



BOOK REVIEW

The Population Ecology and Conservation of Charadrius Plovers

Tamás Székely[®]

Milner Centre for Evolution, University of Bath, Bath, UK
T.Szekely@bath.ac.uk

Published February 27, 2020

The Population Ecology and Conservation of Charadrius Plovers, Mark A. Colwell and Susan M. Haig, Editors. 2019. CRC Press, Boca Raton, FL, USA. xii + 330 pp., 18 color illustrations, 51 b/w illustrations. \$199.95 (hardcover), \$180.00 (eBook). ISBN: 9781498755825 (hardcover), ISBN: 9781315152882 (eBook)

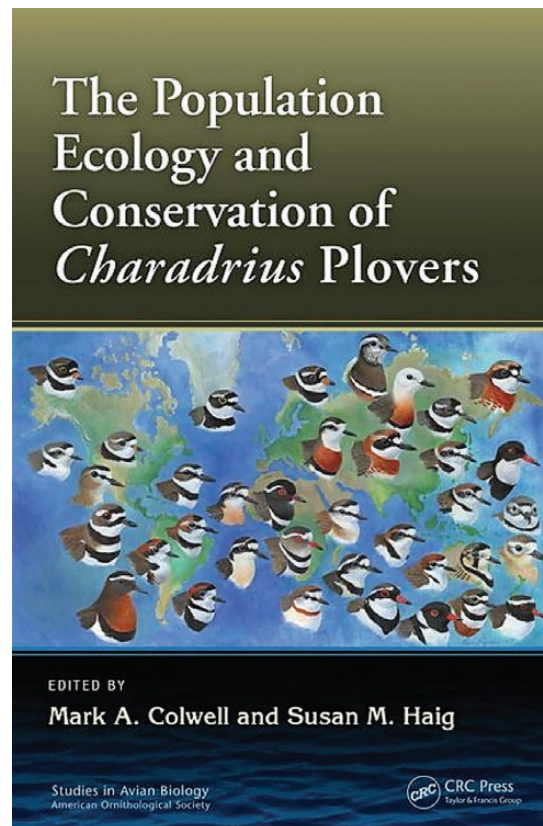
Small plovers (*Charadrius* spp.) are attracting the attention of behavioral ecologists, population biologists, and conservationists for 3 main reasons. First, they are geographically widespread and breed on all continents except Antarctica, and they can be locally abundant. Plover species have an immense variation in geographic distribution: some, like the Ringed Plover (*Charadrius hiaticula*), are nearly circumpolar whereas others, like the Saint Helena Plover (*Charadrius sanctaehelenae*), are restricted to a single island. Second, plovers tend to be tame and tolerant of detailed investigations that probe into their behavior, adaptations, and ecology, as over the millennia plovers have evolved to cope with various disturbances on their breeding and foraging sites. Finally, they have diverse lifestyles that can be attributed to the fact that some plovers are long-distant migrants whereas others have restricted movements throughout the year or even spend their entire life on a small island. Taken together, these features make them attractive subjects for evolutionary and biodiversity research. They are diverse enough to test key ideas about adaptation, ecology, behavior, and conservation, yet are still a small and well-defined group in

terms of number of species that exhibit a shared Bauplan that facilitate studies using standard and straightforward methodology. In short, they are arguably the Goldilocks organisms of field biology (Székely 2019).

Colwell and Haig present a well-focused informative volume on some of the key features of plovers. Chapters cover an array of subjects, including molecular ecology and phylogenetics, ecology, breeding systems, and nonbreeding biology. As the title suggests, the book's emphasis is on conservation, and appropriately this theme pervades its 12 chapters. This emphasis is entirely justified given that 15 out of 40-odd plover species are threatened or data deficient, as the introductory chapter by Colwell and Haig states.

The chapters in general are well written, instructive, and balanced. Perhaps 3 chapters stand out. A chapter by Eberhart-Phillips focuses on a fundamental evolutionary question—reproductive strategies—and by overviewing decades of studies on mating system and parenting in various plovers, puts these results in a phylogenetic framework. In contrast, the chapters of Colwell and Weston focus on conservation-related issues: predator management and human disturbance, respectively. These reviews build upon theoretical studies and

they summarize a substantial amount of information that will interest both evolutionary biologists and biodiversity scientists. Together, the chapters convey the important message that in the era of accelerating



anthropogenic effects, evolutionary biologists, population demographers, and conservation biologists need to work together to understand and protect populations in the wild.

While plover research over the past few decades has made significant contributions to the fields of evolution, population biology, and conservation, major challenges remain. Studies of shorebirds, including plovers, are still dwarfed in terms of publications by other avian orders (Schuetz and Johnson 2019), and knowledge about plovers is biased toward 2 or 3 species that breed in North America or Europe. Although a number of plover species breed in the tropics or subtropics, their population ecology has remained largely unstudied (much of South America and Southeast Asia stand out as *terra incognita*), and a large amount of information on Australian and New Zealand plovers is sadly buried in unpublished masters theses, doctoral dissertations, or in internal conservation reports. We also need more studies that use plovers as model species for studies in genomics, physiology, immunology, neurobiology, and conservation, and we need to develop and utilize new analytical and statistical techniques both in the laboratory and in the field.

The seemingly insatiable appetite of people to occupy more beaches, coastlines, and lake shores, and the desire to put increasing livestock on grasslands where many plovers nest together, place plover populations in jeopardy worldwide. As Colwell and Haig illustrate, much of these threats, and the conservation actions to counter these threats, are unfortunately specific to a particular species, to a certain country or state, or to specific habitats. I argue that there is an urgent need to form a global plover conservation consortium to enhance communication between conservationists, researchers, and managers

locally (i.e. in a particular country or a state) as well as globally, as in a time of increasing globalization, shorebird scientists need to look beyond their specific study system and focus more on global issues to combat local and global biodiversity loss.

Book reviewers are expected to raise the limitations of a product, although I cannot find much undesirable to mention. One apparent bias is geographic distribution among the authors, as nearly all are from North America and Western Europe and only one is from Australia. The price tag of the hardcover version regrettably will put this book out of reach for most students, and perhaps even for some researchers and practicing conservationists.

Taken together, I strongly recommend this wonderful compilation to ornithologists, students, and laypeople. Many will enjoy reading the book chapters that are packed with good data and ideas for follow-up studies. The text is clear and illustrative, much jargon has been carefully avoided, and the illustrations are excellent. Therefore, the conservation methods, actions, and implications presented in this book will provide immensely useful material for conservation biology courses. By providing a link between science and conservation action, practical conservationists will also benefit from reading it.

LITERATURE CITED

- Schuetz, J. G., and A. Johnston (2019). Characterizing the cultural niches of North American birds. *Proceedings of the National Academy of Sciences USA* 116:10868–10873.
- Székely, T. (2019). Why study plovers? The significance of non-model organisms in avian ecology, behaviour and evolution. *Journal of Ornithology* 160:923–933.

Book Review Editor: Jay Mager, j-mager@onu.edu