



Plants

Pu'uka'a

Cyperus trachysanthos

SPECIES STATUS:

Federally Listed as Endangered

Genetic Safety Net Species

Hawai'i Natural Heritage Ranking – Critically Imperiled

Endemism – Ni'ihau, Kaua'i, O'ahu, Moloka'i, Lana'i

Critical Habitat - Designated

SPECIES INFORMATION: *Cyperus trachysanthos*, a member of the sedge family (Cyperaceae), is a perennial grass-like plant with a short rhizome (underground stem). The culms (aerial stems) are densely tufted, obtusely triangular, 20 to 45 cm (8 to 18 in.) tall, sticky, and leafy at the base. The linear leaf blades are green, covered with a waxy coating, and somewhat leathery. The leaf sheath is yellowish brown and partitioned with nodes. The flower clusters are 5 to 9 cm (2 to 3.5 in.) long and 6 to 12 cm (2 to 5 in.) wide. Each flower head contains 10 to 30 pale yellowish brown spikelets, each of which contains 8 to 20 flowers. The glumes (small pair of bracts at the base of each spikelet) are broadly egg-shaped. The fruit is a dark brown, egg-shaped achene. This species is distinguished from others in the genus by the short rhizome, the leaf sheath with partitions at the nodes, the shape of the glumes, and the length of the culms.

DISTRIBUTION: Historically, *Cyperus trachysanthos* was known from Ni'ihau, Kaua'i, scattered locations on O'ahu, Moloka'i, and Lana'i.

ABUNDANCE: Currently this species is known from three populations on Ni'ihau, Kaua'i, and O'ahu with an estimated total of less than 350 individuals. On privately owned Ni'ihau, an unknown number of individuals occur in an area west of Mokouia Valley. On Kaua'i, more than 300 individuals are known from State land in Nualolo Valley, while on O'ahu an unspecified number of individuals is known from State land at Kaena Point.

LOCATION AND CONDITION OF KEY HABITAT: *C. 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. On Kaua'i, associates include *Hibiscus tiliaceus* (hau), *Plantago lanceolata* (narrowleaved plantain), and *Pteris vittata*.

THREATS:

- The risk of extinction from naturally occurring events due to the small number of populations;
- Browsing by feral goats;
- Competition with alien plant species.

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 USFWS has developed a recovery plan that 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:

- Continue surveys of population 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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