

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)

SITE NUMBER: 025XY324UT

MLRA: o25

Original Site Description: Author: GBB

Date: 01/15/1985

Revised Site Description: Author: GBB

Date: 02/07/1994

Approved by: Title: State Range Cons. Signed: Pat Shaver

Date: 04/25/1994

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:

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

Subsurface Textures: >50%

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

Geologic Parent Materials: Colluvium from Tuffaceous Sandstone & Conglom.

Moisture Regime:

Temperature Regime:

Runoff: High

Permeability(min-max): Rapid

Drainage Class(min-max): Well drained

Water Erosion Hazard: High

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): 0.5-1.5

Major Soils Associated With This Site:

Soil Survey Area: 601

Codquin GR-SL

**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 general view of this site is Utah juniper. The composition by air-dry weight is approximately 40 percent perennial grasses, 10 percent forbs, and 40 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	ASSP6		62.5	75	25	30
Indian ricegrass	ACHY		12.5	25	5	10
Bottlebrush squirreltail	ELEL5		7.5	12.5	3	5
Nevada bluegrass	PONE3	1	2.5	7.5	1	3
Great basin wildrye	LECI4	1	2.5	7.5	1	3
Sandberg bluegrass	POSE	1	2.5	7.5	1	3
Other perennial grasses	PPGG	1	7.5	12.5	3	5
Other annual grasses	AAGG	1	7.5	12.5	3	5

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Blue flax	LIPE2	2	2.5	7.5	1	3
Dustymaiden	CHDO	2	2.5	7.5	1	3
Lobeleaf groundsel	SEMU3	2	2.5	7.5	1	3
Cushion wild buckwheat	EROV	2	2.5	7.5	1	3
Carpet phlox	PHHO	2	2.5	7.5	1	3
Arrowleaf balsamroot	BASA3	2	2.5	7.5	1	3
Other perennial forbs	PPFF	2	12.5	25	5	10
Other annual forbs	AAFF	2	12.5	25	5	10

Shrubs/Vines, %

Common Name	National	Group	Pounds per Acre	% by Weight of
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	Symbol				Total Composition	
			Low	High	Low	High
Bitterbrush	PUTR2		25	37.5	10	15
Wyoming big sagebrush	ARTRW		25	37.5	10	15
Saskatoon serviceberry	AMAL2		12.5	25	5	10
Low rabbitbrush	CHVI8	2	7.5	12.5	3	5
Stemless mock goldenweed	STACA	2	7.5	12.5	3	5
Black sagebrush	ARNO4	2	7.5	12.5	3	5
Other shrubs	SSSS	2	12.5	25	5	10

Trees, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Utah juniper	JUOS		12.5	25	5	10

### **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	300	400
Average Year	150	250
Unfavorable Year	50	75

### **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)	5	1	2
Shrubs	25	3	10
Trees	40	12	15
Cryptogams			

b. Other

Litter	
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Coarse Fragments	
Bare Ground	

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

As this site deteriorates due to grazing pressure bluebunch wheatgrass, bitterbrush, and Indian rice grass decrease while juniper, Wyoming big sagebrush and rabbitbrush increase. When the potential natural plant community is burned, bitterbrush, Wyoming big sagebrush, and juniper decrease while rabbitbrush, and stemless mock goldenweed increase.

### **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 Growth	0	0	5	15	40	20	10	5	5	0	0	0
Name	PNC											
ID Number	UT3241											
Description	Excellent Condition											

### **7. Aspect Differences Near MLRA Boundaries**

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

### **8. Associated Sites Within MLRA**

025XY322UT  
 Upland Juniper Savanna (Utah juniper)

025XY314UT  
 Upland Loam (Wyoming big sagebrush)

025XY316UT  
 Upland Shallow Loam (Black 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 provides proper grazing for cattle and sheep during spring, summer, and fall.

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

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

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

**2. Wildlife**

a. Site Factors Influencing Management

This site provides food and cover for wildlife.

b. List of Potential Species Present

Wildlife using this site include blacktail jackrabbit, cottontail, coyote, sage grouse, golden eagle (winter and spring), 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**

Hunting, Hiking, and Camping

**4. Wood Products**

Fire Wood and Posts

**5. Archaeological Values**

A few surface finds of projectile points

**6. Other Uses**

**E. THREATENED AND ENDANGERED SPECIES**

1. Plants

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 2. Animals

## **F. MODAL LOCATION AND DOCUMENTATION**

State: Utah                      County: Box Elder  
 Latitude:                      Longitude:

General Legal Description:

Modal soils: Codquin GR-SL – loamy-skeletal, mixed, calcareous, frigid, shallow Typic Xerorthents

Type location: SW ¼, SE ¼, Section 31, Township 12N, Range 17W  
 SW ¼, SE ¼, Section 10, Township 12N, Range 18W

### **Field Office Site Location**

Logan  
 Box Elder County

### **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	2				
Permanent Transect Location					

### **Other References**

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### Attachment 1

Ecological Reference Worksheet

Author(s)/participant(s): Shane A. Green

Contact for lead author: \_\_\_\_\_ Reference site used? Yes/No

Date: 6/28/06 MLRA: D25 Ecological Site: Upland Shallow loam (025XY324UT) (Juniper) 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 (6 to 15 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 evidence of some 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. Numerous terracettes should be 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 a soil stability 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. Color is white (2.5Y 8/2) gravelly sandy loam, light brownish gray (2.5Y 6/2) moist; single grain; soft, very friable.

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

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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 150-300 years. Perennial grasses, non-sprouting shrubs > Trees > 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 (5-10%) and depth (.25-.50 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): **150 - 250 #/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, 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.**