August 1993

Review of *Ecology and Conservation of Neotropical Migrant Landbirds* by John M. Hagan III and David W. Johnston

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Ecology and Conservation of Neotropical Migrant Landbirds. John M. Hagan III and David W. Johnston, eds. Washington, DC: Smithsonian Institution Press, 1992. xiii + 609 pp. Graphs, tables, index, and references. $17.95 paper.

When I first began to notice changes in the numbers and bird species that I netted on the Great Lakes' islands in the 1970s, I had little comprehension of the extent to which global modifications already underway were driving the

changes in bird populations. With this compendium based on a symposium hosted by Manomet Bird Observatory in December, 1989, ornithologists can now substantiate the validity and seriousness of such earlier observations. The erosion of Neotropical bird populations is only one of many symptoms of planetary deterioration.

To be sure, we still have only a limited understanding of the population dynamics of small landbird migrants on either a regional or continental scale, but this volume brings us closer to a grasp of the subject. Most of the indices and trends are down for those bird species that nest in temperate zones and migrate to the tropics for the winter. Among the contributors to this volume, Hussel et al. shows declines at Long Point, Ontario; Faaborg and Arendt show declines for winter resident birds in Puerto Rico; and James et al. shows declines in southern U.S. highlands and increases in the lowlands. Sauer and Droege, using data from the North American Breeding Bird Survey, examine long-term and recent trends from the whole continent and find that in the long term (1966-1988) more species of Neotropical migrants were increasing than decreasing in both the east and west. But, in the short term (1978-1988), more species of Neotropical migrants decreased in the east. The paper by Atwood and Wood analyzes nineteen years of banding data from two stations and shows significant declines in eleven species and increases in two. However, many of the declining species winter in the southeastern U. S. rather than the tropics.

The book is further organized to discuss aspects of habitat change in the non-breeding and breeding seasons with a concluding section titled Hemispheric Perspectives. This section concentrates on mechanisms for ranking species by their degree of endangerment by Reed, demographic modeling of migratory populations by Ricklefs, paleoecology perspectives by Hunter, and the case history, by Robbins et al., of the cerulean warbler—a warbler in trouble.

The recurrent theme of the contributors is the effect of habitat fragmentation and the loss of natural avian habitats through destruction due to deforestation, agriculture, and urbanization in both temperate nesting grounds and tropical wintering grounds. The geometry of habitat fragmentation is such that the amount of edge habitat exposed to predators and parasites increases greatly as the fragments get smaller. A powerful paper by Freemark and Collins compares replicated forest interiors to forest edges for species richness in forests from Illinois, Missouri, and Ontario. The latter paper, along with a paper on a decade of population fluctuations in the American redstart at Hubbard Brook Experimental Forest in New Hampshire, are part of the

fifty-two diverse works which make this an essential document not only to ornithologists, but to all scientists and nonscientists trying to understand and predict changes in the natural world. **William C. Scharf**, *School of Biological Sciences, University of Nebraska-Lincoln.*