BOOK REVIEWS

EDITED BY JEFFREY S. MARKS

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Island Eagles: 20 Years of Observing Golden Eagles on the Isle of Skye. By Ken Crane and Kate Nellist. 1999. Cartwheeling Press, Glenbrittle, Isle of Skye, U.K. 142 pp., color cover, 26 drawings, 3 figures. ISBN 0-9536033-0-X. Paper, £10 (ca. \$16.00).-Modern ecology is a world of mathematical models and statistical inferences that by and large can be pretty dull fare. Thus, it is with great pleasure that I introduce this little volume, which is a treasure trove of previously undescribed Golden Eagle (Aquila chrysaetos) behavior. Although the book is well organized in its presentation of topics, they are woven so naturally into the fabric of the authors' experiences that the book reads like a novel. We are drawn into the story as the old male at one territory slowly succumbs to avian tuberculosis, or as a widowed female chooses a new mate. So much here is new to science that this volume almost eclipses even the father of Golden Eagle naturalistic observations, Seton Gordon himself.

The value of this book as a source of behavioral observations is enhanced by the authors not having restricted their observations to the breeding season. Most of what is available on Golden Eagle behavior and ecology comes from visits to occupied nests, and little comes from nonbreeding seasons that are much more difficult to study. Here, the authors emphasize subjects such as pair formation, responses to intruding eagles in winter, and interactions with mammalian predators. Not only do the authors provide a description of what eagles did, they give context so that we learn much about the function and rarity of unusual behavior. The experienced field biologist will detect, from the way each story is related, that the observers are objective in their descriptions and conservative in their interpretations. What's more, many of the anecdotes are illustrated with charming pencil drawings by the authors.

These illustrations are not detailed but appear to be drawn from photographs, so they provide an accurate record of behavioral positions.

Ironically, the only failing of the book is also one of its strengths. The authors appear to be largely unaware of the scientific literature on the Golden Eagle, especially work not done in western Europe. Although the practice of planning a study from the most up-to-date literature has merit, something can also be said for tackling a scientific study with a novel perspective, unencumbered by preconceptions that come from a thorough review of the literature. Indeed, this little volume is testimony to the value of low-tech in that we learn what can be accomplished by two people with binoculars, notebooks, a telescope, and little else. Little else, but incredible will. No doubt this volume will be most highly revered by those who understand what it means to stay the watch when a storm glides in and covers the mountain and the rain turns to sleet and then snow. To have persisted in such a study on those soggy moors for five years is remarkable; to have continued for 20 years has few parallels in the world of raptor ecology.

So, what do these rain-soaked highlanders have to offer? In addition to a well-written and most interesting text, the book presents the following novel observations: (1) ground nesting (without a nest); (2) novel plumage features (e.g., a juvenile with a tail white to the tip, and a bird with asymmetrical plumage-lighter on one side than the other); (3) juvenile Golden Eagles playing in their first autumn snow; (4) talon grappling with Whitetailed Eagles (Haliaeetus albicilla), and the occasional displacement of Golden Eagles by this species; (5) using the sound of sea breeze and surf to camouflage an eagle's attack; (6) both adults lying down, tail-to-tail, apparently resting; (7) behavior of newly formed pairs, (8) role reversal in sexual solicitation; (9) observations of Golden Eagles kleptoparasitizing foxes; and (10) more and better observations of the roller coaster courtship flights

(undulations) than can be had in any other publication. The authors have drawn from more than 500 undulation bouts and describe an extreme bout of 143 undulations. Furthermore, they diagram circular and figure-of-eight undulation patterns and undulation flights in two contexts, courtship and territorial defense. The long duration of their study allowed them to document the survival of some eagles in excess of 20 yr. Although few students of *Aquila* eagles have seen more than a dozen kills, these authors report details from 26 prey captures, including observations of killing as an apparent displacement activity with no attempt to feed on the prey.

Some philosophical points are also worth mention and emulation. The authors appropriately withhold details of eyrie locations to protect the privacy (and the survival) of the birds. They also repeatedly encourage watching (gathering data) from far enough away to avoid disturbance. Unfortunately, they do not specify safe distances. From my own observations, I know that it is best to begin open field observations from about 1 km (farther if the birds have been subject to shooting) and to move closer only after the birds show little attention to the observer and occasionally drift closer themselves.

Louis Agassiz, the great 19th century glaciologist and ichthyologist, put it this way: "If a man studies nature from books alone, he will not know her when he meets her in the woods and fields." Those of you with extensive knowledge of raptors from persistent fieldwork will recognize the value of this httle book immediately, and those of you without such experiences will perhaps be inspired after reading this book to put down the "mouse" and turn off the computer.—David H. Ellis, USGS Patuxent Wildlife Research Center, Laurel, MD 20708 U.S.A.

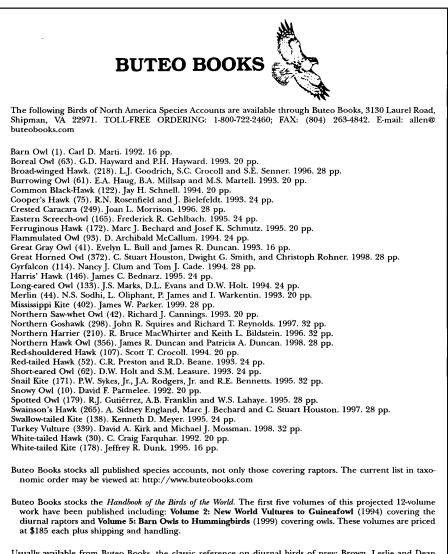
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Raptor Watch: A Global Directory of Raptor Migration Sites. Edited by Jorje I. Zalles and Keith L. Bildstein. 2000. BirdLife Conservation Series No. 9, BirdLife International, Cambridge, U.K. xviii + 419 pp., 22 black-and-white photos, 21 tables, 21 figures, 3 appendices. ISBN 0-946888-38-8. Cloth, \$58.00.—In 1988, Hawk Mountain Sanctuary launched a global conservation initiative entitled "Hawks Aloft Worldwide." In response to this imtiative, more than 800 raptor biologists from around the world submitted information on potential and ongoing raptor migration watchsites. This book is a compilation of the information submitted by those biologists and serves as a companion to the *Raptor Migration Watch-Site Manual* published by the Hawk Mountain Sanctuary Association in 1995 (see *J. Raptor Res.* 30:52, 1996).

Raptor Watch presents a tremendous amount of information that is skillfully summarized in an accessible format. Introductory chapters contain tables that list, among other things, the continental distribution and migration status (complete vs. partial vs. irruptive migrants) of all migratory species, species of global conservation concern according to BirdLife International, the regional origin of breeding populations of migratory species, and the countries of occurrence of all taxa that are of conservation concern. One can turn to the "Global Analyses" chapter and instantly learn that 183 of the world's 292 species of diurnal raptors are migratory; that the highest numbers of migratory species occur in Asia (66 species) and Africa (61); and that 388 raptor watchsites have been identified around the world, 252 of which occur on protected lands. Following this information is a table that lists each watchsite that has reported at least 10,000 migrating raptors annually. I could go on and on. Suffice it to say that if you wish to know where to go to see migrating raptors, or where certain species are most likely to occur, this book will either provide the answer directly, or give you the information to answer your question with little additional effort.

The bulk of the book, some 312 pages, consists of descriptions of the 388 watchsites organized by country. In most cases, a "country description" also provides information on the size (km²) of the country, the length of its coastlines, human population size and population growth rate, per capita GNP, the names of bordering countries, and major land uses. The watchsite descriptions themselves run from about one-half to one and one-half pages, furnishing information on location by latitude and longitude, elevation, a site description, land tenure and protection, land use, threats, monitoring activity, main periods of migration, raptor species present, research and conservation activities, a list of contacts for the site, and the criteria that resulted in inclusion of the site in the global directory.

The book contains no index, which is a minor inconvenience when searching for specific sites in the United States and Canada (emphasis on "minor"). Aside from that, I found nothing to criticize, because this book is excellent, both in content and in production. *Raptor Watch* represents an astounding achievement that will be a valuable contribution to conservation efforts for migrating falconiforms. Moreover, it is an extremely handy reference on the distribution and conservation status of the world's diurnal raptors. The editors, compilers, BirdLife International, Hawk Mountain Sanctuary, and the 800-plus contributors to this book should be genuinely proud of their accomplishment.—Jeff Marks, Montana Cooperative Wildlife Research Unit, University of Montana, Missoula, MT 59812 U.S.A.



Usually available from Buteo Books, the classic reference on diurnal birds of prey: Brown, Leslie and Dean Amadon. Eagles, Hawks and Falcons of the World. Country Life Books, 1968. Two volumes. First English edition in brown cloth. Fine in slipcase. \$300.00 and other editions at lesser prices.