Other: Indian (African) Ring-necked Parakeet, Indian Green Parakeet *P.k. manillensis* and/or *borealis*

naturalized (non-native) resident, recently established

The Rose-ringed Parakeet is native to sub-Saharan Africa N of the equator and to India, Pakistan, Burma, and nearby areas (Ali and Ripley 1981, Cramp and Simmons 1985, Forshaw 1989, AOU 1998). The species has been imported as a cage bird to locations throughout the Northern Hemisphere since the earliest 20th century, including Florida, Virginia, and s. California, with escapes seen commonly and sometimes becoming established in the wild (Long 1981, Lever 1987, Garrett 1997, AOU 1998). Escaped Rose-ringed Parakeets have been noted in Honolulu and elsewhere since the 1930s or before (Caum 1933, Munro 1944) and, coupled with increased observer effort and awareness, established breeding populations have since been documented on several Southeastern Islands; it was added to the official Hawaii checklist by Pyle (1988). Concern has been expressed about Rose-ringed Parakeets doing damage to agricultural crops and spreading diseases in Hawaii (Kishinami 2001).

On *Kaua'i*, some were reportedly released by workers at a bed-and-breakfast inn during the 1960s near Lawai, and by 1981 they were being recorded regularly foraging in nearby Hanapepe Valley and roosting nightly at Kukuiolono Park in Kalaheo. By Nov 1982 late afternoon counts reached 30-40 birds at Kukuiolono Park and the population in Kalaheo and nearby areas was estimated to be 50 or more (Paton et al. 1982b). The birds caused enough damage to crops in Hanapepe Valley (E 47:69) that farmers obtained state permits to destroy the parakeets. In early 1990 the flock abandoned the Kukuiolono Park roost and was reported more frequently a few km to the east in the National Tropical Botanical Gardens near Lawai and around Waita Reservoir near Koloa. In Apr 1994 a flock of 150-200 birds was reported and in Mar 1997 the parakeets were well established from Hanapepe to Maha'ulepu east of Koloa, with roosts in O'mao, Kalaheo, and Lihue (Denny 1999) and with a total population of several hundred estimated by the state biologist issuing crop-damage permits to shoot the birds. This population appeared to be at least stable (cf. Pratt 2002a) and continued to increase through the mid-2010s, with roost counts of over 1000 birds counted at Prince Kuhio Park near Poipu, and the total population was estimated at at least several 1000s of birds.

On *O'ahu*, increased awareness led to the documentation of several small groups of Rose-ringed Parakeets during the 1970s, at Waimanalo (*E* 35:54, 38:85), Kapiolani Park (*E* 33:82, 36:139, 37:9, 38:4), and elsewhere in and around Honolulu (*E* 37:147). Numbers appeared to increase steadily, such that counts of 12-15 birds were recorded in Waimanalo in 1982 (Paton et al. 1982b), up to 30 at the Kaneohe Yacht Club in the 1980s, 30 in Kapiolani Park in 1986 (*E* 47:69), 21-23 in Makiki in 1987 (*E* 48:30), 16 well above Honolulu in 1990 (*E* 51:23), 15 in lower Nu'uanu Valley in 2001 (cf. HRBP 5863-5864), and 75 roosting at the Central Union Church in downtown Honolulu (at the base of Manoa Valley) in 2000, Following the breeding season in summer 2006, 240 were counted at this roost site, followed by up to 500 noted there in Mar 2009, 870 counted 15 May 2011, and roughly similar numbers through 2016. Individuals and small

flocks were also recorded increasingly farther afield during the 1990s-mid 2000s (cf. HRBP 5863-5868); e.g., in Pearl City, Mililani, and Makapu'u in 1993; Mokapu and Kane'ohe in 1994; Punalu'u in 1996; and Waiawa in 2003, although most observations through the mid-2010s were in Honolulu. These increases have been reflected by a spike in numbers observed on the Honolulu Count during 2001-2014 (Graph). Nesting has been documented in cavities of favored large trees around the city, including O'ahu Cemetery; at one site in lower Manoa Valley two dead chicks were found beneath a nesting tree 29 Mar 2003 (BPBM 185061-062).

On Maui, presumably escaped Rose-ringed Parakeets have been reported three times: 2 birds at Makawao 20 Aug 1988, 1 at Wailua along the Hana Hwy 20 Sep 1990, and 1 at Napili Bay 26 Mar 2014. On Hawai'i I, Rose-ringed Parakeets were first noted at a nest near Kea'au (Paton et al. 1982b); the female and 1 young were captured and returned to cage bird status. Beginning in the early 1980s single free-flying individuals appeared around Hilo and the Kona area, the latter increasing to a flock of 25-30 birds observed in 1988-1990 and smaller numbers through 2016. Small populations were also noted around Kuamo'o, Kalapana, and Kona S to Kealakekua. Through the 2010s they were only being reported occasionally near Kona, and we do not consider this population to have become established.

Four subspecies of Rose-ringed Parakeets are recognized (Forshaw 1989, Clements 2007). Naturalized populations of Rose-ringed Parakeets in California (Garrett 1997), Florida, and Great Britain are believed to be of one or both of the Indian subspecies *P.k., manillensis* or *borealis* (*cf.* Ali and Ripley 1981), and long-term studies of roosts also indicate one or a mixture of these subspecies for the Honolulu population (N. Kalodimos, pers. comm.). Other Hawaiian populations are likely of these subspecies as well, given their domination in the wild bird trade; Caum (1933), Munro (1944) and others referred to this species in Hawaii as the "Indian" Ring-necked Parakeet, perhaps strengthening this supposition.

Acronyms and Abbreviations

Literature cited

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