

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Gonocalyx concolor

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 *A*species.@

X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Plants - Ericaceae

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.):

Two species of the genus Gonocalyx are known from Puerto Rico, both endemic: Gonocalyx portoricensis and G. concolor. Gonocalyx portoricensis is found in the Caribbean National forest in the Luquillo mountains and in the Toro Negro Commonwealth Forest in Jayuya.

Richard A. Howard, of the Arnold Arboretum on Cerro La Santa in the Carite Commonwealth Forest, discovered Gonocalyx concolor in January 1968. Cerro La Santa lies on the border of the municipalities of Cayey and San Lorenzo at an elevation of approximately 903 meters (984 feet) (Proctor 1992). The plant was also reported from the Caribbean National Forest in the Luquillo mountains of northeastern Puerto Rico (S. Flores, personal communication, 1996).

Gonocalyx concolor is a small evergreen epiphytic shrub. The leaves are simple, alternate, coriaceous, ovate, and 1.5 to 3 centimeters (cm) (0.5 to 1.2 inches) long and 1.5 to 2.25 cm (0.5 to 0.9 inches) broad. Venation is 5-plex from the base with the mid-vein immersed above and emersed beneath. Young leaves and branches are brilliantly rose colored but become green with age. Flowers are bisexual, 5-merous, regular, and uniformly vivid red. They are borne singly on axillary brachyblasts and are semipendent. The corolla tube is campanulate and about 13 to 15 millimeters (mm) (0.5 to 0.6 inches) in length and 6 to 7 mm (0.2 to 0.3 inches) in diameter and carnos. The flowers may be hummingbird pollinated (Proctor 1992).

Currently, G. concolor is known only from the type locality in the Carite Commonwealth Forest. The population previously reported from the Luquillo mountains is apparently no longer extant. Approximately 172 plants have been located at the Carite site. Initial efforts at propagation have been successful. Preliminary studies of the species' reproductive biology indicate that the plant is predominantly out crossed, and that out crossed flowers produce twice the number of seeds of self-pollinated flowers (S. Flores, pers. comm. 1996).

The Carite Commonwealth Forest is located in the Sierra de Cayey in the municipalities of Guayama, Cayey, Caguas, San Lorenzo, and Patillas in southeastern Puerto Rico. The highest peak is Cerro La Santa at 903 meters (2,962 feet). The forest is steep with slopes ranging from 20 to 60 percent. Underlain by volcanic rock, andesitic in composition, the forest's soils are primarily of clay texture with moderate or slow permeability. Mean annual rainfall is 2,150 mm (86 inches), with February through April being the drier months. Mean monthly temperature varies from 20 °C in February to 23 °C in September. The forest lies within the subtropical wet forest and subtropical lower montane forest life zones. Five vegetation types have been identified: upper montane and palm, lower montane, dwarf or elfin, early successional, and plantations. Gonocalyx concolor occurs in the dwarf or elfin forest type.

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.

Gonocalyx concolor has been affected in the past by the construction of roads and telecommunication towers on these mountain peaks. It has also been affected by landslides. Currently, the only known population is located on Cerro La Santa in the Carite Commonwealth Forest. The dwarf or elfin forest in Carite has been reduced in size by nearly 20 percent as a result of the construction of communication towers. The species is found growing on trees located close to the communication towers, the road, plantations, and trails. Any expansion of these facilities might result in a loss of individual plants, thus potentially affecting the

population=s ability to maintain itself. While the population falls within the Carite Commonwealth Forest and is managed by the Puerto Rico Department of Natural and Environmental Resources, the forest has no management plan.

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

While G. concolor is an attractive plant, but any use of the species for horticultural purposes is not known. It is also not known to be utilized for commercial, recreational, scientific or educational purposes.

C. Disease or predation.

Neither disease nor predation are known to be factors affecting this 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, Gonocalyx concolor is not on this list. Federal listing under the Endangered Species Act would provide added protection, and, by virtue of an existing cooperative agreement under section 6 between the Service and the Commonwealth, it would ensure the species= 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. The species is epiphytic, growing on the trunks of trees. Damage caused by hurricanes, including tree fall, defoliation, and landslides, could result in the loss of individual plants and impacts to the population. Hurricane Georges caused severe damage in the Carite Commonwealth Forest. The species is possibly pollinated by hummingbirds, and any modification in habitat that results in shifts in faunal composition may result in the reduction of 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):

The known population occurs on land managed by the Puerto Rico Department of Natural and Environmental Resources.

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

Aspects of the reproductive biology of the species have been studied and propagation efforts 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):

Department of Natural Resources. 1976. The Master Plan for the Commonwealth Forests of Puerto Rico. Puerto Rico Department of Natural Resources, San Juan, Puerto Rico. 259 pp.

Liogier, H. A. and L. F. Martorell. 1982. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Editorial de la Universidad de Puerto Rico, Rio Piedras, Puerto Rico. 342 pp.

Proctor, G. 1992. Status report on Gonocalyx concolor Nevling. Puerto Rico Department of Natural Resources. 6 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 *Gonocalyx concolor* is high because it is currently known from only one locality, the extant population is numerous and it occurs in protected land (Carite Commonwealth Forest in southeastern Puerto Rico). Additionally, efforts to propagate this species have been successful, thus a stock of propagated plants is available to introduce this species within its historic range and to other suitable areas. Based on the non-imminent threats to *G. concolor*, a Listing Priority of 5 was assigned to this species.

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: _____
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: Jorge E. Saliva - Boquerón, Puerto Rico FO

Comments:

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