

*Gouania meyenii* (NCN)

*Gouania meyenii*, a member of the buckthorn family (Rhamnaceae) and a short-lived perennial, is an erect to spreading shrub. It is distinguished from the two other Hawaiian members of its genus by its lack of tendrils on flowering branches, the lack of teeth on the leaves, and the hairiness of the fruits (Wagner *et al.* 1999).

*Gouania meyenii* flowers from March to May. Seed capsules develop in about six to eight weeks. Plants appear to live about 10 to 18 years in the wild. Little else is known about its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors (Service 1998b).

Historically, *Gouania meyenii* was known from central and southern areas of Oahu's Waianae Mountains, from Kamaileunu Ridge to Honouliuli and from Diamond Head. Currently, this species is found on Oahu and Kauai. On Oahu, it is found on Makaha-Waianae Kai Ridge on State, private, city, and county lands. The 4 known occurrences on Oahu contain an estimated 63 individuals (GDSI 2001; HINHP Database 2001; Wagner *et al.* 1999).

*Gouania meyenii* typically grows on moderate to steep slopes in dry shrubland or mesic lowland forest at elevations of 17 to 930 m (56 to 3,050 ft). Associated native plant species include *Alyxia oliviformis*, *Bidens* sp., *Canavalia* sp., *Carex meyenii*, *Chamaesyce* sp., *Charpentiera* sp., *Diospyros sandwicensis*, *Diospyros* sp., *Dodonaea viscosa*, *Dryopteris unidentata*, *Dubautia sherffiana*, *Eragrostis* sp., *Hedyotis* sp., *Hibiscus* sp., *Lysimachia* sp., *Melicope* sp., *Myrsine* sp. (kolea), *Nestegis sandwicensis*, *Pisonia* sp., *Psychotria* sp., *Psydrax odorata*, *Sapindus oahuensis*, *Schiedea* sp., *Senna gaudichaudii*, *Sida fallax*, or *Sophora chrysophylla* (HINHP Database 2001).

The major threats to *Gouania meyenii* on Oahu are competition from the nonnative plant species *Grevillea robusta*, *Kalanchoe pinnata*, *Lantana camara*, *Leucaena leucocephala*, *Melinis minutiflora*, *Oplismenus hirtellus*, *Pimenta dioica*, *Psidium cattleianum*, *Psidium guajava*, and *Schinus terebinthifolius*; fire; habitat degradation by feral pigs and goats; and a risk of extinction from naturally occurring events and/or reduced reproductive vigor due to the small number of remaining occurrences and individuals (HINHP Database 2001).

*Gouania vitifolia* (NCN)

*Gouania vitifolia*, a short-lived member of the buckthorn family

(Rhamnaceae), is a climbing shrub or woody vine with tendrils. The species is the only Hawaiian member of the genus with tendrils and toothed leaf margins (Wagner *et al.* 1999).

*Gouania vitifolia* flowers from March to May. Seed capsules develop in about six to eight weeks. Plants appear to live about 10 to 18 years in the wild. Little else is known about its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors (Service 1998b).

Historically, *Gouania vitifolia* was known from Maui, the island of Hawaii, and the northwestern portion of the Waianae Mountains in Makaleha, Keaau, and Waianae Kai Valleys on Oahu. Currently, this species is extant on Oahu and Hawaii. It is known from 2 occurrences on Oahu on State and private lands, located at Waianae Kai and Keaau Valley, totaling 44 individuals (GDSI 2001; HINHP Database 2001; Wagner *et al.* 1999).

*Gouania vitifolia* typically grows on the sides of ridges and gulches in dry to mesic forests at elevations of 39 to 978 m (128 to 3,208 ft). Associated native plant species include *Bidens* sp., *Carex meyenii*, *Chamaesyce* sp., *Diospyros sandwicensis*, *Dodonaea viscosa*, *Erythrina sandwicensis*, *Hedyotis* sp., *Hibiscus arnottianus*, *Melicope* sp., *Nestegis sandwicensis*, *Pipturus albidus*, *Psychotria* sp., or *Urera glabra* (Service 1998b).

The major threats to *Gouania vitifolia* are competition from the nonnative plant species *Aleurites moluccana*, *Buddleia asiatica*, *Cordyline fruticosa*, *Hyptis pectinata*, *Lantana camara*, *Leucaena leucocephala*, *Melinis minutiflora*, *Oplismenus hirtellus*, *Panicum* sp. (panic grass), *Passiflora edulis*, *Passiflora ligularis*, *Passiflora suberosa*, *Psidium cattleianum*, *Rubus argutus*, *Schinus terebinthifolius* and *Toona ciliata*; habitat destruction by feral pigs; and a threat of random extinction and reduced reproductive vigor due to the small number of extant individuals (HINHP Database 2001; 59 FR 32932).

*Hedyotis coriacea* (Kioele)

*Hedyotis coriacea*, a short-lived member of the coffee family (Rubiaceae), is a small shrub with leathery leaves that are generally elliptic to oblong in shape. This species is distinguished from others of the genus by its small, triangular calyx lobes that do not enlarge in fruit, by capsules that are longer than wide, and by flower buds that are square in cross-section (Wagner *et al.* 1999).

Little is known about the life history of *Hedyotis coriacea*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1997).

Historically, *Hedyotis coriacea* was known from the Waianae and Koolau Mountains on Oahu and the island of Hawaii. Currently, this species is extant on Maui and Hawaii. This species was last collected on Oahu in the 1800s (HINHP Database 2001).

*Hedyotis coriacea* is found on steep, rocky slopes in dry to mesic *Dodonaea viscosa* dominated shrublands or forests at elevations of 57 to 836 m (187 to 2,742 ft). Associated native species include *Alyxia oliviformis*, *Leptecophylla tameiameia*, or *Metrosideros polymorpha* (HINHP Database 2001; 57 FR 20772).

Nothing is known of the threats to *Hedyotis coriacea* on Oahu because the species was last collected there in the 1800s (Service 1997; 57 FR 20772).

*Hesperomannia arborescens* (NCN)

*Hesperomannia arborescens*, a long-lived member 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 fruit during March and June. Little else is known about its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors (Service 1998b; 59 FR 14482).

*Hesperomannia arborescens* was formerly known from Molokai, Lanai, and scattered occurrences throughout the Koolau Mountains, Oahu, from Koolauloa and Pupukea at its northern extreme to Konahuanui at the southern end. This species is now known from Oahu, Molokai, and Maui. On Oahu, there are 36 occurrences containing between 86 and 93 individuals on private, city, county, State, and Federal lands at a few disjunct locations upslope of Kahuku, Laie, and Malaekahana; along Poamoho Trail above Poamoho Stream; along Waikane-Schofield Trail near the ridge summit; and at Kipapa Gulch, on Halawa Ridge, Waimanalo-Niu divide, Kainawaanui, Kaukonahua Gulch, Maakua-Kaipapau