

ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: <i>Braya humilis</i> / Low Braya, Alpine Braya			
Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	A	<p><i>Braya humilis</i> is primarily a boreal species, with disjunct populations in the mountains of central Colorado (Chaffee, Gunnison, Park, Pitkin, and Summit counties) and one known population in northwest Wyoming (Fremont County) on Shoshone National Foreste in the Wind River Range.</p> <p>In Colorado, this species is found above 11,400 feet on exposed scree and solifluction slopes of Leadville Limestone or Manitou Dolomite (Spackman et al. 1997). The single Wyoming population occurs on barren gravel slopes and banks at 11,100 feet on calcareous soils.</p> <p>Confidence in Rank: High</p>	<ul style="list-style-type: none"> • Fertig 1996 • Fertig 1998 • Fertig 2000 a • Fertig 2000 b • Spackman et al. 1997 • University of Wyoming 1998 • Welp et al. 2000
2 Distribution outside R2	B	<p>Low Braya ranges from Alaska to Greenland south to British Columbia, Alberta, and Vermont, with disjunct populations in NW Wyoming and C Colorado.</p> <p>Confidence in Rank: High</p>	<ul style="list-style-type: none"> • Rollins 1993
3 Dispersal Capability	AB	<p><i>Braya</i> spp. produce 10-many seeds per fruit on a somewhat congested inflorescence (Rollins 1993). Seeds are dispersed passively and lack appendages to facilitate wind or animal movement (although high winds in the plant's alpine habitat may aid dispersal). Dispersal is probably limited by the availability of suitable establishment sites. Germination may also be rare and episodic due to the harsh conditions of the plant's habitat. Additional information is needed on seedling recruitment and survival in the Rocky Mountains. Consult Neely and Carpenter (1986) for additional information on Colorado populations.</p> <p>Confidence in Rank: Medium</p>	<ul style="list-style-type: none"> • Neely and Carpenter 1986 • Rollins 1993
4 Abundance in R2	AB	<p>This species is ranked S2 by the Colorado Natural Heritage Program and is known from ca 10 main locations (based on the map in Spackman et al. 1997). The single Wyoming population contains ca. 50 individuals in less than 1 acre of habitat (Fertig 1998, Welp et al. 2000). Populations in Colorado and Wyoming are mostly small, patchy, and restricted to unusual substrates.</p> <p>Confidence in Rank: Medium</p>	<ul style="list-style-type: none"> • Fertig 1998 • Spackman et al. 1997 • Welp et al. 2000

ATTACHMENT SS2

Species: <i>Braya humilis</i> / Low Braya, Alpine Braya			
Criteria	Rank	Rationale	Literature Citations
5 Population Trend in R2	D	Trends not known in Wyoming. Additional information is needed on trends in Colorado. Confidence in Rank: High	• -
6 Habitat Trend in R2	D	Some alpine rock scree habitat may have been lost in historical times from impacts of hard rock mining. Confidence in Rank: High	• -
7 Habitat Vulnerability or Modification	B	Threats to this plant's habitat in Wyoming are low due to a lack of mining interest in the area and reduction in sheep grazing. Habitat could be impacted by high recreation use (a major trail is nearby). Colorado populations could be impacted by mining and recreation. <i>Braya humilis</i> is not listed as Sensitive. The Wyoming population is protected within the Fitzpatrick Wilderness and is located within the potential Arrow Mountain Research Natural Area (Jones and Fertig 1999). At least one Colorado population is on lands purchased and protected by The Nature Conservancy (Colorado Native Plant Society 1997). Confidence in Rank: High	<ul style="list-style-type: none"> • Colorado Native Plant Society 1997 • Fertig 1998, 2000b • Jones and Fertig 1999
8 Life History and Demographics	D	Consult Neely and Carpenter (1986) for information from their studies of population size and structure of <i>B. humilis</i> in central Colorado. Confidence in Rank: Low	<ul style="list-style-type: none"> • Neely and Carpenter 1986
Initial Evaluator(s): Walter Fertig and Scott Laursen			Date: 8 February 2002

ATTACHMENT SS2

National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY(L)¹ to occur:

<u>Colorado NF/NG</u>	Known	Likely	<u>Kansas NF/NG</u>	Known	Likely	<u>Nebraska NF/NG</u>	Known	Likely	<u>South Dakota NF/NG</u>	Known	Likely	<u>Wyoming NF/NG</u>	Known	Likely
Arapaho-Roosevelt NF			Cimmaron NG			Samuel R.McKelvie NF			Black Hills NF			Shoshone NF	X	
White River NF	X					Halsey NF			Buffalo Gap NG			Bighorn NF		
Routt NF						Nebraska NF			Ft. Pierre NG			Black Hills NF		
Grand Mesa, Uncompahgre, Gunnison NF	X					Ogalala NG						Medicine Bow NF		
San Juan NF												Thunder Basin NG		
Rio Grande NF														
Pike-San Isabel NF	X													
Comanche NG														

Literature cited

Colorado Native Plant Society. 1997. Rare Plants of Colorado, second edition. Falcon Press Publ., Helena, MT.

Fertig, W. 1996. Additions and deletions to the flora of Wyoming. Castilleja 15(4):6-7.

Fertig, W. 1998. The status of rare plants on Shoshone National Forest: 1995-97 survey results. Report prepared by the Wyoming Natural Diversity Database, Laramie, WY.

Fertig, W. 2000 a. Rare vascular plant species in the Wyoming portion of the Utah-Wyoming Rocky Mountains Ecoregion. Prepared for the Wyoming Nature Conservancy by the Wyoming Natural Diversity Database, Laramie, WY.

Fertig, W. 2000 b. State Species Abstract: *Braya humilis*. Wyoming Natural Diversity Database. Available on the internet at www.uwyo.edu/wyndd

Jones, G.P. and W. Fertig. 1999. Ecological evaluation of the potential Arrow Mountain Research Natural Area within the Shoshone National Forest, Fremont County, Wyoming. Unpublished report prepared for the Shoshone National Forest, USDA Forest Service by the Wyoming Natural Diversity Database, University of Wyoming.

Neely, E.E. and A.T. Carpenter. 1986. Size, structure, and habitat characteristics of populations of *Braya humilis* var. *humilis* (Brassicaceae): an alpine disjunct from Colorado. Great Basin Naturalist 46: 728-735.

¹ Likely is defined as more likely to occur than not occur on the National Forest or Grassland. This generally can be thought of as having a 50% chance or greater of appearing on NFS lands.

ATTACHMENT SS2

Rollins, R.C. 1993. The Cruciferae of Continental North America, Systematics of the Mustard Family from the Arctic to Panama. Stanford Univ. Press, Stanford, CA.

Spackman, S., B. Jennings, J. Coles, C. Dawson, M. Minton, A. Kratz, and C. Spurrier. 1997. Colorado Rare Plant Field Guide. Prepared for the Bureau of Land Management, US Forest Service, and US Fish and Wildlife Service by the Colorado Natural Heritage Program, Ft. Collins, CO.

University of Wyoming – Rocky Mountain Herbarium. 1998. Atlas of the Flora of Wyoming. Posted electronically through 1998 at: <http://www.esb.utexas.edu/tchumley/wyomap/> and unposted accession information at the Rocky Mountain Herbarium through 2001.

Welp, L., W.F. Fertig, G.P. Jones, G.P. Beauvais, and S.M. Ogle. 2000. Fine filter analysis of the Bighorn, Medicine Bow, and Shoshone National Forests in Wyoming. Wyoming Natural Diversity Database, Laramie, WY.