

*Carex meyenii*, *Coprosma* spp., *Cryptocarya mannii*, *Dianella sandwicensis*, *Dicranopteris linearis*, *Dubautia* spp., *Hedyotis* spp., *Ilex anomala*, *Melicope* spp., *Poa* spp., *Pouteria sandwicensis*, *Psychotria* spp., *Syzygium sandwicensis*, or *Xylosma hawaiiense* (HINHP Database 2000; Service 1995; 59 FR 9304; K. Wood, pers. comm., 2001).

The major threats to populations of *Solanum sandwicense* on Kauai are habitat degradation by feral pigs, and competition with nonnative plant species (*Hedychium gardnerianum* (kahili ginger), *Lonicera japonica* *Passiflora tarminiana*, *Psidium cattleianum*, or *Rubus argutus*); fire; human disturbance and development; and a risk of extinction from naturally occurring events (e.g., landslides or hurricanes) and/or reduced reproductive vigor due to the small number of existing individuals (HINHP Database 2000; Service 1995; 59 FR 9304).

#### *Spermolepis hawaiiensis* (NCN)

*Spermolepis hawaiiensis*, a member of the parsley family (Apiaceae), is a slender annual herb with few branches. Its leaves are dissected into narrow, lance-shaped divisions. *Spermolepis hawaiiensis* is the only member of the genus native to Hawaii. It is distinguished from other native members of the family by being a non-succulent annual with an umbrella-shaped inflorescence (Constance and Affolter 1999).

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

Historically, *Spermolepis hawaiiensis* was known from Kauai, Oahu, Lanai, and the island of Hawaii. Currently, it is found on Kauai, Oahu, Molokai, Lanai, West Maui, and Hawaii. On Kauai, this species is known from State-owned land at Koaie Canyon, the rim of Waimea Canyon, and Kapahili Gulch within the Na Pali-Kona Forest Reserve. There are two known occurrences with five individuals total on Kauai (GDSI 2000; HINHP Database 2000; Service 1999; 59 FR 56333).

*Spermolepis hawaiiensis* is known from *Metrosideros polymorpha* forest and *Dodonaea viscosa* lowland dry shrubland, at elevations between 56 and 725 m (184 and 2,377 ft). Associated native plant species include *Bidens sandwicensis*, *Doryopteris* spp., *Eragrostis variabilis*, *Erythrina sandwicensis*, *Lipochaeta* spp., *Schiedea spargulina*, or *Sida fallax* (HINHP Database 2000; Service 1999; K. Wood, pers. comm., 2001).

The primary threats to *Spermolepis hawaiiensis* on Kauai are habitat degradation by feral goats; competition with various nonnative plants; and erosion, landslides, and rock slides due to natural weathering, which result in the death of individual plants as well as habitat destruction (Service 1999; 59 FR 56333).

#### *Vigna o-wahuensis* (NCN)

*Vigna o-wahuensis*, a member of the pea family (Fabaceae), is a slender twining short-lived perennial herb with fuzzy stems. Each leaf is made up of three leaflets which vary in shape from round to linear. This species differs from others in the genus by its thin yellowish petals, sparsely hairy calyx, and thin pods, which may or may not be slightly inflated (Geesink *et al.* 1999).

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

Historically, *Vigna o-wahuensis* was known from Niihau, Oahu, Molokai, Lanai, Kahoolawe, Maui, and the island of Hawaii. Currently, *Vigna o-wahuensis* is known from Molokai, Lanai, Kahoolawe, Maui, and the island of Hawaii. It was last observed on Niihau in 1912 (GDSI 2000; HINHP Database 2000; 59 FR 56333).

Nothing is known of the preferred habitat of or native plant species associated with *Vigna o-wahuensis* on the island of Niihau.

Nothing is known of the threats to *Vigna o-wahuensis* on the island of Niihau.

#### *Zanthoxylum hawaiiense* (ae)

*Zanthoxylum hawaiiense* is a medium-sized tree with pale to dark

gray bark and lemon-scented leaves in the rue family (Rutaceae). A long-lived perennial tree, *Z. hawaiiense* is distinguished from other Hawaiian members of the genus by several characteristics: three leaflets all of similar size, one joint on the lateral leaf stalk, and sickle-shaped fruits with a rounded tip (Stone *et al.* 1999).

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

Historically, *Zanthoxylum hawaiiense* was known from five islands: Kauai, Molokai, Lanai, Maui, and Hawaii. Currently, *Zanthoxylum hawaiiense* is found on Kauai, Molokai, Maui, and Hawaii. On Kauai, this species is only known from three occurrences with three individuals on State-owned land in Kawaiiki and Kipalau Valleys within the Alakai Wilderness Preserve and Na Pali-Kona Forest Reserve (GDSI 2000; HINHP Database 2000).

*Zanthoxylum hawaiiense* is reported from lowland dry or mesic forests, at elevations between 332 and 1,151 m (1,089 and 3,774 ft). This species is typically found in forests dominated by *Metrosideros polymorpha* or *Diospyros sandwicensis* with associated native plant species including *Alectryon macrococcus*, *Antidesma platyphyllum*, *Charpentiera elliptica*, *Dodonaea viscosa*, *Melicope* spp., *Myrsine lanaiensis*, *Pisonia* spp., *Pleomele aurea*, *Streblus pendulinus*, or *Zanthoxylum dipetalum* (HINHP Database 2000; K. Wood, pers. comm., 2001).

The threats to *Zanthoxylum hawaiiense* on Kauai include competition with the nonnative plant species *Lantana camara* and *Melia azedarach*; fire; human disturbance; and risk of extinction from naturally occurring events, such as landslides or hurricanes, and/or reduced reproductive vigor due to the small number of existing individuals (Service 1996; 59 FR 10305).

A summary of occurrences and landownership for the 95 plant species reported from the islands of Kauai and Niihau is given in Table 2.

TABLE 2.—SUMMARY OF EXISTING OCCURRENCES ON KAUAI AND NIIHAU, AND LANDOWNERSHIP FOR 95 SPECIES REPORTED FROM KAUAI

Species	Number of current occurrences	Landownership		
		Federal	State	Private
<i>Acaena exigua</i> .....	0	.....	.....	.....