Photo: DOFAW

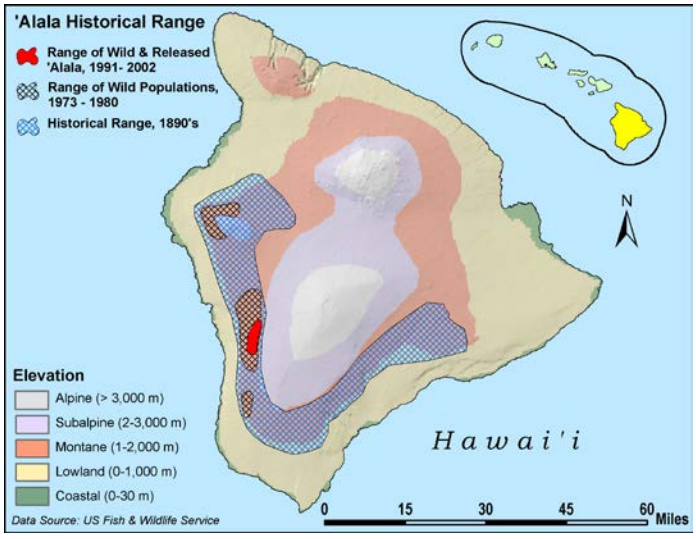
Forest Birds

ʻAlalā or Hawaiian crow

Corvus hawaiiensis

SPECIES STATUS:
Federally Listed as Endangered
State Listed as Endangered
State Recognized as Endemic
NatureServe Heritage Rank: GXC-Presumed Extinct/ Captive Population
IUCN Red List Ranking—Extinct in the Wild
Revised Recovery Plan for the ʻAlalā —USFWS 2009

SPECIES INFORMATION: Historically at least five crow species (Family: Corvidae) occurred in Hawaiʻi, only the ʻalalā, or Hawaiian crow survives. Like other crows, ʻalalā are raucous, gregarious and vocal; young, captive-raised birds often engage in tug-of-war with sticks. Like many corvids, ʻalalā are long-lived with a life span of 20 or more years. The diet primarily consists of native and introduced fruits, invertebrates, and eggs and nestlings of other forest birds, as well as nectar, flowers and carrion. Seasonal movements in response to weather and availability of food plants (e.g., ʻieʻie [*Freycinetia arborea*]) have been noted. Although individuals form long-term pair bonds, extra-pair copulations have been observed. Nests are predominantly constructed in ʻōhiʻa (*Metrosideros polymorpha*) trees. Both sexes participate in nest construction, although only females incubate eggs and brood young. Clutch size ranges from two to five, although usually only one or two nestlings fledge. Fledglings typically cannot fly and often remain near the ground for long periods, likely increasing their susceptibility to disease (i.e., toxoplasmosis) and predation. Juveniles depend on their parents for at least eight months and remain with their family group until the following breeding season. Large flocks characteristic of American crows (*C. brachyrhynchos*) have not been reported, but there are historical reports of small local flocks after the breeding season.



DISTRIBUTION: No individuals are known to exist in the wild. Historically occurred in high- and low-elevation forests of the western and southeastern regions of the island of Hawaiʻi.

ABUNDANCE: World population of 114 individuals in 2014, housed entirely in the Keauhou and Maui Bird Conservation Centers.

LOCATION AND CONDITION OF KEY HABITAT: Historically, ʻalalā occupied dry and seasonally wet ʻōhiʻa and ʻōhiʻa/koa (*Acacia koa*) forests between 300 and 2,500 meters (1,000 – 8,200 feet) elevation. Because the last wild individuals were confined to a small subset of the species' former range, specific knowledge of key habitat requirements are unknown. Currently, all potential habitat is degraded. The presence of non-native mammalian predators and birds, which can act as disease reservoirs, further reduces habitat quality. Core areas of the species' former range are now managed by the State of Hawai'i and the U.S. Fish and Wildlife Service.

THREATS: ʻAlalā are likely susceptible to the same factors that threaten other native Hawaiian forest birds, including: loss and degradation of habitat, predation by introduced mammals, and disease. For ʻalalā populations, the following are of particular concern:

- Predation. The small Indian mongoose, rats, and feral cats prey on ʻalalā. The ʻio (*Buteo solitarius*) and presumably pueo (*Asio flammeus sandwichensis*) also prey on juvenile and adults. ʻIo have been documented killing captive-raised birds released into the wild. Fledglings are unable to fly and this likely contributes to high rates of predation.
- Shooting. Many ʻalalā were killed around farms between 1890 and 1930. Despite legal protection in 1931, shooting of individuals occurred into the 1980s.
- Disease. Population declines were noted between 1890 and 1910, a period when other native bird populations declined, presumably because of mosquito-borne diseases. Seasonal movement may have increased exposure to diseases. In addition, ʻalalā are susceptible to toxoplasmosis carried by feral cats.
- Habitat degradation. Habitat conversion by human activity as well as by grazing ungulates has severely degraded former ʻalalā habitat. These changes may have limited food or nesting resources and may have increased the vulnerability of ʻalalā to predation by ʻio. Currently, little suitable habitat exists for the species.
- Population size. Small populations are plagued by a variety of potentially irreparable problems which fall into three categories: demographic, stochastic, and genetic; the former are usually most problematic. Demographic factors include skewed sex ratios.
- Captive-breeding. There is some evidence that captive-reared birds lack important foraging and predator-avoidance behaviors.

CONSERVATION ACTIONS: The ʻalalā has been legally protected by the State of Hawai'i since 1931 and was listed as federally endangered in 1967. A captive propagation program was established in 1973; crows are now housed at the Keauhou Bird Conservation Center and the Maui Bird Conservation Center. The ʻAlalā Recovery Team was formed to facilitate the species recovery, and a related second group, the ʻAlalā Partnership, was formed to facilitate program implementation on private lands. Between 1993 and 1998, 27 captive-raised juvenile ʻalalā were released at McCandless Ranch. Of these, 21 died in the wild and six were recaptured and returned to the captive flock. Predator control was ongoing during the release program. Intensive field studies of the wild population and released juveniles were conducted between 1992 and 2002. In 1999, the Kona Forest Unit of Hakalau Forest National Wildlife Refuge was acquired, with the goal of restoring habitat in the core of the species' historic range. To date, legal and operational constraints have impeded this effort. Restoration of future re-introduction sites is ongoing and re-introductions are expected to occur in the near future. In addition to the above efforts, ʻalalā likely will benefit from management activities to conserve other

endangered forest birds on the island of Hawai'i including fencing, ungulate and small mammal control, forest restoration, habitat monitoring, and studies of disease and disease vectors. In addition to these efforts, future management specific to the 'alalā should include the following:

- Continue restoration of future reintroduction areas.
- Maintain and increase the captive flock without further loss of genetic diversity.
- Continue protection and management of wildlife sanctuaries and refuges.

MONITORING: The captive flock is monitored. If and when re-introduction occurs, wild populations will be intensively monitored.

RESEARCH PRIORITIES: Research priorities for most Hawaiian forest birds include improving methods for controlling rats and feral cats in native forests, determining the ecological requirements of *Culex* mosquitoes at mid- and high-elevation forests, and developing methods to control mosquito populations. Research priorities specific to the 'alalā include the following:

- Review all data from studies on captive and wild populations.
- Determine methods to increase the reproductive output of captive individuals.
- Conduct field studies to determine if understory restoration will reduce the ability of 'io to prey on 'alalā.
- Establish a set of habitat criteria that must be met prior to release of birds at a particular site.
- Develop methods to habituate captive-raised individuals to respond appropriately to mammalian and avian predators, and sources of toxoplasmosis.
- Determine potential reintroduction sites on other islands.

References:

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