

ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: <i>Sagittaria ambigua</i> J.G. Sm. Kansas arrowhead			
Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	A	Known only from se-most KS. [Vouchers at KANU from Allen, Anderson, Crawford, Montgomery, Neosho, and Woodson Cos, KS.] Species is not known or presumed to occur in or near any NFS lands in R2. Status G3G4; KS S1 Confidence in Rank High or Medium or Low	<ul style="list-style-type: none"> Freeman in prep. Great Plains Flora Association 1977 Kaul 1991 Haynes & Hellequist 2000.
2 Distribution outside R2	B	se-most KS, sw-most MO, e OK. Disjunct in ne-most MO, IL and w ¼ of IN (fide Haynes & Hellequist). Confidence in Rank High or Medium or Low	<ul style="list-style-type: none"> Freeman in prep. Great Plains Flora Association 1977 Kaul 1991 Haynes & Hellequist 2000 Yatskievych 1999
3 Dispersal Capability	B	Evaluator was unable to find any information about seed dispersal. However, related species have been hypothesized to be water- or animal dispersed. At any rate, species is an obligate emergent aquatic, requiring suitable habitat to persist. Confidence in Rank High or Medium or Low	<ul style="list-style-type: none"> Gordon 1996
4 Abundance in R2	A	In R2, known from only a few collections se KS, despite several decades of rather intensive collecting where species occurs. Confidence in Rank High or Medium or Low	
5 Population Trend in R2	D	Species is described by Kaul as "not common" in the Great Plains. Observation of herbarium specimen labels at KANU does suggest that species is limited by habitat requirements. Further study of species' distribution and abundance is needed. Confidence in Rank High or Medium or Low	<ul style="list-style-type: none"> Kaul 1991
6 Habitat Trend in R2	D	Observation of herbarium specimen labels at KANU reveals that species is found in a variety of permanently or only seasonally wet situations. Several specimens were taken from man-made wetlands, such as roadside ditches and shores of ponds, which are not uncommon in R2 where species is known to occur. Nevertheless, species is represented in herbaria by few collections and is believed to be rare in the southern Great Plains. Further study of species' distribution and abundance is needed. Confidence in Rank High or Medium or Low	<ul style="list-style-type: none"> Kaul 1991
7 Habitat Vulnerability or Modification	D	Evaluator was unable to find direct information on required habitat. Further study of species' distribution and abundance is needed to determine whether the dearth of herbarium specimens reflects species' rarity or merely collectors' oversight. Confidence in Rank High or Medium or Low	

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Criteria	Rank	Rationale	Literature Citations
8 Life History and Demographics	B	Perennial emergent aquatic forb. Flowering and fruiting late June through September. Evaluator was unable to find other life history information for species. Confidence in Rank High or Medium or Low	<ul style="list-style-type: none"> Haynes & Hellequist 2000 Kaul 1991
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National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY (L)¹ to occur:

NOTE: Species is not known or presumed to occur in or near any NFS lands in R2.

<u>Colorado NF/NG</u>	<u>Known</u>	<u>Likely</u>	<u>Kansas NF/NG</u>	<u>Known</u>	<u>Likely</u>	<u>Nebraska NF/NG</u>	<u>Known</u>	<u>Likely</u>	<u>South Dakota NF/NG</u>	<u>Known</u>	<u>Likely</u>	<u>Wyoming NF/NG</u>	<u>Known</u>	<u>Likely</u>
Arapaho-Roosevelt NF			Cimmaron 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						Ogalala NG						Medicine Bow NF		
San Juan NF												Thunder Basin NG		
Rio Grande NF														
Pawnee NG														
Pike-San Isabel NF														
Comanche NG														

REFERENCES

Freeman, C.C. in prep. Checklist of the Vascular Plants of the Grassland Biome of Central North America.
 Gordon, E. 1996. Dispersal type, germination and seedling growth of *Sagittaria latifolia* (Alismataceae). *Fragment. Florist. et Geobot.* 41: 657–668.
 Great Plains Flora Association. 1977. *Atlas of the Flora of the Great Plains.* Iowa State University Press. Ames, Iowa. xii + 600 pp.

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.

ATTACHMENT SS2

- Haynes, R.R. and C.B. Hellequist. 2000. Alismataceae, pp. 7–25 in Flora of North America Editorial Committee, *Flora of North America North of Mexico, Vol. 22: Magnoliophyta: Alismatidae, Arecidae, Commelidae (in part), and Zingiberidae*. Oxford University Press. New York, New York. xxiii + 352 pp.
- Kaul, R.B. 1991. Alismataceae, pp. 1022–1028 in Great Plains Flora Association, *Flora of the Great Plains*. University Press of Kansas. Lawrence, Kansas. vii + 1402 pp.
- Yatskievych, G. 1999. *Steyermark's Flora of Missouri, Vol. 1*. Missouri Department of Conservation and Missouri Botanical Garden. Jefferson City and St. Louis, Missouri. xii + 991 pp.