

UPPER MISSISSIPPI RIVER AND GREAT
LAKES REGION JOINT VENTURE

ROLE OF THE UPPER MISSISSIPPI RIVER AND GREAT LAKES REGION JOINT VENTURE AND SYNOPSIS OF BIRD CONSERVATION INITIATIVES

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ABSTRACT

The North American Waterfowl Management Plan (NAWMP) has been described as a model for bird conservation, and its success in delivering habitat programs can be largely attributed to regional partnerships called Joint Ventures. Following the NAWMP, there has been an unprecedented surge in new continental bird conservation initiatives including the North American Landbird Conservation Plan, the United States Shorebird Conservation Plan, and the North American Waterbird Conservation Plan. In addition, to facilitate linkages among the individual bird plans, a North American Bird Conservation Initiative was established. The collective efforts of these large-scale bird conservation initiatives may seem overwhelming to wildlife professionals being asked to participate in them. However, the partnership opportunities available through regional Joint Ventures can make integrated bird conservation more manageable. Upper Mississippi River and Great Lakes Region (UMRGL) Joint Venture partners recently agreed to practice "all-bird conservation," making understanding and integrating the needs of bird groups beyond waterfowl a necessity. Coupled with a working list of priority bird species, this report is intended to provide wildlife administrators and managers with information about the UMRGL Joint Venture and the primary continental bird plans being used to guide bird conservation.

The term "joint venture" stems from the private sector and has been commonly used when referring to temporary strategic alliances between business partners (Schermerhorn et al. 1991). For example, in the early 1980s American automobile manufacturers began cooperating with foreign auto makers to produce higher quality cars for a lower price, enhancing participation and competition in the global marketplace. This collaboration, or sharing of information, technology, and parts resulted in "American-made" autos with foreign components and foreign vehicles produced using American technologies. In addition to production, businesses also partner on marketing initiatives, human resource management techniques, and many other aspects of today's profit-based economy.

Recognizing the value of partnerships in wildlife management, the U.S. Fish and Wildlife Service (FWS) has provided funding for administration of bird conservation Joint Ventures

(JVs). The FWS definition of joint venture is “a self-directed partnership of agencies, organizations, corporations, tribes, or individuals that has formally accepted the responsibility of implementing national or international bird conservation plans within a specific geographic area or for a specific taxonomic group, and has received general acceptance in the bird conservation community for such responsibility” (USFWS 2002). Working both collectively and independently, joint venture partners conduct activities in support of bird conservation goals cooperatively developed by the partnership. Five functional elements must be included in the operation of a joint venture to receive FWS financial support. They include coordination; planning; project development and implementation; monitoring, evaluation, and applied research; and communications and outreach. The use of these elements to achieve established bird conservation goals is described in a JV implementation plan.

The theme of joint ventures is one of relationships that build synergy, or a greater collective outcome than parties could achieve individually. Partners with varied resources and expertise work together, achieving common goals with reduced overlap in effort and thus greater efficiency. The North American Waterfowl Management Plan (NAWMP) was established in 1986 by government and non-government partners who had a common vision -- to restore duck populations. It was the first continental-scale wildlife conservation plan, and it has been implemented using a joint-venture approach. The NAWMP (2004) identifies 16 regional habitat JVs across the continent and three species-oriented JVs to address individual species or groups of concern (black duck, sea duck, and arctic geese). Primary NAWMP partners are state and federal agencies involved with wildlife conservation and large non-government conservation organizations (e.g., Ducks Unlimited, The Nature Conservancy, Pheasants Forever). NAWMP partnerships can also be dynamic, depending on interest in a particular site and availability of resources for conservation work. Tribal efforts, local groups, and some individuals have been important to many NAWMP projects.

The Upper Mississippi River & Great Lakes Region (UMRGL) Joint Venture of the NAWMP encompasses all or portions of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin (Figure 1). Partners have mutually agreed to safeguard the waterfowl habitats of the nation’s only inland coastal area – the Great Lakes – plus interior wetlands, including the floodplains of four of the country’s major river systems – the lower Missouri, upper Mississippi, the Illinois, and Ohio. The original implementation plan for the UMRGL JV was finalized in 1993 and updated in 1998. JV habitat conservation objectives include protection, restoration, and enhancement of waterfowl breeding (592,000 acres) and migration (166,500 acres) habitat, particularly wetlands and associated grasslands (USFWS 1998). The 1998 JV plan also includes an objective for protection and/or increase of habitats for wetland and associated upland wildlife species, with emphasis on declining non-waterfowl migratory birds, when this effort is consistent with waterfowl objectives.

Support and achievements for the NAWMP have been impressive, largely due to the strength of JV partnerships. Successes soon became obvious to other bird conservation groups, and the NAWMP was recognized as a model for successful bird conservation. Subsequently, continental conservation plans were developed for landbirds, shorebirds, and waterbirds (colonial nesting water birds and wading birds). The North American Bird Conservation Initiative (NABCI) evolved to help provide coordination between plans. And, in the continued

spirit of cooperation, the Upper Mississippi River and Great Lakes Region JV partners in 2002 pledged to conduct all-bird conservation, accommodating other bird groups while implementing the NAWMP. Most of the habitat JVs have also expanded to all-bird conservation.

The collective efforts of JV partners and the various bird conservation plans may seem overwhelming, especially for those who have not been part of the evolution. The purpose of this report is to familiarize readers with the UMRGL JV and the primary bird conservation initiatives. A section on the expanding role of the UMRGL JV is provided, plus brief background descriptions and vision statements for the NABCI and the four continental bird conservation plans. In addition, a working list of priority bird species for each plan has been compiled for the JV region. This effort is intended to help make the plethora of bird conservation information more manageable for those implementing wildlife conservation in the JV area.

JOINT VENTURE EVOLVING ROLE

The North American Bird Conservation Initiative prompted a need to develop bird habitat conservation programs that build on both Joint Venture partnerships and a system of ecological planning units known as Bird Conservation Regions (BCRs). In the year 2000, the U.S. NABCI Committee agreed to promote conservation delivery via existing and new Joint Ventures with a nationwide coverage, thus eliminating redundant partnership structures and separate biological planning processes for the various bird groups (Smith 2004). BCRs (Figure 1) are physiographic areas with similar landscape-community types and bird conservation issues (NABCI 2000a and 2000b). BCRs can be further subdivided to improve planning at smaller scales (e.g., focus areas). Communication links among wildlife professionals working locally, at the BCR level, and across JVs will improve delivery of integrated bird conservation.

Joint Ventures are increasingly using BCRs when landscape planning and the boundaries of some new JVs are aligned with BCR boundaries. “Stepping down” bird population and habitat objectives from BCRs to specific focus areas is a logical approach to planning when updating a JV implementation plan. The use of BCRs and associated ecological information also will help partners, from administrators to bird-habitat managers, communicate in the same landscape cover-type terminology. This is an essential step to bring stakeholders representing various bird-groups into the all-bird forum.

Joint Ventures are administered by a Management Board and a JV Coordinator. Boards consist of representatives from each state wildlife agency in the JV region, federal conservation and land-management agencies, and private, non-government conservation organizations. NAWMP partners are trying to strengthen the scientific foundation behind bird habitat delivery (NAWMP 2004). To do this the UMRGL JV Management Board established a Technical Committee in 2003 chaired by a JV Science Coordinator (hired in 2004). The role of the Science Coordinator and Technical Committee is to advise the JV Management Board on improving the science and efficiency of bird habitat conservation in the JV region.

To date, UMRGL JV priorities have been to:

- Establish partnerships of conservation agencies and non-government organizations interested in waterfowl and other wetland-wildlife conservation,
- Establish and support a Joint Venture staff: JV Coordinator, Assistant Coordinator, and Science Coordinator,
- Establish capacity for biological planning, implementation, and program evaluation,
- Establish a technical committee to solicit, review, and prioritize project proposals that relate to population and habitat objectives,
- Expand the role of the JV so that it integrates non-waterfowl bird groups (i.e., all-bird conservation) while not losing waterfowl conservation momentum, and
- Support bird monitoring programs within FWS Region 3, which covers most of the JV area.

The Fish and Wildlife Service's Migratory Bird Program and other bird conservation partners hope to define and achieve landscape conditions necessary to support bird populations at desired levels. Conducting assessments of both current and desired future landscape conditions for birds is one of the functions of habitat JVs. Individual JVs are developing spatially explicit habitat objectives at eco-regional and local scales based on the needs and priorities identified in continental bird conservation plans. Working with partners, JVs are conducting strategic biological planning using the best available science and state-of-the-art tools and techniques such as biological models and Geographic Information Systems (GIS) to identify what kinds, how much, and where habitat is needed to achieve healthy and sustainable populations of birds.

Additional UMRGL JV priorities include:

- Prioritize regional bird species based on habitat threats, declining abundance, small population size or limited distribution, and socio-economic importance,
- Identify factors limiting populations of regional bird species of greatest concern and use new technologies and decision tools to target conservation effort,
- Identify management or monitoring "focal" bird species that can represent suites (a group of species) who respond similarly to management actions,
- Develop the necessary landscape design and specific habitat objectives to achieve target bird populations within the JV, and promote management that links habitat programs to population objectives at multiple scales,
- Continue to support and help prioritize bird population and habitat inventory, monitoring, and research work focused on JV goals and assumptions
- Refine JV goals and objectives on the basis of learning from monitoring and assessment (practice adaptive management),
- Encourage a shift in how conservation results are measured (focus on population influence or habitat characteristics strongly linked to population performance vs. simply acres manipulated and dollars spent), and
- Revise the JV implementation strategy using ecological planning units (BCRs / state focus areas), population goals from continental and regional conservation plans, and priorities listed above.

Bird population monitoring and research are critical to measure population trends and fill information gaps to improve management decisions and measure results. The Region 3 FWS Division of Migratory Birds staff helps to coordinate regional participation in continental waterfowl, woodcock, and mourning dove surveys and waterfowl banding. They also facilitate development and use of protocols for landbird point counts and surveys of secretive marsh-birds; coordinate the Great Lakes Colonial Waterbird Survey; and work to increase partnership involvement in the International Shorebird Survey, the Program for International and Regional Shorebird Monitoring (PRISM), and Coordinated Bird Monitoring (CBM). In recent years, the JV has provided considerable funding for bird survey, monitoring, and research projects completed by FWS migratory bird staff and other bird research entities.

BIRD CONSERVATION INITIATIVES

The following information provides background on the NABCI and the four continental bird conservation plans encompassed by NABCI. Regional conservation strategies for the continental bird plans can be accessed using the internet addresses provided.

North American Bird Conservation Initiative (NABCI 2000a and 2000b)
<http://www.nabci-us.org>

Vision: Populations and habitats of North America's birds protected, restored or enhanced through coordinated efforts at international, national, regional, state and local levels, guided by sound science and effective management.

The surge of interest in bird conservation has spurred development of several major bird conservation initiatives (NABCI 2000b). These include the North American Waterfowl Management Plan, the North American Landbird Conservation Plan, the United States Shorebird Conservation Plan, and the North American Waterbird Conservation Plan. In addition, several species-specific plans with a harvest orientation have been developed for waterfowl by Technical Committees of the four Flyway Councils. NABCI is facilitating linkages among these individual initiatives, both within the United States and among the United States, Canada, and Mexico. The primary role of the NABCI is to coordinate, not duplicate, efforts of the four major bird plans. More specifically, NABCI intends to 1) increase the effectiveness of existing and new initiatives, 2) foster greater cooperation among the nations and peoples of the continent, and 3) build on existing structures such as joint ventures, plus stimulate new joint ventures and mechanisms as appropriate.

NABCI promotes planning by ecologically distinct bird conservation regions (BCRs) with similar bird communities, habitats, and resource management issues. BCRs are scale-flexible, nested ecological units delineated by the North American Commission for Environmental Cooperation (CEC 1998). The original CEC framework comprised a hierarchy of three levels of ecoregions. At each step-down in level, spatial resolution increases and ecoregions encompass areas that are progressively more similar in their biotic (e.g., plant and wildlife) and abiotic (e.g., soils, drainage patterns, temperature, and annual precipitation) characteristics. NABCI endorsed BCRs completely cover the United States, and each of the four primary bird plans is adopting BCR boundaries and integrating these ecological planning

units into regional plan revisions. A BCR system of universal planning regions will improve communication by scientists and other stakeholders representing various bird groups.

BCRs may be partitioned into smaller ecological units when finer scale conservation planning, implementation, and evaluation are necessary. Conversely, BCRs may be aggregated to facilitate conservation partnerships throughout the range of a group of species, recognizing that migratory birds often use multiple BCRs throughout their annual life cycle. BCRs also facilitate domestic and international cooperation in bird conservation because these areas of relatively homogenous bird habitats and communities traverse state, provincial, and national borders.

In summary, NABCI has promoted planning by BCRs because they facilitate communication among the bird conservation initiatives, systematically and scientifically apportion North America into conservation units, facilitate a regional approach to bird conservation, promote new and expanded partnerships, and identify overlapping or conflicting conservation priorities (CEC 1998). As integrated bird conservation progresses in North America, BCRs should ultimately function as the primary units to resolve biological foundation issues, design landscape configurations of sustainable bird habitats, and originate priority projects (Smith 2004).

North American Waterfowl Management Plan (NAWMP 1998 and 2004)

<http://northamerican.fws.gov/NAWMP/nawmphp.htm>

Vision: To sustain abundant waterfowl populations by conserving landscapes, through partnerships, guided by sound science.

First of the continental wildlife conservation plans, the NAWMP was developed in 1986 (updated in 1994, 1998, and 2004) by a group of government agencies and private organizations concerned about declining waterfowl populations. The principal goal of the NAWMP has been to restore waterfowl populations to levels recorded during the 1970s, a period of relatively high duck abundance. In an effort to reach defined waterfowl population targets, the NAWMP works through regional JV partnerships to manage habitats important to waterfowl.

There are three aspects within the NAWMP vision statement: 1) conserving landscapes to sustain waterfowl populations, 2) broadening partnerships, and 3) strengthening the biological foundations of waterfowl conservation. General consensus by those evaluating the NAWMP is the first two elements have successfully evolved since 1986. During the next several years, more emphasis will be placed on strengthening the plan's biological foundation. In addition, the NAWMP intends to broaden partnerships with other migratory bird conservation initiatives and support and encourage conservation partnerships with communities.

The North American Wetlands Conservation Act, passed in 1989, provides a funding source to assist in implementation of NAWMP projects. The 2004 NAWMP update combined core

elements of the original 1986 version (and the 1994 and 1998 updates) with guidance addressing issues and conditions of the 21st century.

North American Landbird Conservation Plan (Rich et al. 2004)

<http://www.partnersinflight.org>

Vision: To ensure the long-term maintenance of healthy populations of native landbirds, through the development of voluntary, non-regulatory bird conservation plans that, proactively, provide frameworks to develop and implement habitat conservation actions on species identified as having the greatest need for conservation.

Concern about significant population declines for several songbird species, notably Neotropical migrants, resulted in a group of bird conservationists encouraging legislative action for nongame birds. They used a publication highlighting 15 years of data from the North American Breeding Bird Survey (Robbins et al. 1986) to succeed in amending the U.S. Fish and Wildlife Conservation Act of 1980 (Keisman 2001). The “Mitchell Amendment” [Public Law 100-653 (102 Stat. 3825)] requires the Department of Interior to “monitor and assess migratory nongame birds, determine the effects of environmental change and human activities, identify those candidates for endangered species listing, identify appropriate actions, and report to Congress ... at five-year intervals on actions taken” (USFWS 2001).

Building on this legislative mandate, the National Fish and Wildlife Foundation led this consortium of nongovernmental organizations, research and academic institutions, private conservation groups, and state and federal government agencies in forming Partners In Flight (PIF) (Keisman 2001), an initiative to conserve nongame landbirds in the United States. PIF guiding principles included restoring populations of the most imperiled avian species and preventing other birds from becoming endangered -- “keeping common birds common.”

During the past several years PIF has completed or nearly completed 58 regional bird conservation plans based on physiographic areas which cover the continental United States. Physiographic area plans have similar boundaries to BCRs, but they are not exactly aligned, as BCRs were finalized after many PIF regional plans were completed (e.g., the UMRGL JV encompasses 7 PIF regional plans vs. 6 BCRs). The PIF 2004 continental plan also identifies seven larger scale avifaunal biomes in North America, encompassing 37 BCRs. Bird species warranting attention due to concern (currently “in trouble”) are labeled “watch list” species, and those that are common but occur primarily in only one of the seven biomes have been identified as “stewardship species.” The plan presents global population estimates for 448 species of North American landbirds as well as continental-scale conservation and stewardship priorities and population objectives for priority species. Priority research and monitoring needs for landbirds are also identified in the plan.

United States Shorebird Conservation Plan (Brown et al. 2001)

<http://shorebirdplan.fws.gov>

Vision: To ensure that stable and self-sustaining populations of all shorebirds are distributed throughout their range and diversity of habitats in the United States and Western Hemisphere, and that species which have declined in distribution or abundance are restored to their former status to the extent possible at costs acceptable to society.

Developed as a national partnership between federal and state agencies, non-governmental organizations, and researchers, the United States Shorebird Conservation Plan (USSCP) is committed to the conservation of shorebirds that depend on wetland communities. The USSCP calls for the development of integrated management practices and regional conservation planning to protect shorebirds. The plan identifies goals at several scales, including a hemispheric goal, which addresses the need for international cooperation. National and regional goals and potential management activities are also provided. They generally aim to 1) develop monitoring programs related to shorebirds, 2) conduct research to determine factors limiting shorebird populations, 3) address known limiting factors, and 4) develop coordinated shorebird conservation efforts.

The primary goal for the Upper Mississippi Valley/Great Lakes (UMVGL) Shorebird Conservation Plan (de Szalay et al. 2000; a step-down from USSCP) is to ensure the availability of shorebird foraging and nesting sites over a range of climatic conditions by protecting, restoring, and managing a variety of shorebird habitat types. Specific management activities include adopting management techniques that integrate region-specific knowledge of wetland dynamics and life history strategies of shorebird species, plus conducting water-level manipulation and other management activities (e.g., burning, discing, etc.) at intensively managed wetland sites to assure benefits to shorebirds. The UMVGL Shorebird Conservation Plan adopted the waterfowl-habitat goals and objectives of the NAWMP Upper Mississippi River & Great Lakes Region JV because of the focus on providing complexes of ephemeral and permanent wetlands with associated upland plant communities.

Specific research needs for shorebirds in the JV area include determining 1) regional abundance, distribution, migration chronology, and population trends, 2) the influence of management activity on shorebirds and their invertebrate food base, 3) wetland distribution and habitat conditions during variable climatic conditions, and 4) impacts of human disturbance on shorebirds. The Western Hemisphere Shorebird Reserve Network (www.manomet.org/WHSRN) identifies site-based bird conservation efforts.

North American Waterbird Conservation Plan (Kushlan et al. 2002)
<http://www.waterbirdconservation.org>

Vision: To restore and sustain the distribution, diversity, and abundance of breeding, migratory, and non-breeding populations of waterbirds throughout the lands and waters of North America, Central America, and the Caribbean.

Several bird conservation stakeholders recognized that the needs of seabirds, colonial-nesting waterbirds, and marsh birds were not being adequately addressed in the decision-making processes of the other bird plans. Initially launched in 1998, the Waterbird

Conservation for the Americas initiative is a voluntary partnership dedicated to the conservation of waterbirds (Keisman 2001). The plan document, North American Waterbird Conservation Plan (NAWCP), was finalized in 2002, a product of an independent partnership of individuals and institutions having interest and responsibility for conservation of waterbirds and their habitats. The plan emphasizes the importance of scale and habitat diversity for this bird group, and encompasses North and Central America, the Caribbean, and the open waters of the Atlantic and Pacific Oceans.

Specific goals of the NAWCP are to 1) ensure sustainable abundance, diversity, and distribution of waterbird species, 2) protect, restore, and manage key sites and high quality habitat for waterbirds, 3) disseminate information on waterbird conservation to decision makers, the public, and those whose actions impact waterbirds, and 4) coordinate and integrate waterbird conservation efforts, guided by common principles, across geo-political boundaries. The plan also provides a list of scientific information needs, including management-oriented research and ecosystem and landscape issues related to waterbirds. A step-down waterbird conservation plan for the Upper Mississippi Valley / Great Lakes Region is under development and should be available in 2005. The National Audubon Society's Important Bird Areas Program (www.audubon.org/bird/iba) has information about site-based conservation efforts.

PRIORITY SPECIES AND CONCLUSIONS

The collective efforts of the NABCI and its associated continental bird conservation plans may seem overwhelming. However, if wildlife professionals become familiar with conservation priorities of each plan and partnership opportunities through Joint Ventures, the task should become more manageable. A list of priority bird species which occur in manageable numbers in the JV area, and are identified as high conservation concern in continental plans, is provided (Table 1). This list is based largely on habitat threats, population size and trends, or the limited distribution of a species. It should be considered a "working list" because priority species may change with new knowledge and changes in population status over time. Regional conservation plans, particularly PIF plans, identify additional species considered to be regional species of concern.

State wildlife management agencies have been responsible for some of the greatest partner contributions to bird habitat conservation in the UMRGL JV, and they have yet another opportunity to enhance bird conservation through planning and partnering. States are currently developing Comprehensive Wildlife Conservation Strategies (CWCSs) to be completed by October 2005. The bird component of these conservation strategies can be an extension of JV regional planning and set direction for bird conservation at the state level. Ideally, CWCSs would present bird population and habitat objectives "stepped-down" from JV regional objectives when these become available. Initial waterfowl objectives have been identified in the 1998 JV Implementation Plan (USFWS 1998), and refined objectives for all bird groups will be presented in a revised UMRGL JV plan which should be available in late 2006. Future updates of state CWCSs will have the benefit of a completed all-bird JV regional plan, but in the mean time state planners are encouraged to work with bird experts throughout the JV.

The current theme in bird conservation is improved decision-making based on contemporary biological, ecological, social, and economic information, plus the use of biological modeling. Joint Ventures and each of the bird conservation plans encourage use of these disciplines, plus enhanced monitoring, management evaluation, and adaptive management based on research findings. Integrated bird conservation is at an exciting threshold in the Upper Mississippi River and Great Lakes Region and in North America. Collective planning, coordination, habitat delivery, and assessment by JV partners should enhance bird populations and the science foundation behind wildlife management.

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Table 1. Working list of bird species which occur in manageable numbers within the Upper Mississippi River and Great Lakes Joint Venture Region and have been identified in continental bird-conservation plans as "high" or "moderately-high" concern due to habitat threats, declining abundance, small population size, or limited distribution.

Plan and species common name	Scientific name	Season occurring ^a	Primary habitat ^b
North American Waterfowl Management Plan, 2004			
American Black Duck	<i>Anas rubripes</i>	B M W	Wetland
Mallard ^c	<i>Anas platyrhynchos</i>	B M W	Wetland
Common Goldeneye ^c	<i>Bucephala clangula</i>	B M W	Wetland
Blue-winged Teal ^c	<i>Anas discors</i>	B M	Wetland
Redhead ^c	<i>Aythya americana</i>	B M	Wetland
Northern Pintail	<i>Anas acuta</i>	M	Wetland
Canvasback	<i>Aythya valisineria</i>	M	Wetland
Lesser Scaup	<i>Aythya affinis</i>	M	Wetland
Interior Canada Goose (SJB, MVP, EPP, WPP)	<i>Branta canadensis</i>	M	Wetland
Trumpeter Swan (Interior Population)	<i>Cygnus buccinator</i>	B M	Wetland
Tundra Swan (Eastern Population)	<i>Cygnus columbianus</i>	M	Wetland
PIF North American Landbird Conservation Plan, 2004 ("watch list" species)			
Rusty Blackbird	<i>Euphagus carolinus</i>	B M W	Deciduous Forest
Greater Prairie Chicken	<i>Tympanuchus cupido</i>	B W	Grassland
Bell's Vireo	<i>Vireo bellii</i>	B M	Shrub/successional
Short-eared Owl	<i>Asio flammeus</i>	B M	Grassland
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	B M	Woodland
Olive-sided Flycatcher	<i>Contopus cooperi</i>	B M	Coniferous Forest
Willow Flycatcher	<i>Empidonax traillii</i>	B M	Shrub/successional
Wood Thrush	<i>Hylocichla mustelina</i>	B M	Deciduous Forest
Blue-winged Warbler	<i>Vermivora pinus</i>	B M	Shrub/successional
Cerulean Warbler	<i>Dendroica cerulea</i>	B M	Deciduous Forest
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	B M	Shrub/successional
Kirtland's Warbler	<i>Dendroica kirtlandii</i>	B M	Coniferous Forest
Bay-breasted Warbler	<i>Dendroica castanea</i>	B M	Coniferous Forest
Canada Warbler	<i>Wilsonia canadensis</i>	B M	Mixed Forest
Kentucky Warbler	<i>Oporornis formosus</i>	B M	Deciduous Forest
Prothonotary Warbler	<i>Protonotaria citrea</i>	B M	Deciduous Forest
Worm-eating warbler	<i>Helmitheros vermivorus</i>	B M	Deciduous Forest
Henslow's Sparrow	<i>Ammodramus henslowii</i>	B M	Grassland
Dickcissel	<i>Spiza americana</i>	B M	Grassland
United States Shorebird Conservation Plan, 2001			
American Woodcock	<i>Scolopax minor</i>	B M	Shrub/successional
Piping Plover	<i>Charadrius melodus</i>	B M	Wetland
Upland Sandpiper	<i>Bartramia longicauda</i>	B M	Grassland
Wilson's Phalarope	<i>Phalaropus lobatus</i>	B M	Wetland
Short-billed Dowitcher	<i>Limnodromus griseus</i>	M	Wetland
Marbled Godwit	<i>Limosa fedoa</i>	M	Wetland
Buff-breasted Sandpiper	<i>Tryngites subruficollis</i>	M	Wetland
Greater Yellowlegs	<i>Tringa melanoleuca</i>	M	Wetland
Whimbrel	<i>Numenius phaeopus</i>	M	Wetland
American Golden Plover ^d	<i>Pluvialis dominica</i>	M	Wetland

Ruddy Turnstone ^d	<i>Arenaria interpres</i>	M	Wetland
Solitary Sandpiper ^d	<i>Tringa solitaria</i>	M	Wetland
Sanderling ^d	<i>Calidris alba</i>	M	Wetland
North American Waterbird Conservation Plan, 2002			
American Bittern	<i>Botaurus lentiginosus</i>	B M	Wetland
Least Bittern	<i>Ixobrychus exilis</i>	B M	Wetland
Common Loon	<i>Gavia immer</i>	B M	Wetland
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	B M	Wetland
Black Rail	<i>Laterallus jamaicensis</i>	B M	Wetland
King Rail	<i>Rallus elegans</i>	B M	Wetland
Yellow Rail	<i>Coturnicops noveboracensis</i>	B M	Wetland
Black Tern	<i>Chlidonias niger</i>	B M	Wetland
Common Tern	<i>Sterna hirundo</i>	B M	Wetland
Least Tern	<i>Sterna antillarum</i>	B M	Wetland

^aSeasonal occurrence = B (breeding), M (migration), and W (wintering)

^bPrimary habitat from "major habitat category" list in PIF North American Landbird Conservation Plan (2004).

^cContinental population appears stable, but listed as a "high" or "moderately high" priority species in NAWMP because of relative importance to sport harvest.

^dSpecies was not labeled highest concern in the 2001 USSCP, but it was considered high concern as of August 2004 (U.S. Shorebird Conservation Plan. 2004. High Priority Shorebirds – 2004. Unpublished report, U.S. Fish and Wildlife Service, 4401 N. Dr., MBSP 4107, Arlington, VA 22203 USA. 5pp.)

Figure 1. Upper Mississippi River and Great Lakes Joint Venture (JV) Region and North American Bird Conservation Initiative Bird Conservation Regions (BCRs). There are 67 BCRs in North America and associated islands. The JV consists largely of three BCRs: Boreal Hardwood Transition (BCR 12, only U.S. portion shown), Prairie Hardwood Transition (BCR 23), and Eastern Tallgrass Prairie (BCR 22). Relatively small portions of the Central Hardwoods (BCR 24), Appalachian Mountains (BCR 28), and Lower Great Lakes/St. Lawrence Plain (BCR 13) also occur within the JV boundary.

