

ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: (Botrychium echo/Reflected Moonwort/BOEC)			
Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	B	<i>Botrychium echo</i> is known from 15 Colorado counties at elevations between 9,500 11,000 ft. It has a widespread albeit patchy distribution within the region. It occurs in gravelly soils on grassy slopes, rocky hillsides, along the edges of lakes, along roadsides and near trails, and in other disturbed areas such as avalanche chutes and snow fields. Confidence in Rank High	<ul style="list-style-type: none"> • CNHP EO records (received September 2002) • FNA 1993
2 Distribution outside R2	B	Outside the Rocky Mountain region the species is reported to occur in Arizona and Utah, however there is no record of the Arizona occurrence, and only 1 historical record for Utah in the Uinta Basin. The ID for the Utah specimen is also suspect. Confidence in Rank Medium	<ul style="list-style-type: none"> • CNHP EO records (received September 2002) • FNA 1993 • NatureServe Explorer 2001
3 Dispersal Capability	C	<i>Botrychium echo</i> produces wind-blown spores and is capable of dispersing widely across landscapes. Confidence in Rank High	<ul style="list-style-type: none"> • CNHP EO records (received September 2002) • NatureServe Explorer 2001
4 Abundance in R2	B	Although it is widespread and although as of 1996 there were 18 known element occurrence records in Colorado, the total number of individuals documented at all extant sites is less than 50. However, population records for all occurrences are not reported. Three of the occurrences document an abundance of five to seven individuals. Confidence in Rank High	<ul style="list-style-type: none"> • CNHP EO records (received September 2002) • NatureServe Explorer 2001
5 Population Trend in R2	D	Population trends are not documented or well known. Confidence in Rank High	<ul style="list-style-type: none"> • CNHP EO records (received September 2002)

ATTACHMENT SS2

Species: (Botrychium echo/Reflected Moonwort/BOEC)			
Criteria	Rank	Rationale	Literature Citations
6 Habitat Trend in R2	B	Natural disturbances such as avalanches and rockfalls occur frequently in the Rocky Mountain Region. Road construction and widening projects are also common occurrences. Existing level of disturbances may be stable. Confidence in Rank Medium	<ul style="list-style-type: none"> • CNHP EO records (received September 2002)
7 Habitat Vulnerability or Modification	C	The species naturally occurs on disturbed sites (roadcuts, logged areas, roadsides, avalanche chutes, rockfall areas) and is therefore likely tolerant to habitat changes and may require some degree of disturbance for establishment. Confidence in Rank Medium	<ul style="list-style-type: none"> • CNHP EO records (received September 2002)
8 Life History and Demographics	B	<i>Botrychium echo</i> is a spore producing perennial. Reproductive rates, susceptibility to disease or herbivory are not well known, but the species appears to be tolerant to and responds well to disturbance. Confidence in Rank Medium	<ul style="list-style-type: none"> • CNHP EO records (received September 2002) • FNA 1993
Evaluator(s): Paula Durkin			Date: September 17, 2002

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.

ATTACHMENT SS2

Species Name:											
<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	X	Cimarron NG		Samuel R. McKelvie NF		Black Hills NF		Shoshone NF			
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	X							Thunder Basin NG			
Rio Grande NF	X										
Pike-San Isabel NF	X										
Comanche NG											
Pawnee NG											

CNHP 2002. Colorado Natural Heritage Program Element Occurrence Record for *Astragalus missouriensis* var. *humistratus* (Missouri milk-vetch) received September 2002. Colorado State University, Ft. Collins, CO.

FNA 1993. Flora of North America Editorial Committee. Flora of North America North of Mexico, vol. 2. Oxford University Press, NY.

NatureServe Explorer: An online encyclopedia of life [web application]. 2001. Version 1.6. Arlington, Virginia, USA: NatureServe. Available: <http://www.natureserve.org/explorer>. (Accessed: September 29, 2002).

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 U.S. Forest Service and the U.S. Fish and Wildlife Service by the Colorado Natural Heritage Program.