

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Dalea carthagenensis (Jacq.) J.F. Macbr. var. floridana (Rydb.) Barneby

COMMON NAME: Florida prairieclover (= Cartagena prairieclover)

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 Aspecies.@

X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Plant - Fabaceae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Florida

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Florida

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

LEAD FIELD OFFICE CONTACT (Office, name, phone number): South Florida Field Office, Paula Halupa, 772/562-3909 extension 257

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

The systematics of Florida prairieclover were reviewed in a 1977 revision by the late Rupert Barneby of the New York Botanical Garden, according to the Missouri Botanical Garden=s (2003) nomenclatural database.

Dalea carthagenensis var. floridana is a shrub up to 2 meters (6 feet) tall with small pea-like flowers borne in spikes. It is known only from pine rocklands, edges of rockland hammock edges, and coastal uplands. It has been collected in Miami-Dade, Collier, Monroe, and Palm Beach Counties. It was last reported from Palm Beach County in 1918. Currently, it is known from two occurrences at the Big Cypress National Preserve in Collier and Monroe Counties and from the Miami Rock Ridge in Miami-Dade County at the Charles Deering Estate at Cutler and at the R. Hardy Matheson Preserve. Some of the Miami area sites where Dalea carthagenensis var. floridana was once collected still exist, and it might still be worthwhile to check Key Biscayne (Crandon Park), the Castellow Hammock Environmental Education Center, the Cox Hammock, and the edge of Everglades National Park (Bradley and Gann 1999). Gann et al (2002) are not very optimistic about finding more localities. They have accounted for essentially every herbarium specimen and reliable sighting. They provide the best available summary of this plant's status. This shrub is found in several habitats, including edges of rockland hammock and pine rockland, coastal upland, and marl prairie. Fire is probably very important to the livelihood of this taxon. plants probably do not tolerate shading by hardwoods in the absence of periodic fires. Two of the extirpated occurrences were reported from rockland hammocks (Castellow [Hammock] and Cox [Hammock]). Plants probably occurred at the edges of these hammocks. . . While plants were known to occur in coastal uplands on Key Biscayne at Crandon park, we do not have good information on the habitat it occurred in. . . probably along the edges of one of several small maritime hammocks there, and possibly in coastal strand. (Bradley and Gann 1999). The number of plants has been estimated at fewer than 1,000, perhaps about 200 to 300. All are on protected lands (Bradley and Gann 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.

Most of Dalea carthagenensis var. floridana's habitat has been destroyed by human activity. Pine rocklands in Miami-Dade County have been reduced to about 11 percent of their former extent (Kernan and Bradley 1996). Of the estimated historical extent of 74,000 hectares (ha) (182,780 acres), only 8,140 ha (20,106 acres) of pine rocklands remained in 1996. Outside of the Everglades National Park, only about 1 percent of the Miami Rock Ridge pinelands have escaped clearing, and much of the remaining pinelands is in small remnant blocks isolated from other natural areas (Herndon 1998). Florida had a 15.3 percent increase in the human population from April 1, 1990, to July 1, 1998, and was ranked as the fourth fastest growing state in the nation during 1998 (U.S. Census Bureau 1998). Given the popularity of South Florida, this trend is expected to continue.

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

None are known.

C. Disease or predation.

None are known.

D. The inadequacy of existing regulatory mechanisms.

The Florida Department of Agriculture and Consumer Services has designated Dalea carthagenensis as endangered under Chapter 5B-40, Florida Administrative Code. This listing provides little or no habitat protection beyond the State's Development of Regional Impact process, which serves to disclose impacts from projects, but provides no regulatory protection for State-listed plants on private lands. Without local or county ordinances preventing the destruction of the plant, conservation does not occur.

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

Fire suppression and invasive exotic plants are the greatest threats to Dalea carthagenensis var. floridana. Fire is required to maintain the pine vegetation and keep hardwoods from encroaching. Under natural conditions, lightning fires typically occurred at 3- to 7-year intervals. With fire suppression, hardwoods eventually invade pine rocklands and shade out understory species like Dalea carthagenensis var. floridana. Fire suppression has reduced the size of the areas that do burn and habitat fragmentation has prevented fire from moving across the landscape in a natural way. Thus, many pine rockland communities have moved past their normal fire subclimax toward tropical hardwood hammock communities. More to the point, the sites where this plant persists in the Miami metro area are surrounded by urban development, making prescribed burning difficult but not impossible.

Exotic species have also altered the type of fire that occurs in pine rocklands. Historically, pine rocklands had an open low understory where natural fires remained patchy with low temperature intensity, thus sparing many native grasses such as Dalea carthagenensis var. floridana. The current density of exotic plant overgrowth throughout the range of Dalea carthagenensis var. floridana has created a situation that may no longer allow the species to be conserved through fire. Dense vegetative growth can create immense fire temperatures and longer burning periods. Pine rockland plants cannot tolerate these extreme conditions. Given the current conditions, exotic plant control may require an alternate, more labor intensive method. One such method, hand chopping followed by spot treatment, requires extensive man-hours and is very costly. This method is feasible, if costly, at a small, intensively managed site like the Charles Deering Estate, but not for the large Big Cypress National Preserve.

Exotic plant taxa have significantly affected pine rocklands. As a result of human activities, at least 277 taxa of exotic plants are now known to have invaded pine rocklands throughout South Florida (U.S. Fish and Wildlife Service 1998). In much of south Florida, the worst of these plants are Brazilian pepper (Schinus terebinthifolius), Burmese reed (Neyraudia reynaudiana), Melaleuca (Melaleuca quinquenervia) is a severe problem in the Big Cypress National Preserve. All exotic, nuisance plant species threaten the native vegetation with extirpation or extinction.

Given the species' narrow range and the small number of individuals that exist, Dalea carthagenensis var. floridana is extremely vulnerable to natural catastrophic events such as hurricanes and tropical storms. Either one of these events could extirpate existing populations.

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 known plants of Dalea carthagenensis var. floridana occur on preserved lands. All known non-preserved sites have apparently been extirpated.

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

No specific conservation activities are being conducted for Dalea carthagenensis var. floridana. There is exotic plant control at Big Cypress National Preserve, but it is a huge job requiring staffing and budget. On February 4, 2003, the Preserve celebrated the death of the last known melaleuca (Melaleuca quinquenervia) tree, out of 120,000 that had been treated. Seed banks remain, so seedlings are expected to continue to appear (online archive, Naples News, consulted February 27, 2003). Miami-Dade County has active management of its public pinelands.

The Service has developed an ecosystem-based, multi-species recovery plan for the threatened and endangered species of South Florida. It includes many recommendations for conservation of the pine rockland community (U.S. Fish and Wildlife Service 1999).

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

Bradley, K. A. and G. D. Gann. 1999. Status summaries of 12 rockland plant taxa in southern Florida. Report submitted to U.S. Fish and Wildlife Service, Vero Beach, Fla. The Institute for Regional Conservation, 22601 S.W. 152 Ave., Miami, Florida 33170. 82 pp.

Herndon, A. 1998. Life history studies of plants endemic to South Florida. Final report to the National Park Service under cooperative agreement number CA5280-5-9019. October 1, 1995 to April 30, 1998.

Kernan, C. and K. Bradley. 1996. Conservation survey of Linum arenicola in Dade County. A report to the U.S. Fish and Wildlife Service. Fairchild Tropical Garden, Miami, Florida.

Missouri Botanical Garden. 2003. W3 TROPICOS database: Vascular TROPICOS nomenclature. Entries for Dalea carthagenensis, including its distribution. Checked February 27, 2003.

The Nature Conservancy. 1998. BioSource; National Heritage database.

U.S. Census Bureau. 1998. State and Metropolitan Area Data Book 1997-1998.

U.S. Fish and Wildlife Service. 1999. South Florida multi-species recovery plan. Atlanta, Georgia. 2172 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: This plant is currently known at only four localities, two in Big Cypress National Preserve and two in publicly-owned preserves in Miami-Dade County. This has become an extremely rare plant, and loss of any populations would be a serious blow to its future.

Imminence: The known localities are in preserves with sensitive management that is oriented toward protecting the tropical flora.

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: David Martin - South Florida Ecological Services Office

Comments:

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