

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 Shallow Loam (Utah juniper–Singleleaf pinyon)

SITE NUMBER: 028AY324UT

MLRA: 028A

Original Site Description: Author: DJS

Date: 03/01/1988

Revised Site Description: Author: DJS

Date: 06/29/1993

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: 10-20 inches

Surface Textures: Very Gravelly Loam

Surface Fragments(<=3" % cover, >3" % cover): 50%

Subsurface Textures:

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

Geologic Parent Materials: Colluvium and Residuum from Limestone and Chert

Moisture Regime:

Temperature Regime:

Runoff: Rapid to Very Rapid

Permeability(min-max): Moderately to Rapidly

Drainage Class(min-max): Somewhat Excessively Drained

Water Erosion Hazard: Severe to Very Severe

Wind Erosion Hazard:

Electrical Conductivity (EC in mmhos/cm):

Sodium Adsorption Ration (SAR):

Soil Reaction (1:1 water):

Soil Reaction (0.1 M CaCl<sub>2</sub>):

pH Range:

Available Water Capacity (inches): 1-5

Major Soils Associated With This Site:

Soil Survey Area: 608

Amtoft ST-L, Moist

Lundy GRV-L

Pioche

Itcz

Lodar GRV-L

Reywat CBV-L

Bodacious

Cederan

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



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**1. Potential Plant Community Description and Ecological Factors**

The dominant aspect of this plant community is an open stand of Utah juniper with small amounts of pinyon pine. The composition by air-dry weight is approximately 50-60 percent perennial grasses, 3-5 percent forbs, 40-50 percent shrubs, and 10-15 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		90	120	15	20
Nevada bluegrass	PONE3		60	90	10	15
Indian ricegrass	ACHY		30	60	5	10
Bottlebrush squirreltail	ELEL5		18	30	3	5
Western wheatgrass	PASM	1	6	18	1	3
Needleandthread	HECO26	1	6	18	1	3
Prairie junegrass	KOMA	1	6	18	1	3
Salina wildrye	LESAS	1	6	18	1	3
Blue grama	BOGR2	1	6	18	1	3
Galleta	HIJA	1	6	18	1	3
Sand dropseed	SPCR	1	6	18	1	3
Geyer sedge	CAGE2	1	6	18	1	3
Other perennial grasses	PPGG	1	30	60	5	10
Other annual grasses	AAGG	1	30	60	5	10

Forbs, %

Common Name	National	Group	Pounds per Acre	% by Weight of
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	Symbol				Total Composition	
			Low	High	Low	High
Low beardtongue	PEHU	2	6	18	1	3
Pacific aster	ASCH2	2	6	18	1	3
Grassy rockgoldenrod	PEPU7	2	6	18	1	3
Longleaf phlox	PHLO2	2	6	18	1	3
Ballhead skyrocket	IPCOC3	2	6	18	1	3
Cushion wild buckwheat	EROV	2	6	18	1	3
Longleaf hawksbeard	CRAC2	2	6	18	1	3
Gooseberry globemallow	SPGR2	2	6	18	1	3
Dustymaiden	CHDO	2	6	18	1	3
Roundspike catseye	CRHU2	2	6	18	1	3
Shaggy fleabane	ERPU2	2	6	18	1	3
Small leaf pussytoes	ANMI3	2	6	18	1	3
Fendler sandwort	ARFE3	2	6	18	1	3
Wyoming Indian paintbrush	CALI4	2	6	18	1	3
Freckled milkvetch	ASLE8	2	6	18	1	3
Lambs quarters	CHAL7	2	6	18	1	3
Western tansymustard	DEPI	2	6	18	1	3
Other perennial forbs	PPFF	2	30	60	5	10
Other annual forbs	AAFF	2	30	60	5	10

Shrubs/Vines, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Black sagebrush	ARNO4		120	150	20	25
Bitterbrush	PUTR2		30	60	5	10
Birchleaf mountainmahogany	CEMO2		30	60	5	10
Low rabbitbrush	CHVI8	3	6	18	1	3
Mexican cliffrose	PUME	3	6	18	1	3
Nevada jointfir	EPNE	3	6	18	1	3
Mountain snowberry	SYOR2	3	6	18	1	3
Wyoming big sagebrush	ARTRW	3	6	18	1	3
Utah serviceberry	AMUT	3	6	18	1	3
Littleleaf mountainmahogany	CEIN7	3	6	18	1	3
Central pricklypear	OPPO	3	6	18	1	3
Curleaf mountainmahogany	CELE3	3	6	18	1	3
Broom snakeweed	GUSA2	3	6	18	1	3
Mountain big sagebrush	ARTRV	3	6	18	1	3
Mojave buckbrush	CEGR	3	6	18	1	3
Other shrubs	SSSS	3	18	30	3	5

Trees, %

Common Name	National Symbol	Group	Pounds per Acre	% by Weight of Total Composition
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		Low	High	Low	High
Utah juniper	JUOS	72	90	12	15
Singleleaf pinyon	PIMO	18	30	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:

	Low	High
Favorable Year	600	800
Average Year	400	600
Unfavorable Year	100	300

### **4. Ground Cover and Structure**

#### a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	30	2	10
Forbs (perennial)	5	2	3
Shrubs	40	2	15
Trees	20	10	10
Cryptogams			

#### b. Other

Litter	
Coarse Fragments	
Bare Ground	

### **5. Ecological Dynamics of the Site**

As ecological condition deteriorates due to overgrazing, Bluebunch wheatgrass and Indian ricegrass decrease, while rabbitbrush, sagebrush, and annual grasses and forbs increase.

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

Cheatgrass 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

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Growth														
Name	UT3241													
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**

028AY318UT  
 Upland Shallow Loam (Black sagebrush)

028AY320UT  
 Upland Shallow Hardpan (Singleleaf pinyon-Utah juniper)

028AY338UT  
 Upland Stony Loam (Singleleaf pinyon-Utah juniper)

028AY418UT  
 Mountain Loam (Bigtooth maple)

**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 grazing by cattle and sheep during spring, summer, and fall.

Grazing suitability is fair because of low production in the understory.

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

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This site provides food and cover for wildlife.

**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 hunting, hiking and picnicking.

**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: Juab  
 Latitude:                      Longitude:

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Modal Soil: Amtoft ST-L, Moist – loamy-skeletal, carbonatic, mesic Lithic Xerollic Calciorthid

Type Location: SE ¼ of the SW ¼, Section 36, Township 15S, Range 2W

General Legal Description: Map 87, P-6, PF14-4 Warm Springs Soil Survey, Needle Range-Beaver, Co.

### **Field Office Site Location**

Logan

Provo

Cedar City

Murray

Richfield

### **Data Collected and References**

Sampling Source	Number of Records	Range Similarity Index			
		> 76%	51-75%	26-50%	0-25%
NRCS - ECS - 417	34				
UTAH - RANGE - 2	24				
Permanent Transect Location					

### **Other References**

## Attachment 1

Ecological Reference Worksheet
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Author(s)/participant(s): V. Keith Wadman  
 Contact for lead author: \_\_\_\_\_ Reference site used? Yes/No  
 Date: 6/19/04 MLRA: 028A Ecological Site: Upland Shallow loam (028AY324UT) Pinyon-juniper, Bluebunch wheatgrass, Black 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): 10 - 20%. (50% 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 2 to 4 inches. Structure is fine granular. Color is brown (10YR5/3). An mollic or ochric epipedon extends to about 8 inches.

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

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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. Bedrock occurs at 15 to 20 inches that could be mistaken for a compaction layer.

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 & Nevada bluegrass; Sub-dominants: Black sagebrush, Bitterbrush & Birchleaf mountainmahogany. 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): 400 - 600 #/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.