

PUAIOHI

Myadestes palmeri

Other: Small Kaua'i Thrush (1983-1985), Palmer's Thrush, *Manu amaui* monotypic

native resident, endemic, endangered

The Puaiohi is endemic to the island of *Kaua'i*, where small populations have persisted in steep gulches in the Alaka'i Swamp (Denny 1999; Snetsinger et al. 1999, 2005; USFWS 1983c, 2006; Woodworth et al. 2009); the subfossil evidence indicates presence down to sea level as well (Burney et al. 2001). It was first reported by Gay based on native Hawaiian accounts (Wilson and Evans 1899), first collected by Munro (2007:xviii, in Gregory 1929) near Halemanu 21 or 24 Mar 1891, and first described by Rothschild (1900) in 1893 (Banko 1980d). The Puaiohi and [Kama'o](#) appear to have arrived in the Hawaiian Islands as part of the same invasion by N American solitaires: Amadon (1947) and Greenway (1967) considered the Puaiohi more primitive than the [Kama'o](#) and other Hawaiian solitaires whereas Pratt (1982) suggested that it recolonized Kaua'i after radiation of the [Kama'o](#) group. It was considered in the genus *Phaeornis* (see [Synonymies](#)) until lumped with the solitaire genus *Myadestes* by Pratt (1982) and the AOU (1985). A Puaiohi captured in 1965 built a nest and laid eggs with a Slate-colored Solitaire (*M. unicolor*) at the Honolulu Zoo (*E* 26:55, 27:75, 30:20, Berger 1972, 1981).

Early naturalists (Wilson and Evans 1899, Rothschild 1900, Bryan and Seale 1901, Munro 1944) universally considered the Puaiohi to be a rare bird, especially as compared to the much more ubiquitous [Kama'o](#) (estimated to be 100 times as common by Perkins 1903) at the time. Only 13 specimens were known in the late 1970s (Banko 1979). After these original records no observations were made for over four decades, prompting it to be considered "possibly extinct" by Bryan and Greenway (1944) and "probably extinct" by Amadon (1950). A sighting of two individuals on the Alaka'i Plateau in Oct 1941 (*E* 2:52) was substantiated by Richardson and Bowles (1964), who collect two, observed 15 others, and considered them "fairly common" in certain areas of the plateau in Jul 1960.

During the 1960s-mid 2010s the Puaiohi was reported fairly regularly in small numbers (e.g., *E* 22:3, 24:23, 24:49, 26:29-31, 27:47, 29:19-20, 37:28; Conant et al. 1998), with the first nests being found in 1981 (Kepler and Kepler 1983) and 1983 (Ashman et al. 1984). It was listed as endangered by the USFWS in 1967 and by the State of Hawaii in 1982 (USFWS 1983c, 2006). Sincock et al. (USFWS 1983c) estimated a total population of 177 in 1968-1973 and Scott et al. (1986) estimated 20 individuals during the [HFBS](#) in 1981, in an area where Sincock et al. had estimated 97. Hurricane 'Iniki in 1992 apparently resulted in reduced populations of Puaiohi (Snetsinger et al. 1999). But during the mid-1990s populations appeared to be increasing (or at least stable), with as many as 80 nests located during each of the 1996 and 1997 breeding seasons, and populations estimated at 200-500 individuals based on surveys in 1994-2004 (Reynolds et al. 1997b, Snetsinger 1999, Reynolds and Snetsinger 2001, USFWS 2006; Crampton 2016). However, range appeared to be contracting during this period, especially in w. portions of the Alakai (Snetsinger et al. 1999, Woodworth et al. 2009), and actual population trend during 1980-2009 had not been adequately determined (Gorresen et al. 2009, BLI 2016). Based on lower survival estimates, rats may be predated on nesting females more than males (VanderWerf et al. 2014); population increases have thus been aided by rat trapping and nest-box usage (cf. Crampton 2016),

and the finding of some resistance to avian malaria is cause for some hope (Atkinson et al. 2001).

After experimenting with [O'maos](#) as surrogates, a captive breeding program was initiated for Puaiohis in 1996 (summarized by Lieberman and Kuehler 2009, Woodworth et al. 2009; see also Lieberman and Kuehler 1998; Conrow 1999; Tweed et al. 2003, 2006; USFWS 2006; VanderWerf et al. 2014; Crampton 2016; *E* 57:73-74, 59:13, 59:39-40, 65:14-15; *NAB* 53:213). During 1999-2010 a total of 200 captive-raised birds were released at two sites on the Alakai Plateau, many of which have subsequently been recorded nesting, during what has been considered a successful model on which to base captive programs of other endangered Hawaiian forest birds (Woodworth et al. 2009, VanderWerf et al. 2014). However, subsequent analysis revealed that captive-bred birds had lower survival than wild-bred birds (VanderWerf et al. 2014).

[Acronyms and Abbreviations](#)

[Literature cited](#)

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