

U.S. FISH AND WILDLIFE SERVICE - SPOTLIGHT SPECIES ACTION PLAN

Common Name: Haha

Scientific Name: *Cyanea hamatiflora* subsp. *carlsonii*

Lead Region: Region 1

Lead Field Office: Pacific Islands Fish and Wildlife Office

Species Information:

Status: Endangered

Recovery Priority Number or Listing Priority Number: 6

Recovery Plan or Candidate Assessment Form: U.S. Fish and Wildlife Service. 1996. Recovery plan for the Big Island plant cluster. U.S. Fish and Wildlife Service, Portland, Oregon. 202+ pages.

Most Recent 5-year Review: July 21, 2009

Other: U.S. Fish and Wildlife Service. 2003. Endangered and threatened wildlife and plants; final designation and nondesignation of critical habitat for 46 plant species from the island of Hawaii, HI; final rule. Federal Register 68(127):39624-39761.

Threats: The primary threats are habitat degradation, browsing, and trampling by introduced ungulates (Factors A and B); competition with invasive introduced plant species (Factor E); and predation of fruits by rodents (Factor B).

Target: The target for this species is to improve the species' status from declining to stable.

Measure: Increase by 1,000, the total population size; increase the total number of reintroduced populations.

Actions:

1. Seedlings for reintroduction will be generated through a managed breeding program following strict genetic protocols. The parties responsible for this action are the Plant Extinction Prevention Program and the University of Hawaii Center for Conservation and Research Training's Volcano Rare Plant Facility. This will address recovery action #13, maintain genetic stock *ex situ*, #32, propagate material for augmentation, and #4, create new populations. This action will partially address all listing factors and threats impacting this species and will continue over all five years.
2. Reintroduce the seedlings into protected sites. The parties responsible for coordinating this action are the Plant Extinction Prevention Program, and Volcano Rare Plant Facility, working collaboratively with the Hawaii Division of Forestry and Wildlife and potentially private landowners. This will begin addressing recovery actions #41, select new population sites and obtain long-term protection of sites; #43, transplant selected material; and #44, maintain, monitor and evaluate new populations. These actions will partially

address all listing factors and threats impacting this species and will continue over all five years.

3. Control invasive introduced plant species within the protected sites. The party responsible for coordinating this action is the Plant Extinction Prevention, working collaboratively with Hawaii Division of Forestry and Wildlife and potentially private landowners. This will partially address recovery action #122, manage threats. This action will partially address invasive introduced plant species impacting this species (Factor E) and will continue over all five years.

Estimated costs of the actions: Estimated costs of the actions are approximately \$17,000 per year for the five-year period, of which \$10,000 per year would be provided by the USFWS.

Role of other agencies: The Plant Extinction Prevention Program, partially funded by USFWS, conducts the ongoing on-the-ground recovery actions for this species, and oversees the implementation of any *ex situ* actions. The cooperation of the University of Hawaii Center for Conservation and Research Training's Volcano Rare Plant Facility is also critical for propagating material to the size that it can be reintroduced into the wild. The continued cooperation of the landowners, including the Hawaii Division of Forestry and Wildlife, allowing *in situ* the management and reintroduction, is also critical for the preservation of the species.

Role of other ESA programs: Section 6 grants contribute funds to implement the actions necessary for the success of the species, including funding to the Volcano Rare Plant Facility.

Role of other FWS programs: The Plant Extinction Prevention Program is working with Hakalau National Wildlife Refuge (NWR) to reintroduce *Cyanea hamatiflora* subsp. *carlsonii* into the Kona Forest Unit of Hakalau NWR, but it is unclear if the appropriate approval and permits can be acquired to allow this to occur within the next 4 years.

Additional funding analysis: The actions described above cannot be undertaken nor the stated target reached without the estimated funding from the Service and outside sources described above. If additional funding was approved, additional sites for reintroduction would be identified and protected (with fencing), and new reintroduced populations would be established, thereby increasing the total numbers of *Cyanea hamatiflora* subsp. *carlsonii* individuals and populations. The additional actions would be implemented by the Volcano Rare Plant Facility and the Plant Extinction Prevention Program, working collaboratively with the Hawaii Division of Forestry and Wildlife and potentially private landowners. The estimated costs of fencing additional reintroduction sites and establishing additional reintroduced populations would be about \$50,000 to \$100,000 per year.