



## The Singing Life of Birds.

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## Reviews



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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**The Singing Life of Birds.**—Donald Kroodsma. 2005. Houghton Mifflin, New York. xii + 482 pp., 68 text figures, 98-track audio CD (playing time 73:26). ISBN 0-618-40568-2. Cloth, \$28.00.—For those who enjoy reading outdoors or by an open window, this book will not easily be finished in one sitting. So infectious is Kroodsma's enthusiasm for the vocalizations of birds, from the simple songs of flycatchers (Muscicapidae) to the intricate cadences of the Winter Wren (*Troglodytes troglodytes*), that even a reader in a library will at times feel compelled to put the book down, venture outside, and listen to what the author calls "our singing planet."

*The Singing Life of Birds* accomplishes two major goals. First, it serves as the author's memoir. Second, both implicitly and explicitly, it encourages readers to become more observant of and amazed by the sounds of wild birds. A leader in the field of bird song, with many years' experience studying diverse species, Kroodsma is intimately familiar with the range of interesting questions about bird vocal behavior and the approaches to answering them. For him, this pursuit appears to constitute both career and lifelong hobby, and he clearly enjoys sharing his fascination with bird song. In this volume, written predominantly in first-person narrative, he takes the reader on what are best described as adventures in listening to birds. Along the way, he repeatedly demonstrates how observation leads to questions.

The book focuses on questions and techniques that are accessible to most bird enthusiasts. Broadly, these questions include how bird song develops, how and why it varies across

individuals and species, and how it functions. Techniques that the reader might be inspired to try range from simply listening to birds in one's backyard, perhaps with watch and notebook in hand, to recording those birds and using computer software to generate sound spectrograms for visual study. Useful information on audio recording and sound-analysis software is included in the book's second appendix.

The book begins with a clear lesson on how to read sound spectrograms, graphic representations of sound frequency in relation to time. Kroodsma calls this skill his "secret for listening." Mastering this will enhance the reader's understanding of the book, which is filled with high-quality spectrograms. These images illustrate sounds from the accompanying audio compact disc, also of high quality. The system by which the spectrograms are labeled in the figures makes it easy to find the corresponding sounds on the CD. Together, the recordings and the spectrograms complement the text and, along with Nancy Haver's line drawings of the birds, bring to life the 33 different species accounts that constitute the six chapters. With the enthusiastic, conversational tone of the writing, the overall result is the next best thing to a field trip with the author.

A general introduction in Chapter 1 categorizes the questions that can be asked about bird song into Niko Tinbergen's four "whys" of classic ethology. These four questions, of development, function, evolution, and mechanism, all receive some attention throughout the book. The "mechanism" question is touched on only lightly, and much research on the neural bases of song behavior—including some of the

author's own work, in Marsh Wrens (*Cistothorus palustris*) for example—is not covered. However, although fascinating, this aspect of song behavior does not lend itself to firsthand observation by the intended audience and so, considering the book's goal of encouraging observation, its omission is understandable. Most of the material in each species account, except for two near the beginning on song learning in White-crowned Sparrows (*Zonotrichia leucophrys*) and Song Sparrows (*Melospiza melodia*), is from the author's own published or exploratory research. Several studies done by others are also mentioned throughout, with notes and a bibliography at the end of the book. The accounts are not comprehensive reviews of all studies done on the vocal behavior of any one species, but this is not to be expected of a memoir. The studies that are included are clearly presented, and should be readily understood by a general audience with no scientific background.

Each chapter consists of a brief introduction followed by multiple sections focusing on individual species. These species accounts, which make up the bulk of the text, are chosen to illuminate the topic of the chapter, but are not rigidly constrained to that one topic. Along with the introductory material described above, Chapter 1 contains two species accounts, on the Bewick's Wren (*Thryomanes bewickii*) and the American Robin (*Turdus migratorius*). Chapter 2, "How Songs Develop," contains six such sections; one of these covers three flycatcher species. Chapter 3, on geographic song dialects, contains five species accounts, one on both the Eastern and Spotted towhees (*Pipilo erythrophthalmus* and *P. maculatus*). Chapter 4, "Extremes of Male Song," covers ten species, with the following subtopics: songbirds without song (the Blue Jay [*Cyanocitta cristata*]), songbirds with especially complex or beautiful song, song produced in flight, and tireless singers. Chapters 5 and 6, on predawn song and female song, respectively, each contain three species accounts. One of these, in chapter five, covers both Chipping and Brewer's sparrows (*Spizella passerina* and *S. breweri*).

The diversity of species described in these accounts is commendable, extending even beyond passerines to include the American Woodcock (*Scolopax minor*), the Whip-poor-will (*Caprimulgus vociferus*), and the Barred Owl (*Strix varia*). A favorite theme of Kroodsma's is

the array of differences that distinguish species from one another in vocal behavior. Throughout the book, comparisons are made, either between closely related species—such as Marsh Wrens, which imitate songs, and nomadic Sedge Wrens (*Cistothorus platensis*), which improvise—or between unrelated species when the same question can be addressed in both. A strength of this book is that it conveys, in everyday language, the power of the comparative method for supporting hypotheses about cause and effect, or in other words, for uncovering general rules governing bird song. For example, on page 175, the author explains that, once it has been studied, the geographic variation in Tufted Titmouse (*Baeolophus bicolor*) song might be compared to that in Chestnut-sided Warbler (*Dendroica pensylvanica*) song to ascertain whether the functions of short- versus long-distance songs are likely similar in these two unrelated species. The actual processes of data collection described in the species accounts, including recording song rates, estimating repertoire size, and observing how neighbors interact, might seem repetitive at times, but the value of gathering similar data about multiple species for comparative use is effectively demonstrated.

Variation of songs among species is of course not only scientifically interesting, but also aesthetically pleasing. Breaking from the species-account format of the rest of the book, in a section of Chapter 4 titled "Music to Our Ears" Kroodsma considers cross-species variation to be one of the reasons why bird song is generally pleasing to human listeners. Bird song is often compared to human music, but this comparison should not just be done note-by-note, he asserts. Avian and human music are more convincingly compared at higher levels: in the themes and variations produced across songs by some individual birds, for example, and in the contrasts between sounds produced by different species. While scientifically rigorous, this book is more conspicuously a celebration of the beauty and diversity of bird song, from individual notes ("revel in the details" says the legend for Figure 21 and audio track 33) to the "prolonged concert" of the dawn chorus with its multiple voices. Learning more about bird song, particularly from such a source as this, does not at all diminish one's enjoyment of its sound.

With its clear and enthusiastic writing, the range of species and topics covered, and the

high-quality recordings and sound spectrogram images, this book will make a valuable addition to the library of any bird enthusiast who is interested in gaining a deeper appreciation of bird vocal behavior.—JILL A. SOHA, *Borror Laboratory of Bioacoustics, Department of Evolution, Ecology and Organismal Biology, The Ohio State University, Columbus, Ohio 43210, USA. E-mail: soha.1@osu.edu*

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**The Carolina Parakeet: Glimpses of a Vanished Species.**—Noel F. R. Snyder. 2004. Princeton University Press, Princeton, New Jersey. xii + 153 pp., 2 color plates, 35 black-and-white photographs, 2 tables. ISBN 0-691-11795-0. Cloth, \$29.95.—The Carolina Parakeet (*Conuropsis carolinensis*) was once widespread and abundant across much of the eastern United States. Like the Passenger Pigeon (*Ectopistes migratorius*) and Ivory-billed Woodpecker (*Campephilus principalis*), the Carolina Parakeet went into decline in the 19th century and was believed to have gone extinct in the early part of the 20th. The recent electrifying news of the rediscovery of the Ivory-billed Woodpecker (Fitzpatrick et al. 2005) has raised hopes that other bird species long believed to be extinct may in fact await rediscovery. In this context, a volume reviewing the history and biology of the Carolina Parakeet is timely indeed.

As an ornithologist studying parrots, my thoughts of the Carolina Parakeet are always accompanied by a sharp pang of regret that temperate North America's only native parrot was gone before anyone thought to undertake systematic study of its natural history. In the absence of such primary data, the best we can hope for is an authoritative species account that synthesizes fragmentary and scattered material to draw a comprehensive picture of the vanished species. Snyder attempts such a synthesis here, and it is a strong effort; the occasional unevenness of coverage in the volume seems

more a reflection of the shortcomings of the source material than those of the author.

The book can be divided into two parts that differ in approach and style. The first is a lively historical account of the decline of the species and the personalities associated with its last known wild populations, many of which were ignored by the ornithological authorities of the day. This portion is based on a review of historical records, augmented by interviews of elderly residents of central Florida and field investigations by the author. Snyder builds a convincing case that populations of the Carolina Parakeet persisted in central Florida's Okeechobee swamp into the late 1920s and in the lower Santee River of South Carolina into the late 1930s. These reports considerably postdate the generally accepted extinction date of 1914, based on the demise of a captive pair held in the Cincinnati Zoo. The text here is enlivened by photographs of people, objects, and locales discussed, including pictures of a controversial last-recorded nest and the eggs collected from it.

The conclusion that wild populations persisted into the middle of the 20th century provides a distressing subtext to the remainder of the book, which synthesizes available data on the biology of the Carolina Parakeet and discusses probable causes for its extinction. Here, Snyder is forced to sift through historical accounts, many of which were previously compiled by Daniel McKinley in a series of state-by-state records of the species (e.g. McKinley 1985). This section represents no mean scholarly feat by Snyder, for despite the abundance of this species before its decline, historical accounts from such well-known naturalists as Audubon, Wilson, Nuttall, and Brewster are striking in their patchwork nature and conflicting content. Snyder does his best to fill in the resulting gaps with extrapolations from the biology of other parrot species, based on personal knowledge gleaned from extensive fieldwork. Despite this effort, chapters on habitat preferences, feeding habits, and breeding biology raise as many questions as they answer regarding the degree to which the Carolina Parakeet relied on virgin primary forest, the relative importance of different food items, whether this species was toxic to its predators, the social structure of flocks, the timing of the breeding season, and whether it nested exclusively in cavities or also constructed twig nests.