Status of the Spotless Crane (Porzana tabuensis) in American Samoa

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ABSTRACT.—In July 2003, during seabird surveys in dense montane rainforest at the summit of Ta'u, we documented the occurrence of the Spotless Crane (Porzana tabuensis) in American Samoa for the first time in 17 years. The last sightings were made during 1985–1986 in lowland agricultural areas, semievergreen, and secondary forests. Norway rats (Rattus norvegicus) also were discovered in the montane forest and pose a threat to the continued survival of the crane at its only colony in the Samoan archipelago. Received 4 June 2003, accepted 19 August 2003.

The Spotless Crane (Porzana tabuensis), also known as the Sootty Rail, is present over much of the South Pacific, including Australia, New Zealand, New Guinea, the Philippines, and many oceanic islands as far east as the Marquesas Islands and Pitcairn Islands (Pratt et al. 1987). Although widely scattered in small vulnerable populations, the Spotless Crane (P. t. tabuensis) exists in virtually every major island group in the South Pacific. In Western Polynesia, it is extirpated from Futuna but occurs on three islands in Tonga and on six islands in Fiji (Wattling 2001). It is known from Samoa only on the island of Ta'u, the easternmost high island of the Samoan archipelago. This population was discovered in 1923 when biologists with the Whitney South Seas Expedition found the birds in marshy coastal habitat on the northwestern side of the island (Murphy 1924, Banks 1984). Others were not able to find the secretive species during 1975–1976 (Ammerson et al. 1982). The population was thought to be extirpated since it had not been seen since 1923 (Mose and Muse 1982), but was rediscovered during 1985, when a road-killed specimen was found. During subsequent searches one individual was seen and two more heard 1 km east of Ta'u village (Engbring and Englin 1988). Since so much time had passed between the initial discovery and rediscovery, and these sightings were in lowland, agricultural forests in the northwestern area where the species was discovered, Engbring and Englin (1988) speculated that the population was small and decreasing as wetland habitat diminished with a reduction in subsistence agriculture. Here we describe the discovery of cranes at the summit of Ta'u, which suggests that the population may have been larger than originally thought and that cranes could be present on other island summits in Samoa. Ta'u (14°14' S, 169°26' W) is the largest of the Manu'a Islands located approximately 100 km east of Tutuila in the U.S. Territory.

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of American Samoa. The National Park of American Samoa was established in 1993, and approximately half of the island of Ta'u was leased to the U.S. Puri Service (Craig 2002). The Ta'u Island Unit encompasses 2,169 ha of coastal, upland, and high elevation scrub forests rising from the eastern and southern coastlines to the highest point in the territory at the summit of Mt. Lata (996 m). Habitat at the summit is composed of dense montane rainforest characterized by 'ire'ire vines (Frey-cinetia storcki and F. reinickii), tree ferns (Cyathea spp.), native meliaceae, and the invasive alien meliaceae (Clidemia hirta). Rainfall at the summit can exceed 750 cm per year and misty conditions characterize the daily weather. Hurricanes episodically modify the forest environment, and Hurricane Val destroyed much of the tree canopy on the summit in 1991.

During a seabird survey at the summit on 19 July 2001, at 08:00 (Samoaan standard time) we heard calls we thought were Tahiti Petrel (Pseudoiswbera rostrata) or Audu- bon's Shearwater (Puffinus xermani) chicks in burrows, but the sounds apparently moved. We marked the location and after dark we at- tempted to locate adults arriving to feed chicks at a burrow. Since we found no adults, we placed a voice-activated tape recorder in the undergrowth at the site, but no vocaliza- tions were captured on tape. When we heard the calls again at 16:00 the next day, we tried to locate the bird by crawling through the tan- gled undergrowth of ferns and vines to the base of several tree ferns, where the sound was last heard. Although some digging had occurred under the ferns, we found no burrow or other nest. We next heard sounds from this area at about 07:30 on 21 July, and again at- tempted to find the calling bird in the dense vegetation. The sound moved away rapidly, suggesting a bird other than a seabird chick, which would have been unable to move so quickly in the dense undergrowth.

Our search through the tangles elicited bird movements and a rattle-like alarm call pre- ceding the emergence of a Spotless Crane from the vegetation. Its conspicuous red eye, pink legs, and dark gray body were diagnostic. Cranes were heard again making a "bop-bup- bop-bup-bop" call from this site in December 2001 and December 2002. A "chattering" call just was repeated at sunrise and sunset near our camp, about 0.5 km from the previous site, may have been from this species. Another crane was heard and glimpsed is December 2002 in similar habitat about 1.6 km distant.

Spotless Cranes are considered monogamous and territorial, possibly throughout the year (Taylor 1996). Our observations of cranes in the same area on different visits sug- gest cranes might be territorial year round and widely scattered through the montane forest of Ta'u, an area of about 20 km². Spotless Crakes occur from sea level up to 3,300 m in New Guinea (Taylor 1986). Throughout its range, they are found in rock vegetation in almost any habitat, in fere-covered hillside, heathy flats, and coastal scrub, usually near water (Taylor 1996). On some islands, Spotless Crakes occupy low forests and also rocky habi- tats without standing water. They also readily occupy artificial wetlands, farmlands, and sea- bird islands where they have been reported to eat a wide range of prey, including insects on a cow carcass, seeds, shoots, and inverte- brates, and also the eggs of shearwaters, petrels, and terns (Taylor 1996). In the Kermadec Islands, New Zealand, they have been re- ported foraging in trees that hold Black Noddy (Anous minutus) nests (Taylor 1996). On Ta'u, Tahiti Petrels are relatively common nesters in the areas where crakes were encountered, and it is possible that the crakes prey on petrel eggs.

During July 2001, we found that Norway rats (Rattus norvegicus) were present in mod- erate densities on the summit of Ta'u. Throughout the Pacific Islands, Spotless Crakes have suffered relocations and local ex- tinctions where humans and associated exotic species are present (Taylor 1996). Crake pop- ulations in Western Polynesia are declining precipitously as a result of introduced dogs, cats, mongoose, and rats (Wattling 2001). Spotless Crakes survive in rat-infested areas of New Zealand by inhabiting the stoutest part of the marsh, where rats are least likely to go (C. R. Veitch pers. comm.). Similarly, crakes may persist on Fiji, despite the presence of the mongoose, by inhabiting isolated swamps (Wattling 2001). As a result of rat predation, Spotless Crakes have become rare on Norfolk Island, and the species is extinct on Raoul Is- land in the Kermadec Island group.
Crakes persist in the Pitcairn Islands where rats have been eradicated from Oeno Island and should survive as a result (B. Bell pers. comm.). On Poor Knights Island, New Zealand, Spotted Crakes increased after human occupation ceased and pigs were removed (Taylor 1996).

Norway rats have been present at low elevations on Ta'ū for many years and may have contributed to the extirpation of the Spotless Crake from these areas. Pacific rats (R. exulans) are common in the forest area on Ta'ū, but evidently only Norway rats are established, in the upper rainforest, Norway rat predation on crakes, on their invertebrate foods, and on seabirds likely is a significant threat to their survival. The climate, terrain, and fiscal and legal constraint make rat control on Ta'ū summit very unlikely in the near future. Current rodenticide registration in U.S. Pacific territories does not allow usage in nonagricultural areas. An exemption from the U.S. Environmental Protection Agency (EPA) to the Federal Insecticide, Fungicide, and Rodenticide Act is being sought. The EPA and USFWS are pursuing national registrations for rodenticides (brodifacoum and diphenacoum) for conservation purposes, to be used in all U.S. territories and possessions, and these should be available within several years. Even with such a registration, significant fiscal and physical barriers must be overcome to insure that the Spotless Crake, a candidate for listing under the Endangered Species Act, continues to survive in the Samoa Archipelago.

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LITERATURE CITED


