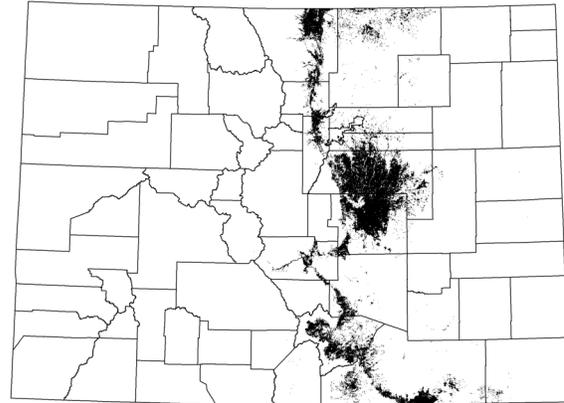


## WESTERN GREAT PLAINS Foothill and Piedmont Grassland



G. Dohle



extent exaggerated for display

- ANDROPOGON GERARDII - (SORGHASTRUM NUTANS) HERBACEOUS ALLIANCE
  - Andropogon gerardii* - *Schizachyrium scoparium* Western Great Plains Herbaceous Vegetation
  - Andropogon gerardii* - *Sorghastrum nutans* Western Great Plains Herbaceous Vegetation
  - Andropogon gerardii* - *Sporobolus heterolepis* Western Foothills Herbaceous Vegetation
- BOUPELOUA GRACILIS HERBACEOUS ALLIANCE
  - Bouteloua gracilis* - *Bouteloua curtispindula* Herbaceous Vegetation
  - Bouteloua gracilis* - *Bouteloua hirsuta* Herbaceous Vegetation
  - Bouteloua gracilis* - *Buchloe dactyloides* Herbaceous Vegetation
  - Bouteloua gracilis* Herbaceous Vegetation
- HESPEROSTIPA COMATA - BOUPELOUA GRACILIS HERBACEOUS ALLIANCE
  - Hesperostipa comata* Colorado Front Range Herbaceous Vegetation
- HESPEROSTIPA COMATA BUNCH HERBACEOUS ALLIANCE
  - Hesperostipa comata* - *Achnatherum hymenoides* Herbaceous Vegetation
- HESPEROSTIPA NEOMEXICANA HERBACEOUS ALLIANCE
  - Hesperostipa neomexicana* Herbaceous Vegetation
- NASSELLA VIRIDULA HERBACEOUS ALLIANCE
  - Nassella viridula* Herbaceous Vegetation
- PSEUDOROEGNERIA SPICATA HERBACEOUS ALLIANCE
  - Pseudoroegneria spicata* - *Poa secunda* Herbaceous Vegetation
  - Pseudoroegneria spicata* Herbaceous Vegetation
- SCHIZACHYRIUM SCOPARIUM - BOUPELOUA CURTIPENDULA HERBACEOUS ALLIANCE
  - Schizachyrium scoparium* - *Bouteloua curtispindula* Western Great Plains Herbaceous Vegetation

**Overview:** This large patch system typically occurs between 5,250 and 7,200 feet (1,600-2,200 m) in elevation. It is best characterized as a mixed-grass to tallgrass prairie on mostly moderate to gentle slopes, usually at the base of foothill slopes such as the hogbacks of the Rocky Mountain Front Range, where it typically occurs as a relatively narrow elevational band between montane woodlands and shrublands and the shortgrass steppe. The system also extends east on the Front Range piedmont alongside the Chalk Bluffs at the Colorado-Wyoming border, out into the Great Plains on the Palmer Divide, and on piedmont slopes below mesas and foothills in southeastern Colorado and northeastern New Mexico.

**Characteristic species:** Usually occurrences of this system have multiple plant associations that may be dominated by *Andropogon gerardii*, *Schizachyrium scoparium*, *Muhlenbergia montana*, *Nassella viridula*, *Pascopyrum smithii*, *Sporobolus cryptandrus*, *Bouteloua gracilis*, *Hesperostipa comata*, or *Hesperostipa neomexicana*. In Wyoming, typical grasses found in this system include *Pseudoroegneria spicata*, *Festuca idahoensis*, *Hesperostipa comata*, and species of *Poa*. Typical adjacent ecological systems include foothill shrublands, ponderosa pine savannas, juniper savannas, as well as shortgrass prairie.

Viable populations of Ottoo skipper (*Hesperia ottoe*), Cross-line skipper (*Polites origenes rhena*), Arogos skipper (*Atrytone arogos iowa*), Dusted skipper (*Atrytonopsis hianna turneri*), and Regal fritillary (*Speyeria idalia*) are indicators of a healthy and functioning foothills grasslands system.

**Environment:** A combination of increased precipitation from orographic rain, temperature, and soils limits this system to the lower elevation zone with approximately 16 in (40 cm) of precipitation/year. It is maintained by frequent fire and associated with well-drained clay soils.

**Dynamics:** This system is one of the most severely altered systems in the Southern Rocky Mountains ecoregion. Alteration is due to fire suppression, housing and water developments, conversion to hay meadows, overgrazing, etc. Fire suppression has allowed for shrub and tree invasion into the grassland and alters the species composition as well (Mast et al. 1997, Mast et al. 1998). Housing and water developments severely fragment and usually destroy the habitat, while agricultural use has converted tall grass prairies into hay meadows dominated by exotic grasses, e.g., smooth brome (*Bromus inermis*). It is very unusual to find excellent occurrences of this system. Threats are very high for this system and therefore, a premium is set on protecting the existing occurrences.



R. Rondeau

**Variation:** The tallgrass of the foothills and piedmont is disjunct from the Great Plains tallgrass prairie with large expanses of mid-grass and shortgrass prairies in between.

Mast, J. N., T. T. Veblen, and M. E. Hodgson. 1997. Tree invasion within a pine/grassland ecotone: an approach with historic aerial photography and GIS modeling. *Forest Ecology and Management* 93:181-94.

Mast, J. N., T. T. Veblen, and Y. B. Linhart. 1998. Disturbance and climatic influences on age structure of ponderosa pine at the pine/grassland ecotone, Colorado Front Range. *Journal of Biogeography* 25:743-755.

Rank:	A	B	C	D
<b>① CONDITION</b>				
<b>Community structure</b>	If trees are present, these are widely scattered and mature. Species richness is often high, and native bunch grasses or sedges (non-increasers) are dominant.	If trees are present, these are widely scattered and mature. Species richness is often high, and native grasses (non-increasers) are dominant.	Trees and shrubs may have seedlings, juveniles, or saplings present. Alteration is extensive but potentially restorable over several decades.	Native grassland species < 10% cover and 20% relative cover. Alteration of vegetation is extensive and restoration potential is low.
<b>Invasive exotics with major potential to alter structure and composition</b> (e.g., non-native thistle, <i>Euphorbia esula</i> , <i>Bromus tectorum</i> )	Absent.	May be present, but in low abundance.	May be prominent but still controllable.	
<b>Other non-native spp.</b>	<5% cover, native species dominant.	<10% cover, native species dominant.	>10% cover.	Dominant.
<b>Native increaser spp.</b> (e.g. <i>Koeleria micrantha</i> , <i>Gutierrezia sarothrae</i> , and <i>Artemisia frigida</i> )	< 3% cover.	<10% cover.	Dominant to co-dominant with native species.	
<b>Disturbance</b>	Fragmentation from roads and developments are less than 1% of the occurrence.	Fragmentation from roads and developments are less than 5% of the occurrence.	Fragmentation, vehicle use or livestock grazing disturbance, if present, is extensive and significant enough to have notable impact on species composition and soil compaction.	Vehicle use or livestock grazing disturbance, if present, is extensive and significant enough to have notable impact on species composition and soil compaction. System remains fundamentally compromised despite restoration of some processes. Soil compaction and disturbance are extensive throughout the occurrence.
<b>② LANDSCAPE CONTEXT</b>				
<b>Connectivity</b>	Connectivity of adjacent systems allows natural ecological processes, e.g., fire and species migrations to occur. No unnatural barriers present.	Adjacent systems surrounding occurrence retain much connectivity. Few non-natural barriers present.	Adjacent systems surrounding occurrence are fragmented by alteration with limited connectivity.	Connectivity is severely hampered.
<b>Surrounding land</b>	At least 90% native and unaltered landscape with very little to no urban development or agriculture.	Surrounding landscape composed of at least 75% natural or semi-natural vegetation, with little urban development within or adjacent to the occurrence.	Surrounding landscape is a mosaic of agricultural or semi-developed areas with >50% natural or semi-natural vegetation. Some non-natural barriers are present. Significant disturbance, but easily restorable.	Major human-caused alteration of surrounding landscape. Adjacent systems surrounding occurrence are mostly converted to agricultural or urban uses.
<b>③ SIZE</b>				
<b>Acres</b>	>10,000 Large enough to support A-ranked occurrences of disjunct butterflies and skippers, grassland birds as well as a mosaic of plant associations.	5,000-10,000	1,000-5,000	< 1,000