

# Whither field ornithology?

## Perspectives from the “inside”

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We read with interest the recent article by Alan Contreras in *North American Birds* (Contreras 2000) and found ourselves disagreeing with almost every word in that article. We contend that—rather than being in decline—field ornithology in North America is enjoying a period of surprising growth and diversity. Our perspective is that of the “academic insider” to whom Contreras alluded. We have been in academia continuously for between 2 and 3 decades; we publish in scientific journals and help decide on the fate of manuscripts submitted to many of those journals, we serve as officers in professional ornithological societies; we conduct some research involving avian DNA, and our research often entails more time in front of a computer than behind binoculars. However, some of our research also involves extended periods in the field, and some incorporates the work of a vast army of amateur field ornithologists. In addition, we have remained active birders and continue to submit sightings to regional journals, as well as to *North American Birds*. Therefore, we believe we have reasonably balanced perspectives on the nature, role, and importance of field ornithology today.

Like most areas of human thought or activity, science is not static. Whereas Contreras bemoans today's reduced level of credit for descriptive field ornithology, we see instead the hallmarks of ornithology's maturation and integration into an array of scientific disci-

plines. In *all* disciplines, questions evolve as information is accumulated. In *all* disciplines, good university researchers should challenge themselves to be on the cutting edge, asking questions at the frontiers of understanding. Thus, in North America, most professional field ornithologists indeed have moved on from the basic questions (“what birds are where?”) that dominated ornithology from 1850 to 1950. Today, thanks to advances in our tool kits as well as our basic knowledge, we address far more difficult and penetrating questions, such as “why are these birds here?” and “do the ratios of different ages and sexes vary among populations?” and “how is this bird species evolving?” and “what causes birds' distributions or abundances to change?”

It is true, as Contreras contends, that our knowledge of avian distribution and abundance in North America remains far from complete. We agree with him that *documenting these basic facts of natural history is vital and ongoing*. However, it cannot be reasonably disputed that our level of basic knowledge in avian natural history today is enormous and sufficient to allow professional ornithologists to begin studying *the causes and implications* behind birds' distributions. Answering such questions often requires intensive study of small portions of a bird's range, working in the laboratory, and analyzing data at the office instead of inside a tent. This does not mean that field ornithology is declining—it means that the information collected by field ornithologists is being put to a greater diversity of uses than ever before. To the uninformed, field ornithology might seem to stop after sightings have been recorded. To a modern, academic natural historian, the most interesting questions and applications only begin there. As Contreras noted, descriptive studies are unlikely to be published in the “major” ornithological journals, and the venues in which these descriptive studies are published are not given equal weight in academic evaluations of ornithologists. We feel that this is proper. Science is not just the collection of facts but the placing of facts within a context and an explanation of why these facts are important.

Let there be no misunderstanding. Academia still does abound with genuine “natural historians.” Ironically, many of these probably are the often lab-bound “indoor ornithologists” about whom Contreras writes.

We refer especially to museum-based researchers—scientists who are versed in avian systematics and dedicated to gathering precise information on distributions of birds in relatively unknown parts of the world. These museum-based researchers are generally making expeditions to unexplored areas where the need for basic knowledge of birds' distributions is far greater than in North America. Almost every year, museum-based researchers are still discovering previously undescribed species. These are the same scientists who tend museum collections, protecting our most exhaustive “libraries” of verifiable information about birds and their distributions in previous centuries. Many of these scientists also explore the DNA of birds past and present, thereby providing ever-deeper understanding of the diversity that lies hidden inside the mantle of the term “species.” And today, many of these scientists actively incorporate their research into conservation efforts that will affect the persistence of bird populations far into the future. (We note, for example, the recent declaration of a spectacular new national park in Peru, which followed directly from the efforts of a number of field ornithologists from several institutions.)

All good professional scientists are responsible for publishing the results of their research. In these publications, it will always be true that mistakes occur. Contreras refers to published errors in patterns of distribution and movement. To these we can add other kinds of errors: improper analysis of data, omission of field or laboratory methodology, and even reaching conclusions not fully supported by the data. As Contreras noted, published errors occur because reviewers and editors are not omniscient. However, suggesting that the most egregious errors by authors and reviewers are consequences of decay in “field ornithology” simply reflects what is most important and interesting to Contreras. We cannot agree that published errors in detail about avian distribution or movements are any more common than errors of other kinds, and we certainly cannot agree that they are any more common now than they were in bygone eras.

We do concur that reviewers and editors (who are human) sometimes make errors in judgment. However, we know of no professional ornithological journal today in which the

editor or editorial board disputes the fundamental value of field ornithology. As a quick test, we examined the most recent issue of each of the four major ornithological journals of North America (*Auk*, *Condor*, *Wilson Bulletin*, and *Journal of Field Ornithology*). We were stunned by the results: of 83 full-length articles, *only one* did not involve extensive field work on wild birds or analysis of wild bird data and/or specimens gathered by others in the field. (Ironically, the single exception—an aviary study of juncos—was published in *Journal of Field Ornithology*.) Among the short notes, the results were equally overwhelming: 30 published notes, of which 29 involved field ornithology. We also noted, in a similar analysis, that only seven per cent of full-length articles were related to game species, countering Contreras's claim that students entering ornithology as a profession would be "working on game species in a system funded largely by hunters."

While it may be more difficult for an amateur field ornithologist to acquire all of the skills needed by a professional ornithologist today than would have been the case a century ago, the importance of amateur field ornithologists and their work have not diminished. In fact, we contend that the role of amateur field ornithologists in professional science today is greater than it has ever been. Many scientists, ourselves included, regularly publish peer-reviewed academic papers based *entirely* on

data collected by amateurs. The validity and importance of amateur-collected data are routinely demonstrated through papers published in many of the world's most prestigious scientific journals (e.g., Crick and Sparks 1999, Greenberg and Droege 1999, Rosenberg et al. 1999, Hochachka and Dhondt 2000, Boulinier et al. 2001). Most such studies would have been impossible to conduct if field work had been limited to professional ornithologists or hired technicians. Indeed, because of the increasing number of skilled amateurs across the continent, the questions that can be asked using amateur-collected data on birds today have attained an unprecedented level of scope and complexity.

The research publications listed in the previous paragraph were from professionally organized projects in which amateurs participated. Because they were readily accessible to the scientists who published these papers, these data could help document the dynamic nature of birds' distribution and abundance. The pages of *North American Birds* have also provided testimony to the dynamic nature of bird distributions—nearly every regional report contains first records of breeding, wintering, or migration occurrence for individual states or regions. In the face of global climate change and drastic habitat changes, scientific interest in these changing distributions clearly has not diminished. Data from *North American Birds* and its predecessors continue to be used to shed light

on regional distribution patterns (e.g. Robertson and Woolfenden 1992, Patten and Marantz 1996) and other investigations of the dynamics of birds' distributions (e.g., Veit 2000).

In summary, we take exception with Contreras's limited vision of field ornithology and certainly with his contention that field ornithology is declining in its role in scientific research. Moreover, we contend that his perceived dichotomy between "academic" and "field" ornithologists is illusory. Never before have there been so many ways in which the amateur bird enthusiast can make enormous contributions to professional scientific research. Never before have the walls of ornithological academia been more open to being educated by the lay public. As professionals deeply rooted in this science, we are personally committed to fostering the collaboration between professionals and amateurs, and we could not be more thrilled about this new era of field ornithology.

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