

## Ouray National Wildlife Refuge Vegetation Mapping Project

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### IV.A.2.N.a.8. *KRASCHENINNIKOVIA LANATA DWARF-SHRUBLAND ALLIANCE*

#### Winter-fat Dwarf-shrubland Alliance

**Alliance Identifier:** A.1104

*Krascheninnikovia lanata* / *Pleuraphis jamesii* Dwarf-shrubland

Winter-fat / James' Galleta Dwarf-shrubland

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#### ELEMENT CONCEPT

**GLOBAL SUMMARY:** This minor dwarf-shrubland association is reported from northwestern New Mexico and eastern Utah, but likely occurs throughout the Colorado Plateau. Stands typically occur on alluvial flats and plains. Sites are typically flat to gently sloping, occurring on any aspect. Soils are generally moderately deep, calcareous, and moderately alkaline and derived from sandstone and shale. Soil texture ranges from sandy loam to silty clay. The ground surface has high cover of bare soil (70-90%). Vegetation is characterized by a sparse to moderately dense dwarf-shrub layer codominated by *Krascheninnikovia lanata* and *Gutierrezia sarothrae*. Other woody species may include scattered *Artemisia tridentata*, *Artemisia bigelovii*, *Chrysothamnus viscidiflorus*, *Opuntia imbricata*, *Opuntia polyacantha*, or *Yucca glauca*. The herbaceous layer has sparse to moderately dense cover that is dominated or codominated by *Pleuraphis jamesii* with scattered perennial forbs. Associated graminoids may include *Achnatherum hymenoides*, *Bouteloua gracilis*, *Elymus elymoides*, *Hesperostipa comata*, and *Sporobolus airoides*. Scattered perennial forbs may be present such as *Chaetopappa ericoides*, *Machaeranthera pinnatifida*, and *Sphaeralcea coccinea*. Exotic annuals may include *Bromus tectorum*, *Salsola kali*, and *Sisymbrium altissimum*.

#### ENVIRONMENTAL DESCRIPTION

**USFWS WETLAND SYSTEM:** PALUSTRINE – UPLAND

**Ouray National Wildlife Refuge Environment:** The *Krascheninnikovia lanata* Shrubland occurs in two small stands on flats separated by a draw dominated by *Sarcobatus vermiculatus* Shrubland. Soils are silty clay, and nearly 70% of the ground surface is without vegetative cover. The most evident soil features of the stand include disturbance due to small mammal burrowing activity and wind erosion, which results in some pedestaling at the base of the dominant shrubs.

**Global Environment:** This minor dwarf-shrubland association is reported from northwestern New Mexico and eastern Utah, but likely occurs throughout the Colorado Plateau. Elevations range from 1450-2050 m. Climate is temperate and semi-arid. Annual precipitation ranges from 20-30 cm with most occurring during the growing season, often as short-duration, convectional thunderstorms. Stands typically occur on alluvial flats and plains. Sites are typically flat to gently sloping, occurring on any aspect. Soils are generally moderately deep, calcareous, and moderately alkaline and derived from sandstone and shale. Soil texture ranges from sandy loam to silty clay. The ground surface has high cover of bare soil (70-90%).

#### VEGETATION DESCRIPTION

**Ouray National Wildlife Refuge Vegetation:** *Krascheninnikovia lanata* is the dominant short shrub with foliar cover of approximately 15%. The dwarf shrub *Gutierrezia sarothrae* is also common, providing approximately 10% foliar cover. Other dwarf shrubs present in the stand, in trace amounts, include *Opuntia polyacantha* and *Chrysothamnus viscidiflorus*. Native herbaceous species provide less than 5% foliar cover in the stand and are represented by *Pleuraphis jamesii*, *Hesperostipa comata*, *Achnatherum hymenoides*, and *Sphaeralcea coccinea*. The most common exotic species is *Bromus tectorum*, with approximately 2% foliar cover, but *Sisymbrium altissimum* and *Salsola kali* are also present.

**Global Vegetation:** This association is characterized by a sparse to moderately dense dwarf-shrub layer codominated by *Krascheninnikovia lanata* and *Gutierrezia sarothrae*, and a sparse to moderately dense herbaceous layer dominated by the perennial graminoid *Pleuraphis jamesii*. Scattered *Artemisia tridentata*, *Artemisia bigelovii*, *Chrysothamnus viscidiflorus*, *Opuntia imbricata*, *Opuntia polyacantha*, or *Yucca glauca* may also be present in the woody layer. Other graminoids present in minor amounts may include *Achnatherum hymenoides*, *Bouteloua gracilis*, *Elymus elymoides*, *Hesperostipa comata*, and *Sporobolus airoides*. Scattered perennial forbs may be present such as *Chaetopappa ericoides*, *Machaeranthera pinnatifida*, and *Sphaeralcea coccinea*. Exotic annuals may include *Bromus tectorum*, *Salsola kali*, and *Sisymbrium altissimum*.

**Dynamics:** N/A

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### MOST ABUNDANT SPECIES

#### Ouray National Wildlife Refuge

Stratum	Species
SHORT SHRUB	<i>Krascheninnikovia lanata</i>
DWARF SHRUB	<i>Gutierrezia sarothrae</i> , <i>Opuntia polyacantha</i>
HERBACEOUS	<i>Pleuraphis jamesii</i> , <i>Bromus tectorum</i>

#### Global

Stratum	Species
DWARF SHRUB	<i>Gutierrezia sarothrae</i>
DWARF SHRUB	<i>Krascheninnikovia lanata</i>
GRAMINOID	<i>Bromus tectorum</i>
GRAMINOID	<i>Pleuraphis jamesii</i>

### CHARACTERISTIC SPECIES

#### Ouray National Wildlife Refuge

**Species**  
*Krascheninnikovia lanata*, *Gutierrezia sarothrae*, *Pleuraphis jamesii*

#### Global

**Species**  
*Gutierrezia sarothrae*, *Krascheninnikovia lanata*, *Pleuraphis jamesii*

### OTHER NOTEWORTHY SPECIES

#### Ouray National Wildlife Refuge

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

#### Global

**Stratum**                      **Species**  
GRAMINOID                      *Bromus tectorum*

### OURAY NATIONAL WILDLIFE REFUGE SIMILAR ASSOCIATIONS:

*Gutierrezia sarothrae* Dwarf-shrubland is similar in all respects, except the dominant species, to this type.

### GLOBAL SIMILAR ASSOCIATIONS:

*Krascheninnikovia lanata* / *Bouteloua gracilis* Dwarf-shrub Herbaceous Vegetation (CEGL001321)  
*Krascheninnikovia lanata* / *Achnatherum hymenoides* Dwarf-shrubland (CEGL001323)  
*Krascheninnikovia lanata* / *Hesperostipa comata* Dwarf-shrubland (CEGL001327)  
*Gutierrezia sarothrae* - *Krascheninnikovia lanata* - *Atriplex canescens* / *Bouteloua eriopoda* Shrub Herbaceous Vegetation (CEGL001733)

### SYNONYMY:

*Ceratoides lanata* - *Gutierrezia sarothrae*/*Pleuraphis jamesii* plant association (Francis 1986).

### CLASSIFICATION COMMENTS

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

**Global Comments:** Stands described by Francis (1986) were generally too sparse to be classified as dwarf-shrublands and may be better classified in a shrub herbaceous association. Current and past livestock management can have a large impact on cover and composition of the woody and herbaceous layers. Both *Krascheninnikovia lanata* (winter-fat) and *Pleuraphis jamesii* are valuable livestock forage and are negatively impacted by heavy use. *Gutierrezia sarothrae* increases under heavy livestock use. Significant small mammal burrows and plant pedicelling caused by wind erosion were reported from the Utah stands.

### ELEMENT DISTRIBUTION

**Ouray National Wildlife Refuge Range:** *Krascheninnikovia lanata* Shrubland was observed at only two sites near

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SH 88 in the vicinity of Sheppard Bottom. The larger stand just equals the project minimum mapping unit, but the smaller stand does not. Both stands occupy nearly flat ground on the large plain that lies adjacent to the Green River floodplain.

**Global Range:** This dwarf-shrubland association is reported from alluvial flats in northwestern New Mexico in the upper Rio Puerco basin, and in eastern Utah in flats above the Green River floodplain. It likely occurs throughout the Colorado Plateau.

**Nations:** US

**States/Provinces:** CO? NM UT

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

**USFS Ecoregions:** 313A:CC, 341C:CC

**Federal Lands:** USFWS (Ouray)

### **ELEMENT SOURCES**

**Identifier:** CEGL001322 **Confidence:** 2 **Conservation Rank:** G3G4

**REFERENCES:** Francis 1986, Von Loh 2000.