

**V.A.5.N.D. MEDIUM-TALL BUNCH TEMPERATE OR SUBPOLAR GRASSLAND**

**V.A.5.N.d.27. *HESPEROSTIPA COMATA* BUNCH HERBACEOUS ALLIANCE**

**Needle-and-Thread Bunch Herbaceous Alliance**

**Alliance Identifier:** A.1270

***Hesperostipa comata* Great Basin Herbaceous Vegetation**

**Needle-and-Thread Great Basin Herbaceous Vegetation**

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**ELEMENT CONCEPT**

**GLOBAL SUMMARY:** This grassland occurs on the Colorado Plateau and Great Basin. Elevation ranges from 1450-2320 m. Stands are found on plains, gentle hillslopes, knolls and bluffs, mesa tops, and plateau parks. Substrates are variable and include sand, cobbles, clay loams and silty clay. This association is characterized by a relatively sparse to moderate herbaceous layer (10-30% cover) that is strongly dominated by the cool-season bunchgrass *Hesperostipa comata*. Low cover of other grasses, such as *Achnatherum hymenoides*, *Achnatherum lettermanii*, *Aristida purpurea*, *Elymus elymoides*, *Pleuraphis jamesii*, *Poa fendleriana*, or *Sporobolus cryptandrus*, may be present. *Bouteloua eriopoda* is not present. Forb cover ranges from sparse to moderate and may be diverse. Associated species may be diverse and include species of *Artemisia*, *Balsamorhiza*, *Cirsium*, *Gilia*, *Hymenopappus*, *Lappula*, *Machaeranthera*, and *Vicia*. Scattered shrubs and dwarf-shrubs may be present with less than 5% total cover. The widespread introduced annual grass *Bromus tectorum* often contributes significant cover in disturbed stands. Some stands have high cover of cryptogams on the soil.

**ENVIRONMENTAL DESCRIPTION**

**USFWS WETLAND SYSTEM:** UPLAND

**Ouray National Wildlife Refuge Environment:** *Hesperostipa comata* is distributed on a variety of substrates, including sand, cobble, and silty clay. For some stands, it appears that *Hesperostipa comata* is the beneficiary of fires which have removed the overstory shrub community. Most vegetation stand aspects are to the north or west and the slopes vary from 1-3%. Wind erosion is common on sandy soils, resulting in pedestalled plants. Pronghorn, cottontail rabbit, and small mammal use is evident in the type.

**Global Environment:** This grassland occurs in the Colorado Plateau and Great Basin. Elevation ranges from 1450-2320 m. Stands are found on plains, gentle hillslopes, knolls and bluffs, mesa tops, and plateau parks. Substrates are variable and include sand, cobbles, clay loams and silty clay. Fires may be important in maintaining these grasslands by reducing woody cover, but burning during the growing season could also damage the *Hesperostipa comata* plants.

**VEGETATION DESCRIPTION**

**Ouray National Wildlife Refuge Vegetation:** *Hesperostipa comata* Herbaceous Vegetation occupies predominantly north- and west-facing exposures on knolls, bluff edges and gentle hillslopes along the western portion of the Refuge. This is a short-statured (0.5-1 m) and relatively sparse community, rarely exceeding 25-30% foliar cover. *Hesperostipa comata* typically contributes approximately 20% foliar cover, the remainder is provided primarily by *Achnatherum hymenoides*, *Pleuraphis jamesii*, *Sporobolus cryptandrus*, *Aristida purpurea*, *Gutierrezia sarothrae*, *Ericameria nauseosa*, and *Opuntia polyacantha*. Associated species are determined by the substrate, e.g., *Pleuraphis jamesii* is present on silty clay and cobble substrate, while *Achnatherum hymenoides* and *Sporobolus cryptandrus* are present on sandy soils.

**Global Vegetation:** This association is characterized by a relatively sparse to moderate herbaceous layer (10-30% cover) that is strongly dominated by the cool-season bunchgrass *Hesperostipa comata*. Low cover of other grasses, such as *Achnatherum hymenoides*, *Achnatherum lettermanii*, *Aristida purpurea*, *Elymus elymoides*, *Pleuraphis jamesii*, *Poa fendleriana*, or *Sporobolus cryptandrus*, may be present. *Bouteloua eriopoda* is not present. Forb cover ranges from sparse to moderate and may be diverse. Associated species include *Artemisia campestris*, *Artemisia dracuncululus*, *Artemisia ludoviciana*, *Balsamorhiza sagittata*, *Cirsium arizonicum*, *Hymenopappus filifolius*, *Machaeranthera canescens*, *Vicia americana*, and species of *Eriogonum*, *Gilia*, and *Lappula*. Scattered shrubs and dwarf-shrubs may be present with less than 5% total cover. *Artemisia tridentata* ssp. *vaseyana*, *Chrysothamnus viscidiflorus*, *Ericameria nauseosa*, *Opuntia polyacantha*, *Gutierrezia sarothrae*, and *Symphoricarpos oreophilus* have been reported from this grassland. The widespread introduced annual grass *Bromus tectorum* often contributes significant cover in disturbed stands. Several other exotic species like *Salsola kali*, *Kochia scoparia*, and *Sisymbrium altissimum* may be present to abundant. Some stands have high cover of cryptogams on the soil including *Collema*

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*tenax*, *Tortula ruralis*, *Bellia papillata*, and *Fulgensia bracteata* (Kleiner and Harper 1977).

**Dynamics:** These grasslands are dominated by relatively deep-rooted grasses that use soil moisture below 0.5 m during the typically dry summers. The coarse-textured soils allow for rapid infiltration and storage of winter and summer precipitation (Daubenmire 1970, Kleiner 1968, Kleiner and Harper 1977, Thilenius et al. 1995). Fires when the grasses are dormant may be important in maintaining these grasslands by reducing woody cover. However, burning during the growing season generally kills or severely damages *Hesperostipa comata* plants. After fire, regeneration of this non-rhizomatous bunchgrass is by seed and may take many years to reach prefire densities (FEIS 1998).

### MOST ABUNDANT SPECIES

#### Ouray National Wildlife Refuge

Stratum	Species
DWARF SHRUB	<i>Chrysothamnus viscidiflorus</i> , <i>Gutierrezia sarothrae</i> , <i>Opuntia polyacantha</i>
HERBACEOUS	<i>Hesperostipa comata</i> , <i>Pleuraphis jamesii</i> , <i>Achnatherum hymenoides</i> , <i>Sporobolus cryptandrus</i> , <i>Aristida purpurea</i>

#### Global

Stratum	Species
GRAMINOID	<i>Hesperostipa comata</i>

### CHARACTERISTIC SPECIES

#### Ouray National Wildlife Refuge

**Species**  
*Hesperostipa comata*, *Pleuraphis jamesii*, *Achnatherum hymenoides*, *Gutierrezia sarothrae*, *Chrysothamnus viscidiflorus*

#### Global

**Species**  
*Hesperostipa comata*

### OTHER NOTEWORTHY SPECIES

#### Ouray National Wildlife Refuge

Stratum	Species
N/A	

#### Global

Stratum	Species
N/A	

### GLOBAL SIMILAR ASSOCIATIONS:

Muhlenbergia montana - *Hesperostipa comata* Herbaceous Vegetation (CEGL001647)  
Pseudoroegneria spicata - *Hesperostipa comata* Herbaceous Vegetation (CEGL001679)  
*Hesperostipa comata* - *Carex filifolia* Herbaceous Vegetation (CEGL001700)  
*Hesperostipa comata* - *Achnatherum hymenoides* Herbaceous Vegetation (CEGL001703)  
*Hesperostipa comata* - *Poa secunda* Herbaceous Vegetation (CEGL001704)  
*Elymus lanceolatus* - *Hesperostipa comata* Herbaceous Vegetation (CEGL001746)

### SYNONYMY:

*Hesperostipa comata* dominated grassland (Kleiner and Harper 1977)

### CLASSIFICATION COMMENTS

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

**Global Comments:** This association is composed of relatively pure *Hesperostipa comata* grasslands in the Intermountain West. The similar associations are distinguished by the codominance of other grass species or a shrub layer.

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### ELEMENT DISTRIBUTION

**Ouray National Wildlife Refuge Range:** *Hesperostipa comata* Herbaceous Vegetation occurs as patches and stands throughout the western one-third of the Refuge.

**Global Range:** N/A

**Nations:** US

**States/Provinces:** CO UT

**TNC Ecoregions:** 10:C, 18:C, 19:C

**USFS Ecoregions:** 313A:CC, 341B:CC, 341C:CC, 342G:??, M341C:CC

**Federal Lands:** NPS (Canyonlands, Zion); USFWS (Ouray)

### ELEMENT SOURCES

**Identifier:** CEGL001705 **Confidence:** 2 **Conservation Rank:** G2G4

**REFERENCES:** Daubenmire 1970, FEIS 1998, Kleiner 1968, Kleiner 1983, Kleiner and Harper 1977, Thilenius et al. 1995, Thompson 2001, Von Loh 2000.