

*kavaiensis*, *Vaccinium* spp., *Wilkesia gymnoxiphium*, *Xylosma* spp., or *Zanthoxylum dipetalum* (57 FR 20580; K. Wood, pers. comm., 2001).

The primary threat to the survival of *Poa siphonoglossa* is habitat degradation and/or herbivory by feral pigs and deer. The nonnative plant *Rubus argutus* invading Kohua Ridge constitutes a probable threat to that population. Small population size and the potential for one disturbance event to destroy the majority of known individuals are also serious threats to this species (HINHP Database 2000; Service 1995; 57 FR 20580).

*Pritchardia aylmer-robinsonii* (wahane)

*Pritchardia aylmer-robinsonii*, a member of the palm family (Arecaceae) is a fan-leaved tree about 7 to 15 m (23 to 50 ft) tall. This species is distinguished from others of the genus by the thin leaf texture and drooping leaf segments, tan woolly hairs on the underside of the petiole and the leaf blade base, stout hairless flower clusters that do not extend beyond the fan-shaped leaves, and the smaller spherical fruit (Read and Hodel 1999).

Little is known about the life history of *Pritchardia aylmer-robinsonii*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (61 FR 41020).

Historically, *Pritchardia aylmer-robinsonii* was found at three sites in the eastern and central portions of the island of Niihau. Trees were found on Kaali Cliff and in Mokouia and Haao Valleys at elevations between 70 and 270 m (230 and 885 ft) on privately owned land. The most recent observations indicate that two plants still remain on Kaali Cliff (GDSI 2000; HINHP Database 2000; Read and Hodel 1999).

*Pritchardia aylmer-robinsonii* typically grows on rocky talus in seepage areas within coastal dry forest at elevations between 91 to 259 m (300 to 850 ft). Associated native plant species include *Brighamia insignis*, *Cyperus trachysanthos*, *Lipochaeta lobata* var. *lobata* (nehe), or *Lobelia niihauensis*. Originally a component of the coastal dry forest, this species now occurs only in a rugged and steep area where it receives some protection from grazing ungulates (HINHP Database 2000; 61 FR 41020).

The species is threatened by habitat degradation and/or herbivory by cattle, feral pigs, and feral goats and seed predation by rats. Small population size, limited distribution, and reduced reproductive vigor makes this species

particularly vulnerable to extinction (61 FR 41020).

*Pritchardia napaliensis* (loulou)

*Pritchardia napaliensis*, a member of the palm family (Arecaceae), is a small tree with about 20 leaves and an open crown. This species is distinguished from others of the genus that grow on Kauai by having about 20 flat leaves with pale scales on the lower surface that fall off with age, inflorescences with hairless main axes, and globose round fruits less than 3 cm (1.2 in) long (Read and Hodel 1999).

Little is known about the life history of *Pritchardia napaliensis*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1998a).

*Pritchardia napaliensis* has only been known from five occurrences with 155 individuals on State-owned land in Pohakuao, Alealau, Waiahuakua, and Hoolulu Valley within the Hono o Na Pali NAR and Na Pali Coast State Park (GDSI 2000; HINHP Database 2000; K. Wood, in litt. 1999).

*Pritchardia napaliensis* typically grows in areas between elevations of 152 and 1,158 m (500 and 3,800 ft) in a wide variety of habitats ranging from lowland dry to diverse mesic forests dominated by *Diospyros* spp. or montane wet forests dominated by *Metrosideros polymorpha* and *Dicranopteris linearis*. Associated native plant species include *Alsinidendron lychnoides*, *Alyxia oliviformis*, *Boehmeria grandis*, *Cheirodendron trigynum*, *Cibotium* spp., *Dubautia knudsenii*, *Elaeocarpus bifidus*, *Hibiscus kokio* ssp. *saintjohnianus* (kokio), *Lipochaeta connata* var. *acris* (nehe), *Melicope peduncularis* (alani), *Nesoluma polynesianum* (keahi), *Ochrosia kauaiensis* (holei), *Phyllostegia electra* (NCN), *Pleomele aurea*, *Poa sandwicensis*, *Pouteria sandwicensis*, *Psychotria* spp., *Psydrax odorata*, *Pteralyxia kauaiensis*, *Rauvolfia sandwicensis*, *Santalum freycinetianum* var. *pyrularium*, *Stenogyne purpurea* (NCN), *Syzygium sandwicensis*, *Vaccinium dentatum*, *Wilkesia gymnoxiphium*, or *Xylosma hawaiiense* (HINHP Database 2000; Service 1998a; 61 FR 53070).

Major threats to *Pritchardia napaliensis* include habitat degradation and grazing by feral goats and pigs; seed predation by rats; and competition with nonnative plants such as *Erigeron karvinskianus*, *Kalanchoe pinnata*, *Lantana camara*, *Psidium guajava*, or possibly *Cordyline fruticosa*. The species is also threatened by vandalism

and over-collection. In 1993, near the Wailua River, the State Division of Forestry and Wildlife (DOFAW) constructed a fenced enclosure around 39 recently planted *P. napaliensis* individuals. Shortly after planting, the fence was vandalized and the 39 plants were removed. Also, because of the small number of remaining populations and individuals, this species is susceptible to a risk of extinction from naturally occurring events, such as landslides or hurricanes, and from reduced reproductive vigor (61 FR 53070; Craig Koga, DOFAW, in litt. 1999; A. Kyono, pers. comm., 2000).

*Pritchardia viscosa* (loulou)

*Pritchardia viscosa*, a member of the palm family (Arecaceae), is a small tree 3 to 8 m (10 to 26 ft) tall. This species differs from others of the genus that grow on Kauai by the degree of hairiness of the lower surface of the leaves and main axis of the flower cluster, and length of the flower cluster (Read and Hodel 1999).

Historically, *Pritchardia viscosa* was known only from a 1920 collection from Kalihiwai Valley. It was not seen again until 1987, when Robert Read observed it in the same general area as the type locality, off the Powerline Road at 512 m (1,680 ft) elevation (HINHP Database 2000). Currently, there is one occurrence with three individuals on State-owned land within the Halelea Forest Reserve (GDSI 2000; HINHP Database 2000; 61 FR 53070).

This species is found in *Metrosideros polymorpha*-*Dicranopteris linearis* lowland wet forest at elevations between 488 and 518 m (1,600 and 1,700 ft). Associated native species include *Antidesma* spp., *Bobea* spp., *Cibotium* spp., *Cyanea fissa*, *Cyrtandra kauaiensis*, *Cyrtandra longiflora*, *Dubautia knudsenii*, *Nothocestrum* spp., *Perrottetia sandwicensis*, *Psychotria* spp., *Sadleria pallida*, or *Syzygium sandwicensis* (Service 1998a; 61 FR 53070).

*Pritchardia viscosa* is threatened by *Psidium cattleianum*, nonnative grasses such as *Paspalum conjugatum*, and seed predation by rats. At least one of the remaining mature trees has been damaged by spiked boots used either by a botanist or seed collector to scale the tree. In mid-1996, a young plant and seeds from mature *Pritchardia viscosa* plants were removed from the only known location of this species. Because of this past activity, it is reasonable to assume that these plants are threatened by over-collection and vandalism. Also, because of the small numbers of individuals in the only known population, this species is susceptible to