

BOOK REVIEWS

Birds of the Salton Sea: Status, Biogeography and Ecology, by Michael A. Patten, Guy McCaskie, and Philip Unitt. University of California Press. 363 pages. 53 photographs (black-and-white), figures, maps. Hardback. \$65.00. ISBN 0-520-23593-2.

The avifauna of vast landscapes in the western U.S. is often surprisingly poorly known (e.g. the entire state of Nevada). Too often, these regions are suddenly faced with major threats—from urban sprawl, water diversions, a proposed military base expansion—each one sending conservationists scrambling for data to mine and experts to interview. The Salton Sea, a large region of brackish wetlands and agricultural habitat in southeastern California, is used by millions of individuals of more than 400 bird species each year. Yet, until the late 1990s, it too had all but fallen through the cracks, ornithologically speaking. With one fell swoop, the publication of *Birds of the Salton Sea* has turned the tide on this trend, synthesizing decades of taxonomic research and observational data on bird distribution—the raw material for conservation work.

Prior to some pioneering census work by Point Reyes Bird Observatory in the late 1990s (Shuford et al. 1999, 2000, 2002), data from the sea had been limited to scattered notes on out-of-range species, toxicology reports, and a smaller number of research papers on breeding seabird biology. The sea has never been included in a breeding bird atlas, and neither has a Breeding Bird Survey route ever intersected much of its habitat. The two Audubon Christmas Bird Counts at the north and south ends, though long playing, cover just a fraction of the bird habitat available at the sea (and only for two days a year). Notable compendia on birds have been produced from regions just to the west (Unitt 1984) and east (Rosenberg et al. 1991), yet for most of the past 15 years, the sea's researchers and conservationists have relied on information that was either outdated (e.g. Garrett and Dunn 1981) or anecdotal and uneven (Massey and Zembal 2002).

Birds of the Salton Sea is generally well organized, exhaustively researched, clearly written, meticulously accurate, and absolutely chock-full of new and otherwise unavailable information on the birds of southeastern California. A glance at the bibliography alone—a Patten/Unitt *tour de force* of records committee proceedings, toxicology reports, identification essays, taxonomic analyses, and turn-of-the-century (and earlier) observations dredged from journals and survey reports—should inform the reader that this is an essential addition to any library of western birds.

The book opens with a concise and eminently readable “A History of the Salton Sink,” which traces the Salton Sea's evolution from the former head of the Gulf of California (Pliocene) to its eventual isolation from the gulf, owing to sediment flowing out of the Colorado River delta. This is followed by a lucid description of the resulting Lake Cahuilla, a massive inland lake filled by Colorado River floodwaters as recently as 400 years ago, and “resurrected” numerous times in somewhat smaller dimensions during the 1800s by the same Colorado River floods heading northwest (= downhill) out of the delta. The authors then describe the result of the “fortuitous engineering blunder” nearly 100 years ago—the sea's accidental (re-) creation by a flooded irrigation canal, a scenario neither wholly artificial nor wholly natural. This section should prove invaluable to educators and speakers searching for materials for courses and lectures. The authors make good use of historical references without inundating the reader with lengthy descriptions and analyses.

The following section, “Conservation and Management Issues,” provides an overview of selected conservation issues, and the final introductory section, “Biogeography of the Salton Sea,” offers a mixture of archaeology, climate, hydrology, and vegetation, concluding with a synthesis of the modern-day distribution of the

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major groups of birds. Portions of the section "Biogeography of the Salton Sea" are strong, and the general reader may be most interested in the discussion of migratory pathways through the region, which the authors developed by synthesizing decades of field notes from Riverside, Imperial, and San Diego counties (few of which have appeared widely elsewhere; see figures 20–23). For example, flocks of Black Brant, regularly observed flying over the Anza–Borrego Desert immediately west of the Sea, are virtually unknown in Banning Pass to the northwest, suggesting a spring migration route out of the Gulf of California and across the Peninsular Ranges (rather than one passing through the Los Angeles Basin). After this section, the authors insert a comprehensive 30-page table of every recorded bird taxon known from the Salton Sink, including seasonal status codes, record type (i.e., specimen, sight record, or photograph), and applicable museum collection or reference information.

The heart of the text, the species accounts, starts 70 pages in, and follows a consistent format that includes a seasonal summary (e.g., for the Osprey: "Uncommon perennial visitor, more numerous in winter [late October to mid-March]"), paragraphs on historical and present status, ecology, and, where appropriate, taxonomy. Interspersed within the accounts are "family summaries" that begin each section.

The seasonal summaries within the species accounts are among the most detail-rich and carefully researched of any comparable publication, filled with early/late dates, high counts, and specific locales. The historical information tracing changes in the abundance of species' (and subspecies') status provided by these accounts is among the best I've seen for any region of California (e.g., the summaries for Greater White-fronted Goose and Clapper Rail). These accounts constitute the unique and lasting contribution of *Birds of the Salton Sea*. To relate just a few facts revealed: there are more Snowy Plovers in summer (200–225 pairs) than in winter (1/2 to 3/4 that number), and the winter population is the largest in the Interior West. One species of gull (the Ring-billed Gull) occurs in numbers more than an order of magnitude greater than the next most common species (California Gull) and winters by the hundreds of thousands in flooded fields of the Imperial Valley. Any large gray thrasher in mid-winter is as likely to be a Curve-billed (an extremely rare vagrant to California) as a Bendire's (breeds less than 50 miles away) and *definitely* not a Le Conte's, which is almost as rare, and appears only from spring to fall). The Large-billed Savannah Sparrow, a Gulf of California endemic, may become the next breeding bird of the Salton Sea, if it hasn't already done so by the time you read this.

The final section of the species accounts, taxonomy, is equally strong, with a few accounts comprehensive enough to warrant separate papers. All subspecies described for each species recorded within the Salton Sink are discussed in detail (as well as the history of various invalid races). The authors stray well beyond the boundaries of their study area, with many of the resulting sections being micro-treatises on the taxonomy of bird populations of the entire western U.S. (see California Gull, Brown Creeper, Common Yellowthroat). Perhaps as important (to birders at least), the authors include subspecific identification criteria that are otherwise difficult to find in contemporary ornithological literature for all but a handful of taxa.

Only because *Birds of the Salton Sea* contains the subheading Status, Biogeography, and Ecology is it necessary to assess its treatment of all three equally, and it will become clear to most readers that the first two topics receive preferential treatment. The introductory pages within "Conservation and Management Issues" already feel somewhat dated (perhaps inevitable?) and at times oversimplified. For example, the mass bird die-offs that continue to bring the Salton Sea so much negative attention are awarded just seven sentences and one vague graph, despite the authors' feeling that the die-offs may be "heralding a collapse of the ecosystem" (p. 8). The population-level effects of these die-offs are not clarified or explored in this section, or in the rest of the book. Were the kills of tens of thousands of Eared Grebes and pelicans in the early and mid-1990s responsible for the apparent crash in their numbers five years

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later during the early 2000s (K. C. Molina pers. comm.), despite the occurrence of several "good years" (e.g., 1999) in between?

Several studies of contamination of birds by pesticides (especially DDE) and heavy metals are cited but are not explored in much detail, despite the authors' repeated comments that such contamination is among the gravest threat to birds here. The reader will learn that studies have linked reproductive failures of the White-faced Ibis in Nevada to the birds' contamination by DDE on their wintering grounds in the Imperial Valley, but details are scant. Where is the contamination coming from? Are there "safe areas" without it? Are the hundreds of ibis pairs currently nesting in the Imperial Valley (or their offspring) suffering from this?

Bird habitat is also treated unevenly within "Biogeography." For example, the description of vegetation and habitat later in this section, though accurate, seems overly technical (e.g., "heliophytic" and "mesophytic" referring to the more familiar terms "wetland" and "riparian"), and there is little information on which birds are associated with which habitats (though a few are included in the photograph captions). Also missing are maps (even schematic ones) of the locations of the major bird communities within the sink, which are readily available in the oft-cited Shuford et al. (2000).

Although the species accounts are on the whole exceptionally well done, the "ecology" sections within them are probably best considered brief comments on microhabitat preference, since only a handful of accounts make even an attempt to describe the ecology of the species treated, even when an opportunity is readily available (e.g., the Eared Grebe and pelican die-offs; seasonal use of different habitats by the Mountain Plover). For example, nest-site choice in the White-tailed Kite, a species that has recently appeared as a breeder throughout the Southwest, is mentioned only as "Kites have nested in large Fremont Cottonwoods." Are there at least anecdotal generalizations that could have been included about site selection (e.g., that they prefer isolated groves of trees, surrounded by well-irrigated fields, with an abundance of prey through the breeding season)?

The tables presented in *Birds of the Salton Sea* are on the whole inconsistent. Several (e.g., salt levels during the early 1900s; fossil birds at Lake Cahuilla) could have been placed in an appendix, if used at all, which also might have been the place for the 30-page "Checklist of Birds of the Salton Sea." Most of the remaining tables in the book (9 out of 13) are scattered through the species accounts, which, although logical, forces the reader to comb through each section. A prominent selection of tables of bird counts in the introductory chapters would have been convenient. Several of these tables will be inaccessible to the great majority of readers, and more appropriate for separate papers, (e.g., mensural differences among races of Red Knots and California Gulls from the sea). On the other hand, the two pie charts (figures 19 and 63), which present relative proportions of breeding seabirds and wintering sparrows, are thoroughly enlightening, and should be useful for conservationists characterizing the sea's waterbird community, or for visiting birders combing through sparrow flocks. Finally, the map showing the region covered and the locations of sites mentioned in the text (both thoroughly buried on pp. 69 and 70) would have been better reproduced in the first few pages if not just inside the cover.

Technically speaking, this book is near perfect, and there are very few typos or oversights in the text and no real inaccuracies that I could find (though in just one instance, I detected an inconsistency between the family summaries and the following species accounts: on p. 218, the Vermilion Flycatcher is declared "extirpated" as a breeder, but later [p. 224] it is termed a "rare breeder in the Imperial Valley"). However, these in no way detract from the remarkable quality of scholarship, which is thoroughly impressive. The book is an excellent source of seasonal, distributional, and taxonomic information on the region's avifauna. Though it suffers from brevity when diverging into other fields (e.g., conservation, ecology), it is on the whole a welcome and long-overdue treatment of the birdlife of a region of international importance.

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The Birdwatcher's Companion to North American Birdlife, by Christopher W. Leahy. 2004. Princeton University Press. 1039 pages, scattered line illustrations. Hardback. \$39.50. ISBN 0-691-09297-4.

The promotional blurb calls this *Companion* “both a practical handbook for amateurs and a handy reference for seasoned birders.” It is basically a reference manual of eclectic scope that covers topics related to North American birds (north of Mexico), with entries arranged alphabetically. Examples? Try “drake,” “Hutton,” “names, colloquial,” “skimmer,” “wreck,” and “xanthochromatism,” to name but six that my eyes lit upon in a random opening of pages. On page xii, the author explains his two-fold desires in writing such an encyclopedia: to have at his fingertips a book that could answer numerous technical to trivial questions about birds, and a longing for nontechnical accounts of the basic elements of birdlife that could be read for pleasure as well as information. An earlier iteration of the *Companion* was published in 1982, but this 2004 edition is greatly updated and expanded.

Readers may be tempted to dip into the book right away, picking subjects that interest them, or looking for definitions of bird-related words—and this is certainly what I did on opening my copy. But, as with most books, a few minutes reading the introductory material are well spent. The introduction will help readers appreciate the book's layout and refine their search image for information. It notes how broad subjects (e.g., flight, migration, molt) are treated in essay form with the aim of summarizing present knowledge. It lists examples of subjects that readers may not look for because they might not think of them, such as “cats,” “chumming,” “politics, birds in,” and “religion, birds in.” It lists subjects that come under the umbrella of physiology and anatomy (e.g., bursa of Fabricius, ossification, touch); it lists the family-level entries that can be found (albatross, anhinga, auk, etc.); it explains how bird-finding localities are organized; and it discusses other types of entries, such as name definitions and etymology, biographies (for all whose names appear in current scientific or English species names of North American birds), and nouns of assemblage. There is also a brief note on pronunciation (guides to which are provided for potentially unfamiliar words), an explanation of the bibliography, and a list of the appendices.