

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Calliandra locoensis

COMMON NAME: no common name

LEAD REGION: 4

INFORMATION CURRENT AS OF: February 2003

STATUS/ACTION (Check all that apply):

New candidate

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 first became a Candidate: _____

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.

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 - Mimosaceae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Puerto Rico

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Puerto Rico

LEAD REGION CONTACT (Name, phone number): Rick Gooch, 404/679-7124

LEAD FIELD OFFICE CONTACT (Office, name, phone number): Boquerón, Puerto Rico Field Office, Jorge Saliva, 787/851-7297

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

The genus Calliandra is composed of about 130 species that are endemic to the Americas (Barneby 1998). Species previously described as belonging to the genus in Africa, Madagascar, and Asia have been excluded based on specific morphological features. Twenty-five native species of Calliandra have been reported for the Antilles. Of those, three are native to Puerto Rico: Calliandra portoricensis, C. haematomma, and C. locoensis. The latter, C. locoensis, is endemic to Puerto Rico and was not discovered until 1991 during a study of the flora of the Susúa Commonwealth Forest. García and Kolterman (1992) described the species in 1992.

Currently, the species is known from only two localities in the Susúa Commonwealth Forest in southwestern Puerto Rico known as La Quebrada and El Cerro. During recent studies, scientists located and marked 398 individuals greater than 0.5 meters (1.6 feet) in height at the La Quebrada locality, and 299 at the El Cerro locality. Seedlings were abundant at both locations (González 1998).

The Susúa Commonwealth Forest, managed by the Puerto Rico Department of Natural and Environmental Resources, is located in the municipalities of Yauco and Sabana Grande in southwestern Puerto Rico and encompasses approximately 1,314 hectares (3,245 acres). The forest lies within the subtropical moist forest life zone, the most extensive life zone found on the island. The majority of the forest is covered by serpentine outcrops, interspersed with Nipe and Rosario clay soils. These areas have a poor water-holding capacity, and the vegetation is more xeric than might be expected based on the amount of rainfall received in the region. The topography is mountainous in both forests and characterized by steep ravines and intermittent streams. Mean annual precipitation in the Susúa Forest has been reported to be 1,339 millimeters (53 inches). Much of the vegetation in the forest was cut for cultivation, grazing, charcoal production, and wood prior to its designation as a public forest. The vegetation may be described as semi-evergreen to deciduous forest (Silander et al. 1986).

González (1998) studied aspects of the distribution, abundance, population structure, phenology, pollination, breeding system, and germination of Calliandra locoensis. Flowering was found to be synchronous and seasonal, occurring primarily during the dry season, and was found to be more prolific in sunnier areas. Honey-bees, five species of butterflies, warblers (Coereba flaveola) and hummingbirds (Chlorostilbon maugeus) were observed visiting the flowers. The species has exhibited a low degree of self-compatibility in pollination tests. Seeds do not appear to have a biotic dispersal agent, but are dispersed by dehiscence, which may be a factor in the species' limited distribution. Seeds have a short viability period, and require mesic conditions for germination.

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.

Calliandra locoensis is endemic to Puerto Rico and known only from two localities. Activities known to have occurred in the past in the area include the planting of crops such as coffee, avocado, and oranges, the production of charcoal and firewood, and cattle grazing. The

populations are easily accessible and may be threatened by developments proposed within the forest, as well as by unsuitable management practices that could harm the species or its habitat. Recent proposals for development in the forest have included the establishment of hotels and the construction of roads. Management practices that might affect the species include the development and maintenance of trails, and the effects of increased visitor use and potential for fire in this xeric environment. No management plan for the forest has been prepared.

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

Collection has not been documented as affecting Calliandra locoensis.

C. Disease or predation.

Neither disease nor predation have been documented as factors affecting the species.

D. The inadequacy of existing regulatory mechanisms.

The Commonwealth of Puerto Rico has adopted a regulation that recognizes and provides protection for certain Commonwealth listed species. However, Calliandra locoensis is not on this list. Federal listing under the Endangered Species Act would provide protection, and, by virtue of the existing cooperative agreement between the Service and the Commonwealth under section 6, would ensure its addition to the Commonwealth list.

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

One of the most important factors affecting the continued survival of this species is its limited distribution. Damage caused by hurricane Georges in 1998 in the Susúa Forest was severe. Landslides, defoliation, and tree fall were extensive. Nevertheless, while individual specimens of C. locoensis were affected, such disturbance may play an important role in reproduction and recruitment (e.g., increased flowering in sun-exposed areas and seed dispersal). Because of the vegetation's xeric nature, a catastrophic spontaneous or man-caused fire could devastate an entire population. Also, the reduction in pollinator availability due to introduced animals or pesticides may affect fruit and seed set. The spread of the Africanized honeybee (Apis mellifera) could have an adverse effect on pollination of C. locoensis by competing with native pollinators.

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):

Both known localities occur on land managed by the Puerto Rico Department of Natural and Environmental Resources.

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

Scientists at the University of Puerto Rico, Mayagüez Campus, through a cooperative agreement with the Service, have studied aspects of the life history of Calliandra locoensis. Efforts at propagation of the plant have been initiated.

REFERENCES (Identify primary sources of information (e.g., status reports, petitions, journal publications, unpublished data from species experts) using formal citation format):

Barneby, R. C. 1998. Silktree, guanacaste, monkey's earring: A generic system for the synandrous Mimosaceae of the Americas. Part III. Calliandra. *Memoirs of the New York Botanical Garden* 74(3): 1-223.

García, R. G. and D. A. Kolterman. 1992. Nueva especie de Calliandra (Mimosaceae: Ingae) del suroeste de Puerto Rico. *Caribbean Journal of Science* 28: 56-61.

González, M. A. 1998. Population and reproductive ecology of Calliandra locoensis Garcia & Kolterman (Mimosaceae), an endemic species of southwestern Puerto Rico. M.S. thesis, University of Puerto Rico, Mayaguez Campus.

Silander, S., H. Gil de Rubio, M. Miranda, and M. Vázquez. 1986. Los Bosques de Puerto Rico, Volume II. *Compendio Enciclopédico de los Recursos Naturales de Puerto Rico*. Puerto Rico Department of Natural Resources, San Juan, Puerto Rico. 389 pp.

LISTING PRIORITY (place * after number)

THREAT

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 and Imminence: Although the magnitude of threat to *Calliandra locoensis* is high because it has a very restricted distribution of only one population in the Susúa Commonwealth Forest, Yauco (Puerto Rico), there is no imminent threat to the species due to potential development projects or inadequate management practices. The known population of *C. locoensis* seems to be thriving with seedlings found near mature trees along sections of the Río Loco, suggesting that the species is successfully reproducing itself in the wild. Also, there is evidence that the species can reproduce vegetatively. Based on the non-imminent threat to *C. locoensis*, a Listing Priority of 5 was assigned.

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: Linda Kelsey March 14, 2003
Acting Regional Director, Fish and Wildlife Service Date

Concur: _____ Date _____
Director, Fish and Wildlife Service

Do not concur: _____ Date _____
Director, Fish and Wildlife Service

Director's Remarks:

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Date of annual review: February 2003

Conducted by: Jorge E. Saliva - Boquerón, Puerto Rico FO

Comments:

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