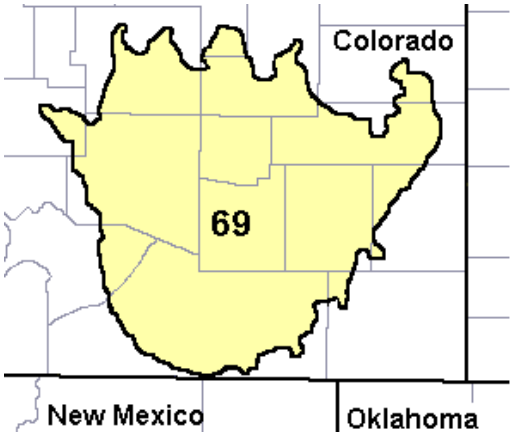
United States Department of Agriculture
Natural Resources Conservation Service

Ecological Site Description



Site Type: Rangeland

Site Name: Shaly Plains

Site ID: R069XY046CO

Major Land Resource Area: 69 – Upper Arkansas Valley Rolling Plains

Physiographic Features

This site occurs on gently sloping to very steep ridges, hills and pediments and is controlled by shale bedrock.

Landform: ridge, plain, hill

Aspect: N/A

	Minimum	Maximum
Elevation (feet):	3600	6000
Slope (percent):	1	9
Water Table Depth (inches):	60	60
Flooding:		
Frequency:	none	none
Duration:	none	none
Ponding:		
Depth (inches):	0	0
Frequency:	none	none
Duration:	none	none
Runoff Class:	medium	very high

Climatic Features

The mean average annual precipitation varies from 10 to 14 inches per year depending on location and ranges from 5 inches to over 24 inches per year. Approximately 75 percent of the annual precipitation occurs during the growing season from mid-April to late-September. Snowfall can vary greatly from year to year and can range from 20 to 40 inches per year. Winds are estimated to average about 6 to 7 miles per hour annually. Daytime winds are generally stronger than nighttime and occasional strong storms may bring brief periods of high winds with gusts to more than 60 miles per hour.

The average length of the growing season is 155 days, but varies from 147 to 162 days. The average date of first frost in the fall is October 10, and the last frost in the spring is about May 5. July is the hottest month and January is the coldest. It is not uncommon for the temperature to exceed 100 degrees F during the summer. Summer humidity is low and evaporation is high. The winters are characterized with frequent northerly winds, producing severe cold with temperatures dropping to as low as -35 degrees F.

Growth of native cool season plants begins about April 15 and continues to about June 1. Native warm season plants begin growth about May 1and continue to about August 15. Regrowth of cool season plants occurs in September and October of most years, depending on moisture.

	Minimum	Maximum
Frost-free period (days):	147	162
Freeze-free period (days):	169	186
Mean Annual Precipitation (inches):	10	14

Average Monthly Precipitation (inches) and Temperature (ºF):

	Precip. Min.	Precip. Max	Temp. Min.	Temp. Max.
January	0.28	0.27	12.1	46.4
February	0.14	0.36	15.3	52.9
March	0.25	0.68	20.7	61.5
April	0.73	1.16	28.9	71.8
May	0.90	2.21	38.6	81.1
June	0.83	1.79	47.6	91.4
July	2.34	2.38	53.4	96.2
August	1.62	2.00	51.7	93.7
September	1.04	1.12	43.3	86.0
October	0.90	0.78	32.2	74.2
November	0.49	0.51	21.0	58.1
December	0.43	0.27	14.1	48.6

Climate Stations		Period	
Station ID	**Location or Name**	**From**	**To**
CO6763	Pueblo Army Depot	1971	2000
CO3828	Haswell	1922	2001
CO7287	Rush	1924	2001
CO4834	Las Animas	1930	2001

For detailed information visit the Western Regional Climate Center at http://www.wrcc.dri.edu/ website.

Influencing Water Features

Wetland Description:	**System**	**Subsystem**	**Class**	**Sub-class**
None	None	None	None	None

Stream Type: None

Representative Soil Features

The soils of this site are dominantly shallow, but also includes moderately deep. They are well drained and have moderately slow to very slow permeability. Typically these soils formed in slope alluvium and residuum from shale. They occur on hills, ridges, pediments, and plains. The available water capacity is typically very low or low, but ranges too high in moderately deep soils. The surface layer ranges from 2 to 10 inches thick and the texture is loam, silty clay loam, clay loam, or clay. Shale occurs at depths of 6 to 40 inches. The pH generally ranges from slightly alkaline to strongly alkaline. The soil moisture regime is ustic aridic but ranges to aridic in the driest areas of MLRA 69. Soil temperature regime is mesic.

Where slopes are gentle, water flow paths should be broken, irregular in appearance or discontinuous with numerous debris dams or vegetative barriers and exhibit slight to no evidence of rills, wind scoured areas or pedestaled plants. Sub-surface soil layers, where not affected by bedrock, are non-restrictive to water movement and root penetration.

Major soil series correlated to this ecological site include: Lismas, Midway, Ordway, Pultney, Razor, Samsil, and Shingle.

Soil series that will be correlated to other MLRA's when outdated soil surveys are updated are: Lismas and Samsil. These soils have an aridic ustic moisture regime.

Other soil series that have been correlated to this site include: Shingle, gypsum variant.

Parent Material Kind: slope alluvium, residuum
Parent Material Origin: shale
Surface Texture: clay loam, silty clay loam, loam, clay
Surface Texture Modifier: none

Subsurface Texture Group: clayey
Surface Fragments ≤ 3" (% Cover): 0 to 25 percent
Surface Fragments > 3" (%Cover): 0 to 5 percent
Subsurface Fragments ≤ 3" (% Volume): 0 to 35 percent
Subsurface Fragments > 3" (% Volume): 0 to 5 percent
Rock fragments are generally gravel or channers.

	Minimum	Maximum
Drainage Class:	well	well
Permeability Class:	moderately slow	very slow
Depth (inches):	6	40
Electrical Conductivity (mmhos/cm)*:	0	16
Sodium Absorption Ratio*:	0	15
Soil Reaction (1:1 Water)*:	7.4	9.0
Soil Reaction (0.1M CaCl2)*:	6.8	9.0
Available Water Capacity (inches)*:	0.8	7.0
Calcium Carbonate Equivalent (percent)*:	0	20

*These attributes represent 0-40 inches in depth or to the first restrictive layer.

Plant Communities

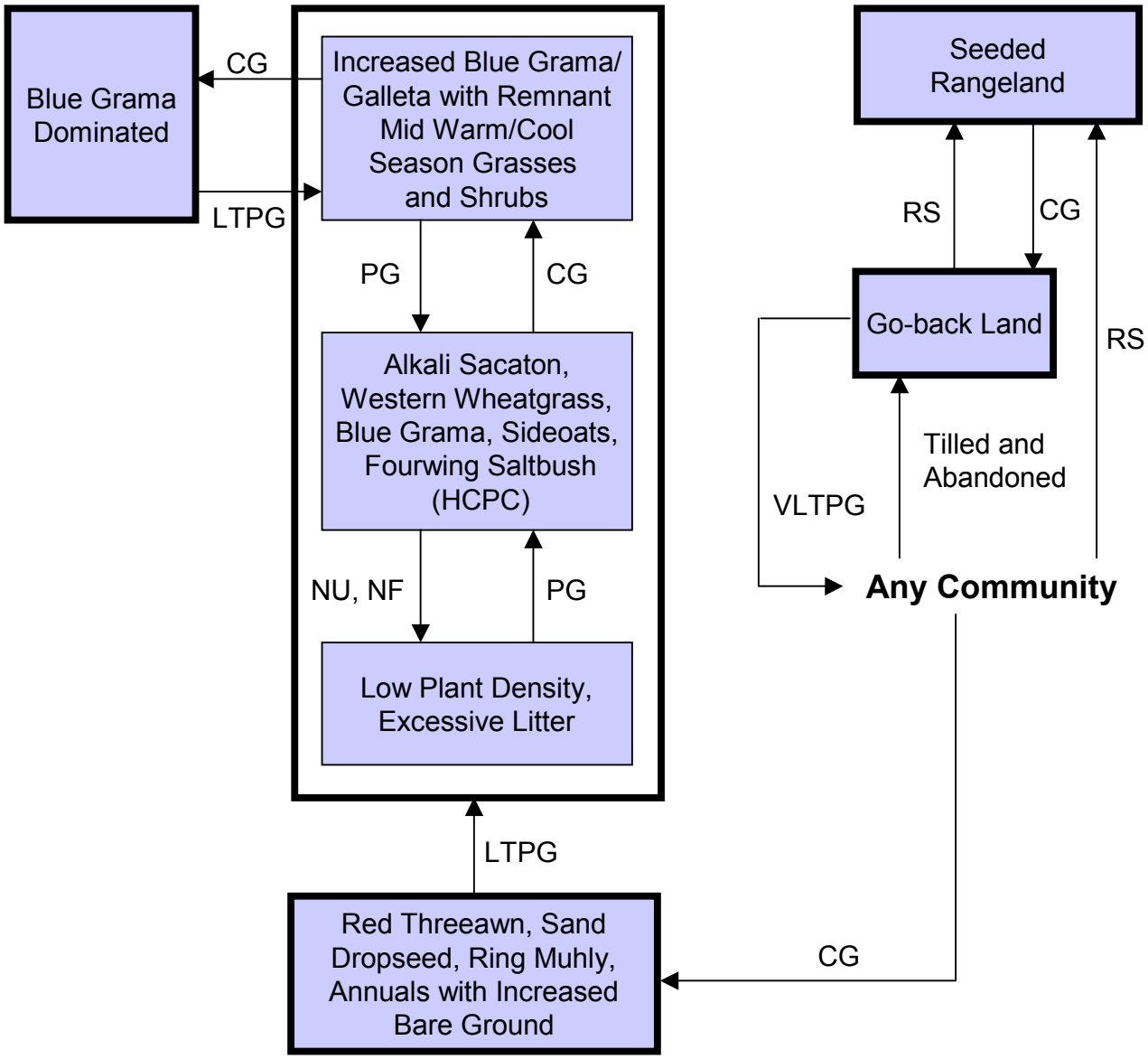
Ecological Dynamics of the Site:
Deterioration of this site, due to continuous grazing without adequate recovery periods following each grazing occurrence, will cause blue grama to increase and if continued long enough, red threeawn, sand dropseed, ring muhly and bare ground will increase. Alkali sacaton, green needlegrass and western wheatgrass will decrease in frequency and production as well as key shrubs such as fourwing saltbush and winterfat. American vetch and other highly palatable forbs will decrease also. Plant communities subjected to extended periods of non-use (rest), in the absence of fire, will exhibit excessive litter and reduced plant density.

Drier and warmer climatic conditions exist in the central portion of MLRA-69. This area includes the eastern half of Pueblo county, northern Otero, extreme northwestern Bent, western edge of Kiowa, southern edge of Lincoln and all of Crowley County. These conditions are primarily caused by a rain shadow effect from the southern Rocky Mountains. Evapotranspiration rates (atmospheric demand) will be higher in this area of MLRA-69. Total annual production will typically be lower.

The historic climax plant community (description follows the plant community diagram) has been determined by study of rangeland relic areas, areas protected from excessive disturbance, seasonal use pastures, short durationl/time controlled grazing and historical accounts.

The following is a diagram that illustrates the common plant communities that can occur on the site and the transition pathways (arrows) among communities. Bold lines surrounding each plant community or communities represent ecological thresholds. The ecological processes will be discussed in more detail in the plant community descriptions following the diagram.

Plant Communities and Transitional Pathways



CG - continuous grazing without adequate recovery opportunity, **HCPC** - Historic Climax Plant Community, **LTPG** - long term prescribed grazing (>40 yrs), **NF** - no fire, **NU** - non use, **PG** - prescribed grazing with adequate recovery period, **RS** - range seeding, **VLTPG** - very long term prescribed grazing with adequate recovery periods (>80 yrs)

Plant Community Composition and Group Annual Production

			A. Sacaton, W. Wheatgrass, Blue Grama, Sideoats, Fourwing Saltbush (HCPC)		
COMMON/GROUP NAME	**SCIENTIFIC NAME**	**SYMBOL**	**Group**	**lbs./acre**	**% Comp**
GRASSES & GRASS-LIKES			*1*	*420 - 510*	*70 - 85*
alkali sacaton	Sporobolus airoides	SPAI	1	150 - 210	25 - 35
western wheatgrass	Pascopyrum smithii	PASM	1	90 - 150	15 - 25
blue grama	Bouteloua gracilis	BOGR2	1	90 - 120	15 - 20
sideoats grama	Bouteloua curtipendula	BOCU	1	60 - 120	10 - 20
galleta	Pleuraphis jamesii	PLJA	1	60 - 90	10 - 15
green needlegrass	Nassella viridula	NAVI4	1	18 - 42	3 - 7
little bluestem	Schizachyrium scoparium	SCSC	1	6 - 30	1 - 5
Indian ricegrass	Achnatherum hymenoides	ACHY	1	0 - 12	0 - 2
inland saltgrass	Distichlis spicata	DISP	1	0 - 12	0 - 2
needleandthread	Hesperostipa comata ssp. comata	HECOC8	1	0 - 12	0 - 2
bottlebrush squirreltail	Elymus elymoides ssp. elymoides	ELELE	1	0 - 6	0 - 1
buffalograss	Buchloe dactyloides	BUDA	1	0 - 6	0 - 1
prairie junegrass	Koeleria macrantha	KOMA	1	0 - 6	0 - 1
red threeawn	Aristida purpurea var. longiseta	ARPUL	1	0 - 6	0 - 1
ring muhly	Muhlenbergia torreyi	MUTO2	1	0 - 6	0 - 1
sand dropseed	Sporobolus cryptandrus	SPCR	1	0 - 6	0 - 1
vine mesquite	Panicum obtusum	PAOB	1	0 - 6	0 - 1
sun sedge	Carex inops ssp. heliophila	CAINH2	1	6 - 18	1 - 3
threadleaf sedge	Carex filifolia	CAFI	1	0 - 6	0 - 1
other perennial grasses		2GP	1	6 - 18	1 - 3
FORBS			*2*	*30 - 60*	*5 - 10*
American vetch	Vicia americana	VIAM	2	6 - 18	1 - 3
Fremont goldenweed	Oonopsis foliosa var. foliosa	OOFOF	2	6 - 12	1 - 2
scarlet globemallow	Sphaeralcea coccinea	SPCO	2	6 - 12	1 - 2
desert princesplume	Stanleya pinnata var. pinnata	STPIP	2	0 - 6	0 - 1
dotted gayfeather	Liatris punctata	LIPU	2	0 - 6	0 - 1
groundplum milkvetch	Astragalus crassicarpus	ASCR2	2	0 - 6	0 - 1
Louisiana sagewort	Artemisia ludoviciana	ARLU	2	0 - 6	0 - 1
penstemon	Penstemon spp.	PENST	2	0 - 6	0 - 1
povertyweed	Iva axillaris	IVAX	2	0 - 6	0 - 1
prairie coneflower	Ratibida columnifera	RACO3	2	0 - 6	0 - 1
purple prairie clover	Dalea purpurea var. purpurea	DAPUP	2	0 - 6	0 - 1
slimflower scurfpea	Psoralidium tenuiflorum	PSTE5	2	0 - 6	0 - 1
sulphur-flower buckwheat	Eriogonum umbellatum	ERUM	2	0 - 6	0 - 1
twogrooved milkvetch	Astragalus bisulcatus	ASBI2	2	0 - 6	0 - 1
other perennial forbs		2FP	2	6 - 18	1 - 3
SHRUBS			*3*	*60 - 120*	*10 - 20*
fourwing saltbush	Atriplex canescens	ATCA2	3	30 - 60	5 - 10
winterfat	Krascheninnikovia lanata	KRLA2	3	12 - 30	2 - 5
James' frankenia	Frankenia jamesii	FRJA	3	6 - 12	1 - 2
shadscale	Atriplex confertifolia	ATCO	3	6 - 12	1 - 2
black greasewood	Sarcobatus vermiculatus	SAVE4	3	0 - 6	0 - 1
broom snakeweed	Gutierrezia sarothrae	GUSA2	3	0 - 6	0 - 1
green plume rabbitbrush	Ericameria nauseosa ssp. nauseosa var. glabrata	ERNAG	3	0 - 6	0 - 1
pale wolfberry	Lycium pallidum	LYPA	3	0 - 6	0 - 1
plains greasebush	Glossopetalon planitierum	GLPL	3	0 - 6	0 - 1
plains pricklypear	Opuntia polyacantha	OPPO	3	0 - 6	0 - 1
small soapweed	Yucca glauca	YUGL	3	0 - 6	0 - 1
walking stick cholla	Opuntia imbricata	OPIM	3	0 - 6	0 - 1
other shrubs		2SHRUB	3	6 - 18	1 - 3

Annual Production lbs./acre	LOW	RV*	HIGH
GRASSES & GRASS-LIKES	170 -	465	- 810
FORBS	25 -	45	- 65
SHRUBS	55 -	90	- 125
TOTAL	250 -	600	- 1000

This list of plants and their relative proportions are based on near normal years. Fluctuations in species composition and relative production may change from year to year dependent upon precipitation or other climatic factors. *RV = Representative value.

Plant Community Narratives

Following are the narratives for each of the described plant communities. These plant communities may not represent every possibility, but they probably are the most prevalent and repeatable plant communities. The plant composition tables shown above have been developed from the best available knowledge at the time of this revision. As more data is collected, some of these plant communities may be revised or removed, and new ones may be added. None of these plant communities should necessarily be thought of as "Desired Plant Communities". According to the USDA NRCS National Range and Pasture Handbook, Desired Plant Communities will be determined by the decision-makers and will meet minimum quality criteria established by the NRCS. The main purpose for including any description of a plant community here is to capture the current knowledge and experience at the time of this revision.

Alkali Sacaton, Western Wheatgrass, Blue Grama, Sideoats Grama, Fourwing Saltbush Plant Community

This is the interpretive plant community and is considered to be the Historic Climax Plant Community (HCPC). This plant community evolved with grazing by large herbivores and is well suited for grazing by domestic livestock and can be found on areas that are properly managed with prescribed grazing that allows for adequate recovery periods following each grazing event.

The historic climax plant community consists mainly of mid warm and cool season grasses. The principal dominant mid grasses are western wheatgrass, alkali sacaton, sideoats grama and galleta. Blue grama is the dominant short grass. Secondary grasses include green needlegrass, and little bluestem. Forbs and shrubs such as American vetch, Fremont goldenweed, scarlet globemallow, fourwing saltbush and winterfat are significant. The HCPC is about 70-85% grasses and grass-likes, 5-10% forbs and 10-20% woody plants.

This is a sustainable plant community in terms of soil stability, watershed function and biological integrity. Litter is properly distributed with little movement. Decadence and natural plant mortality is very low. Community dynamics, nutrient cycle, water cycle and energy flow are functioning properly. This community is resistant to many disturbances except continuous grazing, tillage and/or development into urban or other uses.

Total annual production, during an average year, ranges from 250 to 1050 pounds per acre air-dry weight and will average 600 pounds.

The following is the growth curve of this plant community expected during a normal year:
Growth curve number: CO6901
Growth curve name: Warm season/cool season co-dominant; MLRA-69; upland fine textured soils.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	5	10	20	30	20	10	3	2	0	0

(monthly percentages of total annual growth)

Transitions or pathways leading to other plant communities are as follows:

- Continuous grazing without adequate recovery periods following grazing events will shift this plant community toward the *Increased Blue Grama/Galleta with Remnant Mid Warm/Cool Season Grasses and Shrubs Plant Community.*
- Non-use (rest) and absence of fire will move this plant community toward the *Excessive Litter, Low Plant Density Plant Community.*
- Prescribed grazing that allows for adequate recovery opportunity following each grazing event and proper stocking will maintain the *Alkali Sacaton, Western Wheatgrass, Blue Grama, Sideoats Grama, Fourwing Saltbush Plant Community (HCPC).*

Increased Blue Grama/Galleta with Remnant Mid Warm/Cool Season Grasses and Shrubs Plant Community

This community developed with longer term continuous grazing resulting from the lack of adequate recovery periods between grazing occurrences. Blue grama and galleta dominate this plant community. Mid cool and warm season grasses such as western wheatgrass, green needlegrass, alkali sacaton and sideoats grama have been reduced to remnant amounts. Fourwing saltbush and winterfat are reduced but can still be found in scattered amounts.

Plant frequency and vigor have decreased. Reduction of rhizomatous grasses, nitrogen fixing forbs, shrub component and increased warm season short grasses has begun to alter the biotic integrity of this community. Water and nutrient cycles are becoming impaired.

Total annual production, during an average year, ranges from 150 to 600 pounds per acre air-dry weight and will average 300 pounds.

The following is the growth curve of this plant community expected during a normal year:
Growth curve number: CO6903
Growth curve name: Warm season dominant, cool season sub-dominant; MLRA-69; upland fine textured soils.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	15	35	25	15	5	0	0	0

(monthly percentages of total annual growth)

Transitions or pathways leading to other plant communities are as follows:

- Continuous grazing without adequate recovery opportunity between grazing events will shift this plant community across an ecological threshold toward the *Blue Grama Dominated Plant Community.*
- Prescribed grazing with adequate recovery periods following each grazing event and proper stocking will move this plant community toward the *Alkali Sacaton, Western Wheatgrass, Blue Grama, Sideoats Grama, Fourwing Saltbush Plant Community (HCPC).*

Excessive Litter, Low Plant Density Plant Community

This plant community occurs when grazing is removed for long periods of time (rest) in the absence of fire. Plant composition is similar to the HCPC, however individual species production and frequency will be lower.

Much of the nutrients are tied up in excessive litter. The semiarid environment and the absence of animal traffic to break down litter slow nutrient recycling. Aboveground litter also limits sunlight from reaching plant crowns. Many plants, especially bunchgrasses die off. Thick litter and absence of grazing or fire reduce seed germination and establishment.

In advanced stages, plant mortality can increase and erosion may eventually occur if bare ground increases. Once this happens it will require increased energy input in terms of practice cost and management to bring back.

Total annual production, during an average year, ranges from 150 to 700 pounds per acre air-dry weight.

The following is the growth curve of this plant community expected during a normal year:
Growth curve number: CO6902
Growth curve name: Warm season/cool season co-dominant, excess litter; MLRA-69; upland fine textured soils.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	3	7	22	33	18	12	5	0	0	0

(monthly percentages of total annual growth)

Transitions or pathways leading to other plant communities are as follows:

- Prescribed grazing with adequate recovery opportunity between grazing events and proper stocking can restore this plant community back to the *Alkali Sacaton, Western Wheatgrass, Blue Grama, Galleta, Fourwing Saltbush Plant Community (HCPC).*

Blue Grama Dominated Plant Community

This plant community has developed with further continuous grazing. Blue grama dominates the plant community. The key warm and cool season mid grasses such as alkali sacaton, western wheatgrass and green needlegrass are absent and have been replaced by increased amounts of red threeawn, ring muhly and sand dropseed. Fourwing saltbush and winterfat have been removed. Only a remnant amount of galleta and sideoats grama may exist.

A significant amount of production and diversity has been lost when compared to the HCPC. Loss of cool season grasses, shrub component and nitrogen fixing forbs have negatively impacted energy flow and nutrient cycling. Soil loss is obvious where flow paths are connected. The plant community lacks diversity and exhibits a greatly impaired water cycle. Desertification is obvious.

Total annual production, during an average year, ranges from 75 to 300 pounds per acre air-dry weight and will average 150 pounds.

The following is the growth curve of this plant community expected during a normal year:
Growth curve number: CO6904
Growth curve name: Warm season dominant; MLRA-69; upland fine textured soils.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	0	15	45	25	15	0	0	0	0

(monthly percentages of total annual growth)

Transitions or pathways leading to other plant communities are as follows:

- Continuous grazing without adequate recovery opportunity between grazing events will shift this plant community (as well as other plant communities) across an ecological threshold toward the *Red Threeawn, Sand Dropseed, Ring Muhly, Annuals and Bare Ground Plant Community.* This transition can occur within a 10 - 20 year time frame.
- Long-term prescribed grazing with adequate recovery periods between grazing events will move this plant community to the *Increased Blue Grama/Galleta with Remnant Mid WarmlCool Season Grasses and Shrubs Plant Community* and eventually to the *HCPC* or associated successional plant communities assuming an adequate seed/vegetative source is available. This change will require a long period of time and may be difficult to attain depending on the degree of degradation.

Red Threeawn, Sand Dropseed, Ring Muhly, Annuals with Increased Bare Ground Plant Community

This plant community develops with repeated continuous grazing. Communities that contained remnant amounts of blue grama, fourwing saltbush and winterfat have been replaced by red threeawn, sand dropseed, ring muhly, little barley, plains prickleypear and broom snakeweed. Annual invaders such as kochia, Russian thistle and cheatgrass have increased.

Bare ground is a major concern. Erosion potential is high and soil loss can be severe. This community lacks stability, diversity and productivity. Desertification is well advanced.

Total annual production, during an average year, ranges from 25 to 150 pounds per acre air-dry weight.

The following is the growth curve of this plant community expected during a normal year:
Growth curve number: CO6903
Growth curve name: Warm season dominant, cool season sub-dominant; MLRA-69; upland fine textured soils.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	15	35	25	15	5	0	0	0

(monthly percentages of total annual growth)

Transitions or pathways leading to other plant communities are as follows:

- Long-term prescribed grazing with adequate recovery periods between grazing events and proper stocking can eventually move this community back to the *Historic Climax Plant Community* or associated successional plant communities, depending upon the degree of degradation of the plant community and availability of an adequate seed/vegetative source. This transition may take up to 40 years or more to accomplish.
- Range seeding followed by prescribed grazing may be used as an alternative to convert this plant community to a *Seeded Rangeland* community, which can resemble the *HCPC* however, at a substantial cost.

Go-back Land

Go-back land occurs where the soil has been tilled and abandoned. All native plants have been destroyed. Over time, early successional annuals and perennials begin to cover the soil surface. Kochia, Russian thistle, cheatgrass are an example of some early annuals, which begin to establish. These areas will soon become dominated by red threeawn. Eventually, sand dropseed, ring muhly, bottlebrush squirrletail will begin to establish.

Organic matter has left the system through decomposition and/or erosion. Erosion can be accelerated if ground cover is lacking.

Transitions or pathways leading to other plant communities are as follows:

- Very long-term prescribed grazing can be used as a management alternative to take *Go-back Land* to *Any Plant Community* relative to the shaly plains site. This process can take 80 years or greater to accomplish. Prescribed grazing with adequate recovery periods following each grazing event will accelerate the recovery.
- Rangeland seeding can be applied to convert *Go-back Land* to a *Seeded Rangeland.* This transition requires high energy and financial expenditures.

Seeded Rangeland

This community results from *Any Plant Community* that was tilled or degraded over time by continuous grazing and is seeded to adapted native plant species. A seed mixture of grasses, forbs and shrubs can be used to accomplish various management objectives however, revegetation is extremely difficult and costly due to severe soil limitations.

Transitions or pathways leading to other plant communities are as follows:

- Continuous grazing without adequate recovery period between grazing events will shift this plant community to a community resembling *Go-back Land.*

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

The heavy soils and grasses, forbs, and shrubs found on this ecological site provides habitat for numerous wildlife species. Historic large grazers that influenced these plant communities were bison, elk, and pronghorn. Changes over time have resulted in the loss of bison, the reduction in elk numbers, and pronghorn population swings. Domestic grazers now share these habitats with wildlife. The grassland communities of eastern Colorado are home to many bird species. Changes in the composition of the plant community when moving from the HCPC to other communities on this ecological site may result in species shifts in the bird community. The occasional wetland or spring found on this ecological site provides essential seasonal water needed for reproductive habitat by some reptiles and amphibians. Because of a lack of permanent water, fish are not commonly expected on this ecological site. Mule and white-tailed deer may use this ecological site. The gray wolf and wild bison used this ecological site in historic times. The wolf is thought to be extirpated from Eastern Colorado. Bison are currently found only as domestic livestock.

Alkali Sacaton, Western Wheatgrass, Blue Grama, Sideoats Grama, Fourwing Saltbush Plant Community (HCPC)

Reptiles using this community include western rattlesnake, bullsnake, western hognose snake, racer, western box turtle, and six-lined racerunner. The structural diversity in the plant community on this site provides habitat for Cassin's and Brewer's sparrow, lark bunting, scaled quail, and ferruginous and Swainson's hawks. The combination of mid-tall grasses and shrubs provides habitat for lesser prairie chicken in the eastern part of this ecological site. Small mammals such as white-tailed jackrabbit, badger, swift fox, and several species of mice are common in this plant community. Pronghorn is a typical ungulate found in this community.

Increased Blue Grama/Galleta with Remnant Mid Warm/Cool Season Grasses and Shrubs Plant Community

All HCPC species are expected in this plant community, however, the loss of some of the vegetative structural diversity in this plant community makes it less attractive to the HCPC species.

Excessive Litter, Low Plant Density; Blue Grama Dominated Red Threeawn, Sand Dropseed, Ring Muhly, Annuals and Increased Bare Ground; and Go-back Land Plant Communities

The loss of shrubs and taller grasses in these plant communities results in a shift of bird species away from the HCPC birds. The habitat conditions associated with these communities favor the long-billed curlew, burrowing owl, mountain plover, killdeer, and horned lark. Ferruginous and Swainson's hawks are frequent users of these communities.

Most mammals will be the same as in the HCPC, however, black-tailed jackrabbit and black-tailed prairie dog use will increase because of the changing plant community. Reptiles using this community are the same as in the HCPC.

Seeded Rangeland

The wildlife species expected on seeded rangeland would be those listed for the plant community the seeding most resembles.

Animal Preferences (Quarterly – 1,2,3,4†)

Common Name	Cattle				Sheep				Horses				Deer				Antelope				Bison				Elk			
Grasses and Grass-likes																												
alkali sacaton	U	D	D	U	N	U	N	N	U	D	D	U	N	U	N	N	N	U	N	N	U	D	D	U	U	D	D	U
blue grama	D	P	P	D	D	P	P	D	D	P	P	D	D	P	P	D	D	P	P	D	D	P	P	D	D	P	P	D
bottlebrush squirreltail	U	D	U	U	U	D	U	U	U	D	U	U	U	D	U	U	U	D	U	U	U	D	U	U	U	D	U	U
buffalograss	D	D	P	D	D	D	P	D	D	D	P	D	D	D	P	D	D	D	P	D	D	D	P	D	D	D	P	D
galleta	N	N	U	N	N	N	U	N	N	N	U	N	N	N	U	N	N	N	U	N	N	N	U	N	N	N	U	N
green needlegrass	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D
Indian ricegrass	D	P	D	D	D	P	D	D	D	P	D	D	D	P	D	D	D	P	D	D	D	P	D	D	D	P	D	D
inland saltgrass	N	U	U	N	N	N	N	N	N	U	U	N	N	N	N	N	N	N	N	N	N	U	U	N	N	U	U	N
little bluestem	U	D	P	U	N	D	D	N	U	D	P	U	N	D	D	N	N	D	D	N	U	D	P	U	U	D	P	U
needleandthread	U	P	D	D	N	D	N	D	U	P	D	D	N	D	N	D	N	D	N	D	U	P	D	D	U	P	D	D
prairie junegrass	U	D	U	D	N	D	N	U	U	D	U	D	N	D	N	U	N	D	N	U	U	D	U	D	U	D	U	D
red threeawn	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
ring muhly	N	N	N	N	U	U	U	U	N	N	N	N	U	U	U	U	U	U	U	U	N	N	N	N	N	N	N	N
sand dropseed	U	D	U	N	N	U	D	N	U	D	U	N	N	U	D	N	N	U	D	N	U	D	U	N	U	D	U	N
sideoats grama	U	D	P	U	U	D	P	U	U	D	P	U	U	D	P	U	U	D	P	U	U	D	P	U	U	D	P	U
sun sedge	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D
threadleaf sedge	U	D	U	D	U	P	N	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D
vine mesquite	U	D	P	U	U	D	D	U	U	D	P	U	U	D	D	U	U	D	D	U	U	D	P	U	U	D	P	U
western wheatgrass	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D	U	P	D	D
Forbs																												
American vetch	D	P	P	D	D	P	P	D	D	P	P	D	D	P	P	D	D	P	P	D	D	P	P	D	D	P	P	D
desert princesplume	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
dotted gayfeather	U	U	D	U	U	D	P	U	U	U	D	U	U	D	P	U	U	D	P	U	U	U	D	U	U	U	D	U
Fremont goldenweed	U	U	U	U	N	U	U	N	U	U	U	U	N	U	U	N	N	U	U	N	U	U	U	U	N	U	U	N
groundplum milkvetch	U	D	U	U	U	D	D	U	U	D	U	U	U	D	D	U	U	D	D	U	U	D	U	U	U	D	D	U
Louisiana sagewort	U	U	U	U	U	U	D	U	U	U	U	U	U	U	D	U	U	U	D	U	U	U	U	U	U	U	D	U
penstemon	U	U	U	U	U	P	P	U	U	U	U	U	U	P	P	U	U	P	P	U	U	U	U	U	U	P	P	U
povertyweed	U	U	U	U	N	N	N	N	U	U	U	U	N	N	N	N	N	N	N	N	U	U	U	U	N	N	N	N
prairie coneflower	U	U	D	U	U	P	P	U	U	U	D	U	U	P	P	U	U	P	P	U	U	U	D	U	U	P	P	U
purple prairie clover	U	P	P	D	U	P	P	U	U	P	P	D	U	P	P	U	U	P	P	U	U	P	P	D	U	P	P	D
scarlet globemallow	U	D	D	U	U	P	P	U	U	D	D	U	U	P	P	U	U	P	P	U	U	D	D	U	U	D	D	U
slimflower scurfpea	N	N	N	N	N	U	U	N	N	N	N	N	N	U	U	N	N	U	U	N	N	N	N	N	N	N	N	N
sulphur-flower buckwheat	U	U	D	U	U	U	U	U	U	U	D	U	U	U	U	U	U	U	U	U	U	U	D	U	U	U	U	U
twogrooved milkvetch	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Shrubs																												
black greasewood	U	D	D	U	T	T	T	T	U	D	D	U	D	U	U	D	D	U	U	D	U	D	D	U	D	U	U	U
broom snakeweed	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
fourwing saltbush	P	D	D	P	P	D	D	P	P	D	D	P	P	D	D	P	P	D	D	P	P	D	D	P	P	D	D	P
green plume rabbitbrush	N	N	N	D	D	D	D	D	N	N	N	D	D	D	D	D	D	D	D	D	N	N	N	D	N	N	N	D
James' frankenia	N	N	U	U	U	U	N	U	N	N	U	U	U	U	N	U	U	U	N	U	N	N	U	U	N	N	U	U
pale wolfberry	N	N	U	N	N	U	D	U	N	N	U	N	N	U	D	U	N	U	D	U	N	N	U	N	N	N	U	N
plains greasebush	N	N	N	U	U	U	D	U	N	N	N	U	U	U	D	U	U	U	D	U	N	N	N	U	N	N	N	U
plains pricklypear	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
shadscale	D	D	P	D	D	U	U	D	D	D	P	D	D	U	U	D	D	U	U	D	D	D	P	D	D	U	U	D
small soapweed	D	P	N	D	D	P	N	D	D	P	N	D	D	P	N	D	D	P	N	D	D	P	N	D	D	P	N	D
walking stick cholla	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
winterfat	P	P	D	P	P	P	P	P	P	P	D	P	P	P	P	P	P	P	P	P	P	P	D	P	P	P	D	P

N = not used; **U** = undesirable; **D** = desirable; **P** = preferred; **T** = toxic
† Quarters: 1 – Jan., Feb., Mar.; 2 – Apr., May, Jun.; 3 – Jul., Aug., Sep.; 4 – Oct., Nov., Dec.

Animal Community – Grazing Interpretations

The following table lists suggested initial stocking rates for cattle under continuous grazing (year long grazing or growing season long grazing) under normal growing conditions however, *continuous grazing is not recommended.* These are conservative estimates that should be used only as guidelines in the initial stages of the conservation planning process. Often, the current plant composition does not entirely match any particular plant community (described in this ecological site description). Because of this, a field visit is recommended, in all cases, to document plant composition and production. More precise carrying capacity estimates should eventually be calculated using the following stocking rate information along with animal preference data, particularly when grazers other than cattle are involved. Under more intensive grazing management, improved harvest efficiencies can result in an increased carrying capacity.

Plant Community	Production (lbs./acre)	Stocking Rate (AUM/acre)
A. Sacaton, Western Wheatgrass, Blue Grama, Sideoats, Fourwing (HCPC)	600	0.19
Increased Blue Grama/Galleta w/ Remnant Warm/Cool Grasses & Shrubs	300	0.09
Blue Grama Dominated	150	0.05
Excessive Litter, Low Plant Density	*	*
Red Threeawn, Sand Dropseed, Ring Muhly, Annuals and Bare Ground	*	*

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangelands in this area provide yearlong forage under prescribed grazing for cattle, sheep, horses and other herbivores. During the dormant period, livestock may need supplementation based on reliable forage analysis.

* Highly variable; stocking rate needs to be determined on site.

Hydrology Functions

Water is the principal factor limiting forage production on this site due to the shallowness of the soil. This site is dominated by soils in hydrologic group D. Infiltration is moderate to low and runoff potential for this site varies from moderate to high depending on ground cover. In many cases, areas with greater than 75% ground cover have the greatest potential for high infiltration and lower runoff. An example of an exception would be where short grasses form a strong sod and dominate the site. Areas where ground cover is less than 50% have the greatest potential to have reduced infiltration and higher runoff (refer to NRCS Section 4, National Engineering Handbook (NEH-4) for runoff quantities and hydrologic curves).

Recreational Uses

This site provides hunting, hiking, photography, bird watching and other opportunities. The wide varieties of plants that bloom from spring until fall have an esthetic value that appeals to visitors.

Wood Products

No appreciable wood products are present on the site.

Other Products

None noted.

Supporting Information

Associated Sites

(069XY006CO) – Loamy (formerly Loamy Plains)
(069XY037CO) – Saline Overflow
(069XY048CO) – Shale Breaks (formerly combined with Shaly Plains)

Similar Sites

(069XY048CO) – Shale Breaks (formerly combined with Shaly Plains)
[steeper slopes, less plant cover and production]

Inventory Data References

Information presented here has been derived from NRCS clipping data, numerous ocular estimates and other inventory data. Field observations from experienced range trained personnel were used extensively to develop this ecological site description. Specific data information is contained in individual landowner/user case files and other files located in county NRCS field offices.

Those involved in developing this site description include: Ben Berlinger, Rangeland Management Specialist, NRCS; Scott Woodall, Rangeland Management Specialist, NRCS; Lee Neve, Soil Scientist, NRCS; Julie Elliott, Rangeland Management Specialist, NRCS; Terri Skadeland, Biologist, NRCS.

State Correlation

N/A

Field Offices

Canon City, Colorado Springs, Cheyenne Wells, Eads, Holly, Hugo, Lamar, Las Animas, Pueblo, Rocky Ford, Simla, Springfield, Trinidad, Walsenburg

Other References

High Plains Regional Climate Center, University of Nebraska, 830728 Chase Hall, Lincoln, NE 68583-0728. (http://hpcc.unl.edu)

USDA, NRCS. National Water and Climate Center, 101 SW Main, Suite 1600, Portland, OR 97204-3224. (http://wcc.nrcs.usda.gov)

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Site Description Approval

/s/ 03/25/2004

State Range Management Specialist Date