Year in Review – 2006

National Wildlife Refuge System Biological Monitoring Team

A pilot effort contributing toward the implementation of Element 4 (Monitoring and Research) of the Strategic Habitat Conservation (SHC) Framework.

The U.S. Fish and Wildlife Service Service's Biological Monitoring Team (BMT) was charged in 2005 with developing a program to address biological monitoring and adaptive management needs within the National Wildlife Refuge System (NWRS). The program, currently in its pilot phase, is based in the Northeast and Great Lakes – Big Rivers regions. The BMT's LaCrosse, Wisconsin, office is co-located with the U.S. Geological Survey's (USGS) Upper Midwest Environmental Sciences Center to strengthen the science partnership between the two agencies.

This report summarizes the BMT's accomplishments from October 1, 2005, through September 30, 2006, as they relate to the three goals established in the team's 2006 – 2010 strategic plan (see box). The BMT strives to improve science-based management within the NWRS through the development of defensible biological monitoring plans, efficient use of data through the development of databases, and improvement of management decisions through the use of adaptive management. To support these long-term goals, the BMT in its first year focused on identifying needs and evaluating how to best apply the program within the NWRS.

The BMT reports the following accomplishments for Fiscal Year 2006, including the Service regions, partnerships, and funding that supported each accomplishment.

Land bird data, monitoring protocol

■ Reviewed nine protocols used nationally or at landscape levels by other agencies, conducted a refuge survey on land bird monitoring needs, and selected an existing protocol for modification
Regions 3, 4, 5
Partners: USGS, National Park Service (NPS)

Biological Monitoring Team Goals

Biological Monitoring and Evaluation – National wildlife refuges (refuges) will evaluate achievement of their wildlife and habitat goals and track the management and conservation of their natural resources over time and space through systematic collection, storage, and reporting of biological data addressing specific management information needs.

Adaptive Management – Refuges will initiate management-focused research and develop new tools and techniques to fill information gaps. Adaptive management research will be used to clarify the outcomes of specific management actions and guide future management programs.

Partnerships to Coordinate Monitoring – Refuges will contribute to regional, national, and continental conservation of trust resources as partners with other Service programs and states by collaborating with other agencies performing similar monitoring efforts to ensure that data can be easily exchanged for analyses at multiple landscape scales.

■ Updated the National Point Count Database to accommodate refuge surveys
Regions 3, 5
Partners: USGS-Patuxent, Md.
Funding: USGS-SSP

■ Conducted two Internet training sessions for 41 refuges on use of the National Point Count Database
Regions 3, 5

Marsh bird monitoring and database

■ Developed a monitoring program and a central database for the management of marsh bird data that will benefit more than 90 refuges in six regions that are monitoring secretive marsh birds
Regions 2, 3, 4, 5
Partners: USGS-Arizona Cooperative Unit, USGS-Patuxent
Funding: $50,000 (USGS-SSP)

Invasive species mapping protocol

■ Instructed three weed-mapping training sessions for refuge volunteers mapping invasive plant species using standardized databases and protocols
Regions 3, 4, 5
Partners: The Nature Conservancy, FWS-National Invasive Species Coordinator

National database management

■ Developed Web-based refuge management actions database (RMAD) to assist refuges nationwide in tracking actions, integrating information with other biological data to facilitate evaluation of management activities
Regions 3, 5, 9
Partners: FWS-Denver ITM, USGS-Patuxent
Funding: $260,000 (FWS)

■ Submitted database elements on wind speed and wind direction for adoption as national Service data standards; served on Service's National GIS Steering Committee involved in establishing GIS data standards

■ Participated in Department of Interior (DOI) efforts to adopt the Integrated Taxonomic Information System (ITIS) as a DOI standard for species nomenclature

Water level database

■ Developed a prototype NWRS database to track water level data within refuge management units; the database is currently being tested by several field stations
Regions 3, 4, 5
Partners: USGS-LaCrosse, Wis.

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Analysis and interpretation of data collected at multiple refuges

■ Completed a report on land bird data collected by several refuges on the Missouri River that provides a template for critical future statistical analyses on a variety of species

■ Coordinated analysis of amphibian data (Region 5), land bird point count data (Region 5) and secretive marsh bird data (regions 2 - 6)

Partners: USGS-LaCrosse, Patuxent, and Arizona Cooperative Unit, University of Missouri
Funding: $30,000 (FWS)
$57,000 (USGS-SSP)

NWRS inventory and monitoring policy

■ The BMT leader co-leads a national team of biological experts that is revising the Service's Policy on Inventory and Monitoring to define NWRS standards for systematic collection, storage and reporting of NWRS biological data
Regions 1 - 9

NWRS biology training

■ Assisted in development of training courses for Service staff responsible for managing biological programs within the NWRS
Regions 2 - 7
Partners: FWS-National Conservation Training Center

Refuge monitoring needs

■ Used Web-based software to conduct five surveys to obtain current information on monitoring needs at all refuges in regions 3 and 5
Regions 3, 5

BMT intranet site

■ Developed a Service-wide intranet site for the BMT
Regions 3, 5

Water bird response to impoundment levels

■ Initiated a three-year study at 23 refuges to evaluate the seasonal timing of impoundment draw-downs on migratory water birds to evaluate the conservation value of different management treatments to achieve refuge objectives
Regions 3, 5
Partners: USGS-Patuxent
Funding: $150,000 (USGS-RCRP)

Cattail control with prescribed fire

■ Continued a four-year study (2004-2007) at five refuges to investigate prescribed fire as a strategy for controlling cattail dominance in wetlands within the NWRS
Regions 3, 5
Partners: USGS-Northern Prairie Wildlife Research Center, New York DEC
Funding: $121,000 (USGS-RCRP)

Invasive species management

■ Held a workshop in July at the Upper Mississippi River National Wildlife and Fish Refuge for scientists to collaborate on adaptive approaches for managing reed canary grass; held a workshop in August at Big Oaks NWR for scientists to collaborate on adaptive forest management practices to meet refuge objectives; results of both workshops were utilized by USGS to request research proposals from USGS scientists to meet these refuge needs.
Regions 3, 5, 6
Partners: USGS-Patuxent and Missouri, University of Missouri, University of Michigan, State of Maryland
Funding: $36,000 (FWS)
$12,000 (USGS-SSP)

■ Planned a refuge workshop on the identification and management of invasive species to support an RFP for a multi-refuge adaptive management study
Regions 3, 5, 9

Adaptive management consultation

■ Initiated a program to consult with USGS and other subject matter experts on adaptive management practices within the NWRS through focused case studies
Regions 1 – 7
Partners: USGS science centers, universities
Funding: $40,000 (FWS)

Continental marsh bird monitoring

■ Participated on the international steering committee to develop a standardized continental marsh bird monitoring program; held the second annual Marsh Bird Monitoring Technical Workshop at Patuxent in March.
Regions 1 – 6
Partners: USGS, CWS, states, etc.

Upper Mississippi River – Great Lakes Joint Venture

■ Participated on the Land Bird Subcommittee of the joint venture and other initiatives to determine the role of the NWRS in landscape level conservation and to ensure that databases and monitoring protocols will remain interchangeable in the future
Partners: FWS-Migratory Birds, HAPET office, 9 states

Natural Resource Monitoring Partnership

■ Improved monitoring efforts nationwide through the interagency partnership, led by USGS, by making protocols and databases widely available
All regions
Partners: USGS, NPS, BLM, states

Monitoring symposium

■ Organized and moderated a symposium, *Objectives and Metrics for Monitoring Wildlife*, at the annual meeting of The Wildlife Society
All regions
Partners: USGS, NPS, Forest Service, Institute for Bird Population

Due to staffing and budget constraints, the BMT deferred several high priority projects from 2006 to 2007. These include conducting workshops to scope future Service/USGS joint adaptive management projects; developing ecological monitoring protocol for various relevant abiotic and biotic attributes within the NWRS; hosting a meeting to discuss the role of the NWRS in water bird monitoring; hosting a meeting of the marsh bird database team; and establishing a process to manage baseline inventory data on refuges.

For further information

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Additional information is available to Service employees on the intranet at https://intranet.fws.gov/region3/ (click on Topics, Science Excellence Initiative, Biological Monitoring Team)

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