

5-YEAR REVIEW

Short Form Summary

Species Reviewed: *Cyanea stictophylla* (hāhā)

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:

Daniel Adamski, Biologist, PIFWO

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 *Cyanea stictophylla* (USFWS 2020). The evaluation by Daniel Adamski, Biologist, was reviewed by Lauren Weisenberger, Plant Recovery Coordinator, and 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/4068>).

Review Analysis:

Please refer to the previous 5-year reviews for *Cyanea stictophylla* published in the Federal Register on August 28, 2012 (available at https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/1989.pdf), and on September 29, 2020 (available at https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/3135.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. stictophylla*.

This short-lived perennial shrub or tree in the Campanulaceae (bellflower) family is Endangered and endemic to the island of Hawai‘i. The status and trends for *Cyanea stictophylla* are provided in the tables below.

New Status Information:

- Currently, there are 28 wild individuals of *Cyanea stictophylla* at 8 populations on the island of Hawai‘i; Honokua, Ho‘okena, Ka‘ohe, Kukuiopa‘e, Kūlani, Pali O Ka Eo, and ‘Ōlelomoana (Hawai‘i Volcanoes National Park [HVNP] 2024; Plant Extinction Prevention Program [PEPP] 2024).
- Currently, there are at least 50 maternal lines represented in *ex situ* storage and propagation collections, including seeds in seed banks, explants in micropropagation, and plants in a living collection (Lyon Arboretum 2024; HVNP 2024; Volcano Rare Plant Facility [VRPF] 2024; National Tropical Botanical Garden [NTBG] 2025).

New Threats:

- None

New Management Actions:

- Monitoring and surveys—PEPP and staff at HVNP monitor and collect fruit from wild and reintroduced populations of *Cyanea stictophylla* on the island of Hawai‘i (PEPP 2024; HVNP 2024).
- Ungulate monitoring and control—PEPP and staff at HVNP monitor and repair fences and excludes ungulates from fences protecting wild and reintroduced populations. A small enclosure was constructed in 2021 to protect a wild individual at Honokua (HVNP 2024; PEPP 2024).
- Nonnative plant control—PEPP and staff at HVNP and Three Mountain Watershed Alliance (TMWA) control nonnative plants in habitat around populations of *Cyanea stictophylla* as well as establish fire breaks to limit the effects of wildfires (HVNP; PEPP 2024; TWA 2025).
- Pollinator observations—PEPP installed cameras on at Honokua in 2024 for pollinator observations (PEPP 2024).
- Collection and propagation for genetic storage and reintroduction—
 - Lyon Arboretum Micropropagation Laboratory reports 126 explants in micropropagation representing one wild individual from Kūlani and two wild individuals from Pu‘uwa‘awa‘a Forest Bird Sanctuary (PFBS). Lyon Arboretum Seed Conservation Laboratory reports over 158,000 seeds in storage representing approximately 45 wild individuals from Honokua, Ka‘ohe, Kīpāhoehoe, Kukuiopa‘e, Kūlani, ‘Ōlelomoana, and Pu‘uwa‘awa‘a (Lyon Arboretum 2025).
 - HVNP reports two potted plants in a greenhouse living collection and over 31,000 seeds from the two wild individuals from Pali O Ka Eo (HVNP 2024).
 - Volcano Rare Plant Facility (VRPF) reports 18 plants in a living collection representing 11 wild individuals from Kahuku, Ka‘ohe, Kīpāhoehoe, Kukuiopa‘e, Kona, Kūlani, and ‘Ōlelomoana (VRPF 2024).
 - NTBG reports 1,630 seeds in storage from one founder from Pu‘uwa‘awa‘a and two founders from Kukuiopa‘e (NTBG 2025).

- Translocations—Since 2013 there have been thousands of outplants of *Cyanea stictophylla* at Kīpāhoehoe, Kahuku, Kūlani, Pu‘uwa‘awa‘a and Kukuioपा‘e. Since 2020, HVNP reported outplanting 3 and monitoring of 115 total individuals at Kilauea and Kahuku. In addition, PEPP reported outplanting and monitoring 90 individuals at several populations. (HVNP 2024; PEPP 2024).

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

Table 1a.

Date	No. wild individuals	No. Outplanted	Stabilization Targets Identified in Recovery Plan	Stabilization Targets Completed?
1996 (Listing)	15	0	All threats managed in the 3 populations	No
			Complete genetic storage	No
			3 populations with 50 individuals each	No
2012 (5-year review)	45	>1,000	All threats managed in the 3 populations	Partially
			Complete genetic storage	Partially
			3 populations with 50 individuals each	No

Table 1b.

Date	No. wild individuals	No. Outplanted	Preventing Extinction Targets Identified in HPPRCC	Preventing Extinction Targets Completed?
2020 (5-yr review)	29 mature 6 immature	Unknown (>2,400 planted; at least 100s survive)	All threats managed in the 3 populations	Partially
			Complete genetic storage	Yes
			3 populations with 50 mature individuals each	No
2025 (5-year review)	28	93 planted; at least 122 persist	All threats managed in the 3 populations	Partially
			Complete genetic storage	Yes
			Natural reproduction at 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 *Cyanea stictophylla* and ongoing conservation efforts.

Threat	Listing factor	Current Status	Conservation/ Management Efforts
Ungulate destruction and degradation of habitat	A	Ongoing	Partial, ungulate control and most populations fenced
Established ecosystem altering invasive plant species degradation of habitat	A	Ongoing	Partial, nonnative plant control around exclosures and surrounding habitat
Degradation by treefall	A	Ongoing	None
Climate change and degradation of habitat	A	Ongoing	None
Ungulate predation or herbivory	C	Ongoing	Partial, ungulate control and most populations fenced
Rodent predation or herbivory	C	Ongoing	None
Lack of adequate hunting regulations	D	Ongoing	Partial, ungulate control and most populations fenced
Reduced viability due to low numbers	E	Ongoing	Partial, seed collections, propagation, and reintroduction

Synthesis:

Currently there are 28 wild individuals of *Cyanea stictophylla* on the island of Hawai‘i. Individuals are provided protection from ungulates by fencing, and nonnative plant control. Collections, propagation, and reintroductions are ongoing. Recruitment has not been observed.

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.

Cyanea stictophylla is a short-lived perennial shrub or tree. 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 not three populations with 50 mature reproducing individuals, all threats are not being managed, although genetic storage is complete (Table 2). Therefore, *Cyanea stictophylla* meets the definition of Endangered as it remains in danger of extinction throughout 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—Continue monitoring known populations of *Cyanea stictophylla* to assess resiliency and make collections.
- 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 *Cyanea stictophylla*.
- Site and habitat protection—Develop and implement effective control measures to reduce the impacts of treefall.
- 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 limited numbers and inadequate hunting regulations.
- Research—Investigate alternative pollinators from related species.
- 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:

- [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. 2025. 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, HI.
- [NTBG] National Tropical Botanical Garden. 2025. 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.
- [TMWA] Three Mountain Watershed Alliance. 2025.
<https://threemountainalliance.org/hana/>. Accessed 27 AUG 2025.
- [USFWS] U.S. Fish and Wildlife Service. 1996. Recovery plan for the Big Island Plant Species. Portland. 176 pp. + appendices.
- [USFWS] 2012. *Cyanea stictophylla* 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/1989.pdf.
- [USFWS] 2020. *Cyanea stictophylla* 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/3135.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.
- [VRPPF] Volcano Rare Plant Propagation 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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SIGNATURE PAGE for 5-YEAR REVIEW of *Cyanea stictophylla* (hāhā)

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 _____