

ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: (*Draba exunguiculata* (O.E. Schulz) C.L. Hitchc. /Clawless draba/DREX3 – USDA PLANTS)

A synonym is *Draba chrysantha* S. Wats. var. *exunguiculata* O.E. Schulz (Rollins 1993). The common name indicated on the USDA National PLANTS internet site (http://plants.usda.gov/cgi_bin/topics.cgi) indicated the common name was Gary's Peak draba that may be confused with Gray's draba (*Draba grayana*).

Criteria	Rank	Rationale	Literature Citations
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Criteria	Rank	Rationale	Literature Citations
<p>1 Distribution within R2</p>	<p>A</p>	<p><i>Draba exunguiculata</i> is endemic to northern and central Colorado. It has been reported from Boulder, Clear Creek, El Paso, Gilpin, Grand, Lake, Park and Summit Counties.</p> <p>An "A-rank" is awarded as the most recent occurrence data suggest populations are typically distributed as isolated patches with restricted interaction among patches and possibly limited opportunity for dispersal among patches.</p> <p>Confidence in Rank Medium.</p>	<ul style="list-style-type: none"> • Rollins, R. C. 1993. The Cruciferae of Continental North America. Stanford University Press, Stanford, CA. • Occurrence data from: Colorado Natural Heritage Program Element Occurrence records provided by Michael Menefee, September 2002; The University of Colorado Herbarium records provided by Nan Lederer, September 2002; The Colorado State University Herbarium records provided by J. Rowens Ackerfield, September 2002. • Weber, W.A. and R.C. Wittmann. 2001. Colorado Flora - Western slope. 3rd ed. University Press of Colorado, Boulder, CO. • 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, the US Forest service and the US Fish and Wildlife Service by the Colorado Natural Heritage Program.

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Criteria	Rank	Rationale	Literature Citations
2 Distribution outside R2	A	<i>Draba exunguiculata</i> is endemic to mountain peaks northern and central Colorado. Confidence in Rank High	•
3 Dispersal Capability	B	Pollen stainability as a measure of fertility has been reported to be very low to essentially zero and reproduction is likely by agamospermy, that is seed set by asexual means (Price 1979). Seed is likely the main dispersal vehicle for genetic material. Seed dispersal mechanisms are not documented. It is speculated that seed is dispersed by wind, animals such as pika, and precipitation. A "B rank is awarded because it likely disperses only through suitable habitat. Confidence in Rank Medium	• Price, R. A. 1979. The <i>Draba crassa</i> complex Brassicaceae): systematics and geography. Unpublished MS thesis. University of Wisconsin, Madison, WI.
4 Abundance in R2	B	Weber and Wittman (2001) commented that it is "occasional" in alpine fell fields. There are at least 13 occurrences that have been reported in the last 15 years. The species grows in small patches. Occurrence size typically ranges from 3 isolated individuals to several patches that comprise a total of 20+ individuals over 0.1 acre. Population size seems very variable. Price (1978) wrote that "populations observed on Colorado Mines Peak and on the ridge east of Loveland Pass comprise 1000 or more individuals each.....while only about 10 individuals were observed on James Peak." Petterson (1997) reported it only to be "occasional on fell field of alpine tundra" between Colorado Mines Peak and Mt. Flora along the divide. A "B-rank" is awarded because although the species is uncommon, it appears that current abundance (estimated number of individuals) is large enough that demographic stochasticity is not likely to lead to rapid extinction, but, in combination with highly variable environmental factors, could pose a threat. Confidence in Rank Medium	• Weber, W.A. and R.C. Wittmann. 2001. Colorado Flora - Eastern slope. 3 rd ed. University Press of Colorado, Boulder, CO. Spackman et al 1997. • Price, R.A. 1978. Communication from RA Price to Colorado Natural Heritage Program. • Petterson, Angelique. 1997. Specimen collected July 14, 1997 and deposited at Colorado State University Herbarium Accession # 43810.

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<p>5 Population Trend in R2</p>	<p>D</p>	<p>The current information available is not sufficiently quantitative to estimate trends. There have been not reports of large numbers of plants since 1978 (see Criteria 4).</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> •
<p>6 Habitat Trend in R2</p>	<p>B</p>	<p><i>Draba exunguiculata</i> grows in the alpine tundra at elevations of approximately 11,700 to 13,700 ft. The relatively inaccessible nature of much of the habitat suggests only a small portion of potential habitat has been impacted historically.</p> <p>However, the very patchy distribution (for example 1000 individuals on one peak compared to 10 on another; see Criteria 4) raises the possibility that the population is centered in a very limited area. Therefore, significant disturbance in areas with high population density would have a much greater impact on the species than if it were evenly distributed. Botanical surveys recorded in the Colorado Heritage Program element occurrence records have indicated that plants are trampled in several areas that receive high use by hikers. If these areas are centers of high population density suitable habitat may be unduly compromised.</p> <p>A "B rank" is awarded as there appears relatively large areas of suitable habitat remaining. The confidence level is "low" because the distribution may be skewed and, in the last 20 years, there have been no reports to indicate populations of a thousand plus individuals (see Criteria 4).</p> <p>Confidence in Rank Low</p>	<ul style="list-style-type: none"> •

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<p>7 Habitat Vulnerability or Modification</p>	<p>B</p>	<p>Mining activities are likely to have impacted populations that are observed in the vicinity of existing mines. Disturbance by hikers has frequently been cited in occurrence records as likely impacting individual populations (see Citations of Criteria 1). The alpine tundra is very vulnerable to disturbance as it takes a long time to recover (Willard 1979). Undisciplined hiking and excessive widening of existing trails is recognized as being a problem to maintaining undisturbed habitat in the high mountains of Colorado (Morrow 2002).</p> <p>Air pollution and nitrogen deposition along the Front Range may be considerable (Baron 2001, Baron et al. 2000). However this threat and the considerable vulnerability of alpine habitats to global warming is not included in assessing the associated rank because the consequences of such phenomenon are somewhat speculative.</p> <p>A "B rank" is awarded because although the accessible habitat is very vulnerable to modification, substantial potential, if not occupied, habitat remains remote and inaccessible. Therefore, in general, "habitat seems somewhat vulnerable". See discussion in "Criteria 6" for additional information that may influence this rank.</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> Morrow, B. 2002. Education and Outreach Manager, "Colorado Fourteeners Initiative". Radio broadcast, "Colorado Matters", Colorado Public Radio. April 17. Willard, B.E. 1979. Plant sociology of alpine tundra, Trail Ridge, Rocky Mountain National Park, Colorado. Colorado School of Mines quarterly: Vol. 4, no. 4. Baron, J.S. 2001. Acid Rain in the Western United States. Statement of Jill S. Baron, ecologist U.S. Geological Survey. Before the House Committee on Science. United States House of Representatives. May 3, 2001. [Accessed April 2002]. http://www.greennature.com/article.php?sid=869 Baron, J.S., H.M Rueth, A.M. Wolfe, K.R. Nydick, E.J. Allstott, J.T. Minear and B. Moraska. 2000. Ecosystem responses to nitrogen deposition in the Colorado Front Range. Ecosystems 3: 352-368.

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Criteria	Rank	Rationale	Literature Citations
<p>8 Life History and Demographics</p>	<p>D</p>	<p><i>Draba exunguiculata</i> is a perennial that reproduces by seed. Seed vigor, seedling recruitment, or adult mortality rates have not been documented. This species does not appear to grow in disturbed areas.</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> •
<p>Evaluator(s): Juanita A. R. Ladyman</p>			<p>Date: September 22, 2002</p>

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

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.

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