O'AHU 'ELEPAIO *Chasiempis ibidis*

native resident, endemic, endangered monotypic

The O'ahu 'Elepaio was formerly a subspecies of 'Elepaio (*C. sandwichensis*) until split by the AOU (2010) based on differences in vocalizations (VanderWerf 2007b), morphology, ecology and behavior (Pratt et al. 1987; Conant et al. 1998; VanderWerf 2013a, 2015), and genetic analyses (VanderWerf et al. 2010). See Kaua'i 'Elepaio for a nomenclatural history of the three species in the Hawaiian Islands, and see also Synonymies and Hawai'i 'Elepaio for additional information on the 'elepaios. Subfossil bones of O'ahu 'Elepaio have been found in fossil deposits of O'ahu that were ca. 200,000 yrs old (James 1987).

The O'ahu 'Elepaio is endemic to ***O'ahu***, where it was regarded as common in the late 1800s and early 1900s, from sea level to the highest elevations of the Wai'anae and Ko'olau ranges (Seale 1900; Bryan 1905b; MacCaughey 1919; Munro *in* Gregory 1931, 1935; Northwood 1940). But populations decreased dramatically from the 1920s to the mid-2010s (*E* 55:17-18, 55:38, 58:49; Conant 1977; Shallenberger 1977b; Shallenberger and Vaughn 1978; Banko 1981a; Williams 1987; VanderWerf et al. 1997, 2001, 2006b, 2011b, 2013; VanderWerf 2012, 2013a, 2015), being listed as Federally Endangered in 2000 (USFWS 2006). Distribution on O'ahu declined 75% between 1975 and 2012, as also evident based on data from the Honolulu Christmas Bird Count (Graph); no trends were detected on the Waipi'o count (Graph), but detection rates were low here. Declines were more severe in wetter areas, implicating mosquito-born diseases such as malaria and avian pox as causes (VanderWerf et al. 2001, 2006b), as well as predation from rats (VanderWerf and Smith 2002; VanderWerf 2009, 2012, VanderWerf et al. 2011b, 2013). Nest predation by rats may be more severe on Oahu than for 'elepaios on other islands because O'ahu 'Elepaios prefer riparian areas that are dominated by alien fruit-bearing trees, which attract rats into the forest canopy. During the 2000s, control of rats resulted in a 26% increase in survival of breeding females and a doubling of reproduction (VanderWerf 2009); an increase in nest height during this period, perhaps an adaptive response to rats, also resulted in higher reproductive success (VanderWerf 2012).

During the 1990s, populations were estimated at 1,950-2,000 individuals, residing primarily in 6 fragmented populations in the Ko'olau and Wai'anae ranges (VanderWerf et al. 2001, USFWS 2006). By 2012 populations had declined to an estimated total of 1,261 birds including 477 breeding pairs and 307 single males (VanderWerf et al. 2011b, 2013). Distributions in both the Ko'olau (estimated 961 birds) and Wai'anae (300 birds) ranges had become increasingly fragmented, at elevations (150-500 m in the Ko'olau Range and 550-850 m in the Wai'anae Range) which are lower than are found for surviving populations of 'elepaios on Kaua'i and Hawai'i I. Restoration of native forest integrity along with continued control of rats are needed for this species to persist (VanderWerf et al. 2011b, 2013; VanderWerf 2012a, 2012, 2013a, 2015). In the late 2000s-mid 2010s captive propagation programs involving 'elepaios were being considered to develop technologies for potential use with the O'ahu 'Elepaio (Lieberman and Kuehler 2009; VanderWerf 2013a, 2015).

Acronyms and Abbreviations
Literature cited

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