

Magical Merlins

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BOOK REVIEW

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Magical Merlins. By Bruce A. Haak (editor and chief contributor). 2021. Falco Sapiens Press, Eagle, Idaho, USA. 182 pp., 35 illustrations, 66 color photographs. ISBN 978-0997816549. Hardcover standard edition: \$50.00 USD.

Magical Merlins, edited and mostly written by Bruce Haak, an accomplished raptor biologist, bander, and *Journal of Raptor Research* (JRR) contributor, provides an approachable introduction to Merlin (*Falco columbarius*) ecology focused on North America's Pacific Northwest. This attractive book was written for falcon enthusiasts, raptor biologists, and even the casual reader interested in learning more about birds of prey. Haak and his collaborators summarize several local scientific studies of wintering and breeding Merlins and provide a thorough description of the three Merlin subspecies that occur in North America. These subspecies include the taiga Merlin (*F. c. columbarius*), the prairie or Richardson's Merlin (*F. c. richardsonii*), and the black Merlin (*F. c. suckleyi*). The book contains many wonderful color illustrations from numerous artists including Hans Peters, N. John Schmitt, and Carl Bass, as well as an assortment of color photographs attributed to the author and many contributors. Three chapters are written by coauthors and serve as strong additions to this collaborative work.

The book begins with what the author describes as a personal challenge to back up his assertion that Merlins were relatively common in Idaho, and not a Species of Greatest Conservation Need as declared by the Idaho Department of Fish and Game in 2005. With this task in mind, Haak embarks on a journey to learn about Merlin breeding and wintering ecology in southwestern Idaho. To learn more, Haak connects with other researchers studying Merlins, primarily in the Pacific Northwest, some of whom form the *Magical Merlins* writing team.

In Chapter 1 (Embracing the Species), Haak introduces us to his fortuitous collaboration with Dr. Leon Powers researching urban nesting accipiters; this collaboration led to the unexpected discovery that Merlins were occupying the same towns and cities in which the researchers were searching for Cooper's Hawks (*Accipiter cooperii*) and Sharpshinned Hawks (*A. striatus*). This led seamlessly into Haak's study, published in *The Journal of Raptor Research* and focused on wintering Merlins in southwestern Idaho (Haak 2012). Finding little published data on Merlins in Idaho, Haak set out to determine the proportions of the three

Merlin subspecies within the wintering population and how each subspecies used the available habitat. Readers also receive a brief introduction into how the development and expansion of urbanized areas in the Canadian prairie provinces and northwestern United States have likely increased the amount of Merlin winter habitat in the form of irrigated croplands, feedlots, and urban woodlots. In his brief description of the effects of environmental contaminants on Merlins, Haak emphasizes how little was known about Merlins pre-dichlorodiphenyltrichloroethane (DDT). Although Merlins suffered serious reproductive impairment during the DDT era, they were never federally listed as an endangered species or subject to intensive and expensive captive breeding programs such as those that helped restore populations of Peregrine Falcons (*Falco peregrinus*); this omission was likely due to the lack of baseline data on the status of Merlin populations in North America.

In Chapter 2 (Trapping and Radio-tagging), the author describes the methods of his 2012 telemetry effort, including a description of capture techniques. The author has decades of experience trapping and banding raptors, but he still gives a nod to expert falconers who mentored him on trapping back in the 1960s, a time when official raptor banding stations were scarce. There are several color photos of trapping which show the breathtaking moment of capture, along with the requisite day's catch photo of Merlins in hand (with hood and aba). Between 2006 and 2011 in southwestern Idaho, the author trapped and banded 86 wintering Merlins of all three subspecies and age classes, including the nine Merlins that formed the basis of his radiotelemetry study. Haak introduces the idea of female dominance and age-based differences in wintering habitat use. In Chapter 3 (Habitat Preferences and Selection), Haak provides a brief, qualitative overview of Merlin habitat preferences and selection based on telemetry and road surveys, citing percentages of observations by subspecies, habitat, and sex. One of the interesting, but tentative, observations was that overwintering black Merlins used urban habitat more than taiga Merlins, while the latter used cropland more. Alas, within the book, there are neither statistical analyses nor any assessment of use based on availability of habitats. We, the reviewers, hope Haak and his collaborators will publish these data in a future paper in *The Journal of Raptor Research*.

In Chapter 4 (Winter Range, Roosting Behavior, and Winter Site Fidelity), we learn about the winter habitat use, roosting behavior, and site fidelity of a small sample of radio-tagged Merlins from what appears to be unpublished data from his 2012 study, as well from studies by other authors in Idaho and Utah. The chapter includes several

maps of home ranges as estimated by minimum convex polygon and kernel density, the former of which suggest that home ranges in southwestern Idaho are markedly larger than those in Utah or Saskatchewan (Haney 1997; Warkentin and Oliphant 1990). Haak explains this is likely due to lower prey density in southwestern Idaho combined with patchy prey distribution and foraging areas being located at a distance from roost sites. Haak also notes, intriguingly, that Merlins regularly flew through the winter home ranges of other Merlins with seemingly few territorial interactions. Haak posits that roost tree selection by Merlins is based on finding sites that offer sufficient insulation as well as protection from predators, such as the ubiquitous Great Horned Owl (*Bubo virginianus*) and domestic cats (*Felis catus*). The majority of roost trees chosen by radio-tagged Merlins in Haak's study area were small- to medium-sized conifers (8-15 m), which surprisingly were not the tallest trees available. Of the conifers, nonnative Austrian pine (*Pinus nigra*), used in urban landscaping, was preferred by all three Merlin subspecies, at least based on a qualitative analysis. This observation underscores a common thread in Haak's book, that the development of cities, towns, agriculture and associated horticultural plantings throughout the dry Intermountain West may have created conditions perfect for wintering (and now breeding) Merlins.

Chapter 5 (Subspecies Composition in Idaho) is a brief amalgam of musings on Merlin subspecies in Idaho, where all three subspecies occur, and sets the stage for subsequent chapters, including N. John Schmitt's chapter on plumages of North American Merlins (see also Schmitt 2022). In Chapter 6 (Wintering, Migration, and Breeding), the author rightly points out that no concentrated migration points for Merlins have been discovered in the western USA that match the numbers of migrants encountered along the eastern seaboard at raptor migration locations. Haak raises many insightful questions that remain to be answered about Merlin migration of all three subspecies. He wraps up his discussion of wintering Merlins by stating, based on his data, the special-species designation in Idaho (his original dare) was not justified, at least in relationship to winter abundance. We (the reviewers) were left wondering, given the dearth of Merlin studies prior to or after this study, if additional years of data might help inform assessment of population trends of Idaho Merlins to better evaluate the designation of the Merlin as a special status species in Idaho, especially for the breeding population. As for breeding, the author provides many interesting observations on behavior, nesting habits, and even spectacular hunting flights. Haak concludes the chapter with the reflection that global climate change may well induce songbirds to winter farther north and migrate shorter distances, which in turn may expand suitable nesting habitat for Merlins.

Chapter 7 (Populations of North American Merlins) wraps up the discussion of the Idaho study and, despite the title of the chapter, continues to primarily discuss Merlins

in the Pacific Northwest, with a strong focus on black Merlins.

N. John Schmitt wrote and illustrated Chapter 8 (Plumages of North American Merlins). This contributed chapter contains a detailed description of each of the three North American Merlin subspecies. Schmitt begins with a discussion about variation in plumage in the genus *Falco* and emphasizes the importance of describing multiple plumage details and subtle characteristics. This is especially important when differentiating between Merlin subspecies, which exhibit a wide range of plumage variability and are known to hybridize. Each of the three subspecies displays a range of plumage characteristics and individuals may not always be confidently identified to subspecies level. Schmitt reminds the reader of the importance of meticulous field notes and detailed observed characteristics of a certain subspecies when possible. This point is driven home with an end plate to the book depicting a page from his own field notes, albeit with no reference to it in the text. The illustrated plates of each subspecies are drawn with exquisite attention to detail and include four plates depicting juvenile and adult males and females of each of the three subspecies. Each plate was typically based on a single specimen (from the field or from a museum collection) and depicts a ventral view of a bird in flight and a dorsal view of a bird perched with a spread wing. Schmitt includes additional dorsal tail illustrations on some plates to show the variation he has observed within particular subspecies in museum specimens, and also includes plates illustrating how to age Merlins based on the upper-tail coverts and subterminal and terminal ventral rectrix bands. It is enough to warm the heart of any inveterate raptor bander! The attention to detail, both in the illustrations and in the text, make this a wonderful chapter to read and reread to let all the minutiae of raptor subspecies identification sink in. As raptor biologists, we fully appreciate Schmitt's fine art and stunning biological illustrations, yet we felt the plates could have been better organized within the text. The current placement of the illustrations resulted in considerable flipping back and forth of pages. For example, Plate XIII, which depicts all three subspecies and is probably the most important overview plate in the entire book, has only a cursory description; finding the detailed description in the chapter required some hunting. Cross-referencing comments on plumage traits in other chapters, such as Haak's remark on a diagnostic (plumage) trait of the black Merlin, wherein "the markings on the leading primaries are spotted, not barred, and do not reach the margin of the feather" would have improved understanding of the complex Merlin traits. One minor note of confusion throughout this chapter stems from Schmitt substituting the term "race" for the term "subspecies" interchangeably without defining "race." We are left to wonder if it is meant as something less than an established subspecies designation, or just a method to avoid repeating the same term many times over.

Joseph Buchanan wrote Chapter 9 (Hunting Behavior), which provides fascinating, highly detailed descriptions of Merlins in pursuit of prey, based largely on his extensive (over 1600!) field observations of specific hunting behaviors in coastal Washington. This exciting chapter provides second by second descriptions of how Merlins approach and attack large congregations of overwintering shorebirds along coastal estuaries and beaches. Perhaps most fascinating to us was his detailed description of how Merlin hunting behavior shifted as Peregrine Falcon populations rebounded post-DDT (Buchanan 2009). In the 1980s and 1990s Buchanan frequently observed Merlins hunting as “the” apex avian predator at some coastal Washington estuarine habitats, using lengthy, soaring flights with big, conspicuous stoops to attack shorebird flocks. However, as Peregrine Falcons became more frequent visitors to the site in the early 2000s, Merlins shifted their behavior to that of a mesopredator, hunting in low flights close to cover and never risking long, exposed flights where they could have prey stolen by the larger Peregrines or be attacked and killed themselves. The rebound of Peregrine Falcons not only changed how Merlins used the site, but also led to a change in how shorebird flocks used evasive flight behaviors to avoid aerial predators. We feel this chapter provides raptor researchers and behavioral ecologists throughout the world a fascinating look into shifting predator-prey dynamics that have occurred in a relatively short time frame.

Chapter 10 (Seattle’s Urban Merlins), coauthored by Kim McCormick and Ben Vang-Johnson, provides a look into an urban nesting population of black Merlins in the Seattle, Washington, metro area. The authors contributed a tremendous amount of work to their community science project documenting Merlin nests in Seattle neighborhoods and encouraging the public to take an interest in backyard raptors. Early data suggest a growing population of urban nesting Merlins within the study area and we hope to learn more in published accounts about this population from future years of this study. Suffice it to say, along with Peregrine Falcons, Cooper’s Hawks, Red-shouldered Hawks (*Buteo lineatus*), Swainson’s Hawks (*Buteo swainsoni*), etc., Merlins are our neighbors and are here to stay in human-created urban environments.

We enjoyed this book, cover to cover, and feel that it has brought Merlins some of the spotlight they seemingly have lacked over the years. Although relatively minor, we did have several criticisms of the book from our combined perspective as raptor researchers. First, the book tells the story of Merlins with an admittedly Pacific Northwest-bias that clearly reflects where the authors have conducted their field studies, as well as being the only location where all three North American Merlin subspecies regularly overlap in range. With their discussion regarding trends in urban nesting and wintering Merlins in the Pacific Northwest, we feel the authors missed an opportunity to compare results with other studies from throughout the species’ holarctic range and also to connect future Merlin enthusiasts elsewhere to the wonderment and lack of data on wintering

and breeding falcons in their area. Second, the information in the book is not laid out as one might expect in a strict species monograph. Instead, the book reads almost like a pleasant conversation with the author. We recognize this book was written to inform a wide variety of avian enthusiasts, from laypeople and community scientists to professional biologists. Clearly the authors have achieved that goal. But we also point out this tone can be fine and good and insightful as long as the reader’s expectations remain at that level. We were pleased data from multiple scientific studies were presented and woven together with field observations and stories from the authors to create an accessible format to readers who may be new to raptor biology. Although this amalgamation of scientific studies and general background information on Merlins in the Pacific Northwest may read as a casual introduction to Merlin ecology, the information, as mentioned above, is often randomly interspersed throughout chapters, including several tables with no reference or mention in the text (e.g., Tables 13 and 14). We believe the author’s intent was for the book to be read chapter by chapter, picking up information along the way as the story hones in on the species’ ecology in the Pacific Northwest. With this in mind, the authors should have shown a map of the Idaho study area with an inset map to help orient readers unfamiliar with its location in North America. The book contains a multitude of stunning color photographs that certainly highlight Merlins. However, we felt the photographs, as well as the wonderful drawings and paintings, could have been better utilized to tell the stories within each chapter. Third, although the book is geared toward a wide variety of readers, some terms are introduced without proper definition. We are reminded of Karen Steenhof’s entreaties over the decades to raptor researchers to define our terms. For example, in Chapter 10, the authors use the terms “active” to describe the status of nests without including a clear definition of the term. Recommendations set forth in Steenhof et al. (2017) discourage the use of opaque terminology when describing occupied nests during the breeding season and this topic has been a recurring contemporary discussion for raptor biologists. A glossary of terms would have helped set clear definitions and provide a resource for readers unfamiliar with terminology commonly used by raptor biologists. Finally, the book contains various tables of raw data from Haak’s Idaho study, including six pages of appendices listing winter Merlin banding data. We must simply assume that these data, provided as they are without explanation, are intended to memorialize information for future researchers.

The book’s final chapter summarizes some of the results of studies previously discussed, highlights current Merlin research, and provides a few potential avenues for future study within Merlin habitat throughout North America. The author ends by emphasizing that the goal of conservation should be education, which in our estimation, *Magical Merlins* has achieved. Haak emphasizes building connections to the natural world through time spent

learning about nature. A subtitle to this book could be “building collaborations to learn even more about nature,” an area where Haak and his contributors have excelled. From cover to cover, this is a fun, engaging, raptor-centric book that synthesizes Merlin research in a style all readers can understand. We highly recommend this book to JRR readers, birders, community scientists and laypeople who simply look up and become fascinated with the goings on above their heads. Regardless of background, anyone can pick up this book, read about descriptive studies in raptor biology, and come away with a desire to be curious and observant about the raptors in their own backyard.—**Benjamin M. Dudek (email address: bdudek@swater.org), San Francisco Public Utilities Commission, 525 Golden Gate Avenue, San Francisco, CA, USA, and Douglas A. Bell (email address: dbell@ebparks.org), East Bay Regional Parks District, 2950 Peralta Oaks Court, Oakland, CA, 94605 USA.**

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