

due to the small number of individuals in the only known occurrence; and habitat degradation and/or predation by feral pigs and goats that are known from adjacent areas (Service 1998a).

*Melicope reflexa* (alani)

*Melicope reflexa*, a long-lived perennial of the rue family (Rutaceae), is a sprawling shrub 1 to 3 m (3.3 to 10 ft) tall with short, yellowish-brown, short-lived hairs on new growth. Opposite leaves with leaf stalks usually over 1 cm (0.4 in) long, larger leaves and fruit, and partially fused sections of the capsule (fruit) separate it from other species of the genus (Stone *et al.* 1999).

Little is known about the life history of this species. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1996a).

Historically, *Melicope reflexa* occurred from a ridge between Hanalilolilo and Pepeopae to as far east as Halawa on East Molokai. The 3 remaining occurrences of fewer than a total of 1,000 individuals are on State and private lands in Honomuni, the Wailau-Mapulehu summit area, and Kukuinui Ridge in Wailau Valley (GDSI 2000, HINHP Database 2000).

*Melicope reflexa* typically grows in wet *Metrosideros polymorpha*-dominated forest with native trees, such as *Cheirodendron* sp. (olapa), at elevations between 319 and 1,508 m (1,046 and 4,946 ft). Associated native plant species include *Antidesma platyphyllum*, *Alyxia oliviformis* (maile), *Cheirodendron trigynum*, *Cibotium* spp., *Dicranopteris linearis*, *Freycinetia arborea*, or *Syzygium sandwicensis* (ohia ha) (Stone *et al.* 1999; J. Lau, *in litt.* 2001).

Major threats to *Melicope reflexa* include habitat degradation and predation by ungulates (axis deer and feral pigs); competition with the non-native plant *Clidemia hirta* (Koster's curse); and catastrophic extinction from environmental events due to this species' few occurrences and small number of individuals (Service 1996a, 57 FR 46325).

*Pritchardia munroi* (loulou)

*Pritchardia munroi*, a member of the palm family (Arecaceae), is a long-lived perennial tree about 4 to 5 m (13 to 16 ft) tall. The leaves are deeply divided into segments with long, drooping tips. This species is distinguished from others of the genus by its relatively smooth leaves; the grayish-brown hair on the inflorescence stalks, which are shorter than the petioles (leaf stalks); and the small size of the fruits (Read and Hodel 1999).

Little is known about the life history of this species. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1996a).

Historically and currently, *Pritchardia munroi* is found in leeward East Molokai, above Kamalo, near Kapuaokoolau Gulch. The only known wild individual is found on privately owned land (HINHP Database 2000, Read and Hodel 1999).

The only known wild individual grows near the base of a small ravine in mesic *Metrosideros polymorpha*-*Dodonaea viscosa*-*Leptecophylla tameiameia* shrubland at elevations between 189 and 1,205 m (619 and 3,952 ft). Associated plant species include *Bidens menziesii* (kookoolau), *Coprosma* sp., *Diospyros sandwicensis*, *Dubautia linearis* (naenae), *Pleomele auwahiensis* (hala pepe), *Pseudognaphalium sandwicense* (enaena), *Sida fallax* (ilima), or *Wikstroemia* sp. (Read and Hodel 1999; J. Lau, *in litt.* 2001).

Threats to the only known wild individual of *Pritchardia munroi* include habitat degradation by ungulates (axis deer, goats, or pigs) around its fenced enclosure, which prevents the establishment of seedlings; predation of seeds by rats; and catastrophic extinction by random environmental events (e.g., fire) due to its extreme rarity (Service 1996a, 57 FR 46325).

*Schiedea lydgatei* (NCN)

*Schiedea lydgatei*, a member of the pink family (Caryophyllaceae), is a low, hairless short-lived perennial with branched stems 10 to 40 cm (4 to 16 in) long that are woody at the base. The opposite, thin, three-veined leaves with petioles and the smooth, open flower clusters with relatively larger, green sepals separate this species from other members of this endemic Hawaiian genus (Wagner *et al.* 1999).

This species has been observed with flowers and fruit in June. Little is known about the life history of this species. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (HINHP Database 2000, Service 1996a).

Historically, *Schiedea lydgatei* was found in Kalae, Poholua, Makolelau, and Ohia Gulch on East Molokai. This species is now known from 4 occurrences in a more restricted area in Makakupaia, Kawela, and Makolelau. The 4 occurrences total more than 1,000 individuals on State and privately owned lands (GDSI 2000, HINHP Database 2000).

This species is found along ridges in dry to mesic grassland, shrubland, and forest with scattered native trees. It ranges in elevation between 458 and 1,047 m (1,502 and 3,434 ft). Associated plant species include *Dicranopteris linearis*, *Dodonaea viscosa*, *Leptecophylla tameiameia*, or *Metrosideros polymorpha* (Gagne and Cuddihy 1999, HINHP Database 2000, Wagner *et al.* 1999).

The major threats to *Schiedea lydgatei* are habitat degradation by feral ungulates; competition with the non-native plant species *Melinis minutiflora*; and catastrophic extinction due to random environmental events, primarily fire, because in this species' dry, windswept habitat a single fire could potentially destroy a large part of the occurrence (Service 1996a, 57 FR 46325).

*Schiedea sarmentosa* (NCN)

*Schiedea sarmentosa*, a short-lived perennial herb of the pink family (Caryophyllaceae), is a many-branched shrub. The opposite leaves are slender, threadlike, and covered with dense, glandular hairs. The flowers are female on some plants and bisexual on others. This species differs from others in this endemic Hawaiian genus by its densely bushy habit, leaf width, hairiness, and staminode (false stamen) length (Wagner *et al.* 1999).

The population in Makolelau Gulch has a frequency of 31 percent female plants. Based on analyses of pollen-ovule ratios, pollen size, inflorescence structure, and comparison to other *Schiedea* species tested in a wind tunnel, *Schiedea sarmentosa* could be wind-pollinated. Little is known about the life history of this species. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1998a).

*Schiedea sarmentosa* has been found in Kawela Gulch, Makolelau, and Onini Gulch. Currently, only five occurrences are known to be extant on private lands. Estimates of the total number of individuals have ranged to over 1,000. An accurate count is difficult because this species grows interspersed with *Schiedea lydgatei* (GDSI 2000, HINHP Database 2000, Service 1998a).

*Schiedea sarmentosa* is typically found on steep or gentle to moderate slopes in *Metrosideros polymorpha*-*Dodonaea viscosa* lowland dry or mesic shrubland, or dry to mesic forest dominated by *Metrosideros polymorpha* and/or *Diospyros sandwicensis*, at elevations between 316 and 1,072 m (1,036 and 3,516 ft). Associated species include *Alyxia oliviformis*, *Bidens menziesii*, *Carex meyenii* (NCN),