



**NBII Bird Conservation Node
Strategic Plan FY 2006-2010
October 2006**

I. Background

Birds are recognized by many groups and individuals as having important ecological, economic and recreational values. Bird watching appeals to a broad range of nature enthusiasts, as they are easy to observe and provide much enjoyment and interest. Many avian organizations have witnessed multi-fold increases in membership over the past 20 years. Those engaged in bird-related activities, such as bird watching and hunting, spend millions of dollars each year on these pastimes, providing an important economic resource. Birds have also been viewed as useful indicators of environmental quality and provide a means to monitor the spread of diseases that pose a threat to human health.

Largely for these reasons, impressive amounts of data have been collected on North American birds throughout the past hundred years. These data have often been used to assess the status of bird populations in the United States and are a vital component in the implementation of bird management and conservation activities. Bird conservation plans in the United States have identified access to scientific data and information as one of the critical components needed to enable integration and coordination of bird conservation efforts, not only nationally but also internationally.

In response to this identified need, the National Biological Information Infrastructure (NBII) Bird Conservation Node was initiated in 2001 to increase access to bird data and related information necessary to support bird conservation activities in North America. The Bird Conservation Node, an information component of the NBII Program, is managed by the U.S. Geological Survey (USGS), and was developed jointly as a collaborative effort between the USGS NBII Program, the USGS Patuxent Wildlife Research Center (Patuxent), and the U.S. Fish and Wildlife Service (USFWS) Divisions of Migratory Bird Management and Bird Habitat Conservation. This collaborative partnership leads the NBII Bird Conservation Node and is referred throughout this document as the Node Core Team.

II. Core Mission

Provide online access to data and information supporting the conservation of bird populations and their habitats in North America, by facilitating development and availability of data sets, data standards, analytical tools and other important information necessary for effective bird conservation.

III. Vision

To help conserve North American birds by providing via the Internet the essential information resources needed for planning and implementation of bird conservation actions at multiple geographic scales.

IV. Thematic Definition

The proposed objectives, strategies, and actions outlined in this document will advance NBII's strategies of pursuing a thematic approach to managing data and information relevant to biological issues of national concern and leveraging resources through partnerships. These objectives, strategies, and actions reflect the following scope of the NBII Bird Conservation Node:

A. Geographic Scale: The Node's primary focus is on bird communities of North America, with North America being defined as Canada, Mexico, the United States of America (U.S.), and all U.S. territories. Recognizing that many migratory birds spend much of the year outside North America, the Node will also retain a hemispheric focus to support conservation of North American birds across their non-breeding ranges.

Rationale: The emphasis on all-bird conservation in North America requires sources of information that support these all-encompassing efforts. In addition to national and international programs, information sources may include regional, state/provincial, and local programs that can be aggregated to address national conservation issues. While the Bird Conservation Node is positioned to develop resources useful at larger geographic scales, it can also partner with NBII Regional Nodes and local, state and regional organizations to identify critical bird conservation issues and develop comparable data sources necessary to address these issues at appropriate geographic scales.

B. Target Audience: The Node will emphasize information resources supporting existing mechanisms for delivery of bird conservation at national, regional and state levels. These mechanisms include the North American bird conservation initiatives, migratory bird Joint Ventures, Bird Conservation Regions, Coordinated Bird Monitoring partnerships, Partners in Flight Regional Working Groups, State Comprehensive Wildlife Conservation Strategies, and other mechanisms and partnerships working towards bird conservation. Information resources to be provided by the Node will support the work of bird conservation coordinators, resource managers, and researchers, but the Node recognizes that this information may be used by a much wider audience including policy-makers, educators, and the general public.

Rationale: Bird conservation professionals need access to data and information useful to plan, evaluate, and implement conservation activities, information that is frequently not available through existing web-based resources. The Bird Conservation Node can help to fill these gaps by developing partnerships with NBII Regional Nodes, bird conservation organizations, and other relevant groups and organizations to develop appropriate information sources that do not duplicate existing excellent educational materials and general information on birds already

available on the Internet. These new information sources will include websites providing technical information required by conservation professionals and less technical sources more readily understood by wider audiences.

C. Delivery Mechanism: The need for information by the bird conservation community will always be greater than the resources available to the Node to develop information sources. Financial resources and institutional challenges involving data sharing among different organizations require the Node to proceed in incremental steps and that its products not depend upon continuous future funding. Partnerships with other organizations can expand resources available to support development of information sources needed to conserve birds, and these collaborations will be pursued by the Node.

Rationale: Resources available to the Bird Conservation Node are limited. Available funding must be used efficiently to ensure support for those projects of greatest importance to the bird conservation community, recognizing that conservation priorities will change over time. Node Core Team members can devote only a portion of their time to support node activities, hence, the Node can develop and maintain only a limited number of web-based information sources and must rely on partnerships to provide the range of information sources required by the bird conservation community.

V. Data and Information Responsibilities

The NBII Bird Conservation Node supports partners to improve access to raw data and synthesized information via web-based data retrieval interfaces, exploration and visualization tools, and use of standards to facilitate data sharing. Because the Node facilitates access to existing data, partner organizations are responsible for data collection, maintenance, and quality except in the rare instances where important data sets are at risk of being lost due to lack of institutional support. All data sets made available online with the support of the Node will have a corresponding metadata record that follows the NBII Biological Data Profile of the Federal Geographic Data Committee (FGDC) metadata standard. In addition, these data sets will comply with Federal government Data Quality Guidelines including U.S. Department of the Interior (DOI) and USGS data quality policies. For data hosted on USGS servers, Federal security guidelines and requirements will be followed to ensure data integrity.

VI. Node Goals/Strategies/Metrics

Node goals are prioritized below based on input received from partners, stakeholders (see list at end of document), and the other NBII nodes. Collectively, these groups are referred to as the bird conservation community below:

Goal 1: Improve discovery and availability of long-term primary avian data sets via the Internet.

Rationale: The timely availability of data is critical to support bird conservation activities and provide baseline information to assess the status and trends of North American bird populations. The NBII Bird Conservation Node continues to emphasize improved data accessibility through support for computerizing data existing as hard copy, consolidating dispersed data sets into common database formats, and developing web-based data entry and retrieval pages.

Strategies: The Node's emphasis remains directed towards improving accessibility of long-term, multi-species data sets from national programs and regional efforts that can be aggregated to national, continental, and range-wide scales. Collaboration and partnership with the bird conservation community will identify key data sets and tools to support their use. Specific actions to be followed include:

- a. Identify existing avian data sets collected and maintained by bird population monitoring programs and facilitate their discovery via the Internet.
 - ♦ Support continued development of a bird monitoring data registry.
- b. Identify long-term, large-scale bird population datasets essential for bird conservation, especially datasets that can be used for integration and synthesis with other information, and provide support for improving web accessibility to these data.
 - ♦ Complete improvements to web accessibility for all long-term, large-scale bird population datasets managed by the USFWS Division of Migratory Bird Management.
 - ♦ Provide support for continuing development of an electronic Breeding Bird Atlas database for North America.
 - ♦ Explore opportunities to improve web access to the North American Bird Banding Laboratory database.
 - ♦ Identify new data sets and support additional improvements to existing databases.
- c. Facilitate communication between the bird conservation community and organizations that collect and maintain key primary sources of information.
 - ♦ Explore the needs of the bird conservation community for migration monitoring and banding data and the potential relationship to the North American Bird Banding Laboratory database.
- d. Identify mechanisms for strengthening linkages between primary data sources and the information resources derived from these primary sources:
 - ♦ Explore mechanisms for making stronger links between the Partners in Flight Species Assessment Database and the primary sources of information used by this database such as the North American Breeding Bird Survey.

Mechanisms: All projects will be collaborative efforts. Partner organizations will bring existing datasets, ongoing data management functions, and ongoing program coordination. The NBII Bird Conservation Node will provide short-term financial support to improve specific aspects of

data accessibility as necessary, recognizing that the Partners will be responsible for maintaining their websites once they have been developed. The need to support these projects should diminish as more data sets become web accessible, but the Node anticipates the need to continue supporting these efforts for the foreseeable future.

Outcomes: Better information on the status and trends of bird populations allows bird conservation organizations to improve their ability to identify species and habitats at risk and target their activities to benefit these species before they require Federal listing as Threatened or Endangered. These actions will prevent dozens of species from requiring Federal protection, reducing the resources necessary to conserve and manage their populations.

Measures of Success: Increasing the number of web-accessible bird population data sets and the number of bird monitoring metadata descriptions available within the NBII Metadata Clearinghouse will indicate greater availability of these resources to the bird conservation community. Actual use will be based on usage statistics on websites. Stable or increasing usage indicates the importance of these web resources while declining usage may indicate a web resource has become less relevant and its continued availability should be re-examined.

Goal 2: Increase use of standards, common protocols, and methodologies for collection, management, and delivery of avian data to facilitate data integration.

Rationale: Bird population monitoring efforts are being implemented at various geographic scales. As these efforts get underway, there is increasing need for access to protocols, standards, and methodologies for data collection, management, and delivery to facilitate data sharing and integration. By increasing awareness and promoting use of existing standards, protocols, and methodologies, the NBII Bird Conservation Node will contribute towards facilitating integration of important bird monitoring data sets.

Strategies: The NBII Bird Conservation Node will promote use of standards and protocols for data collection, management and delivery, and collaborate with standardization efforts aimed at facilitating data integration. When appropriate, the Node will encourage creation of new data standards and protocols specific to bird population databases. Specifically, the node will:

- a. Develop a section on the Bird Conservation Node website that increases awareness of standards, protocols, and methodologies applicable to collection, management, and delivery of bird population data, and tools facilitating implementation of these standards.
- b. Encourage adoption of existing standards by the bird conservation community.
- c. Collaborate with groups developing standards, protocols, and methodologies that facilitate integration of bird population data.
 - ♦ Collaborate with the Avian Knowledge Network to develop and implement the Bird Monitoring Data Exchange (BMDE) schema, a standard for interconnecting distributed electronic bird monitoring databases.

Mechanisms: The development and implementation of standards will require expertise and resources from the Node, NBII Program Office, and the bird conservation community. The Node will facilitate this process but its success depends upon the collaborative efforts of these organizations.

Outcomes: Adopting standards will improve integration among bird population monitoring data sets and allow bird conservation organizations to better identify species and habitats at risk. They can then target conservation actions to benefit these species before they require Federal protection, reducing the resources necessary to conserve and manage their populations. The net result will be that fewer birds will require listing as Federal Threatened or Endangered species.

Measures of Success: The best indicator of success will be increased adoption of these standards by bird population monitoring programs, leading to improvements in database quality and increased integration of data resources to inform conservation efforts. Use of these standards will be required of database applications supported by the Node and also promoted through the Node website and collaborative efforts within the bird conservation community.

Goal 3: Improve access to web-based tools for data exploration and visualization that increase capacity to integrate data from a variety of sources.

Rationale: Bird conservation requires the ability to synthesize data from multiple sources to address increasingly complex questions. Exploration and visualization are important steps toward data integration, synthesis, and analysis. Web technology is developing rapidly to facilitate data integration from multiple sources, allowing users to receive customized results. Syntheses of data sets through visualization tools are increasingly valuable sources of timely information in support of bird conservation. As more data become available, users will require increasingly sophisticated tools to address complex conservation questions.

Strategies: The NBII Bird Conservation Node has been in the forefront of developing interactive web-based applications providing access to bird population data. It will continue to play this role through the following actions:

- a. Maintain and continue developing existing Node mapping applications located at USFWS and Patuxent.
- b. Support Open GIS and other technologies facilitating integration of multiple data sets.
- c. Support development of web-based applications that synthesize data from multiple sources and provide valuable summaries of this information in support of bird conservation.
- d. Provide access to new web-based tools for exploration and visualization of bird population data.

Mechanisms: The Node will maintain and improve its mapping applications but will not solely support development and maintenance of new applications. All new projects will be

collaborative efforts with partners providing resources for long-term maintenance. The node may contribute data or spatial layers and provide short-term funding to assist with application development, but will work with partners to leverage resources from other sources.

Outcomes: These data exploration and visualization tools should provide better information to direct bird conservation activities. Each application should provide information allowing bird conservation organizations to initiate multiple successful projects resulting in increased populations for individual species at risk or for bird communities within threatened habitats.

Measures of Success: The value of increased numbers of data visualization and synthesis tools available to the bird conservation community should be measured through the usage statistics obtained from the websites. For both entire applications and specific features of these applications, usage will indicate the importance of these features for bird conservation. Increased usage should translate into more successful bird conservation projects on the ground, resulting in increased bird populations for species at risk or in threatened habitats.

Goal 4: Improve communication between the Node and its stakeholders.

Rationale: Communication between the bird conservation community and its target audiences is critically important for supporting bird conservation efforts and the success of the NBII Bird Conservation Node. Input from the bird conservation community and other user communities should help guide future Node activities and improve existing data and information delivery mechanisms.

Strategies: Communication between the Node and its stakeholders will be improved by the following actions:

- a. Assemble a Node Guidance Team composed of members from the bird conservation community and other key stakeholders. The primary role of this Guidance Team is to facilitate communication between the Node and its stakeholders, act as liaisons expressing the needs of these communities to the Node, and broadcast availability of Node products to their constituents.
- b. Develop a communication strategy for the Bird Conservation Node. With input from the Guidance Team, this strategy will serve as a working document defining the objectives, specific actions, venues, and target audiences for the Node's outreach activities.
- c. Enhance the Node website to improve communication with the bird conservation community and improve access to data and other information useful for the target audiences.
 - ♦ The Node website will be redesigned to integrate into the NBII portal and associated technologies, improving links to bird conservation-related resources identified or maintained by other NBII regional and thematic nodes.

- ♦ The Node will effectively use the Internet to communicate with users and disseminate data and information. The Node website will provide information on node-supported activities and products, provide opportunities for user feedback, and provide access to information resources identified as priorities by the bird conservation community including primary sources of information, data standards, and data exploration and visualization tools. These resources will be organized in a manner facilitating their discovery and use by target audiences, and complement services already provided by existing web resources and search engines.

Mechanisms: As indicated above, the Node will use its website and Guidance Team to improve communications with its user communities in order to understand the information needs of these communities, develop resources that meet these needs, disseminate data and other information relevant to bird conservation, and receive feedback concerning the usefulness of the Node's resources.

Outcomes: Successful communication should eventually translate into more effective bird conservation activities on the ground. Once these communication mechanisms have become operational, the availability of better information will allow conservation planners and resource managers to develop projects that will result in improved population levels for bird species at risk. The number of successful conservation projects should increase over time.

Measures of Success: The immediate indication of success will be increased participation in the Node by members of the bird conservation community. Successful communication will eventually translate into more effective bird conservation activities where information accessed through the Node directs efforts aimed at increasing bird populations. The Node website will link to successful projects that have improved populations of bird species at risk and directly benefited from information obtained from the Node.

VII. Partnerships and Node Growth

Availability of increased resources would enhance the Bird Conservation Node to meet its objectives. Several possible venues could be followed to expand the Node's capabilities, and the Node will explore these opportunities during the next five years. The Node will continue to work with the NBII Program Office to obtain additional resources through normal appropriations processes. However, greater potential for growth probably would be achieved by developing additional partnerships. This process is outlined briefly below:

a. External Partners

As previously described, the Node will assemble a Guidance Team from representatives of the bird conservation community and other key stakeholders. One function of this team will be to assist the Node in developing partnerships with various organizations that can play roles in expanding Node capabilities. This process will include:

- ◆ Invite representatives from organizations in a position to leverage resources to participate in the Guidance Team.
- ◆ Work with the Guidance Team to develop a business strategy for growth. This strategy will provide the framework for developing partnerships, leveraging resources, and identifying key opportunities to increase resources available for achieving the goals described in this strategic plan. Subsequent steps will be directed by this business strategy.

b. Internal Partners

The Node will also explore opportunities to develop additional partnerships and leverage resources within USGS and USFWS. Greater effort will be directed towards collaborating with the NBII regional nodes and other thematic nodes to leverage some of their resources towards projects that will benefit bird conservation activities and the entire NBII program. Within USGS, the Node will contact the Geography Discipline to explore potential collaborative efforts that can expand the capabilities of both groups. Similar efforts will be considered with other USGS disciplines and USFWS divisions, especially when specific topics of mutual interest are identified.

Developing partnerships is a strategy but creating successful partnerships requires the cooperation of all involved. Although some organizations will be the focus of initial discussions, at this time, it is not possible to predict who will become active partners with the Node, the resources that may become available to the Node, and the specific projects to be completed.

VIII. Relationship to NBII Program

The mission of NBII is to provide a mechanism for accessing the vast amount of existing biological and natural resources data, information products, and analytical tools that support and enhance science-based decision-making. NBII instituted thematic nodes, such as the Bird Conservation Node, to provide a national perspective and coordination on issues that are highly important to the nation. The Bird Conservation Node supports NBII's overarching goals while ensuring that the specific information needs of its stakeholders are met. The NBII programmatic goals are described in greater detail within its strategic plan, available at: http://www.nbii.gov/images/uploaded/8496_1165236262413_NBII_Strategic_Plan.pdf.

The Bird Conservation Node will focus on data and information resources that are collected or can be aggregated to national, international, and multi-regional scales. Additional NBII efforts are directed by regional nodes towards activities supporting bird conservation at local, state, or regional levels, or by other thematic nodes addressing issues such as invasive species and wildlife disease, that bear on the conservation of bird populations. As indicated above, the Bird Conservation Node will expand its efforts to work collaboratively with NBII regional and thematic nodes to implement projects that will benefit the entire NBII program.

IX. Planning Process and Stakeholder Input

The Node Core Team conducted preliminary discussions regarding the strategic plan during spring and summer of 2004. At the June 2004 NBII All-Node Meeting in Big Sky, Montana, the Node Core Team conducted a two-hour session securing input from regional and other thematic nodes regarding their needs and potential opportunities for collaboration. The Node Core Team, with assistance from the Keystone Center for Science and Public Policy, produced a draft document by autumn 2004. Comments on this draft document were obtained from the leadership of the USFWS Divisions of Migratory Bird Management and Bird Habitat Conservation, USGS Patuxent Wildlife Research Center, and USGS NBII Program at a meeting in Arlington, Virginia during November 2004. Between December 2004 and March 2005, the Node solicited input on the draft strategic plan and conservation-related information needs from partners and bird conservation practitioners in government and non-governmental sectors. Input was provided via an anonymous input form on the Internet and through comments submitted by email. During April 2005, the Bird Conservation Node conducted a strategic planning meeting in Laurel, MD with a small group of stakeholders to solicit final input into the strategic plan development. A list of organizations that participated in this strategic planning meeting is included below.

Node Core Team Members:

Elizabeth Martín
USGS NBII Program

Bruce Peterjohn, John Sauer, Mark Wimer
USGS Patuxent Wildlife Research Center

Rebecca Rau
USFWS Division of Migratory Bird Management

Strategic Planning Meeting Participant Organizations:

American Bird Conservancy
Canadian Wildlife Service
Cornell Laboratory of Ornithology
Department of Defense Partners in Flight
Ducks Unlimited
Hawk Mountain Sanctuary
Association of Fish and Wildlife Agencies
Missouri Department of Conservation
North American Bird Conservation Initiative
North American Land Bird Conservation Plan
North American Waterbird Conservation Plan
North American Waterfowl Management Plan
U.S. Fish and Wildlife Service
U.S. Forest Service
U.S. Geological Survey