REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: Selaginella mutica D.C. Eat. ex. Underwood / Bluntleaf spikemoss / SEMU

Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	B	In Colorado, SEMU occurs in canyons at the mountain front from Wyoming to New Mexico (Larimer, Boulder, Jefferson, Douglas, El Paso, Fremont, Huerfano counties). A second set of records occurs in the canyon systems of the southeastern plains (Las Animas County). A third series of populations occurs in the sandstone canyons in the northwestern part of the state Mesa, Montrose, Moffat counties). In Wyoming, SEMU is found only in the Laramie and Medicine Bow ranges and the Green River Basin along the southern edge of the state, in Carbon, Laramie, and Sweetwater counties. It is known from three sites discovered or relocated between 1972 and1995. Because of the isolated nature of the known locations, SEMU could also be ranked "A". Confidence in Rank Medium	• WYNDD species abstract (1999) • University of Colorado Herbarium • Harrington, Manual of the Plants of Colorado (1964) • Dorn, Vascular Plants of Wyoming (3rd ed.) • Rocky Mountain herbarium
2 Distribution outside R2	C	Bluntleaf spikemoss is a species of the southwestern US. S. mutica's distribution outside of R2 includes scattered sites in Arizona (6 locations, including the Grand Canyon), and acrossTrans-Pecos Texas. It is found infrequently in eastern Utah in the canyons of the Green and Colorado rivers. It is described as "widespread" in New Mexico, and Lellinger describes its general distribution as "frequent". A scattered distribution is to be expected for this species, given its life history and habitat requirements (see below). The number of reported locations of SEMU would indicate a "B" rank, but it is likely underreported, thus the rank of "C" Confidence in Rank Medium	• PLANTS database • Lellinger, A Field Manual of the Ferns and Fern-Allies of the US and Canada (1985) • Kearney & Peebles, Arizona Flora (1960) • Intermountain Flora (V. 1) • WYNDD species abstract (1999) • Martin & Hutchins, Flora of New Mexico 1981)

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3 Dispersal Capability	A	Poor. Spikemosses reproduce by means of a two-stage system: Sporophytes produce separate wind-dispersed male and heavy, 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. Finally, the appropriate substrate must be present (cliffs or large outcrops of sandstone, granite or basalt). These factors limit moderate and long-distance dispersal. Confidence in Rank High	• Lellinger, A Field Manual of the Ferns and Fern-Allies of the US and Canada (1985)
4 Abundance in R2	B	Because this species grows in mats, individual plants are impossible to count. The specimen labels I examined gave little evidence of abundance; of 38 collections representing at least 18 sites, three said the species, was abundant, common, or very abundant, and two described it as rare or uncommon. Because the species is somewhat inconspicuous, it is less likely to draw the attention of a botanist in areas where it is sparse or uncommon. Confidence in Rank Medium	• WYNDD species abstract (1999)
5 Population Trend in R2	B	Unknown but presumed stable. There may have been a historic decline in population; many populations occur at or near roadsides in canyons, and some populations may have been lost during road construction or maintenance. Confidence in Rank High	• WYNDD species abstract (1999)

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Criteria	Rank	Rationale	Literature Citations
6 Habitat Trend in R2	B	Unknown, but presumed stable. Bluntleaf spikemoss habitat in R2 consists of cliffs, boulders, crevices, ledges, arid canyonsides and rocky slopes in full sun or partial shade. The elevation range is 4500-8800 feet, with most populations occurring between 5000 and 6500 feet. Other than on-going road maintenance in canyon habitats with roads, there are few threats to the habitat for this species. Confidence in Rank High	• Flora of North America (V. 22) • Lellinger, A Field Manual of the Ferns and Fern-Allies of the US and Canada (1985) • Intermountain Flora (V. 1) • WYNDD species abstract (1999) • Weber, W.A.. Colorado Flora (3rd edition) • Dorn, Vascular Plants of Wyoming (3rd ed.)
7 Habitat Vulnerability or Modification	C	All known Wyoming occurrences of SEMU are on public lands managed for multiple uses, especially recreation. Direct threats are probably low. In Colorado, SEMU is protected to some degree in Colorado National Monument, Black Canyon of the Gunnison National Park, and Dinosaur National Monument, Roxborough State Park and the Owl Canyon Natural Area. Other populations occur on BLM lands, USDA-Forest Service lands, private lands, highway rights-of-way, military reservations, and State of Colorado lands. The rocky, cliff habitats of SEMU are generally out of the way of any activities that might affect them. Confidence in Rank High	• WYNDD species abstract (1999) • Rocky Mountain herbarium • University of Colorado herbarium
8 Life History and Demographics	D	Other than the complicated life-cycle described above, little is known of the demographics or life-history of bluntleaf spikemoss. Once a sporophyte becomes established, it forms dense mats. Confidence in Rank High	• Lellinger, A Field Manual of the Ferns and Fern-Allies of the US and Canada (1985)

Evaluator(s):	Date:
Janet J. Coles	September 28, 2002

ATTACHMENT SS2

National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY (L)[1] to occur:

Species Name:															
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
Arapaho-Roosevelt NF	X		Cimarron NG			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	X	
San Juan NF												Thunder Basin NG		
Rio Grande NF		X												
Pike-San Isabel NF	X													
Comanche NG		X												
Pawnee 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.