

*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. It was last seen on Lanai in 1940 (GDSI 2000; HINHP Database 2000; Service 1998b; 59 FR 14482).

*Hesperomannia arborescens* is found on slopes or ridges in lowland mesic or wet forest at elevations between 737 and 1,032 m (2,417 and 3,385 ft) and containing one or more of the following associated native plant species:

*Antidesma* spp., *Bobea* spp., *Cheirodendron* spp. (olapa), *Cibotium* spp. (hapuu), *Clermontia* spp., *Coprosma* spp., *Dicranopteris linearis*, *Freycinetia arborea*, *Isachne distichophylla* (ohe), *Machaerina* spp. (uki), *Melicope* spp., *Metrosideros polymorpha*, *Myrsine sandwicensis* (kolea), *Pipturus albidus*, *Psychotria* spp., *Sadleria* spp. (HINHP Database 2000; Service 1998b; 59 FR 14482; R. Hobdy, pers. comm., 2001).

The major threats to *Hesperomannia arborescens* on Lanai included habitat degradation by axis deer and mouflon sheep, and competition with nonnative plant species (HINHP Database 2000; Service 1998b; 59 FR 14482).

*Hibiscus brackenridgei* (mao hau hele)

*Hibiscus brackenridgei*, a short-lived perennial and a member of the mallow family (Malvaceae), is a sprawling to erect shrub or small tree. This species differs from other members of the genus in having the following combination of characteristics: Yellow petals, a calyx consisting of triangular lobes with raised veins and a single midrib, bracts attached below the calyx, and thin stipules (leaf bracts) that fall off, leaving an elliptical scar.

Two subspecies are currently recognized, *Hibiscus brackenridgei* ssp. *brackenridgei* and *H. brackenridgei* ssp. *mokuleianus* (Bates 1999).

*Hibiscus brackenridgei* is known to flower continuously from early February through late May, and intermittently at other times of year. Intermittent flowering may possibly be related to day length. Little else is known about the life history of this plant. Pollination biology, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999).

Historically, *Hibiscus brackenridgei* was known from the islands of Kauai, Oahu, Lanai, Maui, Molokai, and the island of Hawaii. *Hibiscus brackenridgei* was collected from an undocumented site on Kahoolawe, though the subspecies has never been determined. Currently, *H. brackenridgei* ssp. *mokuleianus* is only known from Oahu. *Hibiscus brackenridgei* ssp. *brackenridgei* is currently known from Lanai, Maui, and the island of Hawaii. On Lanai, there are two occurrences containing an unknown number of individuals on privately owned land; one occurrence is known from Keamuku Road, one from a fenced area on the dry plains of Kaena Point. Outplanted individuals that were initially planted in Kanepuu Preserve now appear to be reproducing naturally (GDSI 2000; HINHP Database 2000; Service 1999; Wesley Wong, Jr., *in litt.* 1998).

*Hibiscus brackenridgei* ssp. *brackenridgei* occurs in lowland dry to mesic forest and shrubland between 0 and 645 m (0 and 2,116 ft) in elevation. Associated plant species include *Dodonaea viscosa*, *Isachne distichophylla*, *Psydrax odorata*, or *Sida fallax* (HINHP Database 2000; Service 1999).

The primary threats to *Hibiscus brackenridgei* ssp. *brackenridgei* on Lanai are habitat degradation; possible predation by axis deer, mouflon sheep, and rats; competition with nonnative plant species; fire; and susceptibility to extinction caused by naturally occurring events or reduced reproductive vigor (Service 1999; 59 FR 56333; R. Hobdy *in litt.* 2002).

*Isodendron pyriforme* (wahine noho kula)

*Isodendron pyriforme*, a short-lived perennial of the violet family (Violaceae), is a small, branched shrub with elliptic to lance-shaped leaf blades. The papery-textured blade has moderately hairy veins. Below the petiole are oval, hairy stipules. The fruit is a three-lobed, oval capsule. *Isodendron pyriforme* is distinguished

from other species in the genus by its smaller, green-yellow flowers, and hairy stipules and leaf veins (Wagner *et al.*, 1999).

During periods of drought, this species will drop all but the newest leaves. After sufficient rains, the plants produce flowers with seeds ripening one to two months later. Little else is known about the life history of *Isodendron pyriforme*. Flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1996a; 59 FR 10305).

*Isodendron pyriforme* was historically found on six of the Hawaiian Islands: Niihau, Oahu, Molokai, Lanai, Maui, and the island of Hawaii. Currently it is found only on the island of Hawaii. It was last seen on Lanai in 1870 (GDSI 2000; HINHP Database 2000; Service 1996a; 59 FR 10305).

On Lanai, *Isodendron pyriforme* occurred in dry shrubland at elevations between 132 and 574 m (433 and 1,883 ft) with one or more of the following associated native plant species: *Dodonaea viscosa*, *Heteropogon contortus*, *Lipochaeta* or *Melanthera* spp. (nehe), or *Wikstroemia oahuensis* (akia) (Service 1996a; 59 FR 10305; J. Lau and R. Hobdy, pers. comms., 2001).

Nothing is known of the threats to *Isodendron pyriforme* on the island of Lanai because the species was last seen there in 1870.

*Mariscus fauriei* (NCN)

*Mariscus fauriei*, a member of the sedge family (Cyperaceae), is a short-lived perennial plant with somewhat enlarged underground stems and three-angled, single or grouped aerial stems 10 to 50 cm (4 to 20 in) tall. This species differs from others in the genus in Hawaii by its smaller size and its more narrow, flattened, and more spreading spikelets (flower clusters) (Koyama 1990; 59 FR 10305).

Little is known about the life history of *Mariscus fauriei*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (USFWS 1996a).

Historically, *Mariscus fauriei* was found on Molokai, Lanai, and the island of Hawaii. It currently occurs on Molokai and the island of Hawaii. It was last seen on Lanai in 1929 (GDSI 2000; HINHP Database 2000; Service 1996a; 59 FR 10305).

Nothing is known of the preferred habitat of or native plant species