Symposium—Implementing Bird Conservation Across the Southeast

An Overview of Bird Conservation Planning and Integration

Robert P. Ford, *U.S. Fish and Wildlife Service, The University of Memphis, South Campus, Memphis, TN 38152*

Debbie Hahn, *International Association of Fish and Wildlife Agencies, 444 North Capitol Street, NW, Suite 725 Washington, DC 20001*

Paul Schmidt, *U.S. Fish and Wildlife Service, 4401 Fairfax Drive, Arlington, VA 22203*

Abstract: Since the late 1980s, range-wide bird conservation plans have been developed for a wide range of species and habitats. These plans provide a basis for setting population and habitat objectives, as well as identify assumptions that require further research and monitoring. Generally, bird conservation plans share four common components: a vision to sustain a high relative abundance, the development of specific population estimates and objectives, the development of habitat objectives within ecoregions, known as Bird Conservation Regions, and the acknowledgement of partnerships for conservation delivery at local and regional scales. The North American Bird Conservation Initiative (NABCI) was formed in 2000 to provide a forum for discussion and action among wildlife administrators charged with implementing bird conservation plans. Currently, high priority actions for the U.S. NABCI Committee include increased efficiency of bird population and habitat monitoring efforts, and further integration of trinational conservation priorities.

Key words: conservation, planning, NABCI, monitoring, trinational

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Science based, range-wide planning efforts that target the conservation and management of bird populations and habitats have matured rapidly during the last two decades. Although Flyway Councils have tracked migratory game bird populations and management since the 1950s (Hawkins et al. 1984), the 1986 signing of the North American Waterfowl Management Plan (NAWMP) by the United States and Canada is widely acknowledged as the first comprehensive bird management plan (U.S. Fish and Wildlife Service 1986). By 1990, a conservation initiative for neotropical migratory birds, later known as Partners in Flight (PIF), was emerging

(National Fish and Wildlife Foundation 1990). In the late 1990s, continental and national plans for shorebirds (Brown et al. 2001) and waterbirds (Kushlan et al. 2002) were developed as well. Working groups for the Association of Fish and Wildlife Agencies (AFWA) have taken the lead to develop comprehensive plans for some migratory game birds (e.g., AFWA Woodcock Task Force). Range-wide conservation plans for resident game birds, such as northern bobwhite, have also been developed (Dimmick et al 2002).

Bird conservation planning, at a variety of spatial scales, has been led by coalitions of Federal and State agencies, tribal entities, foreign governments, non-governmental organizations, industry, academia, and private individuals who are interested in the conservation and management of bird populations and their habitats. Integration across taxonomic, cultural, and geographic boundaries was needed to fully achieve bird conservation in North America (Andrew and Andres 2002). As a result, the North American Bird Conservation Initiative (NABCI) was developed to integrate the bird conservation plans through a suite of regionally-based, biologically-driven, landscape-oriented partnerships that deliver the full spectrum of bird conservation (Williams 2003).

This paper provides an overview of bird conservation plans and explores the components common to each plan and the role of NABCI in bird conservation. The paper concludes with a discussion about the two priorities in bird conservation today.

Overview of Bird Conservation Plans

North American Waterfowl Management Plan (NAWMP)

In 1986, the NAWMP was signed by Canada and the United States and laid out a strategy for cooperation for waterfowl conservation. NAWMP emphasized the importance of a partnership approach to conserve habitats and the need to continually improve the scientific understanding of waterfowl populations and their associated habitat needs. Mexico signed the NAWMP in 1994.

The most recent update of the NAWMP addresses the conservation needs of 50 species of ducks, geese, and swans (NAWMP 2004). The 2004 Plan defines the needs, priorities, and strategies for waterfowl conservation for the next 15 years and guides partners in strengthening the biological foundation of waterfowl conservation (NAWMP 2004).

Partners in Flight

PIF was formed in 1990 in recognition that a cooperative and coordinated approach was needed for bird conservation (National Fish and Wildlife Foundation 1990). PIF has a collective commitment to conserve the resident, and migratory landbirds that occupy every biome and habitat on the continent. The PIF vision is expressed through three related concepts: helping species at risk, keeping common birds common, and providing support for voluntary partnerships for birds, habitats, and people (Pashley et al. 2000, Rich et al. 2004). The goal to “keep common birds

common" signaled a major paradigm shift for nongame management that was traditionally rooted in endangered species and crisis management of minimum viable populations or focused on highly visible and popular species.

The most recent PIF plan provides a framework for population and habitat objectives for 448 landbird species that breed in United States and Canada; of which 100 warrant the PIF watchlist status (Rich et al. 2004). The next version of the PIF plan, already in progress, will add 450 species from Mexico, making the scope of the plan close to 1000 species.

U.S. Shorebird Conservation Plan

This plan provides goals and strategies for shorebird conservation at hemispheric, national, and regional scales. The goals and strategies were targeted to restore those species which have experienced declines in distribution or abundance and to maintain those species with self-sustaining populations (Brown et al. 2001).

In particular, the shorebird plan addresses 50 species that regularly breed or occur on the U.S including those that require specific conservation attention, prioritizes conservation actions and mechanisms for delivery of conservation programs, and identifies mechanisms for monitoring and tracking success.

North American Waterbird Conservation Plan

Published in 2002, the Waterbird Plan addresses the conservation needs of waterbirds in North America, Central America, and the Caribbean (Kushlan et al. 2002). The Waterbird Plan provides a continental scale framework for the conservation and management of 210 species of waterbirds, including seabirds, coastal waterbirds, wading birds, and marshbirds.

Flyway Council Migratory Game Bird Plans

Flyway Councils have focused on population management and harvest of migratory game birds since the 1950s (Hawkins et al. 1984). Recently, working groups through the IAFWA in coordination with Flyway Councils have begun to develop comprehensive and range-wide management plans for upland migratory game birds such as American woodcock and mourning dove.

For example, the American woodcock plan will provide a framework for management that will return woodcock densities to the levels observed during the early 1970s by encouraging comprehensive surveys, and setting specific habitat objectives by Bird Conservation Region (BCR) and state.

Resident Game Bird Plans

Resident game bird conservation plans are developing as well. For example, the northern bobwhite conservation plan was published in 2002 through the Southeast Quail Study Group, and was encouraged by the Southeastern Association of Fish and Wildlife Agencies. While the primary vision is to restore bobwhite populations, the plan is focused on benefits to many early successional species, including significant overlap with PIF birds of concern (Dimmick et al. 2002).

North American Bird Conservation Initiative (NABCI)

NABCI was formed in 1999 as a forum in which bird conservation initiatives could discuss, prioritize and act upon the components that cut across all plans. The NABCI vision is that "Populations and habitats of North America's birds are protected, restored, and enhanced through coordinated efforts at international, national, regional, state, and local levels, guided by sound science and effective management." The goal of the U.S. NABCI Committee is "to deliver the full spectrum of bird conservation through regionally based, biologically driven, landscape-oriented partnerships" (USFWS 2000). A NABCI council has been established in Mexico, Canada, and the United States, and a Trinational NABCI Committee coordinates trinational priorities among the three countries.

Common Components Of The Bird Conservation Plans

Each bird conservation plan encompasses three elements of conservation planning: 1) the need for a strong biological foundation for decision-making, 2) the ability to identify priority habitat needs and design landscapes at an ecoregional scale, and 3) the need for a delivery mechanism that operates at both ecoregional and state scales (Baxter 2003).

Within this broad conceptual framework, the plans share four components that have helped shape bird conservation over the last two decades. They 1) share a vision of abundance, not minimum populations, 2) recommend development of population estimates and objectives, 3) support the development of habitat objectives for BCRs to help meet the population objective, and 4) acknowledge the importance of partnerships for conservation delivery at regional and local levels.

A Vision for Abundance

Each bird conservation plan, as well as the NABCI vision, provides a framework to manage for an abundance of birds that is ecologically sound, supports societal expectations, and enhances socio-economic factors. Management for sustained harvest of game birds such as waterfowl (NAWMP 2004), woodcock (Kelley 2004), and mourning dove (Dolton and Rau 2004), is an important component of game bird management and justified by the large and active hunting constituency.

However, management plans designed to achieve population abundance for nongame species represents a significant shift in conservation planning for nongame birds. The NAWMP (NAWMP 2004), PIF plan (Rich et al. 2004), and other bird conservation plans, set population objectives for every species well above minimum levels in order to sustain a healthy, genetically diverse population. In some cases, the population objective is millions of birds; the numbers required to maintain intact ecosystems and biotic integrity across the continent (Rich et al. 2004). This vision of abundance supports societal expectations and socio-economic factors demonstrated by an ever increasing bird watching community. The bird watching constituency represents the fastest growing and most economically important segment of outdoor nature enthusiasts in North America (U.S. Department of Interior 2001). State and

federal programs have begun to address this paradigm shift and expressed the need for explict population estimates and objectives.

Population Estimates and Objectives

NAWMP population objectives serve three important functions, which hold true for all bird conservation plans. They 1) move the plan beyond a mere concept for habitat conservation by identifying explicit terms of species conservation, 2) provide a framework for regional planning and gauging on the ground success, and 3) evaluate success by comparing monitoring results with population objectives (USFWS 1998, NAWMP 2004).

Each bird conservation plan sets its own population objectives based on their individual survey techniques and protocols. However, those differences do not inhibit integrated bird conservation planning.

For example, waterfowl surveys, used to develop NAWMP population goals, are the most intensive, continuous surveys available for any group of birds. Beginning in 1955, annual aerial surveys cover approximately 2.0 million square miles of waterfowl breeding areas in North America. The results are reported annually by the U.S. Fish and Wildlife Service. Based on the results of these surveys, the NAWMP objective is to restore and sustain waterfowl population to those levels that occurred during the 1970s, which is a breeding population goal of 62 million ducks resulting in a fall flight index of 100 million (NAWMP 2004).

By contrast, PIF population estimates were based on Breeding Bird Survey (BBS) data from the 1990s. BBS data are available from 1966 and are based on roadside counts conducted by volunteers. In 1966, 600 roadside counts were conducted. Currently, there are approximately 3,700 active BBS routes across the continental United States and Canada, of which nearly 2,900 are surveyed annually (Sauer et al. 1997). Population estimates are derived by application of a pair correction, detection area correction, and time of day correction and are extrapolated across estimated appropriate habitat in the species known range of BCRs (Rich et al. 2004).

The PIF plan uses recent trends in species populations to establish population objectives into one of three categories; recommend doubling the population, increasing the population by 50% or sustaining the population. For example, the current population estimate for wood thrush is 14,000,000 birds annually, which represents a moderate decline (between 15% and 50%) since 1966. Based on this level of decline, the PIF population objective is to increase the population by 50% in the next 30 years (Rich et al. 2004).

Population estimates for the waterbirds were derived from expert opinion, survey results, and literature reviews. However, due to the limited availability of data, population estimates could not be developed for approximately 20% of waterbirds species identified in the plan. Though the Waterbird Plan does not set population objectives at the National level, regional step-down plans establish population objectives based on regional and local population assessments, habitat conditions, and restoration potential.

Conservation plans for American woodcock, northern bobwhite, and shore-

birds set population objectives based on numbers observed during the 1970s or early 1980s. For example, the population objective for American woodcock is to restore their densities to those that were observed during the early 1970s, as measured by singing males per acre (IAFWA woodcock task force, unpublished).

Habitat Objective Setting

Among the first products of NABCI planning was the development of ecoregional maps for bird conservation in North America, or BCR's. These are ecologically distinct regions in North America with similar bird communities, habitats, and resource management issues (U.S. NABCI Committee 2000).

A BCR is an ecological, not an administrative unit, and functions as the primary unit within which biological foundation issues are resolved, the landscape configuration of sustainable habitats is designed, and priority projects originate. The primary purposes of BCRs, as proposed by the mapping team in 1998 and approved in concept by the U.S. NABCI Committee in 1999, are to facilitate communication among the bird conservation initiatives; systematically and scientifically apportion the United States into conservation units; facilitate a regional approach to bird conservation; promote new, expanded, or restructured partnerships; and identify overlapping or conflicting conservation priorities.

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 annual range of a group of species, recognizing that migratory species may use multiple BCRs throughout their annual life cycle.

For each bird conservation plan, habitat objectives are being developed for the BCRs. In the woodcock plan, for example, habitat goals will be developed for each BCR by determining the population deficit that has occurred during the past 30 years and determining how many acres of new habitat need to be created to return densities to desired levels. The assumption is that creation of 40 hectares of new woodcock habitat will add one singing male to the population (IAFWA task force, unpublished).

For the PIF plan, population estimates were extrapolated across estimated habitats in each BCR of the species range. These estimates were then divided by state (Rosenberg 2004). The population estimates by BCR require local and regional expert opinion to modify the estimates to more realistic numbers, and to determine if local and regional bird conservation efforts can contribute additional birds to the range wide population objective.

Delivery Mechanisms

A joint venture (JV) is a self-directed partnership of agencies, organizations, corporations, tribes, or individuals. While the JV provides the forum for prioritization and project development, the partnership has the responsibly of implementing national or international bird conservation plans within a specific geographic area or for a specific taxonomic group.

The U.S. NABCI Committee encouraged the development of bird conservation delivery systems that built on both JVs and the biological foundation of BCRs. In February 2000, the U.S. NABCI Committee agreed to promote conservation delivery via existing and new JVs as "one layer of carpet" nationwide, thus eliminating redundant partnership structures and separate biological planning processes. Significant progress has been made to achieve this vision. Nearly the entire United States now has a developing or existing conservation partnership modeled on joint ventures, and traditional waterfowl and wetlands JVs are making significant advances for conservation of all priority bird species and habitats.

Emerging Issues In Bird Conservation

International Cooperation

In the summer of 2005, Canada, Mexico, and the United States signed a Declaration of Intent (DOI) for cooperative conservation of migratory bird species. The non-binding document, signed by the Minister of the Canada Department of the Environment, the Minister of Mexico Environment and Natural Resources, and the Secretary of the U.S. Department of Interior, formalizes the process for carrying out integrated bird conservation and provides 12 broad objectives for advancing continental bird conservation.

To implement the DOI, NABCI partners are developing an Action Plan based on the 12 objectives of the DOI. The Action Plan will address building and sustaining regional alliances in Mexico, securing sustainable funding for critical habitat projects, developing needed decision support tools, strategically engaging other countries in NABCI, securing the commitment of other partners to the intent of the DOI, and prioritizing marine ecosystem issues.

In the meantime, continental coordination is progressing as Mexican regional alliances continue to take shape. Mexican partners, in conjunction with JV colleagues in the United States and Canada are working on habitat projects in Laguna Madre, Marismas Nacionales, and Janos. For example, a grant from the North American Wetlands Conservation Act provided partners in Marismas, Sinaloa, and Nayarit with seed money to develop a science-based plan to conserve and manage a high priority wetland region in Marismas. The plan will identify gaps in research and monitoring, high priority habitat projects, and link to Canadian and United States partners working on the conservation of the same bird species on their breeding and migration habitat.

Monitoring

To assess opportunities and challenges in coordinated bird monitoring, the IAFWA established a Working Group in 2004 to 1) identify key technical issues, approaches, and suggestions about the coordination of bird monitoring, 2) suggest a process for integrating and updating ideas from the avian conservation and research community; and 3) produce a report for the IAFWA Science and Research Committee with recommendations on technical aspects of coordinated bird monitoring.

The working group report consisted of three sections—Rationale, Design, and Coordination—which emphasized the need to integrate monitoring with science-based management. The report recommendations and the comments received on the report were intended to serve as a springboard for the bird conservation community to develop a shared technical and administrative framework for coordinating bird monitoring.

Based on the recommendations and the comments, the U.S. NABCI Committee's Monitoring Subcommittee (Subcommittee) was created to provide technical support to the U.S. NABCI Committee, to foster Federal, state, NGO, and international cooperation for effective monitoring of bird populations and pertinent environmental conditions and to develop methods to fully integrate monitoring into conservation and management decisions. The Subcommittee includes representation from each bird conservation initiative and a breadth of experience from state and federal agencies and private organizations that are active in bird conservation in North America.

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