

land within the West Maui Mountains Watershed Partnership (GDSI 2001; HINHP Database 2001; Service 1997; 57 FR 20772).

Hedyotis coriacea is found on steep, rocky slopes in dry lowland *Dodonaea viscosa*-dominated shrublands at elevations between 110 and 937 m (361 and 3,074 ft) and containing one or more of the following associated native plant species: *Bidens menziesii* (kookoolau); *Gouania hillebrandii* (NCN); *Melanthera lamarum*; *Myoporum sandwicense*; *Schiedea menziesii* (NCN); or *Sida fallax* (HINHP Database 2001; Service 1997; 57 FR 20772; R. Hobdy, pers. comm., 2001).

The single remaining individual of *Hedyotis coriacea* on Maui is threatened by extinction from a random naturally occurring event (Service 1997; 57 FR 20772).

Hedyotis mannii (Pilo)

Hedyotis mannii, a member of the coffee family (Rubiaceae), is a short-lived perennial plant with smooth, usually erect stems 30 to 60 cm (1 to 2 ft) long, which are woody at the base and four-angled or winged. This species' growth habit; its quadrangular or winged stems; the shape, size, and texture of its leaves; and its dry capsule, which opens when mature, separate it from other species of the genus (Wagner *et al.* 1999).

Little is known about the life history of *Hedyotis mannii*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1996b; 57 FR 46325).

Currently and historically, *Hedyotis mannii* is known from Lanai, West Maui, and Molokai. On Maui, there is a single occurrence of approximately 20 individuals located on private land in Kauaula Valley (GDSI 2001; Service 1996b; 57 FR 46325; K. Wood, *in litt.* 2000).

The occurrence on Maui is found on basal cliffs along stream banks in *Metrosideros polymorpha*-*Dicranopteris linearis* montane wet forest at elevations between 340 and 1,593 m (1,115 and 5,226 ft) and containing one or more of the following associated native plant species: *Boehmeria grandis*; *Carex meyenii*; *Cyanea* spp. (haha); *Cyrtandra grayi* (haiwale); *Cyrtandra hawaiiensis* (haiwale); *Cyrtandra platyphylla* (ilihia); *Hedyotis acuminata*; *Isachne distichophylla* (ohé); *Machaerina* spp. (uki); *Phyllostegia* spp. (NCN); *Pipturus albidus*; *Psychotria* spp.; *Touchardia latifolia*; or *Urera glabra* (Service 1996b; 57 FR 46325; R. Hobdy, pers. comm., 2001; K. Wood, *in litt.* 2000).

Hedyotis mannii on Maui is threatened by landslides; competition with the nonnative plant species *Ageratina adenophora*, *Buddleia asiatica* (butterfly bush), *Clidemia hirta*, *Pluchea carolinensis* (sourbush), and *Rubus rosifolius*; and the low number of individuals which makes it extremely vulnerable to extinction by random naturally occurring events (Service 1996b; 57 FR 46325; K. Wood, *in litt.* 2000).

Hesperomannia arborescens (NCN)

Hesperomannia arborescens, a long-lived perennial of the aster family (Asteraceae), is a small shrubby tree that usually stands 1.5 to 5 m (5 to 16 ft) tall. This member of an endemic Hawaiian genus differs from other *Hesperomannia* species in having the following combination of characteristics: Erect to ascending flower heads; thick flower head stalks; and usually hairless and relatively narrow leaves (Wagner *et al.* 1999).

This species has been observed in flower from April through June and in fruit during March and June. Little else is known about the life history of *Hesperomannia arborescens*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1998b; 59 FR 14482).

Hesperomannia arborescens was formerly known from Oahu, Molokai, and Lanai. This species is now known from Oahu, Molokai, and Maui. There are four occurrences with a total of six individuals on State (Kahukuloa section of the West Maui NAR) and privately owned lands in Honokohau and Lanilii within the West Maui Mountains Watershed Partnership (GDSI 2001; HINHP Database 2001; Service 1998b; 59 FR 14482).

Hesperomannia arborescens is found on slopes or ridges in lowland mesic or wet forest at elevations between 346 and 1,422 m (1,135 and 4,665 ft) and containing one or more of the following associated native plant species: *Antidesma* spp.; *Bobea* spp.; *Cheirodendron* spp.; *Clermontia* spp.; *Cibotium* spp.; *Coprosma* spp.; *Dicranopteris linearis*; *Freycinetia arborea*; *Isachne distichophylla*; *Machaerina* spp.; *Melicope* spp.; *Metrosideros polymorpha*; *Myrsine sandwicensis* (kolea); *Pipturus* spp.; *Psychotria* spp.; or *Sadleria* spp. (HINHP Database 2001; Service 1998b; 59 FR 14482; R. Hobdy, pers. comm., 2001).

The major threats to *Hesperomannia arborescens* on Maui are habitat degradation by feral pigs and goats;

competition with nonnative plant species; impact by humans; and extinction caused by random environmental events or reduced reproductive vigor caused by the small number of remaining individuals (HINHP Database 2001; Service 1998b; 59 FR 14482).

Hesperomannia arbuscula (NCN)

Hesperomannia arbuscula, a long-lived perennial member of the aster family (Asteraceae), is a small shrubby tree, 2 to 3.3 m (7 to 11 ft) tall. This species can be distinguished from other members of the genus by the erect flower heads and the leaves, usually hairy beneath, which are one to two times as long as wide (Wagner *et al.* 1999).

Hesperomannia arbuscula usually flowers in the spring, depending on precipitation. Seeds mature in about 6 weeks and trees live about 10 to 15 years. Little else is known about the life history of *H. arbuscula*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1998b; 56 FR 55770).

Historically and currently, *Hesperomannia arbuscula* is known from Oahu and West Maui. On Maui, there are 8 occurrences with a total of 37 individuals, on privately owned land along Waihee Stream and Nakalaloa within the West Maui Mountains Watershed Partnership (GDSI 2001; HINHP Database 2001; Service 1998b; 56 FR 55770; K. Wood, *in litt.* 1999).

Hesperomannia arbuscula typically grows on steep forested slopes and ridges in mesic forest dominated by *Metrosideros polymorpha* or *Diospyros sandwicensis* at elevations between 354 and 1,453 m (1,161 and 4,767 ft) and containing one or more of the following associated native plant species: *Alyxia oliviformis*; *Bidens* spp.; *Cheirodendron* spp.; *Clermontia* spp.; *Cyanea* spp.; *Psychotria* spp.; or *Tetraplasandra* spp. (HINHP Database 2001; Service 1998b; 56 FR 55770; R. Hobdy and J. Lau, pers. comm., 2001).

The major threats to *Hesperomannia arbuscula* on Maui are habitat degradation by feral pigs, competition from nonnative plant species, trampling by humans, and extinction from naturally occurring random events caused by the small number of occurrences (Service 1998b; 56 FR 55770).

Hibiscus brackenridgei (Mao hau hele)

Hibiscus brackenridgei, a short-lived perennial member of the mallow family (Malvaceae), is a sprawling to erect