



D. Bender, NTBG

Plants

Schiedea kauaiensis

SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

Hawai'i Natural Heritage Ranking- Critically

Imperiled (G1)

Endemism – Kaua'i

Critical Habitat – Designated

SPECIES INFORMATION: *Schiedea kauaiensis*, a member of the pink family (Caryophyllaceae), Erect to ascending subshrubs 3–10 dm tall. Leaf blades 7.5–15 cm long, 1.8–4.1 cm wide, oblong-elliptic, light green or yellowish green. Inflorescence terminal, with 27–70 flowers, 20–48 cm long, diffuse, flowers widely spaced, branches spreading, progressively more densely puberulent to apex; pedicels (7–) 10–23 mm long, elongating slightly in fruit, slightly asymmetrically flattened. Flowers hermaphroditic. Sepals 4.3–5.1 mm long. Styles 3. Capsules 3.1–3.5 mm long, ovoid. The name *S. nuttallii* var. *pauciflora* has been associated with *S. kauaiensis*, however, recent study has shown this entity is the newly described *S. permlanii*. St. John discerned two elements among material of collected in the 1970's, which he described as *S. kauaiensis* and *S. wichmanii*, although the types show overlapping differences in the size of the leaves, inflorescence dimensions, pedicel length, and sepal length. During recent studies this taxon was distinguishable from *S. nuttallii* by a considerable number of characteristics, including the larger leaves and fewer, widely spaced, larger flowers borne in a puberulent inflorescence, has a distinct geographical range, and does not share a unique synapomorphy with *S. nuttallii* in the phylogenetic analysis.

DISTRIBUTION: Historically, *Schiedea kauaiensis* was known from the northwestern side of Kaua'i, from Papa'a to Mahanaloa. The range of the species has now been extended to include Kalalau and Limahuli Valleys farther north. Both populations occur on State land—the Mahanaloa Valley population within Kuia NAR and the Kalalau Valley population within Na Pali Coast State Park.

ABUNDANCE: It was thought to be extinct until the 3 currently known populations were found, consisting of approximately 10 - 20 naturally occurring plants. Currently known from northwestern Kaua'i, in the Valleys of Limahuli, Mahanaloa, and Kalalau.

LOCATION AND CONDITION OF KEY HABITAT: Two of the known populations occur on State land—the Mahanaloa Valley population within Kuia NAR and the Kalalau Valley population within Na Pali Coast State Park. The third is located in Limahuli Valley, which is owned and managed as a nature preserve by the National

Tropical Botanical Garden. *Schiedea kauaiensis* typically grows in diverse mesic forest on steep slopes. Associated plant taxa include *Psychotria hexandra* (kopiko), *Exocarpus luteolus* (heau), lama, the federally threatened *Peucedanum sandwicense* (makou), and *Euphorbia haeleeleana* ('akoko). In Limahuli Valley, it grows alongside *Pritchardia limahuliensis*, *Lobelia niihauensis*, *Artemesia australis*, and *Bidens forbesii*. Alien species that now threaten this habitat include *Schefflera actinophylla*, *Clidemia hirta*, and *Rubus rosifolius*.

THREATS:

- Habitat degradation and/or destruction by feral pigs, goats, and deer;
- Competition from several alien plant taxa;
- Landslides;
- Risk of extinction from naturally occurring events;
- Reduced reproductive vigor due to the low number of individuals in only three known populations.

CONSERVATION ACTIONS: The goals of conservation actions are not only to protect current populations, but also to establish new populations to reduce the risk of extinction. The National Tropical Botanical Garden has grown and outplanted about 30 *S. kauaiensis* into restoration sites in Limahuli Preserve. Clones of 12 wild collected plants from Limahuli are now in cultivation. A USFWS recovery plan details specific tasks needed to recover this species. In addition to common statewide and island conservation actions, specific actions include:

- Survey historic range for surviving populations;
- Establish secure *ex-situ* stocks with complete representation of remaining individuals;
- Augment wild population and establish new populations in safe harbors.

MONITORING:

- Survey for populations and distribution in known and likely habitats;
- Monitor plants for insect damage and plant diseases.

RESEARCH PRIORITIES:

- Develop proper horticultural protocols and pest management;
- Survey *ex-situ* holdings and conduct molecular fingerprinting;
- Conduct pollination biology and seed dispersal studies;
- Map genetic diversity in the surviving populations to guide future re-introduction and augmentation efforts.

References:

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