Other: Bush Warbler, Uguisu C. d. diphone?

naturalized (non-native) resident, long established

The Japanese Bush Warbler is native to Japan and surrounding islands, with northern populations being slightly migratory (AOU 1998). It and the Chinese or Manchurian bush-warbler (*C. canturians*) of e. China are closely related and sometimes considered conspecific (as "Bush Warbler"). Japanese Bush-Warblers have not been introduced anywhere in the world except the *Southeastern Hawaiian Islands*, where they were released on O'ahu in 1929-1941 (Caum 1933, Long 1981, Lever 1987) and have since spread naturally to most or all other Southeastern Islands. Concerns have been expressed about competition of bush-warblers with native species, perhaps especially as competitors for food (Foster 2009).

Japanese Bush-Warblers were initially introduced by the HBAF in 1929 to control insects, but several other releases on *O'ahu* (totaling approximately 138 individuals) were made by the Honolulu Mejiro Club and Hui Manu Society for aesthetic purposes, primarily or entirely in Nu'uanu Valley in 1931-1941 (Caum 1933; HAS 1967; Swedberg 1967a; Berger 1972, 1975c, 1981; E 17:2-3, 37:148; PoP 49[12]:29). They spread quickly on O'ahu, were noted by Munro (1944) in the Waianae Range by 1935, were considered established by Bryan (1941), were found commonly throughout both this and the Ko'olau Range by the 1950s (Northwood 1940, Pedley 1949; E 1[12]:3-4, 17:2-3, 25:91, 27:15-16, 31:108; summarized by Berger 1975c, Shallenberger 1977c, Shallenberger and Vaughn 1978), and were observed as far as Kahuku by 1977 (E 38:56). They appeared to become established first in the lush vegetation of higher elevations of both ranges but have since spread downward (perhaps more frequently in winter; see below), to as low as sea level (e.g., at the Ki'i Unit of JCNWR), where vegetation is thick. This downward expansion is reflected by numbers on the Honolulu Christmas Count, where they were not detected until 1971 and have since shown cyclic population fluctuations (Graph) but little trend (Ralph 1990). On the Waipi'o count they increased significantly during the 1980s-2000s (Graph), perhaps indicating continued expansion to lowland areas, in both range and numbers.

Undoubtedly because it is a migratory species in Japan, the Japanese Bush Warbler has subsequently and systematically colonized or been recorded on all other Southeastern Islands, except Ni'ihau, where the lack of reports likely reflects lack of observer effort relative to the other islands. A major dispersal event from O'ahu appears to have occurred in the late 1970s and early 1980s, when records were first encountered on the four closest islands.

On *Kaua'i*, 3-4 were first observed in the Wailua River Valley 22 Feb 1983 and by the 1990s they were found increasingly throughout central portions of the island (Denny 1999; *E* 48:114). In the Alakai Swamp they went unrecorded during surveys in 1994 (Walther 1995) but were common by 2000 (Foster et al. 2004) and, as on O'ahu, they were also reported with increasing frequency at the lower elevations, e.g., near the Keahua Arboretum near Wailua. L. Pyle (1979) reported the first observations on *Molokai*, at the head of Pelekunu Valley 11 Apr and 25 May 1979. By the HFBS in

1979-1980 they were well established on Olokui Plateau and surrounding cliffs and were noted to be increasing rapidly following the survey (Carothers and Hansen 1982, Scott et al.1986), by 1988 they were noted very commonly throughout montane areas (*E* 48:78), and by the 2000s they were described as the most common songbird in e. Moloka'i (Pratt 2002a). On *Lana'i*, the first record was of a bird heard singing in Hauola Gulch 4 and 8 Apr 1980 (P. Conant 1980; *E* 41:77). Subsequent observers have continued to record moderate numbers in upland areas of Lana'i through the 2000s. On *Kaho'olawe* two were heard at the summit of the island 25 Mar 1992 and they continued to be recorded sporadically through at least 2009 (e.g., Morin et al. 1998) and have presumably maintained a small breeding population through this period.

The first Japanese Bush-Warbler on *Maui*, was heard on the N slope of Mt Haleakala 6 Jul 1980 (Carothers and Hansen 1982). By the late 1980s they had spread at least as far as Ko'olau Gap and Waikamoi Preserve on the w. slopes of Mt Haleakala, as well as the W Maui Mts, where they were first detected in Jun 1984 and described as "abundant" by 1989. Expansion of numbers and range occurred through the 1990s and 2000s; e.g., on the Pu'u O Kaka'e Christmas Bird Count numbers ranged from 1-7 in 1988-1991 to 11-27 in 1992-1999. Simon et al. (2002) recorded increasing densities in the upper Hanawi watershed along the nw. slopes of Mt Haleakala between 1995 and 1997, and also recorded significant seasonal and elevational shifts indicating downlsope dispersal in winter. Densities dropped off at higher elevations (> 2000 m) perhaps suggesting an upper elevational limit to their range. During the 2000s reported numbers at certain localities on Maui seem to have stabilized, although expansion was undoubtedly continuing. An unsubstantiated report of one or more possible bush-warblers singing above Kona, *Hawai'i I* in 1980 may have been correct given expansion to other islands in this time period. Otherwise, the first record for Hawai'i was for Pu'u Wa'a Wa'a 9 Jun 1997 (Nelson and Vitz 1998). At well-monitored Hakalau NWR they were first encountered in May 1999 and by 2000 they were detected in Ka'u, above Kona, and in the Kohala Mts. By 2001 they had been detected at 12 evenly spread localities throughout the island, and surveys at Wiaikea and in the Kohala Mts detected 91 individuals of which 89 were singing males (Foster 2002). By the late 2000s they had been detected in the Volcano area and numbers and range were increasing in frequency throughout Hawai'i I.

Little has been published on the subspecies of Japanese Bush-Warbler introduced to Hawaii, but specimen evidence (PP examination) indicates it is most likely of the nominate subspecies (*C. d. diphone*), the most widespread subspecies in Japan and the most likely to be captured for exportation.

Acronyms and Abbreviations

<u>Literature cited</u>

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