

ATTACHMENT SS2

**REGION 2 SENSITIVE SPECIES EVALUATION FORM**

Species: <i>Selaginella selaginoides</i> (L.) Beauv. ex. Mart. & Schrank / Northern spike-moss, club spike-moss / SESE			
Criteria	Rank	Rationale	Literature Citations
<p><b>1</b> Distribution within R2</p>	<p><b>A</b></p>	<p>Northern spike-moss has been reported only once in R2. In 1978 Dieter Wilken (then curator of the CSU herbarium) collected it on the east side of the Park Range (Jackson County) in north-central Colorado for use in a botany lab. None of the collection was preserved, and although searched for repeatedly by Wilken and others, the Jackson County population has never been relocated.</p> <p>According to Harrington, this species has been reported consistently to occur in Colorado, but no herbarium specimens exist to support the claim.</p> <p>Confidence in Rank High</p>	<ul style="list-style-type: none"> <li>• Weber, Catalog of the Colorado Flora (2000)</li> <li>• Harrington, Manual of the Plants of Colorado (1964)</li> <li>• University of Colorado herbarium</li> </ul>
<p><b>2</b> Distribution outside R2</p>	<p><b>B</b></p>	<p>SESE is a circumboreal species known from Eurasia, the Canary Islands, Greenland, and in North America from Alta., B.C., Man., N.B., Nfld., N.W.T., N.S., Ont., P.E.I., Que., Sask., Yukon, AK, ME, MI, MN, MT, NV, NY, and WI.</p> <p>Wyoming populations are known from the upper Green River Basin, and foothills of the Wind River and Teton Ranges (Sublette and Teton counties). It is noted as “rare in Teton Canyon” by Shaw.</p> <p>Lellinger describes SESE as rare. SESE has formal status as Threatened or Endangered in Maine, Minnesota, and Wisconsin.</p> <p>Confidence in Rank High</p>	<ul style="list-style-type: none"> <li>• PLANTS database</li> <li>• Flora of North America (V. 2)</li> <li>• Lellinger, A Field Manual of the Ferns and Fern-Allies of the US and Canada (1985)</li> <li>• Shaw, Field Guide to the Vascular Plants of Grand Teton NP and Teton County, WY (1976)</li> <li>• Intermountain Flora (V. 1)</li> <li>• WYNDD species abstract (2000)</li> </ul>

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<p><b>3</b> Dispersal Capability</p>	A	<p>Northern spike-moss is unique in having an active megaspore dispersal mechanism, termed "compression and slingshot megaspore ejection". This mechanism is effective for short-distance dispersal, but prospects of dispersal across large areas of unsuitable habitat are poor because of the complicated life-cycle of spikemosses:</p> <p>Spikemosses reproduce by means of a two-stage system: Sporophytes produce separate male (wind dispersed) and non-mobile female gametophytes. The gametophytes produce the eggs and sperm to produce another generation of sporophytes. Sperm transfer requires close proximity of male and female gametophytes and the presence of a film of water for the sperm to swim through. These factors limit moderate and long-distance dispersal.</p> <p>Confidence in Rank High</p>	<ul style="list-style-type: none"> <li>• Flora of North America (V. 2)</li> <li>• Lellinger, A Field Manual of the Ferns and Fern-Allies of the US and Canada (1985)</li> </ul>
<p><b>4</b> Abundance in R2</p>	A	<p>There is only one known population of northern spike-moss in R2, and it has not been relocated since its discovery in 1978. This population is isolated by several hundred miles from the closest known populations in Wyoming. The Green River Lakes populations in Wyoming occur within eight miles of the Shoshone National Forest boundary and the New Fork Lakes population within 20 miles of the Shoshone boundary.</p> <p>Confidence in Rank High</p>	<ul style="list-style-type: none"> <li>• University of Colorado herbarium</li> <li>• Rocky Mountain herbarium</li> </ul>
<p><b>5</b> Population Trend in R2</p>	D	<p>Unknown. Populations are usually small and restricted to specialized microhabitats. Since the Colorado population has not been relocated despite repeated searches, it is possible that it is extirpated from R2. Some wetland populations near the New Fork Lakes in the Wind River Range may have been destroyed during dam and campground construction in the 1930s (WY); these would be the nearest populations to R2.</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> <li>• WYNDD species abstract (2001)</li> </ul>

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6 Habitat Trend in R2	B	<p>Unknown, but probably stable. Northern spike-moss habitat consists of wet places, among mossy stream banks, lakeshores, bogs, and wet talus slopes, in neutral to alkaline soil. Colorado's population was from a marshy place by beaver ponds and in adjacent wet spruce forests. The species prefers moderate elevations, between 7000 and 9500 feet.</p> <p>Two of the Wyoming populations are in association with reservoirs. Colorado's population is in a beaver pond complex; such complexes are extremely common throughout the mountains of R2.</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> <li>• Flora of North America (V. 2)</li> <li>• Lellinger, A Field Manual of the Ferns and Fern-Allies of the US and Canada (1985)</li> <li>• Weber, Colorado Flora (1996)</li> <li>• WYNDD species abstract (2001)</li> </ul>
7 Habitat Vulnerability or Modification	A	<p>The Colorado population is barely inside the Mount Zirkel Wilderness; however it is adjacent to a popular foot and ATV trail. Because of its isolation, the habitat must be considered extremely vulnerable to stochastic events such as floods, fire, inappropriate recreation or logging.</p> <p>Confidence in Rank High</p>	<ul style="list-style-type: none"> <li>• University of Colorado herbarium</li> </ul>
8 Life History and Demographics	D	<p>Other than the complicated life-cycle described above, little is known of the demographics or life-history of northern spike-moss. One established, plants spread using short-creeping, horizontal rhizomes to form small mats.</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> <li>• Lellinger, A Field Manual of the Ferns and Fern-Allies of the US and Canada (1985)</li> </ul>
Evaluator(s): Janet J. Coles			Date: September 28, 2002

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

<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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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
		Cimarron NG		Samuel R.McKelvie NF		Black Hills NF		Shoshone NF			X
				Halsey NF		Buffalo Gap NG		Bighorn NF			
	X			Nebraska NF		Ft. Pierre NG		Black Hills NF			
				Ogalala NG				Medicine Bow NF			
								Thunder Basin NG			