

Syzygium cumini, and *Toona ciliata*; road construction; fire; and susceptibility to extinction caused by random environmental events or reduced reproductive vigor due to a limited number of occurrences and individuals. The primary threats to *Hibiscus brackenridgei* ssp. *molokaiana* are habitat degradation and possible predation by pigs and goats; competition with the nonnative plant species *Ageratum conyzoides*, *Leucaena leucocephala*, and *Panicum maximum*; fire; predation by the Chinese rose beetle; and susceptibility to extinction caused by random environmental events or reduced reproductive vigor due to the single occurrence and limited number of individuals (HINHP Database 2001; 59 FR 56333).

Isodendron laurifolium (Aupaka)

Isodendron laurifolium, a short-lived perennial member of the violet family (Violaceae), is a slender, erect shrub with few branches. The species is distinguished from others in the genus by its leathery, oblong-elliptic, narrowly elliptic, lance-shaped leaves (Wagner *et al.* 1999).

Little is known about the flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors of this species (Service 1999).

Historically, *Isodendron laurifolium* was known from Kauai and the Waianae and Koolau mountains of Oahu. Currently, this species is found on Kauai and Oahu. On Oahu, there are a total of between 22 and 23 individuals found in 5 occurrences on State, private, city, and county lands in Makaha in the Waianae Mountains, East Makaleha Valley, Waianae Kai, Kaawa Gulch, and Kaumokunui Gulch (GDSI 2001; HINHP Database 2001).

Isodendron laurifolium on Oahu is usually found between 90 and 959 m (295 and 3,146 ft) elevation on gulch slopes, in ravines, and on ridges in diverse mesic or dry forest dominated by *Metrosideros polymorpha*, *Eugenia reinwardtiana*, or *Diospyros sandwicensis* with one or more of the following associated native plant species: *Acacia koa*, *Alyxia oliviformis*, *Antidesma platyphyllum*, *Antidesma pulvinatum*, *Carex wahuensis*, *Charpentiera tomentosa* (papala), *Doodia* sp., *Dryopteris unidentata*, *Hedyotis terminalis*, *Hibiscus arnottianus*, *Nestegis sandwicensis*, *Pisonia* sp., *Pouteria sandwicensis*, *Psydrax odorata*, *Rauvolfia sandwicensis*, *Sapindus* sp. (soapberry), *Smilax melastomifolia* (hoi kuahiwi), or

Xylosma hawaiiense (HINHP Database 2001; Service 1999).

The primary threats to *Isodendron laurifolium* on Oahu are habitat degradation by feral goats and pigs; competition with the nonnative plant species *Aleurites moluccana*, *Cordyline fruticosa*, *Grevillea robusta*, *Psidium cattleianum*, *Schinus terebinthifolius*, and *Toona ciliata*; and a potential threat from military activities (HINHP Database 2001; 61 FR 53108).

Isodendron longifolium (Aupaka)

Isodendron longifolium, a member of the violet family (Violaceae), is a slender, erect shrub. The hairless, leathery, lance-shaped leaves distinguish this species from others in the genus (Wagner *et al.* 1999).

Little is known about its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors of this species (Service 1999).

Historically and currently, *Isodendron longifolium* is known from scattered locations on Kauai and the Waianae Mountains on Oahu. There is a total of 30 individual plants on Oahu in 7 occurrences on Federal, State, and private lands in Palikea Gulch, Kaawa Gulch, Makaua Gulch, and Kaukonahua Stream (EDA Database 2001; HINHP Database 2001).

Isodendron longifolium on Oahu is found on steep slopes and stream banks in mixed mesic or lowland wet *Metrosideros polymorpha*-*Dicranopteris linearis* forest, usually between 363 and 964 m (1,191 and 3,162 ft) elevation. Associated native plant species include *Acacia koa*, *Alyxia oliviformis*, *Antidesma* sp., *Bobea brevipes* (ahakea lau lii), *Carex* sp., *Cyanea* sp. (haha), *Cyrtandra* sp., *Hedyotis terminalis*, *Isachne pallens* (NCN), *Melicope* sp., *Peperomia* sp., *Perrottetia sandwicensis*, *Pittosporum* sp., *Pouteria sandwicensis*, *Psychotria* sp., *Psydrax odorata*, *Selaginella arbuscula*, or *Syzygium sandwicensis* (HINHP Database 2001; Service 1999).

The major threats to *Isodendron longifolium* on Oahu are habitat degradation or destruction by feral goats and pigs; competition with the nonnative plants *Ageratina riparia*, *Clidemia hirta*, *Oplismenus hirtellus*, *Paspalum conjugatum*, *Psidium cattleianum*, and *Thelypteris parasitica*; and a risk of extinction from naturally occurring events due to the small number of occurrences and individuals. The Palikea Gulch occurrence is also potentially threatened by fire (HINHP Database 2001; 61 FR 53108).

Isodendron pyrifolium (wahine noho kula)

Isodendron pyrifolium, a short-lived perennial member of the violet family (Violaceae), is a small, branched shrub. The species is distinguished from others in the genus by its smaller, green-yellow flowers and by its 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 its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors (Service 1996c).

Isodendron pyrifolium was known historically from Oahu's central Waianae mountains, Maui, Hawaii, Niihau, Molokai, and Lanai. Currently, this species is found only on the island of Hawaii. This species was last collected on Oahu in the late 1800s (HINHP Database 2001).

Isodendron pyrifolium was found on Oahu on bare rocky hills and in wooded ravines in dry shrublands at low elevations from 363 to 964 m (1,191 to 3,162 ft) (HINHP Database 2001; Wagner *et al.* 1999).

Nothing is known of the threats to *Isodendron pyrifolium* on Oahu because it was last collected there in the 1800s.

Lobelia niihauensis (NCN)

Lobelia niihauensis, a short-lived perennial member of the bellflower family (Campanulaceae), is a small, branched shrub. This species is distinguished from others in the genus by its leaves lacking or nearly lacking leaf stalks, the width of the leaf, and length of the magenta-colored flowers (56 FR 55770).

Lobelia niihauensis flowers in late summer and early fall. Fruits mature four to six weeks later. Plants are known to live as long as 20 years. Little else is known about its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors (Service 1998b).

Historically, *Lobelia niihauensis* was known from the Waianae Mountains of Oahu (Uluhulu Gulch to Nanakuli Valley), Kauai, and Niihau. It is now known to be extant only on Kauai and Oahu. On Oahu, this species remains on Ohikilolo Ridge, Kaimokuiki-Manuwai Ridge, Kamaileunu Ridge, Mt. Kaala, Makaha-Waianae Kai, Makua Military Reservation, Nanakuli, South Mohiaka Gulch, east of Puu Kalena, Kahanahaiki