

fallax (Constance and Affolter 1999; HINHP Database 2001; Service 1995b).

Threats to *Peucedanum sandwicense* on Oahu are habitat degradation by feral goats and pigs and competition with the nonnative plant species *Kalanchoe pinnata*, *Lantana camara*, *Melinis minutiflora*, and *Schinus terebinthifolius* (HINHP Database 2001).

Phlegmariurus nutans (Wawaeiole)

Phlegmariurus nutans is an erect or pendulous herbaceous epiphyte in the clubmoss family (Lycopodiaceae). This species can be distinguished from others of the genus in Hawaii by its epiphytic habit, simple or forking fruiting spikes, and larger and stiffer leaves (59 FR 14482).

This species has been observed fertile, with spores, in May and December. No other information is available on reproductive cycles, dispersal agents, longevity, specific environmental requirements, or limiting factors (Service 1998b).

Historically, *Phlegmariurus nutans* was known from the island of Kauai and from scattered locations in the Koolau Mountains of Oahu, bounded by Kaluanui Valley to the north, Paalaa to the west, and Mount Tantalus to the south. This species is now known only from Oahu in 3 occurrences containing seven individual plants on Federal and State lands in Kaukonahua Gulch, Kahana, and Kaipapau Gulch (EDA Database 2001; GDSI 2001; HINHP Database 2001).

Phlegmariurus nutans on Oahu grows on tree trunks, usually on open ridges, forested slopes, and cliffs in *Metrosideros polymorpha*-dominated wet forests and shrublands and occasionally mesic forests between 227 and 846 m (745 and 2,775 ft) in elevation. Associated native plant species include *Antidesma platyphyllum*, *Broussaisia arguta*, *Cyrtandra laxiflora*, *Dicranopteris linearis*, *Elaphoglossum* sp. (ekaha), *Hedyotis terminalis*, *Hibiscus* sp., *Machaerina angustifolia*, *Psychotria mariniana*, *Syzygium sandwicensis*, or *Wikstroemia oahuensis* (HINHP Database 2001; Service 1998b; EDA, *in litt.* 2001).

The primary threat to *Phlegmariurus nutans* on Oahu is susceptibility to extinction from naturally caused events and decreased reproductive vigor because of the small number of remaining individuals and limited distribution of the species. Additional threats to *Phlegmariurus nutans* are habitat degradation by feral pigs; floods; and the nonnative plants *Clidemia hirta*, *Paspalum conjugatum*, *Psidium*

cattleianum, and *Sacciolepis indica* (HINHP Database 2001).

Phyllostegia mollis (NCN)

Phyllostegia mollis, a short-lived member of the mint family (Lamiaceae), grows as a nearly erect, densely hairy, nonaromatic, 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 else is known about its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors (Service 1998b).

Historically, *Phyllostegia mollis* was known from Molokai, Maui, and Oahu from the central and southern Waianae Mountains, Mt. Kaala to Honouliuli, and Makiki in the Koolau Mountains. Currently, this species is only known from Oahu and Maui. On Oahu, this species remains only in Kaluaa Gulch, Palawai Gulch, Puu Kumakalii, Mohiakea Gulch, Huliwai Gulch, Waieli Gulch, and Pualii Gulch on Federal and private lands. The 5 occurrences contain between 85 and 105 individuals (EDA Database 2001; GDSI 2001; HINHP Database 2001).

Phyllostegia mollis typically grows on steep slopes and in gulches in diverse mesic to wet forests at elevations of 519 to 928 m (1,702 to 3,044 ft). Associated native plant species include *Acacia koa*, *Alyxia oliviformis*, *Antidesma platyphyllum*, *Carex meyenii*, *Chamaesyce multiformis*, *Claoxylon sandwicense*, *Diospyros hillebrandii*, *Dryopteris unidentata*, *Metrosideros polymorpha*, *Myrsine* sp., *Pipturus alba*, *Pisonia umbellifera*, *Pouteria sandwicensis*, *Psychotria hathewayi*, or *Urera glabra* (HINHP Database 2001; EDA, *in litt.* 2001).

The major threats to *Phyllostegia mollis* are competition from the nonnative plant species *Ageratina adenophora*, *Blechnum appendiculatum*, *Christella parasitica*, *Clidemia hirta*, *Heliocarpus popayanensis*, *Kalanchoe pinnata*, *Passiflora suberosa*, *Psidium cattleianum*, *Rubus rosifolius*, and *Schinus terebinthifolius*; rockslides; habitat degradation and predation by feral pigs and goats; and the small number of extant occurrences, which makes the species vulnerable to extinction and/or reduced reproductive vigor (HINHP Database 2001).

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 shape of the leaves and the length of the leaf stalks and lower corolla. The varieties of this species are differentiated by hairs on the inflorescence and leaves and by the branching of the inflorescence.

At the time of listing of this species in 1996, only two varieties were recognized, *Phyllostegia parviflora* var. *glabriuscula* and *P. parviflora* var. *parviflora*. Subsequently we became aware of Wagner *et al.*'s (1999) taxonomic treatment of this group in which *P. parviflora* var. *lydgatei* was recognized. This treatment is cited in the supplement in the revised edition of the *Manual of the Flowering Plants of Hawaii* (Wagner *et al.* 1999) as the basis for recognizing *P. parviflora* var. *lydgatei*. This name change will be addressed in a future **Federal Register** notice.

Historically, *Phyllostegia parviflora* was known from the islands of Oahu, Hawaii, and Maui. This species is now known only from six occurrences on Oahu. *Phyllostegia parviflora* var. *glabriuscula* was only known from the island of Hawaii on private land and has not been observed since the 1800s. *Phyllostegia parviflora* var. *parviflora* is now known from only 30 plants on the east side of Puu Pauao, on State and Federal lands. *Phyllostegia parviflora* var. *lydgatei* is known from only four plants in North Pualii Gulch on private land (GDSI 2001; HINHP Database 2001).

Phyllostegia parviflora var. *lydgatei* is typically found on moderate to steep slopes in mesic forest from 555 to 881 m (1,820 to 2,890 ft) elevation. Native vegetation associated with *Phyllostegia parviflora* var. *lydgatei* includes *Antidesma platyphyllum*, *Chamaesyce multiformis*, *Claoxylon sandwicense*, *Coprosma foliosa*, *Dryopteris unidentata*, *Myrsine lessertiana*, *Pipturus albidus*, *Pouteria sandwicensis*, *Selaginella arbuscula*, or *Xylosma hawaiiense*. *Phyllostegia parviflora* var. *parviflora* is typically found in *Metrosideros polymorpha* mixed lowland wet forest from 232 to 867 m (761 to 2,844 ft) elevation. Native vegetation associated with *Phyllostegia parviflora* var. *parviflora* includes *Antidesma* sp., *Broussaisia arguta*, *Cheirodendron* sp., *Cibotium* sp., *Cyrtandra* sp., *Dicranopteris linearis*, *Melicope* sp., *Phyllostegia glabra* (NCN), *Pipturus* sp., *Pritchardia* sp., *Syzygium sandwicensis*, *Tetraplasandra* sp., or