

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: *Sphagnum balticum* (Russow) C.E.O. Jensen/Baltic sphagnum or Baltic bog moss

Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	A	In Region 2, 2 verified locations exist in CO in iron fens. In R2 this species seems to prefer the wet portions of acidic peatlands (iron fens). Iron fens, often with unique plant communities, are the only type of wetland with strongly acidic yet high calcium content groundwater support in the Rocky Mountain region. Number of populations is rare due to restricted habitat. New fen formation is not possible due to occupation of all potential fen sites with the present fens that began forming just after the Pleistocene age. Unless there is a major change in hydrology, wetlands cannot switch from decomposing systems to peat accumulating systems. <i>Sphagnum balticum</i> is ranked S1 in Colorado (CNHP).  Confidence in Rank Moderate	<ul style="list-style-type: none"> <li>• Weber 2001</li> <li>• Cooper et al. 2002</li> <li>• CNHP website 2009</li> <li>• Heidel 2009</li> <li>• Lemly 2009</li> <li>• NatureServe 2009</li> <li>• NRCS PLANTS website 2009</li> </ul>
2 Distribution outside R2	C	This species is found in the wetter areas of ombrotrophic bogs and ditches of Canada, Wales, Northern England, and Scotland. <i>Sphagnum balticum</i> is ranked globally G2G4 by NatureServe. It is “circumpolar but very rare”.  Confidence in Rank High	<ul style="list-style-type: none"> <li>• McQueen 1990</li> <li>• Duckworth 1999</li> <li>• Weber 2001</li> <li>• Cooper et al. 2002</li> <li>• NatureServe 2009</li> </ul>
3 Dispersal Capability	B	Primary means of distribution - the wind distributes spores. However, <i>Sphagnum balticum</i> will only colonize in suitable wet fen or bog habitat.  Confidence in Rank Moderate	<ul style="list-style-type: none"> <li>• Cooper et al. 2002</li> </ul>
4 Abundance in R2	B	It is unknown how many <i>S. balticum</i> plants exist in the two locations in CO.  Confidence in Rank High	<ul style="list-style-type: none"> <li>• Lemly 2009</li> </ul>
5 Population Trend in R2	D	Unknown. No observations from Colorado that might infer population trend.  Confidence in Rank High	<ul style="list-style-type: none"> <li>• Lemly 2009</li> </ul>

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<p>6 Habitat Trend in R2</p>	<p>A</p>	<p>In one CO <i>Sphagnum balticum</i> location, there is evidence of past mining and ditching. This may have caused some drying or water chemistry alterations in the habitat. In Colorado 50% of all wetlands have been lost since first settlement times (Dahl 1990). Few fen loss estimates in the United States but where available, indicate extensive impacts and fragmentation (USDA Forest Service 2005, Bedford &amp; Godwin 2003). Peat-mining, draining of fens, changes in hydrology, and the increase in motorized vehicle use have decreased the number and quality of fens in Colorado.</p> <p>Confidence in Rank High</p>	<ul style="list-style-type: none"> <li>• Dahl 1990</li> <li>• Cooper et al. 1998</li> <li>• USDI Fish &amp; Wildlife Service 1999</li> <li>• Cooper 2000</li> <li>• Cooper et al. 2002</li> <li>• Cooper 2003</li> <li>• Bedford &amp; Godwin 2003</li> <li>• USDA Forest Service 2005</li> <li>• Austin 2008</li> </ul>
<p>7 Habitat Vulnerability or Modification</p>	<p>A</p>	<p>The CO locations of <i>Sphagnum balticum</i> are vulnerable to mining and ditching, changes in hydrology or water chemistry, non-point pollution, and grazing. These populations are located in multiple use management areas with very little protection. Although the R2 Watershed Conservation Practices Handbook (WCPH) may provide some protection from non-point source pollution, few regulations exist for protection of key groundwater nutrient and water quantity components of fens. Only approximately 0.1% of land mass of R2 (rough guess) is peatlands. Fens accumulate peat at the rate of 8" per 1,000 years in cold climates and do not recover rapidly after disturbance. Significant man-caused disturbance is considered irreversible and has not been found capable of restoration.</p> <p>Confidence in Rank High</p>	<ul style="list-style-type: none"> <li>• Cooper 1990</li> <li>• Cooper &amp; Andrus 1994</li> <li>• Cooper et al. 1998</li> <li>• USDA Fish &amp; Wildlife Service 1999</li> <li>• Cooper 2000</li> <li>• Cooper et al. 2002</li> <li>• Austin 2008</li> </ul>
<p>8 Life History and Demographics</p>	<p>B</p>	<p>In CO evapotranspiration rates are very high and <i>Sphagnum balticum</i> grows very slowly in consistently wet conditions with the very specific water chemistry of iron fens. Recent literature suggests that <i>S. balticum</i> does not do well in competition with other species. It also does not tolerate decreases in water levels well. Thus, it is more often found in the hollows of fens or bogs than on hummocks.</p> <p>Confidence in Rank Moderate</p>	<ul style="list-style-type: none"> <li>• Duckworth 1999</li> <li>• Cooper et al. 2002</li> <li>• Rydin &amp; Jeglum 2006</li> </ul>

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Evaluators: Gay Austin, Rangeland Management Specialist & Botanist, Grand Mesa, Uncompahgre and Gunnison National Forest			Date: 1/13/09

**National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY (L)<sup>1</sup> to occur:** Species Name: *Sphagnum balticum* (Russow) C.E.O. Jensen/Baltic sphagnum or Baltic bog moss

Colorado NF/NG	Known		Likely		Kansas NF/NG	Known		Likely		Nebraska NF/NG	Known		Likely		South Dakota NF/NG	Known		Likely		Wyoming NF/NG	Known		Likely	
	Known	Likely	Known	Likely		Known	Likely	Known	Likely		Known	Likely	Known	Likely		Known	Likely							
Arapaho-Roosevelt NF									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		X							Ogalala NG						Medicine Bow NF									
San Juan NF	X														Thunder Basin NG									
Rio Grande NF																								
Pike-San Isabel NF		X																						
Comanche NG																								
Pawnee NG																								

<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.

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