

by its leathery, oblong-elliptic or narrowly elliptic, lance-shaped leaves (Wagner *et al.* 1999).

Little is known about the life history of *Isodendron laurifolium*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999).

Historically, *Isodendron laurifolium* is known from scattered locations on Kauai and Oahu. Currently, on Kauai, this species is found on State-owned land within the Alakai Wilderness Preserve, Kuia NAR, Na Pali-Kona Forest Reserve, and Puu Ka Pele Forest Reserve in the following locations: Paaiki, Poopooiki, Kawaiula Valley, Mahanaloa Valley, Makaha Valley, Haelele Valley, Kipalau Valley, Kawaiiki Valley and Kaluahaulu Ridge. There are a total of 13 occurrences with 142 to 154 individuals (GDSI 2000; HINHP Database 2000; Service 1999).

*Isodendron laurifolium* is usually found at elevations between 376 and 1,163 m (1,233 and 3,817 ft) in diverse mesic forest dominated by *Metrosideros polymorpha*, *Acacia koa* or *Diospyros* spp. Associated native species include *Alphitonia ponderosa*, *Antidesma* spp., *Claoxylon sandwicense*, *Dodonaea viscosa*, *Dubautia* spp., *Elaeocarpus bifidus*, *Euphorbia haeleleana*, *Hedyotis terminalis*, *Kokia kauaiensis*, *Melicope anisata*, *Melicope barbiger*, *Melicope ovata* (alani), *Melicope peduncularis*, *Myrsine lanaiensis*, *Nestegis sandwicensis*, *Pisonia* spp., *Pittosporum glabrum* (hoawa), *Pleomele aurea*, *Pouteria sandwicensis*, *Psychdrax odorata*, *Streblus pendulinus*, or *Xylosma hawaiiense* (HINHP Database 2000; K. Wood, pers. comm., 2001).

The primary threats to *Isodendron laurifolium* on Kauai are habitat degradation by feral goats, pigs and deer and competition with nonnative plants (HINHP Database 2000; Service 1999; 61 FR 53108).

#### *Isodendron longifolium* (aupaka)

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

Little is known about the life history of *Isodendron longifolium*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1999).

Historically and currently, *Isodendron longifolium* is known from scattered locations on Kauai and Oahu.

On Kauai, this species is reported from Limahuli Valley, Hanakapiai, Pohakea, Waioli Valley, the left branch of Kalalau Valley, Honopu Valley, Kawaiula Valley, and Haupu. There is a total of 15 occurrences on Kauai containing approximately 804 to 854 individual plants on State (Halelea Forest Reserve, Hono o Na Pali NAR, Kokee State Park, Na Pali Coast State Park, and Na Pali-Kona Forest Reserve) and privately owned lands (GDSI 2000; HINHP Database 2000; Lorence and Flynn 1991, 1993; Service 1999; 61 FR 53108).

*Isodendron longifolium* is found on steep slopes, gulches, or streambanks and some flats in certain undisturbed areas in mesic or wet *Metrosideros polymorpha*-*Acacia koa* forests, usually at elevations between 38 and 1,541 m (125 and 5,057 ft). Associated native plant species include *Antidesma* spp., *Bidens* spp., *Bobea brevipes*, *Cheirodendron* spp., *Cibotium* spp., *Cyanea hardyi*, *Cyrtandra* spp., *Dicranopteris linearis*, *Diospyros* spp., *Eugenia reinwardtiana*, *Hedyotis* spp., *Ilex anomala*, *Melicope* spp., *Nestegis sandwicensis*, *Peperomia* spp., *Perrottetia sandwicensis*, *Pipturus* spp., *Pittosporum* spp., *Pritchardia* spp., *Psychotria* spp., *Psychdrax odorata*, or *Syzygium sandwicensis* (HINHP Database 2000; Service 1999; 61 FR 53108; K. Wood, pers. comm., 2001).

The major threats to *Isodendron longifolium* on Kauai are habitat degradation or destruction by feral goats and pigs, and competition with various nonnative plants (HINHP Database 2000; Lorence and Flynn 1993; Service 1999; 61 FR 53108).

#### *Isodendron pyrifolium* (wahine noho kula)

*Isodendron pyrifolium*, a short-lived perennial of the violet family (Violaceae), is a small, branched shrub. It 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 drops all but the newest leaves. After sufficient rain, the plants produce flowers with seeds ripening one to two months later. No other life history information is currently known for this species (Service 1996).

*Isodendron pyrifolium* is known historically from Niihau, Oahu, Molokai, Lanai, Maui, and Hawaii. It is currently found only on the island of Hawaii. It was last seen on Niihau in the 1850s (GDSI 2000; HINHP Database 2000; Service 1996; 59 FR 10305; Marie Brueggemann, U.S. Fish and Wildlife Service, pers. comm., 2000).

Information on the physical and biological features that are essential to the conservation of *Isodendron pyrifolium* on the island of Niihau is not known.

Information on the threats of *Isodendron pyrifolium* on the island of Niihau is not known.

#### *Lobelia niihauensis* (NCN)

*Lobelia niihauensis*, a member of the bellflower family (Campanulaceae), is a small, branched shrub. This short-lived perennial species is distinguished from others in the genus by lacking or nearly lacking leaf stalks, the width of the leaf, and length of the magenta-colored flowers (Lammers 1999).

*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 the life history of *Lobelia niihauensis*. Its flowering cycles, pollination vectors, seed dispersal agents, longevity, specific environmental requirements, and limiting factors are unknown (Service 1998b).

Historically, *Lobelia niihauensis* was known from Oahu, Niihau, and Kauai. It is now known to be extant only on Kauai and Oahu. On Kauai, 13 occurrences containing 284 to 2,134 individuals are found on State (Hono o Na Pali NAR, Na Pali Coast State Park, Na Pali-Kona Forest Reserve, and Puu Ka Pele Forest Reserve) and privately owned lands in Limahuli Valley, Hoolulu Valley, Hanakoa Valley, Pohakua, the left and right branches of Kalalau Valley, Koaie Canyon, Kipalau Valley, Polihale Spring, Kaaweiki Valley, and Keopaweo (GDSI 2000; HINHP Database 2000; Service 1998b).

*Lobelia niihauensis* typically grows on exposed, mesic mixed shrubland or coastal dry cliffs at elevations between 11 and 887 m (37 and 2,911 ft). Associated native plant species include *Artemisia australis*, *Bidens sandwicensis*, *Chamaesyce celastroides*, *Charpentiera* spp., *Eragrostis variabilis*, *Hibiscus kokio* ssp. *saint-johnianus*, *Lipochaeta connata* var. *acris*, *Lythrum* spp. (pukamole), *Nototrichum* spp., *Plectranthus parviflorus*, *Schiedea apokremnos*, or *Wilkesia hobbeyi* (HINHP Database 2000; Lammers 1999; Service 1998b; K. Wood, pers. comm., 2001).

On Kauai, the major threats to this species are habitat degradation and browsing by feral goats and competition from nonnative plants (56 FR 55770).

#### *Lysimachia filifolia* (NCN)

*Lysimachia filifolia*, a member of the primrose family (Primulaceae), is a