

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Argythamnia blodgettii (Torr. ex Chapm) Chapm.

COMMON NAME: Blodgett=s silverbush or Blodgett=s wild mercury

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 - Euphorbiaceae

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 Ecological Services Office, Paula Halupa, 561-562-3909 extension 257

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

Argythamnia blodgettii is a small, suffrutescent (semi-woody) perennial plant. Its range is restricted to southern Florida in Miami-Dade and Monroe Counties. On the Miami-Dade County

mainland it grows in pine rockland and edges of rockland hammock. In the Florida Keys it grows in pine rockland, rockland hammock, and coastal berm, particularly in open sunny gaps or edges (Bradley and Gann 1999). It tolerates some degree of disturbance, even growing in the bottoms of abandoned rock quarries at Windley Key Fossil Reef State Geological Site. Its historical distribution was from central Miami-Dade County to Key West in the Florida Keys.

A. blodgettii is an erect suffrutescent perennial 1-6 dm [0.3-2 feet] tall, the stems and leaves covered with bifurcate hairs; leaves entire, oval to elliptic, sometimes slightly spatulate, 1.5-4 cm long, often colored a distinctive metallic bluish green, distinctly 3-nerved; staminate calyx 7-8 mm wide; sepals are lanceolate; petals broadly elliptic, shorter than sepals; pistillate sepals lanceolate to linear-lanceolate; petals broadly elliptic, shorter than sepals; pistillate sepals lanceolate to linear-lanceolate, 5-6 mm long; capsule 4-5 mm wide (adapted from Small (1933) in Bradley and Gann 1999).

This species is shade intolerant and requires periodic burning to reduce competition from woody vegetation. It was once known from the John Pennekamp Coral Reef State Park, Brickell Hammock, Key West, and Stock Island, where it is extirpated. Argythamnia blodgettii is known from fewer than 9,000 plants at 11 protected sites, and fewer than 1,000 plants at five non-protected sites (Bradley and Gann, pers. comm. 1999). Argythamnia blodgettii's restricted ecological range, and its drastic loss of habitat suggest that the number of individuals are declining.

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.

Habitat loss is threatening the survival of Argythamnia blodgettii. This species once occurred at the John Pennekamp Coral Reef State Park, Brickell Hammock, Key West, and Stock Island, but is now extirpated due to development. Habitat loss continues to occur throughout its remaining habitat and most of Argythamnia blodgettii's remaining suitable habitat has been negatively altered 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.

The regional water control efforts conducted throughout South Florida may have negative effects to Argythamnia blodgettii by altering the hydrology within the plant's range.

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 Argythamnia blodgettii 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 threatening the survival of Argythamnia blodgettii. 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 Argythamnia blodgettii. 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 Argythamnia blodgettii. The current density of exotic plant overgrowth throughout Argythamnia blodgettii'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 publically owned lands, 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). A few of these exotic plants include the Brazilian pepper (Schinus terebinthifolius), burma reed (Neyraudia reynaudiana), and melaleuca (Melaleuca quinquenervia). Many 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, Argythamnia blodgettii is extremely vulnerable to natural catastrophic events such as hurricanes and tropical storms. Either event 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):

Argythamnia blodgettii individuals have been found on some 17 Federal, State and county managed sites: Biscayne National Park, Blue Heron Hammock (Florida Keys Wildlife and Environmental Area), Camp Owaissa Bauer, Castellow Hammock Environmental Education Center, Charles Deering Estate, Dove Creek Hammock (Florida Keys Wildlife and Environmental Area), Everglades National Park, Fuchs Hammock Preserve, Larry and Penny Thompson Park, Lignumvitae Key State Botanical Park (2 tracts), Long Key State Park, National Key Deer Refuge, Ned Glenn Nature Preserve, Pine Ridge Sanctuary, Snake Creek Hammocks (Florida Keys Wildlife and Environmental Area), and Windley Key Fossil Reef State Geological Park (Gann et al. 2002). The species is also known from five private, non-protected sites.

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). Although the Argythamnia blodgettii populations on public lands are protected from development, they are still under threat from exotic vegetation. There are no specific conservation activities for Argythamnia blodgettii on public lands. There are no current conservation activities for the Argythamnia blodgettii sites located on private lands.

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 communities where Argythamnia blodgettii occurs (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.

- Gann, G.D., K.A. Bradley, and S.W. Woodmansee. 2002. Rare Plants of South Florida: Their History, Conservation, and Restoration. Institute for Regional Conservation, Miami. 1056 pages.
- 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. 962 pp.
- Small, J. K. 1933. Manual of the southeastern flora. Univ. of North Carolina Press, Chapel Hill. 1554 pp.
- The Nature Conservancy, Conservation Science Division, in cooperation with The Association for Biodiversity Information, and the International Network of Natural Heritage Programs and Conservation Data Centers. 1999. Biodiversity Conservation Data Source (BioSource). Arlington, Virginia.
- 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 species is rare and is present in Everglades National Park and several preserves in southern Miami-Dade County. Loss of plants or habitat at any of these localities would seriously affect this subspecies.

Imminence: This subspecies is entirely, or almost entirely, restricted to nature preserves whose management is intended to conserve the local flora through prescribed burns and other management actions.

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: March 2003

Conducted by: David Martin - South Florida Ecological Services Office

Comments:

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