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Tundra to Tropics: Connecting Birds, Habitats and People

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Source: The Condor, 113(2) : 470-471

Published By: American Ornithological Society

URL: https://doi.org/10.1525/cond.2011.113.2.470

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The final chapter, *Conservation in the Era of Global Change*, argues that a two-pronged approach will be a key strategy for conservation. These prongs are monitoring the ecological and evolutionary responses of migratory birds to the changing climate and devising international plans for habitat protection that have the necessary flexibility to keep abreast of changing environments.

The book is well organized and the prose is clear, although particularly in the chapters detailing documented changes in migration as a function of climate change, the text is dense and occasionally tedious. The level of the text is about the level of an article in a major ornithological journal. Portions of the final chapter in which the author describes in detail how a Breeding Bird Survey is conducted seem unnecessary, particularly when he often cites BBS data in the review of responses of various bird groups to climate change earlier in the book.

My major complaint about the book is its lack of citations in the text of the chapters. As an active researcher on the effect of climate change on landbird migration, I could identify the source for most of the statements Cox summarized in those chapters, but a nonspecialist or student would not be able to do so. For each chapter, 10 to 15 key references are given, but those are a small subset of the literature that Cox reviewed. The lack of full referencing diminishes the book's utility.

While I fully endorse Cox's goal of assessing the ability of migratory birds to respond to global climate change, I had some initial difficulty in making the connection between his early chapters on changing climate with the many chapters on the responses of migratory birds to those changes. My confusion stemmed from climate changes being challenges not only to migratory birds but to all birds, indeed to all organisms.

The argument is sometimes advanced that migratory birds are at a more significant risk than nonmigratory species because the former depend on different habitats for nesting, for wintering, and for migration. But as Cox shows, migratory species may be safer than nonmigratory species. He used the 2008 IUCN Red List to compare migrants and nonmigrants. Using the three Red List categories with highest risk (critically endangered, endangered, and vulnerable), he found that 12.0% of all migratory species are at risk compared to 23.8% of nonmigratory species. Some migratory species are at much higher risk; according to these criteria, about a third of all seabirds are at risk. The greater vagility of migratory species may allow them to adapt more rapidly than nonmigratory species.

Cox has written a valuable overview of our present knowledge of the effect of global climate change on migratory birds. The book is timely and informative and will be a valuable resource for field ornithologists, wildlife managers, and environmental scientists.—W. HERBERT WILSON, JR., Department of Biology, Colby College, Waterville, ME 04901. E-mail: whwilson@colby.edu.

The Condor 113(2):470–471
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Tundra to Tropics: Connecting Birds, Habitats and People.—Terrell D. Rich, Coro Arizmendi, Dean W. Demarest and Craig Thompson (editors). 2009 Proceedings of the 4th International Partners in Flight Conference, 13–16 February 2008, McAllen, Texas. Partners in Flight. 712 pp., paper; volume currently available only online at http://www.partnersinflight.org/pubs/McAllen-Proc/index.cfm.

The Partners in Flight (PIF) program is a broad coalition of organizations committed to the conservation of landbirds in the Americas. Because many threatened and declining landbird populations span huge geographic ranges across many sociopolitical boundaries, it became necessary to rethink conservation strategies. Numerous organizations and government agencies had been addressing conservation independently. When formed in 1990, PIF set out to address the needs for conservation at a continental scale and to help coordinate the work of many organizations and governmental agencies. PIF represented a novel approach that combined efforts across the public and private sectors, from federal agencies to local conservancies and from academia to concerned individuals. PIF set out twenty years ago to strengthen and coordinate, informally, multiple stakeholders who shared an interest in landbird conservation. The three main goals of PIF (http://www.partnersinflight.org/description.cfm) are to

- Ensure an active scientifically based conservation-design process that identifies and develops solutions to threats and risks to landbird populations.
- Create a coordinated network of conservation partners implementing the objectives of the landbird-conservation plans at multiple scales.
- Secure sufficient commitment and resources to support vigorous implementation of landbird-conservation objectives.

This proceedings volume addresses and demonstrates the significant progress PIF has made toward the first two goals; the third goal is not directly addressed in the volume.

PIF symposia are not held on a regular basis but instead are called when developments seem to merit a need. The appearance of this symposium volume marks significant progress and developments in the maturation of PIF and bird conservation. The volume is important not only for the science and information it contains but as a demonstration of how conservation is improving. Most importantly, the volume acts as a guide for where and how efforts at bird conservation should be directed in the challenging years ahead. The conveners wanted a volume "that spoke more directly to the nagging question, 'so now what?'" (p. 1). The volume addresses this question reasonably well, but sometimes it takes a bit of digging and reading between the lines. Perhaps if the contributors had been required to end with a conclusion or recommendations section, the "now what" implications of individual papers would be more apparent.

The conference attracted about 700 participants, over 100 of them from nations other than the United States of America (roughly 25% of the authors in the volume list institutional addresses outside the U.S.). It is important that PIF, and the bird-conservation community in general, strive to broaden participation from outside the U.S. This need is acknowledged in several places in the volume, such as the chapter "Birds without borders . . ." by Russell, Russell, and Herrera that describes a collaborative program for bird conservation between Mexican and U.S. universities. More such programs and greater investment in conservation training for Latin American students is a message the PIF should continue to drive home. Many U.S.-based conservation

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organizations and universities should emulate the efforts of PIF for greater inclusion of partners across the hemisphere. The longer papers all have Spanish abstracts, and a few papers are in Spanish, but 75% of authors being from the United States is lopsided and attests to the handicap avian conservation faces in the Western Hemisphere.

PIF strives to bring together the many players in conservation. This volume's authors' affiliations roughly break down as 45% nongovernmental organizations, 28% academic, 15% federal agencies, 5% state agencies, and 7% corporate, private, and other. The volume shares information from across the PIF network. There is much in the volume to interest conservation practitioners, not just the more academic, research-oriented conservation biologists, as might be the case at professional meetings of the major ornithological and ecological societies.

Contributed chapters are organized in categories: basic biology, bird communities, anthropogenic effects, decision-support tools, education, communication, and outreach, project implementation, monitoring, and response to habitat changes. These are preceded by one of the most useful features of the volume: a succinct needs assessment summarizing priorities for education, outreach, and communication by Dayer, Pitkin, and Bonfield, monitoring by Lurent and Pashley, and research by Ruth and Rosenberg. For the full list of the 465 conservation needs, the reader is referred to the PIF website. But it was not intuitively easy to find the list, and I gave up my search before locating it. It would be helpful if a clearer link was made to the list or an appendix was added to the online version of the proceedings. At 712 pages it is understandable why the full list was omitted from the hard copy, but it would certainly help to have the full list readily accessible online.

The heightened emphasis on education, outreach, and communication in this volume (151 of the 465 needs identified by PIF) is long overdue and reflects traditional emphasis on research and monitoring by much of the conservation community. Slowly conservation biologists recognize that conservation is as much or more about people as biology. Biology can guide conservation, but without at least some subset of people altering their behavior, there will be no conservation outcome. This is stated in the editors' preface, and it bears repetition here: "*Indeed, if we do not connect people—to each other, to the habitats, and to the birds—we cannot succeed* [in conservation] *no matter how compelling our research, monitoring, and other scientific accomplishments*." In my view most conservation failures can be traced to a failure to address the human side of the equation adequately rather than inadequate science or monitoring.

The assessment of needs for education, outreach, and communication breaks the 151 identified needs into six themes with a few paragraphs devoted to each theme. There is a wealth of useful information in this assessment to point the reader to resources and to highlight areas where more work is needed. Of the six, the most important theme is "Changing of knowledge, attitude or behavior of an audience to address a conservation issue." Another is "Elevating the importance of education/outreach/communications for conservation." The profession's shortcomings with the former theme can be in part attributed to the latter. The postgraduate education system that churns out ornithologists, ecologists, and future conservation professionals offers little training in many skills required to change human behavior and emphasizes pure research (e.g., Muir and Schwartz 2009).

The assessment of monitoring needs emphasizes the need for better coordination among over a thousand monitoring programs in the United States. Although the chapter states that there are large unmet needs for monitoring in Latin America and the Caribbean, I would have liked to see these laid out more explicitly. Most of the discussion is generic, being about data collection, analysis, and distribution, with an important theme for specific goals and objectives for monitoring. The chapter ends with a good set (27) of next steps that set out specific and general recommendations. This chapter ought to be read by leaders of organizations and programs involved with bird-population monitoring. By refining and improving avian monitoring, resulting data can become more useful for conservation.

Because of the substantial investment and large workforce engaged in research, the third needs-assessment chapter on research may nudge ornithologists and graduate students to address some key questions. Three broad areas are listed: crucial gaps in knowledge, effects of human actions on birds, and socioeconomic research. It is commendable that the third category is included, as it traditionally would not fall among priorities set by many ornithologists. Yet conservation biologists need a better grasp on socioeconomic factors that affect bird populations. Traditional conservation efforts, such as habitat preservation or pollution control, operate in a matrix of socioeconomic variables that are poorly studied or understood.

The needs chapters constitute the bulk of the volume, 87 short papers spanning a fairly wide range of topics, detail, and quality. The editors deliberately made the volume as inclusive as possible, including "extended abstracts." And although all submissions were reviewed by at least one peer and one editor, some might not otherwise have made it into mainstream peer-reviewed literature. This is one advantage of a volume like this in which a great deal of useful information is garnered but definitive papers on key topics appear elsewhere.

The papers span a range of topics that defy distillation into a short review. From the effects of domestic cats on birds to population models for the Red-cockaded Woodpecker (*Picoides borealis*) and from effects of prescribed fires in Ponderosa Pine forests to citizen-science projects, there is something here for almost everyone involved in bird conservation.

The contents are available free on the PIF web site. Any conservationist should find something of interest and personal relevance in the volume. It will make fertile material for browsing by university students looking for research topics or a window to the literature on a new topic. Conservation practitioners ought to examine chapters closely, as there is a wealth of information in the form of "lessons learned" from other practitioners and practical steps that advance landbird conservation. Go to the web, download articles of interest, and share them with your colleagues. The goals of PIF and conservation will be promoted the more widely the wealth of content in this volume is shared.—ANDREW L. MACK, Powdermill Nature Reserve, Rector, PA 15677. E-mail: mack.andrew.l@gmail.com.

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