

*Alsinidendron obovatum*  
(No common name)

**5-Year Review  
Summary and Evaluation**

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

**5-YEAR REVIEW**  
***Alsinidendron obovatum* (No common name)**

**I. GENERAL INFORMATION**

**A. Methodology used to complete the review:**

This review was conducted by staff of the Pacific Islands Fish and Wildlife Office (PIFWO) of the Fish and Wildlife Service between July 2005 and June 2006. The Hawaii Biodiversity and Mapping Program was contracted to provide updated information on the current status of *Alsinidendron obovatum*. They also provided recommendations for future actions that may be needed prior to the next 5-year review. The evaluation of the lead PIFWO biologist was reviewed by the Listing Program Leader and Plant Recovery Coordinator. These comments were incorporated into the draft 5-year Review. The draft 5-year Review was then reviewed by the Recovery Program Leader and the Assistant Field Supervisor for Endangered Species before PIFWO submission to the Regional Office.

**B. Reviewers**

**Lead Region:** Region 1

**Lead Field Office:** Pacific Islands Fish and Wildlife Office

**C. Background**

**1. FR Notice citation announcing initiation of this review:**

July 6, 2005. Endangered and Threatened Wildlife and Plants; Initiation of 5-year Reviews (of 33 species in Region 1). 70 FR 38972-38975.

**2. Species status:**

Stable (FY 2005 Recovery Data Call)

**3. Recovery achieved:**

1, meaning 0 - 25 percent of the identified recovery objectives for *Alsinidendron obovatum* have been achieved (FY 2006 Recovery Data Call)

**4. Listing history**

Original Listing

FR notice: U.S. Fish and Wildlife Service. 1991. Endangered and threatened wildlife and plants; determination of endangered status for 26 plants from the Waianae Mountains, island of Oahu, Hawaii. *Federal Register* 56(209): 55770-55786.

Date listed: October 29, 1991

Entity listed: Species

Classification: Endangered

Revised Listing, if applicable:

N/A

**5. Associated actions:**

Critical habitat was designated for *Alsinidendron obovatum* in three units totaling 574 acres (233 hectares) on Oahu (U.S. Fish and Wildlife Service. 2003.

Endangered and threatened wildlife and plants; final designations or nondesignations of critical habitat for 101 plant species from the island of Oahu, HI; Final Rule. *Federal Register* 68(116): 35950-36406).

**6. Review History:** Just the original listing, designation of critical habitat, and recovery plan development actions.

**7. Species' Recovery Priority Number at start of review:** 5, meaning a species with a high degree of threat and a low recovery potential.

**8. Recovery Plan or Outline**

Name of plan: Recovery Plan for the Oahu Plants. 1998. U.S. Fish and Wildlife Service, Portland, Oregon. 207 pp. plus appendices.

Date issued: August 10, 1998

Dates of previous revisions: N/A

Some of the actions outlined in the Recovery Plan have been initiated but not completed (*e.g.*, construct exclosures to protect populations from feral pigs, control nonnative plants within fenced exclosures). Some recovery actions will require long-term commitments (*e.g.*, maintenance of exclosure fences; weed control) or may only be necessary intermittently (*e.g.*, provide protection against fire).

**II. REVIEW ANALYSIS**

**A. Application of the 1996 Distinct Population Segment (DPS) Policy**

This Policy does not apply to plant species.

**B. Recovery Criteria**

**1. Does the species have a final, approved recovery plan?**

X  Yes  
     No

**2. Does the recovery plan contain recovery (i.e., downlisting or delisting) criteria?**

X  Yes  
     No

3. Adequacy of recovery criteria.

a. Do the recovery criteria reflect the best available (i.e., most up-to-date) information on the biology of the species and its habitat?

Yes  
 No

b. Are all of the 5 listing factors that are relevant to the species addressed in the recovery criteria (and there is no new information to consider regarding existing or new threats)?

Yes  
 No

4. List the recovery criteria as they appear in the recovery plan, and discuss how each criterion has or has not been met, citing information. For threats-related recovery criteria, please note which of the 5 listing factors\* are addressed by that criterion. If any of the 5-listing factors are not relevant to this species, please note that here

The threats (Factors A, C, and E) affecting this species are discussed in detail in section II.D. Factors B and D are not considered a threat to this species.

Stabilizing, downlisting, and delisting objectives are provided in the Recovery Plan for Oahu Plants (Service 1998), based on whether the species is an annual, a short-lived perennial (fewer than 10 years), or a long-lived perennial. *Alsinidendron obovatum* is a short-lived perennial, and to be considered stable, this species must be managed to control threats (e.g., fenced) (Factors A, C, and E) and be represented in an *ex situ* collection. In addition, a minimum of three populations should be documented on the island of Oahu where the species now occurs or occurred historically. Each of these populations must be naturally reproducing and increasing in number, with a minimum of 50 mature individuals per population.

While much additional life history information is needed about *Alsinidendron obovatum* to develop more appropriate recovery criteria, the Makua Implementation Team (2003), a team of experts convened to assist the Service and the U.S. Army in developing conservation measures for military training at Makua Military Reservation, recommended that the number of mature, reproducing individuals per population to reach stabilization should be increased to 100 for *A. obovatum*, since it is a short-lived perennial that is prone to large fluctuations in population size.

This recovery objective has not been met.

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- A) Present or threatened destruction, modification or curtailment of its habitat or range;
  - B) Overutilization for commercial, recreational, scientific, or educational purposes;
  - C) Disease or predation;
  - D) Inadequacy of existing regulatory mechanisms;
  - E) Other natural or manmade factors affecting its continued existence.

For downlisting, a total of five to seven populations of *Alsinidendron obovatum* should be documented on the island of Oahu where it now occurs or occurred historically. Each of these populations must be naturally reproducing, stable or increasing in number, and secure from threats (Factors A, C, and E), with a minimum of 300 mature individuals per population. Each population should persist at this level for a minimum of 5 consecutive years before downlisting is considered.

This recovery objective has not been met.

For delisting, a total of 8 to 10 populations should be documented on the island of Oahu where it now occurs or occurred historically. Each of these populations must be naturally reproducing, stable or increasing in number, and secure from threats (Factors A, C, and E), with 300 mature individuals per population for short-lived perennials. Each population should persist at this level for a minimum of 5 consecutive years before delisting is considered.

This recovery objective has not been met.

## C. Synthesis

In 1991, at the time *Alsinidendron obovatum* was listed, there were 2 known populations, approximately 0.5 miles apart, of 100 individuals in Kapuna and Pahole gulches in the northern end of the Waianae mountains. The status of the species in the southern Waianae mountains is unknown, as no botanical surveys have been conducted in the Puuhapapa area of the southern Waianae mountains since it was collected there in 1978. Therefore, this population may still be extant (J. Lau, in litt. 2006; 56 FR 55770). In 1998, when the recovery plan was published, this species was known from 3 populations totaling 11 individuals in Kapuna and Pahole gulches, and 1 population of 1 individual in Kahanahaiki Gulch. The status of the southern Waianae population was still unknown (Service 1998). All three populations were in the northern end of the Waianae mountains. By 2003 these three populations were represented in propagation and storage facilities, but were extirpated from the wild (Makua Implementation Team 2003). However, between 2003 and 2004 new individuals were found in two previously unreported locations within West Makaleha Valley. Currently, there is a single mature plant and 3 seedlings at one location and 40 mature plants and 32 seedlings at the other location (U.S. Army 2006). The U.S. Army has reintroduced the species into a portion of its historical range between Kahanahaiki Valley to Pahole Gulch. This reintroduced population consists of 58 mature plants, 34 immature plants, and 149 seedlings. All of the individuals outplanted from Kahanahaiki to Pahole are from four founders, represented in cultivation before the first known wild population was extirpated (U.S. Army 2005b). Therefore, currently *A. obovatum* is known from 58 mature and 34 immature individuals, as well as 149 seedlings in Kahanahaiki to Pahole Gulch; 41 mature and 35 seedlings from West Makaleha Valley; and an unknown number of individuals in Puuhapapa.

At the time of listing the major threats to *Alsinidendron obovatum* were competition with and habitat degradation by *Melinis minutiflora* (molasses grass) (Factors A and E), habitat degradation by feral pigs (*Sus scrofa*) (Factor A), collection or trampling by humans (Factor E), and the small number of populations (Factor E) (56 FR 55770). Since the time of listing, those populations threatened by trampling are now extirpated and the extant wild individuals, as well as outplanted individuals and future planned outplantings, are in areas relatively inaccessible to the public (Makua Implementation Team 2003). Therefore, we do not believe trampling and overcollection threaten wild and outplanted individuals of this species at this time. In addition to these threats, the 1998 recovery plan included threats from the nonnative plant, *Syzygium cumini* (Java plum) (Factor E), and fire (Factor A and E) (Service 1998). Between 1998 and 2003, at least one population, within Pahole Gulch, was extirpated due to feral pigs (Factor A) (Makua Implementation Team 2005). The cause of the extirpation of two of the other three known populations is unknown but likely due to one or more of the aforementioned threats. *Alsinidendron obovatum* is currently threatened by feral pigs that directly feed on and trample individual plants (Factor C), as well as degrade habitat (Factor A); fire (Factor A and E); slugs that feed on seedlings (Factor C); competition with nonnative plants (Factor E), and small population sizes (Factor E).

Under the terms of the 1999, 2001, and 2004 U.S. Fish and Wildlife Service's Biological Opinions for routine military training at Makua Military Reservation and the 2003 Makua Implementation Plan, the Army began fencing, propagating, and outplanting individuals of this species (Makua Implementation Team 2003). To date, the Army has fenced the larger group of individuals in West Makaleha Valley and the outplanted individuals in Kahanahaiki Valley to protect the plants from feral pigs. An additional reintroduction site in Makaha Valley is being fenced by the Army and Honolulu Board of Water Supply. The Hawaii Division of Forestry and Wildlife has fenced the Pahole Gulch portion of this species' historical range (Hawaii Division of Forestry and Wildlife 1996). The Army has taken steps to address the threat of fire from military training activities by developing and implementing a wildland fire management plan (U.S. Army 2003). High seedling mortality is attributed to predation by nonnative slugs and research is underway on effective control methods in the wild (U.S. Army 2005a). The Army has begun control of nonnative plants within the fenced areas and plans to conduct weed control in areas where fence construction is planned in the future or where fences are currently under construction (U.S. Army 2005a). Propagation for genetic storage and reintroduction is underway at several locations (Service 2005; U.S. Army 2006). The goals for genetic storage of *Alsinidendron obovatum* have been partially met for two populations.

The Army has taken the first steps in the recovery of *Alsinidendron obovatum*. However, the stabilization, downlisting, and recovery goals for this species have not been met and, therefore, *Alsinidendron obovatum* meets the definition of endangered as it remains in danger of extinction throughout all of its range.

### III. RESULTS

#### A. Recommended Classification:

- Yes, downlist to Threatened
- Yes, uplist to Endangered
- Yes, delist
- No, no change is needed

#### B. New Recovery Priority Number N/A

### IV. RECOMMENDATIONS FOR FUTURE ACTIONS

- Research on methods for effective slug control in *in situ* populations of *Alsindendron obovatum*.
- Surveys for new individuals and populations of *Alsindendron obovatum* should be conducted.

### V. REFERENCES

Hawaii Division of Forestry and Wildlife. 1996. Statewide Endangered Plant Program, Surveys and Inventories – Monitoring and Germplasm Collection Statewide. January 1996 Revision. Prepared for the U.S. Fish and Wildlife Service for section 6 funding.

Makua Implementation Team. 2003. Implementation Plan for the Makua Military Reservation, Island of Oahu. Prepared for U.S. Army Garrison by the Makua Implementation Team, Hawaii, May 2003.

Makua Implementation Team. 2005. Meeting minutes from the January 27 and 28, 2005, meeting of the Makua Implementation Team to review the 2004 Status Update of the Makua Implementation Plan. Prepared by: U.S. Army Garrison, Hawaii.

U.S. Army Garrison, Hawaii. 2003. Integrated Wildland Fire Management Plan, Oahu & Pohakuloa Training Areas, 25<sup>th</sup> Infantry Division (Light) and United States Army, Hawaii. 213 pp., plus appendices..

U.S. Army Garrison, Hawaii. 2005a. 2005 Status Report, Makua Implementation Plan, Island of Oahu. Directorate of Public Works, Environmental Division. 334 pp.

U.S. Army Garrison, Hawaii. 2005b. Controlled propagation database, May 31, 2005 Unpublished

- U.S. Army Garrison, Hawaii. 2006. Rare plant database, Mar. 23, 2006. Unpublished
- U.S. Fish and Wildlife Service. 1991. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for 26 Plants from the Waianae Mountains, Island of Oahu, Hawaii; Final Rule. Federal Register 56: 55770-55786.
- U.S. Fish and Wildlife Service. 1998. Recovery Plan for Oahu Plants. U.S. Fish and Wildlife Service, Portland, Oregon. 207 pp., plus appendices.
- U.S. Fish and Wildlife Service. 2003. Endangered and Threatened Wildlife and Plants; final Designations or Nondesignations of Critical Habitat for 101 Plant Species from the Island of Oahu, HI. Federal Register 68(116): 35950-36406.
- U.S. Fish and Wildlife Service. 2005. Captive propagation database, unpublished.

#### **EXPERTS CONSULTED**

- Lau, Joel. 2006. Hawaii Biodiversity and Mapping Program. in litt.

**U.S. FISH AND WILDLIFE SERVICE**  
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Current Classification Endangered

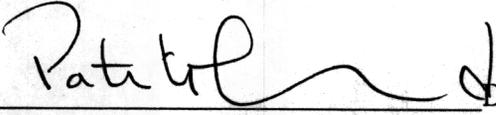
Recommendation resulting from the 5-Year Review

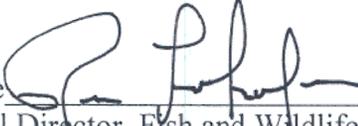
**Downlist to Threatened**  
**Uplist to Endangered**  
Delist  
**X No change is needed**

Appropriate Listing/Reclassification Priority Number N/A

Review Conducted By

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 Date JUL - 3 2007  
Field Supervisor, Fish and Wildlife Service

Approve  Date Aug 21 2007  
Regional Director, Fish and Wildlife Service