

## Ouray National Wildlife Refuge Vegetation Mapping Project

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V.A.5.N.d.24. *SPOROBOLUS AIROIDES HERBACEOUS ALLIANCE*

Alkali Sacaton Herbaceous Alliance

Alliance Identifier: A.1267

*Sporobolus airoides* Southern Plains Herbaceous Vegetation

Alkali Sacaton Southern Plains Herbaceous Vegetation

*Alkali Sacaton Southern Plains Grassland*

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### ELEMENT CONCEPT

**GLOBAL SUMMARY:** This alkali sacaton mesic grassland community is found in the southwestern Great Plains, in the southwestern United States, and Mexico. Stands occur on slightly to moderately saline, nearly level bottomlands and terraces. Substrates are shallow, moderately well- to poorly drained, silty clay soils formed in alluvium. The community is dominated by medium-tall and short grasses. *Sporobolus airoides* is a dominant, often accompanied by *Symphotrichum subulatum* (= *Aster subulatus*), *Pascopyrum smithii*, *Buchloe dactyloides*, *Distichlis spicata*, *Hordeum jubatum*, and *Bouteloua gracilis*.

### ENVIRONMENTAL DESCRIPTION

**USFWS WETLAND SYSTEM:** TERRESTRIAL

**Ouray National Wildlife Refuge Environment:** Alkali sacaton occupies deposits of silty clay left following overbank flooding of the Green River. These soils lie over near-to-surface ground water, typically just outside the riparian tree zone. Because of its habitat preference, *Sporobolus airoides* Herbaceous Vegetation is invaded by exotic species, including salt-cedar, giant whitetop, and Russian-olive throughout the Refuge.

**Global Environment:** This grassland community occurs on alluvial toeslopes and flats, floodplain depressions, and on sandy streambanks in bottomlands throughout the southern Great Plains and Colorado Plateau. Elevations range from below 1000 m to over 2000 m. Sites are nearly level, and soils are typically fine-textured silts or clays often derived from shale. Substrates are shallow to moderately deep, moderately well- to poorly drained, alkaline, and often saline.

### VEGETATION DESCRIPTION

**Ouray National Wildlife Refuge Vegetation:** The *Sporobolus airoides* Herbaceous Vegetation type is relatively tall (0.5-1 m) and extremely dense, with foliar cover values ranging from 60-90%. Alkali sacaton provides foliar cover from 60-70% for each plot sampled. Other herbaceous species common to this type include *Distichlis spicata*, *Pascopyrum smithii*, *Muhlenbergia asperifolia*, *Eleocharis palustris*, *Iva axillaris*, and *Lepidium latifolia*. Shrubs tend to invade this type, particularly the exotics *Tamarix ramosissima* and *Elaeagnus angustifolia*. Native shrubs and trees are also invasive into this community, e. g., *Sarcobatus vermiculatus* and *Populus fremontii*.

**Global Vegetation:** This association is characterized by a sparse to moderately dense (20-60% cover), medium-tall graminoid layer dominated by *Sporobolus airoides*. Associated species include *Symphotrichum subulatum* (= *Aster subulatus*), *Buchloe dactyloides*, *Distichlis spicata*, *Hordeum jubatum*, *Bouteloua gracilis*, *Panicum obtusum*, *Pleuraphis jamesii*, *Sporobolus cryptandrus*, and *Pascopyrum smithii* (Lauver et al. 1999). Scattered *Atriplex canescens* or *Sarcobatus vermiculatus* shrubs may be present. Forb cover is minor.

**Dynamics:** This is an early-seral community that occurs on floodplains and depressions with moderately saline soils (Aldous and Shantz 1924 as cited in Johnston 1987). While the stand sampled may be flooded infrequently, other stands of *Sporobolus airoides* (alkali sacaton) are reported to occur on soils not flooded but with often high water tables because of land position. The intermittent flood regime affects soil moisture and salinity which can alter species composition. Sudden increases in salinity will result in a decrease in cover of *Sporobolus airoides*. With no change in salinity, this plant association will form hummocks that accumulate sand. Gradually the sites will decrease in salinity, and moisture and invasion by other grasses will follow (Ungar 1974a as cited in Johnston 1987). Soils are non-saline to moderately saline to usually alkaline. *Sporobolus airoides* will decrease in abundance with increased soil salinity.

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### MOST ABUNDANT SPECIES

#### Ouray National Wildlife Refuge

Stratum	Species
SHRUB	<i>Tamarix ramosissima</i> , <i>Elaeagnus angustifolia</i> , <i>Populus fremontii</i> , <i>Sarcobatus vermiculatus</i>
HERBACEOUS	<i>Sporobolus airoides</i> , <i>Muhlenbergia asperifolia</i> , <i>Pascopyrum smithii</i> , <i>Distichlis spicata</i> , <i>Lepidium latifolium</i> , <i>Iva axillaris</i>

#### Global

Stratum	Species
GRAMINOID	<i>Sporobolus airoides</i>

### CHARACTERISTIC SPECIES

#### Ouray National Wildlife Refuge

**Species**  
*Sporobolus airoides*, *Distichlis spicata*, *Pascopyrum smithii*, *Muhlenbergia asperifolia*, *Iva axillaris*

#### Global

**Species**  
*Sporobolus airoides*

### OTHER NOTEWORTHY SPECIES

#### Ouray National Wildlife Refuge

**Stratum**                      **Species**  
N/A

#### Global

**Stratum**                      **Species**  
N/A

### OURAY NATIONAL WILDLIFE REFUGE SIMILAR ASSOCIATIONS:

*Distichlis spicata* Herbaceous Vegetation

### GLOBAL SIMILAR ASSOCIATIONS:

*Sporobolus airoides* - *Bouteloua gracilis* Herbaceous Vegetation (CEGL001686)--found only in New Mexico.  
*Sporobolus airoides* Northern Plains Herbaceous Vegetation (CEGL002274)--occurs in the northwestern Great Plains.  
*Distichlis spicata* - (*Hordeum jubatum*, *Poa arida*, *Sporobolus airoides*) Herbaceous Vegetation (CEGL002042)--found in the southeastern Great Plains.  
*Sporobolus airoides* - *Distichlis spicata* Herbaceous Vegetation (CEGL001687)--found in the southeastern Great Plains.  
*Sporobolus airoides* Monotype Herbaceous Vegetation (CEGL001688)--found in the southeastern Great Plains.  
*Sporobolus airoides* - *Muhlenbergia porteri* Herbaceous Vegetation (CEGL001689)--found in the southeastern Great Plains.  
*Sporobolus airoides* - *Scleropogon brevifolius* Herbaceous Vegetation (CEGL001692)--found in the southeastern Great Plains.  
*Gutierrezia sarothrae* / *Sporobolus airoides* - *Pleuraphis jamesii* Shrub Herbaceous Vegetation (CEGL001776)--found in the southeastern Great Plains.  
*Pleuraphis jamesii* - *Sporobolus airoides* Herbaceous Vegetation (CEGL001778)--found in the southeastern Great Plains.

### SYNONYMY:

*Sporobolus airoides* Plant Community (Francis 1986)  
*Sporobolus airoides* - *Elytrigia smithii* Plant Association (Johnston 1987)  
*Sporobolus airoides* Herbaceous Vegetation [Provisional] (Kittel et al. 1999)  
*Sporobolus airoides* (Lauver et al. 1999)

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### CLASSIFICATION COMMENTS

**Ouray National Wildlife Refuge:** N/A

**Global Comments:** Compare this association with *Sporobolus airoides* - *Bouteloua gracilis* Herbaceous Vegetation (CEGL001686) and *Pleuraphis jamesii* - *Sporobolus airoides* Herbaceous Vegetation (CEGL001778). Stands in Montana are placed with *Sporobolus airoides* Northern Plains Herbaceous Vegetation (CEGL002274), which occurs in the northwestern Great Plains, and this type is restricted to the southwestern Great Plains and southwestern United States. In the southeastern Plains see *Distichlis spicata* - (*Hordeum jubatum*, *Poa arida*, *Sporobolus airoides*) Herbaceous Vegetation (CEGL002042).

### ELEMENT DISTRIBUTION

**Ouray National Wildlife Refuge Range:** *Sporobolus airoides* Herbaceous Vegetation grows on undisturbed floodplain terraces of the Green River.

**Global Range:** This alkali sacaton mesic grassland community is found in the southwestern Great Plains and elsewhere in the southwestern United States and Mexico, ranging from Kansas and Colorado south to Texas, New Mexico (Rio Puerco, Otero County, in Ecoregion 24), and possibly California.

**Nations:** MX US

**States/Provinces:** CA? CO KS MXCO NM TX

**TNC Ecoregions:** 10:C, 19:C, 20:C, 24:C, 27:C

**USFS Ecoregions:** 262:P, 313B:CC, 321A:CC, 322:P, 331F:C?, 331G:C?, 331I:CC, 341C:CC, M331G:CC, M331I:CC

**Federal Lands:** USFWS (Ouray)

### ELEMENT SOURCES

**Identifier:** CEGL001685 **Confidence:** 3 **Conservation Rank:** G3Q

**REFERENCES:** Aldous and Shantz 1924, Francis 1986, Johnston 1987, Kittel and Lederer 1993, Kittel et al. 1999, Lauver et al. 1999, Lindauer 1970, Soil Conservation Service 1978, Steward 1982, Von Loh 2000.