ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: ***Muhlenbergia arenicola*** **Buckley sand muhly**

Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	B	Known from scattered localities in the e ½ of CO (Baca, Boulder, Kiowa, Las Animas, Otero, Pueblo, and Washington Cos) and sw-most KS (Clark, Hamilton, Morton and Stevens Cos). [Vouchers at KANU from Baca and Kiowa Cos, CO; and Clark, Hamilton, Morton and Stevens Cos, KS.] Species reaches the n extension of its range in the s-central part of R2. Status: G5; KS S1. Confidence in Rank **High** or Medium or Low	• Freeman 2000 • Freeman in prep. • Great Plains Flora Association 1977 • Rubright 2000 • Sutherland 1991 • Weber & Wittman 2001
2 Distribution outside R2	C	e ½ of CO and sw-most KS, s through w TX (cited by Correll & Johnston as "Trans-Pecos, w Edwards Plateau and Plains Country"); thence w throughout NM and AZ. Disjunct in South America. Confidence in Rank **High** or Medium or Low	• Correll & Johnston 1979 • Martin & Hutchins 1980 • Peterson & Ortiz-Diaz 1998 • Peterson et al. in prep.
3 Dispersal Capability	D	Evaluator was unable to find any information about species' dispersal capability. Confidence in Rank High or Medium or **Low**	
4 Abundance in R2	B	Evaluator was unable to find any information about species' abundance within R2. Species appears to be rather widespread in e CO, but observation of herbarium specimen labels at KANU that species is rarely common where encountered in KS. R2 populations may be subject to local extinction due to some kinds of management. However, Correll & Johnston report species to be "abundant" in TX and it is probably secure throughout the greater part of its range. Confidence in Rank High or **Medium** or Low	• Correll & Johnston 1979
5 Population Trend in R2	D	Evaluator was unable to find any information about population trends within R2. Confidence in Rank High or Medium or **Low**	
6 Habitat Trend in R2	A	Observation of herbarium labels at KANU reveals species is found in upland shortgrass prairies; often on sandy soils, but sometimes on silty or rocky soils. Ostlie et al. report that 40% of shortgrass prairies have been converted to croplands, with much of the remainder used for livestock grazing. Populations have probably been adversely affected by these management practices, but evaluator cannot estimate the extent of loss of suitable habitat. Confidence in Rank High or **Medium** or Low	• Ostlie et al. 1997
7 Habitat Vulnerability or Modification	D	Habitat is vulnerable to conversion to cropland and to overgrazing by livestock. Evaluator cannot estimate the extent to which habitat may be affected by these management practices, however. Confidence in Rank High or Medium or **Low**	• Ostlie et al. 1997

Species: ***Muhlenbergia arenicola*** **Buckley sand muhly**

Criteria	Rank	Rationale	Literature Citations
8 Life History and Demographics	B	Cespitose, perennial graminoid. Flowering late June through early August; fruiting late July through early October. Evaluator was unable to find any other information about species life history. It seems that this species has been studied very little. Confidence in Rank High or Medium or **Low**	

Evaluator:
Caleb A. Morse, R.L. McGregor Herbarium (KANU), University of Kansas Campus West, 2045 Constant Ave, Lawrence KS 66047

Date: 01/08/02

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

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			Cimmaron NG	**X3**		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						Ogalala NG						Medicine Bow NF		
San Juan NF												Thunder Basin NG		
Rio Grande NF														
Pawnee NG														
Pike-San Isabel NF														
Comanche NG	**X2**													

2 KANU catalog # 188124: CO, Baca Co: 20 mi S, 3 mi W Pritchett, 3 Aug 1970, *S. Stephens 42557 & R. Brooks*.

3 KANU catalog # 18231: KS, Morton Co: 9 mi N Elkhart, N of Cimarron River, T34S R42W S6, 26 Jun 1958, *L.C. Hulbert 3249*; KANU catalog 18232: KS, Morton Co: KS, Morton Co: 9 mi N, 2 mi W Elkhart, Cimarron River, 8 Aug 1961, *E.L. Richards 3502*; KANU catalog # 18235: KS, Morton Co: 9 mi N, 2 mi W Elkhart, Point of Rocks, Cimarron River, 8 Jul 1961, *E.L. Richards 2927*; KANU catalog # 18236: KS, Morton Co: 7 mi N, 4 mi W Elkhart, 28 Aug 1966, *S. Stephens 8878*; KANU catalog # 32333: KS, Morton Co: ca 8 mi N, 2 mi W jct KS 27 & US 56 in Elkhart, Cimarron NG, Point of Rocks, N side Cimarron River, T34S R43W S12 N½ SE¼, Elev 3530 ft, 30 Jul 1987, *C.C. Freeman 2445 & R.E. Brooks*; KANU catalog # 86752: KS, Morton Co: ca 6 mi N, 6 mi W Elkhart, Cimarron NG, T34S R43W S16, SW ¼ NW ¼, Elev 3550-3560 ft, 5 Oct 1988, *C.C. Freeman 2794*; KANU catalog # 102156: KS, Morton Co: ca 6 mi N, 2.5 mi W Elkhart, Cimarron NG, Point of Rocks, T34S R43W S12 N½ SE¼, Elev 3510-3530 ft, 5 Oct 1988, *C.C. Freeman 2775*.

REFERENCES

[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.

Correll, D.S. and M.C. Johnston. 1979. *Manual of the Vascular Plants of Texas*. University of Texas at Dallas. Richardson, Texas. xv + 1881 pp.
Freeman, C.C. 2000. Floristic surveys of Cheyenne, Kiowa, Kit Carson, and Lincoln Counties, Colorado. Unpublished report submitted to the Colorado Natural Areas Program. 63 pp.
Freeman, C.C. (in prep.) Checklist of the Vascular Plants of the Grassland Biome of Central North America.
Great Plains Flora Association. 1977. *Atlas of the Flora of the Great Plains*. Iowa State University Press. Ames, Iowa. xii + 600 pp.
Martin, W.C. and C.R. Hutchins. 1980. *A Flora of New Mexico*. J. Cramer. Vaduz, Germany. xiii + 2591 pp.
Ostlie, W.R., R.E. Schneider, J.M. Aldrich, T.M. Faust, R.L.B. McKim and S.J. Chaplin. 1997. *The Status of Biodiversity in the Great Plains*. The Nature Conservancy. Arlington, Virginia. xii + 326 pp.
Peterson, P.M. (in prep.) *Muhlenbergia*, in Flora of North America Editorial Committee, *Flora of North America North of Mexico*.
Peterson, P.M. and J.J. Ortiz-Diaz. 1998. Allelic variation in the amphitropical disjunct *Muhlenbergia torreyi* (Poaceae: Muhlenbergiinae). *Brittonia* 50: 381–391.
Rubright, L. 2000. *Atlas of the Grasses of Colorado*. Published by the author (copies available for purchase by email: Colopoa@aol.com). 313 pp.
Sutherland, D. 1991. Poaceae, pp. 1113–1235 *in* Great Plains Flora Association, *Flora of the Great Plains*. University Press of Kansas. Lawrence, Kansas. vii + 1402 pp.
Weber, W.A. and R.C. Wittman. 2001. *Colorado Flora: Eastern Slope* (3rd Edition). University Press of Colorado. Boulder, Colorado. xl + 521 pp.