

SPECIES EVALUATION

Carex diandra, Priority 1. *Carex diandra* Schrank (CADI4), lesser panicled sedge. CNHP G5 / S1, Track A
 G5 N?. CO S1, WY S2, NE S2. WY Peripheral 1 MBNF, 6 SNF;NNF - MCKELVIE NF-BUCKHORN SPRINGS & MCKELVIE NF-DRINKWALTER EXCLOSURE;
 ARP-Boulder, Redfeather, WR-Eagle

Criteria	Rank	Confidence	Rationale	Sources of Information
1 Distribution within R2	A	L	Or Rank B, seems to fit rank "A" better, because the occurrences are widely scattered. Much of the terminology in the ranking descriptions does not fit, hence the low confidence. <i>Carex diandra</i> is ranked S1 in Colorado, S2 in Wyoming, and S2 in Nebraska. However, <i>Carex diandra</i> is apparently not tracked by the Nebraska Natural Heritage Program.	Johnston 2001, Weber and Wittmann 2001ab, Dorn 2001.
2 Distribution outside R2	C	H	Known from most of the western States, and across Canada.	Johnston 2001, Harrington 1954.
3 Dispersal Capability	D	M	Dispersal mechanisms are not known.	
4 Abundance in R2	B	M	There are about 10 occurrences in Wyoming, about eight in Colorado, and perhaps two in Nebraska. "Individual populations often locally abundant within small areas of suitable habitat" (Fertig 2000). None of Colorado occurrences has a populations estimate.	Fertig 2000, Johnston 2001, Spackman and others 1999, herbarium specimens at COLO and RM.
5 Population Trend in R2	B	L	"Extant populations appear to be stable to partly declining due to habitat loss" (Fertig 2000).	Fertig 2000.
6 Habitat Trend in R2	A	L	"On floating and non-floating moss mats, pond edges, and hummocks in open shrub and sedge meadows Soils often influenced by limestone" (Fertig 2000). Calcareous Subalpine fens and bogs in Colorado and Wyoming – the Nebraska report has an unknown habitat, but it is surely different from the Colorado and Wyoming records. These habitats seem to be declining due to construction and development, road and trail use, and livestock grazing. Nonetheless, we have no monitoring data specific to this species, hence the low confidence. Several sites for <i>C. diandra</i> in Wyoming are protected, and there is now increased attention on protection of fens and bogs.	Fertig 2000, my observations.
7 Habitat Vulnerability or Modification	A	L	Calcareous fens and bogs are vulnerable to almost any kind of continual use, although we have no monitoring data on effects at the sites for <i>Carex diandra</i> . Rehabilitation of these sites is difficult or sometimes impossible because of some sites' great age.	My observations, Mitsch and Gosselink 1993.
8 Life History and Demographics	D	H	This perennial sedge forms densely clustered tufts. Flowering and fruiting occur from July through August. Additional information on the taxon, including life history stages, population structure, longevity, mortality, and seed biology, are not available.	Fertig 2000, Weber and Wittmann 2001ab, Handley and others 2002.

SPECIES EVALUATION

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

* 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.

COLORADO NF/NG		K	L	NEBRASKA NF/NG		K	L	WYOMING NF/NG		K	L
Arapaho-Roosevelt NF		K		Samuel R. McKelvie NF		?		Shoshone NF		K	
White River NF		K		Halsey NF				Bighorn NF			
Routt NF			L	Nebraska NF				Black Hills NF			
Grand Mesa Uncompahgre Gunnison NF				Ogala NG				Medicine Bow NF			
San Juan NF		K		SOUTH DAKOTA NF/NG				Thunder Basin NG			
Rio Grande NF				Black Hills NF				KANSAS NF/NG			
Pike-San Isabel NF				Buffalo Gap NG				Cimarron NG			
Comanche NG				Ft. Pierre NG							
Pawnee NG											

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Taxonomy. All botanists in the western United States accept *Carex diandra* as a species.

Discussion. These habitats are vulnerable, and calcareous fens and bogs are not commonly found in good condition. This species is widespread in North America. *Carex diandra* may have viability concerns, but a more widespread and complete inventory of wetlands, especially fens, is necessary. Concern for this species is one reason why we should improve management of all wetlands, which goes hand-in-hand with conservation of this species.

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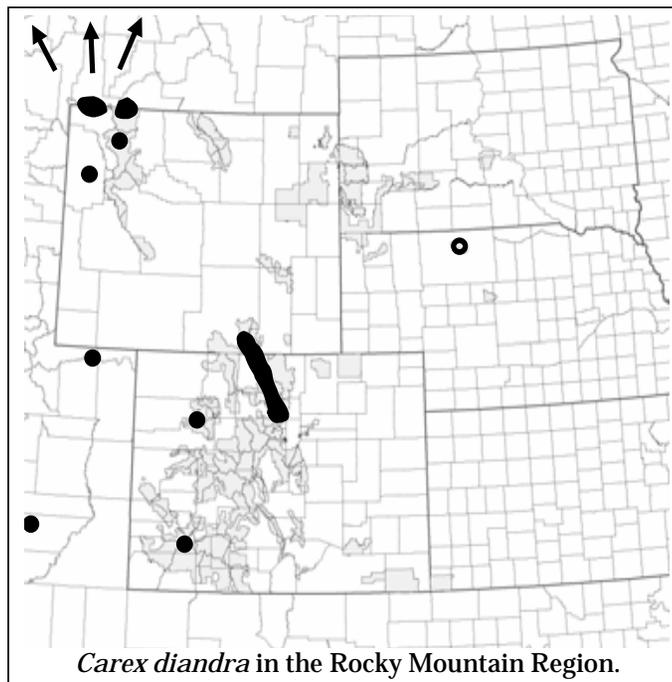
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SPECIES EVALUATION
REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: <i>Carex diandra</i> / Lesser Panicled Sedge			
Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	B	Lesser Panicled Sedge occurs on the Medicine Bow and Shoshone National Forests on the Absaroka, Beartooth, and Medicine Bow ranges in Albany and Park counties, Wyoming. This species also occurs in Colorado on Arapaho-Roosevelt National Forest and in Nebraska on McElvie National Forest. It is not known from South Dakota. In Wyoming, this species is found on floating and non-floating mats of peat, at pond edges, and on hummocks in open shrub and sedge meadows at 6100-8600 feet. The water chemistry is often influenced by limestone. This peatland habitat is isolated and uncommon in the state. Confidence in Rank	<ul style="list-style-type: none"> • Dorn 1992 • Fertig 1997 • Fertig 1998, 2000 • Fertig and Jones 1992 • Jones and Fertig 1999 • Johnston 2001 • Mills and Fertig 1996 • University of Wyoming 1998
2 Distribution outside R2	C	This species is circumpolar. In North America it is found from Newfoundland to the Yukon and south to Maryland, Tennessee, Nebraska, Colorado and California. In Wyoming it is also known outside Region 2 on the Yellowstone Plateau in Teton County. Confidence in Rank Medium	<ul style="list-style-type: none"> • Cronquist et al. 1977 • Dorn 1992 • Fertig 2000 • Hermann 1970 • Hitchcock et al. 1969 • Hurd et al. 1998 • NatureServe 2002
3 Dispersal Capability	D	Dispersal vectors are not known, but it may be inferred that water and aquatic animals aid in seed dispersal across unsuitable habitats. Confidence in Rank Medium	<ul style="list-style-type: none"> • -
4 Abundance in R2	AB	It is known from 7-9 recent records (all observed since 1985) and 2 older reports prior to 1963. Several occurrences are in the same general area (although isolated by unsuitable habitat), and perhaps should be considered subpopulations of one larger population complex. Individual populations are often locally abundant within small areas of suitable habitat. Census data are lacking. It is ranked "S2" in Wyoming and Nebraska, and "S1" in Colorado. Confidence in Rank Medium	<ul style="list-style-type: none"> • Fertig 1997 • Fertig 1998, 2000 • Fertig and Jones 1992 • Jones and Fertig 1999 • Mills and Fertig 1996
5 Population Trend in R2	DA	Extant populations appear to be stable to partly declining due to habitat loss. Confidence in Rank Medium	<ul style="list-style-type: none"> • Fertig 1997 • Fertig 1998, 2000 • Fertig and Jones 1992 • Jones and Fertig 1999
6 Habitat Trend in R2	DA	Extant populations appear to be stable to partly declining due to habitat loss. Confidence in Rank Medium	<ul style="list-style-type: none"> • Fertig 2000
7 Habitat Vulnerability or Modification	B	This species may be threatened by trampling, grazing, and development of wetland habitats. One population is protected in the Absaroka Beartooth Wilderness and one is in the Swamp Lake Special Botanical Area of the Shoshone National Forest. Four known populations are on lands managed Grand Teton and Yellowstone National Parks. The other 5 populations are on lands managed for multiple use by the Medicine Bow and Shoshone National Forests. Confidence in Rank Medium	<ul style="list-style-type: none"> • Fertig 1997 • Fertig 1998, 2000 • Fertig and Jones 1992 • Jones and Fertig 1999 • Mills and Fertig 1996 • WYNDD 2001
8 Life History and Demographics	D	This perennial sedge forms densely clustered tufts. Flowering and fruiting occur from July through August. Additional information on the taxon, including life history stages, population structure, longevity, mortality, and seed biology, are not available. Confidence in Rank Medium	<ul style="list-style-type: none"> • Cronquist et al. 1977 • Hermann 1970 • Hitchcock et al. 1969 • Hurd et al. 1998 • WYNDD 2001
Initial Evaluator(s): Joy Handley, Bonnie Heidel and Scott Laursen			Date: February 13, 2002

SPECIES EVALUATION

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

<u>Colorado NF/NG</u>	Known Likely	<u>Kansas NF/NG</u>	Known Likely	<u>Nebraska NF/NG</u>	Known Likely	<u>South Dakota NF/NG</u>	Known Likely	<u>Wyoming NF/NG</u>	Known Likely
Arapaho-Roosevelt NF	X	Cimmaron NG		Samuel R. McKelvie NF	X	Black Hills NF		Shoshone NF	X
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				Ogallala NG				Medicine Bow NF	X
San Juan NF								Thunder Basin NG	
Rio Grande NF									
Pike-San Isabel NF									
Comanche NG									

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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.