

ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: *Botrychium simplex* E. Hitchc./Little grapefern / BOSI Global rank: G5
 [Synonyms: *B. simplex* E. Hitchc. var. *compositum* (Lasch) Milde; *B. simplex* E. Hitchc. var. *laxifolium* (Clausen) Fern.; *B. simplex* E. Hitchc. var. *tenebrosum* (A.A.Eat.) Clausen; *B. simplex* E. Hitchc. ssp. *typicum* Clausen; *B. tenebrosum* A.A. Eat.]

Flora of N. America Vol 2: "The many environmental forms and juvenile stages of *B. simplex* have resulted in the naming of numerous, mostly taxonomically worthless, infraspecific taxa. The western montane populations in the flora from CO to north SK and westward are evidently distinctive, however, and may warrant subspecies or species status."

Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	A	S1 in CO; S2 in WY; Unrankable in SD 8 locations in WY ; 3 in CO Western WY and northwestern CO are on the east edge of the western range of <i>B. simplex</i> Confidence in Rank Medium	<ul style="list-style-type: none"> NatureServe 2001 Atlas of Vascular Plants of Wyoming - www.rmh.edu CO NHP files
2 Distribution outside R2	B-C (species is found over a large area but not in large populations)	S1 in ID, IL, IN, IA, NC, RI, UT, VA 4 locations in UT; 85 locations in 23 counties in CA S3 in MN, WA S4 in OR S5 in PA Reported in AK, CA, DE, DC, ME, MA, MS, NV, NH, NM, NY, VT Historic in CT, MD, OH Unranked in MI, NJ, WV Unrankable in ND Canada: S1 in PEI, SK; S2 in AB, NB, NF; S2S3 in BC, NS; S4? In ON; Reported in NT, QC Circumboreal species Confidence in Rank Medium	<ul style="list-style-type: none"> NatureServe 2001 Digital Atlas of the Vascular Plants of Utah www.nr.usu.edu www.calflora.org
3 Dispersal Capability	D	Dispersal capability unknown Confidence in Rank High	

ATTACHMENT SS2

Species: *Botrychium simplex* E. Hitchc./Little grapefern / BOSI Global rank: G5
 [Synonyms: *B. simplex* E. Hitchc. var. *compositum* (Lasch) Milde; *B. simplex* E. Hitchc. var. *laxifolium* (Clausen) Fern.; *B. simplex* E. Hitchc. var. *tenebrosum* (A.A.Eat.) Clausen; *B. simplex* E. Hitchc. ssp. *typicum* Clausen; *B. tenebrosum* A.A. Eat.]

Flora of N. America Vol 2: "The many environmental forms and juvenile stages of *B. simplex* have resulted in the naming of numerous, mostly taxonomically worthless, infraspecific taxa. The western montane populations in the flora from CO to north SK and westward are evidently distinctive, however, and may warrant subspecies or species status."

Criteria	Rank	Rationale	Literature Citations
<p>4 Abundance in R2</p>	A-B	<p>No information on population sizes at site locations: 8 locations in WY, 3 in CO</p> <p><i>Botrychium</i> spp. populations have a long underground part of their life cycle that appears to support continued population survival through periods of unfavorable conditions as long as the underground environment is not altered; also, they thrive with a high degree of asexual reproduction and the resulting low genetic diversity.</p> <p>BOSI is uncommon, but its identifiable aboveground presence indicates a stable population situation if the disturbance regime, hydrology, etc. is stable</p> <p>Confidence in Rank Low</p>	<ul style="list-style-type: none"> • CO NHP files • Atlas of Vascular Plants of Wyoming - www.rmh.edu
<p>5 Population Trend in R2</p>	D	<p>Unknown</p> <p>Confidence in Rank High</p>	
<p>6 Habitat Trend in R2</p>	D	<p>A variety of habitats including meadows, barrens, and woods, usually in subacid soils; found in gravelly slopes of open places; marshy areas, streamsides, and open places EL 3030 to 3180 m in UT; 7600-11500 ft in CO</p> <p>No information on habitat trend</p> <p>Confidence in Rank High</p>	<ul style="list-style-type: none"> • NatureServe 2001, Global PCA; PCA for CO

ATTACHMENT SS2

Species: *Botrychium simplex* E. Hitchc./Little grapefern / BOSI Global rank: G5
 [Synonyms: *B. simplex* E. Hitchc. var. *compositum* (Lasch) Milde; *B. simplex* E. Hitchc. var. *laxifolium* (Clausen) Fern.; *B. simplex* E. Hitchc. var. *tenebrosum* (A.A.Eat.) Clausen; *B. simplex* E. Hitchc. ssp. *typicum* Clausen; *B. tenebrosum* A.A. Eat.]

Flora of N. America Vol 2: "The many environmental forms and juvenile stages of *B. simplex* have resulted in the naming of numerous, mostly taxonomically worthless, infraspecific taxa. The western montane populations in the flora from CO to north SK and westward are evidently distinctive, however, and may warrant subspecies or species status."

Criteria	Rank	Rationale	Literature Citations
7 Habitat Vulnerability or Modification	A	Road construction, trampling (by animals or people), and changes in local hydrology may be primary threats to this species; more information about species distribution is needed before threats can be fully identified Meadows are very vulnerable habitat for modification Confidence in Rank Medium	<ul style="list-style-type: none"> • Schwab 1992 (draft) • CO NHP files
8 Life History and Demographics	D	Insufficient information to infer impacts of life history or demographics; the <i>Botrychium</i> style of life (long underground portion of the lifespan) is supportive of a stable population that may not readily appear as such to the aboveground observer. However, <i>Botrychium</i> interaction with mycorrhizal fungi, their requirements for dark, moist soil conditions, etc are fairly restrictive conditions that must be met in a stable mode for the species to thrive. Confidence in Rank High	<ul style="list-style-type: none"> • CO NHP files
Initial Evaluator(s): Beth A. Burkhardt, Botanist – Species Conservation Project/Black Hills NF			Date: 09/25/2002

References:

Schwab, Eric. 1992. Sensitive plant species and natural plant communities of the Arapaho National Forest and Pawnee National Grasslands, Colorado. Unpublished report.

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>		<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
Arapaho-Roosevelt NF	K	Cimmaron NG		Samuel R.McKelvie NF		Black Hills NF		Shoshone NF	K
White River NF	K			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	K								
Pike-San Isabel NF	K								
Comanche NG									

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.