

ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: <i>Pellaea gastonyi</i> Windham / Gastony's cliffbrake / PEGA5			
Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	A	Occurs in the Black Hills in R2. Material labeled <i>Pellaea atropurpurea</i> in Wyoming may actually be <i>Pellaea gastonyi</i> because until recently all plants were considered <i>P. atropurpurea</i> until <i>P. gastonyi</i> was recognized as a separate species. The number of populations in Wyoming would still be small if this is true. Further surveys needed in SD and WY. Two new sites in South Dakota were located during the 2001 field season near the Centennial Trail on the Northern Hills Ranger District. Confidence in Rank <b>High</b>	<ul style="list-style-type: none"> <li>• NatureServe, 2001</li> <li>• Fertig, 2000</li> <li>• FS Records</li> </ul>
2 Distribution outside R2	A	Outside of R2, <i>Pellaea gastonyi</i> occurs only in Missouri, Alberta, British Columbia and Saskatchewan, and has limited distribution in these areas. It is listed as S2 or S1 in the Canadian Provinces, S1 in Wyoming, and SR in South Dakota and Missouri. <i>Pellaea gastonyi</i> is hybrid in origin, and may occur anywhere in R2, but the number of known populations is low. Close examination of all reports of <i>Pellaea atropurpurea</i> and <i>Pellaea glabella</i> in Region 2 would be beneficial in establishing the true range of this species. Confidence in Rank <b>High</b>	<ul style="list-style-type: none"> <li>• FNA Vol. 2, 1993</li> </ul>
3 Dispersal Capability	B	The spores of <i>Pellaea gastonyi</i> , like the spores of other ferns and fern allies, can occasionally be transported over long distances. Spores can only germinate in appropriate environments, but this species is apogamous (no sexual reproduction even though spores are produced – there is no egg-sperm fusion), so any given spore may lead to a new population. In addition, <i>Pellaea gastonyi</i> is a hybrid of <i>P. atropurpurea</i> and <i>P. glabella</i> , and new populations may arise spontaneously at any time where the two species co-occur. Populations of <i>P. gastonyi</i> occur in locations (Canada) where neither parent species currently is found. Confidence in Rank <b>Medium</b>	<ul style="list-style-type: none"> <li>• FNA Vol. 1, 1993</li> </ul>
4 Abundance in R2	A	Rare in Wyoming, unknown occurrence and abundance in South Dakota. Additional surveys in Wyoming and South Dakota should help establish the abundance of <i>Pellaea gastonyi</i> , and its abundance relative to <i>Pellaea atropurpurea</i> . If further surveys show <i>Pellaea gastonyi</i> to be more common in South Dakota, then this ranking could change to a B. Despite the need for more information about this species, the fact that it occurs in only 4 small areas in North America causes it to be ranked A. Confidence in Rank <b>High</b>	<ul style="list-style-type: none"> <li>• NatureServe, 2001</li> <li>• Fertig, 2000</li> </ul>

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Criteria	Rank	Rationale	Literature Citations
5 Population Trend in R2	D	No information about the populations.  Confidence in Rank <b>Medium</b>	•
6 Habitat Trend in R2	B	Limestone cliffs, ledges and outcrops in the Black Hills.  Confidence in Rank <b>Medium</b>	• Fertig, 2000 • Larson & Johnson, 1999
7 Habitat Vulnerability or Modification	B	Cliffs and ledges may be disturbed during mining or logging in some areas of the Black Hills National Forest.  Confidence in Rank <b>Medium</b>	•
8 Life History and Demographics	D	<i>Pellaea gastonyi</i> , like most species of fern, reproduces clonally as well as by spores, and should tolerate some small-scale disturbance. The removal or destruction of limestone cliffs or outcrops may affect isolated populations.  Confidence in Rank <b>High</b>	• FNA Vol. 2, 1993
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**Notes**

This species may be better placed on a watch list until its abundance in South Dakota is determined. Its overall ranking may put it on the sensitive species list even with additional information, due to the fact that it is found in only four widely-scattered areas anywhere in the world, and is not widely distributed even in those areas where it is found.

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

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<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
		Cimarron NG		Samuel R. McKelvie NF		Black Hills NF	X	Shoshone NF	
White River NF				Halsey NF		Buffalo Gap NG		Bighorn NF	
Routt NF				Nebraska NF		Ft. Pierre NG		Black Hills NF	X
Grand Mesa, Uncompahgre, Gunnison NF				Ogalala NG				Medicine Bow NF	
San Juan NF								Thunder Basin NG	
Rio Grande NF									
Pike-San Isabel NF									
Comanche NG									
Pawnee NG									

References

Fertig, W. 2000. *Pellaea gastonyi* Wyoming State Species Abstract.

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Larson, G.E., and Johnson, J.R. 1999. Plants of the Black Hills and Bearlodge Mountains: a field guide with color photographs. South Dakota State University College of Agriculture & Biological Sciences, South Dakota Agricultural Experiment Station, Brookings, SD.

Nature Serve Explorer: An online encyclopedia of life [web application]. 2001. Version 1.6. Arlington, Virginia, USA: NatureServe. Available: <http://www.natureserve.org/explorer>. Accessed between (November 20, 2001 and December 10, 2001).

<sup>1</sup> 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.

# *Pellaea gastonyi* Black Hills National Forest

