

*Cyanea stictophylla*  
(Haha)

**5-Year Review  
Summary and Evaluation**

**U.S. Fish and Wildlife Service  
Pacific Islands Fish and Wildlife Office  
Honolulu, Hawaii**

## 5-YEAR REVIEW

Species reviewed: *Cyanea stictophylla* (Haha)

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**5-YEAR REVIEW**  
***Cyanea stictophylla* (Haha)**

**1.0 GENERAL INFORMATION**

**1.1 Reviewers**

**Lead Regional Office:**

Region 1, Endangered Species Program, Division of Recovery, Jesse D'Elia, (503) 231-2071

**Lead Field Office:**

Pacific Islands Fish and Wildlife Office, Loyal Mehrhoff, Field Supervisor, (808) 792-9400

**Cooperating Field Office(s):**

N/A

**Cooperating Regional Office(s):**

N/A

**1.2 Methodology used to complete the review:**

This review was conducted by staff of the Pacific Islands Fish and Wildlife Office of the U.S. Fish and Wildlife Service (USFWS), beginning on April 8, 2010. The review was based on the designation of critical habitat for *Cyanea stictophylla* and the Big Island plant cluster recovery plan (USFWS 2003, 1996), as well as a review of current, available information. The Bernice Pauahi Bishop Museum provided an initial draft of portions of the review and recommendations for conservation actions needed prior to the next five-year review. The evaluation of Sam Aruch, biological consultant, was reviewed by a recovery biologist and the Plant Recovery Coordinator. The document was then reviewed by the Recovery Program Lead and the Assistant Field Supervisor for Endangered Species before submission to the Field Supervisor for approval.

**1.3 Background:**

**1.3.1 Federal Register (FR) Notice citation announcing initiation of this review:**

[USFWS] U.S. Fish and Wildlife Service. 2010. Endangered and threatened wildlife and plants; 5-year review status of 69 species in Idaho, Washington, Hawaii, Guam, and the Commonwealth

of the Northern Mariana Islands. Federal Register  
75(67):17947-17950.

### 1.3.2 Listing history

#### Original Listing

**FR notice:** USFWS. 1994. Endangered and threatened wildlife and plants; determination of endangered or threatened status for twenty-one plant species from the island of Hawaii, State of Hawaii. Federal Register 59(43):10305-10325.

**Date listed:** March 4, 1994

**Entity listed:** Species

**Classification:** Endangered

#### Revised Listing, if applicable

**FR notice:** N/A

**Date listed:** N/A

**Entity listed:** N/A

**Classification:** N/A

### 1.3.3 Associated rulemakings:

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

Critical habitat was designated for *Cyanea stictophylla* in four units totaling 2,228 hectares (5,506 acres) on Hawaii Island. These designations include habitat on State and private lands (USFWS 2003).

### 1.3.4 Review History:

Species status review [FY 2011 Recovery Data Call (August 2011)]:  
Improving

#### **Recovery achieved:**

1 (0-25%) (FY 2007 Recovery Data Call)

### 1.3.5 Species' Recovery Priority Number at start of this 5-year review:

2

### 1.3.6 Current Recovery Plan or Outline

**Name of plan or outline:** U.S. Fish and Wildlife Service. 1996. Big Island plant cluster recovery plan. U.S. Fish and Wildlife Service, Portland, Oregon. 202+ pages. Available online at <http://www.fws.gov/pacificislands/recoveryplans.html>.

Date issued: September 26, 1996

Dates of previous revisions, if applicable: N/A

## 2.0 REVIEW ANALYSIS

### 2.1 Application of the 1996 Distinct Population Segment (DPS) policy

2.1.1 Is the species under review a vertebrate?

Yes

No

2.1.2 Is the species under review listed as a DPS?

Yes

No

2.1.3 Was the DPS listed prior to 1996?

Yes

No

2.1.3.1 Prior to this 5-year review, was the DPS classification reviewed to ensure it meets the 1996 policy standards?

Yes

No

2.1.3.2 Does the DPS listing meet the discreteness and significance elements of the 1996 DPS policy?

Yes

No

2.1.4 Is there relevant new information for this species regarding the application of the DPS policy?

Yes

No

### 2.2 Recovery Criteria

2.2.1 Does the species have a final, approved recovery plan containing objective, measurable criteria?

Yes

No

2.2.2 Adequacy of recovery criteria.

2.2.2.1 Do the recovery criteria reflect the best available and most up-to date information on the biology of the species and

**its habitat?**

*Yes*  
 *No*

**2.2.2.2 Are all of the 5 listing factors that are relevant to the species addressed in the recovery criteria?**

*Yes*  
 *No*

**2.2.3 List the recovery criteria as they appear in the recovery plan, and discuss how each criterion has or has not been met, citing information:**

A synthesis of the threats (Listing Factors A, B, C, D, and E) affecting this species is presented in Section 2.3.2 and Table 2.

Stabilizing, downlisting, and delisting objectives are provided in the Big Island plant cluster recovery plan (USFWS 1996), based on whether the species is an annual, a short-lived perennial (fewer than ten years), or a long-lived perennial. *Cyanea stictophylla* is a short-lived perennial, and to be considered stabilized, which is the first step in recovering the species, the taxon must be managed to control threats (*e.g.*, fenced) and be represented in an *ex situ* (off-site) collection. In addition, a minimum of three populations should be documented on Big Island (Hawaii Island). For the species to be considered stable, each of these populations must be naturally reproducing and increasing in number, with a minimum of 50 mature individuals per population.

This recovery objective has not been met.

For downlisting, a total of five to seven populations of *Cyanea stictophylla* should be documented on the island of Hawaii. Each of these populations must be naturally reproducing, stable or increasing in number, and secure from threats, with a minimum of 300 mature individuals per population. Each population should persist at this level for a minimum of five consecutive years before downlisting is considered.

This recovery objective has not been met.

For delisting, a total of eight to ten populations of *Cyanea stictophylla* should be documented on the island of Hawaii. Each of these populations must be naturally reproducing, stable or increasing in number, and secure from threats, with 300 mature individuals per population for short-lived perennials. Each population should persist at

this level for a minimum of five consecutive years before delisting is considered.

This recovery objective has not been met.

## **2.3 Updated Information and Current Species Status**

### **2.3.1 Biology and Habitat**

#### **2.3.1.1 New information on the species' biology and life history:**

*Cyanea stictophylla* is a short-lived perennial species that has been reported to grow epiphytically or in moss (USFWS 1994, 1996, 2002; National Tropical Botanical Garden 2011). Flowering appears to occur year round when conditions are favorable (USFWS 2002; Bishop Museum 2011; National Tropical Botanical Garden 2011). Fruit has been observed on herbarium specimens collected in April (Bishop Museum 2011), although given its confirmed flowering year-round as moisture allows, fruit can probably also be found throughout the year. Buss *et al.* (2001) reported that *Cyanea stictophylla* has a “type C” seed coat, which is characterized by a striate (marked with fine, usually parallel lines or grooves) or striate-verruculate (covered with very small wart-like elevations) testa (seed coat), which was found in four of the five sections studied by the authors.

Givnish *et al.* (1994) reported that the flowers of *Cyanea* species coevolved with honeycreepers and that the stem has prickly-like thorns. These authors also indicated that the genus *Cyanea* contains separate orange and purple-fruited clades, based on chloroplast DNA evidence (Givnish *et al.* 1994). Since *Cyanea stictophylla* has orange fruits, it is most closely related to others in that clade (Givnish *et al.* 1995). However, *C. stictophylla* was not sampled in the DNA analysis so its closest relatives are uncertain (Givnish *et al.* 1994, 1995). The species also is heterophyllous, having somewhat different leaf morphologies in juvenile and adult plants (Givnish *et al.* 1994).

*Cyanea stictophylla* is the host plant species for an undescribed native species of delphacid planthopper in the genus *Nesosydne* (family Delphacidae), and an undetermined leafhopper specimen of the genus *Nesophrosyne* (family Cicadellidae) (Giffin 2009).

**2.3.1.2 Abundance, population trends (e.g. increasing, decreasing, stable), demographic features (e.g., age structure, sex ratio, family size, birth rate, age at mortality, mortality rate, etc.), or demographic trends:**

At the time it was listed, *Cyanea stictophylla* was known from three populations comprising a total of approximately 15 individuals (USFWS 1994). At the time the recovery plan was drafted (USFWS 1996), a total of three populations were known, representing less than 20 individuals, and 46 individuals had been outplanted (USFWS 1996). When critical habitat was designated (USFWS 2003), the species was known from six populations, located on Federal, State, and private land.

At Hakalau Forest National Wildlife Refuge, all individuals of *Cyanea stictophylla* in the Kona Forest Unit died between 2004 and 2006, even though individuals were protected within lava tube skylights (Jeffrey and Horiuchi 2008). Mortality was likely due to a combination of tree fall and herbivory by rats (*Rattus* sp.) (Jeffrey and Horiuchi 2008).

In 2007, the Plant Extinction Prevention Program (2007a) summarized the status of the populations of *Cyanea stictophylla*. Fruits collected from a single individual in 1999 were germinated and later outplanted at Kipahoe Natural Area Reserve, and at that time had reached maturity. The Plant Extinction Prevention Program (2007a) also reported at least two maternal lines having been outplanted at Kipahoe Natural Area Reserve. The report further indicated that no wild individuals remained at populations formerly known at Manuka, Kulani, or Kilauea Forest's Puu Kipu Unit, although there were still 50 outplanted mature individuals at Kilauea from that same line (Plant Extinction Prevention Program 2007a). At the time of the report, a single individual presumably had been seen in the South Kona Forest Reserve by Lyman Perry, but its status had not been reconfirmed (Plant Extinction Prevention Program 2007a).

At about the same time, the Plant Extinction Prevention Program (2007b) reported a total of 399 individuals of *Cyanea stictophylla* had been outplanted at Puu Waawaa. By 2008, the last known wild individuals of *Cyanea stictophylla* had disappeared from their former range at Puu Waawaa (Giffin 2009).



In 2009, the Plant Extinction Prevention Program (2009) reported 26 wild individuals of *Cyanea stictophylla* at Olelomoana and noted that the population showed some signs of browsing by cattle (*Bos taurus*). In 2009, a population census for *C. stictophylla* reported four populations comprising a total of 45 individuals in the wild, with 18 of these represented in *ex situ* genetic storage (Plant Extinction Prevention Program 2009).

Most recently, the Plant Extinction Prevention program (2010) reported 4 populations with a total of 45 individuals. These numbers include two adults and several juvenile individuals at Kahuku pit crater, Hawaii Volcanoes National Park, 17 adults between Kukuioapae Forest Reserve and Kaohe, and 25 individuals at Olelomoana South Kona Forest Reserve, Hawaii Island (Plant Extinction Prevention Program 2009).

**2.3.1.3 Genetics, genetic variation, or trends in genetic variation (e.g., loss of genetic variation, genetic drift, inbreeding, etc.):**

The chromosome number for some species of *Cyanea* are  $n = 14$ , although no counts are known for *Cyanea stictophylla* (Lammers 1988). As currently recognized (Lammers *et al.* 1993), the genus *Cyanea* now includes taxa formerly included in the genus *Rollandia* (Wagner *et al.* 1999).

**2.3.1.4 Taxonomic classification or changes in nomenclature:**

*Cyanea stictophylla*, of the bellflower family (Campanulaceae), was described by Rock (1913) based on a collection he made in 1912 on Mauna Loa (USFWS 1994, 1996). The species includes a number of synonyms, including *Cyanea nelsonii* St. John; *C. palakea* C. Forbes; *C. quercifolia* (Hillebr.) F. Wimmer var. *atropurpurea* F. Wimmer; *C. stictophylla* var. *inermis* Rock; *Delissea nelsonii* (St. John) St. John; *D. palakea* (C. Forbes) St. John; *D. quercifolia* (Hillebr.) St. John var. *atropurpurea* (F. Wimmer) St. John; *D. stictophylla* (Rock) St. John; and *D. stictophylla* var. *inermis* (Rock) St. John (Lammers 1999).

**2.3.1.5 Spatial distribution, trends in spatial distribution (e.g. increasingly fragmented, increased numbers of corridors, etc.), or historic range (e.g. corrections to the historical range, change in distribution of the species' within its historic range, etc.):**

See above section 2.3.1.2.

**2.3.1.6 Habitat or ecosystem conditions (e.g., amount, distribution, and suitability of the habitat or ecosystem):**

The historical range of *Cyanea stictophylla* includes a relatively wide geographical range on Hawaii Island on the western, southern, and eastern slopes of Maua Kea, between 762 and 1,951 meters (2,500 and 6,400 feet) elevation (USFWS 1994, 2010). At the time of listing (USFWS 1994), it was known near Keauhou and in South Kona on privately-owned land. The species occurs in montane wet *Metrosideros* (ohia) forest and mesic *Acacia koa* (koa) forest (USFWS 2010). This species also occurred at one point in a cave at the Kona Forest Unit of Hakalau Forest National Wildlife Refuge (USFWS 1996). Native plant species associated with *Cyanea stictophylla* include members of *Melicope*, such as *M. volcanica* (alani) and *Urera glabra* (opuhe) (USFWS 1994, 1996, 2010).

Soil known to underlie current or historical populations of *Cyanea stictophylla* includes typic hydrandeps, lithic tropofolists, hydric lithic dystrandeps, and transitional soils intermediate between hydrandeps and tropofolists (Hawaii Biodiversity and Mapping Program 2010).

**2.3.1.7 Other:**

No new information.

**2.3.2 Five-Factor Analysis (threats, conservation measures, and regulatory mechanisms)**

**2.3.2.1 Present or threatened destruction, modification or curtailment of its habitat or range:**

**Threats:**

- Ungulate degradation of habitat – Disturbance by feral pigs (*Sus scrofa*) and feral cattle (*Bos taurus*) (USFWS 1994, 1996, 2002, 2010; Plant Extinction Prevention Program 2007b)
- Established ecosystem-altering invasive plant species degradation of habitat (Plant Extinction Prevention Program 2007b, 2009)

- *Passiflora tarminiana* (banana poka)
- Landslides and flooding – Tree falls at the Hakalau Forest National Wildlife Refuge Kona Forest Unit (Jeffrey and Horiuchi 2008)

**Current conservation efforts:**

- Ungulate enclosure:
  - The Three Mountain Alliance maintains fences at the Puu Kipu and Kulani Cone populations (C. Cole, Three Mountain Alliance, pers. comm. 2012).
  - At Puu Waawaa, a fenced enclosure is used as a reintroduction site for *Cyanea stictophylla*.
- Ecosystem-altering invasive plant species control:
  - The Three Mountain Alliance controls weeds at the Puu Kipu and Kulani Cone populations (C. Cole, pers. comm. 2012).
  - In 2007, banana poka (*Passiflora tarminiana*) was removed by hand around a reintroduced population within a fenced enclosure at Puu Waawaa (Plant Extinction Prevention Program 2007b).

**2.3.2.2 Overutilization for commercial, recreational, scientific, or educational purposes:**

None reported.

**2.3.2.3 Disease or predation:**

**Threats:**

- Rodent predation or herbivory – Rats (USFWS 1994, 1996, 2002, 2010; Plant Extinction Prevention Program 2007b; Jeffrey and Horiuchi 2008)
- Ungulate predation or herbivory – Browsing by cattle (USFWS 1994, 1996, 2002, 2010), heavy browsing signs were noted at Olelomoana within the South Kona Forest Reserve in 2008 (Plant Extinction Prevention Program 2007b, 2009)

**Current conservation efforts:**

- Ungulate enclosure:

- The Three Mountain Alliance maintains fences at the Puu Kipu and Kulani Cone populations (C. Cole, Three Mountain Alliance, pers. comm. 2012).
- At Puu Waawaa, a fenced enclosure is used as a reintroduction site for *Cyanea stictophylla*.

#### **2.3.2.4 Inadequacy of existing regulatory mechanisms:**

##### **Threats:**

- Lack of adequate hunting regulation in areas with ungulates – The lack of adequate ungulate control and the existence of established hunting programs in areas where *Cyanea stictophylla* occurs outside of Hawaii Volcanoes National Park continue to threaten this species.

#### **2.3.2.5 Other natural or manmade factors affecting its continued existence:**

##### **Threats:**

- Ungulate trampling –By cattle (USFWS 1994, 1996, 2002, 2010; Plant Extinction Prevention Program 2007b)
- Low numbers – increased likelihood of stochastic extinction due to changes in demography, the environment, genetics, or other factors (Plant Extinction Prevention Program 2007b; USFWS 1996)
- Established invasive plant species competition (Plant Extinction Prevention Program 2007b, 2009)
  - *Ehrharta stipoides* (meadow rice grass)
- Climate change may pose a threat to this species. However, current climate change analyses in the Pacific Islands lack sufficient spatial resolution to make predictions on impacts to this species. The Pacific Islands Climate Change Cooperative (PICCC) has currently funded climate modeling that will help resolve these spatial limitations. We anticipate high spatial resolution climate outputs by 2013.

##### **Current conservation efforts:**

- Captive propagation for genetic storage and reintroduction:

- In October 2003, Robert Robichaux (Hawaiian Silversword Foundation, pers. comm. 2003) reported that about 150 seedlings of *Cyanea stictophylla* were being cultivated for reintroduction.
- The Plant Extinction Prevention Program (2007b) reported 99 individuals of *Cyanea stictophylla* in cultivation. Jeffrey and Horiuchi (2008) reported that *Cyanea stictophylla* found in the Kona Forest Unit of the Hakalau Forest National Wildlife Refuge was being propagated at the Volcano Rare Plant Facility, although numbers of individuals was not reported.
- The Volcano Rare Plant Facility (2010) reported 24 individuals of *Cyanea stictophylla* in genetic storage and 95 plants in controlled propagation representing individuals from Kahuku Pit Crater, Kipahoehoe, Kukuiopae, Kulani, Olelomoana, Puu Waawaa, and South Kona Forest Reserve. In previous years, the Volcano Rare Plant Facility (2009, 2008, 2007, 2006) totals were: 2009, 35 individuals in genetic storage and 8 individuals in controlled propagation; 2008, 42 individuals in genetic storage and 45 plants in controlled propagation; 2007, 45 individuals in genetic storage and 383 individuals in controlled propagation; 2006, 45 individuals in genetic storage and 576 individuals in controlled propagation.
- Reintroduction / translocation implementation:
  - By March 2003, a total of 106 seedlings and cuttings were reintroduced at Puu Kipu and Kulani Cone Units of the Kulani Correctional Facility (Anonymous 2004; Rubenstein 2007). The cuttings and seedlings were derived from a single maternal line, had been observed in flower and fruit, and at the time of the report, the survivorship rate was 98.1 percent (104 out of 106 individuals) (Rubenstein 2007).
  - In 2007, 399 individuals of *Cyanea stictophylla* were reintroduced at Puu Waawaa in a fenced enclosure (Plant Extinction Prevention Program 2007b).
  - A total of 46 individuals of *Cyanea stictophylla* recently were reintroduced within a fenced enclosure at the Kau Forest Reserve and Puu Waawaa (USFWS 2010).

- The Volcano Rare Plant Facility (2010) reported that four individuals were reintroduced into Kipahoe Natural Area Reserve in 2010. In previous years, the Volcano Rare Plant Facility (2009, 2008, 2007, 2006) totals were: 2009, 37 individuals were reintroduced into the Hawaii Volcanoes National Park, Kahuku Pit Crater; 2008, 347 individuals were reintroduced (335 individuals into Kipahoe Natural Area Reserve and 12 into Puu Makaala Natural Area Reserve); 2007, 99 individuals reintroduced (49 into Kipahoe Natural Area Reserve and 50 into Manuka); 2006, 96 individuals were reintroduced (90 into Kipahoe Natural Area Reserve and 6 into Puu Waawaa cone unit).

## 2.4 Synthesis

The interim stabilization goals for this species have not been met. There are four wild populations containing a total of 45 individuals currently known at Olelomoana in South Kona Forest Reserve, Kahuku pit crater, Kukuiope Forest reserve, and at Kaohe (Plant Extinction Prevention Program 2010). The reintroduced populations consist of 50 mature individuals at Kilauea Forest and 399 individuals (mature individuals were not distinguished from juvenile individuals) at Puu Waawaa (Plant Extinction Prevention Program 2007a). Thus, there is only a single population confirmed to contain more than 50 mature individuals, at Kilauea Forest (Table 1). In addition, all threats are not being managed (Table 2). Therefore, *Cyanea stictophylla* meets the definition of endangered as it remains in danger of extinction throughout its range.

**Table 1. Status of *Cyanea stictophylla* from listing through 5-year review.**

<b>Date</b>	<b>No. wild individuals</b>	<b>No. outplanted</b>	<b>Stabilization Criteria identified in Recovery Plan</b>	<b>Stabilization Criteria Completed?</b>
1994 (listing)	15	0	All threats managed in all 3 populations	No
			Complete genetic storage	No
			3 populations with 50 mature individuals each	No
1996 (recovery plan)	<20	46	All threats managed in all 3 populations	Partially
			Complete genetic storage	Partially
			3 populations with 50 mature individuals each	No
2003 (critical habitat)	10	106	All threats managed in all 3 populations	Partially
			Complete genetic storage	Partially
			3 populations with 50 mature individuals each	No
2012 (5-year review)	16	449	All threats managed in all 3 populations	Partially (see Table 2)
			Complete genetic storage	Partially
			3 populations with 50 mature individuals each	No

**Table 2. Threats to *Cyanea stictophylla* and ongoing conservation efforts.**

<b>Threat</b>	<b>Listing factor</b>	<b>Current Status</b>	<b>Conservation/ Management Efforts</b>
Ungulates – Degradation of habitat, herbivory, trampling	A, C, D,E	Ongoing	Partially: Ungulate exclosures at Puu Kipu, Kulani Cone, and Puu Waawaa
Established ecosystem-altering invasive plant species degradation of habitat	A	Ongoing	Partially: Weeds controlled at Puu Kipu, Kulani Cone, and Puu Waawaa
Landslides and flooding	A	Ongoing	No
Rodent predation or herbivory – Rats	C	Ongoing	No
Established invasive plant species competition	E	Ongoing	No
Low numbers	E	Ongoing	Partially: Reintroduction, captive propagation and storage, and monitoring
Climate change	A, E	Increasing	No

### 3.0 RESULTS

#### 3.1 Recommended Classification:

Downlist to Threatened

Uplist to Endangered

Delist

*Extinction*

*Recovery*

*Original data for classification in error*

**No change is needed**

#### 3.2 New Recovery Priority Number:

**Brief Rationale:**

#### 3.3 Listing and Reclassification Priority Number:

**Reclassification (from Threatened to Endangered) Priority Number:** \_\_\_\_\_

**Reclassification (from Endangered to Threatened) Priority Number:** \_\_\_\_\_

**Delisting (regardless of current classification) Priority Number:**

\_\_\_\_\_



## **Brief Rationale:**

### **4.0 RECOMMENDATIONS FOR FUTURE ACTIONS**

- Captive propagation for genetic storage and reintroduction:
  - Continue to collect seed from all populations and distribute to at least two centers where it may be stored or propagated.
  - Maximize the number of individuals from which seed is collected to help maintain existing genetic variation within the species.
- Reintroduction / translocation site identification – Identify suitable habitat within the historical range of the species for reintroduction.
- Reintroduction / translocation implementation – Continue to reintroduce the species into its known historical range.
- Ungulate exclosures:
  - Continue to fence all known populations.
  - Monitor fences biannually for evidence of breaching.
- Ungulate control – Protect all populations against disturbances from feral ungulates.
- Ecosystem-altering invasive plant species control – Continue to control all invasive introduced plant species around all populations.
- Surveys / inventories – Resurvey the known historical range of the species to search for additional populations.
- Threat monitoring and control – Monitor existing populations for evidence of insect damage or plant disease, and control as necessary.
- Predator / herbivore control – Control rodents around existing populations.
- Site / area / habitat protection – Develop and implement effective measures to reduce the impact of landslides and erosion associated with tree falls at the Hakalau Forest National Wildlife Refuge Kona Forest Unit.
- Genetic research – Use microsatellites or other DNA techniques to determine overall levels of genetic diversity, including how such diversity is partitioned among extant populations.
- Population biology research – Carry out field studies to determine the pollinators and seed dispersal mechanism of the species.
- Threats research – Assess the modeled effects of climate change on this species, and use to determine future landscape needed for the recovery of the species.

- Alliance and partnership development – Work with the Hawaii Division of Forestry and Wildlife, and other land managers to continue implementation of ecosystem-level restoration and management to benefit this species.

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**Signature Page**  
**U.S. FISH AND WILDLIFE SERVICE**  
**5-YEAR REVIEW of *Cyanea stictophylla* (Haha)**

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

**Recommendation resulting from the 5-Year Review:**

<u>          </u>	Delisting
<u>          </u>	Reclassify from Endangered to Threatened status
<u>          </u>	Reclassify from Threatened to Endangered status
<u>      X</u>	No Change in listing status

**Appropriate Listing/Reclassification Priority Number, if applicable:** \_\_\_\_\_

**Review Conducted By:**

Chelsie Javar, Fish and Wildlife Biologist  
Marie Bruegmann, Plant Recovery Coordinator  
Jess Newton, Endangered Species Recovery Program Leader  
Kristi Young, Assistant Field Supervisor for Endangered Species

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

*for*

Jess Newton

Date 8/28/2012