

CANDIDATE AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Calliandra locoensis

COMMON NAME: no common name

LEAD REGION: 4

INFORMATION CURRENT AS OF: January 5, 2001

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: ____

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/TERRITORIES/COUNTRIES OF OCCURRENCE: Puerto Rico

LEAD REGION CONTACT (Name, phone number): Lee Andrews, 404/679-7217

LEAD FIELD OFFICE CONTACT (Office, name, phone number): Boquerón, Puerto Rico Field Office, Susan Silander, 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 strictly 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 only discovered in 1991 during a study of the flora of the Susua Commonwealth Forest. Garcia and Kolterman (1992) described it in 1992.

Currently, the species is known from only two localities in the Susua Commonwealth Forest in southwestern Puerto Rico, known as El 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 El Quebrada locality and 299 at the El Cerro locality. Seedlings were abundant at both locations (Gonzalez 1998).

The Susua 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; therefore, the vegetation is more xeric than might be expected based on the rainfall received in the region. Topography is mountainous in both forests, characterized by steep ravines and intermittent streams. Mean annual precipitation in the Susua 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).

Gonzalez (1998) studied aspects of the distribution, abundance, population structure, phenology, pollination, breeding system, and germination for 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, and birds (bananaquits (Coereba flaveola) and the Puerto Rican emerald hummingbird (Chlorostilbon maugaeus)) were observed visiting the flowers. The species 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 and that 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 management practices. 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, including 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 would provide protection under the Act, and, by virtue of the existing cooperative agreement under section 6 of the ESA, 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 Susua 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, seed dispersal). Because of the vegetation's xeric nature, a catastrophic spontaneous or man-caused fire could devastate an entire population. 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.

BRIEF SUMMARY OF REASONS FOR REMOVAL OR LISTING PRIORITY CHANGE:

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, Mayaguez 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.

Garcia, 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.

Gonzalez, 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. Vazquez. 1986. *Los Bosques de Puerto Rico, Volume II. Compendio Enciclopedico 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 |

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, annual retentions of candidates, removal of candidates, and listing priority changes.

Approve: _____
Regional Director, Fish and Wildlife Service Date _____

Concur: _____
Director, Fish and Wildlife Service Date _____

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

Director's Remarks: _____

Date of annual review: January 5, 2001

Conducted by: Susan Silander - Boqueron, Puerto Rico FO

Changes from October 25, 1999 CNOR(check one) Yes X No___

Approval: _____ Dated _____
Regional Director

Comments: _____

(rev. 6/00)