007 that describes four elements believed essential to conserve the species: conservation and management; research and monitoring; data storage and management; and education and outreach.

In partnership with the Tricolored Blackbird Working Group, the USFWS, and the University of California-Davis, the NBII provides support for development of the Tricolored Blackbird Portal <http://tricolor.ice.ucdavis.edu>. This Portal helps meet the goals set out in the Data Storage and Management section of the conservation plan.

The Tricolored Blackbird Portal provides access to current documented information related to the species’ life history and conservation actions, as well as access to reports, images, links to tricolors in the news, and descriptions of research and monitoring efforts. The Portal utilizes open-source applications, Drupal as the content-management system, and MySQL as the database back-end to enable the entry and documentation of existing legacy data related to the locations, sizes, nest substrates, and population size estimates of colonies.

The 150 volunteer participants in this year’s State-wide Tricolor Survey in California were able to enter the records of their observations via the Portal — the first time online data entry for a survey have been available. The site also utilizes an Application Programming Interface (API) for Google Maps to enable users to locate colonies. Data entered into the Portal are shared with state (California Department of Fish and Game), national (Avian Knowledge Network), and international (Global Biodiversity Information Facility) data-sharing efforts that are also supported by the NBII.

“The Portal is a great asset to tricolored blackbird conservation,” said Mike Green, USFWS.

Future enhancements to the site include moving from Google Maps to an open-source mapping tool, providing visualization tools to retrieve data, adding data on colony productivity estimates, and additional enhancements as suggested by site users.
activity to acquire our new search engine and oversee its implementation. As that process has moved forward, the team has come up with an interim search solution that is quick and inexpensive.

“The main thing,” says Erwin, “is that we wanted to keep our search capabilities simple and, at the same time, effective.”

The answer? Google has partnered with the NBII! Just go to the home page <www.nbii.gov> and look for the thin horizontal box near the top of the screen on the right. That’s the starting point for a “Google Custom Search.”

After only a few weeks of configuration and customization by the NBII in-house team, our Google Custom Search was launched in summer 2008. Under the new system, NBII search results are delivered in several categories:

- **NBII Web site** — Includes information from all the nodes as well as other NBII site content.
- **Metadata Clearinghouse** — Filters results for only the NBII Metadata Clearinghouse, which makes available over 40,000 metadata records contributed by 41 NBII partners. All the records are compliant with the Federal Geographic Data Committee’s “Content Standard for Digital Geospatial Metadata.”
- **Biology at Department of the Interior (DOI)** — Includes all other DOI records: U.S. Fish and Wildlife Service, National Park Service, Bureau of Reclamation, and so forth.
- **Related Content** — Lists all the other search results; i.e., everything that doesn’t include the NBII, the NBII Metadata Clearinghouse, and DOI biology.
- **Images** — Identifies graphics, primarily from the NBII Digital Image Library, but from other sources as well.
- **Back to All Results** — Shows all search results.

From the start, the Google Custom Search tool was envisioned as a temporary fix to our search engine problems, which is to say, it does have its drawbacks. The main problem is gaps in coverage. The SEE team knows it needs to make sure our new search engine fills those gaps and, at the same time, is easy to use.

Erwin says the main capability we’re missing now is “visualization,” which is best demonstrated through a search engine’s ability to “cluster” or group search results logically.

To see clustering in action, he recommends visiting the U.S. Government’s official Web portal <www.USA.gov> and doing a search.

“Then click on Topics, Agencies, or Sources,” he says. “Move on to whichever subtopic you like under each of those headings and it will bring up related results ranked hierarchically in terms of their helpfulness. Those are the kind of capabilities the new NBII search engine will provide, along with the ability to tie search results to whatever geographic parameters the user might supply.”

Erwin says the new search engine should be ready for launch in April 2009. User testing and focus groups will follow to ensure the new product meets our customers’ needs.
NBII-sponsored E-journal Emerges as a Leading Voice in Sustainability Science

Sustainability: Science, Practice, & Policy (SSPP) <http://ejournal.nbii.org> is a peer-reviewed, open access, online, academic publication for the cross-disciplinary study and discussion of sustainability. In spring 2005, the inaugural issue launched with an editorial by Harvard University Professor E. O. Wilson recognizing the journal’s role in “creating achievable sustainable practices through buy-in and consensus.” The editorial endorsed the journal’s goal to “establish a forum for forward-looking discussions on sustainability from experts trying to affect change.”

Subsequent journal issues have featured an international array of authors publishing on such topics as environmental decision making; forestry and water resource management; sustainable consumption, development, and conservation; urban planning; transportation; policy research; economics; ethics; telework; and hygiene. SSPP also includes Community Essays, Book Review Perspectives, and online moderated discussions via e-letters.

This indispensable publication is produced through an ambitious government/private industry partnership between the NBII and ProQuest-CSA <http://www.csa.com>.

In the past two years, SSPP has been increasingly identified within the literature as a leading sustainability science journal. In a recent article in Sustainability Science, SSPP was one of three core journals analyzed in a review of the current efforts in sustainability research (Kajikawa, 2008).

Although sustainability is still evolving as a research field, the foundation of SSPP’s progress and success is the dedication and cross-disciplinary expertise of its authors. In a single article, authors address the social, economic, political, and environmental interactions that provide solutions to sustainability problems. Work published in SSPP has already been cited in 23 academic journals and is clearly having an impact on the field of sustainability.

This online journal does not have a subscriber listing; however, more than 10,000 users visit SSPP each month and download almost 400 articles each day from the seven completed issues. More than 1,200 of these readers are registered for and receive new content e-mail alerts.

The efficient, online editorial process of SSPP enables accepted articles to be published within 24 hours after galleys are approved. The journal’s timetable is not constrained by production as in print journals, but the time needed to expertly review and edit an article is no different from other academic publications. From an international pool of referees, three individuals are secured to review submitted manuscripts and make a recommendation to the journal editor. SSPP currently holds a 63 percent rejection rate.

The journal is a professional platform for widely disseminating useful information and perspectives and, through open access to this knowledge, to facilitate consensus on the viability of new practices and policies. Are you reading or contributing to Sustainability: Science, Practice, & Policy?

For more information, contact Amy Forrester, Managing Editor, Sustainability: Science, Practice, & Policy, 7200 Wisconsin Avenue, Suite 601, Bethesda, MD 20814, USA; <amy.forrester@proquest.com>; 301/961-6722.

Literature referenced

A Successful Organization of Fish and Wildlife Information Managers (OFWIM) Conference in Albuquerque

The annual OFWIM conference was held October 27–30, 2008, in Albuquerque, NM. Approximately 60 people attended, including solid representation from the NBII. The NBII Program has supported OFWIM for many years, most prominently by investing volunteer time in the organization. This year a big congratulations goes to Jen Pollock, OFWIM’s newest President-elect, and Lisa Zolly, who begins her second term as Secretary! NBII leadership will also be found on various OFWIM committees in the coming year.

The success of OFWIM depends greatly on networking opportunities at the annual meeting and throughout the year. The 2007 conference was the first for a new member from West Virginia. He returned in 2008 having spent the past year reroxing his state’s State Wildlife Action Plan using technology approaches he learned about the year before. Stories such as these are why OFWIM continues to be successful — new ideas can continue to be shared through the OFWIM community, available to all members on the NBII Portal. Conference attendees were shown the capabilities of the Portal system this year, and they were encouraged to participate in discussion threads and other community activities between conferences.

The 2008 conference began with a field trip to the Sevilleta National Wildlife Refuge, just south of Albuquerque. It was led by Mike Friggens, an accomplished career ecologist. Over 20 people attended the day-long event. Time was spent visiting various ecosystems on the preserve and learning about Long Term Ecological Research monitoring projects, many of them spanning years in length, that are set up on the 220,000 acres of land.

The 2008 conference theme was “Using Innovative Technology to Move from Planning to Implementation.” William Michener, Associate Director of the Long Term Ecological Research Network office, launched the conference with a powerful keynote address about the state of data management today. Interesting presentations from a wide variety of speakers representing states, universities, and the federal government were given over three days. This year’s “Best Presentation Award” went to Joel Sartwell (Missouri Department of Conservation) for his talk, “Animal-borne Video Systems: Recent Developments for Terrestrial Conservation Research.” In addition, each year the OFWIM conference sponsors the popular “Hackers Ball,” during which posters are displayed and computers are set up for attendees to share projects with a more in-depth perspective than can be delivered in a presentation. This year’s winner of “Best Poster for 2008” was Beth Stys of the Florida Fish and Wildlife Conservation Commission.

Two Student Scholarship Awards were given this year by OFWIM.

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The success of OFWIM depends greatly on networking opportunities at the annual meeting and throughout the year.

A Successful Organization of Fish and Wildlife Information Managers (OFWIM) Conference in Albuquerque (continued from page 7)

Andrew Whittle, a master’s student at the University of Kentucky, attended the conference and presented his research on “Black Bear and Florida Panther Habitat and the Effects of Climate Change.” A second student, Tana Beus, from Western Washington University, also won the scholarship for her work studying mountain goat habitat in the North Cascades.

Student scholarships are important to the membership future of small professional organizations such as OFWIM. The conference gives students a chance to network and build important connections before they graduate and enter the job market. The hope is that students will continue to attend OFWIM meetings annually; to encourage this, one of the changes in the bylaws being reviewed is the initiation of a student rate for membership fees. For all others, membership in OFWIM is $25 per person/per year fee. Organizational memberships are also available (six members for $100). Information about becoming a member can be found on the Web site: <http://www.ofwim.org>.

Join us for the 2009 conference — in Seattle, WA!
The Community Resource Mapper (see Access, Spring 2008) has recently received a lot of favorable press. Articles include Chattanooga Times and Free Press, September 30, 2008, “Chattanooga: New Community Resource mapper to coalition to create,” and Chattanooga Times and Free Press, September 30, 2008, “University of Tennessee at Chattanooga helps map the future.” There was also an audio interview with Andy Carroll on the local newspaper Web site. The following links are to the news articles (one has the audio file posted) and a press release from the University. See <http://www.timesfreepress.com/news/2008/sep/30/university-tennessee-chattanooga-helps-map-future/>, <http://www.timesfreepress.com/news/2008/sep/30/chattanooga-new-community-resource-mapper-coalitio/>, and <http://www.utc.edu/Administration/UniversityRelations/news/2008/09/19/new-nnline-mapping-service-announced/>. In a nutshell, the Community Resource Mapper is a publicly available, geographical information system allowing land-use planners and resources managers to create maps at the county, watershed, or state levels. Examples of layers available for mapping include State Wildlife Action Plans, satellite imagery, impaired streams, and protected lands. This user-friendly visual tool was developed through a partnership with the Southeast Watershed Forum, the NBII Southern Appalachian Information Node, and the University of Tennessee-Chattanooga.

Jean Freeney, Node Manager of the NBII Southern Appalachian Information Node, was mentioned in an article in the October 19, 2008, edition of OakRidger.com, “TEEA annual statewide conference held” (see <http://www.oakrider.com/localnews/x398372072/TEEA-annual-statewide-conference-held>). The Tennessee Environmental Education Association (TEEA) conference was held in Oak Ridge, TN. More than 100 teachers, educators, and officials from throughout the state gathered for the event to learn better ways to teach environmental science in the classroom. Jean’s activities spotlighted USGS-NBII resources for the classroom and included a general overview of the NBII Web site. She highlighted our species pages, invasive species, amphibian decline, GAP, and the Metadata Clearinghouse. She also gave gift bags with the CDs of frog calls, data sheets, stickers, and images from our Record the Ribbit sponsored event (used as door prizes).

Tom Lahr, USGS Deputy Associate Chief Biologist for Information, is the subject of an article in the September-October 2008 edition of Marketing Library Services, titled “Lahr Named 2007 Federal Librarian of the Year.” The piece notes that Lahr received this honor from the Federal Library and Information Center Committee (FLICC) of the Library of Congress. FLICC paid tribute to Lahr and its other award winners at the 25th Annual FLICC Forum on Federal Information Policies, which was held September 12, 2008, at the Library of Congress in Washington, DC. Lahr, who serves as a senior manager in the USGS Biological Informatics Program — the home of the NBII National Program Office — has led the development of new ways to integrate and deliver information and has initiated and maintained USGS public and private partnerships with a wide variety of organizations.

The NBII is mentioned as a resource for information on pollinators in an article in the September 2, 2008, edition of The Press of Atlantic City, “Bee researchers turn to N.J. to solve colony collapse/Forsythe one of several refuges in bee survey.” The piece looks at work going on in northern New Jersey related

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Do you have news about an invasive species project you would 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 ideas or suggestions for Toolbox columns to <asimpson@usgs.gov> or <esellers@usgs.gov>.

**FAO Database on Introductions of Aquatic Species**

The Food and Agriculture Organization of the United Nations (FAO) offers an online database with records of aquatic species introduced or transferred from one country to another, including, where available, a description of the kinds of resulting impacts. This information began to be collected in the 1980s and the freely available online database now contains more than 5,500 records. The site also includes suggested codes of practice for aquatic species introductions. See <http://www.fao.org/fishery/dias> for more details.

**Pacific Basin Information Node Hosts 500+ Plant Risk Assessments**

The Pacific Island Ecosystems at Risk Web site provides access to more than 500 species-based weed risk assessments (potential invasiveness) for Australia and the Pacific region. The Pacific assessments, a modified version of the Australia and New Zealand model, are used to identify potentially harmful plant pests in Hawai‘i and other Pacific Islands. The results can be used to predict the likely invasiveness of a species in these areas and are NOT a field evaluation of the current distribution or impact of the species in Australia, Hawai‘i, or the Pacific Islands. The assessments along with comprehensive species profiles are accessible at <http://www.hear.org/pier/wralist.htm>.

**Delivering Alien Invasive Species Information for Europe (DAISIE) Expertise Database**

This ambitious project of the European Union is designed to provide a “one-stop shop” for information on biological invasions in Europe. Did you know that DAISIE’s expertise database accepts online submissions from invasive species experts from around the world? See <http://www.europe-aliens.org/expertSearch.do> for a search interface for experts. To submit information about your area of expertise, visit <http://daisie.ckff.si/>.

**NBII in the News (continued from page 9)**

- to colony collapse disorder, a phenomenon that killed about a quarter of the nation’s honey bee population in 2007. Honey bees support the nation’s $15 billion agriculture industry. Sam Droege, a biologist at the USGS Patuxent Wildlife Research Center, is quoted in the article at some length.
- The NBII Pollinators Project is also mentioned in an article in the August 6, 2008, edition of Midland Reporter-Telegram titled “Bring a picnic and learn aboutorny toads, butterflies, and other pollinators this Saturday” (see <http://www.mywesttexas.com/articles/2008/08/07/news/opinion/columns/burr_williams/burr_williams.txt>). The article alerted readers to an event at Sibley Nature Center giving attendees the opportunity to learn about some of West Texas’ favorite creatures — including, but not limited to, pollinators.
The Global Biodiversity Information Facility (GBIF) recently held the 15th meeting of its Governing Board in Arusha, Tanzania, November 1–7, 2008. The meeting began with a capacity-building training and node meeting for African GBIF node participants, encouraging greater participation by African governments and NGOs within GBIF and related organizations. GBIF’s Science, Rules, Budget, and Executive Committees then met to examine GBIF’s long-term regionalization strategy and refine its 2009–11 work plan.

Following the conclusion of these committee meetings, GBIF’s Governing Board, of which NBII Director Gladys Cotter is Vice Chair, discussed recommendations provided by the committees. GBIF has pledged to have one billion records online and searchable as part of its long-term goals, and the regionalization and capacity-building trainings GBIF is now undertaking in Africa and elsewhere are key components of its strategy to achieve this goal.

**Coordinated by the U.S. Geological Survey (USGS), the NBII is a broad, collaborative program to provide increased access to data and information on the nation’s biological resources. The NBII International Program participates in worldwide biological informatics activities that promote information sharing and infrastructure development across borders.**

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**Inter-American Biodiversity Information Network Holds Visioning Meeting to Refine Long-Term Organization**

The Executive Committee (IEC), Thematic Networks (TNs), Organization of American States (OAS) and other partners in the Inter-American Biodiversity Information Network (IABIN) recently met in Washington, DC, to discuss the long-term structure and priorities of the network. IABIN’s grant from the Global Environment Facility, “Building the Inter-American Biodiversity Information Network,” intended to form the infrastructure and collaborative backbone of the network, completes implementation in December 2009. Participants discussed a range of options for IABIN’s future.

IABIN will continue finalizing its long-term vision and sustainability strategy in the months ahead, and approve a revised five-year work plan and vision at the 2009 IABIN Council Meeting in the Dominican Republic.

For more information, please contact Ben Wheeler <bwheeler@usgs.gov>.

**NBII Presents at World Conservation Congress**

The NBII presented on and participated in a range of activities at the recent World Conservation Congress in Barcelona, Spain, organized by the International Union for Conservation of Nature (IUCN) October 5–14, 2008. Over 8,000 delegates from government agencies, non-government organizations (NGOs), universities, and business sectors attended the Congress to coordinate conservation activities across a wide range of disciplines and geographic regions.

NBII representatives John Mosesso and Annie Simpson attended the Congress and highlighted NBII and Gap Analysis Program (GAP) products and resources. Details of the USGS efforts to gather and disseminate information regarding the delineation, classification, and evaluation of protected areas in the United States were presented at the meeting.

Information on the joint USGS-Doris Duke Charitable Foundation effort to organize a U.S. consortium of protected areas experts and to develop a plan for expanding and enhancing the current Gap Analysis Stewardship data (i.e., protected areas database) was also shared with participants at the meeting.

The USGS also participated in symposia organized by the IUCN Species Survival Commission’s Invasive Species Specialist Group (ISSG) and at a special event session, the USGS participated in discussions of invasive species information management tools.

For more information, contact Annie Simpson <asimpson@usgs.gov> or John Mosesso <john_mosesso@usgs.gov>.

**Global Biodiversity Information Facility Holds 15th Governing Board Meeting**

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Attendees at the recent IABIN meeting held in Washington, DC.
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<th>Event</th>
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<tr>
<td>Symposium on the Ecology of Plague and its Effects on Wildlife, Fort Collins, CO.</td>
<td>November 4-6</td>
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<tr>
<td>Society of American Foresters 2008 National Convention, Reno-Tahoe, NV.</td>
<td>November 5-9</td>
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<td>35th Annual Conference on Ecosystems and Creation, Plant City, FL.</td>
<td>November 6-8</td>
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<td>The Wildlife Society 15th Annual Conference, Miami, FL.</td>
<td>November 8-12</td>
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<td>Bird Conservation Alliance Fall Meeting, Arlington, VA.</td>
<td>November 12</td>
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<tr>
<td>Kentucky Native Plant Society Fall Conference, Mammoth Cave National Park, KY.</td>
<td>November 14-15</td>
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<tr>
<td>15th Biennial Southern Silvicultural Research Conference, Hot Springs, AK.</td>
<td>November 17-20</td>
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<tr>
<td>Rocket City Geospatial Conference 2008, Huntsville, AL.</td>
<td>November 18-20</td>
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<tr>
<td>Online Guides to North American Bee Identification, Laurel, MD.</td>
<td>November 29</td>
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<tr>
<td>9th National Conference for Science, Policy, and the Environment, Washington, DC.</td>
<td>December 8-10</td>
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<tr>
<td>A Conference on Ecosystem Services (ACES), Naples, FL.</td>
<td>December 8-11</td>
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<tr>
<td>Society for Integrative and Comparative Biology Annual Meeting 2009, Boston, MA.</td>
<td>January 3-7</td>
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<tr>
<td>2009 Weed Science Society of America and Southern Weed Society Joint Meeting, Orlando, FL.</td>
<td>February 9-12</td>
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