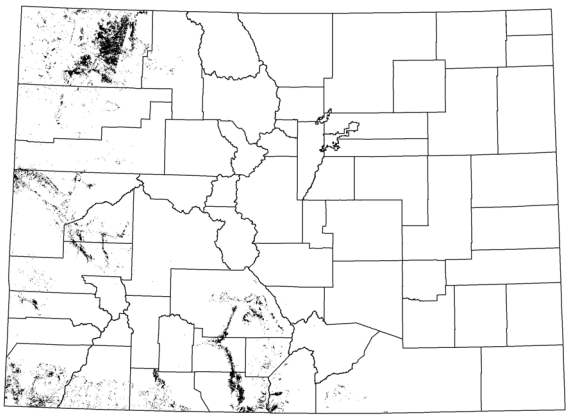
INTER-MOUNTAIN BASINS SEMI-DESERT GRASSLAND

P. Lyon



extent exaggerated for display

ARISTIDA PURPUREA HERBACEOUS ALLIANCE
Aristida purpurea Herbaceous Vegetation
BOUTELOUA ERIOPODA HERBACEOUS ALLIANCE
Bouteloua eriopoda - Pleuraphis jamesii Herbaceous Vegetation
BOUTELOUA GRACILIS HERBACEOUS ALLIANCE
Bouteloua gracilis - Bouteloua curtipendula Herbaceous Vegetation
Bouteloua gracilis - Bouteloua hirsuta Herbaceous Vegetation
Bouteloua gracilis - Pleuraphis jamesii Herbaceous Vegetation
Bouteloua gracilis Herbaceous Vegetation
HESPEROSTIPA COMATA BUNCH HERBACEOUS ALLIANCE
Hesperostipa comata - Achnatherum hymenoides Herbaceous Vegetation
Hesperostipa comata Great Basin Herbaceous Vegetation
HESPEROSTIPA NEOMEXICANA HERBACEOUS ALLIANCE
Hesperostipa neomexicana Herbaceous Vegetation
MUHLENBERGIA ASPERIFOLIA INTERMITTENTLY FLOODED HERBACEOUS ALLIANCE
Muhlenbergia asperifolia Herbaceous Vegetation
PLEURAPHIS JAMESII HERBACEOUS ALLIANCE
Pleuraphis jamesii Herbaceous Vegetation
PSEUDOROEGNERIA SPICATA HERBACEOUS ALLIANCE
Pseudoroegneria spicata - Achnatherum hymenoides Herbaceous Vegetation
Pseudoroegneria spicata ssp. *inermis* Herbaceous Vegetation

Overview: This widespread ecological system occurs throughout the intermountain western U.S. on dry plains and mesas. These grasslands occur in lowland and upland areas and may occupy swales, playas, mesa tops, plateau parks, alluvial flats, and plains, but sites are typically xeric. Substrates are often well-drained sandy- or loamy-textured soils derived from sedimentary parent materials, but are quite variable and may include fine-textured soils derived from igneous and metamorphic rocks. When they occur near foothills grasslands they will be at lower elevations. The dominant perennial bunch grasses and shrubs within this system are all very drought-resistant plants.

Characteristic species: These grasslands are typically dominated or codominated by *Achnatherum hymenoides, Aristida* spp., *Bouteloua gracilis, Hesperostipa comata, Muhlenbergia torreyi*, or *Pleuraphis jamesii*, and may include scattered shrubs and dwarf-shrubs of species of *Artemisia, Atriplex, Coleogyne, Ephedra, Gutierrezia*, or *Krascheninnikovia lanata*.

Environment: Low-elevation grasslands in the Intermountain West region occur in semi-arid to arid climates at approximately 4,750-7,610 feet (1,450 to 2,320 m) in elevation. Grasslands within this system are typically characterized by a sparse to moderately dense herbaceous layer dominated by medium-tall and short bunch grasses, often in a sod-forming growth. These grasslands occur in lowland and upland areas and may occupy swales, playas, mesa tops, plateau parks, alluvial flats, and plains. These grasslands typically occur on xeric sites. This system experiences cold temperate conditions.

Hot summers and cold winters with freezing temperatures and snow are common. Annual precipitation is usually from 8-16 in (20-40 cm). A significant portion of the precipitation falls in July through October during the summer monsoon storms, with the rest falling as snow during the winter and early spring months. These grasslands occur on a variety of aspects and slopes. Sites may range from flat to moderately steep. Soils supporting this system also vary from deep to shallow, and from sandy to finer-textured. The substrate is typically sand- or shale-derived. Some sandy soil occurrences have a high cover of cryptogams on the soil. Soil salinity depends on the amount and timing of precipitation and flooding.

Dynamics: This system is maintained by frequent fires and sometimes associated with specific soils – often well-drained clay soils. A combination of precipitation, temperature, and soils limits this system to the lower elevations within the region. The dominant perennial bunch grasses and shrubs within this system are all very drought-resistant plants. Grasses that dominate semi-arid grasslands develop a dense network of roots concentrated in the upper parts of the soil where rainfall penetrates most frequently.

The semi-desert grassland system is vulnerable to invasion by exotic species, particularly cheatgrass. Although frequent fires in grasslands may have been common historically, the introduction of cheatgrass has altered the dynamics of the system, and fire often results in cheatgrass dominance. Once overtaken by cheatgrass, more frequent fires are encouraged by the dry flammable material, leading to further domination by cheatgrass. Even a few cheatgrass plants in a stand will produce enough seed to dominate the stand within a few years after fire.

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Rank:	A	B	C	D
① SIZE				
Acres	>30,000	10,000-30,000	5,000-10,000	< 5,000
② CONDITION				
Community structure	Native species dominate.	Native species dominate.	Native species dominate.	Occurrence is dominated by native perennial increasers or non-native species.
Invasive exotics with major potential to alter structure and composition (e.g. *Bromus inermis, Bromus tectorum)*	Absent.	Nearly absent (<1% cover).		
Other non-native spp.	<3% total cover.	May be present and even dominant in spots, but not throughout the occurrence and only in disturbed areas.	May be present and quite abundant in small and large patches.	May be dominant.
Native increaser spp. *(Balsamorriza, Wyethia, Gutierrezia sarothrae)*	< 3% cover.	<10% cover.		May be dominant.
Disturbance	No surficial disturbance is evident or if present than in only small, isolated areas (e.g., mines or ranch activities and building; off-road vehicle use); There are few or no roads found within the occurrence.	Surficial disturbances are limited to less than 20% of the occurrence area; There are only a few roads found throughout the occurrence.	Surficial disturbances occur on more than 20% of the area (e.g., mines or ranch activities and buildings; off-road vehicle use). There are more than a few roads within the occurrence.	Surficial disturbances occur on more than 50% of the area (e.g., mines or ranch activities and buildings; off-road vehicle use). There are many roads throughout the occurrence.
Ground cover (vegetation or biotic crust)	Ground cover > 65%. Soil erosion is not accelerated by anthropogenic activities.	Ground cover is intact in at least 80% of the occurrence. Soil erosion may be accelerated in small patches throughout the occurrence; surficial disturbance, if present, is in only small, isolated areas (e.g., mines or ranch activities and buildings; off-road vehicle use).	Ground cover is below 60% in more than 25% of the area, or in various stages of degradation throughout the occurrence.	Ground cover has been removed from 75% of the area, with only small pockets of ground cover remaining (usually due to protection from livestock and off-road vehicle use).
③ LANDSCAPE CONTEXT				
Connectivity	Highly connected.	Moderately connected.	Moderately fragmented.	Highly fragmented.
Surrounding land	Area around the occurrence is largely intact natural vegetation, with species interactions and natural processes occurring across communities.	Area around the occurrence is moderately intact natural vegetation, with species interactions and natural processes occurring across many communities; landscape includes partially disturbed natural or semi-natural communities, some of it not high quality due to excessive grazing.	Area around the occurrence is largely a combination of cultural and natural vegetation, with barriers between species interactions and natural processes across natural communities; occurrence is surrounded by a mix of intensive agriculture or urban land use (total area no smaller than ten times the minimum "C"-rated size).	Area around the occurrence is entirely, or almost entirely, surrounded by agricultural or urban land use; occurrence is at best buffered on one side by natural communities.