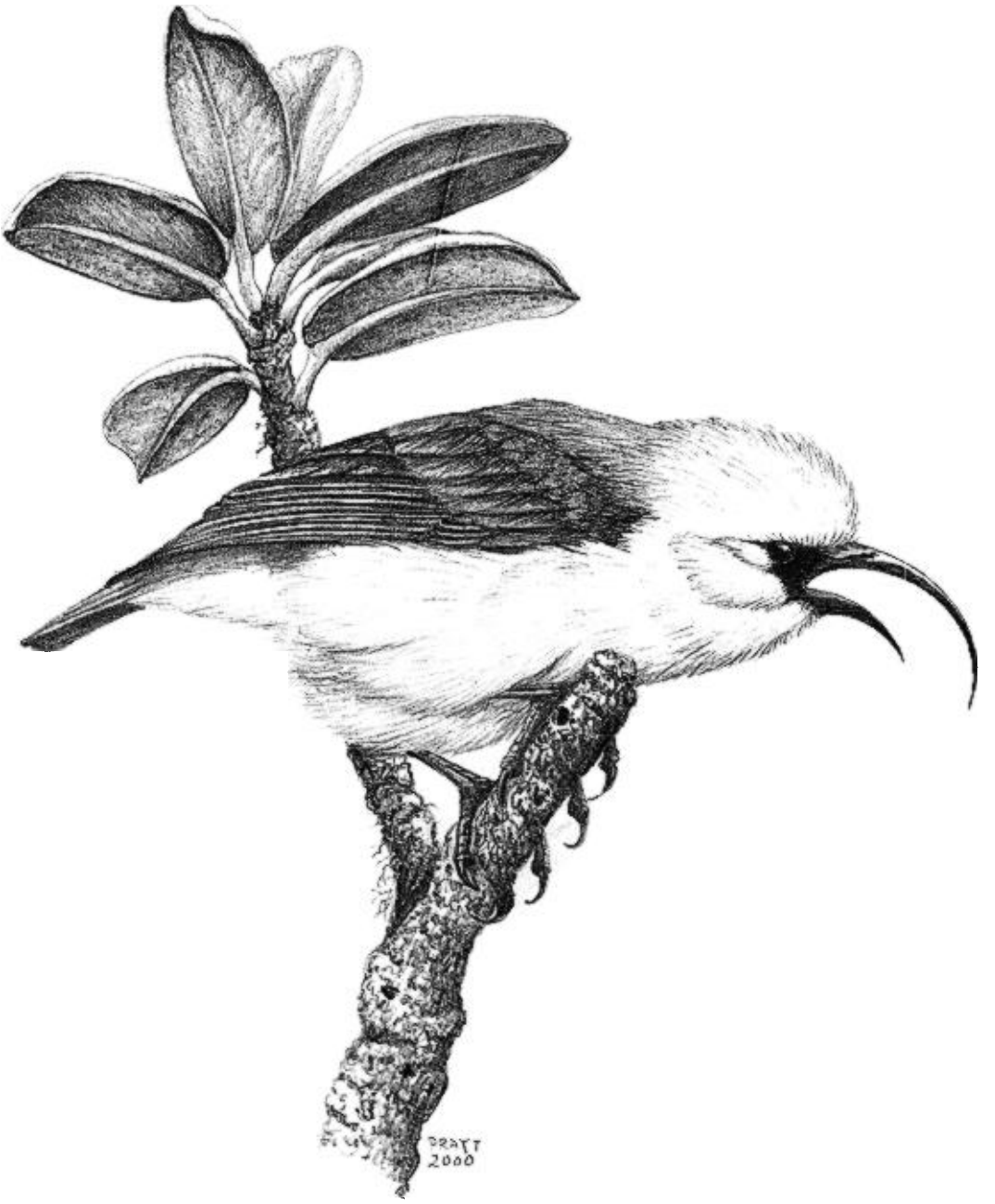

Status and Trends

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STATUS AND TRENDS—INTRODUCTION

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The first postcontact attempts to assess the status of Hawai'i's birds were the collection of birds by naturalists of Cook's third voyage of exploration (Medway 1981). Additional 18th and 19th century attempts to document the occurrence of birds in Hawai'i were sporadic and incompletely reported, and are documented in detail elsewhere (Olson and James 1994a). In the last decade of the 19th century and in the first years of the 20th century, there was renewed interest in the birds of Hawai'i. Henry Palmer collected for Walter Rothschild, and S. B. Wilson obtained specimens that resulted in publication of his and Evans's monumental works on the avifauna of Hawai'i (Wilson and Evans 1890–1899, Rothschild 1893–1900). The Nihoa Finch (*Telespiza ultima*) was described in 1917 (Bryan 1917) and the Nihoa Millerbird (*Acrocephalus familiaris*) in 1924 (Wetmore 1924), but the Po'ouli (*Melamprosops phaeosoma*) would not be described until 1973 (Casey and Jacobi 1974). During this same period, Henshaw (1902a) and Perkins (1903) added much to our knowledge of the turn of the century status and distribution of birds in Hawai'i. It was not until George C. Munro's efforts to survey the avifauna of the islands from 1935 to 1937 that anyone would attempt to systematically ascertain the 20th century status of Hawai'i's native avifauna (Munro 1944).

The husband and wife team of Charles and Elizabeth Schwartz conducted an 18-mo survey of the game birds of the territory of Hawai'i (Schwartz and Schwartz 1949). The objectives of this survey were "to ascertain the game birds present on the Hawaiian Islands, their distribution and abundance and factors upon which their welfare depends." Several surveys of the Leeward Islands followed (Bailey 1956, Amerson 1971, Amerson et al. 1974, Clapp et al. 1977, Woodward 1972). Richardson and Bowles (1964) conducted an exhaustive survey of Kaua'i, one that resulted in the last documented field observations of the 'Akialoa (*Hemignathus ellisianus*). Their observation that all of the species known to have occurred on Kaua'i could still be found there resulted in the state of Hawai'i setting aside the Alaka'i Swamp as a reserve.

John Sincock and Gene Kridler, both of the U.S. Fish and Wildlife Service, set up a statistically defensible set of transects allowing an estimate of the population size of Laysan Finch (*Telespiza cantans*) and the Nihoa Millerbird in the Leeward Islands (Conant et al 1981, Conant and Morin *this volume*). These transects have since been monitored continuously and constitute the first estimate of the numbers of Hawaiian birds that included variances. Sincock followed his efforts in the Leeward Islands by establishing a set of transects in the Alaka'i Swamp that were used to establish the population size of the endangered forest birds of Kaua'i (reported in Scott et al. 1986). Interagency efforts were initiated in the 1950s to monitor the numbers of waterbirds (Engilis and Pratt 1993) and to assess the number and distribution of the Nēnē (Hawaiian Goose, *Branta sandvicensis*; Black and Banko 1994). In 1976, nearly 100 years after its discovery (Wilson and Evans 1890–1899), the first ever attempt to estimate the population size of the Palila (*Loxiodes bailleui*) was conducted (van Riper et al. 1978). That effort established that the Palila was more abundant than previously thought, thus documenting the value of statistically based surveys of the entire range of a species. Winston Banko provided an exhaustive review of the literature on Hawaiian birds and documented all known records (Banko 1979, 1980a,b,c,d; 1981a,b; 1984a,b; 1986)

The second range-wide survey of the Palila occurred in 1980 (Scott et al. 1984) and used the variable circular count. This census method has been used in all subsequent attempts to estimate population size of the Palila (Jacobi et al. 1996). It was in part the success of the Palila surveys that prompted the Hawaiian Forest Bird Survey (HFBS) 1976–1981 (Scott et al. 1986), an effort to survey all the forest bird habitat in Hawai'i. The HFBS was initiated in the forests of Ka'ū on Hawai'i in 1976 and ended deep in the heart of the Alaka'i Swamp on Kaua'i in 1981. The objectives of this survey were to determine the numbers, distribution, habitat associations, and possible limiting factors of the endangered forest birds of the high islands of Hawai'i. The only islands not surveyed were O'ahu (Shallenberger and Vaughn 1978) and the privately owned Ni'ihau. Since completion of this HFBS, segments of HFBS transects have been surveyed irregularly (Reynolds et al. *this volume*). The challenges of estimating the number of birds in Hawai'i were the motivation for an international symposium on estimating the number of terrestrial birds (Ralph and Scott 1981).

Authors in this section report on more recent efforts to assess the numbers of Hawai'i's avifauna. David Ainley and his coauthors use a combination of field observations and modeling to assess the status of the Hawaiian subspecies of Townsend's Shearwater (*Puffinus auricularis newelli*), hereafter referred to as Newell's Shearwater, whereas the late Miklos Udvardy and Andrew Engilis report on 50 years of data on the migratory Northern Pintail (*Anas acuta*). Michelle Reynolds and Thomas Snetsinger describe their efforts to monitor the status of the rarest birds in Hawai'i, reporting on thousands of person-days of field effort. Paul Baker describes the status and distribution of the rarest of Hawai'i's terrestrial birds, the Po'ouli (*Melamprosops phaeosoma*) and finds three birds remaining. The dilemma of what management actions are dictated by such a rare species has challenged the talents of scientists and managers alike.