



Aves Rapaces de Chile

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BOOK REVIEWS

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Aves Rapaces de Chile. (In Spanish). Edited by A. Muñoz Pedreros, J. Rau Acuña, and J. Yañez Valenzuela. 2019. Second edition. CEA Ediciones, Casilla 164, Valdivia, Chile. 561 pp., 46 figures, 163 photos, 7 maps, glossary, indices, author list, credits. ISBN 978-956-7279-08-1. Paperback. Sold by <https://www.ceaediciones.cl/>.

Spanish-speaking ornithologists and/or bird enthusiasts often find a scarcity of raptor literature available in their language. Some ornithological journals are published in Spanish (e.g., *El Hornero*, *Spizaetus*, *La Chiricoca*, *Boletín Chileno de Ornitología*, *Huitzil*), and we can also find some books (e.g., Alvarado et al. 2016). However, there will always be a need for more raptor books written in Spanish. *Aves Rapaces de Chile (Raptors of Chile)* helps augment extant Spanish-language raptor books. This book introduces amateurs and professionals to raptors throughout Chile while also addressing different research topics.

Birds of prey are a source of cultural and ecological fascination for humans. However, little is known and published about the natural history of several species of raptors that inhabit the Neotropics. Many of these birds of prey are rare, uncommon, and even endangered. In this second edition of *Aves Rapaces de Chile*, 30 recognized raptor experts update the first edition edition (written in 2004 and now out of print) and include additional contemporary topics.

Aves Rapaces de Chile has been thoughtfully crafted to be comprehensive to raptor studies. One might think that since it deals with the birds of prey of Chile, it consists primarily of species accounts; however, the book covers multiple raptor topics of interest to students, birders, and ornithologists. The book is divided into six chapters and ranges from generalities about raptors in Chapter 1 through conservation and management in Chapter 6. Also included are topics such as ecology and evolution (Chapter 3), field methodologies for collecting samples, capturing individuals, and analyzing pellets, and bioacoustic studies (Chapter 5). Each section is the work of one or more researchers. Notably, more than half of the citations come from English-language sources (57.3%). Although the bibliography written in English is outstanding, it would be helpful to publish the references in Spanish. Spanish texts facilitate their use by Spanish-speaking managers, administrators, wildlife conservationists, researchers, and students on multiple continents.

Aves Rapaces de Chile begins with two short prefaces and a prologue describing the role raptors play in ecosystems and an introduction to the book's topics. In Chapter 1 (general information), there is a review of the raptors of Chile (28 diurnal and seven nocturnal species) describing their characteristics and adaptations. I consider it a good introduction because in a brief and clear way it presents not only the general characteristics of raptors, but also the particular characteristics of each family. For example, it includes the shapes of the wings and consequently the forms of flight, and adaptations for hunting. It also references diversity in beaks, vision, hearing, and smell. The authors explain how some hawks use their beaks to kill their prey, while other groups, such as the Accipitridae, primarily use their talons. This information helps the reader understand not only the group of raptors in general, but also the behavioral characteristics of each family.

"Species descriptions of Chilean raptors" (Chapter 2) includes morphological and ecological information and conservation status for each species. Characteristics for field identification are included. The chapter highlights the visible morphological characteristics of each species and behavioral characteristics such as flight form, type of calls/vocalizations, and seasonality. The authors describe characteristics that can be confused, especially among juveniles or immatures of other species that have similar plumages. Identification of Neotropical raptors can be difficult (van Dort 2018), and misidentifications are not unknown (Clark et al. 2020). All species have one illustration and at least one photo associated with their information, which will be useful to students, professionals, and lay people alike. It would have been useful to include distribution maps for each species, so readers would not need to resort to other sources to learn about the range (and perhaps movements) of the species. Although *Aves Rapaces de Chile* is not a field guide, it provides useful data that aids in identification. The author also discusses seven additional species considered as visitors or accidental in Chile.

"Ecology and evolution" (Chapter 3) begins with the evolution of the ancestors of birds, the origin of bipedalism, endothermy, the ability to fly, and the arboreal foot with opposable toe. The information presented is very interesting, but possibly this topic (evolution) should have been a separate chapter. The information presented is on the evolution of birds in general and not specifically raptors or paleontological findings of raptors in Chile. Until recently, most fossils of raptors have been found in other areas of South America (Rubilar-Rogers et al. 2012). This chapter is extensive with seven sections, from the evolution of birds, through species distribution involving diversity

and biogeography issues. Also included are ecological topics such as reproduction, trophic ecology, and taxonomic assemblages of raptors in Chile. This chapter underscores that Chile is a Neotropical country for which considerable information on diurnal and nocturnal raptor ecology has been published (see Alvarado et al. 2016, Figueroa et al. 2017).

It was a pleasant surprise to find in this second edition a section dedicated to raptor parasites because this topic is absent in most bird books, especially raptor books, despite the topic's importance for raptor health. The dearth of raptor parasite studies is a global problem. In Chile, the situation is no different; most of the studies of parasites in raptors are based on a few common species such as the Chimango Caracara (*Milvago chimango*) and the American Kestrel (*Falco sparverius*). Parasitological studies are important because they allow us to comprehend the ecological triad of parasite, host, and environment. These studies aid in understanding diseases and have matured into the recently emerging field of conservation medicine. The authors and editors of *Aves Rapaces de Chile* acknowledge that the lack of current studies are related to the limited number of trained professionals and the low availability of study material.

In "Determination and classification" (Chapter 4), the authors guide readers with information on collection and identification of field samples (including parasites). This will be of great help to students who are new to the study of raptors. An interesting part of the book that caught my attention was the inclusion of techniques for identification of bird orders using feather microstructures, which is a useful tool for identifying feather remains in pellets. Microphotographs of 19 bird orders are shown to help readers identify these species. This methodology opens a space for the study and identification of feathers in pellets, without a comparison collection of prey (bones, skulls, hairs, or feathers). In my opinion, the study of intra-guild predation among raptors has been somewhat neglected in raptor research (Sergio and Hiraldo 2008) and is an important topic for long-term conservation efforts, particularly as the make-up of raptor communities evolves under pressure of urbanization and climate change.

Another interesting topic included in Chapter 4 is the regulatory responsibilities of our profession, including permits and licenses essential for the study, handling, and collection of samples (blood, parasites, feathers) in raptors. Previously, there was a misperception that ethical values in research were unimportant, so raptor studies in Chile and elsewhere were carried out without research permits to capture, band, or collect specimens or samples. I believe Chapter 4 will be very useful for students, laypeople, and professionals.

"Techniques and methods of study" (Chapter 5) includes numerous techniques for studying raptors including capture and marking (with the use of rings, wing marks, wing clipping or feather staining). Authors include methods used for raptor population ecology studies such

as estimating abundance using observation points or transects. It is a very complete chapter for those who want to start studying raptor ecology at the population or community level. A recently popularized methodology described in this chapter, is the field of bioacoustics, which analyzes the communication behavior of wildlife through sound signals such as calls or vocalizations. For some species, such as nocturnal raptors, the vocal component is important for species identification. At present, we lack a complete database on the vocalizations of Neotropical raptors. More recordings and bioacoustical studies are needed for tropical nocturnal raptors, and I hope researchers will strongly consider their work include a bioacoustical component.

"Conservation and management of raptors" (Chapter 6) is one of the broad chapters with a variety of themes. The authors have provided information on the history of legislation and conservation of Chilean raptors and their legal protection. It was interesting to read this section because it is another subject rarely seen in bird books. Currently, several Neotropical countries have no specific legislation or regulation on the protection of raptor species, including acquiring, possession, permits, or falconry. However, in Chile there are laws and regulations protecting all birds of prey. The authors propose different initiatives to conserve raptors, including ecological studies for threatened species, identification and protection of nesting sites, and habitat improvements by establishing structures to attract raptors, including artificial feeders, platforms, or boxes for nesting. I appreciated that the authors included several tips about these structures, e.g., time of installation, the exposure or best location to place them, distance between nesting boxes, when to check them, and their maintenance and cleaning. This type of specific and well-documented information is rare for raptor conservation in Neotropical countries.

One activity that the authors propose to increase raptor studies is to form research groups in Chile for areas and species that are little studied. I add to this by proposing that Neotropical raptor researchers increase links with neighboring countries in the region and take advantage of academic/professional meetings, such as Raptor Research Foundation or Neotropical Raptors conferences, where there is a great opportunity to create intra- and international collaborations. Collaboration will be key to raptor conservation locally, regionally, and globally.

Aves Rapaces de Chile is well edited for consistency, grammar, and spelling. At the end of the book, there is a glossary with the technical words defined, which will help beginners, students, amateurs, and researchers to comprehend raptor research terminology. This is very useful for those who may be new to raptors, research, or both. The drawings and photographs are a fundamental part of this book because they support the information written in the text. Twenty-two photographers contributed to illustrating the book. I feel that the book addresses virtually all topics of interest on raptors, and I recommend it as an excellent

general reference book for Spanish-speaking students and researchers who are planning or conducting biological and ecological studies on birds of prey.

Aves Rapaces de Chile is aimed primarily at undergraduate and graduate students, professionals, and academics, but is also useful for amateurs, and conservationists who are also interested in raptors. The book presents considerable useful information and addresses a wide diversity of topics; and although some topics may be only briefly addressed, I found information that will be helpful for reference and consideration. Hopefully, non-Spanish speaking researchers will become interested in raptor research topics written in Spanish; *Aves Rapaces de Chile* may be an incentive for this. The book will be a welcome addition to the reference or personal library of all raptor researchers, and the second edition of this book will be useful to current and future raptor researchers, managers, and conservationists.—**Paula L. Enríquez Rocha (email address: penrique@ecosur.mx), Departamento Conservación de la Biodiversidad, El Colegio de la Frontera Sur, PO Box 63-29290 San Cristóbal de Las Casas, Chiapas, México.**

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