



## **Plants**

### **Pa'iniu**

*Astelia waialealae*

#### **SPECIES STATUS:**

Federally Listed as Candidate

Genetic Safety Net Species

IUCN Red List Ranking – Critically Endangered (CR D)

Hawai'i Natural Heritage Ranking- Critically Imperiled (G1)

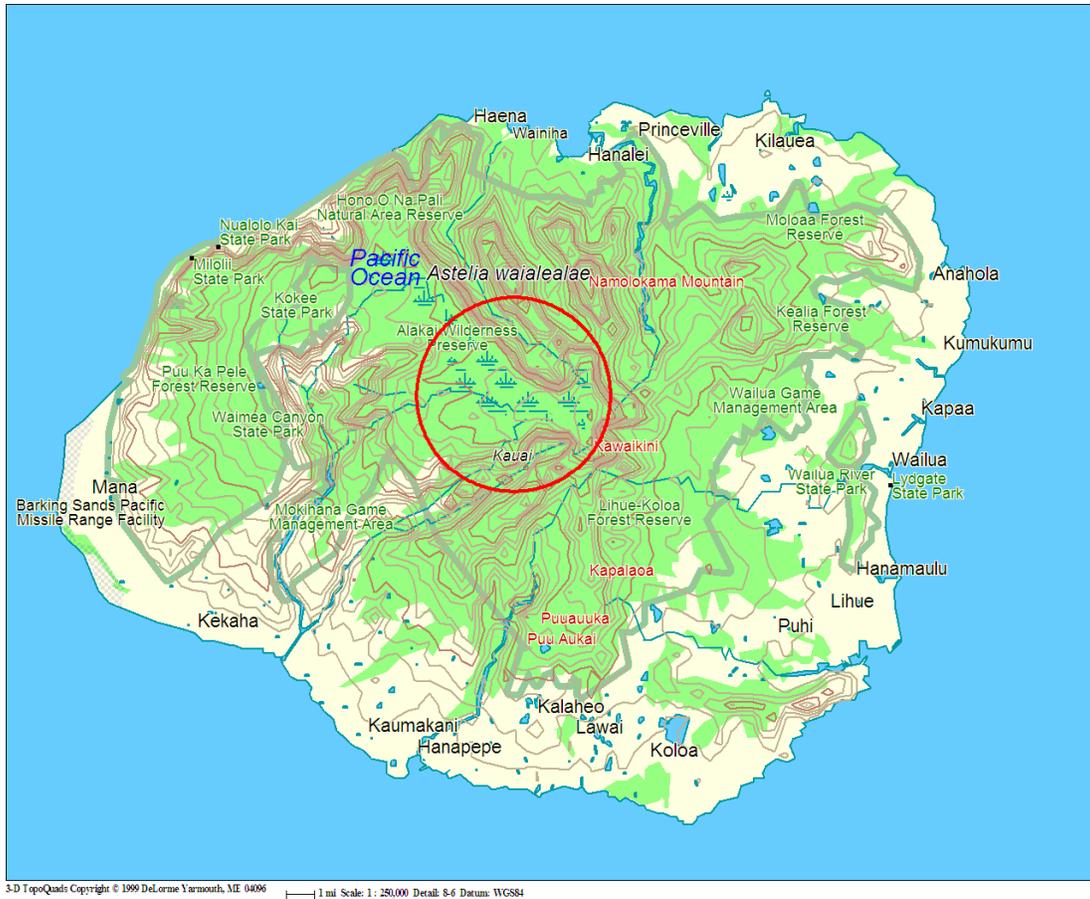
Endemism – Kaua'i

**SPECIES INFORMATION:** *Astelia waialealae* is a terrestrial rhizomatous perennial herb in the astelia family (Asteliaceae). Plants are short, from a bulbous caudex. Leaves silvery, 12-20 cm long, and wooly pubescent. Scapes 10-20 cm long. Racemes 3-7 cm long. Tepals dark purple and densely pubescent.

**DISTRIBUTION:** *Astelia waialealae* is endemic to the montane bogs on the central plateau of the island of Kaua'i. Found only within the Alaka'i Swamp, Sincock Bog, and Wai'ale'ale Summit areas.

**ABUNDANCE:** Three subpopulations are known; with a total population of probably less than ten mature individuals in the Alaka'i Swamp. The populations have shown a drastic decline over the past ten years.

**LOCATION AND CONDITION OF KEY HABITAT:** Montane bogs located within wet forests in the cloud zone on the central plateau of the island of Kaua'i. All three of the current occurrences are in Alaka'i Swamp Wilderness Preserve.



### THREATS:

- In the past, most of the bogs have been heavily damaged by feral pigs;
- Competition with alien plants for light, space, and water;
- Fire;
- Small number of remaining individuals.

**CONSERVATION ACTIONS:** The goals of conservation actions are not only to protect current populations, but also to establish further populations to reduce the risk of extinction. In addition to common statewide and island conservation actions, specific actions include:

- All remaining individuals are within small fenced, weeded, and monitored areas;
- Augment wild populations and establish new populations in safe harbors;
- Establish secure *ex-situ* stocks with complete representation of remaining individuals.

### MONITORING:

- Survey for populations and distribution in known and likely habitats;
- Monitor fenced enclosure for feral pig ingress and plants for damage;
- Monitor plants for insect damage and plant diseases.

**RESEARCH PRIORITIES:**

- Develop proper horticultural and pest management protocols;
- 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:**

International Union for Conservation of Nature and Natural Resources, 2004, IUCN Red List of Threatened Species: Data Base Search, <http://www.redlist.org/search/search-basic.html>.

Hawai'i Natural Heritage Program, 2005. Hawaii Natural Heritage Program Search, <http://www.hinhp.org/printpage.asp?spp=PDMAL0H0A0>.

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