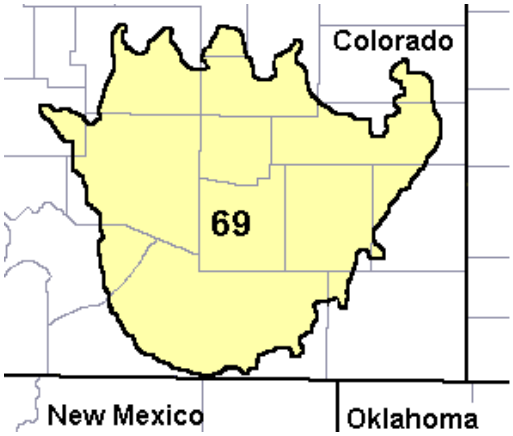
United States Department of Agriculture
Natural Resources Conservation Service

Ecological Site Description



Site Type: Rangeland

Site Name: Salt Meadow

Site ID: R069XY030CO

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

Physiographic Features

This site occurs on level to gently sloping slopes.

Landform: floodplain, terrace drainageway, depression, playa **Aspect:** N/A

	Minimum	Maximum
Elevation (feet):	3350	5200
Slope (percent):	0	3
Water Table Depth (inches):	6	36
Flooding:		
Frequency:	rare	occasional
Duration:	none	brief
Ponding:		
Depth (inches):	0	0
Frequency:	none	none
Duration:	none	none
Runoff Class:	negligible	medium

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

This ecological site has a combination of physical and hydrological features that: 1) provide season-long ground water within 3.5 feet of the surface, 2) allows relatively free movement of water and air in the upper part of the soil, and 3) are rarely, or occasionally flooded.

Wetland Description:	System	Subsystem	Class	Sub-class
Cowardin, et al., 1979	Palustrine	N/A	Emergent Wetland	Persistent

Representative Soil Features

The soils of this site are very deep. Typically, they are poorly to somewhat poorly drained and have moderate to slow permeability. These soils formed in alluvium derived from mixed calcareous sources and often have accumulated salts in the subsoil and substratum from runoff, water table, or the parent material. They occur on flood plains, drainageways, depressions, terraces and playas and often have occasional or frequent flooding. The available water capacity is high. The soil surface layer ranges from 3 to 16 inches thick and is typically loam, silt loam, fine sandy loam, clay loam, silty clay loam, or clay. The pH ranges from slightly alkaline to moderately alkaline in the surface and moderately alkaline to strongly alkaline in the subsoil and substratum. The soil moisture regime is typically aquic, but may be ustic aridic in somewhat poorly drained soils. The soil temperature regime is mesic.

The soils of this site are very deep, poorly to somewhat poorly drained, and slowly to moderately rapidly permeable. These soils occur on floodplains. Some soils have 0-15% rock fragments in underlying material. The available water capacity is typically low to moderate. The soil surface layer is typically 6 to 24 inches thick.

The Historic Climax Plant Community (HCPC) should show slight to no evidence of rills, wind scoured areas or pedestalled plants. Water flow paths are broken, irregular in appearance or discontinuous with numerous debris dams or vegetative barriers. The soil surface is stable and intact. Sub-surface soil layers are non-restrictive to water movement and root penetration.

Major soil series correlated to this ecological site include:
Apishapa, Bloom, Las, Las Animas, Seldom, Harvey wet, Kornman wet, Keynor wet, Neesopah wet, Nepesta wet, Numa wet, Rocky Ford wet and saline, Ordway wet.

Soil series that will be correlated to other MLRA's or other soil series when outdated soil surveys are updated are: Harvey wet, Kornman wet, Keynor wet, Las, Neesopah wet, Nepesta wet, Numa wet, Rocky Ford wet and saline, Ordway wet.

Other soil series that have been correlated to this site include: none

Parent Material Kind: alluvium
Parent Material Origin: sedimentary
Surface Texture: clay loam, loam
Surface Texture Modifier: none

Subsurface Texture Group: silty clay loam, clay loam
Surface Fragments ≤ 3" (% Cover): 0 to 5 percent
Surface Fragments > 3" (%Cover): 0
Subsurface Fragments ≤ 3" (% Volume): 0 to 15 percent
Subsurface Fragments > 3" (% Volume): 0

	Minimum	Maximum
Drainage Class:	poorly	somewhat poorly
Permeability Class:	slow	moderately rapid
Depth (inches):	60	60
Electrical Conductivity (mmhos/cm)*:	1	8
Sodium Absorption Ratio*:	0	15
Soil Reaction (1:1 Water)*:	7.4	9.0
Soil Reaction (0.1M CaCl2)*:	7.2	9.0
Available Water Capacity (inches)*:	4.0	8.0
Calcium Carbonate Equivalent (percent)*:	1	35

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

Plant Communities

Ecological Dynamics of the Site:

Continuous grazing without adequate recovery periods following each grazing occurrence will cause prairie cordgrass, switchgrass, alkali sacaton and eventually western wheatgrass to decrease in frequency and production while inland saltgrass increases. In time, the plant community will become dominated by inland saltgrass and develop into a sodbound condition with alkali sacaton and western wheatgrass persisting only in remnant amounts. Heavy continuous grazing will ultimately result in a plant community dominated by foxtail barley, annual invaders and increased bare ground. Excessive litter, plant mortality and decadence can result from the lack of fire and/or non-use. Extended periods of non-use (rest), lack of fire or heavy long term continuous grazing can lead to increase bare ground.

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.

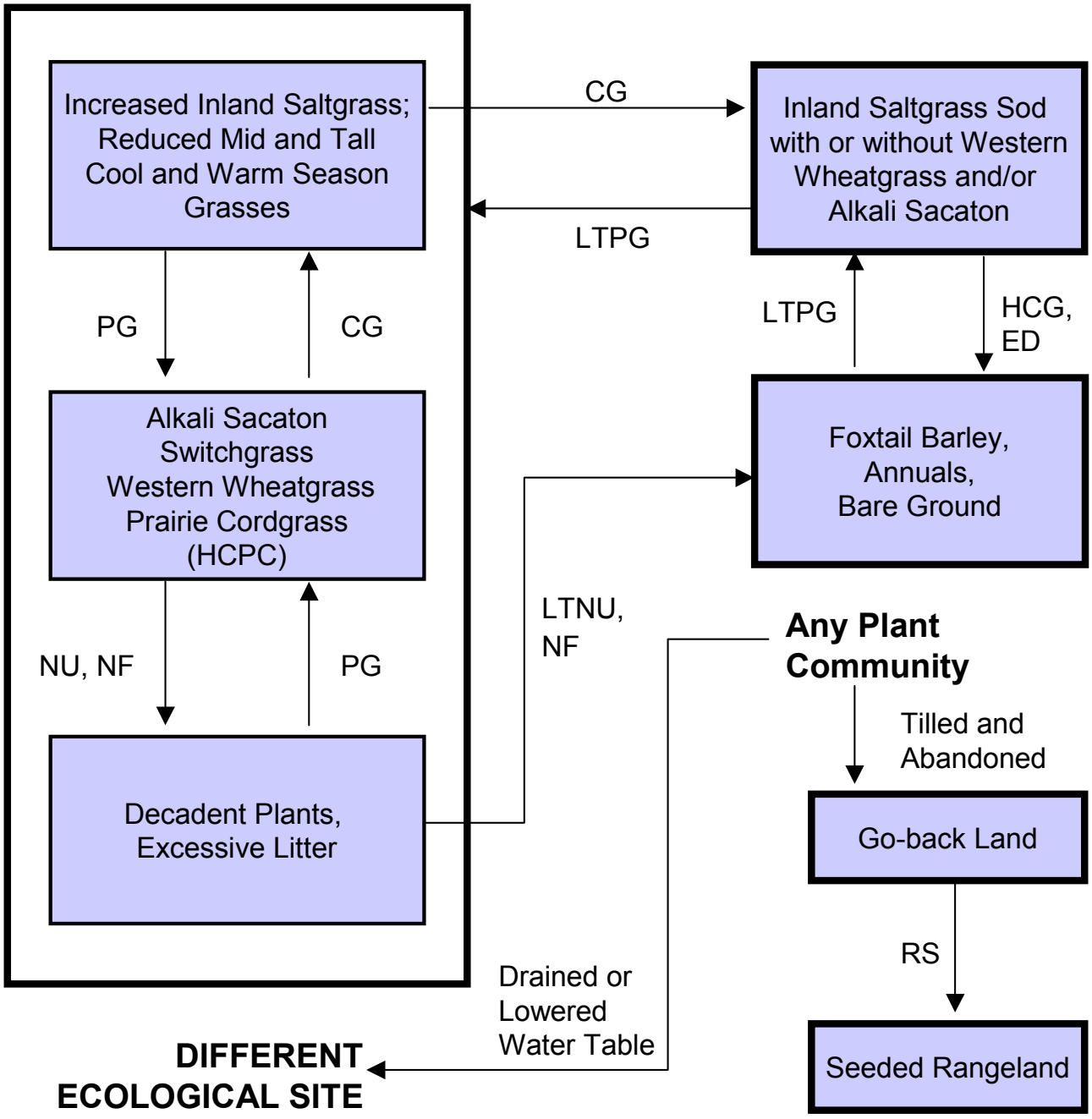
Tillage or any type of mechanical treatment is not recommended on this site since it will increase inland saltgrass.

Irrigation (pumping) or drainage will cause water table levels to drop. Sustained reduction in water table levels will cause a different ecological site to develop.

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; **ED** - excessive defoliation; **HCG** - heavy continuous grazing; **HCPC** - Historic Climax Plant Community; **LTNU** - long term non-use (>40 years); **LTPG** - long term prescribed grazing (>40 years); **NF, NU** - no fire, non-use; **PG** - prescribed grazing with adequate recovery opportunity; **RS** - range seeding

Plant Community Composition and Group Annual Production

			Alkali Sacaton, Switchgrass, Western Wheatgrass, Prairie Cordgrass (HCPC)		
COMMON/GROUP NAME	**SCIENTIFIC NAME**	**SYMBOL**	**Group**	**lbs./acre**	**% Comp**
GRASSES & GRASS-LIKES			*1*	*2080 - 2470*	*80 - 95*
alkali sacaton	Sporobolus airoides	SPAI	1	910 - 1040	35 - 40
switchgrass	Panicum virgatum	PAVI2	1	520 - 780	20 - 30
western wheatgrass	Pascopyrum smithii	PASM	1	390 - 650	15 - 25
prairie cordgrass	Spartina pectinata	SPPE	1	260 - 390	10 - 15
alkali bluegrass	Poa juncifolia	POJU	1	78 - 182	3 - 7
vine mesquite	Panicum obtusum	PAOB	1	52 - 130	2 - 5
big bluestem	Andropogon gerardii	ANGE	1	26 - 130	1 - 5
alkali cordgrass	Spartina gracilis	SPGR	1	26 - 78	1 - 3
Canada wildrye	Elymus canadensis	ELCA4	1	26 - 78	1 - 3
inland saltgrass	Distichlis spicata	DISP	1	26 - 78	1 - 3
Indiangrass	Sorghastrum nutans	SONU2	1	26 - 78	1 - 3
little bluestem	Schizachyrium scoparium	SCSC	1	0 - 78	0 - 3
slender wheatgrass	Elymus trachycaulus	ELTR7	1	0 - 78	0 - 3
Nuttall's alkaligrass	Puccinellia nuttalliana	PUNU2	1	26 - 52	1 - 2
foxtail barley	Hordeum jubatum	HOJU	1	0 - 26	0 - 1
green muhly	Muhlenbergia racemosa	MURA	1	0 - 26	0 - 1
scratchgrass	Muhlenbergia asperifolia	MUAS	1	0 - 26	0 - 1
Baltic rush	Juncus balticus	JUBA	1	26 - 78	1 - 3
Nebraska sedge	Carex nebrascensis	CANE2	1	26 - 78	1 - 3
other perennial grass-likes		2GLP	1	26 - 78	1 - 3
other perennial grasses		2GP	1	26 - 78	1 - 3
FORBS			*2*	*78 - 260*	*3 - 10*
American licorice	Glycyrrhiza lepidota	GLLE3	2	26 - 130	1 - 5
rag sumpweed	Iva xanthifolia	IVXA	2	0 - 78	0 - 3
illinois bundleflower	Desmanthus illinoensis	DEIL	2	26 - 52	1 - 2
showy prairie gentian	Eustoma exaltatum ssp. russellianum	EUEXR	2	0 - 52	0 - 2
false boneset	Brickellia eupatorioides	BREU	2	0 - 26	0 - 1
Fremont goldenweed	Oonopsis foliosa var. foliosa	OOFOF	2	0 - 26	0 - 1
giant goldenrod	Solidago gigantea	SOGI	2	0 - 26	0 - 1
heath aster	Symphyotrichum ericoides var. ericoides	SYERE	2	0 - 26	0 - 1
smallflower gaura	Gaura mollis	GAMO5	2	0 - 26	0 - 1
other perennial forbs		2FP	2	26 - 78	1 - 3
SHRUBS			*3*	*52 - 260*	*2 - 10*
fourwing saltbush	Atriplex canescens	ATCA2	3	0 - 130	0 - 5
rubber rabbitbrush	Ericameria nauseosa ssp. nauseosa var. nauseosa	ERNAN5	3	26 - 52	1 - 2
black greasewood	Sarcobatus vermiculatus	SAVE4	3	0 - 26	0 - 1
other shrubs		2SHRUB	3	26 - 78	1 - 3

Annual Production lbs./acre	LOW	RV*	HIGH
GRASSES & GRASS-LIKES	1375 -	2275	- 3150
FORBS	75 -	169	- 275
SHRUBS	50 -	156	- 275
TOTAL	1500 -	2600	- 3700

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 table shown above has 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, Switchgrass, Western Wheatgrass, Prairie Cordgrass Plant Community

This plant community is the interpretive plant community for this site and is considered to be the Historic Climax Plant Community (HCPC). This community evolved with grazing by large herbivores and is well suited for grazing by domestic livestock. Historically, fires occurred infrequently. This plant community can be found on areas that are grazed and where the grazed plants receive adequate periods of recovery during the growing season. The potential vegetation is about 80-95% grasses and grass-likes, 3-10% forbs and 2-10% woody plants.

The community is dominated by tall and mid warm and cool season grasses. Major grasses include alkali sacaton, switchgrass, prairie cordgrass and western wheatgrass. Other grasses and grass-likes occurring on the community include alkali bluegrass, big bluestem, vine mesquite, little bluestem, alkali cordgrass, Canada wildrye, Baltic rush and Nebraska sedge. Key forbs and shrubs include American licorice, prairie gentian, rag sumpweed, Illinois bundleflower, rubber rabbitbrush and fourwing saltbush.

This plant community is stable and well adapted to the Northern Great Plains. The high water table supplies much of the moisture for plant growth. Plant litter is properly distributed with little movement and natural plant mortality is very low. This is a sustainable plant community in terms of soil stability, watershed function and biologic integrity.

Total annual production ranges from 1500 to 3700 pounds of air-dry vegetation per acre and will average 2600 pounds during an average year.

The following is the growth curve of this plant community expected during a normal year:
Growth curve number: CO6908
Growth curve name: Warm season/cool season co-dominant; MLRA-69; lowland water influenced soils.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	5	10	23	30	17	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 between grazing events will shift this plant community initially toward the *Increased Inland Saltgrass; Reduced Mid and Tall Cool and Warm Season Grasses Plant Community.*
- Non-use (no grazing and/or no haying) and no fire will move this plant community toward the *Decadent Plants, Excessive Litter Plant Community*. Initially, excess litter begins to build-up. Eventually native plants can show signs of mortality and decadence.

- Prescribed grazing that allows for adequate recovery opportunity following each grazing event and proper stocking will maintain the *Alkali Sacaton, Switchgrass, Western Wheatgrass, Prairie Cordgrass Plant Community (HCPC)*.

Increased Inland Saltgrass; Reduced Mid and Tall, Cool and Warm Season Grasses Plant Community

This plant community developed with continuous grazing without adequate recovery opportunities between grazing events. Inland saltgrass has increased and dominates the community. Alkali sacaton, prairie cordgrass, switchgrass, Indiangrass, big bluestem, Canada wildrye and Nebraska sedge have been significantly reduced. Western wheatgrass and alkali bluegrass may initially increase or decrease depending upon the season of use. Forbs and shrubs are still present in reduced amounts. This plant community is at risk of losing warm season tall grasses, palatable forbs and shrubs.

This plant community has decreased in frequency and production. Less litter can be expected however, the soil remains stable and can become very resistant to change depending on the degree to which the inland saltgrass dominates the community.

Total annual production, during an average year, ranges from 700 to 1900 pounds per acre air-dry weight and will average 1300 pounds.

The following is the growth curve of this plant community expected during a normal year:
Growth curve number: CO6909
Growth curve name: Warm season dominant, cool season sub-dominant; MLRA-69; lowland water influenced soils.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	3	7	15	35	25	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 between grazing events will shift this plant community across an ecological threshold toward the *Inland Saltgrass Sod with or without Western Wheatgrass and/or Alkali Sacaton Plant Community.*
- Prescribed grazing with adequate recovery periods between grazing events will move this plant community back toward the *Alkali Sacaton, Switchgrass, Western Wheatgrass, Prairie Cordgrass Plant Community (HCPC).*

Decadent Plants, Excessive Litter Plant Community

This plant community developed under the absence (20 years or more) of grazing, fire and/or haying. The dominant plants tend to be somewhat similar to those found in the Historic Climax Plant Community.

Grazing, haying or fire followed by prescribed grazing can quickly move this plant community back toward the HCPC. Much of the nutrients are tied up in excessive litter. Organic matter oxidizes in the air rather than being incorporated into the soil due to the absence of animal impact. Excessive litter levels prevent sunlight from reaching plant crowns and in time can stagnate the plant community. Bunchgrasses such as alkali sacaton, little bluestem and switchgrass have a tendency to exhibit dead centers and eventually entire plants can die off.

Total annual production can vary substantially from 600 to 2800 pounds of air-dry vegetation per acre depending on how long this plant community has developed in the absence of haying, grazing or fire.

The following is the growth curve of this plant community expected during a normal year:
Growth curve number: CO6910
Growth curve name: Warm season dominant, cool season sub-dominant, excess litter; MLRA-69; lowland water influenced soils.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	2	8	20	30	20	10	7	3	0	0

(monthly percentages of total annual growth)

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

- Prescribed grazing with adequate recovery opportunities between grazing events or prescribed burning followed by prescribed grazing will move this plant community toward the *Alkali Sacaton, Switchgrass, Western Wheatgrass, Prairie Cordgrass Plant Community (HCPC).* This transition can occur in a relatively short period of time (3-5 years).
- Long-term non-use (no grazing, no haying) in absence of fire will shift this plant community across an ecological threshold to the *Foxtail Barley, Annuals, and Bare Ground Plant Community.* This transition may take greater than 40 years to achieve.

Inland Saltgrass Sod with or without Western Wheatgrass and/or Alkali Sacaton Plant Community

This plant community develops under continuous grazing without adequate recovery opportunities between grazing events. The plant community exhibits a dense sod made up of primarily inland saltgrass. Remnant amounts of western wheatgrass and/or alkali sacaton may still be present. Tall grasses (prairie cordgrass, big bluestem, Indiangrass, switchgrass) as well as little bluestem, Nebraska sedge and fourwing saltbush have been removed. Alkali muhly, foxtail barley and Kentucky bluegrass may be increasing or invading. Salt cedar can invade this plant community from adjacent riverbottom areas.

This community remains stable but has lost much of its production and diversity. This plant community is extremely resistant to change because of the aggressive behavior (vigorous rhizomes) of inland saltgrass. Nutrient cycle is impaired due to the loss of tall grass species, deep-rooted forbs (legumes and others) and shrubs. Desertification is advanced.

Total annual production, during an average year, ranges from 300 to 900 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: CO6911
Growth curve name: Warm season dominant; MLRA-69; lowland water influenced soils.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	15	45	20	10	5	0	0	0

(monthly percentages of total annual growth)

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

- Heavy continuous grazing or excessive defoliation without adequate recovery periods following each grazing event will shift this plant community across an ecological threshold to the *Foxtail Barley, Annuals and Bare Ground Plant Community*.
- Long-term prescribed grazing with adequate recovery periods following each grazing occurrence and proper stocking will move this plant community toward the *Increased Inland Saltgrass; Reduced Mid and Tall Cool and Warm Season Grasses Plant Community* and will eventually return to the *HCPC* or associated successional stages assuming an adequate seed/vegetative source is available. This is a long-term transition requiring 40 years or more to accomplish.

Foxtail Barley, Annuals, Bare Ground Plant Community

This plant community develops under continuous and heavily grazed conditions, especially through the growing season. The plant composition is made up of foxtail barley, annuals and scattered areas of inland saltgrass. Annuals such as Russian thistle, kochia and cocklebur have invaded the community. Kentucky bluegrass may persist in localized areas. Salt cedar can increase significantly depending on proximity to a seed source.

Compared to the Historic Climax Plant Community, all perennial plants have been greatly reduced with only remnants of the most grazing tolerant species surviving. Plant diversity and production are very low. Planned rest periods during the growing season will improve the vigor of the plant species present and eventually reduce the amount of bare ground.

Wind and water erosion may occur at low amounts due to increased bare ground. Litter amounts are low. Mineral crusting caused by raindrop impact disrupts surface soil aggregates, increasing ponding and slowing infiltration. Compaction, if severe enough, can affect water infiltration also. Carbon storage/nutrient cycling has been greatly reduced. Animal wastes can contaminate ground water or runoff. Desertification is obvious.

Total annual production, during an average year, ranges from 50 to 300 pounds per acre air-dry weight.

The following is the growth curve of this plant community expected during a normal year:
Growth curve number: CO6908
Growth curve name: Warm season/cool season co-dominant; MLRA-69; lowland water influenced soils.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	5	10	23	30	17	10	3	2	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, will shift this plant community back toward the *Inland Saltgrass Sod with or without Western Wheatgrass and/or Alkali Sacaton Plant Community* assuming an adequate seed/vegetative source is available. The rate of this transition can be extremely variable depending on the amount of inland saltgrass remaining on the community.

Go-back Land

Go-back land is created when any plant community is tilled long-term (annually cropped) and abandoned. All of the native plants are destroyed and bare soil remains. With time, a plant community resembling the *Foxtail Barley, Annuals, Bare Ground Plant Community* develops.

Most any plant community associated with the Salt Meadow ecological site, when short-term tilled, will result in an increased inland saltgrass stand.

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

- Range seeding followed with prescribed grazing can be used to convert *Go-back Land* to a *Seeded Rangeland Plant Community*. Prescribed grazing will maintain the seeded plant community.

Seeded Rangeland

This plant community can vary considerably depending on how eroded the soil was, species seeded, the stand that was established, how long ago the stand was established and the management of the stand since establishment.

Formation of Different Ecological Site
If any plant community is subjected to persistent water table depletion due to irrigation or drainage, a different ecological site will form. The new site would typically resemble a Salt Flat ecological site.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations
This ecological site is wetter than many others in MLRA 69, potentially providing breeding habitat for amphibian species that is missing on drier ecological sites. Even with the wetter conditions, this site is not expected to support a fishery or permanent water bodies. Some species may use this area for reproductive functions or for other phases of their lives then move into the grassland once those needs are met. Historic large grazers that influenced these plant communities were bison, elk, and pronghorn. Changes to the plant community 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 dramatic species shifts in the bird community. Mule and white-tailed deer may use this ecological site, however the shrub cover is too low to expect more than occasional use. 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, Switchgrass, Western Wheatgrass, Prairie Cordgrass Plant Community
The loamy soils and landscape position of this ecological site may discourage burrowing amphibians, reptiles, and mammals found on adjacent upland sites from using this site. Woodhouse's toad is expected on this site along with reptiles such as bullsnake and glossy snake. The structural diversity in the plant community found on the HCPC is attractive to a number of bird species such as Cassin's and Brewer's sparrow. Frruginous and Swainson's hawks are commonly seen using this site. Mammals that may use the site for foraging or cover include jackrabbit, badger, coyote, swift fox, and pocket mouse.

Increased Inland Saltgrass; Reduced Mid and Tall, Cool and Warm Season Grasses Plant Community
Most HCPC species are expected in this plant community. The reduction in mid and tall grasses and the increase in shorter species may attract mountain plover, horned lark, long-billed curlew, and black-tailed jackrabbit.

Inland Saltgrass Sod with or without Western Wheatgrass and/or Alkali Sacaton Plant Community; Decadent Plants, Excessive Litter Plant Community; **and Foxtail Barley, Annuals, Bare Ground Plant Community**
The reduction of shrubs and taller grasses in these plant communities results in a shift of bird species away from the HCPC birds. Cassin's and Brewer's sparrow stop using the community altogether. Use by species such as mountain plover, horned lark, and long-billed curlew would increase. Mammals, reptiles, and amphibians from the HCPC may continue to use these communities.

Go-back Land
The conditions in these communities are marginal for most wildlife species although species from the Inland Saltgrass Sod Plant Community may occasionally be found here.

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 bluegrass	U D U D	D P U D	U D U D	U P N D	U P N D	U D U D	U D U D
alkali cordgrass	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
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
Baltic rush	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
big bluestem	U D P D	U D U U	U D P D	U D U U	U D U U	U D P D	U D P D
Canada wildrye	U D U U	N U N N	U D U U	N U N N	N U N N	U D U U	U D U U
foxtail barley	U D N N	N P N N	U D N N	N P N N	N P N N	U D N N	U D N N
green muhly	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
Indiangrass	U D P D	U D U U	U D P D	U D U U	U D U U	U D P D	U D P 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
Nebraska sedge	U P U D	U P N D	U P U D	U D U D	U D U D	U P U D	U P U D
Nuttall's alkaligrass	U P D D	P P P P	U P D D	P P P P	P P P P	U P D D	U P D D
prairie cordgrass	U D D U	N N N N	U D D U	N N N N	N N N N	U D D U	U D D U
scratchgrass	N U U N	N N U N	N U U N	N N U N	N N U N	N U U N	N U U N
slender wheatgrass	U P U U	N D U N	U P U U	N D U N	N D U N	U P U U	U P U U
switchgrass	U D D U	U D U U	U D D U	N N N N	N N N N	U D D U	U D D U
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 licorice	U U D U	N U U N	U U D U	N U U N	N U U N	U U D U	N U U N
false boneset	U U D U	N D U N	U U D U	N D U N	N D U N	U U D U	N D U N
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
giant goldenrod	N N U N	N U U N	N N U N	N U U N	N U U N	N N U N	N N U N
heath aster	U U D U	U U P U	U U D U	U U P U	U U P U	U U D U	U U P U
illinois bundleflower	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
rag sumpweed	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
showy prairie gentian	U U U U	N U U N	U U U U	N U U N	N U U N	U U U U	U U U U
smallflower gaura	N N U N	N D U N	N N U N	N D U N	N D U N	N N U N	N N U N
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
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
rubber 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

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)
Alkali Sacaton, Switchgrass, Western Wheatgrass, P. Cordgrass (HCPC)	2600	0.82
Increased Inland Saltgrass; Reduced Mid/Tall Warm and Cool Season	1300	0.41
Inland Saltgrass Sod	600	0.19
Decadent Plants, Excessive Litter	*	*
Foxtail Barley, Annuals, 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. Soils in hydrologic group C and D dominate this site. Infiltration is moderate and runoff potential for this site varies from moderate to high depending on ground cover. 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

(069XY033CO) – Salt Flat
(069XY031CO) – Sandy Bottomland
(069XY047CO) – Alkaline Plains Riverbottom

Similar Sites

(069XY033CO) – Salt Flat
[lacks water table and tall grass species, less 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

This site is specific to Colorado.

Field Offices

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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Rennicke, J. 1990. Colorado Wildlife. Falcon Press, Helena and Billings, MT and CO Div. Wildlife, Denver CO. 138 pp.

Site Description Approval

/s/ 03/25/2004

State Range Management Specialist Date