

Section II

Ecological Site Description—Rangeland

MLRA: 58AC – Sedimentary Plains, Central
R058AC040MT



1. Physiographic features:

- Landform:** sedimentary plain, fan, terrace
- Elevation (feet):** 2250 - 4500
- Slope (percent):** 0–15, mainly less than 8
- Depth to Water Table (inches):** >40
- Flooding:** mainly none
- Ponding:** none
- Runoff Class:** slow or medium
- Aspect:** not significant

2. Soils: These soils are loams, silt loams, very fine sandy loams, or sandy clay loams more than 20 inches deep. They include soils that have two inches or more of one of these textures over a clayey (argillic) subsoil. There are no significant limitations to plant growth. Available Water Holding Capacity to 40 inches is mostly about 8 inches.

3. Associated sites: Clayey, Sandy, Silty-Steep, Shallow. Occasionally Very Shallow, ClayPan, Overflow, Clayey-Steep, Shallow Clay, and Gravel.

4. Similar sites: Sandy, Clayey, Silty-Steep, Shallow:

The Sandy and Clayey sites occupy the same landscape positions; the primary difference is soil texture and plant community.

The Silty-Steep site differs mainly by being on slopes greater than 15% and having lower production.

The Shallow site differs by being 20 inches or less to a restrictive layer or bedrock and having significantly lower production and ground cover.

5. Major Plant Community Types: The following are descriptions of several plant communities that may occupy this site:

Plant Community 1: Tall and Medium Grasses/ Forbs/ Shrubs: The physical aspect of this site in the Historical Climax Plant Community (HCPC) is that of a level to undulating grassland dominated by cool and warm season grasses, with forbs and shrubs occurring in smaller percentages. Approximately 75–80% of the annual production by weight is from grasses and sedges, 5–15% is from forbs, and 1–5% is from shrubs, half-shrubs, and cacti. Canopy cover of shrubs is typically 1–5%. Trees are not significant on this site.

Dominant species include **bluebunch wheatgrass, green needlegrass, western or thickspike wheatgrass, needleandthread**, and short grasses such as **Sandberg bluegrass and prairie junegrass**. There are abundant forbs (**purple and/or white prairie clover, prairie coneflower, dotted gayfeather**) which occur in smaller percentages. Shrubs such as **Wyoming big sagebrush and winterfat** are common.

This plant community is well adapted to the Northern Great Plains climatic conditions. The diversity in plant species and presence of tall, deep-rooted perennial grasses allows for drought tolerance. Plants on this site have strong, healthy root systems that allow production to increase significantly with favorable moisture conditions. Abundant plant litter is available for soil building and moisture retention. Plant litter is properly distributed with very little movement off-site and natural plant mortality is very low. This plant community provides for soil stability and a functioning hydrologic cycle.

Plant Community 2A: Medium and Short Grasses and Sedges/ Half-shrubs: This community occurs mainly on soils in the fine silty family. Dominants include **needleandthread, western or thickspike wheatgrass, threadleaf sedge, blue grama, and prairie junegrass**. Bluebunch wheatgrass and green needlegrass will still be present but in smaller amounts. There may be an increase in the amount of **fringed sagewort** or other half-shrubs. Palatable and nutritious forbs will be replaced by less desirable and more aggressive species.

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Plant Community 2B: Medium and Short Grasses and Sedges/ Shrubs and Half-shrubs: This community occurs on soils in the fine silty family, and is similar to 2A, except that it will tend to have more shrubs. It is typically dominated by the same grasses, plus shrubs and half-shrubs including **Wyoming big or silver sagebrush, and fringed sagewort**. There is also sometimes an increase in the amount of cactus. **Silver sagebrush** tends to become more prevalent on old stream terraces that no longer flood, except very rarely.

There will be some shifting of sagebrush between Communities 2A and 2B, depending on the occurrence and frequency of fire and which species of sagebrush is present. A lack of fire in Community 2A tends to favor Wyoming big sagebrush. The presence of fire in a big sagebrush stand will generally reduce the density of plants, making the community more similar to 2A. Fire will often increase the amount of silver sagebrush, however, as it will sprout from the roots after being burned.

Grass biomass production and litter become reduced on Communities 2A and 2B as the taller grasses become less prevalent, increasing evaporation and reducing moisture retention. Additional open space in the community can result in undesirable invader species. These plant communities provide for moderate soil stability.

Plant Community 3: Short and Medium Grasses/ Half-shrubs and Shrubs: This is a disturbance induced community, with dominants including **Sandberg bluegrass, prairie junegrass, perennial forbs, fringed sagewort, and silver or Wyoming big sagebrush**. Remnant amounts of western or thickspike wheatgrass and needleandthread may be present. Tall grasses and palatable forbs will be mostly absent.

The amount of Wyoming big sagebrush in this community can also be the result of lack of fire in Community 4. Periodic fire tends to reduce the amount of big sagebrush that is present. Silver sagebrush, however, will react just the opposite, as it will tend to increase after a fire due to root sprouting.

Plant Community 4: Short and Medium Grasses and Sedges/ Half-Shrubs: This is a disturbance induced community, with dominants including **threadleaf sedge, needleandthread, blue grama**, and other short grasses. It is similar to Community 3, but having less of a shrub component.

Plant Communities 3 and 4 are much less productive than Plant Communities 1, 2A, or 2B and have lost many of the attributes of a healthy rangeland. The loss of deep perennial root systems reduces total available moisture for plant growth. Reduction of plant litter will result in higher surface soil temperatures and increased evaporation losses. Annual species are often aggressive and competitive with seedlings of perennial plants. This community can respond positively to improved grazing management but it will take additional inputs to move it towards a community similar in production and composition to that of Plant Community 1, 2A, or 2B.

Plant Community 5: Short Grasses/ Half-shrubs/ Cactus/ Annual Grasses and Forbs: This community is the result of continual adverse disturbances. Dominants include **blue grama, Sandberg bluegrass, and prairie junegrass**, half-shrubs such as **fringed sagewort and broom snakeweed, plains pricklypear**, and annuals such as **cheatgrass, Japanese brome and six-weeks fescue**. **Red threawn and non-native, weedy forbs** are also likely to invade.

Plant Community 6: Short Grasses/ Shrubs and Half-shrubs/ Cactus/ Annual Grasses and Forbs: This community is the result of continual adverse disturbances, and is similar to Community 5 but with more of a shrub component. Dominants include **blue grama, Sandberg bluegrass, prairie junegrass, Wyoming big sagebrush**, half-shrubs such as **fringed sagewort and broom snakeweed**, and **plains pricklypear**, and annuals such as **cheatgrass, Japanese brome, six-weeks fescue, and weedy forbs** (e.g., thistles).

Plant communities 5 and 6 have extremely reduced production of native plants (< 600 lbs./acre). The lack of litter and short plant heights result in higher soil temperatures, poor water infiltration rates, and increased evaporation, which gives short sod grasses and annual invaders a competitive advantage over the cool season tall and medium grasses. These communities have lost many of the attributes of a healthy rangeland, including good infiltration, minimal erosion and runoff, nutrient cycling and energy flow. Significant economic inputs and time would be required to move these plant communities toward a higher successional stage and a more productive plant community.

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5a. Cover and structure (Historic Climax Plant Community)

COVER TYPE	BASAL COVER (%)	CANOPY COVER (%)	AVERAGE HEIGHT (inches)
Cryptogams	T–2	T–5	0.25 - .50
Grasses/ sedges	5–15	70–85	18
Forbs	1–4	1–5	6
Shrubs	1–4	0–10	18
Litter	50–70		
Coarse fragments	0–5		
Bare ground	10–20		

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5b. Major Plant Species Composition - Historical Climax

Common Name	Plant Symbol	Plant Group	Percent Comp.	Group Max. %	Mean Annual Precipitation (inches)				
					11	12	13	14	
					(lbs./acre)	(lbs./acre)	(lbs./acre)	(lbs./acre)	
Grasses and Sedges					70–90%	925–1192	1050–350	1172–1508	1295–1665
Bluebunch wheatgrass	PSSP6	2	30–65		398–861	450–975	502–1089	555–1202	
Green needlegrass	NAVI4	2	5–20		66–265	75–300	84–335	93–370	
Western or Thickspike wheatgrass	PASM ELLAL	14	0–10	10	0–132	0–150	0–168	0–185	
Needleandthread	HECOC8	10	5–15		66–199	75–225	84–252	93–278	
Plains muhly *	MUCU3	3	0–5		---	0–70	0–90	0–110	
Threadleaf sedge	CAFI	12	0–5}	10	0–132 No more than 66 for any one	0–150 No more than 75 for any one	0–168 No more than 84 for any one	0–185 No more than 93 for any one	
Needleleaf sedge	CADU6	16	0–5}						
Blue grama	BOGR2	15	0–5}						
Prairie junegrass	KOMA	12	0–5}						
Sandberg bluegrass	POSE	12	0–5}						
Plains reedgrass	CAMO	16	0–5}						
Other native grasses	2GP		0–5}						
Fendler's threeawn	ARPUF	11	0–T}						0–T
Red threeawn	ARPUL	11	0–T}						
Forbs					5–10%	66–132	75–150	84–168	93–185
Purple prairieclover	DAPU5	21	1–5}	10	13–132 No more than 66 for any one	15–150 No more than 75 for any one	17–168 No more than 84 for any one	18–185 No more than 93 for any one	
White prairieclover	DACA7	21	1–5}						
Prairie coneflower	RACO3	23	1–5}						
Dotted gayfeather	LIPU	21	1–5}						
Silverleaf scurfpea	PSAR	23	0–5}						
Breadroot scurfpea	PSES	30	0–5}						
Hairy goldenaster	HEVI4	23	0–5}						
Prairie thermopsis	THRH	20	0–5}						
American vetch	VIAM	18	0–5}						
Wild onion	ALLIU	32	0–5}						
Milkvetch spp.	ASTRA	24	0–5}						
Hood's phlox	PHHO	28	0–5}						
Plains bahia	BAOP	20	0–5}						
Scarlet gaura	GACO5	23	0–5}						
Western yarrow	ACMI2	19	0–5}						
Biscuitroot spp.	LOMAT	24	0–5}						
Scarlet globemallow	SPCO	20	0–5}						
Penstemon spp.	PENST	28	0–5}						
Aster spp.	ASTER	19	0–5}						
Wild parsley	MUDI	24	0–5}						
Green sagewort	ARDR4	19	0–5}						
Pussytoes spp.	ANTEN	20	0–5}						
Other native forbs	2FP		0–5}						
Twogrooved poisonvetch	ASBI2	24	0–T}	0–T	0–T	0–T	0–T	0–T	
White point loco **	OXSE	24							
Larkspur spp. **	DELPH	24							
Death camas **	ZIGAD	32							
Shrubs and Half-shrubs					1–5%	13–66	15–75	17–84	18–93
Winterfat	KRLA2	35	0–5}	5	0–66	0–75	0–84	0–93	
Wyoming big sagebrush	ARTRW8	37	0–5}						
Silver sagebrush	ARCA13	36	0–5}						
Prairie rose	ROAR3	38	0–5}						
Fringed sagewort	ARFR4	38	0–5}						
Rubber rabbitbrush	ERNAN5	36	0–5}						
Other native shrubs	2SB		0–5}						
Broom snakeweed	GUSA2	37	0–T}	0–T	0–T	0–T	0–T	0–T	
Plains pricklypear	OPPO	38	0–T}						
Total Annual Production (lbs./ac):						1325	1500	1675	1850

*This species tends to occur mainly in the higher precipitation areas of the RRU.

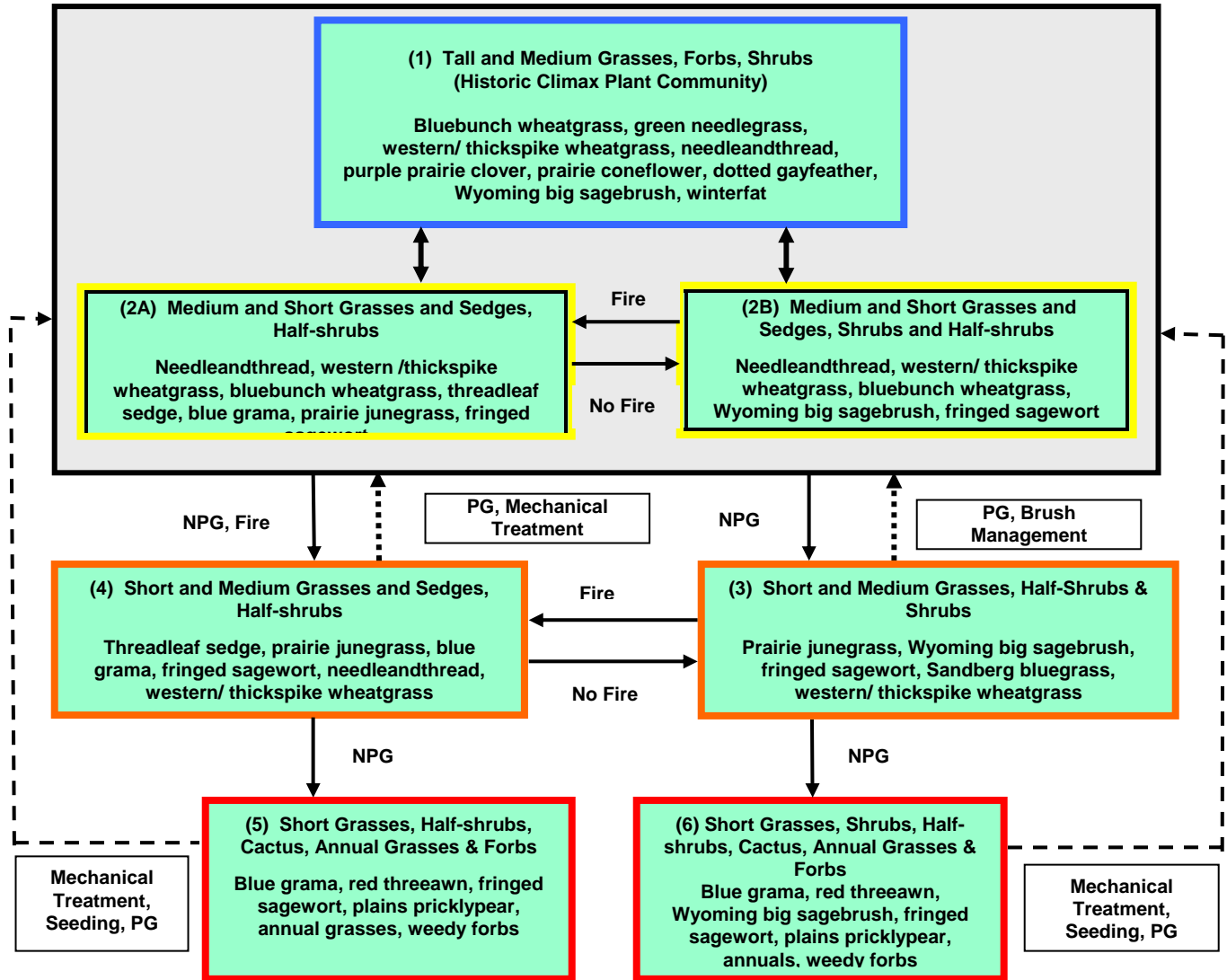
** These plants are poisonous to some grazing animals, during at least some portion of their life cycle.

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5c. Plant Communities and Transitional Pathways (diagram)



Smaller boxes within a larger box indicate that these communities will normally shift among themselves with slight variations in precipitation and other disturbances. Moving outside the larger box indicates the community has crossed a threshold (heavier line) and will require intensive treatment to return to Community 1 or 2. Dotted lines indicate a reduced probability for success. Yellow boxes indicate caution that the community may be in danger of crossing a threshold. Orange boxes represent communities that have crossed over thresholds from the HCPC and may be difficult to restore with grazing management alone. Red boxes represent communities that have severely shifted away from the HCPC and probably cannot be restored without mechanical inputs.

NOTE: Not all species present in the community are listed in this table. Species listed are representative of the plant functional groups that occur in the community.

PG = Prescribed Grazing: Use of a planned grazing strategy to balance animal forage demand with available forage resources. Timing, duration, and frequency of grazing are controlled and some type of grazing rotation is applied to allow for plant recovery following grazing.

NPG = Non-Prescribed Grazing: Grazing which has taken place that does not control the factors as listed above, or animal forage demand is higher than the available forage supply.

Fire: Prescribed fire or non-prescribed wildfire.

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6. Livestock Grazing Interpretations: Managed livestock grazing is suitable on this site as it has the potential to produce an abundance of high quality forage. This is often a preferred site for grazing by livestock, and animals tend to congregate in these areas. In order to maintain the productivity of this site, grazing must be managed carefully on adjoining sites with less production to be sure livestock drift onto the Silty site is not excessive. Management objectives should include maintenance or improvement of the plant community. Shorter grazing periods and adequate re-growth after grazing are recommended for plant maintenance and recovery. Heavy stocking and season-long use of this site can be detrimental and will alter the plant community composition and production over time.

Whenever Plant Communities 2A or 2B (Medium and short grasses) occur, grazing management strategies need to be implemented to avoid further deterioration. These communities are still stable, productive, and healthy provided they receive proper management. These communities will respond fairly quickly to improved grazing management, including increased growing season rest of key forage plants. Grazing management alone can usually move these communities back towards the potential community.

Plant Communities 3 and 4 have substantially reduced forage production, and a high percentage of aggressive, non-palatable species. Once these plant communities become established, it will be much more difficult to restore the site to a community that resembles the potential with grazing management alone. Additional growing season rest is often necessary for re-establishment of the desired species and to restore the stability and health of the site. Brush management and mechanical treatment are often needed to restore tall perennial grasses onto this site.

Plant Communities 5 and 6 have extremely limited forage production (< 250 pounds per acre), and a high percentage of non-preferred species for cattle and sheep. Seeding may be necessary to restore desirable native perennial species.

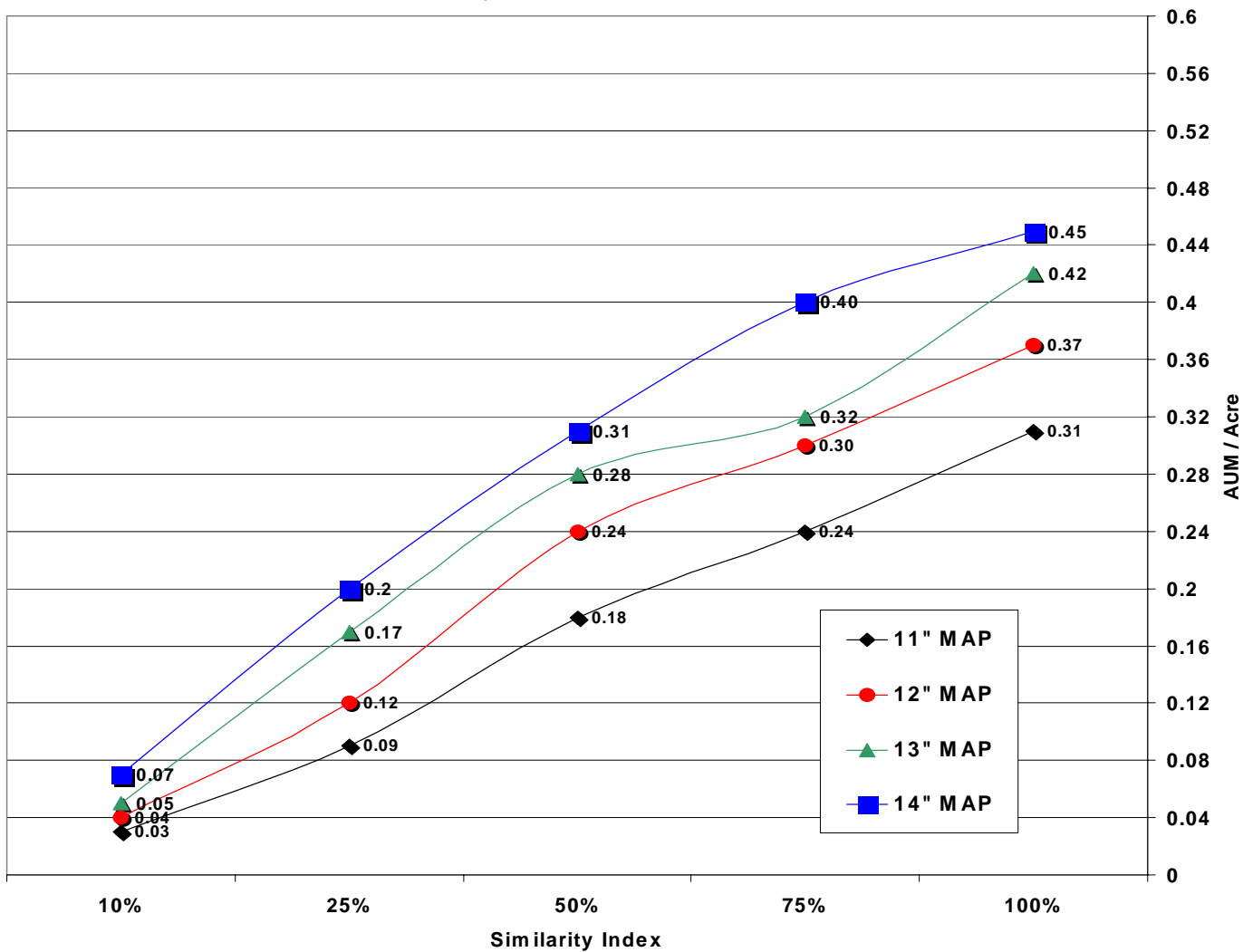
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6a. Guide to Safe Stocking Rates: The following charts provide guidance for determining an initial safe stocking rate. Animal Unit Month (AUM) figures are based on averages of forage production from data collected for this site over several years. The characteristic plant communities and production values listed may not accurately reflect the productivity of a specific piece of land. These tables should not be used without on-site information collected to determine the average forage productivity of the site. Adjustments to stocking rates for each range unit must be made based on topography, slope, distance to livestock water, and other factors which effect livestock grazing behavior.

Stocking Rate Guide (Cattle)
Silty 11-14" 58AC



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6b. Stocking Rate Guide:

Major Plant Community Dominant Plant Species	MAP	Total Production (pounds/ac)	Cattle			Sheep		
			Forage Production	AUM/ac	Ac/AUM	Forage Production	AUM/ac	Ac/AUM
1. Tall and Medium Grasses, Forbs, Shrubs (HCPC) <i>Bluebunch wheatgrass, green needlegrass, western wheatgrass, forbs, winterfat</i> (S.I. >75%)	13–14"	1675 – 1850	1425-1650 +	.39-.45+	2.2-2.6+	1350-1575 +	.37-.43+	2.3-2.7+
	11–12"	1325 – 1500	1125-1350 +	.31-.37+	2.7-3.3+	1050-1275 +	.29-35+	2.9-3.5+
2A. Medium & Short Grasses & Sedges, Half-shrubs <i>Needleandthread, western/ thickspike wheatgrass, bluebunch wheatgrass, blue grama, fringed sagewort</i> (S.I. 40–75%)	13–14"	900-1575	550-1400	.15-.38	2.6-6.7	600-1400	.16-.38	2.6-6.1
	11–12"	700-1275	425-1150	.12-.31	3.2-8.6	450-1150	.12-.31	3.2-8.1
2B. Medium & Short Grasses & Sedges/ Shrubs <i>Needleandthread, western/ thickspike wheatgrass, bluebunch wheatgrass, blue grama, threadleaf sedge, Wyoming big sagebrush, fringed sagewort</i> (S.I. 40–75%)	13–14"	900-1575	500-1350	.14-.37	2.7-7.3	550-1400	.15-.38	2.6-6.7
	11–12"	700-1275	375-1100	.10-.30	3.3-9.8	425-1150	.12-.31	3.2-8.6
3. Short & Medium Grasses, Half- Shrubs & Shrubs <i>Prairie junegrass, Wyoming big sagebrush, fringed sagewort, needleandthread, western/ thickspike wheatgrass</i> (S.I. 20–40%)	13–14"	700-1300	350-700	.10-.19	5.2-10.5	375-900	.10-.25	4.1-9.8
	11–12"	500-1050	250-575	.07-.16	6.4-14.6	275-725	.08-.20	5.0-13.3
4. Short & Medium Grasses & Sedges, Half-shrubs <i>Threadleaf sedge, prairie junegrass, fringed sagewort, needleandthread, western wheatgrass</i> (S.I. 20–40%)	13–14"	600-1200	325-725	.09-.20	5.0-11.3	300-775	.08-.21	4.7-12.2
	11–12"	400-975	225-575	.06-.16	6.4-16.3	200-625	.05-.17	5.9-18.3
5. Short Grasses, Half-Shrubs, Cactus, Annuals <i>Blue grama, red threeawn, fringed sagewort, plains pricklypear, annual grasses and forbs</i> (S.I. < 20%)	11–14"	275-700	100-250	.03-.07	14.6-36.6	100-275	.03-.08	13.3-36.6
6. Short Grasses, Shrubs, Half-Shrubs, Cactus, Annuals <i>Blue grama, Wyoming big sagebrush, fringed sagewort, plains pricklypear, annual grasses and forbs</i> (S.I. < 20%)	11–14"	350-750	100-225	.03-.06	16.3-36.6	150-350	.04-.10	10.5-24.4

Stocking rates are calculated from average forage production values using a 25% Harvest Efficiency factor for preferred and desirable plants, and 10% Harvest Efficiency for less desirable species. AUM calculations are based on 915 pounds per animal unit month (AUM) for a 1,000-pound cow with calf up to 6 months. No adjustments have been made for site grazability factors, such as steep slopes, site inaccessibility, or distance to drinking water.

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7. Wildlife Interpretations: The Silty ecological site occurs over large acreages on the Northern Great Plains except where it is fragmented by conversion to cropland, which is significant in many areas. Habitat fragmentation of this site has contributed to the decline of some “area sensitive” wildlife species, particularly such ground-nesting birds as the grasshopper sparrow. This site is home to a diverse native wildlife complex. Historically, huge herds of migratory bison and pronghorn as well as large numbers of sharp-tailed grouse were probably the dominant “game” species in addition to a wide variety of ground-nesting songbirds, waterfowl and shorebirds, small mammals, and mammalian predators. Grazing patterns, topographic diversity, extensive acreages, and interspersed with other ecological sites make this type very important to numerous wildlife species. Small mammal diversity and abundance is high which, in turn, supports a varied raptor population. In the past, vast prairie dog towns provided habitat for such species as the black-footed ferret, burrowing owl, mountain plover, ferruginous hawk, and swift fox. Invasive plant species such as leafy spurge, Canada thistle, and several knapweeds contribute to a loss of biodiversity within this ecological site. Wildlife water requirements are provided by springs and seeps, intermittent and perennial streams, and, in modern times, numerous artificial ponds and livestock pipelines. These areas are locally important for northern leopard frogs, tiger salamanders and a number to toad species, all of which feed on a variety of insects. Grazing, fire, drought cycles and insect population fluctuations create a shifting mosaic of wildlife habitats across this site.

Plant Community 1: Tall Grasses/ Forbs/ Shrubs (HCPC): The diversity of plant species and life forms provides feeding substrate for pollinating insects. Grasshopper and Mormon cricket infestations occasionally consume the majority of the herbaceous vegetation, especially during drought years. A variety of warm and cool water fish species inhabit the intermittent and perennial streams associated with this community. Northern pike, lake chub, carp, a variety of suckers and walleye are examples. Common reptile and amphibian species include tiger salamanders in ponds and stock tanks, Woodhouse’s toad, western chorus frogs, short-horned lizards, bull snake and rattlesnake, and three species of garter snakes. The diversity of grass stature and life forms, along with scattered shrubs and a variety of forbs, provides habitat for many bird species including the upland sandpiper, sharp-tailed grouse, loggerhead shrike, grasshopper and savanna sparrow, chestnut-collared longspur and western meadowlark. This community is especially favorable for ground-nesting birds because of the abundant residual plant material and litter available for nesting, escape, and thermal cover. Diverse prey populations are available for raptors such as ferruginous and Swainson’s hawks. The predominance of grasses plus a diversity of forbs, shrubs and half-shrubs in this community favors grazers and mixed feeders such as bison, pronghorn and elk. Suitable thermal and escape cover for mule deer is limited because of low shrub cover. Complex plant structural diversity and litter cover provide habitat for a wide array of small mammals (both seed eaters, i.e. deer mice and herbivores, i.e. voles and jackrabbits) and neotropical migratory birds.

Plant Community 2A: Medium and Short Grasses and Sedges/ Half-shrubs: The partial loss of structural diversity makes this plant community somewhat less attractive to the variety of wildlife species using the HCPC or PPC. A decrease in residual plant material and litter cover is usually associated with degradation of the HCPC, which makes this community less attractive for ground-nesting birds. Pronghorn make considerable use of this type because of forb and half-shrub availability in the generally open landscape.

Plant Community 2B: Medium and Short Grasses and Sedges/ Shrubs and Half-shrubs: Wyoming big sagebrush, with canopy cover of 15-30%, and an understory of grasses and forbs, is excellent nesting, winter, brood-rearing, and foraging habitat for sage grouse. Other obligate sagebrush-grassland species, notably Brewer’s sparrow, also benefit from an increase in sagebrush cover. When residual grass and litter cover decrease in this community, ground nesting bird habitat values decline. This community often provides important winter range for mule deer and pronghorn. The sagebrush crowns break up hard crusted snow and provide about 15% protein and 40-60% digestibility for ungulates.

Plant Community 3: Short and Medium Grasses/ Half-shrubs and Shrubs: Heavy stands of big sagebrush can provide winter cover and foraging habitat for mule deer, elk, pronghorn, and sage grouse. However, a decline in herbaceous cover and litter reduces overall wildlife species diversity and habitat value for ground-nesting birds. When this seral stage is dominated by forbs and fringed sagewort, it may provide lek sites for sage grouse and habitat for birds such as horned larks, McCown’s longspurs, mountain plovers, and long-billed curlews. Prairie dogs will have an easier time establishing and expanding towns in this community to the benefit of burrowing owls, mountain plovers, and black-footed ferrets.

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Plant Community 4: Short and Medium Grasses and Sedges/ Half-shrubs: Sparse vegetation and a greater percent cover of bare ground provides suitable habitat for mountain plovers, prairie dogs, horned larks and McCown's longspurs. However, a lack of complex vegetation structure and residual cover makes this community poor habitat in general for most ground-nesting birds and relatively poor big game habitat. Pronghorn may forage in this community spring through fall.

Plant Community 5: Short Grasses/ Half-shrubs/ Cactus/ Annual Grasses and Forbs: This community has low habitat value for most wildlife species except when it occurs in prairie dog towns. It may be important in providing lek sites for sage grouse when adjacent to sagebrush stands and provides forage for pronghorn seasonally.

Plant Community 6: Short Grasses/ Shrubs and Half-shrubs/ Cactus/ Annuals Grasses and Forbs: When big sagebrush cover exceeds about 15 percent, this community may provide winter sage grouse habitat; nest cover for sage grouse is poor because of a lack of standing herbaceous material and surface litter. Lek sites for sage and sharp-tailed grouse may be available in this type. General wildlife habitat is of low value.

8. Hydrology Data: The runoff potential for this site is low to moderate, depending on slope and ground cover/health. Runoff curve numbers generally range from 78 to 90. The soils associated with this ecological site are generally in Hydrologic Soil Group C. The infiltration rates for these soils will normally be moderate to moderately rapid.

9. Site Documentation:

Authors: Original: NRCS, 1983 Revised: MJR, REL, RSN, POH, 2003

Supporting Data for Site Development:

NRCS–Production & Composition Record for Native Grazing Lands (Range-417): 12
BLM–Soil & Vegetation Inventory Method (SVIM) Data: 3
NRCS–Range Condition Record (ECS-2): 10
NRCS–Range/Soil Correlation Observations & Soil 232 notes: 32
Ecological Site Reference: NRCS 417 No.: Wheatland County 513, Golden Valley County 523

Field Offices where this site occurs within the state:

Big Sandy	Columbus	Harlowton	Roundup
Big Timber	Crow Agency	Joliet	Stanford
Billings	Fort Belknap	Lewistown	White Sulphur Springs
Chinook	Hardin	Malta	Winnett

Site Approval: This site has been reviewed and approved for use:

Loretta J. Metz
State Rangeland Management Specialist

10/22/2004
Date

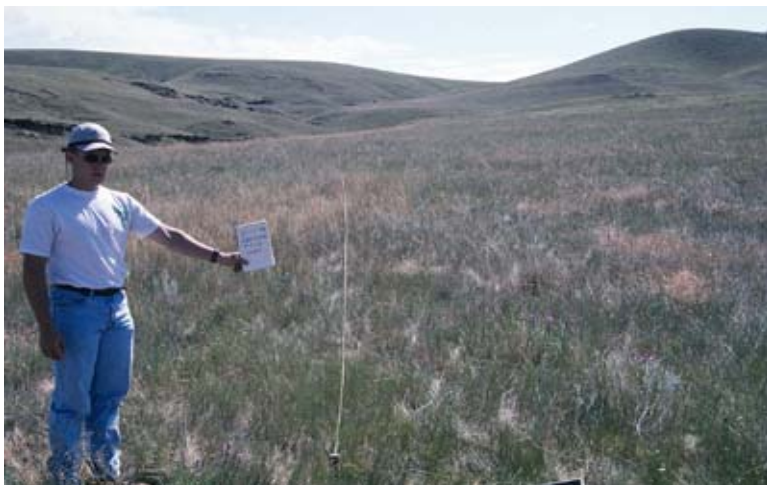
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Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 1
HCPC
Wheatland County
Bluebunch wheatgrass–60%



Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 1
HCPC



Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 1
HCPC
Wheatland County

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**Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 1 to 2**



**Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 1 to 2**



**Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 2
Sweetgrass County
Bluebunch wheatgrass, needleandthread**

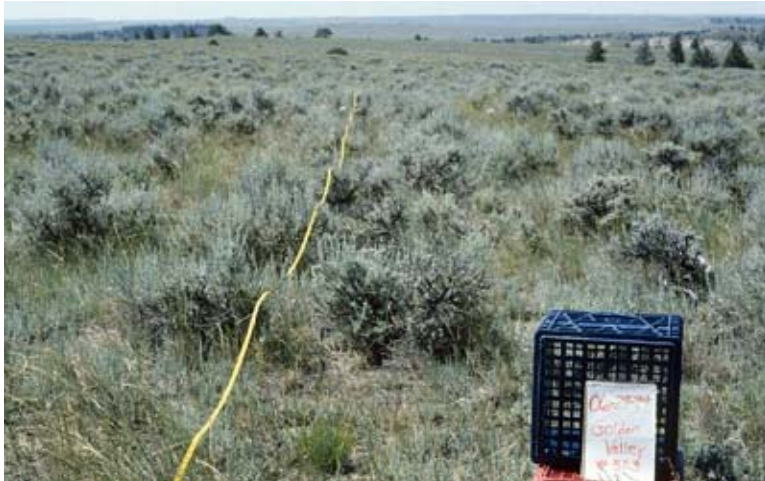
Ecological Site Description—Rangeland

Silty (Si), 11–14" MAP

MLRA: 58AC – Sedimentary Plains, Central
R058AC040MT



Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 2
Sweetgrass County



Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 3
Golden Valley County
Bluebunch wheatgrass,
Wyoming big sagebrush



Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 3
Golden Valley County

Ecological Site Description—Rangeland

Silty (Si), 11–14" MAP

MLRA: 58AC – Sedimentary Plains, Central
R058AC040MT



Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 3
Golden Valley County
Bluebunch wheatgrass,
prairie junegrass



Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 4
Golden Valley County
Needleandthread, fringed sagewort



Silty, 11–14" MAP,
Sedimentary Plains, Central
Plant Community 4
Golden Valley County
Needleandthread, fringed sagewort