

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

This draft ecological site description is approved for field use and testing for a one year period beginning MM, YYYY.
Additional information and comments on this site should be sent to the Utah State Range Management Specialist.

STATE: Utah

SITE TYPE: Rangeland

ECOLOGICAL SITE NAME: Upland Stony Loam (Singleleaf pinyon-Utah juniper)

SITE NUMBER: 028AY338UT

MLRA: 028A

Original Site Description: Author: DJS

Date: 01/01/1987

Revised Site Description: Author: DJS

Date: 06/30/1993

Approved by: Title: State Range Cons.

Signed: Pat Shaver

Date: 08/30/1993

Ecological Site Definition - A distinctive kind of land, with specific physical characteristics, which differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation, and in its response to management.

A. PHYSICAL CHARACTERISTICS

(description narrative of this particular site)

1. SOILS

Depth: 24-60 inches

Surface Textures: Gravelly Loam

Surface Fragments(<=3" % cover, >3" % cover): 35%

Subsurface Textures:

Subsurface Fragments(<=3" % vol, >3" % vol): 35-60%

Geologic Parent Materials: Alluvium and Colluvium from Mixed Sedimentary and Metamorphic Parent Materials

Moisture Regime:

Temperature Regime:

Runoff:

Permeability(min-max): Moderate

Drainage Class(min-max): Well Drained

Water Erosion Hazard:

Wind Erosion Hazard:

Electrical Conductivity (EC in mmhos/cm):

Sodium Adsorption Ration (SAR):

Soil Reaction (1:1 water):

Soil Reaction (0.1 M CaCl₂):

pH Range:

Available Water Capacity (inches): 3-5

Major Soils Associated With This Site:

Soil Survey Area: 611

Abela GRV-L

Fontreen GR-L

Clavicon GRV-L

Kapod CBV-L

Additional information may be found in Section II of the Field Office Technical Guide.

Site Type: Rangeland

Ecological Site Name: Upland Stony Loam (Singleleaf pinyon-Utah juniper)

Site Number: 028AY338UT

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Foothills, Rolling Hills, Lake Terraces, Alluvial and Colluvial Fans and Mountainsides

Aspect: High Elevation-North / Low Elevation-South

	<u>Minimum</u>	<u>Maximum</u>
Slope:	20	60
Elevation:	6200	8500
Flooding:		
Frequency:		
Duration:		
Ponding:		
Depth (inches):		
Frequency:		
Duration:		
Water Table Depth:		

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 12-16

Mean Annual Air Temperature: 45-48

Mean Annual Soil Temperature: 47-50

Frost Free Period (days): 0-0

Freeze Free Period (days): 80-150

Temperature and Moisture Distribution:

Temp	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	37	43	52	61	72	82	91	89	79	66	50	40
Mean	27	32	40	48	58	67	75	73	64	52	39	29
Low	16	21	28	35	43	52	59	58	45	37	27	19

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	1.70	1.90	2.30	2.30	2.30	1.60	1.30	1.60	2.00	2.10	1.90	1.90
Mean	1.20	1.30	1.60	1.60	1.50	0.90	0.80	1.00	1.20	1.40	1.30	1.20
Low	0.60	0.60	0.70	0.70	0.60	0.30	0.30	0.30	0.30	0.60	0.60	0.50

Climate Stations: St. ID.:

Location:

Period:

From: To:

(Includes factors such as storm intensity, precipitation dependability, origin and pattern of storms, driest and wettest months, orographic effects, etc.)

Influencing Water Features (if any):

Wetland Description(Cowardin System) System Subsystem Class

Stream Types(Rosgen System) System

C. PLANT COMMUNITY CHARACTERISTICS

Site Type: Rangeland
 Ecological Site Name: Upland Stony Loam (Singleleaf pinyon-Utah juniper)
 Site Number: 028AY338UT

1. Potential Plant Community Description and Ecological Factors

The dominant aspect of this plant community is Utah juniper-singleleaf pinyon. The composition by air-dry weight is approximately 45 percent perennial grasses, 5 percent forbs, 50 percent shrubs and 10 percent trees.

2. Plant Community Composition by Weight and Percentage

Grasses and Grasslike, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Bluebunch wheatgrass	PSSP6		97.5	162.5	15	25
Muttongrass	POFE		32.5	65	5	10
Indian ricegrass	ACHY		32.5	65	5	10
Needleandthread	HECO26		19.5	32.5	3	5
Bottlebrush squirreltail	ELEL5	1	6.5	19.5	1	3
Blue grama	BOGR2	1	6.5	19.5	1	3
Western wheatgrass	PASM	1	6.5	19.5	1	3
Sandberg bluegrass	POSE	1	6.5	19.5	1	3
Prairie junegrass	KOMA	1	6.5	19.5	1	3
Geyer sedge	CAGE2	1	6.5	19.5	1	3
Galleta	HIJA	1	6.5	19.5	1	3
Purple threeawn	ARPU9	1	6.5	19.5	1	3
Salina wildrye	LESAS	1	6.5	19.5	1	3
Nevada bluegrass	PONE3	1	6.5	19.5	1	3
Other perennial grasses	PPGG	1	19.5	32.5	3	5
Other annual grasses	AAGG	1	19.5	32.5	3	5

Forbs, %

Common Name	National	Group	Pounds per Acre	% by Weight of
-------------	----------	-------	-----------------	----------------

Site Type: Rangeland

Ecological Site Name: Upland Stony Loam (Singleleaf pinyon-Utah juniper)

Site Number: 028AY338UT

	Symbol		Pounds per Acre		Total Composition	
			Low	High	Low	High
Longleaf hawksbeard	CRAC2		19.5	32.5	3	5
Carpet phlox	PHHO	2	6.5	19.5	1	3
Cushion wild buckwheat	EROV	2	6.5	19.5	1	3
Utah milkvetch	ASUT	2	6.5	19.5	1	3
Skyrocket ballhead	IPCOC3	2	6.5	19.5	1	3
Lobeleaf groundsel	SEMU3	2	6.5	19.5	1	3
Wyoming Indian paintbrush	CALI4	2	6.5	19.5	1	3
Blue flax	LIPE2	2	6.5	19.5	1	3
Pacific aster	ASCH2	2	6.5	19.5	1	3
Shaggy fleabane	ERPU2	2	6.5	19.5	1	3
Chambers twinpod	PHCH2	2	6.5	19.5	1	3
Grassy rockgoldenrod	PEPU2	2	6.5	19.5	1	3
Sego lily	CANU3	2	6.5	19.5	1	3
Fiddleleaf hawksbeard	CRRU3	2	6.5	19.5	1	3
Other perennial forbs	PPFF	2	19.5	32.5	3	5
Other annual forbs	AAFF	2	19.5	32.5	3	5

Shrubs/Vines, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Mountain big sagebrush	ARTRV		97.5	130	15	20
Bitterbrush	PUTR2		65	97.5	10	15
Black sagebrush	ARNO4		32.5	65	5	10
Utah serviceberry	AMUT		19.5	32.5	3	5
Nevada jointfir	EPNE		19.5	32.5	3	5
Mountain snowberry	SYOR2	3	6.5	19.5	1	3
Birchleaf mountainmahogany	CEMO2	3	6.5	19.5	1	3
Low rabbitbrush	CHVI8	3	6.5	19.5	1	3
Mexican cliffrose	PUME	3	6.5	19.5	1	3
Mormontea	EPVI	3	6.5	19.5	1	3
Slender wild buckwheat	ERMI4	3	6.5	19.5	1	3
Broom snakeweed	GUSA2	3	6.5	19.5	1	3
Fourwing saltbush	ATCA2	3	6.5	19.5	1	3
Other shrubs	SSSS	3	19.5	32.5	3	5

Trees, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Singleleaf pinyon	PIMO	4	78	97.5	12	15
Utah juniper	JUOS	4	19.5	32.5	3	5

3. Plant Community Annual Production

At the highest potential similarity index, this site will produce approximately the following amount of air-dry herbage, expressed as pounds/acre:

Site Type: Rangeland
 Ecological Site Name: Upland Stony Loam (Singleleaf pinyon-Utah juniper)
 Site Number: 028AY338UT

	Low	High
Favorable Year	650	850
Average Year	450	650
Unfavorable Year	250	350

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	25	2	10
Forbs (perennial)	3	2	2
Shrubs	30	3.5	15
Trees	10	10	5
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As ecological condition deteriorates due to overgrazing, bluebunch wheatgrass, Indian ricegrass, bitterbrush, and mountainmahogany decrease, while juniper, pinyon, big sagebrush and low rabbitbrush increase.

When the potential natural plant community is burned, pinyon, juniper, big sagebrush, and bitterbrush decrease while low rabbitbrush, serviceberry and Sandberg bluegrass increase.

Cheatgrass, Russian thistle and annual forbs are most likely to invade this site.

Plant Communities & Transitional Pathways

(Show a steady state diagram with influences to move from one steady state to another)

6. Plant Growth Curves

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Percent	0	0	0	10	30	45	5	5	5	0	0	0

Site Type: Rangeland

Ecological Site Name: Upland Stony Loam (Singleleaf pinyon-Utah juniper)

Site Number: 028AY338UT

Growth													
Name	UT3381												
ID Number	PNC												
Description	Excellent Condition												

7. Aspect Differences Near MLRA Boundaries

(Give related range sites in MLRA's above and below)

8. Associated Sites Within MLRA

028AY320UT

Upland Shallow Hardpan (Singleleaf pinyon-Utah juniper)

028AY310UT

Upland Loam (Mountain big sagebrush)

028AY334UT

Upland Stony Loam (Wyoming big sagebrush)

9. Correlated Sites in Other States

(Give site name and number)

D. MAJOR USES OF THIS SITE

1. Livestock

a. Site Factors Influencing Management

This site is suited for cattle and sheep grazing during spring, summer, and fall.

b. Guide to Forage Quality(Plant preference by season)

Species	Oct-Nov	Dec-Feb	Mar-May	Jun-Sep

VG = Very Good G = Good F = Fair P = Poor

2. Wildlife

a. Site Factors Influencing Management

This site provides food and cover for wildlife.

Site Type: Rangeland
 Ecological Site Name: Upland Stony Loam (Singleleaf pinyon-Utah juniper)
 Site Number: 028AY338UT

b. List of Potential Species Present

Wildlife using this site include rabbit, coyote, sage grouse, pronghorn antelope, mule deer, and elk.

This is a short list of the more common species found. Many other species are present as well and migratory birds are present at times.

c. Guide to Forage Preference of Managed Wildlife Species

Wildlife Species →				
Plant Species ↓	Use	Season	Use	Season

Use - A = preferred or desirable
 B = some use, but less important
 C = little use or used occasionally

Season - F = Fall (Oct-Nov)
 W = Winter (Dec-Feb)
 Sp. = Spring (Mar-May)
 Su. = Summer (Jun-Sep)

3. Recreational Uses

Resources that have special aesthetic and landscape values are wildflowers. Some recreation uses of this site are hiking, picnicking, and hunting.

4. Wood Products

Potential wood products are post, fuel, Christmas trees, and nuts.

5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

1. Plants
2. Animals

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County:
 Latitude: Longitude:

Modal Soil: Abela GRV-L – loamy-skeletal, mixed, mesic Aridic Calcixerolls

Site Type: Rangeland

Ecological Site Name: Upland Stony Loam (Singleleaf pinyon-Utah juniper)

Site Number: 028AY338UT

Type Location: Cedar Hills West of Yost, Box Elder County, Utah, 1500 ft. North 500 ft. East of SW Corner of Section 3, Township 14N, Range 16W. Indian Peak, Iron County.

General Legal Description:

Field Office Site Location

Logan

Murray

Provo

Richfield

Cedar City

Data Collected and References

Sampling Source	Number of Records	Range Similarity Index			
		> 76%	51-75%	26-50%	0-25%
NRCS - ECS - 417					
UTAH - RANGE - 2					
Permanent Transect Location					

Other References

Attachment 1

Ecological Reference Worksheet

Author(s)/participant(s): V. Keith Wadman
 Contact for lead author: _____ Reference site used? Yes/No
 Date: 6/20/04 MLRA: 028A Ecological Site: Upland Stony loam (28AY338UT) Pinyon-juniper, Bluebunch wheatgrass, Mountain big sagebrush This must be verified based on soils and climate (see Ecological Site Description). Current plant community cannot be used to identify the ecological site.

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.

1. Number and extent of rills: Minor rill development in exposed areas. Rills present should be short on flatter slopes but may become longer (4 to 12 feet) as slope steepens. They should be somewhat widely spaced (3 to 6 feet), and follow the surface micro-features. Old rills should be weathered and muted in appearance. An increase in rill formation may be seen after disturbance events such as recent fire or thunderstorms. The presence of surface coarse fragments may reduce rill formation.

2. Presence of water flow patterns: Flow patterns wind around surface rock & perennial plant bases and show minor evidence of erosion. They are somewhat short and stable and there is only minor evidence of deposition. Evidence of flow will increase somewhat with slope.

3. Number and height of erosional pedestals or terracettes: Plants may show minor pedestaling on their down slope side. Terracettes should be few and stable.

4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bareground): 15 - 25%. (35% of soil surface is covered with rock).

5. Number of gullies and erosion associated with gullies: Few. Gullies should show only minor signs of active erosion and should be mostly stabilized with vegetation. Gullies may show slightly more indication of erosion as slope steepens. The presence of surface rock may mask erosion indicators.

6. Extent of wind scoured, blowouts and/or depositional areas: Little evidence of wind generated soil movement. Wind caused blowouts and deposition are not present.

7. Amount of litter movement (describe size and distance expected to travel): Some down slope redistribution caused by water. Some litter removal may occur in flow channels with deposition occurring at points of obstruction. Litter movement will increase with slope.

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): 60 to 70% of this site should have an erosion rating of 4 or 5. 30 to 40% may have a rating of 2 to 4. The average should be a 4. Litter accumulation and cryptogamic crusts reduce erosion. The presence of surface rock also reduces site erosion.

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): Soil surface varies from 4 to 5 inches. Structure is granular. Color is grayish brown (10YR5/2). A mollic epipedon extends to about 15 inches.

10. Effect of plant community composition (relative proportion of different functional

Site Type: Rangeland

10

Ecological Site Name: Upland Stony Loam (Singleleaf pinyon-Utah juniper)

Site Number: 028AY338UT

groups) & spatial distribution on infiltration & runoff: When perennial grasses decrease, reducing ground cover and increasing bare ground, runoff will increase and infiltration will be reduced. Significant increases in Pinyon-juniper canopy reduces understory vegetation and increases runoff.

11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): None.

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): Assumed fire cycle of 40-60 years. Perennial grasses, non-sprouting shrubs > sprouting shrubs, annual forbs > invaders such as Cheatgrass & Annual forbs. Dominants: Bluebunch wheatgrass & Mountain big sagebrush; Sub-dominants: Muttongrass, Bitterbrush, Black sagebrush. The perennial grass/non-sprouting shrub functioning group is expected as understory on this site.

13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence): All age classes of perennial grasses should be present. Slight decadence in the principle shrubs and overstory trees could occur near the end of the fire cycle.

14. Average percent litter cover (10-15%) and depth (.25-.50 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 450 - 650 #/acre on an average year.

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": Cheatgrass, Green rabbitbrush, Snakeweed, Sandberg bluegrass & Annual forbs.

17. Perennial plant reproductive capability: All perennial plants should have the ability to reproduce in all years, except in extreme drought years. Understory reproduction is reduced as overstory canopy closes.