Other: Manukapalulu monotypic

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

California Quail are native to the W coast of North America, from s. Oregon to Baja California (AOU 1998, Calkins *et al.* 1999). They have been introduced throughout the Pacific Northwest (to the north of their natural range) and Great Basin, as well as in New Zealand, Australia, Norfolk I., South America, Corsica, and the *Southeastern Hawaiian Islands* (Long 1981, Lever 1987, Marchant and Higgins 1993). California Quail were first introduced to Hawaii in 1818 when V. M. Golovnin (1822), aboard the Russian vessel *Kamchatka*, presented seven birds to King Kamehameha I. By the end of the 19th century they had become commonly established on most Southeastern Islands (Rothschild 1900, Shauinsland 1906, Caum 1933, Swedberg 1967a, Walker 1967). As with most gamebirds, a period of initial flourish was followed by population declines in many regions (Henshaw 1900b, Bryan 1901b), especially in lowlands where mongooses became "their deadly enemy" (Henshaw 1902a), but they continue to thrive on Ni'ihau, Kaua'i, Moloka'i, Maui, and Hawai'i. Bird malaria affected at least one California Quail as early as 1941 (Munro 1944).

Munro (1944) reported California Quails as common on Ni'ihau in 1939 and Fisher (1951) noted them to be abundant there in 1947 (see also Schwartz and Schwartz 1950a). Fisher mentioned that they were originally established there in 1900 and that additional birds had subsequently been released several times. They were reported to be "very abundant" and "most common" on *Kaua'i* in 1901-1907 (*PoP* 14[7]:16, 20[4]:18) but despite further introductions in 1928, Caum (1933) considered them rare and Schwartz and Schwartz (1950a) estimated a population of just 810 birds in 1947 (see also E 7:41, 19:3). Richardson and Bowles (1964) recorded only one during their survey of the island in 1960. Through the mid 2000s they continued to persist in very small numbers in remote areas along the sw. coast (cf. Denny 1999) but there were few or no confirmed reports during the early 2010s. On *O'ahu*, after early introductions in 1818, California Quail were reported to be increasing rapidly in the 1850s (Marsh 1855) and to "literally cover the Waianae Mts." by 1866 (Locey 1937). However, as with other game birds on O'ahu, populations succumbed to extensive hunting, human population pressures, and unknown epidemics. Perkins (in Evenhuis 2007:109) saw a few below Mt. Ka'ala in 1892-93 but remarked that they were not doing as well there as on Hawai'i, and he could not relocate them later in that decade. Despite the continued introduction of 100s of individuals in the 1920s (Swedberg 1967a), they became extirpated by the 1940s (Schwartz and Schwartz 1949, 1950a). Small numbers introduced onto Kaneohe MCAS in 1954 (E 14:65, 15:45) also failed to persist.

Through the 1940s California Quail became established fairly commonly to commonly from sea level to elevations over 3000 m throughout *Moloka'i*, uncommonly along the sw. slopes of Mt Haleakala on *Maui* (e.g., <u>HRBP</u> 6048), and fairly commonly throughout *Hawai'i I* (McGregor 1902, Bryan 1908, Pedley 1949; *E* 5:71), where Schwartz and Schwartz (1949, 1950a) estimated populations in 1947 of 11,590, 2,600, and 62,550, respectively. Little change or slight declines in status or population size was

reported on these islands through the early 2010s (*cf.* Lewin 1971, Emlen 1986, Scott *et al.* 1986; *E* 19:3, 21:67, 36:62). On Hawai'i, 412 more were released at Puu Waa Waa Ranch in 1959-1961, they had become scarce in the upper Ka'u or the Kohala District on Hawai'i (Scott et al. 1986) including sections of the Volcano Christmas Bird Count circle (see Graph), and hybrids with Gambel's Quail were reported in small numbers during the 2000-2010s, primarily in dry habitats along Saddle Road. On Lana'i, introductions prior to 1930 failed to result in an established population (Caum 1933), and twelve pair introduced there in 1937-1938 resulted in a small population (estimated 100) in 1947 (Schwartz and Schwartz 1950a), but these also failed to become established in the end. Recent reports of California Quail from Lana'i (e.g., Scott et al. 1986) and Kaho'olawe probably pertain to the similar Gambel's Quail.

Based on observations of field characters, Schwartz and Schwartz (1949, 1950a) noted that California Quail on Moloka'i were of the subspecies "C. c. brunnescens" from humid coastal areas in nw. sections of their original range, those on Hawai'i I. were supposedly of "californica" from drier inland areas in ne. sections of their range, and that a mixture of these two subspecies were found on Maui and Kaua'i, as well as Ni'ihau (Fisher 1951). It is unknown what subspecies (or mixture of subspecies) comprised the introduction to Hawai'i in 1959-1961. The Kamchatka had originated from the San Francisco area, where "brunnescens" resides, and individuals reported to be of this subspecies in Hawaii may be descendents of this original introduction. Caum (1933) and Swedberg (1967a) indicate that all subsequent introductions were of "californica". But these subspecies are very weakly differentiated, specimens at BPBM and USNM cannot be determined to subspecies (PP examination), and we follow Pyle (2008) in considering the species monotypic.

## Acronyms and Abbreviations

## Literature cited

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