

## 5-YEAR REVIEW

Short Form Summary

**Species Reviewed:** *Cyrtandra giffardii* (ha‘iwale)

**Current Classification:** Endangered

### **Federal Register Notice announcing initiation of this review:**

[USFWS] U.S. Fish and Wildlife Service. 2023. Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status reviews for 133 Species in Oregon, Washington, Idaho, Montana, California, Hawaii, Guam, and the Northern Mariana Islands. Federal Register 88(56): 17611–17614, March 23, 2023.

### **Lead Region/Field Office:**

Region 1/Pacific Islands Fish and Wildlife Office (PIFWO), Honolulu, Hawai‘i

### **Name of Reviewer:**

Lauren Weisenberger, Plant Recovery Coordinator, PIFWO

Megan Laut, Recovery Program Manager, PIFWO

### **Methodology used to complete this 5-year review:**

This review was conducted by staff of the Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (Service) beginning in October 2023. The review was based on a review of current, available information since the last 5-year review for *Cyrtandra giffardii* (USFWS 2020). The evaluation by Lauren Weisenberger, Plant Recovery Coordinator, was reviewed by Megan Laut, Recovery Program Manager.

### **Background:**

For information regarding the species’ listing history and other facts, please refer to the Fish and Wildlife Service’s Environmental Conservation On-line System (ECOS) database for threatened and endangered species (<https://ecos.fws.gov/ecp/species/1460>).

### **Review Analysis:**

Please refer to the previous 5-year reviews for *Cyrtandra giffardii* published in the Federal Register on August 28, 2012 (available at [https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public\\_docs/species\\_nonpublish/1988.pdf](https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/1988.pdf)), and on September 30, 2020 (available at [https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public\\_docs/species\\_nonpublish/3163.pdf](https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/3163.pdf)), for a complete review of the species’ status, threats, management efforts, and references cited. We are not aware of any significant new information regarding the species’ biological status since listing to warrant a change in the Federal listing status of *C. giffardii*.

This short-lived perennial shrub in the Gesneriaceae (African violet) family is Endangered and found on the island of Hawai‘i. The status and trends for *Cyrtandra giffardii* are provided in the tables below.

#### New Status Information:

- There has been no monitoring of wild populations since the previous 5-year review. At least one individual persists at the ‘Ōla‘a population, as a single vegetative cutting was collected in 2024. The population at Laupāhoehoe was last visited in 2018, where one individual was observed but population size was not determined (HFNWR 2024; HVNP 2024; PEPP 2024).
- Currently, there are at least two individuals, one from ‘Ōla‘a and one from Laupāhoehoe represented in *ex situ* storage and propagation collections, including seeds in seed banks and plants in a living collection (HVNP 2024; Lyon Arboretum 2024; Volcano Rare Plant Facility [VRPF] 2024).

#### New Threats:

- None

#### New Management Actions:

- Monitoring and surveys—PEPP and staff at HVNP visited the ‘Ōla‘a population (HVNP 2024).
- Collection and propagation for genetic storage and reintroduction—
  - Lyon Arboretum Seed Conservation Laboratory reports 478 seeds in storage representing one founder from Laupāhoehoe NAR (Lyon Arboretum 2024).
  - Volcano Rare Plant Facility (VRPF) reports 2 plants in a living collection representing one wild plant from Laupāhoehoe (VRPF 2024).
  - HVNP reports at least one wild plant represented by 3 plants in their nursery living collection, and over 14,000 seeds in the seed bank (HVNP 2024).
- Translocation—45 individuals were translocated into ‘Ōla‘a in 2024 (HVNP 2024).

**Table 1. Status and trends of *Cyrtandra giffardii* from listing through current 5-year review. Table 1a shows progress according to Interim Stabilization Goals; Table 1b shows progress according to Preventing Extinction Goals.**

**Table 1a.**

<b>Date</b>	<b>No. wild individuals</b>	<b>No. outplanted</b>	<b>Stabilization Criteria identified in Recovery Plan</b>	<b>Preventing Extinction Targets Completed?</b>
<b>1994 (listing)</b>	14–20	0	All threats managed in all 3 populations	Partially
			Complete genetic storage	No
			3 populations with 50 mature individuals each	No
<b>2012 (5-year review)</b>	<100	77	All threats managed in all 3 populations	Partially
			Complete genetic storage	Partially
			3 populations with 50 mature individuals each	Partially

**Table 1b.**

<b>Date</b>	<b>No. wild individuals</b>	<b>No. outplanted</b>	<b>*Preventing Extinction Criteria identified by HPPRCC</b>	<b>Preventing Extinction Targets Completed?</b>
<b>2020 (5-year review)</b>	Unknown, ca <100	ca 164 planted	All threats managed in all 3 populations	Partially
			Complete genetic storage	Partially
			Reproduction (i.e. viable seeds, seedlings) at all 3 populations	Yes (viable seeds)
			3 populations with 50 mature individuals each	No
<b>2025 (5-year review)</b>	Unknown	45	All threats managed in all 3 populations	Partially
			Complete genetic storage	No
			Natural reproduction at all 3 populations	No
			3 populations with 50 mature individuals each	No

\*The Preventing Extinction Stage was established in 2011. Prior to 2011, the Interim Stabilization Stage was the first stage towards recovery (now it is the second stage after Preventing Extinction).

**Table 2. Threats to *Cyrtandra giffardii* and ongoing conservation efforts.**

<b>Threat</b>	<b>Listing factor</b>	<b>Current Status</b>	<b>Conservation/ Management Efforts</b>
Ungulate destruction and degradation of habitat	A	Ongoing	Partial, exclosures at Laupāhoehoe, ‘Ōla‘a, and Hakalau NWR
Established ecosystem altering invasive plant species degradation of habitat	A	Ongoing	Partial, nonnative plant control around exclosures
Climate change and degradation of habitat	A	Ongoing	None
Human Disturbance	E	Ongoing	None
Hybridization	E	Ongoing	Partial, reintroduction of individuals to areas without other <i>Cyrtandra</i> species
Loss of vigor due to low numbers	E	Ongoing	Partial, collection, propagation, and reintroduction

**Synthesis:**

Currently there are an unknown number of individuals in two locations on Hawai‘i island. Some individuals are provided protection from ungulates by fencing. Collection, propagation and translocations are ongoing.

Stabilizing (interim) targets, and Downlisting and Delisting Criteria were provided in the Recovery Plan for Big Island Plant Cluster (USFWS 1996), and have been updated according to the draft revised recovery objective guidelines developed by the Hawai‘i and Pacific Plants Recovery Coordinating Committee (HPPRCC 2011). The HPPRCC identifies an additional initial objective, the Preventing Extinction Stage, in addition to the Interim Stabilization, Delisting, and Downlisting objectives. Life history traits such as breeding system, population size fluctuation or decline, and reproduction type (sexual or vegetative), have been included in the calculation of goals for the number of populations and reproducing individuals for each stage. The goals for each stage remain grouped by life span defined as annual, short-lived perennial (fewer than 10 years), or long-lived perennial.

*Cyrtandra giffardii* is a short-lived perennial shrub. To prevent extinction, which is the first milestone in recovering the species, the taxon must be managed to control threats (e.g., fenced) and have 50 individuals (or the total number of individuals if fewer than 50 exist) from each of three populations represented in *ex situ* (secured off-site, such as a

nursery or seed bank) collections that are well managed. In addition, a minimum of a total of three populations should be documented on the island of Hawai‘i, where they now occur or occurred historically and each of these populations must be naturally reproducing (i.e., viable seeds, seedlings) with a minimum of 50 mature, reproducing individuals per population.

The preventing extinction goals for this species have not been met (Table 1). There are no known populations with 50 reproducing individuals, all threats are not being managed, and genetic storage is not complete (Table 2). Therefore, *Cyrtandra giffardii* meets the definition of Endangered as it is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range.

### **Recommendations for Future Actions:**

No significant new information regarding the species' biological status has been reported since the last 5-year review in 2020. Thus, the following recommendations for future actions are updated or reiterated for the 5-year review for 2025.

- Surveys and monitoring—
  - Initiate a monitoring schedule for known populations of *Cyrtandra giffardii* to assess resiliency and make collections.
  - Continue surveys for populations of *C. giffardii* in areas of potentially suitable habitat.
  - Determine suitable locations for reintroductions to minimize impacts from hybridization with congeners.
- Ungulate monitoring and control—Monitor and maintain fenced exclosures and construct new fences to protect individuals from the negative impacts of browsing by ungulates.
- Invasive nonnative plant monitoring and control—Control established ecosystem-altering nonnative invasive plant species, and those that compete with *C. giffardii*.
- Climate change adaptation strategy—Research suitability of habitat for viability of species, including where to conduct translocations in the future due to the impacts of climate change, and loss of vigor due to low numbers of wild plants.
- Captive propagation for genetic storage and reintroduction—Continue to maintain collection and propagation efforts for maintenance of genetic stock and for reintroduction.
- Build resiliency, redundancy, and representation—Increase species' viability through habitat restoration, threat control, and reintroduction and translocation into suitable habitat that is being managed for known threats to this species to reduce impacts of hybridization and limited numbers.
- Research— Investigate putative hybrids and develop strategy for minimizing risk of hybridization with congeners.
- Alliance and partnership development—Continue to work with partners and other land managers in planning and implementation of ecosystem-level restoration and management to benefit this species.

## References:

- [HFNWR] Hakalau Forest National Wildlife Refuge. 2024. Annual Report of Endangered Plant Propagation and Outplanting at the Big Island National Wildlife Refuge Complex of the Hakalau Forest Unit and Kona Forest Unit. Submitted by Donna Ball. Permit No. TE090350-8; Subpermit No. HFNWR-8. 17pp.
- [HPPRCC] Hawai‘i and Pacific Plants Recovery Coordinating Committee. 2011. Revised recovery objective guidelines. 8 pp.
- [HVNP] 2024. Annual report to the U.S. Fish and Wildlife Service threatened and endangered plants Hawaii Volcanoes National Park ES019078. 39 pp.
- Lyon Arboretum. 2024. Report on controlled propagation of listed species, as designated under the U.S. Endangered Species Act. Unpublished report submitted to the U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office, Honolulu, Hawai‘i.
- [PEPP] 2024. Plant Extinction Prevention Program FY 2023 annual report Oct 1, 2023-Sep 30, 2024), USFWS CFDA Program #15.657, Endangered Species Conservation-Recovery Implementation Funds, Coop Agreement F14AC00174, December 24, 2016, UH Mānoa, PCSU, PEPP. 56 pp.
- [USFWS] U.S. Fish and Wildlife Service. 1996. Recovery Plan for the Big Island Plant Species. Portland. 176 pp. + appendices.
- [USFWS] 2012. *Cyrtandra giffardii* 5-year review summary and evaluation. USFWS Pacific Islands Fish and Wildlife Office, Honolulu, HI. [https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public\\_docs/species\\_nonpublish/1988.pdf](https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/1988.pdf)
- [USFWS] 2020. *Cyrtandra giffardii* 5-year review summary and evaluation. USFWS Pacific Islands Fish and Wildlife Office, Honolulu, HI. [https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public\\_docs/species\\_nonpublish/3163.pdf](https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/3163.pdf).
- [USFWS] 2023. Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status reviews for 133 Species in Oregon, Washington, Idaho, Montana, California, Hawaii, Guam, and the Northern Mariana Islands. Federal Register 88(56): 17611–17614, March 23, 2023.
- [VRPF] Volcano Rare Plant Facility. 2024. Report on controlled propagation of listed species, as designated under the U.S. Endangered Species Act. Unpublished report submitted to the U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office, Honolulu, Hawai‘i.

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**Pre-1996 DPS listing still considered a listable entity?**   N/A  

**Recommendation resulting from the 5-year review:**

- Delisting
- Reclassify from Endangered to Threatened status
- Reclassify from Threatened to Endangered status
- X   No Change in listing status

**For Field Supervisor, Pacific Islands Fish and Wildlife Office**

\_\_\_\_\_ Date \_\_\_\_\_