

Database 2000; Service 1995b; K. Wood, *in litt.* 2000).

Major threats to *Peucedanum sandwicense* on Molokai are seed predation by rats and competition with the non-native plant species *Ageratum conyzoides* (maile hohono), *Coronopus didymus* (swinecress), *Kalanchoe pinnata*, *Lantana camara*, *Malvastrum coromandelianum* ssp. *coromandelianum* (false mallow), *Morinda citrifolia* (noni), *Plantago lanceolata* (English plantain), *Pluchea carolinensis* (sourbush), *Portulaca oleracea*, *Pseudoelephantopus spicatus* (NCN), *Schinus terebinthifolius*, and *Sonchus oleraceus* (pualele) (Service 1995b; 59 FR 9304; K. Wood, *in litt.* 2000).

Phyllostegia mannii (NCN)

Phyllostegia mannii, a short-lived perennial and nonaromatic 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 in fruit in July. 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, *Phyllostegia mannii* was found from Hanalilolilo to Ohialele on East Molokai and at Ukulele on East Maui. It has not been seen on Maui for over 70 years and is apparently extirpated on that island. On Molokai, this species is now known from only one occurrence on Puu Alii on privately owned land (GDSI 2000, HINHP Database 2000, Service 1996a).

On Molokai, *Phyllostegia mannii* grows in shaded sites in sometimes foggy and windswept, wet, open *Metrosideros polymorpha*-dominated montane forest with a native shrub and *Cibotium* sp. understory between 590 and 1,508 m (1,935 and 4,946 ft) in elevation. Associated plant species include *Asplenium* sp., *Broussaisia arguta*, *Cheirodendron trigynum*, *Coprosma ochracea*, *Cyanea* sp., *Dicranopteris linearis*, *Hedyotis hillebrandii*, *Pipturus albidus*, *Pouteria sandwicensis*, *Psychotria* sp., *Touchardia latifolia*, *Vaccinium* sp., or *Wikstroemia* sp. (HINHP Database 2000, Service 1996a).

The only known occurrence of *Phyllostegia mannii* is threatened by

habitat destruction and degradation by feral pigs. A single natural or human-caused environmental event could extirpate the species (Service 1996a, 57 FR 46325).

Phyllostegia mollis (NCN)

Phyllostegia mollis, a short-lived member of the mint family (Lamiaceae), grows as a nearly erect, densely hairy, non-aromatic, perennial herb. A suite of technical characteristics concerning the kind and amount of hair, the number of flowers in a cluster, and details of the various plant parts separate this species from other members of the genus (Wagner *et al.* 1999).

Individual *Phyllostegia mollis* plants live for approximately five years. The species is known to flower in late winter and spring. 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 1998b).

Historically, *Phyllostegia mollis* was known from Oahu, Molokai, and East Maui. Currently, this species is found only on Oahu and Maui. It was last collected on Molokai in 1912 from Kamakou Preserve by J. F. Rock (HINHP Database 2000).

On Molokai, *Phyllostegia mollis* typically grew in mesic *Metrosideros polymorpha* forests between 551 and 1,216 m (1,807 and 3,988 ft) in elevation (J. Lau, *in litt.* 2001).

Nothing is known of the threats that may have affected *Phyllostegia mollis* on Molokai.

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).

Little is known about the life history of this plant. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown. However, individuals have been observed in fruit

from April through September (Service 1999a).

Plantago princeps was historically known from Kauai, Oahu, Molokai, Maui, and Hawaii Island. It no longer occurs on Hawaii Island. *Plantago princeps* var. *anomala* is currently known from Kauai and Oahu; var. *longibracteata* is known from Kauai and Oahu; var. *princeps* is known from Oahu; and var. *laxiflora* is known from Molokai and Maui. On Molokai, there is currently one remaining occurrence of *Plantago princeps* var. *laxiflora* with five individuals in Kawela Gulch on privately owned land (GDSI 2000, HINHP Database 2000, Service 1999a).

On Molokai, *Plantago princeps* var. *laxiflora* is typically found on streambanks in *Metrosideros polymorpha* lowland mesic forest between 592 and 1,213 m (1,942 and 3,979 ft) in elevation. Associated plant species include *Coprosma* sp., *Cyanea* sp., *Dodonaea viscosa*, *Dryopteris unidentata*, *Pipturus albidus*, or *Wikstroemia oahuensis* (akia), (Wagner *et al.* 1999; J. Lau, *in litt.* 2001).

The primary threats to *Plantago princeps* var. *laxiflora* on Molokai are predation and habitat degradation by feral pigs and goats, and competition with various non-native plant species (Service 1999a, 59 FR 56333).

Platanthera holochila (NCN)

Platanthera holochila, a short-lived perennial member of the orchid family (Orchidaceae), is an erect, deciduous herb. The stems arise from underground tubers, the pale green leaves are lance-to egg-shaped, and the greenish-yellow flowers occur in open spikes. It is distinguished by other Hawaiian orchids by its underground tubers that lack roots at the nodes or pseudobulbs, and the shape and length of its dorsal sepal. This is the only species of this genus that occurs in the Hawaiian Islands (Wagner *et al.* 1999).

Little is known about the life history of this plant. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999a).

Historically, *Platanthera holochila* was known from Maui, Oahu, Molokai, and Kauai. Currently, *P. holochila* is extant on Kauai, Molokai, and Maui. On Molokai, one occurrence with less than 10 individuals is reported from Hanalilolilo on the privately owned land of Kamakou Preserve (GDSI 2000, HINHP Database 2000).

On Molokai, *Platanthera holochila* is found on slightly sloping ridgetops in *Metrosideros polymorpha*-