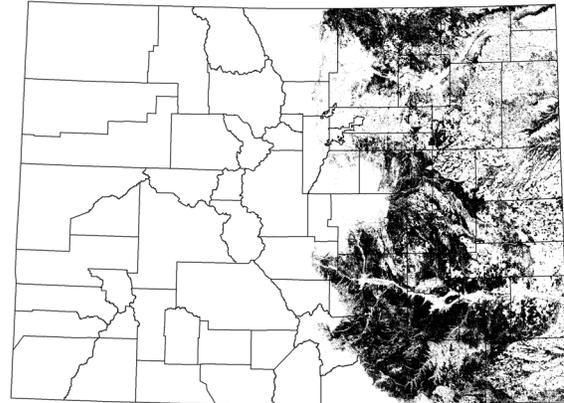


WESTERN GREAT PLAINS SHORTGRASS PRAIRIE



R. Rondeau



extent exaggerated for display

(COMPLEX)

- Blacktailed Prairie Dog Town Grassland Complex
- ARISTIDA PURPUREA HERBACEOUS ALLIANCE
 - Aristida purpurea* Herbaceous Vegetation
- BOUPELOUA ERIOPODA HERBACEOUS ALLIANCE
 - Bouteloua eriopoda* - *Bouteloua hirsuta* Herbaceous Vegetation
- BOUPELOUA GRACILIS HERBACEOUS ALLIANCE
 - Bouteloua gracilis* - *Bouteloua curtipendula* Herbaceous Vegetation
 - Bouteloua gracilis* - *Bouteloua hirsuta* Herbaceous Vegetation
 - Bouteloua gracilis* - *Buchloe dactyloides* Herbaceous Vegetation
 - Bouteloua gracilis* - *Pleuraphis jamesii* Herbaceous Vegetation
 - Bouteloua gracilis* Herbaceous Vegetation

Overview: This system is found primarily in the western half of the Western Great Plains, east of the Rocky Mountains and ranges from the Nebraska Panhandle south into Texas and New Mexico, although some examples may reach as far north as southern Canada where it grades into Northwestern Great Plains Mixedgrass Prairie.

Characteristic species: In much of its range, this system forms the matrix system with *Bouteloua* spp. dominating. Other associated graminoids may include *Buchloe dactyloides*, *Hesperostipa comata*, *Koeleria macrantha* (= *Koeleria cristata*), *Pascopyrum smithii* (= *Agropyron smithii*), *Aristida purpurea* and *Sporobolus cryptandrus*. Although tallgrass and mixedgrass species may be present especially on more mesic soils, they are secondary in importance to the sod-forming short grasses. Shrub species such as *Artemisia filifolia*, *Artemisia tridentata*, and *Chrysothamnus* spp. that dominate the Western Great Plains shrubland systems may also be present.

This system, in combination with the associated wetland systems, represents one of the richest areas in the United States for large mammals. Grassland bird species may constitute one of the fastest declining vertebrate populations in North America. A healthy shortgrass prairie system should support prairie dog complexes, viable populations of pronghorn, endemic grassland birds, and other Great Plains mammals. Historically, such areas would also have been populated by bison in sufficient numbers to support populations of wolves.

Environment: This system occurs primarily on flat to rolling uplands with loamy, ustic soils ranging from sandy to clayey.

Dynamics: Large-scale processes such as climate, fire and grazing influence this system. In contrast to other prairie systems, fire is less important, especially in the western range of this system, because the often dry and xeric climate conditions can decrease the fuel load and thus the relative fire frequency within the system. However, historically, fires that did occur were often very expansive. Currently, fire suppression and certain grazing patterns in the region have likely decreased the fire frequency even more, and it is unlikely that these processes could occur at a natural scale. A large part of the range for this system (especially in the east and near rivers) has been converted to agriculture. Areas of the central and western range have been impacted by the unsuccessful attempts to develop dryland cultivation during the Dust Bowl of the 1930s. The short grasses that dominate this system are extremely drought- and grazing-tolerant. These species evolved with drought and large herbivores and, because of their stature, are relatively resistant to overgrazing.

Variation: This system spans a wide range and thus there can be some differences in the relative dominance of some species from north to south and from east to west.



S. Neid

Rank:	A	B	C	D
① SIZE				
Acres	>500,000	250,000-500,000	50,000-250,000	< 50,000
② CONDITION				
Community structure (for pronghorn and endemic grassland birds)	Includes patchiness on a variety of scales, from bare ground and very short grass that may be heavily grazed to mixed taller grass/shrub patches and ungrazed areas. Vegetation should include a strong forb component (25-35%), high-quality winter browse, and a mixture of native grasses.	Natural vegetative conditions are still sufficient to support Great Plains mammal and bird species.	Natural vegetative conditions are still sufficient to support some Great Plains mammal and bird species, but impacts from human activities are heavy and intense management or long time periods may be needed to restore the area to natural conditions.	The community has been highly altered from natural conditions and even with intense management may never completely recover. Unlikely to ever be able to support a diverse fauna of Great Plains species.
Species composition	Native grasses are dominant. Species richness is often high and includes many native grasses as well as a diverse forb component. Cool season grasses such as western wheatgrass, needle-and-thread, and green needlegrass maintain a healthy presence, and the community has not shifted to a sod-dominated phase.	Species richness is often high, and native grasses are dominant. Cool season grasses such as western wheatgrass, needle-and-thread, and green needlegrass are present, but in remnant amounts. Blue grama and buffalograss may have increased in abundance and are beginning to take on a sod appearance.	Species richness is reduced in comparison with higher ranked occurrences. Native bunchgrasses are present but may be nearly equal in canopy cover to non-native species. Native species that increase with livestock grazing may be co-dominant or dominant. Trees and shrubs may have seedlings, juveniles, or saplings present.	Vegetation on the occurrence has little or no structural diversity and is likely to have low species diversity.
Vegetation condition Evaluation should consider that the Great Plains grasslands are very dynamic in nature and the vegetation can change significantly in a few years of high or low rainfall.	Minor or easily restorable impacts from human use to the vegetation and natural processes which have not permanently altered the vegetation structure and composition. The vegetation has not moved outside of what is thought to have been the natural range of variability.	Vegetation structure or composition may be somewhat altered (e.g. increased shrub component or loss of diversity from heavy grazing or lack of fire) but is still dominated by native species.	Plant density and production may be reduced, and litter may be excessive or not present at all. Dead plants or decadent plants may be common. Reproductive capability of native perennial plants is greatly reduced.	Cover required for nesting and/or breeding of grassland birds is not sufficient. Plant vigor may be poor and dead or decadent plants are common. Reproductive capability of native perennial plants severely reduced.
Exotic species	Non-native species may be common on a very minor part of the land area (such as around stock tanks, wells, or corrals).	Non-native species may be present in low abundance (<3% total canopy cover) throughout and abundant in small parts of the area. Invasive exotics with major potential to alter structure and composition occupy <1%.	Non-native species are present but have < 10% cover. Invasive exotics may be prominent in small and discrete patches.	Non-native species are very common to dominant over much of the landscape and have greatly altered native species composition.
Grassland birds	Populations have successful reproductive rates and source populations are stable or increasing.	Populations are stable.	Populations follow rangewide decline.	Populations in sharp decline.
Internal fragmentation	There is little or no internal fragmentation by cropland, development, trees, or roads. The area retains sufficient internal connectivity to allow natural processes (fire, grazing, drought stress)	Fragmentation is minimal, or can be easily mitigated. Barriers to migration are minimal.	Internal fragmentation and alteration from natural conditions is present in more than 5% of the occurrence.	The occurrence has a high level of internal fragmentation, and is heavily impacted by anthropogenic alterations.

<p>Natural processes</p> <p>Alteration from presettlement conditions (e.g. historically tilled areas, roads, oil and gas wells, windmills, stock ponds, fences, etc.)</p> <p>Ground cover & soils</p>	<p>to operate to maintain heterogeneous structure. Barriers to migration are absent or minimal.</p> <p>Fires are still part of this system. In the absence of native grazers, livestock grazing acts to maintain the mosaic of different structural stages, although not necessarily compositional stages.</p> <p>Minimal or non-existent.</p> <p>Drainages are natural stable channels with no signs of unnatural erosion. The soil surface should show slight to no evidence of rills, wind scoured areas, or pedestaled plants. Plant cover is adequate to protect from excess soil erosion. Soils have a distinct A-horizon and are very stable (low erosion rate). Soils are not compacted.</p>	<p>Major natural ecological processes are still able to function or be simulated.</p> <p>Impacts from human activities are not excessive and natural conditions should be easily restored with some change in management in a relatively short time period (within 10-25 years).</p> <p>Water flow patterns nearly match what is expected for the site; erosion is minor. Soil surface loss or degradation is moderate in plant interspaces with some degradation beneath plant canopies. Slight active pedestalling. Bare areas are of moderate size and sporadically connected. Litter buildup may be present in some areas, Soil structure is degraded and soil organic matter content is significantly reduced. Soil compaction moderately widespread.</p>	<p>Fire frequency may have been altered, although easily restored. Some ecological processes have been altered and are no longer able to function or be fully restored.</p> <p>Deposition and cut areas common; occasionally connected. Soil surface resistance to erosion significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Moderately active pedestalling. Bare ground is moderate to much higher than expected for the site. Bare areas are large and often connected. Soil surface loss or degradation may be severe throughout the site. Soil compaction may be widespread.</p>	<p>Fire frequency may be greatly altered and difficult to restore.</p> <p>Extensive and significant enough to have notable impact on species composition, soil compaction and stability.</p> <p>Water flow patterns unstable with active erosion. Soil surface resistance to erosion may be extremely reduced throughout the site. Abundant active pedestalling and numerous terraces. Bare ground is much higher than expected for the site. Bare areas are large and generally connected. Soil compaction is extensive throughout the occurrence.</p>
<p>③ LANDSCAPE CONTEXT</p>				
<p>Connectivity</p> <p>Surrounding land</p>	<p>Connectivity of adjacent systems (including other matrix and large patch systems) allows natural ecological processes (e.g. fire) to occur, facilitates migration, and results in greater than 500,000 acres of native prairie.</p> <p>Occurrence is surrounded by a native and unaltered landscape and is generally surrounded by other high-quality natural communities. Surrounding vegetation is at least 80% natural.</p>	<p>Connectivity of adjacent systems should result in 300,000 - 500,000 acres of native prairie.</p> <p>The occurrence is surrounded by a landscape that has had some land conversion but in general is still ecologically connected with many of the adjacent natural communities. Surrounding vegetation is 50-80% natural.</p>	<p>Unalterable barriers prevent natural processes, species interaction and migration to and from the matrix community across most of the adjacent communities and ecological systems.</p> <p>Surrounding landscape is a mosaic of agricultural or semi-developed areas with 20-50% natural vegetation.</p>	<p>Connectivity is severely hampered. Ecological processes and species migration cannot occur at a natural scale.</p> <p>The surrounding landscape is almost entirely dominated by lands converted to agricultural or urban uses.</p>