United States Department of Agriculture
Natural Resources Conservation Service

Ecological Site Description

Site Type: Rangeland

Site Name: Saline Upland (SU) 10-14" Foothills and Basins East Precipitation Zone

Site ID: R032XY344WY

Major Land Resource Area: 32 – Northern Intermountain Desertic Basins

Physiographic Features

This site occurs on nearly level to moderately sloping land.

Landform: Hill sides, alluvial fans & stream terraces **Aspect:** N/A

	Minimum	Maximum
Elevation (feet):	5400	7500
Slope (percent):	0	15
Water Table Depth (inches):	None within 60 inches	
Flooding:		
Frequency:	very rare	rare
Duration:	ex. brief	brief
Ponding:		
Depth (inches):	0	0
Frequency:	None	None
Duration:	None	None
Runoff Class:	negligible	medium

Climatic Features

Annual precipitation ranges from 10-14 inches per year. The normal precipitation pattern shows the least amount of precipitation in December, January, and February, increasing to a peak during the latter part of May. Amounts decrease through June, July, and August and then increase some in September. Much of the moisture that falls in the latter part of the summer is lost by evaporation and much of the moisture that falls during the winter is lost by sublimation. Average snowfall exceeds 20 inches annually. 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.

Winds are generally not strong as compared to the rest of the state. 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.

Growth of native cool-season plants begins about April 15 and continues to about July 15. Cool weather and moisture in September may produce some green up of cool season plants that will continue to late October.

The following information is from the "Thermopolis 2" climate station:

	Minimum	Maximum	5 yrs. out of 10 between
Frost-free period (days):	74	149	May 23 – September 16
Freeze-free period (days):	112	180	May 8 – October 1
Annual Precipitation (inches):	7.6	21.9	

Mean annual precipitation: 12.35 inches
Mean annual air temperature: 46.2 °F (30.1°F Avg. Min. to 62.3°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" Grass Creek 1E", "Thermopolis", Thermopolis 25NW", "Buffalo Bill Dam" and "Black Mountain".

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 may be 10-20 inches deep but are usually moderately deep (greater than 20"to bedrock) to very deep well-drained soils formed in alluvium from sodic or alkaline materials. These soils have moderate to slow permeability and are moderately to strongly saline and/or alkaline. The surface soil will vary from 2 to 6 inches in thickness. Some soils may contain more soluble salts in the subsoils than in the surface soils. The soil characteristic having the most influence on the plant community is the high quantity of soluble salts.

Major Soil Series correlated to this site include:
Other Soil Series correlated in MLRA 32 to this site include:

Parent Material Kind: alluvium
Parent Material Origin: sandstone, shale
Surface Texture: loam, very fine sandy loam, fine sandy loam, clay loam, silty clay loam, silt loam
Surface Texture Modifier: none
Subsurface Texture Group: clay, clay loam, sandy clay loam,
Surface Fragments ≤ 3" (% Cover): 0
Surface Fragments > 3" (%Cover): 0
Subsurface Fragments ≤ 3" (% Volume): 0
Subsurface Fragments > 3" (% Volume): 0

	Minimum	Maximum
Drainage Class:	well	well
Permeability Class:	slow	moderate

Depth (inches):	20	>60
Electrical Conductivity (mmhos/cm) ≤20":	4	16
Sodium Absorption Ratio ≤20":	8	> 16
Soil Reaction (1:1 Water) ≤20":	7.4	11.0
Soil Reaction (0.1M CaCl2) ≤20":	NA	NA
Available Water Capacity (inches) ≤30":	1.4	6.3
Calcium Carbonate Equivalent (percent) ≤20":	0	15

Plant Communities

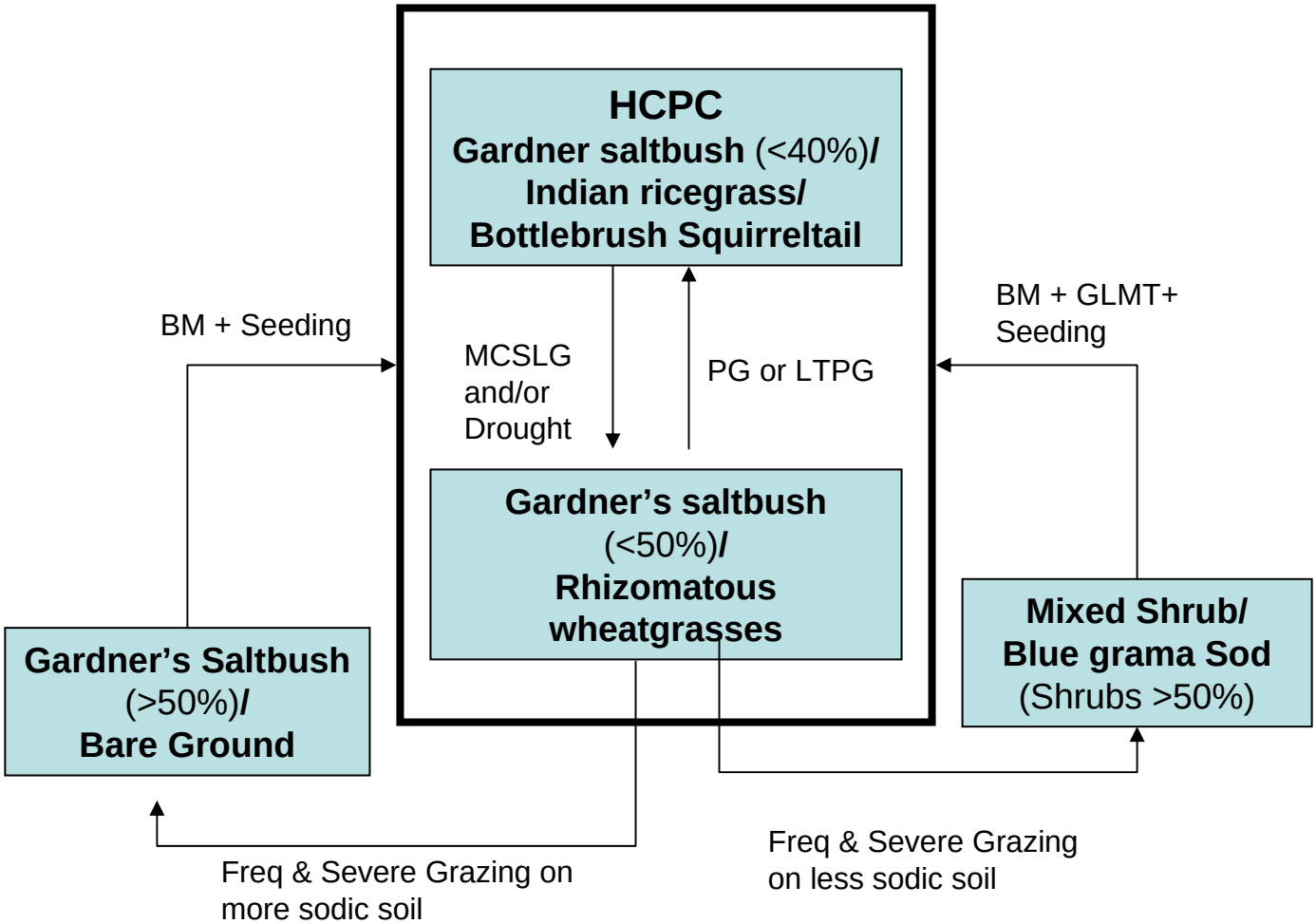
Ecological Dynamics of the Site:

Potential vegetation on this site is dominated by salt tolerant plants and drought resistant mid cool-season perennial grasses. The expected potential composition for this site is about 50% grasses, 10% forbs and 40% woody plants. The composition and production will vary naturally due to historical use, fluctuating precipitation and fire frequency.

As this site deteriorates, species such as birdfoot sagebrush and greasewood will increase. Weedy annuals will invade. Cool season grasses such as Indian ricegrass, bottlebrush squirreltail, and rhizomatous wheatgrasses will decrease in frequency and production.

The Historic Climax Plant Community (description follows the plant community 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 (states) 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 (fire, chemical, mechanical)
Freq. & Severe Grazing - Frequent and Severe Utilization of the Cool-season Mid-grasses during the Growing Season
GLMT - Grazing Land Mechanical Treatment
LTPG - Long-term Prescribed Grazing
MCSLG - Moderate, Continuous Season-long Grazing
NU, NF - No Use and No Fire
PG - Prescribed Grazing (proper stocking rates with adequate recovery periods during the growing season)
VLTPG - Very Long-term Prescribed Grazing (could possibly take generations)
WF – Wildfire

Plant Community Composition and Group Annual Production
Reference Plant Community (HCPC)

COMMON NAME/GROUP NAME	SCIENTIFIC NAME	SYMBOL	Annual Production (Normal Year) Total: 450		
			Group	lbs./acre	% Comp.
GRASSES AND GRASS-LIKES					
GRASSES/GRASSLIKES					
Western wheatgrass	Pascopyrum smithii	PASM	1	45 - 90	10 - 20
Indian ricegrass	Achnatherum hymenoides	ACHY	2	45 - 90	10 - 20
Bottlebrush squirreltail	Elymus elymoides	ELEL5	3	23 - 68	5 - 15
MISC. GRASSES/GRASSLIKES			**4**	**0 - 45**	**0 - 10**
Blue grama	Bouteloua gracilis	BOGR2	4	0 - 23	0 - 5
Griffiths wheatgrass or	Elymus albicans	ELAL7			
Bluebunch wheatgrass	Pseudoroegneria spicata	PSSP6	4	0 - 23	0 - 5
Sandberg bluegrass	Poa secunda	POSE	4	0 - 23	0 - 5
other perennial grasses (native)		2GP	4	0 - 23	0 - 5
FORBS			**5**	**0 - 45**	**0 - 10**
Cous biscuitroot	Lomatium cous	LOCO4	5	0 - 23	0 - 5
Leafy wildparsley	Musineon divaricatum	MUDI	5	0 - 23	0 5
Salsify	Tragopogon spp.	TRPO	5	0 - 23	0 - 5
Sulphur flower buckwheat	Eriogonum umbellatum	ERUM	5	0 - 23	0 - 5
Wild onion	Allium textile	ALTE	5	0 - 23	0 - 5
Woody aster	Xylorhiza spp.	XYLOR	5	0 - 23	0 - 5
other perennial forbs (native)		2FP	5	0 - 23	0 - 5
TREES/SHRUBS					
Birdfoot sagebrush	Artemisia pedatifida	ARPE6	6	0 - 23	0 - 5
Bud sagebrush	Picrothamnus desertorum	PIDE4	7	0 - 23	0 - 5
Gardner's saltbush	Atriplex gardneri	ATGA	8	90 - 180	20 - 40
Winterfat	Krascheninnikovia lanata	KRAL2	9	0 - 23	0 - 5
other shrubs & half shrubs (native)		2SHRUB	10	0 - 23	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 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 (DPC's) 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.

Gardner's saltbush/Indian ricegrass/Bottlebrush Squirreltail Plant Community

The interpretive plant community for this site is the Historic Climax Plant Community. This state evolved with grazing by large herbivores and droughty saline and/or alkali soils. This plant community can be found on areas that are properly managed with grazing and on areas receiving short periods of rest. Potential vegetation is about 50% grasses or grass-like plants, 10% forbs, and 40% woody plants.

Gardner's saltbush dominates this state. Other salt tolerant shrubs include winterfat and birdfoot sagebrush. The major grasses include Indian ricegrass, bottlebrush squirreltail, and rhizomatous wheatgrasses. Other grasses occurring in this state include Sandberg bluegrass and bluebunch wheatgrass. A variety of forbs also occurs in this state and plant diversity is high (see Plant Composition Table).

The total annual production (air-dry weight) of this state is about 450 pounds per acre, but it can range from about 275 lbs./acre in unfavorable years to about 650 lbs./acre in above average years.

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

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

(Monthly percentages of total annual growth)

This state is fragile, but well adapted to the Northern Intermountain Desertic Basins climate. The diversity in plant species allows for high drought tolerance. This is a sustainable plant community, but is difficult to reestablish when damaged. (Site/soil stability, watershed function, and biologic integrity).

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

- Moderate, Continuous Season-Long grazing will convert this plant community to the *Gardner's Saltbush/Rhizomatous Wheatgrasses Plant Community.*

Gardner's Saltbush/Rhizomatous Wheatgrasses Plant Community

Historically, this plant community evolved under grazing by large ungulates. Currently this vegetation state is found under moderate, season-long grazing by livestock. Prolonged drought can also play an important role and will exacerbate these conditions. Gardner's saltbush and rhizomatous wheatgrasses are major components of this plant community. Cool-season grasses make up the majority of the understory with the balance made up of short warm-season grasses, annual cool-season grass, and miscellaneous forbs.

The dominant grasses include rhizomatous wheatgrasses, bottlebrush squirreltail, Sandberg bluegrass, and blue grama. Forbs commonly found in this plant community include smooth woodyaster, Cous biscuitroot, wild onion, and leafy wildparsley. Plains pricklypear and winterfat can also occur.

When compared to the Historic Climax Plant Community, birdfoot sagebrush and blue grama have increased. Plains pricklypear cactus will have invaded, but occurs only in small patches. Indian ricegrass has decreased and may occur in only trace amounts within the patches of pricklypear. In addition, winterfat may or may not have changed depending on the season of use.

The total annual production (air-dry weight) of this state is about 360 pounds per acre, but it can range from about 225 lbs./acre in unfavorable years to about 575 lbs./acre in above average years.

The following is the growth curve expected during a normal year:
Growth curve number:
Growth curve name:
Growth curve description:

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

(Monthly percentages of total annual growth)

This plant community is relatively resistant to change. The herbaceous species present are well adapted to grazing; however, species composition can be altered through long-term overgrazing. The herbaceous component is mostly intact and plant vigor and replacement capabilities are sufficient. Water flow patterns and litter movement may occur, but is not extensive. Incidence of pedestalling is minimal. Soils are mostly stable and the surface shows minimum soil loss. The watershed is functioning and the biotic community is intact.

Transitional pathways leading to other plant communities are as follows:

- Prescribed grazing or Long Term Prescribed Grazing will prevent further deterioration and over the long-term may return this state to near *Historic Climax Plant Community Plant Community.*
- Frequent and severe grazing on less sodic soils will convert this plant community to a *Mixed Shrub/Blue Grama Sod Plant Community.*
- Frequent and severe grazing on more sodic soils will convert this state to *Gardner's Saltbush/Bare Ground Plant Community*.

Mixed Shrub/Blue Grama Sod Plant Community
This plant community evolved under frequent and severe grazing on less sodic soils. Gardner's saltbush, birdfoot sagebrush, greasewood, and blue grama are the dominant species of this plant community. A dense sod of blue grama can be common but mostly occurs in large mosaic patterns. Cool-season grasses have been mostly eliminated and if still present can only be found within patches of plains pricklypear.

The dominant grass is blue grama but Sandberg bluegrass can be present. Cactus often has increased. Noxious weeds such as Russian knapweed and halogeton may invade the site. When compared with the HCPC or the Gardner's Saltbush/Rhizomatous Wheatgrasses Plant Communities, the annual production is lower as is the production of Gardner's saltbush and the perennial cool-season grasses.

The total annual production (air-dry weight) of this state is about 225 pounds per acre, but it can range from about 125 lbs./acre in unfavorable years to about 450 lbs./acre in above average years.

The following is the growth curve expected during a normal year:
Growth curve number:
Growth curve name:
Growth curve description:

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

(monthly percentages of total annual growth)

This plant community is resistant to change as the stand of blue grama is established and continued frequent and severe grazing or the removal of grazing does not seem to affect the plant composition or structure of the plant community. The biotic integrity of this state is minimally functional and plant diversity is moderate to low. Plant vigor is weakened and replacement capabilities are limited due to the reduced number of cool-season grasses.

This state is stable and protected from excessive erosion. The sod formed by these grasses is resistant to water infiltration. While the soil is protected by this sod, excessive runoff may occur off-site. As a result, rills or other more severe erosion can occur on the adjoining sites. The watershed may or may not be functioning, as runoff may affect adjoining sites. The biotic integrity of this plant community is not intact.

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

- Grazing land mechanical treatment (chiseling and seeding, etc.) followed by prescribed grazing and BM if needed will return this plant community to near *Historic Climax Plant Community.*

Gardner's Saltbush/Bare Ground Plant Community
This plant community can occur where sites are subjected to continuous yearlong grazing and where soils are highly sodic. Gardner's saltbush dominates this state and in some cases comprises almost 100% of the plant community. The interspaces between plants have expanded significantly leaving the amount of bare ground prevalent and the soil surface exposed to erosive elements.

Cool season grasses have been eliminated or greatly reduced. Noxious weeds such as Russian knapweed and halogeton have likely invaded the large openings and can overwhelm the site. When compared to the HCPC, plant production is greatly diminished due to the excessive amount of bare ground.

The total annual production (air-dry weight) of this state is about 125 pounds per acre, but it can range from about 50 lbs./acre in unfavorable years to about 225 lbs./acre in above average years.

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

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	10	50	25	5	0	10	0	0	0

(Monthly percentages of total annual growth)

This plant community is resistant to change as the stand becomes more decadent. These areas may actually be more resistant to fire as less fine fuels are available and the bare ground between the

sagebrush plants is increased. Continued frequent and severe grazing or the removal of grazing does not seem to affect the plant composition or structure of the plant community. Plant diversity is extremely low. The plant vigor is diminished and replacement capabilities are severely reduced due to the decrease in the number of cool-season grasses. Plant litter is noticeably less when compared to the HCPC.

Soil erosion is accelerated because of increased bare ground. Water flow patterns and pedestalling are obvious. Infiltration is reduced and runoff is increased. Rill channels may be noticeable in the interspaces and gullies may be establishing where rills have concentrated down slope.

Transitional pathways leading to other plant communities are as follows:

- Brush Management and seeding, followed by prescribed grazing, will return this plant community at or near the HCPC.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

Historic Climax Plant Community: The predominance of woody plants in this plant community provides winter grazing for mixed-feeders, such elk, and antelope. Suitable thermal and escape cover for these animals are limited due to the short stature of the woody plants. When found adjacent to sagebrush-dominated states, this plant community may provide lek sites for sage grouse. Other birds that would frequent this plant community include western meadowlarks, horned larks, and golden eagles. Some grassland obligate small mammals would occur here.

Gardner's Saltbush/Rhizomatous Wheatgrasses Plant Community: The combination of shrubs, grasses, and forbs can provide a forage source for large animals. Suitable thermal and escape cover for these animals are limited due to the short stature of the woody plants. When found adjacent to sagebrush-dominated states, this plant community may provide lek sites for sage grouse. Other birds that would frequent this plant community include western meadowlarks, horned larks, and golden eagles. Some grassland obligate small mammals would occur here.

Mixed Shrub/Blue Grama Sod Plant Community: These communities provide limited foraging for antelope and other grazers. This community may be used as a foraging site by sage grouse if proximal to woody cover. Generally, these are not target plant communities for wildlife habitat management.

Gardner's Saltbush/Bare Ground Plant Community: This plant community exhibits a low level of plant species diversity. It may provide some forage value for antelope, but in most cases it is not a desirable plant community to select as a wildlife habitat management objective.

Animal Preferences (Quarterly - 1,2,3,4) for commonly occuring plants in MLRA 32, 10-14 inch Foothills and Basins East

COMMON NAME/ GROUP NAME	SCIENTIFIC NAME	SCIENTIFIC SYMBOL	*Cattle*	*Sheep*	*Horses*	*Mule Deer*	*Antelope*	*Elk*	*Moose*	*Mtn. Sheep*
GRASSES/GRASSLIKES										
Alkali bluegrass	Poa juncifolia (syn. P. secunda)	POJU (POSE)	DDDD	PPPP	DDDD	PPPP	PPPP	DDDD	DDDD	DDDD
Alkali cordgrass	Spartina gracilis	SPGR	DDDD	UUUU	DDDD	UUUU	UUUU	DDDD	DDDD	UUUU
Alkali sacaton	Sporobolus airoides	SPAI	PPPP	DDDD	PPPP	DDDD	DDDD	PPPP	DDDD	DDDD
Baltic rush	Juncus balticus	JUBA	DDDD	UUUU	DDDD	UUUU	UUUU	DDDD	UUUU	UUUU
Basin wildrye	Leymus cinereus	LECI4	PPPP	PPPP	PPPP	DDDD	DDDD	PPPP	DDDD	PPPP
Big bluegrass	Poa Ampla (syn. P. secunda)	POAM (POSE)	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP
Blue grama	Bouteloua gracilis	BOGR2	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Bluebunch wheatgrass	Pseudoroegneria spicata	PSSP6	PPPP	PPPP	PPPP	DDDD	DDDD	PPPP	PPPP	DDDD
Bluejoint reedgrass	Calamagrostis canadensis	CACAM	PPPP	DDDD	PPPP	UUUU	UUUU	PPPP	DDDD	DDDD
Bottlebrush squirreltail	Elymus elymoides	ELELE	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Bulrush	Scripus spp.	SCIRP	DDDD	UUUU	DDDD	UUUU	UUUU	DDDD	DDDD	DDDD
Canada wildrye	Elymus canadensis	ELCA4	PPPP	PPPP	PPPP	DDDD	DDDD	PPPP	PPPP	PPPP
Canby bluegrass	Poa canbyi (syn. to Poa secunda)	POCA (POSE)	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP
Golden sedge	Carex aurea	CAAU3	DDDD	DDDD	DDDD	UUUU	UUUU	DDDD	UUUU	DDDD
Green needlegrass	Nassella viridula	NAVI4	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP
Indian ricegrass	Achnatherum hymenoides	ACHY	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP
Inland saltgrass	Distichlis spicata	DISP	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Inland sedge	Carex interior	CAIN11	DDDD	DDDD	DDDD	UUUU	UUUU	DDDD	DDDD	DDDD
Mat muhly	Muhlenbergia richardsonis	MURI	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Griffith's wheatgrass	Elymus albicans	ELAL7	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Nebraska sedge	Carex nebrascensis	CANE2	PPPP	PPPP	PPPP	DDDD	DDDD	PPPP	DDDD	DDDD
Needleandthread	Hesperostipa comata	HECO26	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP
Nuttall's alkaligrass	Puccinellia nuttalliana	PUNU2	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP
Prairie junegrass	Koeleria macrantha	KOMA	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Prairie sandreed	Calamovilfa longifolia	CALO	PPPP	DDDD	PPPP	UUUU	UUUU	PPPP	DDDD	DDDD
Sandberg bluegrass	Poa secunda	POSE	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Sand dropseed	Sporobolus cryptandrus	SPCR	DDDD	DDDD	DDDD	UUUU	UUUU	DDDD	UUUU	UUUU
Slender wheatgrass	Elymus trachycaulus	ELTR7	PPPP	DDDD	PPPP	DDDD	DDDD	PPPP	DDDD	DDDD
Slough sedge	Carex obnupta	CAOB3	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Spike fescue	Leucopa kingii	LEKI2	PPPP	DDDD	PPPP	PPPP	DDDD	PPPP	DDDD	DDDD
Streambank wheatgrass	Elymus lanceolatus	ELLAL3	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Thickspike wheatgrass	Elymus lanceolatus	ELLAL3	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Threadleaf sedge	Carex filifolia	CAFI	DDDD	DDDD	DDDD	DDDD	PPPP	DDDD	DDDD	DDDD
Tufted hairgrass	Deschampsia caespitosa	DECA18	PPPP	PPPP	PPPP	DDDD	DDDD	PPPP	DDDD	DDDD
Upland sedges	Carex spp.	CAREX	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Water sedge	Carex aquatilis	CAAQ	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Western wheatgrass	Pascopyrum smithii	PASM	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
FORBS										
Alkali seepweed	Suaeda vera	SUVE2	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
American bistort	Polygonum bistortoides	POB16	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Arrowgrass	Triglochin spp.	TRIGL	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
Asters	Eucephalus spp.	EUCEP2	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Biscuitroots	Lomatium spp.	LOMAT	DDDD	DDDD	UUUU	DDDD	DDDD	DDDD	DDDD	DDDD
Cinquefoil	Potentilla spp.	POTEN	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Deathcamas	Zigadenus Michx.	ZIGAD	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
Dock	Rumex spp.	RUMEX	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Evening primrose	Oenothera caespitosa	OECA10	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
False carrot	Turgenia spp.	TURGE	UUUU	DDDD	UUUU	UUUU	UUUU	UUUU	UUUU	DDDD
Fleabanes	Erigeron spp.	ERIGE2	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Fringed sagewort	Artemisia frigida	ARFR4	UUUU	UUUU	UUUU	UUUU	DDDD	UUUU	UUUU	UUUU
Goldenweed	Stenotus acaulis	STAC	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Gromwell	Buglossoides arvensis	BUAR3	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Hawksbeard	Crepis acuminata	CRAC2	UUUU	PPPP	UUUU	DDDD	DDDD	UUUU	DDDD	DDDD
Horsetails	Equisetum spp.	EQUIS	UUUU	UUUU	TTTT	UUUU	UUUU	UUUU	UUUU	UUUU
Iris	Iris spp.	IRIS	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Larkspur	Delphinium spp.	DELPH	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Milkvetch	Astragalus spp.	ASTRA	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Paintbrush	Castilleja spp.	CAST	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Penstemons	Penstemon spp.	PENST	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP
Phlox	Phlox spp.	PHLOX	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Prairie thermopsis	Thermopsis rhombifolia	THRH	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Princesplume	Stanleya spp.	STANL	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
Nuttalll's povertyweed	Monoepis nuttalliana	MONU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Pussytoes	Antennaria spp.	ANTEN	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Salsify	Tragopogon porrifolius	TRPO	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Scarlet globemallow	Sphaeralcea coccinea	SPCO	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Stemless hymenoxys	Tetraneuris acaulis	TEACA2	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Wild onion	Allium textile	ALTE	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD
Winterfat	Krascheninnikovia lanata	KRAL2	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP
Woody aster	Xylorhiza spp.	XYLOR	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT	TTTT
Wooly groundsel	Packera cana	PACA15	TTTT	UUUU	TTTT	UUUU	UUUU	TTTT	UUUU	UUUU
TREES, SHRUBS & HALF-SHRUBS										
Antelope bitterbrush	Purshia tridentata	PUTR2	PPPP	PPPP	DDDD	PPPP	PPPP	PPPP	PPPP	PPPP
Boxelder	Acer negundo L. var. interius	ACNE12	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Silver sagebrush	Artemisia cana	ARCA13	DDDD	DDDD	DDDD	PPPP	PPPP	DDDD	DDDD	DDDD
Big sagebrush	Artemisia tridentata	ARTR2	DDDD	DDDD	UUUU	DDDD	DDDD	DDDD	DDDD	DDDD
Birdfoot sagebrush	Artemisia pedatifida	ARPE6	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Black sagebrush	Artemesia nova	ARNO4	UUUU	PPPP	UUUU	PPPP	PPPP	UUUU	UUUU	DDDD
Cottonwoods (sprouts)	Populus spp.	POPUL	DDDD	DDDD	DDDD	DDDD	UUUU	DDDD	DDDD	UUUU
Curlleaf mountainmahogany	Cercocarpus ledifolius	CELE3	PPPP	PPPP	DDDD	PPPP	UUUU	PPPP	PPPP	DDDD
Gardners saltbush	Atriplex gardneri	ATGA	PPPP	PPPP	DDDD	PPPP	PPPP	PPPP	DDDD	DDDD
Greasewood	Sarcobatus vermiculatus	SAVE4	DDDD	DDDD	UUUU	DDDD	DDDD	DDDD	UUUU	UUUU
Green rabbitbrush	Chrysothamnus viscidiflorus	CHVI8	PPPP	DDDD	PPPP	PPPP	PPPP	PPPP	DDDD	DDDD
Limber pine	Pinus flexilis	PIFL2	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Rubber rabbitbrush	Ericameria nauseosa	ERNA10	UUUU	PPPP	UUUU	DDDD	PPPP	UUUU	UUUU	DDDD
Rocky Mountain juniper	Juniperus scopulorum	JUSC2	UUUU	UUUU	UUUU	DDDD	UUUU	UUUU	UUUU	UUUU
Shadscale	Atriplex confertifolia	ATCO	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
Shrubby cinquefoil	Dasiphora floribunda	DAFL3	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	DDDD	UUUU
Silver buffaloberry	Shepherdia argentea	SHAR	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU	UUUU
skunkbush sumac	Rhus trilobata	RHTR	DDDD	DDDD	DDDD	DDDD	DDDD	DDDD	UUUU	UUUU
Snowberry	Symphoricarpus occidentalis	SYOC	UUUU	UUUU	UUUU	DDDD	UUUU	UUUU	UUUU	UUUU
Utah juniper	Juniperus osteosperma	JUOS	UUUU	UUUU	UUUU	DDDD	UUUU	UUUU	UUUU	UUUU
Wildrose	Rosa woodsii var. woodsii	ROWOW	DDDD	DDDD	UUUU	DDDD	DDDD	DDDD	DDDD	DDDD
Willows	Salix spp.	SALIX	PPPP	PPPP	DDDD	PPPP	UUUU	PPPP	PPPP	DDDD
Winterfat	Krascheninnikovia lanata	KRAL2	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP	PPPP
Yucca	Yucca spp.	YUCCA	DDDD	DDDD	UUUU	DDDD	DDDD	DDDD	UUUU	DDDD

N = not used; U = undesirable; D = desirable; P = preferred; T = toxic

Animal Community – Grazing Interpretations

The following table lists suggested stocking rates for cattle under continuous season-long grazing under normal growing conditions. 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 this 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. If distribution problems occur, stocking rates must be reduced to maintain plant health and vigor.

Plant Community	Production (lb./ac)	Carrying Capacity* (AUM/ac)
Historic Climax Plant Community	275-650	.25
Gardner's Saltbush/Rhizomatous Wheatgrasses	225-575	.20
Mixed Shrub/Blue Grama Sod	125-450	.12
Gardner's Saltbush/Bare Ground	50-225	.05

* - Continuous, season-long grazing by cattle under average growing conditions.

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area may provide yearlong forage for cattle, sheep, or horses. During the dormant period, the forage for livestock use needs to be supplemented with protein because the quality does not meet minimum livestock requirements.

Hydrology Functions

Water and salinity are the principal factors limiting forage production on this site. This site is dominated by soils in hydrologic group B and C, with localized areas in hydrologic group D. Infiltration ranges from slow to moderate. 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).

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 may be present. Cryptogamic crusts are present, but only cover 1-2% of the soil surface.

Recreational Uses

This site provides some hunting opportunities for upland game species.

Wood Products

No appreciable wood products are present on the site.

Other Products
None noted.

Supporting Information

Associated Sites

Loamy	032XY322WY
Saline Lowland-Drained	032XY340WY

Similar Sites

() – Saline Upland 5-9” Wind River Basin P.Z. 032XY244WY
Saline Upland 5-9” Big Horn Basin P.Z. 032XY144WY
[Lower production than Saline Upland 10-14” E]

Inventory Data References (narrative)
Information presented here has been derived from NRCS inventory data. Field observations from range trained personnel were also used. Those involved in developing this site include: Chris Krassin, Range Management Specialist, NRCS and Everet Bainter, Range Management Specialist. Other sources used as references include USDA NRCS Water and Climate Center, USDA NRCS National Range and Pasture Handbook, USDI and USDA Interpreting Indicators of Rangeland Health Version 3, and USDA NRCS Soil Surveys from various counties.

Inventory Data References
Ocular field estimations observed by trained personnel.

State Correlation
This site occurs entirely within Wyoming.

Type Locality

Field Offices
Casper, Cody, Dubois, Fort Washakie, Greybull, Lander, Powell, Riverton, Thermopolis, Worland,

Relationship to Other Established Classifications

Other References

Site Description Approval

_____ _____
State Range Management Specialist Date