

BOOK REVIEWS

Birds of the Sierra Nevada: Their Natural History, Status, and Distribution, by Edward C. Beedy and Edward R. Pandolfino; illustrated by Keith Hansen. 2013. University of California Press. 446 pp., over 250 paintings, three tables, five regional maps, 12 color photographs. Hardcover, \$75; paperback, \$39.95. ISBN 978-0-520-27494-5.

The Sierra Nevada's varied habitats of forest, chaparral, and alpine meadows, combined with its splendid mountainous scenery, have made this range a favored destination for tourists and bird watchers. For over a century, professional ornithologists and amateur field naturalists have studied the rich avifauna of this region, but until now a comprehensive guide to the full expanse of the Sierra Nevada did not exist. In 1977, David Gaines wrote the *Birds of the Yosemite Sierra: A Distributional Survey*, which covered both the western and eastern slopes of the Sierra Nevada but was limited to the area around Yosemite—it was updated in 1988 as *Birds of Yosemite and the East Slope*. Published in 1985, *Discovering Sierra Birds*, by Edward Beedy and Stephen Granholm, covered the western slope only and focused on Yosemite, Kings Canyon, and Sequoia national parks. The need for a book covering the entire Sierra Nevada, with additional information on natural history, population status, and conservation, was expressed by the late Steve Medley, former president of the Yosemite Association, in 1998. And now, after 15 years of devoted labor, the *Birds of the Sierra Nevada: Their Natural History, Status, and Distribution* has been completed. It includes many passages from *Discovering Sierra Birds*, but with so much additional information and entirely new illustrations, it is much more than just an update.

The physical boundaries of the Sierra Nevada are somewhat ambiguous as steep mountains transition to rolling foothills and foothills gradually flatten to plains. The authors' approach to this issue was to include all the ecological communities directly influenced by the Sierras and to use unambiguous boundaries, such as highways and elevation contours, when feasible. Using this system, the authors recognized 442 species that have been documented within the region at least once. Of these, they considered 276 species sufficiently common to warrant full accounts in the main section of the book, and covered the status and occurrence of the remaining 166 rare species briefly in an appendix. In comparison, *Discovering Sierra Birds* has accounts for 191 species and a list of 103 rare species.

Several well-written introductory chapters precede the main species accounts and are worth reading to gain a fuller appreciation of the Sierra's biotic diversity and status. The chapter on Ecological Zones and Bird Habitats describes seven distinct zones, with major habitat types defined within each zone; the authors then use these habitat types and zones within each species account to describe distributional patterns. Seven "special habitats," such as riparian forest, are also characterized and their importance to birds described. Overall, these zones accurately portray the Sierra landscape. However, in the section on Mountain Chaparral, there is no mention of chaparral in mesic areas, which is an important habitat type in the southern Sierra but apparently not present in the north (Ryan Burnett pers. comm.). This habitat is frequently composed of cherry, willow, and whitethorn and may constitute a dense shrub layer in the understory of coniferous forest or in north-facing openings. This habitat provides important nesting habitat not only for several shrub-dwelling species, such as the Dusky Flycatcher, Fox Sparrow, and MacGillivray's, Yellow, and Wilson's warblers, it is also the habitat in which these species appear to reach their highest densities.

The chapter Recent Trends in Bird Populations and Ranges is a nice addition that provides analyses of data from Breeding Bird Surveys (BBS) and Christmas Bird

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Counts (CBC). A few surprising results stood out, such as positive population trends for the Dusky Flycatcher and Warbling Vireo and negative trends for the Mountain Chickadee, Purple Finch, and Cassin's Finch. While the analyses are rather cursory, they provide readers with a long-term historical perspective and a better understanding of population trends. The sections on Range Expansions and Contractions also rely on BBS and CBC data but were seemingly supplemented by anecdotal observations. In the future, observations from eBird should play a larger role in documenting changes in bird distribution. The next chapter asks the reader several Unanswered Questions about the range and status of 18 species, which will hopefully motivate amateur and professional ornithologists to seek out these species and to enter their sightings into eBird, to publish their findings in peer-reviewed journals, or to post them to an Internet site dedicated to the birds of the Sierra Nevada. The final introductory chapter addresses Bird Conservation in the Sierra by reviewing historical human activities like market hunting and mining as well as contemporary issues such as fire suppression, dams, pollution, housing development, and climate change.

The bulk of this book consists of Family and Species Accounts. The family accounts precede the species accounts for each family and within a few paragraphs provide the reader with the distinctive features of the family's anatomy and behavior. The species accounts contain sections on the Origin of Names, Natural History, Status and Distribution on the West Side and East Side, and Trends and Conservation Status. I found the Origin of Names section particularly enlightening, as it provides a historical context for some of the lesser-known people who have had birds named after them, such as Robert Williamson who was so honored with a beautiful sapsucker. A military engineer and Civil War veteran, Robert Williamson just happened to be a leader on a survey party to Oregon when the first male of this species was collected. I also enjoyed learning the English translations of the scientific names from the various contemporary and antiquated European languages, fascinating details that have certainly improved my memory of many of these birds' scientific names.

The Natural History section is full of interesting anecdotes, many of which are from the authors' collective personal experiences in the Sierra with others supplemented from the scientific literature. This section includes a wealth of information on behavior, vocalizations, foraging, habitat selection, courtship, nesting, and seasonal patterns. One of the more intriguing behaviors I learned about is the communal food sharing by the Cedar Waxwing and Mountain Chickadee. The only detractor in this section is some inconsistency in the amount of material presented for different taxa. For example, all the woodpecker accounts have extensive details about each species' life history, yet for some other species such as swifts information is scant. Regrettably, the spectacular courtship fall of the White-throated Swift is not even mentioned.

The Status and Distribution section provides general information about elevational limits and the ecological zones within which the species is expected to occur. This section is further refined by dividing the Sierra Nevada along its crest into the west and east sides. Because of the ecological differences between the two sides, this distinction is critical, as birds often occur at different elevations and occupy different habitats on each slope. Within these subdivisions the authors provide more precise location details for localized species. The complex distribution patterns of several sparrows that have multiple subspecies within the region are well described. For instance, the thorough treatment of the Sage Sparrow's subspecies was rather prescient considering its subsequent split into the Sagebrush and Bell's sparrows. For a few other species, as discussed in the introductory section on Unanswered Questions, the exact range limits are still being determined. For the two subspecies of the White-breasted Nuthatch that occur in the Sierra Nevada, the authors considered the ranges and habitats to be "non-overlapping," but since both subspecies occur in the vicinity of Shaver Lake where I live, perhaps it would be better if their ranges were described as *mostly* non-overlapping. I was also curious that there was no mention of upslope dispersal

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of the House Wren; in the Sierra, this species seems to be uncommon at mid to high elevations during May and June but then becomes abundant during July and August.

For most species with significant positive or negative population trends, or for species listed by federal or state agencies as endangered, threatened, or of concern, a Trends and Conservation section details the species' changing population status and provides information about the perceived threats or enhancements that may be influencing this change. In general, I believe this section will prove valuable as another resource to land managers in the Sierra, as it helps to elucidate many current conservation issues and covers species in addition to those in *California Bird Species of Special Concern* (W. D. Shuford and T. Gardali, 2008, WFO Studies of Western Birds 1). However, I was a bit dissatisfied that no attempt was made to quantify the magnitude of the population changes from the Breeding Bird Survey or Christmas Bird Count data. In addition, this section was absent from some accounts that probably should have contained it. For example, although the chapter Recent Trends reports that populations of the Mountain Chickadee, Purple Finch, and Cassin's Finch are declining, there is no mention of these declines in the accounts. I also question a few of the conclusions in this section, such as why the recovery of the Bald Eagle in the Sierra was considered limited and whether this species actually nested historically throughout the Sierra. In the Natural History section it states that Bald Eagles "require sizeable bodies of water," but where did large bodies of water occur in the Sierra before reservoirs? Prior to the dam-every-river era we live in now, there were only a few large bodies of water in the Sierra that could have sustained Bald Eagles. Historically, most natural lakes in the Sierra Nevada were relatively small and at high elevations. Typically these lakes have sparse or no forest surrounding them, are frozen during spring when eagles start nesting, and had no fish. Only Lake Tahoe and Eagle Lake come to mind as natural lakes that would have been large enough and had suitable nesting habitat. For the Osprey, though, whose requirement for nesting are similar to those of the Bald Eagle, the authors stated that the creation of reservoirs increased its population and range in the Sierra. The reason for a discrepancy between these two accounts is unclear.

The illustrations in *Birds of the Sierra Nevada* easily surpass those in most other books on the regional status and distribution of birds. Although *Birds of the Sierra Nevada* is not meant to be a guide to identification, the beautifully realistic illustrations do more than just capture the essence of the species; in most instances, field observations should easily match those in the book. For all species, an illustration of the adult is provided, with a second or third illustration included for significant plumage differences by sex or age. For species frequently seen in flight, such as raptors and swallows, another illustration depicts the bird in this pose. My favorite illustrations in the book are of the woodpeckers. In particular, the exquisite detail and accuracy of the Lewis's and Acorn woodpeckers are so realistic that they appear to fly right off the page. There are, however, a few species with minor flaws of proportion, such as the small diameter of the eye on the Canyon Wren and the thin depth of the bill on the Northern Rough-winged Swallow. But overall the illustrations present a delightful visual complement to the text while also providing an instructional tool for readers not already familiar with some of the species covered.

For anyone with an interest in the birds of the Sierra Nevada, whether you live in these mountains, are studying birds anywhere in the range, or are just visiting for a few days, I strongly recommend this book, as it will not only help you find the birds you are looking for, it will give you a much fuller appreciation of the feathered mountaineers of the Sierra. Despite the few minor issues mentioned in this review, I found *Birds of the Sierra Nevada* to be a superb book on the birds in this region that should become a standard for other natural history guides for many years to come.

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