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 (Pinyon-Utah juniper)
SITE NUMBER: 034XY330UT
MLRA: 034
Original Site Description: Author: JLB GWL Date: 05/18/1981
Revised Site Description: Author: JLB GWL Date: 01/12/1994
Approved by: Title: State Range Cons. Signed: Pat Shaver Date: 06/25/1994

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: 40-60 inches
Surface Textures:
Surface Fragments(<=3" % cover, >3" % cover):
Subsurface Textures:
Subsurface Fragments(<=3" % vol, >3" % vol): >50%
Geologic Parent Materials: Alluvium and Colluvium from Mixed Sedimentary
Moisture Regime:
Temperature Regime: Mesic and Frigid
Runoff: Rapid
Permeability(min-max): Moderately Slow
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):

Major Soils Associated With This Site:

Soil Survey Area: 047

Whetrock CNX-L 8-25%	Chilton CBV-L Moist 25-40%
Clapper STX-L 25-50% Eroded	Whetrock ST-FSL 25-50% Eroded
Struch STV-L 3-15%	Grobutte Family GRV-L 25-40% Eroded

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Pediment Back Slopes, Alluvial Fan and Fan Terraces
Aspect: All

	Minimum	Maximum
Slope:	8	50
Elevation:	6000	7500

Flooding:
- Frequency:
- Duration:

Ponding:
- Depth (inches):
- Frequency:
- Duration:
- Water Table Depth:

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 12-16
Mean Annual Air Temperature: 42-47
Mean Annual Soil Temperature: 45-50
Frost Free Period (days): 0-0
Freeze Free Period (days): 90-125

Temperature and Moisture Distribution:

Temp	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	30	36	48	60	67	78	83	83	72	60	44	32
Mean	17	24	36	46	53	63	69	68	58	48	33	2
Low	4	12	24	33	39	48	54	53	45	35	22	9

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High												
Mean	0.47	0.89	1.36	1.10	1.29	1.32	1.28	0.93	1.90	1.12	1.16	0.72
Low												

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

1. Potential Plant Community Description and Ecological Factors

The dominant aspect of the plant community is pinyon and Utah juniper. The understory composition by air-dry weight is approximately 30 percent perennial grasses, 10 percent forbs and 60 percent shrubs.

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		120	160	15	20
Indian ricegrass	ACHY		8	40	1	5
Needleandthread	HECO26		8	40	1	5
Prairie junegrass	KOMA		8	40	1	5
Geyer sedge	CAGE2	1	8	24	1	3
Bottlebrush squirreltail	ELEL5	1	8	24	1	3
Muttongrass	POFE	1	8	24	1	3
Salina wildrye	LESAS	1	8	24	1	3
Other perennial grasses	PPGG	1	24	40	3	5
Other annual grasses	AAGG	1	24	40	3	5

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Yellow milkvetch	ASFL	2	8	24	1	3
Cushion wild buckwheat	EROV	2	8	24	1	3
Western tansymustard	DEPI	2	8	24	1	3
Longleaf phlox	PHLO2	2	8	24	1	3
Grassy rockgoldenrod	PEPU7	2	8	24	1	3
Shaggy fleabane	ERPU2	2	8	24	1	3
Hoary tansyaster	MACA2	2	8	24	1	3
Thickleaf beardtongue	PEPA6	2	24	24	3	3
Other perennial forbs	PPFF	2	40	80	5	10
Other annual forbs	AAFF	2	40	80	5	10

Shrubs/Vines, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Black sagebrush	ARNO4		160	240	20	30
Birchleaf mountainmahogany	CEMO2		80	120	10	15
Slender wild buckwheat	ERMI4		8	40	1	5
Mormontea	EPVI		8	40	1	5
Spineless horsebrush	TECA2	3	8	24	1	3
Central pricklypear	OPPO	3	8	24	1	3
Bitterbrush	PUTR2	3	8	24	1	3
Wyoming big sagebrush	ARTRW	3	8	24	1	3
Gambel oak	QUGA	3	8	24	1	3
Other shrubs	SSSS	3	40	80	5	10

Trees, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Pinyon pine	PIED		96	225	12	15
Utah juniper	JUOS		24	40	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	900	1000
Average Year	700	800
Unfavorable Year	400	500

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	30	4	15
Trees	35	12	15
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As ecological condition deteriorates due to overgrazing and fire suppression, understory vegetation will decrease while pinyon and Utah juniper will increase to dominate the site. When the potential natural plant community is burned, pinyon, Utah juniper and black sagebrush decrease temporarily, while bluebunch wheatgrass, Salina wildrye and birchleaf mountainmahogany 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	0	10	30	45	5	5	5	0	0	0
Name	PNC											
ID Number	UT3301											
Description	Excellent Condition											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

034XY322UT
Upland Shallow Loam (Pinyon-Utah juniper)

034XY306UT
Upland Loam (Basin 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 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

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

2. Wildlife

a. Site Factors Influencing Management

This site produces food and cover for wildlife.

b. List of Potential Species Present

Wildlife using this site include jackrabbit, woodrat, pinyon jay, coyote, 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

This site has aesthetic appeal but limited recreational potential.

4. Wood Products

There are approximately 12-15 cords of firewood per acre in the potential plant community when the average tree diameter is 5 inches at one foot. About 12 to 15 posts and 10 to 12 Christmas trees are produced per acre. The site index is 60.

5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

1. Plants

2. Animals

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County:
Latitude: Longitude:

Modal Soil: Whetrock CNX 8-25% ST-FSL 25-50% Eroded — loamy-skeletal, mixed Aridic Calciborolls

Type Location: SW ¼, SW ¼, NE¼; Section 16, Township 14S, Range 24E SLBM

General Legal Description:

Field Office Site Location
Roosevelt
Price

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: 6/21/04 **MLRA:** 034X_ **Ecological Site:** Upland Stony loam (034XY330UT) 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 pedestialing 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%. (Surface rock covers 50 to 70% of this site).

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 3 inches. Structure ranges from thin platy to subangular blocky. Color is typically grayish brown (10YR5/2). An ochric or mollic epipedon extends to about 3 to 8 inches.

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.

11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): None. Some soils have bedrock at approximately 30 inches.

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 & Black sagebrush; Sub-dominants: Indian ricegrass, 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 (15-20%**) and depth (**.25-.50 inch**).**

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 700 - 800 #/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, Bottlebrush squirreltail & 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.