

Calamovilfa longifolia - Hesperostipa comata Herbaceous Vegetation

COMMON NAME	Prairie Sandreed - Needle-and-thread Herbaceous Vegetation
SYNONYM	Prairie Sandreed - Needle-and-thread Prairie
NE	Sandhills Dry Valley Prairie; Eastern Sandhills Needlegrass Prairie
PHYSIOGNOMIC CLASS	Herbaceous Vegetation (V)
PHYSIOGNOMIC SUBCLASS	Perennial graminoid vegetation (V.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar grassland (V.A.5)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (V.A.5.N)
FORMATION	Tall sod temperate grassland (V.A.5.N.a)
ALLIANCE	CALAMOVILFA LONGIFOLIA HERBACEOUS ALLIANCE
CLASSIFICATION CONFIDENCE LEVEL	2
USFWS WETLAND SYSTEM	Terrestrial

RANGE

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The prairie sandreed type is found primarily in the sandhills portion of the Refuge, although small stands sometimes occur in coarse textured soils along the northern margin of pool #10.

Globally

This prairie sandreed grassland community type occurs in the central and northern Great Plains region of the United States, ranging from Colorado and Nebraska, north to Wyoming and South Dakota.

ENVIRONMENTAL DESCRIPTION

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The more developed stands of prairie sandreed grassland are found on sandy deposits along the northern border of the sandhills. Extensive stands occur primarily in the northeast corner of the sandhills. These species are also common components of many of the sandhill communities.

Globally

Stands occur on stabilized sand dunes, as well as in interdunal valleys or draws, colluvial sands, and, less commonly, silty terraces of intermittent streams. Soils are medium to fine sands formed either from eolian or colluvial processes. For example, in Nebraska stands occur below sandstone outcrops and escarpments. More rarely, stands occur on floodplain terraces of intermittent streams, where soils are moderately deep, poorly drained, silty loams and loams (Heerwagen 1958, USDI 1979, Barnes et al. 1984, Steinauer and Rolfsmeier 2000). Blowouts caused by drought and wind may occur in this type. The type probably represents a later successional stage. Earlier stages may be dominated by *Andropogon hallii* (e.g. CEGL001467). Heavy grazing may increase the likelihood of blowouts.

MOST ABUNDANT SPECIES

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<u>Stratum</u>	<u>Species</u>
Shrub	<i>Yucca glauca</i>
Herbaceous	<i>Calamovilfa longifolia</i> , <i>Carex inops ssp heliophila</i> , <i>Hesperostipa comata</i> , <i>Poa pratensis</i>

Globally

Stratum

Species

Graminoid *Calamovilfa longifolia*, *Carex filifolia*, *Carex inops* ssp *heliophila*

CHARACTERISTIC SPECIES

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Calamovilfa longifolia, *Hesperostipa comata*

Globally

Calamovilfa longifolia, *Carex filifolia*, *Carex inops* ssp *heliophila*

OTHER NOTABLE SPECIES

Globally

Stratum

Species

Graminoid *Koeleria macrantha*, *Schizachyrium scoparium*, *Hesperostipa comata*

VEGETATION DESCRIPTION

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Small stands of prairie sandreed grasslands are fairly common throughout the sandhills. Many are below the minimum mapping unit of 0.5 hectares. Foliar cover is usually sparse, ranging from 20-40%. The dominant grass is prairie sandreed (*Calamovilfa longifolia*), with needle-and-thread (*Hesperostipa comata*) and Kentucky bluegrass (*Poa pratensis*) as common secondary species.

Globally

The vegetation has an open canopy, dominated by mid to tall grasses. *Calamovilfa longifolia* is the most conspicuous grass. Other common grasses include *Bouteloua gracilis*, *Bouteloua gracilis*, *Koeleria macrantha*, *Achnatherum hymenoides* (= *Oryzopsis hymenoides*), *Sporobolus cryptandrus*, and *Hesperostipa comata*. *Pascopyrum smithii* and *Nassella viridula* may occur on more level sites at the base of slopes (Barnes et al. 1984, Steinauer and Rolfsmeier 2000). *Andropogon hallii* may also be present. Sedges are rare but could include *Carex inops* ssp. *heliophila*. Forb diversity ranges from low to moderate, depending on the site. Dry valley sand prairies may be particularly forb-rich. Silty terraces of intermittent streams may contain *Artemisia frigida*, *Artemisia ludoviciana*, *Gutierrezia sarothrae*, *Psoraleidum tenuiflorum*, and *Yucca glauca* (Steinauer and Rolfsmeier 2000). Shrubs are scattered and infrequent to absent, with *Rhus trilobata* the most common species. These areas are highly susceptible to invasion by exotic brome grasses (*Bromus japonicus*, *Bromus squarrosus*, *Bromus tectorum*) and may be quite weedy (Heerwagen 1958, USDI 1979, Steinauer and Rolfsmeier 2000).

CONSERVATION RANK G3. No occurrences have been documented, but the community is reported in 2 ecoregional sections in Wyoming, Colorado, and Nebraska. It is restricted primarily to stabilized sand dunes, as well as in interdunal valleys or draws, colluvial sands, and intermittent streams, but it has a moderately wide distribution in the central to northern Great Plains. Stands are typically less than a few hectares in size, but larger stands are found in interdunal valleys in Nebraska, some reaching 100 acres or more (G. Steinauer pers. comm.

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1999). In Nebraska, this community can be heavily grazed and subsequently invaded by exotic species (Steinauer and Rolfmeier 2000).

DATABASE CODE CEGL001473

SIMILAR ASSOCIATIONS

Calamovilfa longifolia - *Carex inops ssp. heliophila* Herbaceous Vegetation

COMMENTS

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Globally

This type may perhaps be differentiated from other types, such as *Calamovilfa longifolia* –*Carex inops ssp. heliophila* Herbaceous Vegetation (CEGL001471), by the absence or low abundance of *Carex filifolia* and *Carex inops ssp. heliophila*, though why those species are not abundant in this type is not clear. Further floristic comparisons need to be made to help make the distinction clear between that type and this type. Some floristic variability is to be expected in this type, based on successional patterns following dune blowouts. Steve Kettler (pers. comm. 1998) says they don't have this type in Colorado. It sounds like a version of a locally described *Andropogon hallii* - *Stipa comata* type, of which Colorado is also not very confident. Kettler suspects that a lot of the variation in grass dominance is from different management (grazing) over the years. The silty terrace stands are reported from the White River drainage in northwestern Nebraska and Badlands National Park, South Dakota (Von Loh et al. 1999, Steinauer and Rolfmeier 2000).

REFERENCES

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- CDM Consultants. No date. Dave Johnston Mine Application No. 291-T2, on file at Wyoming Department of Environmental Quality, Land Quality Division, Cheyenne.
- Heerwagen, A. 1958. Management as related to range site in the central plains of eastern Colorado. *Journal of Range Management* 11:5-9.
- Johnston, B. C. 1987. Plant associations of Region Two: Potential plant communities of Wyoming, South Dakota, Nebraska, Colorado, and Kansas. R2-ECOL-87-2. USDA Forest Service, Rocky Mountain Region. Lakewood, CO. 429 pp.
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- Steinauer, G., and S. Rolfmeier. 2000. Terrestrial natural communities of Nebraska (January 2000 version). Unpublished report of the Nebraska Game and Parks Commission. Lincoln, NE. 143 pp.
- Von Loh, J., D. Cogan, D. Faber-Langendoen, D. Crawford, and M. Pucherelli. 1999. USGS-NPS Vegetation Mapping Program, Badlands National Park, South Dakota. USDI Bureau of Reclamation. Technical Memorandum No. 8260-99-02. Denver, CO.

Note:

This association is found in two different map classes:

- 1) [Needle-and-Thread / Soapweed Yucca Herbaceous Vegetation](#)
- 2) [Prairie Sandreed - Needle-and-Thread Herbaceous Vegetation](#)