

Introduction

Deborah M. Finch¹ and Peter W. Stangel²

The future for neotropical migratory birds rests with our commitment and ability to provide them adequate habitat during all periods of their life cycle. Our commitment to this cause is apparent in the groundswell of interest in neotropical migrants and the many proactive and cooperative partnerships resulting from the *Partners in Flight - Aves de las Americas* Neotropical Migratory Bird Conservation Program. Our commitment will be tested, however, by the need to balance competing priorities and demands, i.e., for jobs; commercial resources such as wood, livestock, minerals, and land; recreation and scenic beauty; clean air, water, and space; and other wildlife such as game. To be successful, we will need to continually renew and strengthen this commitment, while seeking creative, flexible, and cooperative approaches for addressing multiple human concerns.

Our ability to provide adequate habitat for neotropical migratory birds on lands under different ownerships and uses is the subject of this volume. It represents the proceedings of a National Training Workshop held at Estes Park Center, YMCA of the Rockies, in Estes Park, Colorado, from 21 to 25 September, 1992. The total tally of participants, over 700 people, is a true affirmation of the workshop's timeliness and value. The conference was the first major training event of its kind that dealt exclusively with neotropical migratory landbirds, and that was designed to address the multitude of interests and needs of natural resource managers, researchers, educators, industry representatives, and environmentalists. Its primary purpose was to bring together researchers and resource managers to discuss the challenges and problems, solutions and alternatives, for conserving neotropical migratory birds. If the tremendous interest in neotropical migratory birds is a true indication of our commitment to conserve these species and their habitats, then this volume will find its place on every natural resource manager's bookshelf alongside classic wildlife management books such as *Wildlife Habitats in Managed Forests* (Thomas 1979), *The White-tailed Deer: Ecology and Management* (Hall 1984), *Wildlife 2000, Modeling Habitat Relationships of Terrestrial Vertebrates* (Verner et al. 1986), and *The Wild Turkey: Biology and Management* (Dickson 1992).

Conserving viable populations of migratory species may seem impossible when we consider that only 7% to 8% of available lands in the United States have been set aside as nature preserves, wilderness, refuges, sanctuaries, and parks (Salwasser 1989). Most other lands are privately owned, or managed for multiple uses by states, counties, cities, or federal natural resource agencies such as the U.S. Forest Service and Bureau of Land Management. Yet, such multiple-use lands serve as invaluable reservoirs of habitat for biological diversity (Norse et al. 1986), to which neotropical migratory birds contribute greatly. And, during the last decade, public expectations that populations of endemic, endangered, and migratory species be conserved have risen exponentially. In response to the growing problems facing wildlife species and to changes in public interest and involvement, natural resource agencies are undergoing major shifts in management philosophy and practice.

Managing habitat for neotropical migratory birds is both a challenge and an opportunity. Resource managers may wince when weighing options for managing the diverse needs of dozens of species, many of which are rare or uncommon, present for only a few months each year, and whose ecological needs are not always well-known. But private, state, and federal landowners are coming to realize that managing for single resources, such as wood products, livestock, or minerals, or single species, such as game species, endangered species, and charismatic species, is costly, time-consuming, and potentially in conflict with sustaining other resources and species. Our hope is that this workshop and its products will inspire managers and researchers to cooperate more closely together in developing and transferring information for conserving multiple species on managed lands.

Including diverse assemblages of neotropical migratory birds in management goals may be one approach for creating and maintaining more ecologically balanced habitats. Habitats used by neotropical migratory birds range widely from early to late successional stages; from prairie to shrubsteppe to forest; from nature preserves to industry-owned lands; and from Canada to South America. Protected habitats such as National Parks and privately owned wildlife sanctuaries have great value not only as habitats, but as laboratories for learning about the habitat needs of individual species, and for drawing comparisons to managed lands. Realistically, however, they alone are not adequate to support viable populations of most neotropical migratory birds. Instead, most conservation will take place on altered landscapes, from large public properties such as national

¹ U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station, Southwest Forest Science Complex, 2500 S. Pine Knoll Dr., Flagstaff, AZ 86001.

² National Fish and Wildlife Foundation, 1120 Connecticut Ave., Suite 900, Washington, DC 20240.

forests and state parks, to wildlife management areas, commercial forests and rangelands, greenbelts, non-industrial private lands, city lots, and private backyards. The information contained in this volume will provide managers of these properties with a wealth of information to improve and create habitat for neotropical migratory birds, as well as temperate migrants and nonmigratory resident birds.

Patterns of population declines and endangerment of migratory birds and other species are detected at larger observational scales than those traditionally used to manage lands. To compare and adjust patterns of land use to changing levels of biological resources, we need to recognize a multiplicity of management scales. The size of a management unit (e.g., a stand of trees, a forest district, a national refuge) may be too small or restrictive for effectively detecting severe population changes or for managing habitats for migratory species and regional biological diversity. Shifting to larger geographical scales allows us to account for and sustain integral parts and processes of landscapes and ecosystems. Such shifts in scope require that conservation partnerships be established across land ownerships and that new management ideas and techniques be implemented, such as those discussed in this proceedings.

The conference itself stimulated unusually high interest in neotropical migratory birds and cooperative methods to conserve them. In his opening speech, Perry Olson, Director, Colorado Department of Natural Resources, appealed to natural resource agencies, research institutions, and the private sector to develop knowledge bases and partnerships to conserve migratory birds and their habitats, using case examples from Colorado to stimulate direction. A busy schedule of talks, exhibitions, and events enlivened the conference, including: the annual business meeting of *Partners in Flight*; a full agenda of invited speakers, panels, and concurrent working sessions; a keynote address by Dr. Russell Greenberg, Smithsonian Migratory Bird Center; a poster session with 52 posters and video displays; an awards ceremony and banquet; various *Partners in Flight* regional and national Working Group meetings; planned and impromptu meetings of governmental and private groups; state and federal agency socials; a video-taping interview of selected speakers; and a final day of concurrent field trips to local Colorado bird hotspots and ecologically sensitive areas.

During the awards ceremony and banquet, *Partners in Flight* appreciation plaques were presented to the Program Committee co-chairs, Deborah Finch and Tom Martin, and to the Local Arrangements Committee, Dick Roth and Stephanie Jones, co-chairs, and members, Rick Bonney, Mike Carter, Jeff Conner, Bob Hamre, and Susan Skagen. Chairs and co-chairs of the eight regional and national *Partners in Flight* Working Groups, and *Partners in Flight* organizational coordinators, were also awarded with plaques for their outstanding contributions to *Partners in Flight* over the past two years. Dana Bradshaw, Virginia Department of Game and Inland Fisheries won the 1992

Zeiss Binocular award for the best neotropical migratory bird monitoring project implemented under the *Partners in Flight* umbrella.

Authors of this proceedings were invited to submit manuscripts outlining the status of neotropical migratory landbirds, and describing methods and options for managing and monitoring populations and habitats. Thus, proceedings papers identify gaps in our knowledge of species' requirements; recommend management approaches that are new, modified, or integrated with other strategies; and stimulate the research necessary to effectively manage neotropical migratory birds and their habitats. Papers focus on breeding habitat in the United States and to a lesser extent Canada and Mexico, with some information on habitat needs at migratory stop-over areas. Critical habitat requirements during the nonbreeding season have not been ignored, but rather will be the focus of similar workshops and conferences to be held on the nonbreeding grounds themselves.

Authorities in avian ecology, conservation, and habitat management were invited to author and co-author papers in their areas of expertise. In many cases, multiple experts were requested to unite their thoughts and differing viewpoints by co-authoring papers on invited topics. Before submitting papers, authors were asked to have their manuscripts reviewed by a minimum of two peers. Upon submission, the proceedings co-editors reviewed each manuscript and returned them to authors for revisions. Each published paper therefore went through several drafts. In two cases (Whitacre et al., and Cyr and Larivee), poster presenters were invited to submit papers to help round out the international picture for neotropical migratory birds. In addition, some authors were requested to submit two papers, a review chapter for a book to be published by Oxford University Press and a shorter paper for the proceedings that focused on management options.

This proceedings is broken down into seven sections. Part I, *Changing Values and Partners in Flight* introduces readers to the history and status of *Partners in Flight* from the perspectives of United States governmental agencies, nongovernmental institutions, and Canadian organizations. This is followed by philosophical and imaginative papers emphasizing the need for increased cooperation between researchers and natural resource managers, conservationists and private industry, birdwatchers and landowners. A pivotal paper discussing declining population trends of many neotropical migrant species underscores the reasons why we need to expand and merge our ecological, sociological, and economic thinking. The papers in this section suggest that by evaluating unique socioeconomic opportunities, and by consciously integrating human needs into our efforts to conserve neotropical migratory birds and biological diversity, the future for migrants may indeed be bright.

Part II, *Population Dynamics and Habitat Concerns*, provides overviews of issues, problems, habitat limitations, and management options for neotropical migrants during breeding, migration, and nonbreeding periods. The majority of papers in this proceedings emphasize conservation and management

concerns during the breeding period, so rather than include a recapitulation of breeding concerns in this section, a specific breeding season issue - cowbird parasitism - is highlighted.

Part III, *Prioritizing Regional Species of Concern*, is a special section prepared by the four regional Working Groups of *Partners in Flight*. Prioritized lists of species of management concern were formulated for neotropical migratory birds inhabiting four geographic regions: West, Midwest, Southeast, and Northeast. We recommend that those interested in applying the prioritization scheme consult with *Partners in Flight* regional or state working groups and state fish and wildlife agency coordinators. Note that the regional affiliations of states are the same as those defined by the International Association of Fish and Wildlife Agencies. An overview paper by Chuck Hunter, Mike Carter, David Pashley, and Kieth Barker explains how the prioritization strategy works and why it was needed. At the request of the *Partners in Flight* oversight committees, this paper received extensive scientific review by the Technical Review Subgroup of the *Partners in Flight* Research Working Group to insure that the prioritization scheme was technically sound. We thank David Capen, University of Vermont, for arranging the technical review. Before implementing the results of regional priority lists, we recommend that readers develop a solid understanding of the scheme itself, keeping in mind that priorities will shift as populations of species recover or change, as new knowledge accumulates, and as humans redefine their needs and concerns. The authors and the editors view the prioritization scheme and resulting regional lists as working models, subject to modification or replacement. Also, readers should be aware that species requiring high priority attention within specific states and physiographic areas may not be directly discerned through regional lists. As such, we urge managers and biologists to use regional lists wisely when planning projects, communicating closely with other agencies and landowners, and adhering to the philosophy of "adaptive management". We also emphasize that the priorities for nonmigratory bird species and animal groups other than birds were not defined here, but that these species, and especially endemic, endangered, and sensitive species, must be considered and prioritized alongside migratory species.

Part IV, *Monitoring Bird Populations and Habitats*, explains why monitoring programs and databases for neotropical migratory birds are needed, and describes strategies, standards, and techniques for implementing them on the breeding and nonbreeding grounds. Specific methods for monitoring and counting breeding birds, such as point counts, mist-netting, and nest searches, are discussed in depth in individual papers. Examples of standardized monitoring programs used in Canada and the United States are also described. For additional recommendations on monitoring, please refer to the Monitoring Working Group's 1992 Monitoring Needs Assessment for Neotropical Migratory Birds, published by *Partners in Flight* and available from Cornell Laboratory of Ornithology.

Part V, *Organizational Monitoring Goals and Programs*, is comprised of papers contributed by invited panelists, each of whom reviewed plans and strategies for monitoring neotropical migratory birds established by his or her specific organization. Papers are presented by representatives of U.S. Fish and Wildlife Service, U.S. Forest Service, Bureau of Land Management, U.S. Department of Defense (Army), and state fish and wildlife agencies. While the Environmental Protection Agency was also represented on the panel, its written contribution was included in Section IV. Western and eastern state perspectives were provided by state agency representatives from Utah and Virginia. Completing this section is a paper by ornithologists of the Point Reyes Bird Observatory on the monitoring capacities of nongovernmental organizations and bird observatories.

Part VI, *Land Use Practices and Neotropical Migrants*, is an important and lengthy section that identifies and reviews the relationships between neotropical migratory birds, land use, and habitat patterns. Discussed in detail are various management options for lands that have been converted to agricultural crops or for multiple-use lands where livestock grazing and silviculture are dominant practices. The problems migrants face in relation to toxic chemicals are also discussed, and it is our hope that more research on regional levels of pesticide use and exposure will be initiated on both the breeding and nonbreeding grounds. New perspectives are given on habitat fragmentation and management approaches at the landscape level. Finally, because silvicultural practices vary widely by region, Section VI ends with three papers on regional alternatives for forest management.

Part VII, *Conflicts and Solutions for Integrating Neotropical Migratory Birds with Management of Other Wildlife*. This section focuses on the need to integrate conservation of neotropical migrants with that of other wildlife species, particularly game species. This topic is of special interest to state wildlife agencies, whose financial support for conservation projects comes primarily from hunters. Several authors provide regional case studies that explore ways to integrate management for neotropical migrants with dominant game or endangered species. To accommodate growing concerns about conserving biological diversity, including over 250 neotropical migrant species, emphasis must shift from traditional single species methods for managing habitats and populations to multi-species approaches. Concurrent breakout sessions on this topic followed oral presentations, and session summaries by three regional Working Groups conclude the chapter.

This volume is far from exhaustive. Many basic questions, such as the minimum habitat area required to support particular species, macro- and micro-habitat requirements necessary for successful reproduction, importance of forest interiors, and a host of other important issues remain unclear. Many users of this volume should be surprised, however, by how much we do know and what can be done now to improve environmental conditions for migratory birds. A companion product of the workshop is a book soon to be published by Oxford University Press entitled *Ecology and Management of Neotropical*

Migratory Birds: A Review and Synthesis of the Critical Issues. Invited chapters of the Oxford book review and collate existing knowledge on the ecology of neotropical migratory birds.

With this proceedings as a starting point, we recommend that *Partners in Flight* Working Groups now take a coordinating role to fine-tune management recommendations via training workshops sponsored at regional, state, and local levels. Stimulated by enthusiasm and interactions at the conference, state working groups have formed throughout the United States, assuming leadership roles to coordinate *Partners in Flight*. Management programs for neotropical migratory birds are being implemented, but have not reached the scale necessary to maintain viable populations of many species. Management of these species can no longer be ignored due to lack of interest or information. Much remains to be learned, but plenty can be done right now. We hope this proceedings will stimulate managers to incorporate neotropical migratory birds into their plans.

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