Ecosystem Management and Migratory Bird Conservation: The Vision, the Progress, and the Future

Paul R. Schmidt, *Migratory Bird Management Office, Fish and Wildlife Service, Arlington Square, Suite 634, 4401 N. Fairfax Dr., Arlington, VA 22203*

Dan Petit, *Migratory Bird Management Office, Fish and Wildlife Service, Arlington Square, Suite 634, 4401 N. Fairfax Dr., Arlington, VA 22203*

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It is a pleasure to be on this panel today to talk about something so important to the future of resource management. We've just been treated to an informative overview of some important aspects of ecosystem management and I must start by indicating that I am no expert on ecosystem management, but I offer a manager's view. What I hope to do today is to build upon those perspectives by offering a view from a slightly different vantage point—that of an agency which, along with other federal and state agencies, is responsible for the conservation of thousands of species of plants and animals.

As chief of the Office of Migratory Bird Management for the U.S. Fish and Wildlife Service, I can't think of a better way to illustrate this perspective than by using migratory birds. Migratory bird management provides a good example of the challenge we face in implementing large-scale, comprehensive conservation plans because birds occupy virtually every habitat type imaginable; they represent a different type of resource to different people; many species range over tens of thousands of square miles and a dozen national borders within a single year; and because populations of many of these species are declining at rapid rates—we don't always have the luxury of time in devising and implementing strategies. We can't wait for every bit of research to be done before acting. We must use the best available data and embrace the unknown.

Because land management agencies are stewards of large parcels of habitat, we sit in unique positions to promote ecosystem-level management of fish and wildlife. However, it's clear that success in ecosystem management will depend upon cooperation of many groups, both public and private. And, as you'll see

from my presentation today, that partnership approach has strongly influenced what we picture as a goal for future migratory bird management.

Ecosystem management has spawned a vision of how to achieve a healthy environment, and with it, the perpetuation of over 800 North American migratory bird species. Imagine, for example, the following.

A migratory bird conservation plan for the wetland/grassland complexes of the northern Great Plains of the United States that promotes practices beneficial to the sharp-tailed sparrow, Baird's sparrow, long-billed curlew, northern harrier, in addition to blue-winged teal, northern pintail, and nearly 100 other species that nest in these habitats.

A "Western Habitat Joint Venture" that brings together Canada, the U.S., Mexico, and Guatemala in an effort to conserve habitats of the 400 shared species of migratory birds—landbirds, waterfowl, and shorebirds—that breed, migrate through, and overwinter in the western portions of North and Central America.

A set of 100 large public and private landowners in the Southern Piedmont physiographic region who coordinate their activities to make certain that, at any given time, there is sufficient habitat to support healthy populations of all species native to that region.

Some of these scenarios might seem closer at hand than others. In fact, some of these aspirations have been built upon the progress made in ecosystem-level management over the past two decades. But to figure out where we need to go in ecosystem management, we need to know where we've come from and where we stand now.

In the past 10 years, the word "ecosystem" has emerged as one of the most frequently used terms in natural resource management. It shows up everywhere . . . from scientific journals, to popular magazines, to the Washington Post, to children's books! State and federal agencies and nongovernmental organizations are implementing ecosystem-wide management of flora and fauna. And ecosystem management has been seen as one potential solution to difficult environmental issues.

But while most of us agree that an ecosystem approach is a sound way to proceed, we also know that it is a challenging task to translate those ideas into workable programs that benefit the resource. The immensity and complexity of ecosystem-level management can be overwhelming.

Even if we focus efforts on a subset of species and issues such as migratory bird conservation, we often still find ourselves in the dilemma of trying to be all things to all people: being good stewards of the land, providing natural resources and recreational opportunities, and helping repair environmental damage.

The North American Waterfowl Management Plan (NAWMP) was one of the first attempts to institutionalize an ecosystem approach to conservation of natural resources. In the early 20th century, humans perfected the art of draining and filling wetlands. During the next three decades nearly half of all wet-

lands were drained. And with that technology, came significant declines in populations of North American waterfowl. In 1986, after nearly a decade in the making, the North American Plan was set in motion to reverse the declines of both wetlands and waterfowl as well as other wetland-dependent species.

By identifying large, biologically-relevant areas upon which to focus, the Plan became a forerunner of ecosystem management. Now, less than 10 years later, the NAWMP has leveraged more than $500 million with its partners, formed the infrastructure for 15 joint ventures, restored or protected more than 4 million acres, and identified more than 60 wetland areas of importance in the U.S., Canada, and Mexico. Nearly all waterfowl populations have stabilized or increased during that period, although other conservation programs such as Conservation Reserve Program and Waterbank, and normal fluctuations in water level, also have played a role in those reversals. Favorable precipitation over the past couple of years has helped substantially.

The NAWMP rests upon 4 main principles: (1) Private citizens and organizations must be important players; (2) Wetlands do not persist in isolation of surrounding landscapes; (3) Wise management must be integrated into land use practices; and (4) A written plan, with goals, objectives, and strategies must guide all actions.

Biologists recognized the value of the NAWMP's perspective on resource management and, in the late 1980s and early 1990s, several other large-scale conservation programs were initiated for other migratory species. In fact, the Western Hemisphere Shorebird Reserve Network (WHSRN) was being developed simultaneously with the NAWMP. WHSRN was advanced to help fill a gap in wetland protection—those areas that were not adequately covered by the NAWMP, but that were important for migrating and overwintering shorebirds. WHSRN has built its program around identifying specific sites critical for maintaining shorebird populations, especially during winter and migration. And that network has grown impressively during the past few years, from the first site in 1985 to some 3 dozen sites of international and regional importance today. More than 100 additional sites meet the WHSRN criteria. In the past few years, WHSRN also has made major strides to integrate shorebird management guidelines into the field notebooks of land managers.

Partners in Flight (PIF) was formed in 1990 to, once again, fill a gap in existing conservation efforts. This time the focus was on some 300 species of birds that nest in temperate North America but that overwinter in the Tropics—the Neotropical migrants. The impetus for establishment of PIF was the information collected through a continental monitoring program. Results from the Breeding Bird Survey indicated that, in general, long-distance migrants were declining at greater rates than other birds in North America. Partners in Flight's mission is to ensure the long-term integrity of bird populations through sound habitat management and other conservation efforts. The four main focal areas include research, monitoring, outreach and education, and international programs.

PIF has grown more rapidly than any other conservation effort of its kind. Its participants now include 16 federal agencies, 60 state and provincial agencies, 15 companies from the natural resources industry, 35 nongovernmental organizations, and several dozen additional groups from academia and the private sector. The PIF network is extensive — several hundred conservation projects have been implemented under the auspices of PIF, which has leveraged tens of millions of dollars with its partners. Several notable projects merit mentioning here. The High Island Initiative of coastal Texas and Louisiana was one of the first large-scale projects to consider the protection of an entire ecosystem—a band of coastal scrub, woodland, and marshland call the Chenier Plain. The natural areas of this region were suffering from extensive coastal development.

Once again, through public-private partnerships that included Phillips Petroleum, Amoco, Texas Parks and Wildlife, National Fish and Wildlife Foundation, The Nature Conservancy, Houston Audubon Society, USFWS, and other groups, critical migration habitat for landbirds and waterbirds was preserved and restored.

Likewise, the Interior Low Plateau Ecosystem Initiative is a model for multi-state cooperation. Through a well-crafted plan, several dozen cooperators are offering on-the-ground guidance for management of songbirds. I believe that Bob Ford will talk about this later today.

Because of Partners in Flight, the plight of Neotropical migrants is now on the "radar screen" of many officials and land managers. Not since Rachel Carson's Silent Spring has such a powerful conservation message been delivered to the American public.

Where do we go from here? Have the three major bird conservation programs—NAWMP, WHSRN, and PIF—achieved a comprehensive, ecosystem approach to migratory bird conservation?

Great strides have been made in migratory bird conservation in North America; probably beyond anyone's wildest expectations of only a decade ago. But, we have a ways to go before creating and implementing a large-scale, ecosystem-based conservation program for ALL North American birds. Although some of the major components exist—in the form of established programs—there needs to be a firm commitment to the integration of these efforts.

Two points need to be kept in mind:

- A true ecosystem approach does not manage for one group of species to the exclusion of another group.
- A comprehensive approach incorporates the year-round needs of species.

In fact, the bird conservation community is moving precisely in these directions. As you'll hear later today, there are active movements afoot to bring together some of the goals and objectives of the NAWMP, WHSRN, PIF, and other programs in the form of regional plans, and even a North American Bird Conservation Plan.

A North American Bird Conservation Plan would take a more comprehensive look at ecosystem-level management by merging together the objectives and strategies of individual programs. By examining the strengths and weaknesses of each, we'll be in a better position to fill the gaps in our strategy and move towards a more effective approach to bird conservation. Partners in Flight will be working with the NAWMP and WHSRN to develop a national plan for the United States. The Commission for Environmental Cooperation, an outgrowth of a tri-lateral agreement among the U.S., Mexico, and Canada, has agreed to assist in facilitation of a comprehensive North American Plan.

Now might be an appropriate time to commend all the partners working in the Southeastern Region for leading the way in large-scale conservation. The Mississippi Alluvial Valley Initiative, as you'll see this afternoon, brought together the minds of leading scientists, land managers, administrators, and educators, to form a detailed view of how ecosystem management should work.

The South Atlantic Migratory Bird Initiative will be an exciting and fresh approach to conserving the complex migratory bird communities along the East Coast. Because of the large human population, and the extensive and diverse bird fauna of this region, this initiative will face a very realistic test of the values—and problems—of large-scale conservation. Clearly, biologists, economists, policy-makers, and educators will need to be integrated into all phases of this landmark program. Chuck Hunter will provide you with many more details of this developing idea later today.

Two final points need to be made about these large ecosystem plans. First, these complex initiatives need to be adaptive—that is, they need to be continually evaluated and adjusted to conform to the present and future ecological and social environment. We are doing this with the comparatively simple waterfowl harvest program; it will be a real challenge to ensure that adaptive management plays a strong role in the evolution of ecosystem-level programs. Adaptive management is simply a formal and objectively driven decision-making process. It accounts for uncertainty and insures that managers learn from actions in a strategic way. We must understand the effects of our decisions each time using the best available data as effectively as we can. In the case of game species, we must integrate harvest and habitat for an effective comprehensive approach.

And the second point is that not only will an ecosystem approach help ensure the long-term persistence of migratory birds, but also the continued economic benefits our society gains from bird-related recreation. Nonconsumptive and consumptive migratory bird recreation has an annual economic impact of nearly $20 billion. Bird watching accounts for more than 80% of those revenues. And don't forget the economic impact of individual refuges, National Forests, National Parks, and state and local wildlife management areas on their surrounding local communities. For example, just to the east of us at Chincoteague National Wildlife Refuge, bird-watchers spend nearly $10 million dollars each year in the small towns around the refuge. So you can see that, not only does a

large-scale approach make sense from a biological standpoint, but there is also a clear economic reason for continuing with our ecosystem planning.

In conclusion, the task ahead is both technically and financially challenging, but it is critical that we succeed to insure the long-term conservation of birds. Whatever we do it must be comprehensive, integrated, adaptive, and strategic.