

Legend

- counties_wy
- Basin Rim
- Bear River Valley
- Beaver Rim A
- Beaver Rim B
- Browns Park
- Foothills
- Great Divide Basin
- Green River Basin
- Laramie Basin
- Little Snake
- Natrona
- Pinedale Plateau
- Platte Valley
- Powder Wash
- Rio Blanco
- Shirley Basin
- Yampa Valley



34A				7-9" ustic aridic	9-12" aridic ustic	9-14" aridic ustic	10-16" aridic ustic	11-14" aridic ustic	12-16" typic ustic	Hydrology Controlled sites
Frost Free Days (RV) ← Colder -- Temperature Regime -- Warmer →	90-120 Frigid Warm					LRU G – The Natrona LRU tends on the warmer end of frigid, with longer frost-free days and cool, wet winters and springs and warm, dry summers. Summer storms tend to hit the area more often than other areas				LRU Y – Typically includes ecological sites with water table less than 42" or complex/unique sites
	60-90 Frigid	LRU B – Green River Basin tends toward a cool, wet winter with warm, dry summers, with more snow accumulation than the Great Divide Basin. LRU E – Great Divide Basin trends toward cool, wet winters with warm, dry summers, although late summer moisture occurs here where it is less frequent in the Green River Basin.	LRU F – Beaver Rim is cool and wet in the winter with higher elevations than much of the surrounding area. Weather patterns are influenced by the nearby Wind River Mountains, giving this LRU more available moisture than the lower basins. The northern end of the LRU becomes drier in the summer			LRU D- Basin Rims tends to be cool, wet winter with warm, dry summers, with more snow than LRU B and LRU E. This LRU has inclusions of LRU B within the deliniation	LRU L – Laramie Basin is cool and wet in the winter with significant spring moisture and warm and dry in the summer. Weather patterns are influenced by the Laramie and Snowy Mountain Ranges			
			LRU I – Platte River Valley is cool and wet in the winter and warm and dry in the summer, with weather patterns being influenced by the nearby Mountain Ranges. This area tends to receive additional moisture in the summer than other areas		LRU A – Bear River Valley is cool and wet in the winter and warm and dry in the summer, with significant spring moisture bordering on xeric. Weather patterns are influenced by the nearby Mountain Ranges.	LRU K– Shirley Basin area is wet and cool in the winter and warm and dry in the summer with more spring moisture in the higher elevations than in the surrounding basins.		LRU J – The Foothills LRU is intended to encompass the areas in the foothills of several mountain ranges near the southern border of the MLRA where winters are wet and cool and summers are warm and dry with some spring moisture.		
	45-60 Frigid									
20-45 Frigid Cold			LRU C – The Pinedale Plateau is cool and wet in winter and warm and dry in the summer with weather patterns influenced by nearby mountain ranges. It tends to be the coolest area of the MLRA.							

Rangeland Ecological Site Key-Version 1.0 For MLRA 34A

1a. Site in a lowland position (bottom) that receives significant additional moisture from runoff of adjacent slopes or intermittent/perennial streams or a water table (HIGH productivity potential).....**Group I**

1b. Upland site that does not receive additional moisture as above.....**2**

2a. Soil depth very shallow (<10" (25cm)), shallow (10-20" (25-50cm)) OR moderately deep to deep (>20" (>50cm), skeletal (>35% coarse fragments by volume in top 20" (50cm")) soils on south and west aspects and/or with a root restricting layer which react like shallow soils (LOW productivity potential).....**Group II**

2b. Soil depth moderately deep to deep (>20" (50cm)) without root restricting layer that inhibits the productivity potential.....**Group III**

GROUP I – Sites that Receive Additional Moisture

1a. Site moderately to strongly saline (>8mmhos/cm) within 20" (50cm) and dominated by salt tolerant species (i.e. greasewood, Nutall's alkaligrass, inland saltgrass, alkali sacaton).....**2**

2a. Site somewhat poorly drained and water table within rooting depth of herbaceous species (20-40" (50-100cm)) during most of the growing season, grasses such as alkali sacaton, basin wildrye, alkali/sandberg bluegrass common (typically no shrubs present).....**Saline Subirrigated (SS)**

2b. Site not as above.....**3**

3a. Site adjacent to perennial or intermittent streams, receiving some overland flow from adjacent slopes, with moderately good drainage, but water table within 3' (within rooting depth of woody plants, but not herbaceous plants) during most of the growing season, alkali sacaton, basin wildrye, western wheatgrass, greasewood, inland saltgrass common.....**Saline Lowland (SL)**

3b. Site may receive periodic overflow from adjacent slopes, located in lowland position but water is typically channeled into gullies so that plants are not receiving a lot of benefit from additional moisture, greasewood and Gardner's saltbush common species, big sage (Basin and/or Wyoming) may be present
.....**Saline Lowland, drained (SLdr)**

1b. Site not saline**4**

4a. Site poorly drained with fluctuating water table above surface part of growing season, Nebraska sedge, northern reedgrass, tufted hairgrass common, some willows.....**Wetland (WL)**

4b. Site not as above.....**5**

5a. Site somewhat poorly drained with water tables within rooting depth of herbaceous species (20-40" (50-100cm)) during most of the growing season, basin wildrye, tufted hairgrass, slender wheatgrass, shrubby cinquefoil, sedges, rushes, and willows common**Subirrigated (Sb)**

5b. Site not as above.....**6**

6a. Site adjacent to perennial or intermittent streams, with moderate to excessive drainage, and water table 1 to 5', more often >3' (rooting depth of woody plants, but not herbaceous plants) during some of the growing season, cottonwood or remnants may be present, (gravel bars and pockets of bare gravel often present, basin wildrye, needleandthread, western wheatgrass, woods rose and other woody species common (silver sagebrush east of Continental Divide).....**Lowland (LL)**

6b. Site drier than above, more likely on intermittent drainage without gravel bars and high water table during growing season.....**7**

7a. Surface textures range from sandy loam to light silty clay loam, basin big sagebrush, silver sage, slender wheatgrass, and/or Canby's bluegrass common.....**Loamy Overflow (Ov/LyO)**

7b. Site similar to above with heavier textured soils (clay loam, silty clay loam, and silty clay), heavy presence of western wheatgrass, slender wheatgrass, basin wildrye.....**Clayey Overflow (CyO)**

GROUP II – Upland Sites that are Very Shallow (<10" (25cm)) OR Shallow (10-20" (25-50cm)) OR moderately deep to deep (>20" (>50cm)) skeletal and/or on south/west aspect

1a. Soils very shallow (<10" (25cm)), but may include areas of exposed bedrock and pockets of deep soil, often on steep (up to 55%) south and west facing slopes with VERY LOW productivity potential.....**2**

2a. Bedrock igneous or volcanic, black sage may be present**Igneous (Ig)**

2b. Bedrock not igneous or volcanic.....**3**

3a. Bedrock is soft or hard clay shale bedrock that may be saline, occurs in upland position on moderately to steeply sloping land (5-25% slope). Gardner's saltbush and western wheatgrass common, productivity very low.....**Shale (Sh)**

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3b. Bedrock commonly fractured sandstone, shale, or siltstone, commonly on windswept ridges, Juniper occasionally found on at higher elevations, bluebunch wheatgrass, squirreltail, and western wheatgrass common, other shrubs may be present, productivity very low (if productivity is high and coarse fragments are present, go to #7).....	Very Shallow (VS)
1b. Soils shallow (10-20" (25-50cm)), but may include moderately deep to deep (>20" (>50cm)) skeletal soils on south and west aspects, >15% slopes, and/or with root restricting layer, productivity potential is LOW.....	4
4a. Site with a highly calcareous subsoil (<10" (25cm)), often gravelly or skeletal subsoil OR underlain by soft calcareous materials and slopes >15%.....	5
5a. Moderately deep to deep soil (>20" (50cm)) with highly calcareous (violent effervescence) subsoil at <10" (25cm), often gravelly or skeletal and on 15 to 35% slopes, black sagebrush dominant shrub species.....	Shallow Loamy, calcareous (SwLyca)
5b. Shallow sandy and loamy soils (10-20" (25-50cm)), often cobbly or channery with slopes >35%, underlain by soft calcareous materials with many outcrops of sedimentary rock, mountain mahogany, bluebunch wheatgrass, Indian ricegrass common.....	Rocky Hills (RH)
4b. Site without highly calcareous subsoil or bedrock, OR if lime horizon present, accompanied by high volume of coarse fragments at soil surface, slopes variable.....	6
6a. Soil is skeletal with coarse fragments common on surface and throughout profile (>35% by volume in top 20" (50cm)).....	7
7a. Site occurs along terrace breaks, steep slopes, or terraces with coarse fragments up to 10" diameter covering 50-75% of surface and making up 40-50% volume in top 20" (50cm), may have lime horizon below 12", often westerly aspect and windswept ridges, soils are excessively well drained loamy sands, sandy loams and fine sandy loams, bluebunch wheatgrass, Indian ricegrass, needleandthread, winterfat, fringed sage common, productivity potential VERY LOW.....	Gravelly (Gr)
7b. Fractured sedimentary bedrock at 10-20" (25-50cm) with gravel, cobble, stone, and angular fragments on the surface and throughout soil profile, inclusions of very shallow to deep pockets of soil, loamy well drained soils commonly on south & west facing slopes, juniper common with bluebunch wheatgrass (productivity potential higher than Very Shallow (VS) site).....	Shallow Breaks (SwB)
7c. Skeletal soil that does not fit either condition above, glacial till with large boulders on surface, moderate productivity potential, Mountain big sagebrush and bluebunch wheatgrass common.....	Coarse Upland (CU)
6b. Soils without high amount of coarse fragments at soil subsurface, but still shallow to bedrock or root restricting layer.....	8
8a. Medium to fine textured soils over igneous or volcanic bedrock, bitterbrush common.....	Shallow Igneous (SwI)
8d. Soils not as above.....	9
9a. Soils not as above.....	10
10a. Well drained loamy sand, sandy loams, or fine sandy loams over sedimentary bedrock or calcium carbonate or similar layer that restricts rooting depth, Indian ricegrass, needleandthread common, fringed sagebrush, stemless mock goldenweed and/or Wyoming big sage may be present.....	Shallow Sandy (SwSy)
10b. Well-drained sandy clay loam, clay loam, or silty clay loams over fractured shale bedrock, Wyoming big sage dominant shrub.....	Shallow Clayey (SwCy)
10c. Well-drained fine sandy loam to silty loams over sedimentary bedrock or loams with root restricting layer (i.e. rock layer and/or similar layer); Wyoming big sagebrush or possibly Wyoming big sage intermixed with early (alkali) sagebrush.....	Shallow Loamy (SwLy)
GROUP III – Upland Sites that are Moderately Deep to Very Deep (>20" (>50cm))	
1a. Site affected by soil chemistry (salinity, sodicity, and/or calcium carbonates) within the rooting depth of herbaceous plants (10-20" (25-50cm)).....	2
2a. Soils slightly saline to moderately saline or greater (>4mmhos/cm), calcareous or not.....	3
3a. Silty clay and clay surface textures that are only slightly saline (<8mmhos/cm), but strongly alkaline (pH >8.5), permeability very low, birdfoot sage dominant shrub.....	Impervious Clay (IC)
3b. Loamy surface textures (fine sandy loam to sandy clay loam), sodic (SAR >13, EC <4mmhos/cm) or saline-sodic (SAR >13, EC >4mmhos/cm) within 10" (25cm) to 20" (50cm) of soil surface, calcareous throughout but slight at surface and increasing with depth, permeability moderately slow to slow due to excess sodium in the substratum, birdfoot sagebrush and Gardner' saltbush co-dominant shrubs.....(only in Laramie Basin LRU)....	Saline Loamy (SnLy)

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3c. Surface textures range from sandy loam to clay loam, moderately saline or greater (>8mmhos/cm), or sodic (SAR >13, EC <4mmhos), Gardner's saltbush, winterfat, bud sage common shrubs Indian ricegrass, bottlebrush squirreltail common grasses (if root restrictive layer present and productivity very low consider Shale site – Group II)	Saline Upland (SU)	
2b. Soils highly calcareous (>15% CCE within top 10" (25cm)), but not saline (<4mmhos/cm)		4
4a. Soils very fine sandy loams to sandy clay loams, with strong to violent effervescence between 10" (25cm) and 20" (50cm) of the soil surface, Wyoming big sage dominant shrub.....	Loamy calcareous (Lyc)	
4b. Soils very fine sandy loams to sandy clay loams, strong to violent effervescence at the soil surface, winterfat dominant shrub.....	Limy (Li)	
1b. Sites are not affected by soil chemistry.....		5
5a. Sites with a high volume of coarse fragments in top 20" (>35% by volume)		6
6a. Site occurs along terrace breaks, steep slopes, or terraces with coarse fragments up to 10" diameter covering 50-75% of surface and making up 40-50% volume in top 20" (50cm), may have lime horizon below 12", often westerly aspect and windswept ridges, soils are excessively well drained loamy sands, sandy loams and fine sandy loams, bluebunch wheatgrass, Indian ricegrass, needleandthread, winterfat, fringed sage common, productivity potential VERY LOW.....	Gravelly (Gr)	
6b. Site occurs on glacial till landscapes with large boulders on the surface, soils are well drained, sandy loam or loam surface, 35% or more coarse fragments (gravel, cobble, stone, and flagstone) within 20" (50cm) of the surface and generally increasing with depth, Mountain big sagebrush, bluebunch wheatgrass, and antelope bitterbrush common, black sagebrush (east of Continental Divide), productivity potential high	Coarse Upland (CU)	
5b. Sites without high volume of coarse fragments.....		7
7a. Sites in a lowland position that may receive additional runoff, basin big sagebrush, silver sagebrush common.....	Group I	
7b. Sites in upland position.....		8
8a. Soil textures are heavy, slight to severe soil cracking in dry conditions.....		9
9a. Well drained sandy clay loam, silty clay loam and clay loams soil cracking common during dry summer months, though not severe, Wyoming big sagebrush common, but sparse, with a lot of western wheatgrass, green needlegrass east of the Continental Divide.....	Clayey (Cy)	
9b. Heavy clay soils (silty clays or clays), severe cracking during dry summer months, low or early (alkali) sage common.....		10
10a. Root restricting clay loam to clay subsoil layer with sharply contrasting loam to clay loam surface textures, soil may develop large cracks when dry, early (alkali) sage dominant.....	Loamy Argillic (LyA)	
10b. Heavy clay soils with severe soil cracking in dry conditions, very sticky when wet, (slick spot), western wheatgrass, bottlebrush squirreltail, low sagebrush.....	Dense Clay (DC)	
8a. Soil textures not as above.....		11
11a. Excessively drained soils that are very coarse (loamy sand to sand), on nearly level to rolling uplands or dunes, dark or light colored, needleandthread Indian ricegrass, and thickspike wheatgrass are dominant species, basin big sagebrush/Wyoming big sagebrush may occur.....	Sands (Sa)	
11b. Soil textures range from very fine sandy loam to clay loam.....		12
12a. Soils loamy fine sand to fine sandy loam, Wyoming big sagebrush dominant shrub, needleandthread & Indian ricegrass common, productivity potential is high (Note: Soils with <6" (15cm) sandy loam surface layer over sandy clay loam or clay loams are excluded, got to 12b).....	Sandy (Sy)	
12b. Soils very fine sandy loams to clay loams, a good variety and even mix of grass species.....		13
13a. Slopes >15%, Wyoming big sagebrush dominant shrub.....	Steep Loamy (SLy)	
13a. Slopes <15%, productivity potential is high, well-drained site (Note: soils with <6" (15cm) sandy loam surface layer over sandy clay loam or clay loam is included), Wyoming big sagebrush is dominant shrub.....	Loamy (Ly)	

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Ecological sites are native rangeland sites that differ from each other in their ability to produce different kinds and/or amounts of vegetation. Soils, precipitation, and geographical location are combined to designate a specific ecological site. The sites are listed in alphabetical order according to the site name.

Names of the ecological sites occurring on your ranch operation are highlighted yellow, and these sites are separated by solid white lines on your conservation plan and/or range inventory map.

<u>Symbol</u>	<u>Site Name</u>	
Cy	Clayey	These are heavy clay loam to clay soils with slow permeability that occur in an upland position.
CyO	Clayey Overflow	These are clay loam soils that are found along drainageways and in playa areas.
CU	Coarse Upland	These are deep soils with a very bouldery surface on rough topography. Water intake is fairly rapid. Occurring on glacial till
DC	Dense Clay	These are deep, heavy clay soils with slow permeability that occur on relatively flat topography.
Gr	Gravelly	These are soils with high coarse fragments (>35% by volume) in top 20 inches. Occurring on westerly aspect, windswept ridges
IC	Impervious Clay	These are heavy clay soils with high amounts of sodium. (saline, >8mmhos/cm but strongly alkaline, pH>8.5)
Ig	Igneous	These are very shallow soils over igneous material with areas of exposed bedrock.
Li	Limy	These soils are deep soils with violent effervescence (CCE >15%) throughout
LyA	Loamy Argillic	These are moderately deep to very deep loam or clay loam soils usually overlying clay loam or clay soils with heavy clay increase in top 20 inches (root restricting)
Ly	Loamy	These are moderately deep to very deep, very fine sandy loam to light clay loam soils that occur in an upland position with less than 15% slopes
LyC	Loamy Calcareous	These soils are moderately deep to very deep, very fine sandy loam to light clay loam soils with calcareous layer >15%CCE at 10-20" depth
LyO	Loamy Overflow	These are loamy soils that are found along drainageways and in playa areas. (To be used interchangeably with Overflow east of Continental Divide)
LL	Lowland	These are well-drained soils along streams with a water table below 3 feet, but within rooting depth of woody plants. (gravelly of skeletal)
Ov	Overflow	These are loamy soils that are found along drainageways and in playa areas.
RH	Rocky Hills	These are shallow, loamy fine sand to fine sandy loam soils over soft calcareous material with outcropping sedimentary bedrock.
SL	Saline Lowland	These are saline soils usually found along a stream with a water table below 3 feet, but within rooting depth of woody plants
SLdr	Saline Lowland, drained	These are saline soils found along a drainageway with a water table below rooting depth of woody plants, usually as a result of downcutting.
SS	Saline Subirrigated	These are saline soils with a water table near the surface most of the growing season. . (>8mmhos/cm in top 20", 50cm)
SnLy	Saline Loamy	These are deep, saline soils usually in a low or flat position, but with no associated water table. (only occurs in Laramie Basin) (saline, >8mmhos/cm or sodic, SAR >13, EC>4mmhos/cm)
SU	Saline Upland	These are deep, saline soils usually in a low or flat position, but with no associated water table. (saline, >8mmhos/cm or sodic, SAR >13, EC>4mmhos/cm)
Sa	Sands	These are sand to loam sands textured soils that sometimes form dunes.
Sy	Sandy	These are deep, loamy fine sand to fine sandy loam soils that occur in an upland position.

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Sh	Shale	These are very shallow, often salt influenced, over soft or hard shale. Runoff is rapid and erosion often severe.
SwB	Shallow Breaks	These are shallow soils with some coarse fragments, usually on south and west facing slopes. Outcropping of sandstone and shale
SwCy	Shallow Clayey	These are shallow or skeletal, clayey soils usually overlying clay shale bedrock.
SwI	Shallow Igneous	These are shallow soils over igneous material.
SwLy	Shallow Loamy	These are shallow or skeletal, loamy soils usually overlying shale.
SwLyca	Shallow Loamy, calcareous	These are shallow or skeletal, loamy soils usually overlying limestone. CCE>15% in the top 10" (25cm)
SwSy	Shallow Sandy	These are shallow or skeletal, sandy soils usually overlying sandstone or shale.
Sly	Steep Loamy	These are moderately deep to very deep very fine sandy loam to light clay loam soils with >15% slopes
Sb	Subirrigated	These are deep soils that have a water table near the surface for part or most of the growing season. Water table 20-40", 50-100cm
VS	Very Shallow	These are very shallow soils with areas of exposed bedrock.
WL	Wetland	These are poorly drained soils that have a water table above the surface for part of the growing season. Water table above 20", 50cm

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