

United States Department of Agriculture Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Saline Subirrigated 12-17” Precipitation Zone

Site ID: R067AY142WY

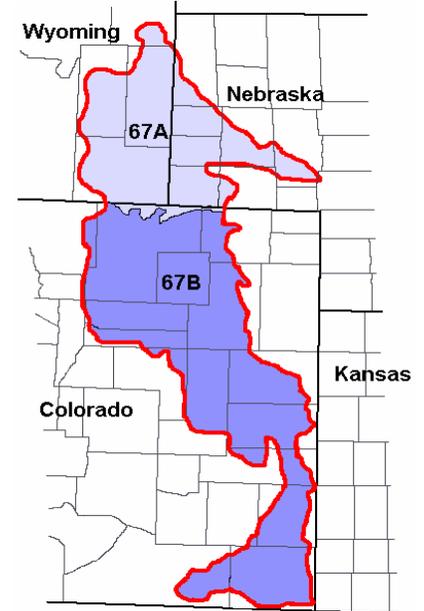
Major Land Resource Area: 67 – North Central High Plains

Physiographic Features

This site occurs on nearly level bottomlands and alluvial fans adjacent to streams, springs and ponds.

Landform: alluvial fans, drainage ways, stream terraces

Aspect: N/A



	<u>Minimum</u>	<u>Maximum</u>
Elevation (feet):	3800	6500
Slope (percent):	0	6
Water Table Depth (inches):	0	30
Flooding:		
Frequency:	occasional	brief
Duration:	very brief	brief
Ponding:		
Depth (inches):	0	0
Frequency:	none	none
Duration:	none	none
Runoff Class:	negligible	low

Climatic Features

Annual precipitation ranges from 12-17 inches per year. Wide fluctuations may occur in yearly precipitation and result in more dry years than those with more than normal precipitation. Temperatures show a wide range between summer and winter and between daily maximums and minimums, due to the high elevation and dry air, which permits rapid incoming and outgoing radiation. Cold air outbreaks from Canada in winter move rapidly from northwest to southeast and account for extreme minimum temperatures. Chinook winds may occur in winter and bring rapid rises in temperature. Extreme storms may occur during the winter, but most severely affect ranch operations during late winter and spring.

Wind speed averages about 8 mph, ranging from 10 mph during the spring to 7 mph during late summer. Daytime winds are generally stronger than nighttime and occasional strong storms may bring brief periods of high winds with gusts to more than 75 mph.

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Growth of native cool-season plants begins about April 1 and continues to about July 1. Native warm-season plants begin growth about May 15 and continue to about August 15. Green up of cool season plants may occur in September and October of most years.

The following information is from the "Lusk 2SW" climate station.

	<u>Minimum</u>	<u>Maximum</u>
Frost-free period (days):	74	148
Freeze-free period (days):	101	181
Mean Annual Precipitation (inches):	12	17

Mean annual precipitation: 15.71 inches

Mean annual air temperature: 45.2 °F (31.0°F Avg. Min. – 59.3°F Avg. Max.)

For detailed information visit the Natural Resources Conservation Service National Water and Climate Center at <http://www.wcc.nrcs.usda.gov/> website. Other climate station(s) representative of this precipitation zone include: "Chugwater, Wheatland 4N, Cheyenne AP, Scottsbluff WSO AP".

Influencing Water Features

Wetland Description:	<u>System</u>	<u>Subsystem</u>	<u>Class</u>	<u>Sub-class</u>
None	None	None	None	None

Stream Type: C (Rosgen System)

Representative Soil Features

The soils of this site have a strong saline and/or alkaline water table within the reach of plant species during most of the growing season. Salt crusts are commonly found on ridges and mounds during dry periods. Moisture is not usually the factor limiting plant production. Layers of soil most influential to the plant community varies from 3 to 6 inches thick.

Major Soil Series correlated to this site include: Bigwin, Dobent, Gering, Kirkham, Merden, Merden saline, Merden variant, Janise, Wildhorse, Lewellen, Jankosh, Yockey, Lisco, Minatare.

Other Soil Series correlated to this site include: Fluvents, Torrifluvents

Parent Material Kind: alluvium

Parent Material Origin: sandstone, shale

Surface Texture: loam, silt loam, very fine sandy loam

Surface Texture Modifier: none

Subsurface Texture Group: loam

Surface Fragments ≤ 3" (% Cover): 0

Surface Fragments > 3" (%Cover): 0

Subsurface Fragments ≤ 3" (% Volume): 0

Subsurface Fragments > 3" (% Volume): 0

	<u>Minimum</u>	<u>Maximum</u>
Drainage Class:	poorly	moderately well
Permeability Class:	moderately slow	moderate
Depth (inches):	20	>60
Electrical Conductivity (mmhos/cm) ≤20":	4	16
Sodium Absorption Ratio ≤20":	10	25

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Soil Reaction (1:1 Water) $\leq 20''$:	6.6	9.0
Soil Reaction (0.1M CaCl₂) $\leq 20''$:	N/A	N/A
Available Water Capacity (inches) $\leq 30''$:	2.8	6.2
Calcium Carbonate Equivalent (percent) $\leq 20''$:	0	10

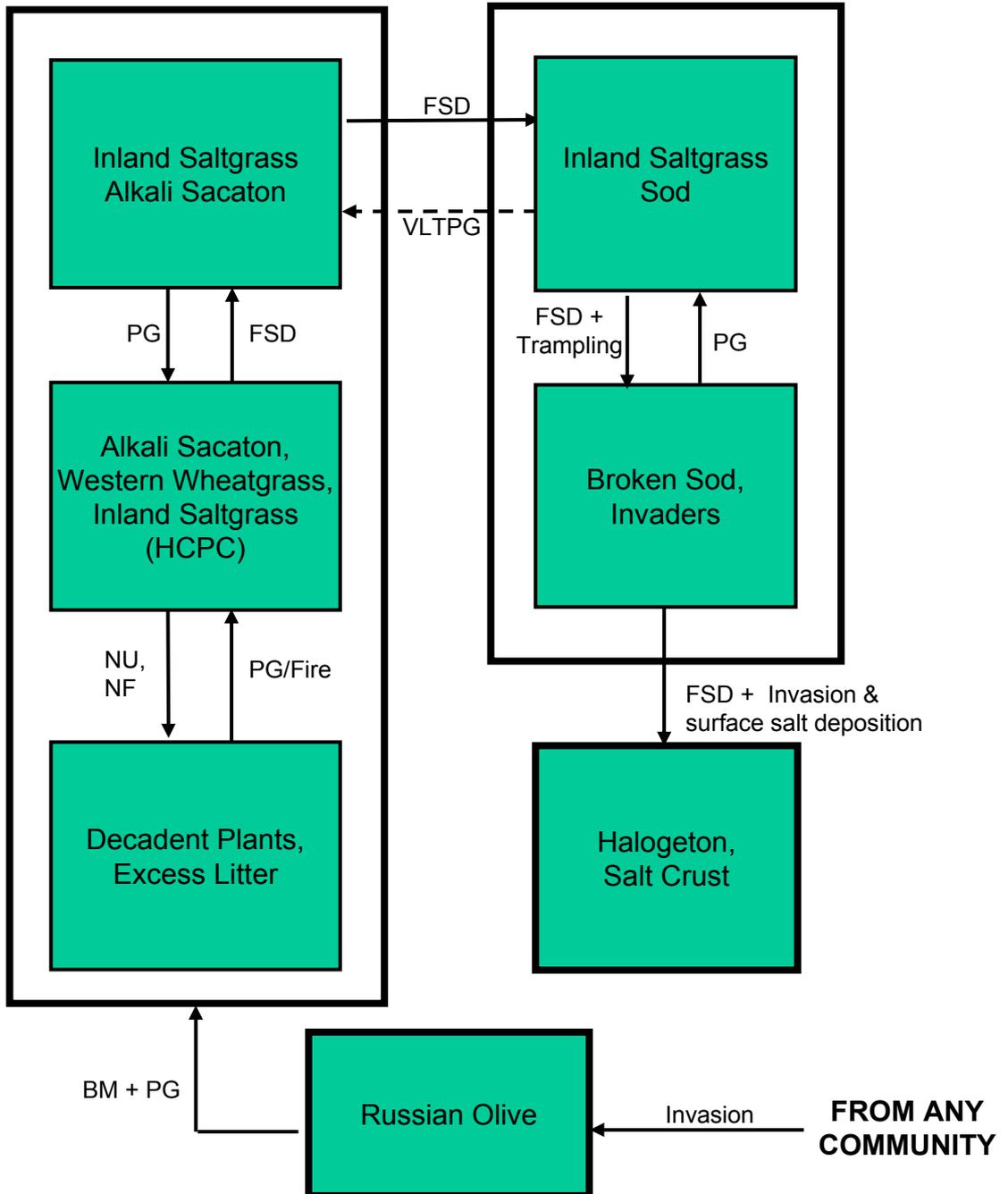
Plant Communities

Ecological Dynamics of the Site

As this site deteriorates from a combination of frequent and severe grazing, species such as inland saltgrass will increase, eventually becoming sod-bound. Grasses such as alkali sacaton, alkali cordgrass, western wheatgrass, and slender wheatgrass will decrease in frequency and production. As the site continues to deteriorate, bare ground increases allowing salts or alkali to build up on the soil surface. Plants such as kochia, Russian thistle and halogeton invade the site. Once these events have occurred, it is difficult for native perennial plants to become reestablished.

The historic climax plant community (description follows the State and Transition Model Diagram) has been determined by study of rangeland relic areas, or areas protected from excessive disturbance. Trends in plant communities going from heavily grazed areas to lightly grazed areas, seasonal use pastures, and historical accounts have also been used.

The following is a State and Transition Model Diagram that illustrates the common plant communities that can occur on the site and the transitions between these communities. The ecological processes will be discussed in more detail in the plant community narratives following the diagram.



- BM** - Brush Management
- FSD** - Frequent and Severe Defoliation
- HCP** - Historic Climax Plant Community
- NU, NF** - Non-use, No Fire
- PG** - Prescribed Grazing w/ adequate recovery period
- VLTPG** - Very Long Term Prescribed Grazing (> 40 years)

Plant Community Composition and Group Annual Production
Alkali Sacaton, Western Wheatgrass, Inland Saltgrass Plant Community (HCPC)

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Group	lbs./acre	% Comp.
			Total: 3200		
GRASSES AND GRASS-LIKES					
WARM-SEASON MID-TALL GRASSES					
			1	1280 - 1760	40 - 55
alkali sacaton	Sporobolus airoides	SPAI	1	1120 - 1440	35 - 45
alkali cordgrass	Spartina gracilis	SPGR	1	160 - 320	5 - 10
RHIZOMATOUS WHEATGRASSES					
			2	320 - 800	10 - 25
western wheatgrass	Pascopyrum smithii	PASM	2	320 - 480	10 - 15
slender wheatgrass	Elymus trachycaulus	ELTR7	2	0 - 320	0 - 10
WARM-SEASON SOD FORMING GRASSES					
			3	320 - 480	10 - 15
inland saltgrass	Distichlis spicata	DISP	3	320 - 480	10 - 15
BLUEGRASSES					
			4	160 - 480	5 - 15
alkali bluegrass	Poa secunda	POSE	4	160 - 480	5 - 15
plains bluegrass	Poa arida	POAR3	4	160 - 480	5 - 15
bluegrasses	Poa spp.	POA	4	0 - 160	0 - 5
SEDGES AND RUSHES					
			5	160 - 320	5 - 10
sedges	Carex spp.	CAREX	5	160 - 320	5 - 10
Baltic rush	Juncus balticus	JUBA	5	0 - 160	0 - 5
bulrush	Scirpus spp.	SCIRP	5	0 - 160	0 - 5
rushes	Juncus spp.	JUNCU	5	0 - 160	0 - 5
spikerush	Eleocharis spp.	ELEOC	5	0 - 160	0 - 5
MISCELLANEOUS GRASSES					
			6	160 - 320	5 - 10
alkali muhly	Muhlenbergia asperifolia	MUAS	6	0 - 160	0 - 5
Canada wildrye	Elymus canadensis	ELCA4	6	0 - 160	0 - 5
foxtail barley	Hordeum jubatum	HOJU	6	0 - 160	0 - 5
little bluestem	Schizachyrium scoparium	SCSC	6	0 - 160	0 - 5
muhly species	Muhlenbergia spp.	MUHLE	6	0 - 160	0 - 5
Nuttall's alkaligrass	Puccinellia nuttalliana	PUNU2	6	0 - 160	0 - 5
switchgrass	Panicum virgatum	PAVI2	6	0 - 160	0 - 5
other perennial grasses (native)		2GP	6	0 - 160	0 - 5
FORBS					
			7	160 - 320	5 - 10
arrowgrass	Triglochin spp.	TRIGL	7	0 - 64	0 - 2
cudweed sagewort	Artemisia ludoviciana	ARLU	7	0 - 64	0 - 2
milkvetches	Astagalus spp.	ASTRA	7	0 - 64	0 - 2
Pursh seepweed	Suaeda calceoliformis	SUCA2	7	0 - 64	0 - 2
western ragweed	Ambrosia psilostachya	AMPS	7	0 - 64	0 - 2
scouringrush	Equisetum spp.	EQUIS	5	0 - 64	0 - 2
other perennial forbs (native)		2FP	7	0 - 160	0 - 5
SHRUBS					
			8	0 - 160	0 - 5
greasewood	Sarcobatus vermiculatus	SAVE4	8	0 - 160	0 - 5
other shrubs and half-shrubs (native)		2SHRUB	8	0 - 160	0 - 5

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.

Plant Community Composition and Group Annual Production
Alkali Sacaton, Western Wheatgrass, Inland Saltgrass Plant Community (HCPC)

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year)		
			Group	lbs./acre	% Comp.
			Total: 3500		
GRASSES AND GRASS-LIKES					
WARM-SEASON MID-TALL GRASSES					
			1	1400 - 1925	40 - 55
alkali sacaton	Sporobolus airoides	SPAI	1	1225 - 1575	35 - 45
alkali cordgrass	Spartina gracilis	SPGR	1	175 - 350	5 - 10
RHIZOMATOUS WHEATGRASSES					
			2	350 - 875	10 - 25
western wheatgrass	Pascopyrum smithii	PASM	2	350 - 525	10 - 15
slender wheatgrass	Elymus trachycaulus	ELTR7	2	0 - 350	0 - 10
WARM-SEASON SOD FORMING GRASSES					
			3	350 - 525	10 - 15
inland saltgrass	Distichlis spicata	DISP	3	350 - 525	10 - 15
BLUEGRASSES					
			4	175 - 525	5 - 15
alkali bluegrass	Poa secunda	POSE	4	175 - 525	5 - 15
plains bluegrass	Poa arida	POAR3	4	175 - 525	5 - 15
bluegrasses	Poa spp.	POA	4	0 - 175	0 - 5
SEDGES AND RUSHES					
			5	175 - 350	5 - 10
sedges	Carex spp.	CAREX	5	175 - 350	5 - 10
Baltic rush	Juncus balticus	JUBA	5	0 - 175	0 - 5
bulrush	Scirpus spp.	SCIRP	5	0 - 175	0 - 5
rushes	Juncus spp.	JUNCU	5	0 - 175	0 - 5
spikerush	Eleocharis spp.	ELEOC	5	0 - 175	0 - 5
MISCELLANEOUS GRASSES					
			6	175 - 350	5 - 10
alkali muhly	Muhlenbergia asperifolia	MUAS	6	0 - 175	0 - 5
Canada wildrye	Elymus canadensis	ELCA4	6	0 - 175	0 - 5
foxtail barley	Hordeum jubatum	HOJU	6	0 - 175	0 - 5
little bluestem	Schizachyrium scoparium	SCSC	6	0 - 175	0 - 5
muhly species	Muhlenbergia spp.	MUHLE	6	0 - 175	0 - 5
Nuttall's alkaligrass	Puccinellia nuttalliana	PUNU2	6	0 - 175	0 - 5
switchgrass	Panicum virgatum	PAVI2	6	0 - 175	0 - 5
other perennial grasses (native)		2GP	6	0 - 175	0 - 5
FORBS					
			7	175 - 350	5 - 10
arrowgrass	Triglochin spp.	TRIGL	7	0 - 70	0 - 2
cudweed sagewort	Artemisia ludoviciana	ARLU	7	0 - 70	0 - 2
milkvetches	Astagalus spp.	ASTRA	7	0 - 70	0 - 2
Pursh seepweed	Suaeda calceoliformis	SUCA2	7	0 - 70	0 - 2
western ragweed	Ambrosia psilostachya	AMPS	7	0 - 70	0 - 2
scouringrush	Equisetum spp.	EQUIS	5	0 - 70	0 - 2
other perennial forbs (native)		2FP	7	0 - 175	0 - 5
SHRUBS					
			8	0 - 175	0 - 5
greasewood	Sarcobatus vermiculatus	SAVE4	8	0 - 175	0 - 5
other shrubs and half-shrubs (native)		2SHRUB	8	0 - 175	0 - 5

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.

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, Western Wheatgrass, Inland Saltgrass Plant Community

This is the interpretive plant community and is considered to be the Historic Climax Plant Community (HPCP). 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 grazed and where the grazed plants receive adequate periods of rest during the growing season in order to recover. Historically, fires likely occurred infrequently. The potential vegetation is about 90% grasses, 5-10% forbs, and 0-5% woody plants by air-dry weight.

The principle dominant plants are alkali sacaton, western wheatgrass, and inland saltgrass. Grasses of secondary importance are alkali cordgrass and slender wheatgrass. Bluegrasses, sedges and rushes occur as an understory. No single (or group) of forb or shrub species occurs with enough abundance to be a significant component of this plant community.

The total annual production (lb./ac., air-dry weight) of this plant community during an average year is: 12-14”P.Z.

	LOW	AVG	HIGH
GRASS/GRASSLIKE	2340	2880	4320
FORB	195	240	285
SHRUB	65	80	95
TREE	0	0	0
TOTAL	2600	3200	3800

15-17”P.Z.

GRASS/GRASSLIKE	2560	3150	3780
FORB	220	265	315
SHRUB	70	85	105
TREE	0	0	0
TOTAL	2850	3500	4200

The following is the growth curve of this plant community expected during a normal year:

Growth curve number:

Growth curve name: Central High Plains, Native Grasslands

Growth curve description: warm season dominant, cool season subdominant, mixed short-mid grass.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	5	10	20	30	15	10	5	5	0	0

(monthly percentages of total annual growth)

Site Type: Rangeland
MLRA: 67 – North Central High Plains

**Saline Subirrigated 12-17” P.Z.
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This plant community is adapted to the high salt/alkali content inherent of the soils. White crusts occupy only minor areas of the soil surface due to seasonal fluctuations in the water table. This is a sustainable plant community in terms of soil stability, watershed function and biological integrity.

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

- Frequent and severe defoliation will convert the HCPC to the *Inland Saltgrass, Alkali Sacaton Plant Community*.
- Non-use and no fire will convert the HCPC to the *Decadent Plants, Excess Litter Plant Community*.

Inland Saltgrass, Alkali Sacaton Plant Community

This plant community developed under frequent and severe defoliation without periodic rest. Plants resistant to grazing are maintaining vigor. Inland saltgrass has increased in abundance. Most of the palatable plants such as alkali sacaton, western wheatgrass, and slender wheatgrass are present but occur in lesser amounts.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 2,100 pounds per acre during an average year, but it can range from about 1,700 pounds per acre in unfavorable years to about 2,500 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 2,300 pounds per acre during an average year, but it can range from about 1,850 pounds per acre in unfavorable years to about 2,750 pounds per acre in above average years.

The following is the growth curve of this plant community expected during an average year:

Growth curve number:

Growth curve name: Central High Plains, Native Grasslands

Growth curve description: warm season dominant, cool season subdominant, mixed short-mid grass.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	3	5	15	30	20	20	5	2	0	0

(monthly percentages of total annual growth)

This community indicates key management concerns. Prescribed grazing at this point will stabilize the community at or near the HCPC, while increased disturbance can easily move the community to a more degraded state.

While plant diversity has been reduced, the soil is stable. The water cycle, nutrient cycle and energy flow is slightly reduced but continues to adequately function.

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

- Frequent and severe defoliation shifts this plant community to the *Inland Saltgrass Sod Plant Community*.
- Prescribed grazing with adequate recovery opportunity will restore this community back to the *Alkali Sacaton, Western Wheatgrass, Inland Saltgrass Plant Community (HCPC)*.

Decadent Plants, Excess Litter Plant Community

This plant community occurs after an extended period of non-use, and where fire has been eliminated. Plant composition is similar to the HCPC, however individual species production and frequency will typically be lower.

Litter amounts have increased causing plants to become decadent. Much of the plant 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. Typically, bunchgrasses (alkali sacaton) develop dead centers and rhizomatous grasses (western wheatgrass) form small colonies because of a lack of tiller stimulation.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 2,900 pounds per acre during an average year, but it can range from about 2,300 pounds per acre in unfavorable years to about 3,500 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 3,100 pounds per acre during an average year, but it can range from about 2,500 pounds per acre in unfavorable years to about 3,700 pounds per acre in above average years.

The following is the growth curve of this plant community expected during an average year:
Growth curve number:

Growth curve name: Central High Plains, Non-Use

Growth curve description: warm season dominant, cool season subdominant, mixed short-mid grass.

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)

This plant community is not resistant to change. Grazing or fire can easily move it toward the HCPC. Soil erosion is not a concern due to increased litter levels and landscape position.

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

- Prescribed grazing or fire will shift this plant community towards the *Alkali Sacaton, Western Wheatgrass, Inland Saltgrass Plant Community (HCPC)*.

Inland saltgrass sod Plant Community

This plant community developed with further frequent and severe defoliation. Inland saltgrass dominates the community and has developed into a sod-bound condition. Alkali sacaton has been nearly eliminated with only a few remnant plants remaining. Slender and western wheatgrasses are gone and have been replaced by increased amounts of inland saltgrass. Forbs such as kochia and Russian thistle have also increased.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 1,800 pounds per acre during an average year, but it can range from about 1,600 pounds per acre in unfavorable years to about 2,000 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 1,900 pounds per acre during an average year, but it can range from about 1,700 pounds per acre in unfavorable years to about 2,100 pounds per acre in above average years.

The following is the growth curve of this plant community expected during an average year:

Site Type: Rangeland
 MLRA: 67 – North Central High Plains
 Growth curve number:
 Growth curve name: Central High Plains, Sod bound
 Growth curve description: Warm season dominant, short grass

**Saline Subirrigated 12-17” P.Z.
 R067AY142WY**

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	10	40	25	15	5	0	0	0

(monthly percentages of total annual growth)

The plant community lacks diversity. Evaporation has increased resulting in a higher salt content on the soil surface. Organic matter/carbon reserves are severely diminished.

It will take a long time to bring this plant community back to the HCPC with management alone. Renovation would be very costly due to high salt/alkali content and water table.

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

- Continued frequent and severe defoliation with trampling will eventually shift this plant community to the *Broken Sod, Invaders Community*.
- Very long-term prescribed grazing will move this plant community to the *Inland Saltgrass, Alkali Sacaton Plant Community* and eventually to the *HCPC*. This process will require a long period of time and may be difficult to attain depending on the degree of degradation.

Broken Sod, Invaders Community

This plant community develops where the Inland Saltgrass Sod Plant Community is further subjected to frequent and severe defoliation during the growing season. High stock densities have resulted in trampling of the vegetation and compaction of the soil surface. Inland saltgrass still dominates the community; however, areas of sod have been removed resulting in bare ground. Annuals, such as kochia and halogeton, are beginning to invade. Alkali sacaton has been completely removed from the plant community.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 1,300 pounds per acre during an average year, but it can range from about 1,000 pounds per acre in unfavorable years to about 1,500 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 1,400 pounds per acre during an average year, but it can range from about 1,100 pounds per acre in unfavorable years to about 1,700 pounds per acre in above average years.

The following is the growth curve of this plant community expected during an average year:

Growth curve number:
 Growth curve name: Central High Plains, Sod bound
 Growth curve description: Warm season dominant, short grass

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	10	40	25	15	5	0	0	0

(monthly percentages of total annual growth)

The plant community lacks diversity and is resistant to positive change. Evaporation has greatly increased, resulting in salt on the soil surface.

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

- Continued frequent and severe defoliation, invasion of halogeton, and excessive development of salt crusts will shift this plant community to the *Halogeton, Salt Crust Community*.
- Prescribed grazing will move this plant community back to the *Inland Saltgrass Sod Community*. This process could require a long period of time, depending on the amount of salt accumulation on the soil surface.

Halogeton, Salt Crust Community

This plant community is the result of long-term frequent and severe defoliation and typically occurs where the vegetation is grazed year-round at high stocking levels. This has resulted in trampling of the vegetation, trailing, and compaction of the soil surface. The resulting bare ground has developed extensive salt crusts. Halogeton is the dominant specie. Only remnants of perennial plants exist with annuals such as kochia and Russian thistle.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 650 pounds per acre during an average year, but it can range from about 520 pounds per acre in unfavorable years to about 780 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 800 pounds per acre during an average year, but it can range from about 650 pounds per acre in unfavorable years to about 950 pounds per acre in above average years.

The following is the growth curve of this plant community expected during an average year:

Growth curve number:

Growth curve name: Central High Plains, Sod bound

Growth curve description: Warm season dominant, short grass

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	10	40	25	15	5	0	0	0

(monthly percentages of total annual growth)

This plant community lacks diversity and is very resistant to change. Management alone will have little affect. Salt crusts prevent the establishment of plants, while halogeton has rendered this plant community worthless for livestock grazing.

Runoff is high because of soil crusting and the lack of ground cover. This plant community is subject to increased erosion. Evaporation is high because of the lack of vegetation and litter.

Once degraded to this point, expensive renovation is the only way to restore the community to a productive condition.

Russian Olive Plant Community

This plant community develops with the introduction of seed source by wildlife, water or wind. It is most commonly found along major drainage ways. The lack of fire or haying allows trees to become established. Dense populations prohibit livestock from utilizing existing forage.

In the 12 to 14 inch precipitation zone, the total annual production (air-dry weight) is about 2,600 pounds per acre during an average year, but it can range from about 2,100 pounds per acre in unfavorable years to about 3,100 pounds per acre in above average years.

In the 15 to 17 inch precipitation zone, the total annual production (air-dry weight) is about 2,800 pounds per acre during an average year, but it can range from about 2,200 pounds per acre in unfavorable years to about 3,400 pounds per acre in above average years.

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The following is the growth curve of this plant community expected during a normal year:

Growth curve number:

Growth curve name: Central High Plains, Russian Olive Encroachment

Growth curve description: closed or nearly closed canopy

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	5	20	40	25	10	0	0	0	0

(monthly percentages of total annual growth)

This plant community is stable unless the Russian Olives are removed in some way.

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

- Brush management with prescribed grazing allowing for adequate recovery periods between grazing events will control tree encroachment and move this plant community through the successional stages leading to the *Alkali Sacaton*, *Western Wheatgrass*, *Inland Saltgrass Plant Community (HCPC)*.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

Alkali Sacaton, Western Wheatgrass, Inland saltgrass Plant Community (HCPC):

Common bird species expected on the HCPC include Cassin’s sparrow, chestnut collared longspur, lark bunting, western meadowlark, and ferruginous and Swainson’s hawks. White-tailed and black-tailed jackrabbit, badger, pronghorn, coyote, plains pocket gopher and several species of mice are mammals that commonly use this plant community.

Decadent Plants, Excessive Litter Plant Community:

The wildlife species expected in this plant community are similar to those in the HCPC. Habitat conditions are poorer than in the HCPC so carrying capacity would be reduced.

Inland Saltgrass, Alkali Sacaton Plant Community:

Most HCPC species are expected in this plant community. The reduction in mid and tall grasses and the increase in shorter species will attract horned lark, McCown’s longspur, killdeer, long-billed curlew, jackrabbit, thirteen-lined ground squirrel, and cottontail rabbit.

Inland Saltgrass Sod Plant Community:

Horned lark, McCown’s longspur, killdeer, and long-billed curlew use these plant communities. Jackrabbit, thirteen-lined ground squirrel, and cottontail rabbit are frequent users of this community.

Broken Sod, Invaders Plant Community:

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.

Halogeton, Salt Crust Plant Community:

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.

Russian Olive Plant Community:

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.

Animal Preferences (Quarterly - 1,2,3,4) for commonly occurring plants in MLRA 67 North

Common Name	Scientific Name	Symbol	Cattle	Sheep	Horses	Antelope	Deer	Elk
GRASSES/GRASSLIKES								
alkali bluegrass	<i>Poa juncifolia</i>	POJU	UDUD	NDNU	UDUD	UDUU	UDUU	DPDD
alkali cordgrass	<i>Spartina gracilis</i>	SPGR	UDPU	UPDU	UPDU	UDUU	UDUU	UDPU
alkali muhly	<i>Muhlenbergia asperifolia</i>	MUAS	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
alkali sacaton	<i>Sporobolus airoides</i>	SPAI	UDPU	UPDU	UPDU	UDUU	UDUU	UDPU
Baltic rush	<i>Juncus balticus</i>	JUBA	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
basin wildrye	<i>Leymus cinereus</i>	LECI4	DPDD	UPDU	DPDD	UDUU	UDUU	DPDD
big bluestem	<i>Andropogon gerardii</i>	ANGE	UDPD	UDDU	UDPD	UDUU	UDUU	UDPD
blowout grass	<i>Redfieldia flexuosa</i>	REFL	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
blue grama	<i>Bouteloua gracilis</i>	BOGR2	UDPU	UDPU	UDPU	UDUU	UDUU	UDUU
bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	PSSP6	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
bluegrasses	<i>Poa spp.</i>	POA	UPUU	UPND	UPUU	UPND	UPND	UPUU
bluejoint reedgrass	<i>Calamagrostis canadensis</i>	CACA4	UPDU	UDUU	UPDU	UDUU	UDUU	UPDU
buffalograss	<i>Buchloe dactyloides</i>	BUDA	UDPU	UDPU	UDPU	UDUU	UDUU	UDUU
bulrush	<i>Scirpus spp.</i>	SCIRP	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
Canada wildrye	<i>Elymus canadensis</i>	ELCA4	UDUU	NUNN	UDUU	NUNN	NUNN	UDUU
Fendler's threeawn	<i>Aristida purpurea var. fendleriana</i>	ARPUF	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
foxtail barley	<i>Hordeum jubatum</i>	HOJU	NDNN	NDNN	NDNN	NDNN	NDNN	NDNN
green needlegrass	<i>Nassella viridula</i>	NAV14	DPPD	UPDU	DPPD	UDUU	UDUU	DPPD
hairy grama	<i>Bouteloua hirsuta</i>	BOHI2	UDPU	UDPU	UDPU	UDUU	UDUU	UDUU
Indian ricegrass	<i>Achnatherum hymenoides</i>	ACHY	DPPD	UPDU	DPPD	UDUU	UDUU	DPPD
Indiangrass	<i>Sorghastrum nutans</i>	SONU2	UDPD	UDDU	UDPD	UDUU	UDUU	UDPD
inland saltgrass	<i>Distichlis spicata</i>	DISP	NUUN	NUUN	NUUN	NUUN	NUUN	NUUN
little bluestem	<i>Schizachyrium scoparium</i>	SCSC	UDPU	UPDU	UPDU	UDUU	UDUU	UDPU
muhly	<i>Muhlenbergia spp.</i>	MUHLE	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
Nebraska sedge	<i>Carex nebrascensis</i>	CANE2	UDUD	UPND	UDUD	UPND	UPND	UDUD
needleandthread	<i>Hesperostipa comata ssp. comata</i>	HECOC8	DPDD	UPDU	DPDD	UDUU	UDUU	DPDD
northern reedgrass	<i>Calamagrostis stricta ssp. inexpansa</i>	CASTI3	UPDU	UDUU	UPDU	UDUU	UDUU	UPDU
Nuttall's alkaligrass	<i>Puccinellia nuttalliana</i>	PUNU2	DPUD	NPND	DPUD	UDUU	UDUU	DPPD
panicgrass	<i>Dichanthelium wilcoxianum</i>	DIWI5	UUDU	NUNN	UUDU	NUNN	NUNN	UUDU
plains bluegrass	<i>Poa arida</i>	POAR3	NPUN	NPUN	NPUN	NDUN	NDUN	NPUN
plains muhly	<i>Muhlenbergia cuspidata</i>	MUCU3	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
plains reedgrass	<i>Calamagrostis montanensis</i>	CAMO	UPDU	UDUU	UPDU	UDUU	UDUU	UPDU
prairie cordgrass	<i>Spartina pectinata</i>	SPPE	UDPD	UDDU	UDPD	UDUU	UDUU	UDPD
prairie junegrass	<i>Koeleria macrantha</i>	KOMA	UDUU	NDNU	UDUU	UDUU	UDUU	UDUU
prairie sandreed	<i>Calamovilfa longifolia</i>	CALO	UDPU	UDUU	UDDU	UDUU	UDUU	UDUU
reed canarygrass	<i>Phalaris arundinacea</i>	PHAR3	UDUU	NUNN	UDUU	NUNN	NUNN	UDUU
rushes	<i>Juncus spp.</i>	JUNCU	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
sand bluestem	<i>Andropogon hallii</i>	ANHA	UDPD	UDDU	UDPD	UDUU	UDUU	UDPD
sand dropseed	<i>Sporobolus cryptandrus</i>	SPCR	NUUN	NUUN	NUUN	NUUN	NUUN	NUUN
sand lovegrass	<i>Eragrostis trichodes</i>	ERTR3	UDPU	UUDU	UDDU	UDUU	UDUU	UDDU
sand paspalum	<i>Paspalum setaceum</i>	PASE5	NUUN	NUUN	NUUN	NUUN	NUUN	NUUN
Sandberg bluegrass	<i>Poa secunda</i>	POSE	NPUN	NPUN	NPUN	NDUN	NDUN	NPUN
sandhill muhly	<i>Muhlenbergia pungens</i>	MUPU2	UUDU	UUDU	UUDU	UUDU	UUDU	UUDU
sedge	<i>Carex spp.</i>	CAREX	UDUD	UPND	UDUD	UPND	UPND	UDUD
sideoats grama	<i>Bouteloua curtipendula</i>	BOCU	UDPU	UPDU	UPDU	UDUU	UDUU	UDUU
slender wheatgrass	<i>Elymus trachycaulus ssp. trachycaulus</i>	ELTRT	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
spikerush	<i>Eleocharis spp.</i>	ELEOC	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
switchgrass	<i>Panicum virgatum</i>	PAVI2	UDPD	UDDU	UDPD	UDUU	UDUU	UDPD
thickspike wheatgrass	<i>Elymus lanceolatus ssp. lanceolatus</i>	ELLAL	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
threadleaf sedge	<i>Carex filifolia</i>	CAFI	UDUD	UPND	UDUD	UPND	UPND	UDUD
threeawn	<i>Aristida spp.</i>	ARIST	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
western wheatgrass	<i>Pascopyrum smithii</i>	PASM	DPDD	UPDD	DPDD	UDUU	UDUU	DPDD
FORBS								
American licorice	<i>Glycyrrhiza lepidota</i>	GLLE3	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
American vetch	<i>Vicia americana</i>	VIAM	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
arrowgrass	<i>Triglochin spp.</i>	TRIGL	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
aster	<i>Aster spp.</i>	ASTER	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
biscuitroot	<i>Lomatium spp.</i>	LOMAT	UUDU	UDDU	UUDU	UDDU	UDDU	UDDU
blue-eyed grass	<i>Sisyrinchium spp.</i>	SISYR	UUDU	UUPU	UUDU	UUDU	UUDU	UUDU
breadroot	<i>Pediomelum spp.</i>	PEDIO2	NUUN	UDUU	NUUN	UDUU	UDUU	UDUU
broadleaf cattail	<i>Typha latifolia</i>	TYLA	UUDU	UUUU	UUDU	UUUU	UUDU	UUDU
buckwheat	<i>Eriogonum spp.</i>	ERIOG	NNNN	UUUU	NNNN	UUUU	UUUU	UUUU
bush morningglory	<i>Ipomoea leptophylla</i>	IPLE	UUUU	UUUU	NNNN	UUUU	UUUU	UUUU
cinquefoil	<i>Potentilla spp.</i>	POTEN	NNNN	UUUU	NNNN	UUUU	UUUU	UUUU
cudweed sagewort	<i>Artemisia ludoviciana</i>	ARLU	UUUU	UUDU	UUUU	UUDU	UUDU	UUDU
curlycup gumweed	<i>Grindelia squarrosa</i>	GRSQ	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
deathcamas	<i>Zigadenus venenosus</i>	ZIVE	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
dotted gayfeather	<i>Liatris punctata</i>	LIPU	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
evening primroses	<i>Oenothera spp.</i>	OENOT	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
false boneset	<i>Brickellia eupatorioides</i>	BREU	NDUN	NDUN	NNNN	NDUN	NDUN	NDUN
fringed sagewort	<i>Artemisia frigida</i>	ARFR4	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
goldenrod	<i>Solidago spp.</i>	SOLID	NUNN	NUNN	NNNN	NUNN	NUNN	NUNN

Animal Preferences (Quarterly - 1,2,3,4) for commonly occurring plants in MLRA 67 North

green sawwort	Artemisia campestris	ARCA12	NNNN	NUUN	NNNN	NUUN	NUUN	NNNN
greenthread	Thelesperma spp.	THELE	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
groundsel	Senecio spp.	SENEC	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
hairy goldaster	Heterotheca villosa	HEV14	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
heath aster	Symphotrichum ericoides	SYER	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
iris	Iris spp.	IRIS	NUUN	NUUN	NNNN	NUUN	NUUN	NUUN
ironweed	Vernonia spp.	VERNO	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
Lambert crazyweed	Oxytropis lambertii	OXLA3	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
larkspur	Delphinium spp.	DELPH	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
lemon scurfpea	Psoraleidum lanceolatum	PSLA3	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
Maximilian sunflower	Helianthus maximiliani	HEMA2	UDPU	UDPU	UDPU	UDPU	UDPU	UDPU
milkvetch	Astragalus spp.	ASTRA	UDUU	UDUU	UDUU	UDUU	UDUU	UDUU
nailwort	Paronychia spp.	PARON	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
Pennsylvania smartweed	Polygonum pensylvanicum	POPE2	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
penstemons	Penstemon spp.	PENST	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
perennial sunflowers	Helianthus spp.	HELIA3	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
phlox	Phlox spp.	PHLOX	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
poison hemlock	Conium maculatum	COMA2	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
prairie clovers	Dalea spp.	DALEA	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
prairie coneflower	Ratibida columnifera	RACO3	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
purple prairie clover	Dalea purpurea	DAPU5	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
Pursh seepweed	Suaeda calceoliformis	SUCA2	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
pussytoes	Antennaria spp.	ANTEN	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
rush skeletonplant	Lygodesmia juncea	LYJU	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
sandwort	Arenaria spp.	ARENA	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
scarlet gaura	Gaura coccinea	GACO5	NNNN	NUUN	NNNN	NUUN	NUUN	NNNN
scarlet globemallow	Sphaeralcea coccinea	SPCO	UUUU	UUUU	UUUU	UPPU	UDDD	UDDD
scurfpea	Psoraleidum spp.	PSORA2	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
showy peavine	Lathyrus polymorphus	LAPO2	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
silky prairie clover	Dalea villosa	DAVI	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
slimflower scurfpea	Psoraleidum tenuiflorum	PSTE5	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
spiderworts	Tradescantia spp.	TRADE	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
stiff sunflower	Helianthus pauciflorus	HEPA19	UDPU	UDPU	UDPU	UDPU	UDPU	UDPU
swamp smartweed	Polygonum hydropiperoides	POHY2	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
tenpetal blazingstar	Mentzelia decapetala	MEDE2	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
veiny dock	Rumex venosus	RUVE2	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
water hemlock	Cicuta spp.	CICUT	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
western ragweed	Ambrosia psilostachya	AMPS	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
western yarrow	Achillea millefolium	ACMI2	NUUN	NUUN	NNNN	NUUN	NUUN	NUUN
white prairie clover	Dalea candida	DACA7	UPPU	UPPU	UPPU	UPPU	UPPU	UPPU
whiteflower gilia	Ipomopsis longiflora ssp. longiflora	IPLOL	NUUN	NUUN	NNNN	NUUN	NUUN	NUUN
wild onion	Allium textile	ALTE	UDUU	UDUU	UDUU	UDUU	UDUU	UDUU
wild strawberry	Fragaria virginiana	FRVI	NNNN	NUUN	NNNN	NUUN	NUUN	NUUN
woollywhite hymenopappus	Hymenopappus tenuifolius	HYTE2	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
TREES, SHRUBS, AND HALF-SHRUBS								
antelope bitterbrush	Purshia tridentata	PUTR2	PDDD	PDDD	DDUD	PDDP	PDPP	PDDP
Arkansas rose	Rosa arkansana	ROAR3	UDDU	UDDU	NUUN	UDDU	UDDU	UDDU
big sagebrush	Artemisia tridentata	ARTR2	UNUU	DUUD	UNNU	PPPP	PUDP	DUUU
boxelder	Acer negundo	ACNE2	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
brittle cactus	Opuntia fragilis	OPFR	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
broom snakeweed	Gutierrezia sarothrae	GUSA2	NNNN	UUUU	NNNN	UUUU	UUUU	UUUU
fourwing saltbush	Atriplex canescens	ATCA2	PDDP	PDDP	PDDP	PDDP	PDDP	PDDP
Gardner's saltbush	Atriplex gardneri	ATGA	PDDP	PDDP	DUUD	PDDP	PDDP	PDDP
greasewood (Toxic in large amounts)	Sarcobatus vermiculatus	SAVE4	DUUD	DUUD	DUUD	DUUD	DUUD	DUUD
green ash	Fraxinus pennsylvanica	FRPE	UUUU	UUUU	UUUU	UDDU	UDDU	UUUU
green rabbitbrush	Chrysothamnus viscidiflorus	CHV18	DUUD	DUUD	UNNU	PDDP	PDDP	DUUD
leadplant	Amorpha canescens	AMCA6	UPDU	UPDU	UDDU	UPDU	UPDU	UPDU
plains cottonwood	Populus deltoides ssp. monilifera	PODEM	DUDD	DUDD	DUDD	DUDD	DUDD	DUDD
plains pricklypear	Opuntia polyacantha	OPPO	NNNN	NNNN	NNNN	NNNN	NNNN	NNNN
ponderosa pine	Pinus ponderosa var. scopulorum	PIPOS	UTTU	UNNU	UNNU	UNNU	UNNU	UNNU
Rocky Mountain juniper	Juniperus scopulorum	JUSC2	UNNU	UNNU	UNNU	UNNU	DUUD	UNNU
rose	Rosa spp.	ROSA5	UDDU	UDDU	NUUN	UDDU	UDDU	UDDU
rubber rabbitbrush	Ericameria nauseosa	ERNA10	UUUU	DUUD	UUUU	UDDU	DUUD	DUUU
sand sagebrush	Artemisia filifolia	ARF12	UNNU	UNNU	UNNU	UNNU	UNNU	UNNU
silver buffaloberry	Shepherdia argentea	SHAR	DUUU	DUUU	UUUU	UUUU	PUDP	DUUU
silver sagebrush	Artemisia cana	ARCA13	DUUD	DUUD	UNNU	PPPP	PDDP	DUUD
skunkbush sumac	Rhus trilobata	RHTR	DUUD	DUUD	UUUU	DUUD	DUUD	DUUD
spreading buckwheat	Eriogonum effusum	EREF	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
true mountainmahogany	Cercocarpus montanus	CEMO2	DDDD	PDDD	DDDD	UNNU	PDDP	PDDD
western sandcherry	Prunus pumila var. besseyi	PRPUB	DUUD	DUUD	DUUD	DUUD	PUDP	PUUP
western snowberry	Symphoricarpos occidentalis	SYOC	UUUU	UUUU	UUUU	UUUU	DUUD	DUUU
willows	Salix spp.	SALIX	PUDP	PUDP	DUUD	UUUU	PUDP	PUDP
winterfat	Krascheninnikovia lanata	KRLA2	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP
yucca	Yucca glauca	YUGL	DUUD	DUUD	UUUU	DUUD	DUUD	DUUD

Animal Community – Grazing Interpretations

The following tables list 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 typically 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 as 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 12-14” Precipitation	Production (lbs./acre)	Carrying Capacity (AUM/acre)
Alkali Sacaton, Western Wheatgrass, Inland Saltgrass (HCPC)	3200	1.00
Inland Saltgrass, Alkali Sacaton	2100	0.70
Inland Saltgrass Sod	1800	0.50
Broken Sod, Invaders	1300	0.40
Low Plant Density, Excess Litter	2900	0.90
Halogeton, Salt Crust	650	0.00
Russian Olive	2600	0.80

Plant Community 15-17” Precipitation	Production (lbs./acre)	Carrying Capacity (AUM/acre)
Alkali Sacaton, Western Wheatgrass, Inland Saltgrass (HCPC)	3500	1.10
Inland Saltgrass, Alkali Sacaton	2300	0.80
Inland Saltgrass Sod	1900	0.60
Broken Sod, Invaders	1400	0.50
Low Plant Density, Excess Litter	3100	1.00
Halogeton, Salt Crust	800	0.00
Russian Olive	2800	0.90

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.

Hydrology Functions

Salinity/alkalinity is the principal factor limiting forage production on this site. This site is dominated by soils in hydrologic group C and D. Infiltration ranges from moderately slow to moderately well. Runoff potential for this site varies from moderate to high depending on soil hydrologic group and 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 Part 630, NRCS National Engineering Handbook for detailed hydrology information).

Site Type: Rangeland

Saline Subirrigated 12-17" P.Z.

MLRA: 67 – North Central High Plains

R067AY142WY

Rills and gullies should not typically be present. Water flow patterns should be barely distinguishable if at all present. Pedestals are only slightly present in association with bunchgrasses. Litter typically falls in place, and signs of movement are not common. Chemical and physical crusts are present. Cryptogamic crusts are present, but only cover 1-2% of the soil surface.

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

(R067AY174WY) – Subirrigated 12-17 " P.Z.

(R067AY178WY) – Wetland 12-17" P.Z.

(R067AY138WY) – Saline Lowland 12-17" P.Z.

Similar Sites

(R067AY174WY) – Subirrigated 12-17" P.Z. has more big bluestem, less alkali sacaton

Inventory Data References (narrative)

Information presented here has been derived from NRCS clipping data and other inventory data. Field observations from range trained personnel was also used.

Inventory Data References

<u>Data Source</u>	<u>Number of Records</u>	<u>Sample Period</u>	<u>State</u>	<u>County</u>
SCS-RANGE-417	110	1963 -1987	WY	Platte & others

State Correlation

This site has been correlated with Wyoming, Colorado, and Nebraska.

Type Locality

Field Offices

Wyoming: Cheyenne, Douglas, Lusk, Torrington, Wheatland

Nebraska: Bridgeport, Harrisburg, Kimball, Oshkosh, Scottsbluff, Sidney

Colorado: Greeley, Sterling

Relationship to Other Established Classifications

Other References

Other sources used as references include: High Plains Regional Climate Center, USDA NRCS Water and Climate Center, USDA NRCS National Range and Pasture Handbook, and USDA NRCS Soil Surveys from various counties.

Site Description Approval

State Range Management Specialist

Date

State Range Management Specialist

Date

State Range Management Specialist

Date

Ecological Reference Worksheet

Author(s)/participant(s): _____
 Contact for lead author: _____ Reference site used? Yes/No
 Date: __ 1/05 __ MLRA: __ 67A __ Ecological Site: R067AY142WY Saline Subirrigated (SS)

____ This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

<p>Indicators. For each indicator, describe the potential for the site. Where possible, (1) use numbers, (2) include expected range of values for above- and below-average years for each community within the reference state, when appropriate & (3) cite data. Continue descriptions on separate sheet.</p>
<p>1. Number and extent of rills: Rills should not be present</p>
<p>2. Presence of water flow patterns: Barely observable</p>
<p>3. Number and height of erosional pedestals or terracettes: Essentially non-existent</p>
<p>4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are <i>not</i> bare ground): Bare ground is 10-20% occurring in small areas throughout site</p>
<p>5. Number of gullies and erosion associated with gullies: Active gullies should not be present</p>
<p>6. Extent of wind scoured, blowouts and/or depositional areas: None</p>
<p>7. Amount of litter movement (describe size and distance expected to travel): Little to no plant litter movement. Plant litter remains in place and is not moved by erosional forces.</p>
<p>8. Soil surface (top few mm) resistance to erosion (stability values are averages – most sites will show a range of values for both plant canopy and interspaces, if different): Plant cover and litter is at 80% or greater of soil surface and maintains soil surface integrity. Soil Stability class is anticipated to be 4 or greater.</p>
<p>9. Soil surface structure and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different): Use Soil Series description for depth and color of A-horizon</p>
<p>10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff: Grass canopy and basal cover should reduce raindrop impact and slow overland flow providing increased time for infiltration to occur. Healthy deep rooted native grasses enhance infiltration and reduce runoff. Infiltration is moderately slow to moderate.</p>
<p>11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): No compaction layer is present. Some surface crusting of salts due to fluctuation of water table.</p>
<p>12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: >>, >, = to indicate much greater than, greater than, and equal to): Mid stature Warm Season Grasses > Rhizomatous Cool Season > Short and Mid stature Grasses/Grasslike > Forbs > Shrubs</p>
<p>13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence): Very Low</p>
<p>14. Average percent litter cover and depth : Average litter cover is 30-40% with depths of 0.25 to 1.0 inches</p>
<p>15. Expected annual production (this is all above-ground production, not just forage production): 12"-14" Precipitation Zone = 3200 lbs/ac 15"-17" Precipitation Zone = 3500 lbs/ac</p>
<p>16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do, continue to increase regardless of the management of the site and may eventually dominate the site": Inland saltgrass, Arrowgrass, Baltic Rush, Kochia, Russian thistle, and Species found on Noxious Weed List</p>
<p>17. Perennial plant reproductive capability: All species are capable of reproducing</p>