

## **Conservation Biology of Hawaiian Forest Birds: Implications for Island Avifauna**

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**Conservation Biology of Hawaiian Forest Birds: Implications for Island Avifauna.**—Thane K. Pratt, Carter T. Atkinson, Paul C. Banko, James D. Jacobi, and Bethany L. Woodworth, editors. 2009. Yale University Press, New Haven, CT. 707 pp. + 32 color plates. ISBN-978-0-300-14108-5. \$85.00 (hard cover).

This is one of the best bird books that I've read in recent years, and certainly the most depressing. The five editors and 43 authors are a *Who's Who* of the scientists who have struggled in recent decades to salvage what little is left of the endemic birdlife of the Hawaiian Islands. In crude terms, through no fault of their own, their failures have far outnumbered their successes. Here we are, in the 21st century, when you can go online and look up the entire genome of your *pollo frito* or Thanksgiving turkey, but nobody can assure the future of well-studied endemic birds on oceanic islands that, relative to many others, are rolling in money from tourism and other sources. What's wrong?

Nobody could say it better than veteran conservation biologist and avian ecologist Michael Scott, in the book's preface (p. xi), "The management actions identified in forest bird recovery plans written two decades ago have not been implemented at ecologically relevant scales. It is neither lack of information nor lack of planning that stands in the way of saving Hawaii's endangered avifauna; it is lack of action. When we have acted, we have done so at scales that have influenced nesting pairs or fractions of populations, not populations, metapopulations, subspecies, or species. Our chances to effectively act on behalf of Hawaii's endangered forest birds are rapidly decreasing as time passes." That the actions undertaken to date have not been on a scale large enough is another way to say that more money and personnel have been needed. That scientists have gathered a great deal of biological information about Hawaiian forest birds makes it especially frustrating to see the birds decline to extinction.

Another fundamental problem is that most endemic species of Hawaiian birds already were gone or badly depleted by the time serious attention was paid to their conservation in the 1960s and 1970s. In Chapter 2 (Table 2.1), Winston Banko and Paul Banko compile the historic and modern status of all species and island populations of Hawaiian forest birds, beginning with the year 1887. (Of course many endemic species and populations already had vanished by 1887, as revealed in paleontological and

zooarchaeological research by Helen James and Storrs Olson.) Looking at the “last year observed” column in Table 2.1, I came up with this summary: 27 species/populations from 1887 to 1900, 25 more species/populations from 1901 to 1950, 17 more species/populations from 1951 to 2000, and 2 more species/populations since 2000. The decline in extinction rate is simply because not much is left to be lost. For most of the survivors, the situation may be hopeless on time scales measured in decades or centuries. Furthermore, as the native bird communities lose more species (and become less interesting), it is more difficult to generate the will to save them.

Good science is at the core of this book, which seems intended mainly for a scholarly audience. The 25 chapters are accommodated in five parts, namely, Introduction: Origins, Historic Decline, and Culture (Chapters 1–3), Status, Biology, and Limiting Factors (Chapters 4–14), Applying Research to Management (Chapters 15–19), Recovery Programs (Chapters 20–23), and the Future (Chapters 24, 25). In Chapter 1, Thane Pratt sets the stage by describing how Hawaiian birds evolved in the absence of mammalian and reptilian predators, as well as pathogens and their vectors, leading to heightened vulnerability once humans and their biological associates arrived, effectively transforming these birds’ surroundings from purely insular to quasi-continental. Most subsequent chapters also are filled with important information to expand your appreciation of Hawaiian forest birds, even if tempered by the realization that another species or population drops out every few years.

The 11 chapters in Part 2 summarize many of the research programs that have addressed Hawaiian birds, including monitoring of populations, habitat assessment, foraging ecology, demography, disease, genetics, predators, and competitors. Most of these chapters have a strong empirical basis yet are written in a thoughtful manner by persons who clearly want to save the birds.

Part 3 consists of five chapters that review how the information learned through research has been used in management programs. Challenges abound in controlling invasive plants, restoring native plants, managing disease, controlling large and small mammals, and propagating native birds in captivity. Seldom can these problems be addressed in a cookbook fashion, but they require hard work, constant vigilance, and a willingness to adapt your methods to local situations, which can get pretty ugly.

Part 4 reviews the recovery programs for four species, the ‘Alalā (*Corvus sandwichensis*), Puaiohi (*Myadestes palmeri*), Po‘o-uli (*Melamprosops phaeosoma*), and Palila (*Loxioides bailleui*). The problems that need to be solved for these species to “recover” are daunting at best. In fact, the cardueline finch called Po‘o-uli was last seen alive in 2004, only 31 years after its discovery. The ‘Alalā (a crow) now exists only in captivity. Approximately 300 to 500 Puaiohi (a thrush) are believed to survive; rat predation and malaria are major problems. The Palila (another cardueline finch) has been declining and no more than several thousand now exist, with habitat quality and non-native predators among the main threats.

The final two chapters are realistic about the future. Chapter 24 is by relative newcomer David Leonard, who is considerate yet frank. Among the species of birds listed under the U. S. Endangered Species Act (ESA), Leonard points out (Table 24.1) that not a single Hawaiian species is among the top 20 in total spending

(federal and state combined). He notes further (Table 24.2) that 10 of the 23 species of Hawaiian forest birds listed since 1967 under the ESA already are extinct, and four others have populations of less than 1000. Only three have populations of 10 000 or more.

Chapter 25 was written by a set of highly experienced Hawaiian conservation biologists (Thane Pratt, Carter Atkinson, Paul Banko, James Jacobi, Bethany Woodworth, and Loyal Mehrhoff), who state (p. 554) that “If key recovery actions are implemented over sufficiently large and viable areas of habitat, the outlook for Hawaiian forest birds changes from pessimistic to cautiously optimistic.” In Table 25.2 they present trends for all native Hawaiian forest birds, including the ones that are locally common and have estimated populations in the tens if not hundreds of thousands. While I find it difficult to be hopeful about the future of even these species, I take heart that these talented veterans have some optimism. Nevertheless, it is clear to everyone that “more of the same” just won’t do. Once again we return to the need for more funding, more personnel, more equipment, etc. It’s a buyers’ market for jobs in conservation biology these days, but given the economic downturn, major increases in funding for Hawaiian forest birds may be a tough sell.

Wouldn’t it be wonderful, however, if we could convince politicians to give Hawaiian birds one day’s worth of the cost of wars in Iraq and Afghanistan? Perhaps then a decent percentage of the species and populations would persist to be studied and enjoyed by the great-grandchildren of the authors of this fine book. Should that be the case, it will be in large part because these scientists courageously set the stage.—DAVID W. STEADMAN, Florida Museum of Natural History, University of Florida, Gainesville, FL 32611. E-mail: dws@flmnh.ufl.edu.