Book Reviews

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BOOK REVIEWS

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The Double-crested Cormorant, Plight of a Feathered Pariah by Linda R. Wires. 2014. Yale University Press, New Haven, Connecticut, and London, U.K. x + 349 pp., 33 b/w illustrations by Barry Kent MacKay. $30 (hardcover). ISBN: 978-0-300-18711-3. eBook ISBN: 978-0-300-18826-4.

This book was a revelation to me, despite having conducted research on Double-crested Cormorants (*Phalacrocorax auritus*) on the West Coast of the U.S. for 18 years. The book documents the shifting attitudes and policies toward Double-crested Cormorants in the U.S., especially after the species was protected under the Migratory Bird Treaty Act (MBTA) in 1972, and the subsequent escalation in widespread cormorant culling operations throughout much of North America east of the Continental Divide.

The book offers an interesting mix of biology, history, sociology, and politics regarding perhaps the most controversial species of native bird in North America. Wires is an authority on the status of Double-crested Cormorants, having conducted scientific research on the species for more than 16 years and authoring eight peer-reviewed scientific publications or major government reports on the species. Although a biologist, Wires makes it clear from the outset that the book has a mission: "Over little more than a decade, I watched the state, tribal, and federal agencies responsible for protecting and managing North American wildlife allow and participate in the destruction of more than half a million cormorants, despite little biological evidence justifying this as a rational course of action" (p. xv). Some readers will find the advocacy aspects of this book a distraction, or even offensive, but I found them refreshing, given the current policy toward Double-crested Cormorants in the U.S. and Canada.

The book is organized into four parts, the first providing some background on cormorants in general, and the Double-crested Cormorant in particular. This part includes many interesting tidbits on cormorant biology and history, such as the etiology of the scientific name for the European Shag (*Phalacrocorax aristotelis*), or literally "Aristotle's bald raven" (p. 19). It also provides useful information on the population status and trends for Double-crested Cormorants throughout their range in North America, including a global population estimate of 239,000–252,000 breeding pairs, two-thirds of which nest in Canada. Wires points out the staggering fact that the number of cormorants legally killed for population control purposes in North America over the last 16 years (>500,000 individuals) exceeds even the most liberal estimates of the numbers of all marine birds that died in the aftermath of the *Exxon Valdez* oil spill.

The second part of the book provides an in-depth examination of the species' fortunes in North America following European settlement. Although Double-crested Cormorants are currently considered by many fisheries managers as "overabundant" and "native invaders," Wires chronicles the observations of early explorers who described the species as present in "unimaginable" and "infinite" numbers. Exploitation and overharvest of the

cormorant resource occurred soon after settlement, however, and fishermen quickly perceived the cormorant as an effective competitor wherever fish resources were aggregated. Despite increasing exploitation and persecution in the 19th century, which in some cases led to regional extirpation of the species, some more remote sites retained astonishing numbers of Double-crested Cormorants, including a colony of more than 200,000 breeding pairs documented in 1913 on Isla San Martin off the Pacific coast of Baja California. Currently, the largest breeding colony of Double-crested Cormorants anywhere in North America is less than one tenth the size of the former Isla San Martin colony. As populations of Double-crested Cormorants began to recover in the early 20th century, the first government-sanctioned control programs were born. Cormorant population recovery occurred despite the exclusion of the species from the protections afforded by the MBTA of 1918, protections that were also withheld from a variety of other predatory and fish-eating birds that were collectively considered "vermin."

Beginning in 1945, the widespread use of DDT and other persistent chlorinated pesticides caused recovering populations of Double-crested Cormorants to collapse. By 1970 the entire population of cormorants in all of the Great Lakes was less than 90 breeding pairs. In 1972 two significant events occurred in the U.S. that would alter the fortunes of the Double-crested Cormorant: The species was afforded protection for the first time under the MBTA and DDT was banned. In fewer than 20 years the population of cormorants in the Great Lakes increased to more than 38,000 pairs. As Wires wrote, "Undoubtedly, diminished human persecution and reduced pesticide contamination were the primary factors making recovery possible" (p. 95).

Part 3 provides a detailed and entertaining description of how current policy toward cormorant management and population control evolved since 1965. For many fisheries managers, Double-crested Cormorants have become "the flies in a perfect ecological ointment," John Steinbeck's tongue-in-cheek description of cormorants in *The Log from the Sea of Cortez*. The concerted effort to exert control over the increasing and expanding cormorant population in the mid-section of North America began in 1986 with the issuance by the U.S. Fish and Wildlife Service (USFWS) of the first depredation permits for taking cormorants to fish farmers in the southern U.S., and, in the same year, the transfer of the Animal Damage Control program from the USFWS to the U.S. Department of Agriculture (USDA). In 1997, USDA–Animal Damage Control was renamed Wildlife Services and the USFWS issued the first standing depredation order for cormorants, the "Aquaculture Depredation Order." The Aquaculture Depredation Order was expanded to a "Public Resource Depredation Order" issued by the USFWS in 2003, and extended in 2014.

In Part 4, Wires attempts a synopsis of the current science, policy, and ethics of cormorant management in North America. At about 100 pages, this is the lengthiest of the book's four parts, and where Wires lays out her critique of how we as a society have rationalized our widespread, lethal programs to reduce or eliminate this native migratory bird from the landscape. In Part 4, Wildlife Services' agenda of reducing Double-crested Cormorant populations nationwide using lethal means is detailed and documented. Also detailed in Part 4 are the USFWS's capitulation to pressure from special interests, state agencies, and Wildlife Services, and its abdication of its responsibilities under the MBTA to protect Double-crested Cormorants as a native species of migratory bird. This reader must admit that this part of the book required some effort to finish, not because the content was tedious, but because of the astonishing reality of what we as a society have done, and continue to do, to cormorants in the name of good resource stewardship. Wires points out that a panel convened by the American Ornithologists' Union was highly critical of the Final Environmental Impact Statement for the Public Resource Depredation Order, prepared by the USFWS. The panel concluded, "it appears that what the USFWS plans to do constitutes persecution of a bird species rather than a solution to the real problems of declining fisheries and depredation at aquaculture and hatchery sites" (p. 293). Wires concludes this part of her book with "in the end, it is the [USFWS] that has enabled a level of cormorant destruction that may exceed the persecution the birds experienced in the nineteenth century. With this agency, then, lies responsibility for what has arguably become a modern-day policy of persecution

for one of nature's most magnificent but misunderstood birds'' (p. 296).

I highly recommend this important book, not just for those interested in the ecology, conservation, and management of waterbirds in North America, but for those with an interest in or involvement with wildlife management anywhere in the world. The issues that are at the heart of the Double-crested Cormorant controversy in North America are at the heart of many other controversies involving the management of top trophic-level predators to enhance the human share of limited resources on this planet. Ornithology as a discipline should familiarize itself with the issues surrounding the vilification and persecution of top avian predators, or risk helping legitimize lethal control programs for native wildlife that can precipitate unintended trophic cascades, restructure ecosystems, and further impoverish the native avifauna.

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The Birds of New Hampshire by Allan R. Keith and Robert P. Fox. 2013. Memoirs of the Nuttall Ornithological Club No. 19 (available at Buteo Books, http://www.buteobooks.com/). 473 pages, 84 text figures. $55 (hardcover). ISBN 978-1-877973-47-5.

This volume is an impressive example of recently published work in the genre of state and regional books on birds. The authors apply high standards overall in evaluating and presenting data from the large body of reports on birds encountered within the geographic boundaries of New Hampshire, across two centuries (Belknap 1792, 1812) of recorded information. They focus entirely on characterizing the current and past occurrence status of species on their main list, and on present and historical distributions in all cases represented by sufficient data. Because they regard the recently published atlas (hereafter ''Atlas'') of breeding birds in the state (Foss 1994) as a complementary companion volume, this book avoids discussing the habitat relations and life-history detail based on local information that are sometimes included in statewide bird reviews (e.g., Palmer 1949).

The table of contents is pared to a single page. To help readers navigate >350 pages of ''Species accounts,'' a list of avian orders (which are provided in the text) and corresponding page numbers would have been helpful in this table. The introduction is thorough and specific in discussing data sources, criteria for accepting bird records, organization of accounts, terminology, and abbreviations. On the subject of what constitutes an acceptable report, the standard in Keith and Fox (hereafter ''K&F'') is high given the modern context of a predominant body of sight reports; in this case, sight reports of a single occurrence by three or more observers is the threshold for acceptability when a specimen, one or more diagnostic photographs, video, or movie clip is unavailable. Unfortunately, the term ''record'' as employed by the authors is so broad, unguided by any definition, that it is almost meaningless. They use the word in relation to acceptable, hypothetical, and unacceptable observations. Given the flexibility attached to this important term in the text, one has to wonder why in some cases they also choose to use ''report,'' unless it is as a mere synonym of ''record.'' Some treatments of regional avifaunas (e.g., Robertson and Woolfenden 1992, Buckley et al. 2009) carefully define both terms for clarity and precision (though somewhat differently in the two cases cited). Restriction of the word ''record'' to any report that is independently verifiable (specimen, photograph, video or audio clips) or that otherwise has been vetted against reasonably high standards, especially in relation to sight reports (as K&F do), identifies the body of information that bears the greatest scientific integrity. The term ''report'' can be applied to the general case of any observation on occurrences of a species, or restricted only to cases that do not pass the vetting process. I use it here in the former context (Robertson and Woolfenden 1992, Greenlaw et al. 2014).

Following the introductory, explanatory material, four short but useful sections focus on a temporal view of habitat changes and bird status in New Hampshire, a

historical review of the state's physiographic and vegetational landscape since the last ice age, changes in the status of selected species since 1986 (of particular interest in relation to recent range expansions often attributed to global warming), and a history of ornithological activity in the state. The first section provides context to the historical comparison of status and distribution provided in the species accounts. The second could have been a little stronger, but this abbreviated section was a trade-off to a more detailed treatment in the Atlas (Foss 1994). At the very least, the authors should have included a physiographic map of the state in their work to support their references, without explanation, to some of the regions mentioned in their accounts. A book should be as self-contained as possible, considering the focal importance of the distributional analysis in K&F, to avoid forcing the reader to have another large book nearby for reference. The map addition could have replaced one of the full-page drawings, which in this reader's view add little to this fine work. Finally, in the book's preamble, two special essays, each authored by a different person, discuss the importance of Christmas Bird Counts and hawk watching as data sources in the state. The latter is a novel section and a wonderful addition (by E. R. Insunza) that provides a strong overview of the fall migration of diurnal raptors across the state, including two summary tables and text figures of movement schedules of 14 species.

The species accounts follow as the main body of this important book. The accounts are thorough, well-organized, concise, and informative. They vary in length from a single paragraph on a vagrant to more than two pages on the Passenger Pigeon (*Ectopistes migratorius*)—this last is an exemplary account that contains more details than I have seen in any other book on regional birds, apart from the account in Roberts (1932). The general cutoff date for adding material to the accounts was the end of 2009, but information on vagrants and new species were included into 2011. The nomenclature and classification generally follow the American Ornithologists' Union (AOU) Check-list (AOU 1998) and supplements through 2012. Yet the authors take some liberties with the check-list and one recent supplement. They get ahead of AOU on nomenclature by splitting Green-winged Teal *sensu lato* into Green-winged Teal (*Anas carolinensis*) and Common Teal (*A. crecca*), and Willet into Eastern Willet (*Tringa semipalmata*) and Western Willet (*T. inornata*) (while incorrectly referring to the two willets as "morphs" in their paragraph on the two putative species). On classification, they continue to place the order Falconiformes in its traditional position with other diurnal raptors, rather than between Piciformes and Passeriformes (Chesser et al. 2012). Setting aside the personal taxonomic views, the accounts are compelling reviews of the historical and current status and distribution of New Hampshire's accepted and hypothetical avifauna. The latter are mixed into the main list of accepted species, with no final accounting on the number of species that the authors accept in New Hampshire. K&F apparently regard the "hypothetical" species as tentatively accepted, and they place them in the main list on equal footing with accepted species. A simple formatting device, such as regular font used for the English names of hypothetical species, would make it easy for the reader to distinguish the two categories, but as it stands, all English names in the main list are bolded. One has to begin reading each account to discover the acceptance level applied to species in the main body of the book.

The text in all longer accounts is conveniently organized under two major historical subheadings, "Early reports to 1950" and "1950 to present." These headings effectively and efficiently expedite historical comparisons across the two eras, which in New Hampshire's case begins at the end of the 18th century. In most accounts, the second subheading is divided into seasonal headings. Under these, the authors effectively mix summary statements on local status and distribution with supporting observations and cited material. In the text, they mainly tie observations to towns in the state, which can be found in the the book's primary map, facing the table of contents. The "Spring" and "Fall" periods provide information on migration chronology, peak periods of movement, and highest recorded counts. Finally, the book ends with four very useful appendices (perhaps one more should have been added to include the hypothetical species), and a bibliography that contains a comprehensive list of all published sources on the birds of the state, including all cited references. Overall, I noticed few editorial lapses in the text. Page "28" was not entered on page 14 to replace the default place holder, and the figure on page 35 without a title is easy to understand from its legend. The misgender agreements of Latinized adjectives "*subvirgata*" and "*altera*" in the discussion on sharp-tailed sparrows are worth noting.

Setting aside my suggestions and comments, which in the broad view are relatively minor, this book provides an excellent model for handling large amounts of information in an effective format on past and present status and distribution of birds in a region. It goes beyond the super-summarized annotations that are prevalent in many such works today. New Hampshire birders, ornithologists, and conservationists will benefit from this admirable book. Moreover, bird people in Maine, Vermont, and Massachusetts, which share boundaries with New Hampshire and share the same ecoregions of the sub-boreal Acadian forest (Mosseler et al. 2003, Griffith et al. 2009), also will find the accounts in this book of value. In particular, the accounts of northward range expansion of several southern species into the Acadian forest region, now underway at an early

stage in northern Maine (J. S. Greenlaw personal observation), but well advanced in northern New Hampshire, should be of particular interest. I highly recommend this book to anybody interested in avian distribution and regional works on birds of the Americas.

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