

CANDIDATE AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Brickellia mosieri (Small) Shinnery

COMMON NAME: Florida brickell-bush or Mosier's false boneset

LEAD REGION: 4

INFORMATION CURRENT AS OF: January 15, 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: Plants - Asteraceae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Florida

CURRENT STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Florida

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

LEAD FIELD OFFICE CONTACT (Office, name, phone number): Vero Beach, Florida Field Office, Dave Martin, 561/562-3909 ext. 230

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

Brickellia mosieri is an endemic perennial plant known only from the Miami Rock Ridge in Miami-Dade County, Florida (Small 1933, Long and Lakela 1971, Wunderlin 1998). The current and historic ranges are similar. This species occurs in pine rocklands. It is shade intolerant and requires periodic burning to reduce competition from woody vegetation. The total number of individuals has been estimated to be fewer than 1,000 plants. Fewer than 900 plants occur at eight preserve sites: Camp Owaissa Bauer, Larry and Penny Thompson Park, Navy Wells Park, Nixon Smiley Pineland Preserve, Pine Shore Park, Rockdale, Ron Ehman Park, and Seminole Wayside Park. Fewer than 100 plants occur unprotected at the U.S. Naval Observatory in Miami (Bradley and Gann, pers. comm. 1999). The species was historically known from other sites on the Miami Rock Ridge, where it is now extirpated (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. Much of the habitat of Brickellia mosieri has been negatively altered by human development. 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 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.

The regional water control efforts conducted throughout South Florida may have negative effects on Brickellia mosieri by the alteration of its hydrology.

- 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 Brickellia mosieri 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 exotic plant invasions are the greatest threats to Brickellia mosieri. Fire is required to maintain the pine rockland community. 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 Brickellia mosieri. 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” and are succeeding to tropical hardwood hammock communities.

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 plants such as Brickellia mosieri. The current density of exotic plant overgrowth throughout a Brickellia mosieri's range has created a situation that may no longer allow the species to be conserved through fire. Dense vegetative growth can create intense 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 herbicide treatment, requires extensive man-hours and is very costly. This method may not be feasible for the preserve managers, given the acreage of land and current staffing and budget constraints.

Exotic plant taxa have significantly affected pine rocklands. As a result of man, 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). The most serious threats are from Brazilian pepper (Schinus terebinthifolius) and Burma reed (Neyraudia reynaudiana). Others, including melaleuca (Melaleuca quinquenervia), may also be problems. “Management of pine rocklands in Miami-Dade County is complicated because most of the remaining habitat occurs in small fragmented areas bordered by urban development. Areas near the managed pine rockland that contain exotic species can act as a seed source of exotics allowing them to continue to invade the pine rockland.” (Bradley and Gann 1999).

Based on the low number of individuals within its narrow range, catastrophic events such as hurricanes and tropical storms may negatively affect Brickellia mosieri. Either event could extirpate remaining populations.

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): The remaining Brickellia mosieri plants are small, isolated populations located on eight different preserved sites and one non-protected site throughout the Miami Rock Ridge in southern Miami-Dade County.

PRELISTING (Describe status of conservation agreements or other conservation activities): In 1979, Miami-Dade County enacted the Environmentally Endangered Lands Covenant Program which gives private land owners of pine rockland habitat a tax break if they agree to not develop the property and manage it for a period of ten years (U.S. Fish and Wildlife Service 1998).

The Service has developed a multi-species recovery plan for the threatened and endangered species of South Florida. This plan is ecosystem-based and 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):

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.

Long, R.W. and O. Lakela. 1971. A flora of tropical Florida; a manual of the seed plants and ferns of southern peninsular Florida. University of Miami Press, Coral Gables, Florida.

Small, J.K. 1933. Manual of the southeastern flora. University of North Carolina Press; Chapel Hill, North Carolina. 1,554 pp.

U.S. Census Bureau, 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.

Wunderlin, R.P. 1998. Guide to the vascular plants of Florida. University Press of Florida; Gainesville, Florida. 806 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 16, 2001

Conducted by: Dave Martin - Vero Beach, Florida FO

Changes from October 25, 1999 CNOR(check one) Yes X No ___

Approval: _____ Dated _____
Regional Director

Comments: _____

(rev. 6/00)