

~ OFWIM 2003 Annual Meeting ~
September 25-29, 2003
Rapid City, SD

**GIS and Information Management for
Conservation Planning**

~~ Thursday, September 25 ~~

Conservation Planning: Setting the Stage (*Morning Session*)
Identifying and Mapping Species of Greatest Conservation Need (*Afternoon Session*)

~~ Friday, September 26 ~~

Identifying and Mapping Habitats of Greatest Conservation Need

~~ Saturday, September 27 ~~

Field Trips!

~~ Sunday, September 28 ~~

Session A (*Morning Session*)
Strategies for Species and Habitat Conservation and Monitoring

Session B (*Morning Session*)
Gap Analysis Program: A Course for Natural Resource Professionals - Part I

Session A (*Afternoon Session*)
Information Management and GIS Tools/Techniques

Session B (*Afternoon*)
Gap Analysis Program: A Course for Natural Resource Professionals - Part II

~~ Monday, September 29 ~~

OFWIM 2003 Business Meeting
(Includes 2004 Conference Planning Meeting)

~ Thursday, September 25 ~

**Welcome and
Opening Remarks**

**Conservation Planning:
Setting the Stage**

Becky Wajda

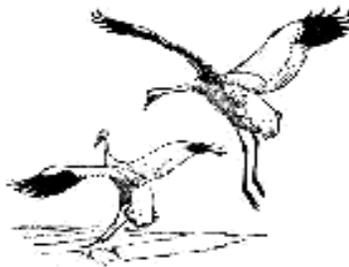
Virginia Department of Game and Inland Fisheries

Jeff Lerner

Defenders of Wildlife

Lori Scott

NatureServe



Comprehensive Wildlife Conservation Plans: Opportunities for Leadership

Rebecca K. Wajda

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Through Congressional appropriation of funding for the Wildlife Conservation and Restoration and State Wildlife Grants programs, the States, Territories, and District of Columbia have been presented with a unique opportunity. These appropriations not only provide much needed funding for conservation of a wide array of wildlife, but also require the recipient agencies to develop a comprehensive wildlife conservation plan/strategy by October 2005. In the development of this document, each agency will identify species of greatest conservation need and their habitats; threats to these resources; and strategies/actions for conservation.

One of the most important aspects of the process, however, is not found directly stated in any of the official documents. The development of the plan/strategy provides each fish and wildlife agency with an excellent opportunity to demonstrate leadership, not only in the planning and implementation of comprehensive wildlife conservation, but in the formation and strengthening of partnerships. Ideally, all aspects of the plan/strategy will draw on numerous information resources and mapping capabilities from within and outside of the agency. Data sharing and information exchange with partners and stakeholders will be lynchpins in the successful completion of the plan/strategy. Upon implementation, continued data sharing and information exchange will provide a solid foundation for monitoring and reporting the success of conservation actions and the adaptation of the strategies over time.

Biography:

Becky Wajda has been involved in wildlife information management for over 15 years. From 1988 to 1999, she was the manager of the wildlife information and GIS programs of the Virginia Department of Game and Inland Fisheries. She is currently the Assistant Director of the Department's Wildlife Diversity Division, advancing programs related to nongame and endangered wildlife, wildlife viewing, information management and GIS, exotic species, and assessing environmental impacts to wildlife and habitats. Becky is managing the development of the agency's Comprehensive Wildlife Conservation Plan, coordinating activities and interactions between biologists and other technical specialists, partners, and stakeholders to develop a common vision for wildlife conservation in Virginia. Becky has been an active member of OFWIM since its inception, serving as the first President of the Organization. She has also served as Member At-Large, web manager, Regional Coordinator, and as a member of the conference planning committees for the 1999-2002 annual conferences. Becky received a Master of Science degree in Fisheries and Wildlife Sciences (Wildlife option) from Virginia Tech in 1993 and a Bachelor of Science degree in Biology from the College of William and Mary in 1985.

Conservation Planning Overview

Jeff Lerner

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The State Wildlife Grant Program's Comprehensive Wildlife Conservation Plans are an exciting opportunity for the states but, to be truly successful, these plans must interface with other planning activities in the states and move beyond piecemeal opportunistic land conservation. Conservation plans are proliferating with the increasing use of GIS in the conservation community. Even before the State Wildlife Grants Program was developed, many states and regions had embarked on sophisticated planning efforts, sometimes with limited success. A review of the geographic extent of regional conservation planning efforts across the United States is provided, as well as the barriers to integrating these efforts with land-use planning, transportation, open space and agricultural programs. Habitat Conservation Plans under the Endangered Species Act will also be discussed, along with their increasing shift toward multi-species efforts, continuing problems and possible solutions.

Biography:

Jeff Lerner is the Conservation Planning Associate for Habitat Conservation Programs at Defenders of Wildlife. His responsibilities include researching the relationship between local land use planning and biodiversity planning, promoting state and regional conservation plans, and including habitat protection as a better-defined aspect of the smart growth agenda. Jeff also supports Defenders' conservation planning activities on public lands. He previously worked for The Nature Conservancy and NatureServe with biodiversity information from across North America. Jeff holds a MS in Conservation Biology from the University of Maryland and a BA in Zoology from Ohio Wesleyan University.

Biotics 4: A New Tool for Comprehensive Wildlife Planning

Lori Scott

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Comprehensive Wildlife Planning requires detailed information about the distribution, abundance, and condition of the species in greatest need of conservation and their habitats. As fish and wildlife information managers evaluate options for managing the data that will form the basis of their comprehensive wildlife plans, the Biotics 4 software is emerging as an important tool. Biotics 4 is the latest generation of software developed by NatureServe for use by the network of state natural heritage programs to map and track the status and location of species and their habitats. Since its release in November 2002, Biotics has been put into production in more than twenty states and provinces across the United States and Canada. The enhanced functionality, standardized data model, and improved spatial mapping standards offered by Biotics 4 allow states and provinces to easily share information and evaluate species status and distribution on regional, national and range-wide scales. This presentation illustrates (1) examples of data types that can be managed in Biotics 4, and how these data can be used to support the comprehensive wildlife planning process; and (2) practical information about how individual fish and wildlife organizations can collaborate with NatureServe and its natural heritage member programs to gain access to these data.

Biography:

Lori is a GIS Project Manager for NatureServe in Arlington, VA. Lori joined NatureServe's Information Division in May 2000. She is currently managing the rollout of the Biotics 4 software product to the NatureServe network of state natural heritage programs. Biotics 4 is the newest generation of NatureServe's biodiversity data management software. Lori received a BS in Mathematics from Bucknell University in 1987. Prior work experience includes ten years with the Lockheed Martin Corporation in the field of information systems development.

~ Thursday, September 25 ~

Identifying and Mapping Species of Greatest Conservation Need

*Shelly Miller and Adam Phelps
Virginia Department of Game and Inland Fisheries*

*Daniel Vichitbandha
Kentucky Department of Fish and Wildlife Resources*

*Beth Stys
Florida Fish and Wildlife Conservation Commission*

*Steve Benson
Minnesota Department of Natural Resources*

*Greg Krakow
Georgia Natural Heritage Program
Georgia Department of Natural Resources
Wildlife Resources Division*



A Process for Selecting Species of Greatest Conservation Need

Shelly Miller (Presenter)

Adam Phelps

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The State Wildlife Grant and Wildlife Conservation and Restoration programs require Virginia to develop a Comprehensive Wildlife Conservation Plan by October 2005. One of the first steps in this process is the selection of species of greatest conservation need. Due to the limited time availability, we decided to draw upon a wide range of existing conservation assessments to develop a relatively objective measure of conservation need. We selected existing lists of rare, imperiled, or endangered species that met certain criteria, including geographic scope, integration of unique information relative to other lists, and use of a thorough and widely accepted methodology. Species ranks assigned by each conservation assessment were assigned a score ranging from 4 to 10 (least to most need). The intent was to create scores that were consistent across lists and provided information about the relative rank of each species within each list. A *total score* for a species was calculated by summing all the scores derived from all conservation lists on which the species appears. Some species groups (such as birds) have had multiple conservation assessments. Therefore, in order to normalize scores across species, we developed a *potential score* for each species group. The *total score* was divided by the *potential score* to produce an *index of imperilment* for each species. Within each species group, species were divided into four tiers of imperilment using their index scores. We are currently incorporating expert review to this process.

Biography:

Shelly has been an aquatic ecologist with the Virginia Department of Game and Inland Fisheries for almost 4 years. She has worked on diverse projects including the development of GIS data and associated databases for anadromous fish, coldwater stream surveys, and threatened and endangered species waters. She is also coordinating a statewide aquatic gap analysis project and is a member of the Department's core working group for Virginia's Comprehensive Wildlife Conservation Plan. Her past work experience includes working for The Nature Conservancy and the West Virginia Department of Natural Resources. She earned a bachelor's degree from the College of William and Mary and a master's degree in ecology and evolution from the University of Pittsburgh. Beyond wildlife and conservation, Shelly's interests extend to travel, mountain biking, and hiking.

A Method for Digital Submission of Scientific Collection Permit Reports

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Scientific collection permit reports provide vital information on species distribution in Kentucky. Extracting species names and their location from paper reports is a time-consuming task even when the data is submitted in a digital file such as Excel via email. The Kentucky Department of Fish and Wildlife Resources (KDFWR) is developing a web application for users to submit scientific collection report data. Criteria needed to create a successful application include: (1) the to access a secure site via the Internet; (2) a user-friendly interface; (3) a non-proprietary data format; (4) validation of taxonomy and coordinates; and (5) verification of rare observations.

Biography:

Daniel is the GIS/Database Manager of the Fish and Wildlife Information System for KDFWR. He has been in the field of GIS for over 10 years. He started as a principal investigator at the U.S. Army Corps of Engineers Research Laboratory (CERL), then as a GIS programmer at Ogden Environmental and Energy Services. He has developed numerous Avenue applications and many GIS linkages to Web/SQL Server applications. Daniel received a MS in Geography from Murray State University in Kentucky.

Strategic Habitats for Biodiversity Conservation in Florida

Beth Stys

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Privately owned lands support a large portion of the biodiversity in some areas, but procedures for identifying those private lands critical to the maintenance of biodiversity vary tremendously.

Drawing from techniques recently developed in the fields of wildlife management and conservation biology, the Geographic Information System was used to assess the degree of security provided to rare species by the current system of conservation lands and to identify important habitat areas not currently protected.

We used habitat-based distribution maps in combination with population conservation goals to help identify strategic habitats on private lands in Florida. We used a vegetation map, occurrence data, and published life-history information to create habitat-based distribution maps for 179 rare taxa. The security of 130 of the taxa was estimated by overlaying public land boundaries on habitat maps and then estimating whether conservation lands satisfied a population goal of supporting at least 10 populations of approximately 200 breeding adults. The remaining taxa were evaluated in terms of number of occurrence records on conservation lands. Of the 179 taxa evaluated, existing conservation lands did not adequately protect 56.

Biography:

Beth is a wildlife biologist for the Florida Fish and Wildlife Conservation Commission. She has worked for the Commission within the Office of Environmental Services for over 11 years. Beth is currently working on a project to update the statewide land cover map of Florida. She has spent the last 3 years classifying and ground-truthing Landsat ETM+ imagery. With this phase of the project nearing completion, she will soon be working on a statewide change detection and updating wildlife species models. The final stage of the project will be a re-evaluation of the statewide conservation system and the security of wildlife species, rare plants, and plant communities. Beth received a Master of Science degree in Wildlife Biology from Mississippi State University (1992) and a BS in Wildlife Ecology from Texas A&M University (1988). She lives in Monticello, Florida, with her husband and son.

Estimating the Population and Range of Minnesota's Wolves

Steve Benson (Presenter)

Bill Berg

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During winter 1997-98, the Minnesota Department of Natural Resources (MN DNR) completed its comprehensive gray wolf (*Canis lupus*) population and distribution survey. The survey's objectives were to delineate changes in wolf range and population in preparation for delisting from the Federal Endangered Species Act and eventual management by MN DNR. In 1979, there was no digital analysis, and all calculations were done by hand. In 1989, data entry was digital and some GIS analyses were done for road and human density, cover type, and ownership, but much of the analyses were still done manually. During the 1998 survey, data entry and analyses were facilitated by ArcView and ARC/INFO software. The data consisted of 3,451 wolf and wolf sign observations.

Investigation compared road and human density, land use, ownership, ecoregion, and wolf management zones. Analyses showed that the wolf population of 2,450, residing in an expanded wolf range of 88,325 sq. km., was the highest ever for Minnesota. Wolves that now reside in areas identified by GIS 10 years ago as having too many roads and humans to support wolves attest to the specie's adaptability. GIS identified areas that may be colonized by wolf packs in the future.

Biography:

Steve is the GIS Coordinator for the Wildlife Division in the Minnesota Department of Natural Resources. The GIS program is staffed by seven people, and has a wide array of data management, applications development, research and user support functions, including:

- *Mapping 1.1 million acres of habitat spread over 1,300 Wildlife Management Areas (WMAs).*
- *Mapping harvest locations of Whitetail Deer samples tested for Chronic Wasting Disease (13,000 samples/year).*
- *Supporting interactive web mapping applications for WMAs and deer harvest information at www.dnr.state.mn.us*
- *Building and analyzing geographic databases of game harvest and populations, habitat features, refuges, acquisition potentials and wildlife depredations.*
- *Creating GIS applications to assist in forest planning/wildlife habitat planning.*

Steve has been a GIS professional since 1985, working in the Divisions of Forestry and Wildlife. He taught a GIS curriculum at Itasca Community College (Grand Rapids, MN) for four years. Steve received a BS in Forest Management from the University of Minnesota in 1980 and an AA in Architecture from North Hennepin (MN). Steve occupies his time with family, camping, teaching, bicycling, fishing, hunting and beer brewing.

GIS Algorithms Useful for Producing “Fuzzy” Rare Species Locations

Greg Krakow

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The Georgia Natural Heritage Program (GNHP) of Georgia DNR’s Wildlife Resources Division is responsible for helping to conserve Georgia's natural diversity of animals, plants and habitats. Part of this responsibility involves presenting information on rare species and significant natural communities in such a way that it can be used effectively for natural resources management. Because of data sensitivity issues, GNHP often provides the data with less locational precision than in its databases. To facilitate data conversions, a number of GIS scripts and extensions have been produced using the ArcView 3.x Avenue scripting language.

Biography:

Greg is Data Manager at Georgia Natural Heritage Program (GNHP), Wildlife Resources Division of Georgia DNR. GNHP is responsible for conserving and protecting Georgia's natural diversity of wild animals and plants and their habitats through research, management and public education. At GNHP, Greg manages the conservation databases and coordinates handling of information requests for this data. Government agencies, developers, conservation organizations, researchers and others use this data for project planning and habitat protection. To assist his efforts, Greg has programmed many ArcView GIS 3.x extensions that are now used at GNHP and many other agencies in and outside of Georgia. These ArcView extensions, as well as information about rare species and significant natural areas in Georgia are available on the Web at www.georgiawildlife.com under the “Nongame Animals & Plants” link.

Greg received his MS degree in Plant Systematics from The University of Georgia (1989) and his BS degree in Art (Biology minor) at Mercer University, Macon Georgia (1972). He lives with his wife in Athens, Georgia.

~ Friday, September 26 ~

Identifying and Mapping Habitats of Greatest Conservation Need

David Diamond, C. Diane True, and Taisia M. Gordon
Missouri Resource Assessment Partnership (MORAP)
University of Missouri
And
Walter E. Foster
U.S. Environmental Protection Agency (EPA)

C. Diane True
Missouri Resource Assessment Partnership (MORAP)
University of Missouri
And
Jane Fitzgerald
American Bird Conservancy

M. Keith Wethington
Kentucky Department of Fish and Wildlife Resources

Shelly Miller
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Shelaine Curd-Hetrick
National Biological Information Infrastructure
Southern Appalachian Information Node (SAIN)

Steve Benson
Minnesota Department of Natural Resources

Nan Hong, Ariena H.C. Van Bruggen, and John Stuver
North Carolina State University

Rebecca K. Wajda
Virginia Department of Game and Inland Fisheries

Mike Sweet
U.S. Fish and Wildlife Service, Federal Aid Division

Mapping and Ranking Conservation Opportunity Areas for the Lower Midwest Using GIS

David Diamond (*Presenter*)

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We used GIS to identify conservation opportunity areas (OAs) for the lower Midwest (IA, KS, MO, NE) using land cover and roads data. OAs are areas of natural and semi-natural vegetation that are away from roads and away from habitat patch edges. We ranked OA polygons for importance in several ecoregions of the northeastern Ozark Highlands using five different conservation targets including patch size, landform representation (from digital elevation model-derived landforms), total vertebrate diversity (from Gap Analysis data), target bird diversity (from Missouri Breeding Bird Atlas data), and target land cover type (from a detailed, satellite-derived land cover classification). We selected top priority OAs for each target until a threshold of 25% of the study area was represented. Perceived top priorities by conservation target generally do not overlap more than would be expected at random. Only 1.6% of the study area was selected as high priority by all five targets. Thus, perceived priorities depend on the conservation target of concern, and few areas are high priority for many targets. Workers should carefully evaluate priority targets for assessments, and may not want to rely on GIS assessments that simply 'stack' results from many separate analyses.

Biography:

David D. Diamond has more than 35 publications in ecology and conservation biology. From the study of grasslands, he moved toward the study of plant communities and wrote the first classification of plant communities for Texas. He helped draft the initial Thematic Mapper Remote Sensing-based land cover classification for Texas, and moved to Missouri where he worked as team leader for the interagency group that provided the first statewide land cover classification. He has held many posts in professional organizations, including President of the Texas Chapter of the Society for Conservation Biology (founding president), President of the Native Prairies Association of Texas (founding president), Chair of the Communities Committee of the Texas Organization for Endangered Species (founding chair), Director for the Board of Governors of the Texas Academy of Science, Conservation Committee Chair of the Southwestern Association of Naturalists, and Chair of the Resolutions Committee for the Wildlife Society. He is currently Director of the Missouri Resource Assessment Partnership (MoRAP) in Columbia, Missouri. MoRAP focuses on application of GIS and Remote Sensing to address natural resource conservation and management concerns across multiple state and federal agencies and non-government organizations in the Midwest.

Using GIS to Develop a Conservation Plan for the Central Hardwoods Bird Conservation Region

C. Diane True (*Presenter*)

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Jane Fitzgerald

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The Central Hardwoods Bird Conservation Region (BCR) straddles the Mississippi River between Illinois and Missouri. Although the native ecosystems have largely been lost or are now severely degraded, the BCR's priority bird species can be grouped into species suites affiliated with four general habitat types: grassland, grass-shrubland, woodland-forest, and wetlands.

One step of many in the process of planning for bird conservation requires the identification of specific areas where the region's priority bird species can receive conservation attention in a coordinated and focused manner. Without a geographic focus, conservation efforts would be more likely to proceed in a "shotgun" fashion, and the dilution of effort could render actions undertaken and money spent ineffective and insufficient to achieve conservation goals. There was, therefore, a need to find the best places to protect or restore grassland, grass-shrubland, forest and wetland ecosystems where conservation work would have the greatest chance of success.

Biography:

Diane first became interested in geography when she was teaching elementary and junior high history and earth science in Texas. She attended a summer program for teachers presented by the National Geographic Society at Texas A&M University. This encouraged her to work on a master's degree in geography at TAMU (thesis: A Comparison of Land Use/Land Cover and Water Quality of the Navasota River Basin, Texas). A Digital Image Processing class piqued her interest in computers and geography, and she started a summer job at the Mapping Sciences Laboratory as a GIS Technician. The next year she became leader of a fire hazard mapping project for the Texas Forest Service. A few years - and several projects - later, the Missouri Resource Assessment Partnership (MoRAP) offered her a job as GIS Coordinator. As GIS Coordinator, Diane mainly functions as technical consultant and production manager. She works with the various MoRAP agencies to iron out the technical details for projects and writes programs to simplify the data development process. Once the standard operating procedures have been developed, she trains others and updates the processes as necessary. Diane also coordinates among and between the respective MoRAP agencies by initiating Technical Committee meetings and special sub-committee meetings as needed. However, she endeavors to find time to produce artful maps whenever possible.

The Role of GAP Data and GIS Modeling Techniques in Developing a Comprehensive Plan for State and Tribal Wildlife Grants

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The State and Tribal Wildlife Grants (STWG) program has a long legislative history with the aim of making Federal funds available to state fish and wildlife agencies for conservation work. This legislative history includes initiatives such as Teaming with Wildlife, Conservation and Reinvestment Act, and the Wildlife Conservation and Restoration Program. In its present form STWG dollars are made available to the States based upon land area and population. The legislation directs that these appropriations be aimed at “species of greatest conservation need”. In order to access STWG monies, the States must commit to developing a Comprehensive Wildlife Conservation Plan. In Kentucky, GAP data products and GIS modeling have been essential components used to develop the Plan.

One goal of the Kentucky STWG Planning Team was to identify specific areas supporting animals in need of conservation. A species-weighting matrix was developed from NatureServe G and S ranks that allowed each species to be assigned a score reflective of rarity in Kentucky. GAP predicted animal distributions were used as one layer in our model to compensate for the lack of known occurrences. These animal distribution models were recoded, assigned a score from the weighting matrix, and summed using ESRI’s Spatial Analyst extension. The resulting predicted animal rarity layer was used in conjunction with other datasets to begin the process of identifying discreet geographic units in need of conservation efforts.

Biography:

Keith is supervisor of the Fish & Wildlife Information System for the Kentucky Department of Fish & Wildlife Resources (KDFWR). He is responsible for implementation of GIS into the Department and supervises the development of species distribution database and web site (www.kfwis.state.ky.us). He has participated in several conservation initiatives including principal investigator for the Kentucky GAP Analysis Project, team member on the Copperbelly Watersnake Conservation Agreement, and currently a member of the KY STWG Conservation Planning Team. He has been with KDFWR since 1996, first as a Wildlife Biologist reviewing coal mining permits and reclamation plans and began his current position in 1998. Keith received a BS in Biology from Murray State University, a MS in Geography from Oklahoma State University, and a MA in Science Education from the University of Kentucky.

Development of a Multi-level Aquatic Habitat Classification in Virginia and Its Use in Aquatic GAP and Conservation Planning

Shelly Miller

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The Virginia Department of Game and Inland Fisheries recently completed a classification scheme for aquatic habitats in Virginia. The most general level of the classification is the ecological drainage unit. This level combines drainage and physiography to describe units with landscape, geological, and biogeographical similarities. The next focus of our efforts was the development of a stream reach classification using GIS data and tool sets. Our classification scheme incorporates concepts and techniques from the Aquatic Gap Analysis Program and The Nature Conservancy. The classification uses the USGS National Hydrography Dataset (NHD) at 1:100,000 scale. These data were modified and attributed with characteristics identified as biologically relevant by a team of regional experts. Attributes include size, connectivity, and gradient. These attributes were then grouped into classes and subsequently combined to create stream habitat types. More recently, we decided to delineate and to classify watersheds. Watersheds were delineated using hydrologic modeling tools and the National Elevation Dataset (NED). Watersheds were then attributed with data representing geology, wetland abundance, spring abundance, and several size and shape characteristics. These classifications provide valuable and much needed methods to catalog and to assess aquatic habitat abundance and distribution. These data will be used in Virginia's aquatic gap analysis to model species distributions and as a unit on which to assess habitat quality. They will also be used in the development of Virginia's Comprehensive Wildlife Conservation Plan as descriptors of aquatic habitats and subsequently to assess rarity and quality of those habitats.

Biography:

Shelly has been an aquatic ecologist with the Virginia Department of Game and Inland Fisheries for almost 4 years. She has worked on diverse projects including the development of GIS data and associated databases for anadromous fish, coldwater stream surveys, and threatened and endangered species waters. She is also coordinating a statewide aquatic gap analysis project and is a member of the Department's core working group for Virginia's Comprehensive Wildlife Conservation Plan. Her past work experiences include working for The Nature Conservancy and the West Virginia Department of Natural Resources. She earned a bachelor's degree from the College of William and Mary and a master's degree in ecology and evolution from the University of Pittsburgh. Beyond wildlife and conservation, Shelly's interests extend to travel, mountain biking, and hiking.

Retrieving Little Tennessee Watershed Data for Conservation Use

Shelaine Curd-Hetrick

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The National Biological Information Infrastructure (NBII) www.nbii.gov is a broad, collaborative program to increase access to U.S. biological resources data and information. The NBII network has regional and thematic nodes including the Southern Appalachian Information Node (NBII-SAIN). SAIN encourages partnerships that improve information exchange for research, education, and environmental decision-making.

As part of that mission, SAIN and its partners identify data for retrieval and assist in making that data accessible to the user. The SAMAB (Southern Appalachian Man and the Biosphere) Appalachian Volunteer Environmental Monitoring (SAVEM) Project identified a continuing study on the Upper Little Tennessee River Watershed. The Little Tennessee Watershed Association (LTWA)'s Little Tennessee River Bio-monitoring Project data was collected and used to calculate an Index for Biotic Integrity (IBI).

An interactive map which shows (1) water quality from a biological perspective for stream stretches and (2) specific sampling points is currently available through the NBII-SAIN web site. Currently, an online input tool to enable direct user access is being developed to smoothly and efficiently continue this work.

The above was produced collaboratively by: Asociación ANAI (www.anaicr.org), Information International Associates (www.infointl.com), Little Tennessee Watershed Association (www.ltwaa.org), NBII-SAIN (sain.nbii.gov), SAMAB (samab.org), Sunsite (sunsite.utk.edu), TVA (www.tva.gov), University of Tennessee (www.utk.edu).

Biography:

Shelaine Curd-Hetrick is the Biodiversity and Ecosystems Informatics Specialist for the Southern Appalachian Information Node of the National Biological Information Infrastructure (NBII-SAIN). She is employed by Information International Associates, Inc. (IIa). Shelaine facilitates partnership development between regional, local, and individual resources. She works with data providers to disseminate their data collections and information through NBII-SAIN. She conducts data quality and data conversion activities following established standards and assists in the development of metadata. She has been with IIa since January 2001 and an active member of OFWIM since 2002. She received her Masters of Science in Applied Ecology and Conservation Biology from Frostburg State University (1996) and a BS in Computer Science and Statistics with a second major in Biology from Roanoke College (1991). She and her husband live in Oak Ridge, Tennessee.

Minnesota Wildlife Management Area GIS Program

Steve Benson

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The Department of Natural Resources (DNR), Wildlife Division administers 1.1 million acres of public lands within the Wildlife Management Area (WMA) system. These areas are managed to provide high quality wildlife habitat and access to public recreation, and are extensively used by hunters, hikers, birders and other nature enthusiasts. WMAs are spread across all of Minnesota's 87 counties, but are most prevalent in farmland areas.

The Division of Wildlife has long had a need for mapping and managing data on WMAs, both for use in management planning and for public information. The WMAGIS project was begun to address these data needs.

The features being mapped statewide include unit boundaries, facilities and vegetation. Applications developed within the DNR are being used to assist field staff in mapping and populating various databases. These databases are further being used to assess habitat needs, aid work planning and detailed cost projections.

While this data generation assists wildlife managers in their work, it also provides information to build a comprehensive web site for the public to access information on WMAs. This talk will cover the successes and pitfalls in the project, and how resource managers and the public are using and will use the system.

Biography:

Steve is the GIS Coordinator for the Wildlife Division in the Minnesota Department of Natural Resources. The GIS program is staffed by seven people, and has a wide array of data management, applications development, research and user support functions, including:

- *Mapping 1.1 million acres of habitat spread over 1,300 Wildlife Management Areas (WMAs).*
- *Mapping harvest locations of Whitetail Deer samples tested for Chronic Wasting Disease (13,000 samples/year).*
- *Supporting interactive web mapping applications for WMAs and deer harvest information at www.dnr.state.mn.us*
- *Building and analyzing geographic databases of game harvest and populations, habitat features, refuges, acquisition potentials and wildlife deprecations.*
- *Creating GIS applications to assist in forest planning/wildlife habitat planning.*

Steve has been a GIS professional since 1985, working in the Divisions of Forestry and Wildlife. He taught a GIS curriculum at Itasca Community College (Grand Rapids, MN) for four years. Steve received a BS in Forest Management from the University of Minnesota in 1980 and an AA in

Architecture from North Hennepin (MN). Steve occupies his time with family, camping, teaching, bicycling, fishing, hunting and beer brewing.

GIS Analysis of Spatial Pattern of Skylark Territories in an Organic Farmland Landscape

Nan Hong (*Presenter*)

Ariena H.C. Van Bruggen

John Stuiver

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The spatial pattern of breeding skylark (*Alauda arvensis*) territories was studied using GIS in an organic farmland landscape in the province Flevoland in the Netherlands. The skylark territory distribution exhibited a non-random, clustered spatial pattern during the whole breeding season. The shortest distances from the center of each skylark territory to the crop border, semi-natural strips, field center, treeline or hedgerow, farmyard boundary, early- and late-mowed canals were compared. At the field-scale, skylarks tended to hold territories towards the field border. Skylarks showed a preference for crop-to-crop borders as opposed to borders with semi-natural strips. The sequence of avoidance of skylark territories was farmyard > tree line or hedgerow > farm road or street. Skylarks preferred ley pasture where the highest territory densities were located. The lowest territory density was in permanent pasture suggesting that skylarks avoided this habitat. Weak preference was found for cereals and weak avoidance for vegetables and root crops. Within farms, skylark territory density was negatively correlated with the length of semi-natural strips with and without treeline or hedgerow. The establishment of semi-natural grassy strips did not improve skylark territory density within farms, confirming that skylarks have affinities for crop vegetation over semi-natural strips.

Focus Group I: Overview of Terrestrial Habitat Classification Systems

Rebecca K. Wajda (*Presenter*)

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Donald L. Schrupp (*Moderator*)

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Under the Wildlife Conservation and Restoration and State Wildlife Grants Programs, state wildlife agencies are required to address a number of issues related to the distribution and condition of wildlife and habitats in their respective states through the development of a Comprehensive Wildlife Conservation Plan/Strategy. Specifically, after identifying species of greatest conservation need, the plans should identify “the extent and condition of wildlife habitats and community types essential to [the] conservation of [these] species.” This element may be addressed using one or more of a variety of habitat classification systems. When evaluating these options, managers should clearly understand the characteristics of a good classification scheme, appropriate scales of use, and other considerations, such as relationship to existing species-habitat associations. A thorough evaluation should also include an assessment of the specific purposes and intended uses of each classification system, the extent and availability of geospatial data, and the currency of the data.

The Colorado Division of Wildlife anticipates adapting tools developed previously for the identification of wildlife habitat resources targeted for protection under earlier land use planning efforts, environmental impact review and natural resource management programs. Wildlife habitat affinities from the Colorado Wildlife Species Database were refined for the initial Colorado Gap Analysis Program and are undergoing further refinement for Southwest Regional Gap Analysis efforts, but need to be linked via crosswalks for use with developmental land cover datasets to project habitat / species distributions. While the Colorado Vegetation Classification Project scheme has evolved through land manager involvement, Division staffs are also likely to consider potential natural vegetation aspects as presented by the (U.S.) National Vegetation Classification Scheme alliance-based classification and the companion Ecological Systems work supported by NatureServe, being fostered through NatureServe for the National Gap Analysis Program. The Division is developing regionally generalized ecological models, but is considering options to make them locally explicit to geographical sub-regions. Weighting values for some spatial modeling efforts may benefit from metrics provided through the Colorado Vertebrate Ranking System.

The Virginia Department of Game and Inland Fisheries is taking a generally similar approach, evaluating the tabular wildlife habitat relationships information compiled in the Virginia Fish and Wildlife Information System and habitat classifications available through digital national and regional habitat coverages, and developing appropriate crosswalks. The assessment of the condition of current habitats will be based on a variety of factors modeling changes over time.

Biography: Rebecca Wajda

Becky Wajda has been involved in wildlife information management for over 15 years. From 1988 to 1999, she was the manager of the wildlife information and GIS programs of the Virginia Department of Game and Inland Fisheries. She is currently the Assistant Director of the Department's Wildlife Diversity Division, advancing programs related to nongame and endangered wildlife, wildlife viewing, information management and GIS, exotic species, and assessing environmental impacts to wildlife and habitats. Becky is managing the development of the agency's Comprehensive Wildlife Conservation Plan, coordinating activities and interactions between biologists and other technical specialists, partners, and stakeholders to develop a common vision for wildlife conservation in Virginia. For the past five years, she has also developed and managed the Web site for the Department. Becky has been an active member of OFWIM since its inception, serving as the first President of the Organization. She has also served as Member At-Large, web manager, Regional Coordinator, and as a member of the conference planning committees for the 1999-2002 annual conferences. Becky received a Master of Science degree in Fisheries and Wildlife Sciences (Wildlife option) from Virginia Tech in 1993 and a Bachelor of Science degree in Biology from the College of William and Mary in 1985.

Biography: Donald Schrupp

Don is the Wildlife Inventory Coordinator in the Habitat Section for the Colorado Division of Wildlife. Don has overseen development of the Division's GIS-based Wildlife Resource Information System (WRIS; early 1970's), the Colorado Wildlife Species Database (CWSDB; early 1980's), the Scientific Collections Permit Database (SCICOLL), and initiation of the Division's Colorado Vegetation Classification Project (CVCP; early 1990's). He has served as Colorado's Principal Investigator for the Colorado Gap Analysis Project (COGAP) [<http://ndis1.nrel.colostate.edu/cogap/>], as well as being Principal Investigator for the Colorado Ecoregional Component of the Southwest Regional Gap Analysis Project (SW-ReGAP). Don has been a collaborator in development of the Division's Natural Diversity Information Source (NDIS) [<http://ndis1.nrel.colostate.edu/>] and other database/web applications at the CDOW. Professionally, Don belongs to The Wildlife Society, The Society for Conservation Biology, The American Society of Photogrammetry and Remote Sensing, the United States Regional Association of the International Association for Landscape Ecology, and the Organization of Fish & Wildlife Information Managers. He is a past-president of OFWIM, and is currently the Southwest Regional Contact for OFWIM, in addition to being the 'unofficial OFWIM WebMaster for 2003-04. Don received his Bachelor of Science degree in Wildlife Biology (Research Option) from Colorado State University (1972) and his Master of Science degree in Wildlife Biology from Colorado State University (1989). Don lives in a seemingly abandoned Victorian home in Denver, Colorado, and enjoys fishing, hunting, camping, motorcycle touring, and an occasional bluegrass festival.

U.S. Fish and Wildlife Service: Federal Aid and Conservation Planning

Mike Sweet

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The U.S. Fish and Wildlife Service Division of Federal Aid has a unique role in the development of Comprehensive Wildlife Conservation Plans. It does not prepare the Plans nor does it identify priorities for actions or species that should be considered in greatest need for conservation actions. However, it has provided leadership in developing administrative regulations for managing the grant programs which may fund development of the plans and is responsible for ensuring compliance with various regulations and laws. It has also provided advice, counsel, staff support, funding and coordination while states organize, plan for and develop their Plans.

The Division administers the two grant programs that were authorized to fund development of the Plans and related wildlife conservation efforts. Regulations and various forms of written guidance and training are available to assist with the development of grant proposals. Sources of information and general guidelines for developing a grant proposal will be provided as well as an opportunity to discuss ideas and questions.

Biography:

Mike is a biologist for the U.S. Fish and Wildlife Service (Service) in the Federal Aid Division where he has worked for nearly five years. He is the principal contact in the Service's eight-state Region 3 for the Wildlife Conservation and Restoration (WCR), State Wildlife Grant (SWG2; formula grants) and State Wildlife Grant (SWG1; national competitive) programs and administers the grants processes for most projects funded through these programs. He participated in developing administrative procedures for implementation of the WCR, SWG2 and Landowner Incentive programs and has been a developer and instructor of Federal Aid training courses. Prior to working for the Service, he was the federal aid coordinator in Illinois, endangered species coordinator and natural heritage program coordinator for the Missouri Department of Conservation, endangered species coordinator for the Illinois Department of Conservation (now the DNR) and researcher for Southern Illinois University-Carbondale. Mike received a Master of Arts in Zoology with emphasis in wildlife ecology from Southern Illinois University-Carbondale (1976) and Bachelor of Science in Zoology from Northern Illinois University-DeKalb (1972). He lives in Lakeville, Minnesota.

~ *Sunday, September 28* ~

Session A: Strategies for Species and Habitat Conservation and Monitoring

*Jeff Lerner
Defenders of Wildlife*

*Aliya Ercelawn
The Nature Conservancy
Texas Field Office*

*Jon Haufler
Ecosystem Management Resource Institute (EMRI)*

Session B: Gap Analysis Program: A Course for Natural Resource Professionals, Part I*

*Instructors: Andy Rosenberger and Scott Klopfer
Conservation Management Institute*

* Sponsored by the U.S. Geological Survey, National Gap Analysis Program; U.S. Fish and Wildlife Service, National Conservation Training Center; and Conservation Management Institute.



Conservation Planning Overview

Jeff Lerner

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Defenders of Wildlife, working with conservation partners in the state developed the Oregon Biodiversity Project in 1994. The Project produced a conservation assessment and strategy for the entire state, which identified Conservation Opportunity Areas in each of the state's 10 ecoregions. Getting to that point included using a biodiversity management rating system that provides a useful tool for assessing biodiversity and can be used in the implementation process. Since the assessment was completed in 1998, Defenders and others have been working on various aspects of implementation, which include not only land protection and stewardship, but also outreach, involvement in other planning efforts and even policy changes.

Biography:

Jeff Lerner is the Conservation Planning Associate for Habitat Conservation Programs at Defenders of Wildlife. His responsibilities include researching the relationship between local land use planning and biodiversity planning, promoting state and regional conservation plans, and including habitat protection as a better-defined aspect of the smart growth agenda. Jeff also supports Defenders' conservation planning activities on public lands. He previously worked for The Nature Conservancy and NatureServe with biodiversity information from across North America. Jeff holds a MS in Conservation Biology from the University of Maryland, and a BA in Zoology from Ohio Wesleyan University.

Data Management for Ecoregional Planning: The Nature Conservancy's New Approach

Aliya Ercelawn

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In the past, science staff from each state chapter of The Nature Conservancy (TNC) developed and used their own systems for managing data that were collected for each step of the conservation planning process. In an effort to standardize the data management tools that are used across the organization, the Technology and Information Systems staff have been working with TNC scientists and planners to produce the Conservation Planning Tool (CPT). CPT is a Microsoft Access based application that is now available to all TNC staff. It ensures that data and methodology are organized in a manner that can be consistently shared within the organization and with other external interested parties. CPT is still being fine-tuned, but it currently includes a set of related tables and user-friendly forms that are used during the process of assessing ecoregions and designing portfolios of conservation areas. The database is designed to house information on: 1) ownership patterns and administrative divisions in the ecoregion of interest; 2) the abundance, quality, and distribution of a representative subset of biodiversity in the region, 3) threats and strategies for addressing those threats, and 4) contact information for experts contacted during the planning process. Future plans for improving the database include adding geo-spatial components and modules for measuring conservation success, as well as making the database available in other languages.

Biography:

Aliya Ercelawn began working as the Conservation Planner for the Texas Field Office of The Nature Conservancy in November 2002. She coordinates ecoregional data management for the South Central Division of The Nature Conservancy and is actively involved in all facets of ecoregional planning within Texas. She received her master's degree in Environmental Studies from the Yale School of Forestry and Environmental Studies, where she focused on community-base conservation and landscape-scale planning. Her graduate research took her to Liberia where she led a rapid assessment of sea turtle nesting patterns, threats to the populations, and opportunities for conservation in conjunction with a local NGO. Her work experiences outside of TNC include conducting surveys for The National Park Service in Florida and teaching natural history to school children in Minnesota.

Focus Group II: Strategies and Performance Measures for Comprehensive Conservation Plans

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Comprehensive wildlife plans should provide for the conservation of all native species in an area. This goal is often stated more broadly as the conservation of biodiversity. The challenge is to identify approaches and methods to practically and effectively accomplish this goal. Planning for biodiversity conservation requires the identification and implementation of a cohesive strategy. A number of conservation strategies are in use today, each with advantages and disadvantages. In this workshop, various types of strategies will be described and contrasted. An approach to comprehensive planning that has been shown to effectively combine components of several strategies will be demonstrated, along with a description of performance measures. This approach will show how ecosystem diversity can be mapped and quantified for large planning areas and how this information can be used in conservation planning. The approach will also show how information on species can be used to assess and complement ecosystem diversity. The workshop will include a presentation on concepts, methods, performance measures, and examples of specific applications. The workshop will be structured to allow for open discussion and opportunities for additional ideas and concerns to be shared.

Biography:

Jon Haufler is executive director of the Ecosystem Management Research Institute (EMRI), a non-profit organization with a mission of providing training and implementation assistance for biodiversity conservation, ecosystem management, and landscape assessment efforts. Jon has been in this position for the past 3 years. Prior positions included Manager, Wildlife and Ecology for Boise Cascade Corporation in Boise Idaho, and Professor of Wildlife Ecology, Michigan State University. His background and expertise is in wildlife/ecosystem ecology and natural resource planning and includes planning projects conducted throughout the U.S. Recent publications include "Performance Measures for Ecosystem Management and Ecological Sustainability", a technical report of The Wildlife Society, and "Practical Approaches to the Conservation of Biological Diversity" from Island Press.

GAP Analysis Program: A Course for Natural Resource Professionals*

**Sponsored by the U.S. Geological Survey, National Gap Analysis Program; U.S. Fish and Wildlife Service, National Conservation Training Center, and Conservation Management Institute*

Andy Rosenberger (Instructor)

Scott Klopfer (Instructor)

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About the Workshop:

The gap analysis, as a term and national program, has become well recognized among natural resource professionals. Several authors have pointed out the gap analysis program (GAP) as a model way of addressing widespread loss of biological diversity in the United States. The gap concept is now being applied in other countries as well. Although the analysis itself is crucial to biodiversity conservation planning, the data layers developed for the analysis are critical to a wide variety of conservation and land management planning activities. These data layers include detailed land cover information, predicted species distributions, and land stewardship information. Many other ancillary data layers have been gathered or created by individual state projects. Collectively, the gap community may very well have the largest, most comprehensive GIS dataset assembled for the country. This accomplishment alone makes the national gap analysis program invaluable. This course will provide detailed information on the gap methodology, the products created, and the appropriate applications. It also will direct potential users to where data and documentation can be found. It will provide this large body of potential users with all the basic information they need to utilize gap data correctly to better manage biodiversity on their respective lands.

Objectives:

- ◆ To provide potential users who are not familiar with the gap analysis program with sufficient background information to utilize available gap data in their management activities.
- ◆ To provide basic training on how to locate, obtain, and matriculate gap data from the national and state gap data servers, into local projects.
- ◆ To demonstrate practical applications of gap analysis data in localized natural resource management activities.

Topics:

- ◆ How gap analysis is conducted.
- ◆ What types of data are generated by a state or regional gap project.
- ◆ Where gap data can be obtained.
- ◆ What kinds of projects have used gap data successfully.

- ◆ Appropriate uses of gap information.
- ◆ How to use metadata and other documentation.
- ◆ How to contact gap cooperators and researchers.

Biography: *Scott Klopfer*

Scott has been involved with Gap Analysis research and the National Gap Analysis Program since 1995. He has worked on several gap-related projects including land cover mapping, species/habitat modeling, stewardship mapping, social aspects of gap, and gap data delivery. He has been teaching professional development courses for the CMI since 1999.

Biography: *Andrew Rosenberger*

Andy received his masters in education from Virginia Tech with a focus in Natural Resource education. For the past three years Andrew has been involved in providing GIS training to state agencies, while also aiding in the completion of the Virginia Gap Analysis.

~ Sunday, September 28 ~

Session A: Strategies for Species and Habitat Conservation and Monitoring

*Vivian Hutchison
U.S. Geological Survey
National Biological Information Infrastructure*

*Lee A. Graham and Donna Roy
National Biological Information Infrastructure*

*Bruce Schmidt
Pacific States Marine Fisheries Commission*

*Rebecca K. Wajda
Virginia Department of Game and Inland Fisheries*

Session B: Gap Analysis Program: A Course for Natural Resource Professionals, Part II*

*Instructors: Andy Rosenberger and Scott Klopfer
Conservation Management Institute*

* Sponsored by the U.S. Geological Survey, National Gap Analysis Program; U.S. Fish and Wildlife Service, National Conservation Training Center; and Conservation Management Institute.

Making Data More Valuable

Vivian Hutchison

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In an age of increasing technological abilities and access to information, metadata represents a critical element in information-sharing environments. Metadata repositories serve as valuable tools to research data that has already been collected, analyzed and reviewed. Conservation management processes are greatly enhanced by the user's ability to evaluate existing information in making more informed decisions.

What is metadata? Metadata is descriptive data about a data set or other information. Metadata provides conservation managers a standardized way to display information about data sets and other research. Creation of metadata provides organizations with documentation of valuable resources in the organization, allowing institutional knowledge to be preserved. It provides a method for maintaining information for future use, and a standard way to share information with data catalogs and clearinghouses. Repetition of expensive research projects can be averted if metadata is shared between organizations.

The National Biological Information Infrastructure (NBII) supports the Federal Geographic Data Committee (FGDC) Content Standard for documentation of scientific data sets. Additionally, the Biological Data Profile (BDP) is the official extension for documenting biological data sets. To create a record including biological information, such as taxonomy, use the FGDC Content Standard and incorporate the Biological Data Profile. The BDP allows metadata records to include biological elements in a standardized format.

There are many tools available for metadata creation such as ArcView and Spatial Metadata Management System (SMMS). Tool descriptions and reviews offered on the NBII and FGDC web sites are valuable resources to assist in choosing an appropriate tool for metadata creation. Visit <http://www.nbii.gov/datainfo/metadata/index.html> or <http://www.fgdc.gov/metadata/toollist/metatool.html> for more information.

Sharing records through Clearinghouse mechanisms is one of the most valuable uses of metadata. More informed conservation management decisions can be facilitated through use of information found in metadata records. The NBII hosts an extensive Clearinghouse site for the purpose of sharing metadata records. Single records can be uploaded into the Clearinghouse, or organizations can opt to create their own Clearinghouse "node". Record retrieval is achieved in the Clearinghouse through an interface that offers many

options for narrowing search parameters. Visit <http://metadata.nbii.gov/> to search the Clearinghouse.

Metadata creation and data sharing is a crucial component in conservation management. The National Biological Information Infrastructure supports this effort by providing training workshops, creation services, quality control, and a Clearinghouse repository to the science and land management community.

Biography:

Vivian Hutchison is the Metadata Coordinator for the National Biological Information Infrastructure. NBII is a web-based program, coordinated by the U.S. Geological Survey that is dedicated increasing access to biological data and information. Vivian has been with the NBII for over a year, contributing to the growth of the metadata program in addition to other assignments. She has a background in Library and Information Science.

Connecting the NBII Nodes: Map Services Registry to Support Data Discovery and Interoperability through Open GIS

Lee A. Graham (*Presenter*)

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The National Biological Information Infrastructure (NBII) is a broad, collaborative program designed 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.

Some of the most powerful tools helping NBII meet its missions are the implementation of “Standards” such as those developed by the Open GIS Consortium. At the center of the Geospatial Interoperability is the implementation of Open GIS standards, supporting data discovery and visualization of GIS data layers across all of NBII and beyond. The Map Services Registry, the central registry of Interactive Internet Mapping Applications, is the primary implementation platform for realizing this interoperability.

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. Now, after implementing Open GIS, these users can visualize and explore the rich base of geographically enabled biological data within the NBII.

Direct Benefits of Information Systems to Endangered Fish: Examples of how resources benefit from modern Information Technology

Bruce Schmidt

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The Emerging Information Technology can be of direct benefit to fish and wildlife resources through a number of means: Accumulating and standardizing information from disparate sources throughout the range of the species for use in recovery planning and management; Facilitating communication and coordination among resource managers; Improving management decision making; and Providing technical information to interested publics and advocacy groups. Specific examples of direct and indirect benefits to the resources are presented drawn from experience with fish species in the Pacific Northwest listed under the Endangered Species Act. Implementation of modern information management systems is proposed as a significant component of restoration and recovery of imperiled species.

Biography

Bruce Schmidt has been active in fisheries management for over 30 years in three states, having held positions of research biologist, planner, research program director, and state fish chief. He holds a BS in Fisheries Management from Utah State University and a MS in Fish and Wildlife Science from South Dakota State University. He is currently the Program Manager for the StreamNet Project, a cooperative project among the four Pacific Northwest states, tribes of the Columbia Basin, and the US Fish and Wildlife Service, which acquires, standardizes georeferences and publicly distributes fisheries data for the Columbia River Basin and the Northwest.

Focus Group III: Discussion Session

Information Management for Comprehensive Wildlife Conservation Plans: Recommendations to the International Association of Fish and Wildlife Agencies

Rebecca K. Wajda (*Discussion Leader*)

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The International Association of Fish and Wildlife Agencies' (IAFWA) Teaming with Wildlife Committee (State Wildlife Grants Workgroup) is seeking technical assistance and recommendations from OFWIM regarding information management and geospatial systems. Specifically, the request is focused on the need for minimal standards for wildlife-related information and geospatial systems to be used by the states in the development of Comprehensive Wildlife Conservation Plans (CWCP) to facilitate regional implementation and national reporting. The specific charge, products and timeframe are outlined below.

Charge: Address the feasibility and reasonableness of states to use information management and geospatial systems that facilitate regional implementation and support national summaries through the integration of data sets and the use of minimal common data standards and/or element. Propose minimal interim guidelines for CWCP-related information management and GIS. Evaluate how states/jurisdictions can use the plans to take steps in that direction. Identify the current status of IM/GIS tools in agencies and recommend methods for documenting data deficiencies and reporting accomplishments in the CWCP. Address the feasibility of OFWIM serving as a clearinghouse for IM/GIS resources on behalf of the states/IAFWA and recommend possible mechanisms, if feasible.

Products:

1. Recommendations resulting from facilitated discussion at OFWIM meeting
2. List of representatives participating in discussion and meeting and their involvement in the CWCP process.
3. Synopsis of current state of IM/GIS tools in place in agencies for use on CWCP processes
4. Targeted list of references related to existing plans/planning efforts useful in the development of lists of species of greatest conservation need or other elements of the plan.

Targeted list of references related to wildlife information management and mapping/use of GIS in conservation planning.

Timeframe: A final report including all of the products outlined above will be presented to the Committee no later than October 31.

Session attendees will participate in an interactive facilitated discussion that should provide an effective framework to collect input from multiple stakeholders across the country and provide consensus-based recommendations to the IAFWA.