

Metrosideros polymorpha, *Dodonaea viscosa* and *Acacia koa* trees in moist, protected gulches or mossy tussocks in mesic to wet montane *Metrosideros polymorpha*-*Acacia koa* forests at elevations between 446 and 1,688 m (1,464 and 5,539 ft) and containing one or more of the following associated native plant species: *Astelia menziesiana* (kaluaha); *Athyrium* spp.; *Cheirodendron trigynum*; *Christella* spp. (NCN); *Coprosma* spp.; *Cyanea* spp.; *Cyrtandra* spp.; *Ilex anomala*; *Leptecophylla tameiameia*; *Machaerina* spp.; *Sadleria* spp.; or *Vaccinium* spp. (Service 1997; 57 FR 20772; R. Hobdy, pers. comm., 2001).

The primary threats to this species are habitat alteration by goats, cattle and pigs, and the impacts of nonnative plant species. Additionally, small occurrence sizes also make the species subject to extinction caused by random environmental events (Service 1997; 57 FR 20772).

Phyllostegia mannii (NCN)

Phyllostegia mannii, a non-aromatic member of the mint family (Lamiaceae), is a climbing vine with many-branched, four-sided, hairy stems. This species is distinguished from others in the genus by its hairiness; its thin, narrow leaves, which are not pinnately divided; and the usually six flowers per false whorl in a terminal inflorescence (Wagner *et al.* 1999).

This species has been observed with fruit in July. Little else is known about the life history of *Phyllostegia mannii*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1996b; 57 FR 46325).

Historically, *Phyllostegia mannii* was found from Hanalei to Ohialele on East Molokai and at Ukulele on East Maui. It has not been seen on Maui for over 70 years. This species is now known only from Molokai (HINHP Database 2001; Service 1996b; 57 FR 46325).

On Maui, *Phyllostegia mannii* occurred on gentle slopes and the steep sides of gulches in mesic to wet forest dominated by *Acacia koa* and/or *Metrosideros polymorpha* at elevations between 1,069 and 1,615 m (3,506 and 5,297 ft) with one or more of the following associated native plant species: *Alyxia oliviformis*; *Cheirodendron trigynum*; *Dicranopteris linearis*; *Diplazium sandwichianum*; *Melicope* spp.; or *Myrsine lessertiana* (Service 1996b; 57 FR 46325; J. Lau, pers. comm., 2001).

Nothing is known of the threats to *Phyllostegia mannii* on the island of Maui (Service 1996b; 57 FR 46325).

Phyllostegia mollis (NCN)

Phyllostegia mollis, a short-lived member of the mint family (Lamiaceae), grows as a nearly erect, densely hairy, nonaromatic, perennial herb. Characteristics concerning the kind and amount of hair, the number of flowers in a cluster, and details of other plant parts separate this species from other members of the genus (Wagner *et al.* 1990).

Individual *Phyllostegia mollis* plants live for approximately 5 years. The species is known to flower in late winter and spring. Little else is known about the life history of *P. mollis*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1998b; 56 FR 55770).

Historically, *Phyllostegia mollis* was known from Oahu, Molokai, and East Maui. Currently, this species is only known from Oahu and Maui. On East Maui, a single occurrence with an unknown number of individuals remains on State (on the border of Kahikinui Forest Reserve and DHHL) land in Waiopai Gulch (GDSI 2001; HINHP Database 2001; Service 1998b; Wagner *et al.* 1999; 56 FR 55770).

Phyllostegia mollis typically grows on steep slopes and in gulches in mesic forests dominated by *Metrosideros polymorpha* and/or *Acacia koa* at elevations between 1,144 and 1,970 m (3,754 and 6,463 ft). Associated native plant species include *Alyxia oliviformis*, *Cheirodendron trigynum*, *Diplazium sandwichianum*, *Melicope* spp., and *Myrsine lessertiana* (Service 1998b; 56 FR 55770; J. Lau, pers. comm., 2001).

The major threats to *Phyllostegia mollis* are competition from the nonnative plant species *Rubus* spp. and *Schinus terebinthifolius*, and a risk of extinction of the only known occurrence of this species on Maui caused by random environmental events (Service 1998b; 56 FR 55770).

Phyllostegia parviflora (NCN)

Phyllostegia parviflora, a member of the mint family (Lamiaceae), is a perennial herb. The species is distinguished from others of the genus by the egg-shaped to broadly egg-shaped leaves, leaf stalks usually 6 to 13.5 cm (2.4 to 5.3 in) long, and the lower corolla lip 6 to 9 mm (0.24 to 0.36 in) long. *Phyllostegia parviflora* var. *glabriuscula* has fewer glandular hairs in the inflorescence, less pubescent leaves, and usually unbranched

inflorescences compared with *P. parviflora* var. *parviflora*. *Phyllostegia parviflora* var. *lydgatei* has shorter leaf stalks, spreading hairs on the leaf stalks, and fewer gland-tipped hairs in the inflorescence. At the time of listing of this species, only two varieties were recognized, *glabriuscula* and *parviflora*. Subsequent to the final rule listing this species in 1996, Wagner's (1999) taxonomic treatment of this group reorganized *P. parviflora* var. *lydgatei* as distinct from *P. parviflora* var. *parviflora*. Wagner's (1999) treatment is cited in the revised edition of the Manual of the Flowering Plants of Hawaii as the basis for recognizing *P. parviflora* var. *lydgatei* (Wagner *et al.* 1999). This name change will be addressed in a future Federal Register notice.

Historically *Phyllostegia parviflora* was known from three islands, Oahu, Hawaii, and Maui. This species is now known only from two occurrences on Oahu (HINHP Database 2001; GDSI 2001; Service 1999; 61 FR 53108).

Nothing is known of the preferred habitat of or native plant species associated with *Phyllostegia parviflora* on the island of Maui (Service 1999; 61 FR 53108; R. Hobdy, pers. comm., 2001) or of the threats to *Phyllostegia parviflora* on the island of Maui (Service 1999; 61 FR 53108).

Plantago princeps (Laukahi kuahiwi)

Plantago princeps, a short-lived member of the plantain family (Plantaginaceae), is a small shrub or robust perennial herb. This species differs from other native members of the genus in Hawaii by its large branched stems, flowers at nearly right angles to the axis of the flower cluster, and fruits that break open at a point two-thirds from the base. The four varieties, vars. *anomala*, *laxiflora*, *longibracteata*, and *princeps*, are distinguished by the branching and pubescence of the stems; the size, pubescence, and venation of the leaves; the density of the inflorescence; and the orientation of the flowers (Wagner *et al.* 1999).

Individuals of this species have been observed in fruit from April through September. Little else is known about the life history of *Plantago princeps*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999; 59 FR 56333).

Plantago princeps was historically found on Kauai, Oahu, Molokai, Maui, and Hawaii. It is no longer extant on the island of Hawaii. Only one of the four varieties is on Maui; *Plantago princeps* var. *laxiflora* is known from Molokai