

ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: (*Eriophorum altaicum* Meinsh. var. *neogaeum* Raymond /Altai cotton grass/National Code for Plants – USDA PLANTS)

*Eriophorum altaicum* is known from Asia and North America while variety *neogaeum* is restricted to the New World. This species is under taxonomic scrutiny. Weber and Witman (2001) recognize it as a unique species. Individuals have been confused with *Eriophorum chamissonis* and *Eriophorum russeolum*. Hitchcock and Cronquist (1973) placed *Eriophorum chamissonis*, *Eriophorum russeolum* and *Eriophorum altaicum* var. *neogaeum* into synonymy. *Eriophorum altaicum* is also reported to be particularly similar to *E. scheuchzeri* (Shishkin 1935) and some authors put *Eriophorum altaicum* into synonymy with *E. scheuchzeri* (Hulten 1968). Recognizing some constant morphological differences within *E. scheuchzeri*, *E. scheuchzeri* var. *tenuifolium* was described. *Eriophorum altaicum* var. *neogaeum* has been suggested a synonym of *E. scheuchzeri* var. *tenuifolium*.

Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	B	<p><i>Eriophorum altaicum</i> var. <i>neogaeum</i> is restricted to fens, marshes, and bogs at high (10,800 to 13,200 ft) elevations in the Rocky Mountains of Colorado.</p> <p>A “B rank” is awarded because the “habitat exists primarily as patches, some of which are small or isolated to the degree that species interactions are limited by movements between patches. Local sub-populations in most of the species’ range (may) interact as a metapopulation or patchy population, but some patches are so disjunct that sub-populations in those patches are essentially isolated from other populations”.</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> <li>Occurrence data from: The Colorado Natural Heritage Program provided by Michael Menefee, September 16, 2002; The University of Colorado Herbarium provided by Nan Lederer September 2002; The Colorado State University Herbarium records provide by J. Rowens Ackerfield, September 2002.</li> </ul>

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<p><b>2</b> Distribution outside R2</p> <p>USDA-Forest Service R2</p>	<p><b>A</b></p>	<p><i>Eriophorum altaicum</i> var. <i>neogaeum</i> appears to be restricted to fens, marshes, and bogs at high elevations in the Rocky Mountains of Colorado (Dorn 2001, Weber and Witman 2001, Welsh 1974, Hulten 1968, Welsh et al. 1993).</p> <p>If it is synonymous with <i>E. scheuchzeri</i> (see comment above) the range extends considerably. <i>E. scheuchzeri</i> is a circumboreal species that extends to Newfoundland and south Alta with isolated (disjunct) occurrences in the high mountains of Montana, Utah, Colorado (Cronquist et al 1977) and Wyoming (Dorn 2001).</p> <p>Therefore a B rank may be a more appropriate as in this case it is a widely disjunct taxa for which the main distribution is at a significant distance from the Rocky Mountain Region.</p> <p>Confidence in Rank LOW</p> <p>Sensitive Species Evaluation Form</p>	<ul style="list-style-type: none"> <li>• Shishkin, B.K. 1935. Flora SSSR. Vol. 3. Flora of the USSR translated 1964 by the Israel Program for Scientific Translations, Jerusalem, Israel.</li> <li>• Hulten, E. 1968 Flora of Alaska and neighboring territories. Stanford University Press, Stanford, CA.</li> <li>• Weber, W.A. and R.C. Wittmann. 2001. Colorado Flora - Western slope. 3<sup>rd</sup> ed. University Press of Colorado, Boulder, CO.</li> <li>• Dorn, R.D. 2001. Vascular plants of Wyoming 3<sup>rd</sup> ed. Mountain West Publishing, Cheyenne, WY.</li> <li>• Welsh, S. L..1974. Anderson's Flora of Alaska and adjacent parts of Canada. Brigham Young University Press, Provo, Utah.</li> <li>• Welsh, S. L.. et al. 1993. A Utah Flora. Brigham Young University Press, Provo, Utah.</li> <li>• Cronquist, A. et al. 1977. Intermountain Flora, vascular plants of the Intermountain West, USA. Vol. 6. Reprinted 1994. New York Botanical Garden, Bronx, NY.</li> </ul>

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Criteria	Rank	Rationale	Literature Citations
3 Dispersal Capability	B	<p><i>Eriophorum altaicum</i> var. <i>neogaeum</i> is likely wind pollinated and seeds are also likely dispersed primarily by wind. In general wind-dispersed seeds move only short distances (Silvertown 1987). However, little is known about the reproductive system. It is strongly rhizomatous and the importance of sexual reproduction in its life history is not known.</p> <p>A "B rank" is awarded it is likely to disperse only through suitable habitat.</p> <p>Confidence in Rank LOW</p>	<ul style="list-style-type: none"> <li>Silvertown, J.W. 1987. Introduction to plant population ecology. 2<sup>nd</sup> edition. Longman Scientific and Technical, Harlow, England, United Kingdom.</li> </ul>
4 Abundance in R2	B	<p>Discounting those occurrences where specimens have been annotated to indicate another species of <i>Eriophorum</i> there are 32 occurrence sites, 5 of which have not been visited within the last 30 years. The occurrence sizes range from as few as 15 individuals to greater than 1,500.</p> <p>A "B rank" is awarded because this seems to be an uncommon species but the "current abundance (estimated number of individuals or populations) is large enough that demographic stochasticity is not likely to lead to rapid extinction, but, in combination with highly variable environmental factors, could pose a threat."</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> <li>Colorado Natural Heritage Occurrence records provided by Susan Spackman and David Anderson, February 2002. Colorado Natural Heritage Program, Fort Collins, CO.</li> </ul>
5 Population Trend in R2	D	<p>The historical and current information on abundance is insufficient to critically assess trends.</p> <p>Confidence in Rank Medium</p>	<ul style="list-style-type: none"> <li></li> </ul>

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Criteria	Rank	Rationale	Literature Citations
6 Habitat Trend in R2	B	Wet habitats generally are in decline (Knight, R.L. et al. 2000) but a “B rank” is assigned because it seems that there are still “stable amounts of suitable or potential habitat” especially at higher elevations.  Confidence in Rank Medium	•
7 Habitat Vulnerability or Modification	A	This species grows in bogs, marshes and wetlands. These areas are very vulnerable to modification from most activities, e.g. mining, livestock grazing, water development projects and outdoor recreation (Knight et al. 2000). This species frequently grows at the edge of wetlands where trails, both “unofficial” and “official”, are often established. Invasion by non-native, aggressive species is also a potential threat.  An “A rank” is awarded because the habitat very vulnerable to modification and the threat of modification as a result of common land management activities.  Confidence in Rank Medium	• Knight, R.L. et al. 2000. Forest fragmentation in the Southern Rocky Mountains. University Press of Colorado, Boulder Colorado.
8 Life History and Demographics	D	Very little is known about the life history or the genetic structure of populations of <i>Eriophorum altaicum</i> var. <i>neogaeum</i> .  Confidence in Rank Medium	•
Evaluator(s): Juanita A. R. Ladyman, Ph.D.			Date: September 13, 2002

ATTACHMENT SS2

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

Species Name: <u><i>Eriophorum altaicum</i> var. <i>neogaeum</i></u>											
<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
	L	Cimarron NG		Samuel R. McKelvie NF		Black Hills NF		Shoshone NF			
White River NF	K			Halsey NF		Buffalo Gap NG		Bighorn NF			
Routt NF	L			Nebraska NF		Ft. Pierre NG		Black Hills NF			
Grand Mesa, Uncompahgre, Gunnison NF	K			Ogallala NG				Medicine Bow NF			
San Juan NF	K							Thunder Basin NG			
Rio Grande NF	L										
Pike-San Isabel NF	L										
Comanche NG											
Pawnee NG											

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<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.