Preface

At this very moment, somewhere on earth, the sun is rising and a dawn chorus of birdsong welcomes the new day. This never-ending avian symphony has been performed non-stop for millions of years, yet our scientific understanding of avian biology still improves with every passing year. This third edition of the *Handbook of Bird Biology* is intended as a current and helpful guide into the spectacular richness of bird diversity and the wonderful and varied ways that birds look, behave, display, function, and evolve.

The third edition of the *Handbook* extends a tradition that began in 1972 when the Cornell Lab of Ornithology first offered a Home Study Course in Ornithology to the general public. That early correspondence course comprised nine seminars on different topics, all written by the Cornell Lab's Director at the time, Dr. Olin Sewall Pettingill, Jr, an ornithologist known for helping connect recreational birdwatchers with scientific advances in avian biology. The first Home Study Course students received nine units of mimeographed sheets sent through the mail. Over the subsequent two decades, the materials increased in length and sophistication as the Home Study Course evolved and expanded. More than 10,000 students successfully passed their mailed-in exams and completed the course.

This material was expanded and modernized as it was incorporated into the 2004 second edition of the *Handbook*, which was produced as an impressively hefty single-volume book co-published by the Cornell Lab of Ornithology and Princeton University Press. It became a multi-authored endeavor with 11 chapters written by experts in their respective fields, each of whom lent their own personal style to explaining why birds look, act, and function in the ways that they do. The second edition remained the foundation of the continuing Home Study Course, used by an additional 5000 students from 65 countries. The book was likewise adopted as a textbook for many college-level ornithology courses and enjoyed as a general reference by many individuals interested in learning more about birds, even outside of any formal or informal coursework.

This third edition, published in 2016, represents an even more extensive overhaul of the content, presentation, and coverage of the *Handbook of Bird Biology*. The new edition's 15 chapters have been authored by 18 expert ornithologists, including five authors who extensively revised their well-regarded chapters from the second edition and 13 who contributed entirely new material. The new content includes extensive and expanded coverage of hundreds of recent discoveries and insights about avian ecology, behavior, evolution, physiology, anatomy, and conservation.

Given that birds are so visually appealing, it is appropriate that the new edition be presented in full color, a first for any general textbook of Ornithology. The 1150 photographs, illustrations, and figure elements depict hundreds of bird species, along with graphs and tables that explain intriguing facets of their underlying biology. The *Handbook* editors and authors express their deep thanks to the many individuals—credited in the figure legends—who generously contributed photographs or artwork to this edition.

Readers familiar with the earlier additions may notice that this edition is now global in its coverage of the world's birds and the people who study and conserve them. It includes examples featuring bird species that are collectively found literally everywhere on earth that birds occur. In addition to the venerable traditions of ornithological research in North America and Europe, exciting new discoveries are now constantly being made by ornithologists from the rest of the Americas, Africa, Asia, Australia, and islands around the world. Our hope is that readers of this book—wherever they might be—will enjoy finding out more about some of the most familiar birds that live around their homes, while also being inspired by learning about species that occur in far-away places.

A special new feature of the third edition is that it is complemented and supplemented by a wealth of online

materials found on the Bird Academy website of the Cornell Lab of Ornithology (web link: **birdbiology.org**). These resources include interactive learning modules on topics ranging from feathers to sexual selection; high-quality video and audio clips chosen to represent behaviors or phenomena discussed in the text; animations that illustrate fundamental concepts in ornithology; longer feature-length coverage of special topics; and much more. The resources are conveniently organized in reference to the corresponding chapters of this *Handbook*. We encourage all readers to use this online material to supplement their readings here. This is especially helpful for the chapters on bird song (Chapter 10) and mating behavior (Chapter 9) where there is no better way to understand these behaviors than to hear or see examples of living birds in action.

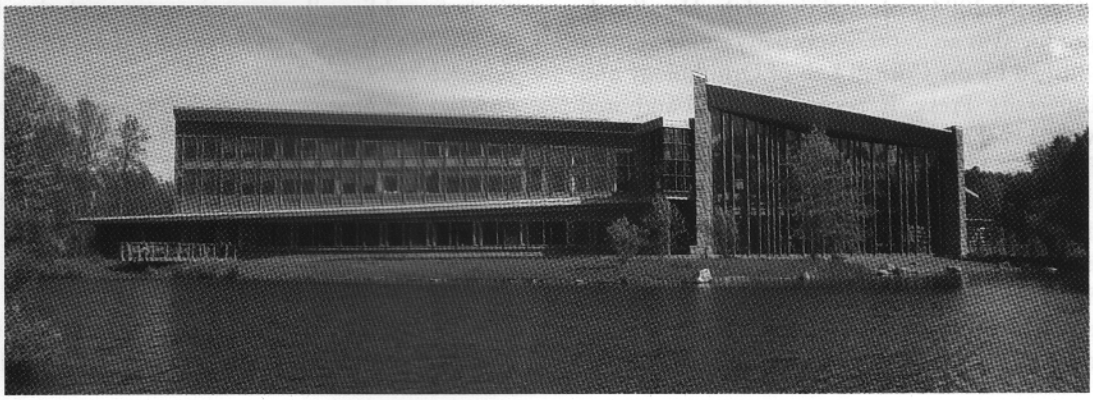
In addition to the 18 chapter authors, the creation of this third edition was possible only through the dedicated efforts of the skilled editorial and production teams at the Cornell Lab of Ornithology and Wiley. The Editors express a debt of gratitude to their Cornell colleagues whose expertise and energy brought this book to completion, including Myrah Bridwell (Permissions Editor), Rebecca Brunner (Development Editor), Alexandra Class Freeman (Art Program Editor), Kevin McGowan (Advising Science Editor), Nancy Trautmann (Education Program Director), Mya Thompson (Online Content Manager), and Megan Whitman (Project Manager). We are likewise deeply appreciative of the wise input and skillful management of this project from the editorial group at Wiley, from our initial discussions with Alan Crowden and Ward Cooper and ultimate project oversight by Kelvin Matthews, through to the production oversight by Emma Strickland and David McDade, hundreds of artistic contributions to figures by Debbie Maizels, production management by Rosie Hayden, skillful project management by Jane Andrew and indexing by Terrence Halliday. We feel extremely fortunate to have had the opportunity to work with such dedicated and professional individuals and teams from both organizations.

About the Cornell Lab of Ornithology

This *Handbook* is an educational resource created by the Cornell Lab of Ornithology, a unit of Cornell University located in Ithaca, New York, USA. The Cornell Lab is a world leader in the study, appreciation, and conservation of birds. Our hallmarks are scientific excellence and technological innovation to advance the understanding of nature and to engage people of all ages in learning about birds and protecting the planet. Our mission—which we take to heart and which guides all of our endeavors—is *to interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds.*

Founded in 1915, the Cornell Lab has grown over the past century into an unusual amalgam of a university department, conservation organization, technology and engineering think-tank, and communications agency. Our staff and faculty number nearly 200 individuals, complemented by almost as many undergraduates, graduate students, and postdoctoral scholars from Cornell and from visiting institutions worldwide. Our vibrant broader community includes 400,000 citizen science participants from all walks of life and 14+ million bird enthusiasts of all ages who connect with us online at birds.cornell.edu.

The Cornell Lab is located in the Johnson Center for Birds and Biodiversity and surrounded by the Sapsucker Woods preserve. We invite all readers of this book to come and enjoy our visitor center and to go birding on our trails. If you cannot visit us in person, be sure to take advantage



The Cornell Lab of Ornithology. Located in the Johnson Center for Birds and Biodiversity, the Cornell Lab is both a unit of Cornell University and an international membership organization. Our mission is *to interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds.* (Photograph by Diane Tessaglia-Hymes © Cornell Lab of Ornithology.)

of our web resources, not only the companion site to this book but also our All About Birds website (**allaboutbirds.org**), our live cameras at active bird nests around the world (**cams.allaboutbirds.org**), our award-winning magazine *Living Bird* (**allaboutbirds.org/living-bird-latest-issue**), and our many citizen science projects (**birds.cornell.edu/citsci**) where you can get involved in collecting information that adds to our ornithological knowledge base to inform bird conservation and management.

We especially encourage all birders—from beginners to experts—to discover and use eBird. At ebird.org you can upload your own checklists and access a rich suite of resources designed to enhance your ability to find and identify birds, all at no cost. eBird is a truly global resource with web portals and partners in many languages and most countries.

We also invite all users of this book to become members of the Cornell Lab at **birds.cornell.edu**. As a nonprofit organization, we depend on our members, donors, research, and our other programs for 99% of our operating budget. These resources support the continued development of this *Handbook* and its online enhancements, along with our many other endeavors in science, conservation, education, and outreach. Your engagement supports the advancement of ornithological science and the informed conservation of birds and their habitats worldwide.

Irby J. Lovette
Fuller Professor of Ornithology
Cornell Lab of Ornithology

For additional online material please visit the
Bird Academy website of the Cornell Lab of Ornithology at **birdbiology.org**