



## Book Reviews

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EDITED BY R. TODD ENGSTROM

*The following critiques express the opinions of the individual evaluators regarding the strengths, weaknesses, and value of the books they review. As such, the appraisals are subjective assessments and do not necessarily reflect the opinions of the editors or any official policy of the American Ornithologists' Union.*

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**Arctic Shorebirds in North America: A Decade of Monitoring.**—Jonathan Bart and Victoria Johnston, Eds. 2012. *Studies of Avian Biology*, no. 44. University of California Press, Berkeley. 302 pp. ISBN 9780520273108. Hardcover, \$80.00.—This book summarizes the history, field and analytical methods, and statistically derived density and population estimates obtained for Arctic-breeding shorebirds during the past 10 years as part of the Arctic Program for Regional and International Shorebird Monitoring (PRISM). The monograph is divided into an introduction, regional reports, methodology, synthesis sections, and several appendices. All the data, methods, and GIS and analytic programs are described as being free online (see [greatbasin.wr.usgs.gov/CBM/default.asp?PageID=1](http://greatbasin.wr.usgs.gov/CBM/default.asp?PageID=1)), although some of these materials appear to be in development.

Arctic PRISM is designed to obtain distributional and habitat data on shorebirds from vast swathes of land in the Canadian and Alaskan Arctic. The authors have succeeded overwhelmingly in this goal, identifying new hot spots for shorebirds and expanding our understanding of the distribution of particular species (see chapters 3–8 and 12). Habitat relationships are also presented, but at a rather coarse level (wetlands, moist areas, uplands; appendix B). Given the reliance on the Circumpolar Arctic Vegetation Map (CAVM Team 2003) for many regions, this level of habitat assignment is likely justified, although refinement is certainly needed and may affect population estimates (see below).

Perhaps the two most important goals of Arctic PRISM are to estimate population sizes *and* trends of shorebirds, which are needed for conservation and adaptive management. Previous estimates of population size were based on expert opinion and were thought to be within one or more orders of magnitude of the true number for most species (Morrison et al. 2006). The authors provide North America-wide population estimates and hundreds of density and population estimates at regional levels for 26 of the 53 shorebird species that breed in North America (chapter 14 and appendix B). These represent the first statistically derived estimates for many shorebird species, and because of this, substantial revisions to North American population estimates have been made (Andres et al. 2013). The authors do

not provide information on trends because the remainder of the first round of surveys and a second complete round of surveys must be accomplished first (chapter 15). Thus, trend estimates are not likely to be available for at least 10 or more years (p. 205). Bart and Smith (chapter 13) predict that between 18 and 24 species may have sufficient survey precision to detect trends, although they acknowledge that numerous simplifications and assumptions were required in their analysis.

Bart et al. developed a double-sampling protocol for surveying shorebirds that relies on a large sample of plots that are rapidly surveyed with an unknown accuracy, and a subsample of these plots that are intensively surveyed to determine the actual numbers present (chapter 2). The ratio of the number of birds recorded by rapid surveyors on the intensive plots, divided by the number of birds determined to be present by the intensive surveyors, serves as a detection ratio that is used to adjust the results from the rapid surveys. Bart et al. explain that this double-sampling approach requires only two assumptions: that the nominal sampling plan is followed and that the counts on intensive plots yield unbiased estimates of numbers present.

Questions surrounding the monitoring methods prompted a call for a review in 2002 (Arctic PRISM Peer Review Committee 2010). The authors mention this review in appendix A and discuss why population trends are difficult to estimate by measuring demographic rates and/or by monitoring shorebirds on migration. I encourage readers of this monograph to also read the review document to learn about other issues raised and how they were resolved. It is clear that much was learned from the review and that many positive changes have occurred over the years. Unfortunately, some issues cannot be resolved easily. I was happy to see that many of these issues were raised in many of the regional reports and methods chapters. One of these issues is difficulties with surveying rare species or those that occupy rare habitats or occur in clumped locations. For these species, the coarseness of the sampling plan (in many cases <0.01% of regions are surveyed) may prevent reliable extrapolation of density estimates. Another issue is inaccuracies in the habitat classification maps, due to dependence on

remote sensing and the lack of supervised habitat classifications, which can make extrapolations problematic. A third issue is how birds are counted on rapid plots. Differences in survey methods are thought to be why the average detection ratios differed between the United States (Alaska; 0.81) and Canada (1.27; p. 215). Obtaining better detection ratios for species in different regions would be useful.

Given the issues identified above, I concur with Andres et al. (2013) that population estimates provided within the monograph should not be adopted unless coefficients of variation are  $<0.30$ . Secondary sources of information from wintering and migration areas should also be used to affirm estimates. Where great discrepancies with historical estimates are present, I hope this will cause others to conduct more in-depth surveys for these species. I anticipate that population estimates will only get more precise and accurate as more in-depth natural history information is collected on species and more detailed habitat information becomes available. Fortunately, Arctic PRISM has flexibility to incorporate new survey approaches should advancements occur in the coming years.

Although Arctic shorebirds appear prominently in the title of the book, information is presented on the distribution, habitat use, and abundance of other bird taxa (chapters 4 and 6–9). This additional information was likely included because the authors promote expanding Arctic PRISM to include waterfowl, waterbirds, and passerines, calling it the “most important remaining innovation” (chapter 15). Expanding Arctic PRISM to include all birds may make it more appealing to funders, but this will come at a cost in terms of logistical effort and funds, and in terms of the changes in the likelihood of shorebirds being detected both on intensive and rapid surveys. Because the current Arctic PRISM sampling design is based on stratification of potential shorebird habitats, population estimates of other bird taxa may also be biased. In my experience, “all bird” surveys count everything but count everything less well.

Overall, I found the book very well written and easy to follow and think it provides a good overview of the Arctic PRISM program during the past decade. I recommend it as essential reading for people interested in shorebird monitoring and population assessment, and as an important acquisition for college and university libraries.—RICHARD B. LANCTOT, *U.S. Fish and Wildlife Service, Migratory Bird Management, 1011 E. Tudor Road, MS 201, Anchorage, Alaska 99503, USA. E-mail: richard\_lanctot@fws.gov*

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**The Kirtland's Warbler: The Story of a Bird's Fight against Extinction and the People Who Saved It.**—William Rapai. 2012. University of Michigan Press, Ann Arbor. x + 204 pp. ISBN 9780472118038. Hardcover, \$24.95.—The population recovery of Kirtland's Warbler (*Setophaga kirtlandii*) is one of the most fascinating success stories of an endangered species in the past 60 years. As the author states, the story transcends the bird and its environment. By including the human dimension of recovery efforts, this book keeps the reader involved throughout what ends up being a catalogue of management and research accomplishments. Of particular interest are the personal descriptions of many key individuals that bring the story to life. Without these personal accounts, the book would be easy to put down, but as written, the story that spans several decades is captivating. This well-written book is divided into three parts: the past, the present, and the future.

In the first part, the author successfully uses historical events and people to describe the bird's natural history and the Jack Pine (*Pinus banksiana*) ecosystem in which it nests. It is in this section that vivid descriptions are given of the species' discovery, song, and what it takes to find this gray-and-yellow warbler in young, thick stands of Jack Pines in northern Lower Michigan. Key events that defined recovery efforts across decades are described, using historical accounts to provide the point of view of key individuals such as Harold Mayfield and Lawrence Walkinshaw. One chapter is devoted to the problem of nest predation by Brown-headed Cowbirds (*Molothrus ater*; hereafter “cowbirds”) and how cowbird control contributed to stabilizing the population. This chapter introduces many of the key cowbird trappers and their unique perspective on efforts to save this species. Another significant event that is described well is the devastating Mack Lake Fire that took a life and the property of many residents. The negative attitudes that resulted from the fire helped draw attention to the importance of education and outreach programs in recovery efforts, which at the time had not been used. The people and actions of the outreach program were pivotal in getting the local community involved as part of the recovery effort. This integration resulted in a Kirtland's Warbler Festival to attract tourism into the area and fostered understanding on the importance of early-successional stages of the Jack Pine ecosystem to multiple species, not just Kirtland's Warbler.

In the second part, the focus shifts to describing present-day research. This research is targeting winter habitat in the Bahamas. Research efforts are linking the winter and breeding habitat to better understand the current pressures on the species. The descriptions of