

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Pleomele fernaldii

COMMON NAME: Hala pepe

LEAD REGION: Region 1

INFORMATION CURRENT AS OF: November 27, 2002

STATUS/ACTION (Check all that apply):

New candidate - This species was inadvertently removed from the June 13, 2002, list of candidates, although it was on the October 31, 2001, list.

Continuing candidate

Non-petitioned

Petitioned - Date petition received: \_\_\_\_\_

90-day positive - FR date: \_\_\_\_\_

12-month warranted but precluded - FR date: \_\_\_\_\_

Is the petition requesting a reclassification of a listed species? \_\_\_\_\_

Listing priority change

Former LP: \_\_\_\_\_

New LP: \_\_\_\_\_

Latest Date species became a Candidate: October 30, 2001

Candidate removal: Former LP: \_\_\_\_\_ (Check only one reason)

A - Taxon more abundant or widespread than previously believed or not subject to a degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

F - Range is no longer a U.S. territory.

I - Insufficient information on biological vulnerability and threats to support listing.

M - Taxon mistakenly included in past notice of review.

N - Taxon may not meet the Act's definition of "species."

X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Plant, Agavaceae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Hawaii

CURRENT STATES/ COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Maui County, island of Lanai

LEAD REGION CONTACT (Name, phone number): Scott M. McCarthy, 503-231-6131

LEAD FIELD OFFICE CONTACT (Office, name, phone number): Marie M. Bruegmann, 808-541-3441

BIOLOGICAL INFORMATION (Briefly describe habitat, historic vs. current range, historic vs. current population estimates (# populations, #individuals/population), etc.):

## Species Description

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This species is a tree 6 to 8 meters (19.7 to 26.2 feet) tall, with leaves borne at the tips of the few branches. Leaves are long and strap-like, and leave conspicuous leaf scars when they fall off. The yellowish-green, short, tubular flowers are borne in large clusters. Berries are bright red. This species differs from others in this genus in Hawaii by having shorter flowers (Wagner *et al.* 1999).

## Taxonomy

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This species was first described as Pleomele fernaldii by Harold St. John in 1947 (St. John 1947). Otto Degener mistakenly named the species Pleomele lanaiensis, but did not officially publish the name (Degener and Degener 1971). Wagner *et al.* (1999) considered *P. lanaiensis* a synonym of *P. fernaldii*.

## Habitat

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Typical habitat is remnant patches of dry forest (Robert Hobdy, Hawaii Division of Forestry and Wildlife, pers. comm., 1995 and 1999).

## Historical Range/Distribution

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Historically, this species was found throughout the dry forest of Lanai, which has become dramatically reduced due to agriculture and habitat degradation (R. Hobdy, pers. comm., 1995 and 1999).

## Current Range/Distribution

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This species is found on the island of Lanai in the few remnant dry forests on the leeward side of the island (R. Hobdy, pers. comm., 1995 and 1999).

## Population Estimates/Status

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This species is known from three populations totaling 200 individuals (R. Hobdy, pers. comm., 1995 and 1999).

**THREATS** (Describe threats in terms of the five factors in section 4 of the ESA providing specific, substantive information. If this is a removal of a species from candidate status or a change in listing priority, explain reasons for change):

### A. The present or threatened destruction, modification, or curtailment of its habitat or range.

This species is threatened by deer that adversely modify habitat (R. Hobdy, pers. comm., 1995). Originally released on the island of Molokai in 1868, Axis deer (*Axis axis*) can now be found in extensive populations on the islands of Maui, Molokai and Lanai. Deer eat native vegetation,

trample roots and seedlings, cause erosion, and promote the invasion of alien plants (Tomich 1986; Cuddihy and Stone 1990).

B. Overutilization for commercial, recreational, scientific, or educational purposes.

None known.

C. Disease or predation.

None known.

D. The inadequacy of existing regulatory mechanisms.

Currently, there is no Federal or State protection for P. fernaldii. The State of Hawaii does not recognize this species as endangered until it is federally listed.

E. Other natural or manmade factors affecting its continued existence.

This species is threatened by numerous alien plant species (R. Hobdy, pers. comm., 1995). The original native flora of Hawaii consisted of about 1,000 species, 89 percent of which were endemic. Of the total native and naturalized Hawaiian flora of 1,817 species, 47 percent were introduced from other parts of the world and nearly 100 species have become pests (Smith 1985, Wagner et al. 1990). Naturalized, introduced species compete with native plants for space, light, water, and nutrients (Cuddihy and Stone 1990). Some of these species were brought to Hawaii by various groups of people, including the Polynesian immigrants, for food or cultural reasons. Plantation owners, alarmed at the reduction of water resources for their crops caused by the destruction of native forest cover by grazing feral animals, supported the introduction of alien tree species for reforestation. Ranchers intentionally introduced pasture grasses and other species for agriculture, and sometimes inadvertently introduced weed seeds as well. Other plants were brought to Hawaii for their potential horticultural value (Wenkam 1969; Scott et al. 1986; Cuddihy and Stone 1990). Many of these introduced alien plant taxa are highly invasive, out-competing and displacing native plants.

FOR RECYCLED PETITIONS:

- a. Is listing still warranted? \_\_\_\_\_
- b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? \_\_\_\_\_
- c. Is a proposal to list the species as threatened or endangered in preparation? \_\_\_\_\_
- d. If the answer to c. above is no, provide an explanation of why the action is still precluded.

LAND OWNERSHIP (Estimate proportion Federal/state/local government/private, identify non-private owners): All of the island of Lanai is owned by one private landowner.

PRELISTING (Describe status of conservation agreements or other conservation activities):

None known.

REFERENCES (Identify primary sources of information (e.g., status reports, petitions, journal

publications, unpublished data from species experts) using formal citation format):

The information in this form is based on the results of a meeting of 20 botanical experts held by the Center for Plant Conservation in December of 1995, and has been updated by personal communication with Robert Hobdy of Hawaii's Division of Forestry and Wildlife.

Cuddihy, L.W., and C.P. Stone. 1990. Alteration of native Hawaiian vegetation; effects of humans, their activities and introductions. *Coop. Natl. Park Resources Stud. Unit, Hawaii*. 138 pp.

Degener, O. and I. Degener. 1971. Schiedea and Pleomele comments by Otto and Isa Degener. *Newsletter of the Hawaiian Botanical Society* 10: 9.

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Scott, J.M., S. Mountainspring, F.L. Ramsey, and C.B. Kepler. 1986. Forest bird communities of the Hawaiian Islands: Their dynamics, ecology, and conservation. *Studies in Avian Biology* 9:1-429. Cooper Ornithological Society, Los Angeles.

Smith, C.W. 1985. Impact of alien plants on Hawai'i's native biota: in Stone, C.P., and J.M. Scott (eds.), Hawai'i's terrestrial ecosystems: preservation and management. *Coop. Natl. Park Resources Stud. Unit, Univ. Hawaii, Honolulu*, pp. 180-250.

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Tomich, P.Q. 1986. *Mammals in Hawai'i; a synopsis and notational bibliography*. Bishop Museum Press, Honolulu. 375 pp.

van Riper, S.G. and C. van Riper. 1982. *A Field Guide to the Mammals of Hawaii*. Oriental Publishing Company, Honolulu. 68 pp.

Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1999. *Manual of the flowering plants of Hawai'i*. University of Hawaii Press and Bishop Museum Press, Honolulu. *Bishop Mus. Spec. Publ.* 97:1-1913.

Wenkam, R. 1969. *Kauai and the park country of Hawaii*. Sierra Club, San Francisco. 160 pp.

LISTING PRIORITY (\* after number)

THREAT
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Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2*
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

**Rationale for listing priority number:**

*Magnitude:* The magnitude of threat to this species is high, with high, uncontrolled populations of introduced Axis deer throughout the island, and particularly in the dry forest remnants. In addition, the amount of intact dry forest on Lanai is nearly completely gone as a result of past agriculture, and what is left is extremely degraded by alien plant species and deer browsing.

*Imminence:* The threat of extinction is imminent for this species, since there is no expectation that the continued onslaught of alien deer and plant species will be halted in the near future. In addition, the risk of stochastic extinction is high, with only three populations remaining.

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, removal of candidates, and listing priority changes.

Approve: Rowan Gould March 6, 2003  
Regional Director, Fish and Wildlife Service Date

Concur: Steve Williams Aprile 5, 2004  
Director, Fish and Wildlife Service Date

Do not concur: \_\_\_\_\_  
Director, Fish and Wildlife Service Date

Director's Remarks: \_\_\_\_\_  
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Date of annual review: February 2003  
Conducted by: \_\_\_\_\_

Comments: \_\_\_\_\_  
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