

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Arabis georgiana Harper

COMMON NAME: Georgia rockcress

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: June 13, 2002

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 - Brassicaceae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Alabama, Georgia

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Alabama, Georgia

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

LEAD FIELD OFFICE CONTACT (Office, name, phone number): Jackson, Mississippi Field Office, Cary Norquist, 601/321-1128

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

Species Description/Taxonomy

Georgia rockcress is a perennial herb up to 90 centimeters (cm) (35 inches (in.)) tall. The basal leaves are oblanceolate, rounded at the apex, toothed on the margins, 4 to 8 cm (2 to 3 in.) long, and with or without long, tapered petioles. The basal leaves usually persist through the fruiting season and have green lower surfaces. The stem leaves are alternate, lanceolate to narrowly elliptic, 1 to 5 cm (0.4 to 2.0 in.) long, and somewhat clasping around the stems. The upper surfaces of the stem leaves have stiff, branched hairs when young and are smoothish when mature. All leaves tend to be finely hairy. The flowers are borne in a terminal inflorescence that is somewhat loosely branched. There are four, white petals which measure 6 to 10 millimeters (mm) (0.2 to 0.4 in.) long. The fruit stands erect as a slender (1mm or 0.04 in. wide), relatively long (5 to 7 cm or 2 to 3 in.) pod that splits in two, leaving behind a thin, papery, lengthwise partition. Seeds are brownish, oblong, about 2 mm (0.1 in.) long, and are borne in single rows on each side of the partition. Flowering occurs from March to April, with fruiting beginning in May and into early July (Allison 1995, Patrick et al.).

Arabis georgiana was first collected in 1841 by Boykin from the vicinity of the Chattahoochee River in Georgia. Several other collections of this species were made in the late 1800's. However, Harper was the first to recognize its distinctiveness, after seeing it in fruit in 1901 on the bank of the Chattahoochee River in Stewart County, Georgia. Harper later described it as a distinct species in 1903 (Allison 1995). The Georgia rockcress was maintained as a distinct species in Hopkin=s 1937 monograph of Arabis in the eastern U.S. (Allison 1995).

Habitat

Arabis georgiana grows in a variety of dry situations, including shallow soil accumulations on rocky bluffs, ecotones of gently sloping rock outcrops, and in sandy loam along eroding riverbanks. It is occasionally found in adjacent mesic woods, but it will not persist in heavily shaded conditions. This species is adapted to high or moderately high light intensities and occurs on soils which are circumneutral to slightly basic (Allison 1995, Allison in litt. 1999, Patrick et al. 1995).

Current and Historical Range

Populations of Arabis georgiana are known from the Gulf Coastal Plain, Piedmont, and Ridge and Valley physiographic provinces of Alabama and Georgia. Currently a total of 18 populations are known from four counties in Alabama (Bibb, Elmore, Russell, Wilcox Counties) and six counties in Georgia (Clay, Chattahoochee, Floyd, Gordon, Harris, Muscogee Counties). A historical location from Stewart County, Georgia, has not been relocated despite repeated searches (Allison 1995, Allison in litt. 1999).

Population Status/Estimates

Extensive searches have been conducted for this species throughout these provinces in Alabama and Georgia for over 5 years (Allison 1995, Allison in litt. 1999). Arabis georgiana is rare throughout its range. Allison (1995) surveyed 205 sites over nine counties in Georgia and discovered only four new populations (a 2 percent success rate).

During surveys, Allison (pers. comm. 1999) found that populations of this species typically have a limited number of individuals restricted over a small area. Of the nine known populations in Georgia, six of them consist of only 3 to 25 plants, and the remaining three populations have 51 to 63 individuals (Allison 1995). The larger populations are primarily in the Ridge and Valley physiographic region of Alabama, particularly in Bibb County. Allison (in litt. 1999) originally documented this species at 18 sites (representing 7 populations) in Bibb County. However, one of these Bibb County populations was not relocated during surveys in 2001 (Allison pers. comm. 2002). Three of six currently-documented Bibb County populations have 5 to 20 plants, and the remaining Bibb County populations contain of 50, 83, and 180 plants, respectively. The remaining three Alabama populations, which occur in the Coastal Plain region of Alabama, have population sizes of 12, 24, and 51 plants (Allison in litt. 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.

One population of Arabis georgiana in Floyd County, Georgia, appears to be a surviving remnant of a once larger population. The primary habitat at this locality has been extensively quarried (Allison 1995). It is likely that other populations on rocky bluffs, in the Piedmont and Ridge and Valley provinces, were destroyed by quarrying or impoundments. Rock bluffs along rivers have also been favored sites for hydropower dam construction. The construction of a dam in Harris County, Georgia, destroyed a portion of suitable habitat for a population of Arabis georgiana and the current population there may also represent a remnant of a once much larger population (Allison 1995).

Habitat degradation, more than its outright destruction, is the most serious threat to this species= continued existence. Most of the Coastal Plain rivers surveyed by Allison (pers. comm. 1999) were considered unsuitable for Arabis georgiana because their banks had been disturbed to the point where there was no remaining vegetative buffer. Disturbance, associated with timber harvesting, road building, and grazing has created favorable conditions for the invasion of exotic weeds in this species= habitat (see Factor E).

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

Overutilization is not known to pose a threat to this species.

C. Disease or predation.

Allison (1995) observed plants damaged from grazing at one site (Allison 1995). However, disease and predation are not thought to be a significant threat to this species.

D. The inadequacy of existing regulatory mechanisms.

Arabis georgiana is listed as Threatened by the State of Georgia (Patrick et al. 1995). This State listing provides legal standing under the Georgia Wildflower Preservation Act of 1973. Georgia

law prohibits the removal of this species from public land and regulates the taking and sale of plants from private land. The greater problem of habitat destruction and degradation is not addressed by this law. Arabis georgiana is considered endangered in Alabama but that state has no protective legislation for plants.

Only three populations occur on public land - two populations on the Fort Benning Military Reservation in Chattahoochee County, Georgia, and Russell County, Alabama, respectively, and one population on the Jackson Park National Historic Site. Whether or not these populations are being adequately protected on these sites is unknown.

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

The primary threat to Arabis georgiana is the ongoing degradation of its habitat. Disturbance of most of the species= known sites has provided opportunities for the invasion of aggressive, non-native weeds, especially Japanese honeysuckle (Lonicera japonica). Arabis georgiana is not a strong competitor. It is usually found in areas where growth of other plants is restrained due to the shallowness of the soils or the pioneer status of the site (e.g., eroding riverbanks) (Allison 1995). However, non-native species are effectively invading these riverbank sites and the long-term survival of the five riverbank populations in the Coastal Plain province is questionable (Allison 1995). This species is only able to avoid competition with non-native species where the soil is limited (e.g., rocky bluffs).

Competition from non-native species, enhanced by adjacent land use changes, likely contributed to the loss of the population at the type locality in Stewart County, Georgia (Allison 1995) and possibly to one of the Bibb County, Alabama, populations (Allison pers. comm. 2002). Four additional populations are currently being negatively affected by competition with non-native plants. Japanese honeysuckle was observed growing on individual plants of Arabis georgiana at three sites. At a fourth site, plants growing in a mat of Nepalese browntop (Eulalia viminea) have declined in number from 17 individuals to a single plant (Allison 1995). Four other populations are imminently threatened by the nearby presence of non-native plants (Allison 1995, Allison in litt. 1999). Thus, 44 percent of the known populations (i.e., 8 of 18) are currently threatened by non-native species.

Populations of Arabis georgiana are healthiest in areas receiving full or partial sunlight. Those populations occurring in forested areas will decline as the forest canopy closes. Allison (in litt. 1999) attributed the decline of a population in Bibb County, Alabama, to canopy closure. In addition, the small number of individuals at the majority of the sites makes these populations vulnerable to local extinctions from stochastic events.

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):

Three sites are located on federal land (two sites on the Fort Benning Military Reservation and one on Jackson Park National Historical Site). All other populations are on private land, including two on property owned by The Nature Conservancy.

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

The Service funded a status survey on this species throughout its range. The Georgia survey was completed in 1995, and the Alabama surveys are ongoing. The Service's Candidate Conservation Program provided funding in 2002 to enact conservation measures for this species including development of management agreements for selected populations on public lands and implementation of non-native plant control and other habitat management activities at other sites. Restoration activities are ongoing in both states. Management plans and restoration are still in the planning stage in Georgia (Allison pers. comm. 2003). In Alabama, selected sites have been visited, landowners have been contacted, and exotic removal has been initiated at several sites (Schotz, Alabama Natural Heritage Program, pers. comm. 2003).

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

Allison, J.R. 1995. Status survey of Arabis georgiana Harper (Georgia rockcress) in Georgia. Unpublished report for the U.S. Fish and Wildlife Service. Jackson, MS. 18 pp. + appendices.

Harper, R.M. 1903. A new Arabis from Georgia. *Torreyia* 3:87-88.

Harper, R.M. 1904. A new station for Arabis georgiana. *Torreyia* 44:24-25.

Harper, R.M. 1906. Notes on the distribution of some Alabama plants. *Bull. Torr. Bot. Club* 33:532.

Hopkins, M. 1937. Arabis in eastern and central North America. *Rhodora* 39:63-98, 106-148, 155-186, plates 457-458.

Patrick, T.S., J.R. Allison, and G.A. Krakow. 1995. Protected Plants of Georgia. Georgia Department of Natural Resources, Wildlife Resources Division, Social Circle. 246 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: The magnitude is not considered high because of the number of populations scattered across multiple counties in two states.

Imminence: The primary threat today consists of competition from exotics which is an insidious threat.

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: Cary Norquist - Jackson, Mississippi FO

Comments:

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