Currently this species is known from 3 populations with a total of as many as 350 individuals on Niihau, Kauai, and Oahu (HHP 1994f1, 1994f5; HPCC 1993a). On privately owned Niihau, an unknown number of individuals is known from an area west of Mokouia Valley (HHP 1994f5). On Kauai, more than 300 individuals are known from State land in Nualolo Valley, while on Oahu an unspecified number of individuals is known from State land at Kaena Point (HHP 1994f1, HPCC 1993a). Cyperus trachysanthos is usually found in wet sites (mud flats, wet clay soil, or wet cliff seeps) on coastal cliffs or talus slopes between 3 and 160 m (10 and 525 ft) elevation (HHP 1994f1, 1994f5; HPCC 1993a; Koyama 1990). On Kauai, associates include Hibiscus tiliaceus (hau), Plantago lanceolata (narrowleaved plantain), and Pteris vittata (HPCC 1993a).

Cyperus trachysanthos is threatened by a risk of extinction from naturally occurring events due to the small number of populations and, on Oahu, competition with alien grasses and possibly Leucaena leucocephala (koa haole) (HHP 1994f1; J. Lau and C. Russell, pers. comms. 1994).

In 1970, Steven Montgomery and the late Wayne Gagné collected a specimen of an unidentified tree in Mahanaloa Valley on Kauai. The following year, Derral Herbst (1971) described it as *Euphorbia haeleeleana*, naming it for another valley where the plant grows. This species has been maintained in the most recent treatment of Hawaiian members of the genus (Wagner *et al.* 1990).

Euphorbia haeleeleana, a member of the spurge family (Euphorbiaceae), is a dioecious (female and male flowers on separate plants) tree 3 to 14 m (10 to 46 ft) tall. The alternate leaves are papery in texture, elliptic, and usually 10 to 15 cm (4 to 6 in.) long and 4 to 6 cm (2 in.) wide. Male trees bear many small male flowers within a cyathium (a compact inflorescence with small individual flowers). The female trees have cyathia with a single female flower surrounded by numerous abortive male flowers. The capsules (dry fruit that open at maturity) are round. This species is distinguished from others in the genus in that it is a tree, whereas most of the other species are herbs or shrubs, as well as by the large leaves with prominent veins (Wagner et al. 1990).

Euphorbia haeleeleana is known historically and currently from 15 populations and between 450 and 625 individuals from northwestern Kauai and the Waianae Mountains of Oahu (HHP 1994g1 to 1994g14, HPCC 1993b).

On Kauai, 11 populations are known from valley slopes and cliffs along Kauai's northwestern coast from Pohakuao to Haeleele Valley and Hipalau Valley within Waimea Canyon. All of the Kauai populations occur on State land, including Kuia NAR and the Na Pali Coast State Park (HHP 1994g1 to 1994g4, 1994g7 to 1994g9, 1994g11, 1994g12, 1994g14; HPCC 1993b). On Oahu, four populations are known from the northern Waianae Mountains. Three of these populations occur on State land leased by the DOD for the Makua Military Reservation, and the fourth population occurs on privately owned land (HHP 1994g5, 1994g6, 1994g10, 1994g13). Euphorbia haeleeleana is usually found in lowland mixed mesic or dry forest that is often dominated by óhiá, óhiá and koa, lama, or Aleurites moluccana (kukui). Typically found between 205 and 670 m (680 and 2,200 ft) elevation, a few populations have been found at elevations up to 870 m (2,860 ft). Associated plant taxa include áálií, Erythrina sandwicensis (wiliwili), Pleomele sp. (hala pepe), Reynoldsia sandwicensis (óhe), and Sapindus oahuensis (aulu) (HHP 1994g1 to 1994g14, HPCC 1993b).

Habitat degradation and/or destruction by wild and feral ungulates including black-tailed deer (*Odocoileus hemionus*), goats, and pigs; predation by rats; fire; potential military activities; and competition with alien plant taxa seriously threaten *Euphorbia haeleeleana* (HHP 1994g1, 1994g3 to 1994g7, 1994g10, 1994g12 to 1994g14; HPCC 1993b).

Isodendrion laurifolium was first described by Gray in 1852 based on a collection made on Oahu by members of the U.S. Exploring Expedition in 1840 (St. John 1952). Other published names considered synonymous with Isodendrion laurifolium are I. forbesii, I. lydgatei, I. subsessilifolium, and I. waianaeense (Wagner et al. 1990). The specific epithet refers to the resemblance in the leaves to those of the laurel tree.

Isodendrion laurifolium, a member of the violet family (Violaceae), is a slender, straight shrub, generally 1 to 2 m (3 to 6 ft) tall, with few branches. The leaves, 4 to 16 cm (2 to 6 in.) long and 1.5 to 5 cm (0.6 to 2 in.) wide, are somewhat leathery, oblong-elliptic, narrowly elliptic lance-shaped, or rarely elliptic. The fragrant flowers are perfect and borne singly along the stems. The five petals, which are clawed and somewhat unequal, are purple with greenish white edges externally, and dusty purple on the inner face of the lobe. The fruit is a green, lance-shaped capsule. This species is distinguished

from others in this endemic Hawaiian genus by the shape of its leaves (Wagner *et al.* 1990).

Historically Isodendrion laurifolium was known from scattered locations on Kauai and both the Waianae and Koolau mountains of Oahu (HHP 1994h1 to 1994h21). A total of 14 populations on 2 islands comprising approximately 190 to 210 individuals is currently known statewide. On Kauai, approximately 130 to 140 individuals are known from 8 populations in the following locations— Paaiki, Kawaiula, Haeleele, Makaha, Poopooiki, and Kuia valleys, and the Koaie branch of Waimea Canyon. All Kauai populations occur on Stateowned land, with several in Kuia NAR (HHP 1994h6, 1994h9 to 1994h13, 1994h15, 1994h21). On Oahu, approximately 60 to 70 individuals of this species are known from 6 populations—Makaha in the Waianae Mountains, on City and County of Honolulu land; East Makaleha Valley, Waianae Kai, Kaawa Gulch, and Kaumokunui Gulch in the Waianae Mountains, on State land, including Mt. Kaala NAR; and south Kaukonahua Gulch within the federally owned Schofield Barracks Military Reservation in the Koolau Mountains (HHP 1994h1, 1994h2, 1994h16, 1994h17, 1994h18, 1994h20). Isodendrion laurifolium is usually found between 490 and 820 m (1,620 and 2,700 ft) elevation in diverse mesic forest, or rarely wet forest, dominated by óhiá or koa-óhiá, or óhiálama with hame, maua, Hedyotis terminalis (manono), Pisonia sp. (papala kepau), and Pouteria sp. (álaá) (HHP 1994h1, 1994h2, 1994h6, 1994h9 to 1994h13, 1994h15 to 1994h18, 1994h20).

The primary threats to *Isodendrion laurifolium* are habitat degradation by ungulates (black-tailed deer, goats, and pigs), competition with alien plant taxa, and a potential threat from military activities (HHP 1994h2, 1994h6, 1994h9, 1994h11, 1994h15 to 1994h18, 1994h20, 1994h21).

Isodendrion longifolium was first collected in 1840 in the "Kaala" [Waianae] Mountains of Oahu by members of the U.S. Exploring Expedition. Gray later named this species for its long leaves (St. John 1952). Isodendrion christensenii and Isodendrion maculatum (St. John 1952, 1978b) are considered synonymous with Isodendrion longifolium (Wagner et al. 1990).

Isodendrion longifolium, a member of the violet family, is a slender, straight shrub generally 0.6 to 2 m (2 to 7 ft) tall. The hairless, somewhat leathery leaves are lance-shaped, 10 to 30 cm (4 to 12 in.) long, and 3.4 to 6.5 cm (1 to 3 in.)