

## JAPANESE WHITE-EYE

## *Zosterops japonicus*

Other: Mejiro, Chinese White-eye

*Z.j. japonicus*

### **naturalized (non-native) resident, long established**

Since introduction to the Hawaiian Islands, primarily in 1929-1937, the Japanese White-eye has become the most abundant and widespread landbird in the *Southeastern Hawaiian Islands* (Berger 1972, 1981; Scott et al. 1986; van Riper 2000). It is native to e. China, Taiwan, Japan, and surrounding islands, n. populations migrating S in winter (Long 1981, Lever 1987, AOU 1998, van Riper 2000). It was formerly considered conspecific with the Oriental White-eye (*Z. palpebrosus*), a widespread Asian species briefly established around San Diego, California in the 1970-1980s (Van Way 1984, Lever 1987).

Details on releases of Japanese White-eyes in Hawaii are sparse. HBAF reportedly introduced them from mainland Japan in 1929 (Caum 1933), followed by additional poorly documented introductions by the HBAF, [Hui Manu](#), and other groups through 1937 (Bryan 1937b, 1958; Swedberg 1967a; Berger 1981; *PoP* 49[1]:17, 49[12]:29, 54[11]:13); the [Hui Manu](#) or others may also have released them in 1928 (Van Way 1984). Earlier introductions consisted of unknown numbers of individuals to O'ahu and perhaps Kaua'i, whereas later releases included 252 individuals to Hawai'i I in Jun 1937 (*E* 36:43), and perhaps other islands (Berger 1981, Lever 1987). Introductions were aimed at pest control, which appeared to be successful despite some concern over the species' fruit-eating habits (Munro 1944; *PoP* 54[11]:13; *E* 31:26). Due to their migratory habits, Japanese White-eyes appeared to spread rapidly throughout all Southeastern Islands. Records in fall of individuals and flocks of up to 42 birds at sea, 185-480 km SSW of Kaua'i and 4-5 records of apparent vagrants on Johnston Atoll (Ely 1971, Amerson and Shelton 1976; USNM 495080, 496214), about 1200 km from Kaua'i, indicate that Hawaiian birds have maintained the migratory tendencies of source populations although, perhaps surprisingly, there are no records for the Northwestern Hawaiian Islands. They have been found inhabiting both dry and wet forests in both cultivated and native habitats from sea level to tree line at 3100 m elevation on the slopes of Haleakala, Mauna Loa, and Mauna Kea. Concern has been expressed about ecological competition of white-eyes with native forest birds (Dunmire 1962, Mountainspring and Scott 1985, Ralph and Noon 1986, Scott et al. 1986, Ralph 1990, van Riper 2000; but see Mueller-Dombois et al. 1981, Pimm and Pimm 1982, Waring et al. 1993), spreading of non-native vegetation (Foster 2009), and the capacity of white-eyes to serve as hosts for avian malaria and other diseases (Warner 1968, Berger 1981, van Riper et al. 1986, van Riper 2000).

First mention of Japanese White-eye on *Kaua'i* was by Caum (1933), who thought them possibly established there at the time. By the early 1940s they were noted to be common throughout the island, with the exception of the Alaka'i Swamp (*E* 2:52, 4:12) and by the 1960s they were considered by far the most abundant species in all locations, although still outnumbered by native landbirds at higher elevations (Richardson and Bowles 1964, Conant et al. 1998). Sincovec et al. (USFWS 1983c) estimated 256,000 Japanese White-eyes in Kaua'i forests in 1968-1973 and Scott et al.

(1986) estimated 15,000 birds in the [HFBS](#) study area in 1981, up from 12,000 estimated by Sincock et al. in the same area. Foster et al. (2004) found no significant changes in abundance there through 2000. [Christmas Bird Count](#) data from both Kapa'a ([Graph](#)) and Lihue ([Graph](#)) suggest that populations declined on Kaua'i from the 1970s through the 2000s. By 1947 Japanese White-eyes had reached *Ni'ihau* in small numbers (Fisher 1951) and they likely still reside there but, except for one observed on Lehua Islet in 2008, there have been no further reports on their status there.

By the late 1930s-1940s Japanese White-eyes had become abundant throughout *O'ahu* (Bryan 1937b, Munro 1944; *E* 2:62, 3:4, etc.) and they remained so during the ensuing 70 years, although [Christmas Count](#) data indicated slight declines from the 1980s to the 2000s in the vicinities of Honolulu ([Graph](#)) and Waipi'o ([Graph](#)), after increasing trends in Honolulu from the 1940s-1980s (Williams 1987, Ralph 1990). Just prior to the start of the decline in Honolulu, Shallenberger and Vaughn (1978) considered them more than twice as abundant as any other species in the Ko'olau Range. Guest (1973) found >1 per acre at the University of Hawaii campus in Honolulu, and found them breeding in Feb-Jul. On *Moloka'i* white-eyes were first recorded in 1948 (Richardson 1949), when they were considered only slightly less abundant than '[Apapane](#)', indicating likely establishment on this island for a decade or more. By the early 1960s and through the 2000s they were considered the most abundant bird on Moloka'i (Pekelo 1964, Pratt 1973; Scott et al. 1977, 1986), with an estimate of 120,000 individuals in the [HFBS](#) area during 1979-1980. Munro (1944, 2007) thought he first heard white-eyes on *Lana'i* in 1933, and indicated that they had spread there without assistance from man. Scott et al. (1986) estimated 11,000 birds in the [HFBS](#) study area there in 1979, and they continue to be reported as abundant there through the 1980s-2000s. By the 1980s-2000s they were also found abundantly and considered among the most common bird species on *Kaho'olawe* (Conant et al. 1983a, Gon et al. 1992, Morin et al. 1998).

On *Maui* and *Hawai'i I*, counts and population assessments indicated continued expansion of populations between first dispersal and introductions in the 1930s-1940s, and at least the 1980s-1990s, especially upslope into native forests. On Maui there are few reports prior to the 1950s, at which time they were found in small numbers on Mt. Haleakala, including inside its crater. In 1967 they were observed only infrequently in Kipihulu Valley (Warner 1967) and in 1975 they were regarded as uncommon in the Ko'olau Forest Reserve (Scott and Sincock 1977), but by 1980 there appeared to be a substantial increase in densities in these areas, 114,000 being estimated for E Maui and 19,000 for W Maui during the [HFBS](#) (Scott et al. 1986). Simon et al. (2002) found little change in densities between 1980 and their study in 1995-1997 in the upper Hanawi watershed, and also found little seasonal or elevational patterns in distribution. On *Hawai'i I*, white-eyes were noted in several spots as early as 1940 (*E* 1[4]:5), had invaded Volcano NP by 1949 (Baldwin 1953), and were by far the most common bird species there by 1959-1961 (Dunmire 1961, 1962). By the [HFBS](#) in 1977-1979 1.3 million white-eyes were estimated in study areas on *Hawai'i I*, by far the most common bird species (Scott et al. 1986). [Christmas Count](#) data from the Volcano vicinity indicate continued expanding populations through the mid 1990s, following which they perhaps began to decline through the 2000s ([Graph](#)).

Nine subspecies of Japanese White-eye have been recognized (Clements 2007). Although Berger (1981) suggests the possibility that insular Japanese or mainland

Chinese subspecies were brought in (including *Z.j. simplex* from China, a species proposed for introduction by the [Hui Manu](#); *E* 36:41), specimens collected in Hawaii match only those of the nominate subspecies (*Z.j. japonicus*) from mainland Japan (PP examination), as has been primarily assumed in the literature.

#### [Acronyms and Abbreviations](#)

#### [Literature cited](#)

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