

Trend Study 28-20-03

Study site name: South Canyon .

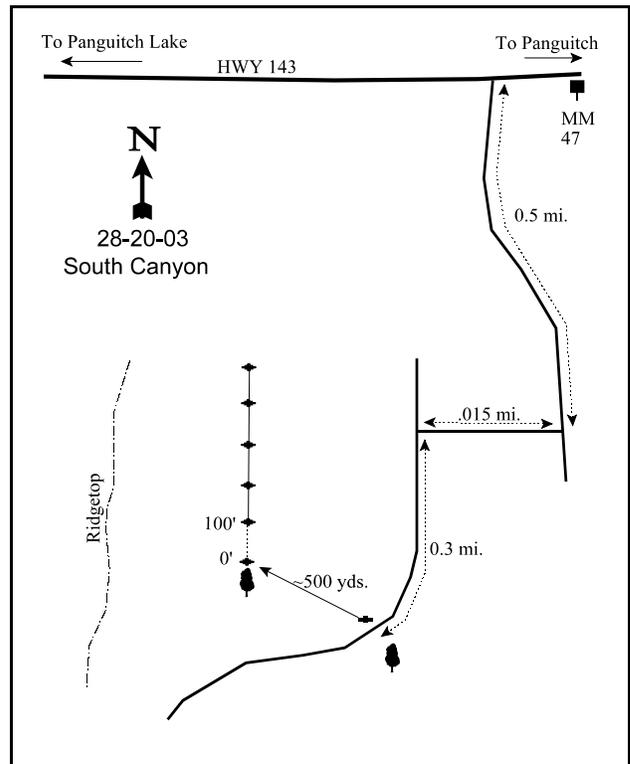
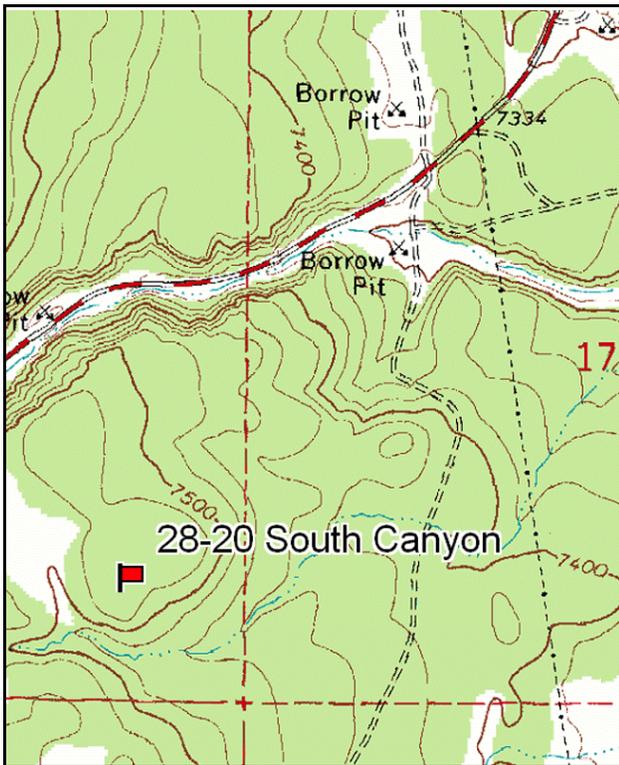
Vegetation type: Pinyon-Juniper .

Compass bearing: frequency baseline 0 degrees magnetic.

Frequency belt placement: line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft). No rebar.

LOCATION DESCRIPTION

On Highway 143, drive toward Panguitch to mile marker 47. About 0.1 miles before mile marker 47, turn on a road going south (right). Drive 0.5 miles to a road going left (west). Turn on this road and drive 0.15 miles until it intersects with a road running north and south. Turn left (south) and drive 0.3 miles to a witness post on the right side of the road. From the witness post, walk 500 yards in a northwest direction to a large ponderosa pine (you will probably need a GPS receiver to find this site as the trees are too thick to take a bearing and pace). The 0-foot stake is 3 paces north of the ponderosa pine.



Map Name: Panguitch

Diagrammatic Sketch

Township 35S, Range 5W, Section 18

GPS: NAD 27, UTM 12S 4180220 N, 371873 E

DISCUSSION

South Canyon - Trend Study No. 28-20

This study was established in 2003 to gather baseline data for a proposed prescribed burn treatment in South Canyon. This site lies on BLM administered land about 4 miles south of Panguitch, and is within the boundaries of a proposed prescribed burn project that was supposed to take place in the late fall of 2003. Terrain is basically level at an elevation of 7,500 feet. The range type is pinyon pine with an understory of black sagebrush and bitterbrush. The area is important winter range for deer and to a lesser extent elk, and the surrounding open areas are used by pronghorn antelope year-round. Pellet group transect data estimated 15 deer and 1 elk day use/acre (38 ddu/ha and 3 edu/ha) in 2003.

Soils are clay loam in texture and slightly acidic in pH (6.2). Soil depth is shallow with an estimated effective rooting depth of less than 9 inches. Rock is very abundant on the surface and throughout the upper portions of the profile. Percent cover of rock and pavement combined was nearly 40% in 2003. Most of the vegetation cover comes from pinyon with very little being provided by herbaceous species. Litter cover is abundant with a high proportion coming from dead pinyon needles underneath the canopy. Bare ground was estimated at only 7% in 2003. An erosion condition class assessment rated soils as stable in 2003.

Pinyon pine dominates the vegetative community with a canopy cover estimated at 37% in 2003. Point-center quarter data estimated 416 pinyon trees/acre with an average basal trunk diameter of 4.3 inches. Black sagebrush density was estimated at 4,300 plants/acre. The population has fair recruitment (6%), but moderate decadence (31%). About 1/4 of the decadent age class was classified as dying which represents ~320 plants/acre that could be lost from the population in the near future. Black sage showed mostly light use and normal vigor. Bitterbrush density was estimated at 800 plants/acre. Decadence was moderate at 33% and use was moderate to heavy. Bitterbrush leaders had averaged 3.3 inches of annual growth when the site was read in late July of 2003.

The herbaceous understory is very poor with low diversity and abundance. Eight total herbaceous species were sampled in 2003 providing only 1.3% ground cover. The dominance of pinyon on the site will continue to suppress the understory until the site can be treated. Due to the low amount of herbaceous species, this site will also need to be reseeded as part of the rehabilitation protocol. The BLM's choice to prescribe burn may not be the best alternative for treatment due to the importance of black sagebrush and bitterbrush to wintering big game. These species are typically fire intolerant and will likely be drastically reduced if not lost entirely from the site if burned. A better alternative may be mechanical treatment such as roller chopping or chaining that would take out pinyon, but leave the understory shrubs intact as well prepare the seedbed for reseeded.

2003 APPARENT TREND ASSESSMENT

Soils appear stable. The abundance of tree and shrub canopy cover as well as pine needles underneath the canopy helps limit erosion. The browse component is dominated by pinyon pine which needs to be decreased. Black sagebrush occurs on the site in moderately high densities but shows signs of depressed health with high decadence and low reproduction. Bitterbrush provides additional preferred browse with an estimated density of 800 plants/acre. Bitterbrush decadence is moderate at 33% and no young or seedling plants were sampled. The health of the sagebrush and bitterbrush populations will continue to decline until the pinyon overstory is treated. The proposed prescribed burn may not be the best alternative as black sagebrush and bitterbrush could be lost from the site. Mechanical treatment, although more expensive and controversial, would give more flexibility to treat pinyon but leave the understory shrubs intact. The herbaceous understory is minimal and in a downward state, and the site needs to be reseeded.

HERBACEOUS TRENDS --

Management unit 28 , Study no: 20

T y p e	Species	Nested Frequency	Average Cover %
		'03	'03
G	<i>Bouteloua gracilis</i>	72	1.00
G	<i>Carex</i> spp.	3	.03
G	<i>Poa fendleriana</i>	3	.03
G	<i>Poa secunda</i>	3	.00
G	<i>Sitanion hystrix</i>	7	.07
Total for Annual Grasses		0	0
Total for Perennial Grasses		88	1.13
Total for Grasses		88	1.13
F	<i>Arabis</i> spp.	3	.00
F	<i>Cryptantha</i> spp.	8	.16
F	<i>Descurainia pinnata</i> (a)	8	.01
Total for Annual Forbs		8	0.01
Total for Perennial Forbs		11	0.16
Total for Forbs		19	0.17

BROWSE TRENDS --

Management unit 28 , Study no: 20

T y p e	Species	Strip Frequency	Average Cover %
		'03	'03
B	<i>Artemisia nova</i>	82	6.67
B	<i>Gutierrezia sarothrae</i>	6	.01
B	<i>Juniperus osteosperma</i>	1	1.79
B	<i>Pediocactus simpsonii</i>	1	-
B	<i>Pinus edulis</i>	18	18.39
B	<i>Purshia tridentata</i>	22	4.11
Total for Browse		130	30.99

CANOPY COVER, LINE INTERCEPT --
 Management unit 28 , Study no: 20

Species	Percent Cover
	'03
Artemisia nova	8.11
Juniperus osteosperma	2.73
Pinus edulis	37.15
Purshia tridentata	5.16

KEY BROWSE ANNUAL LEADER GROWTH --
 Management unit 28 , Study no: 20

Species	Average leader growth (in)
	'03
Purshia tridentata	3.3

POINT-QUARTER TREE DATA --
 Management unit 28 , Study no: 20

Species	Trees per Acre
	'03
Pinus edulis	416

Average diameter (in)
'03
4.3

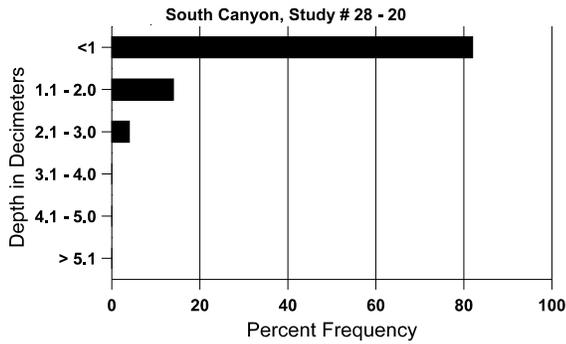
BASIC COVER --
 Management unit 28 , Study no: 20

Cover Type	Average Cover %
	'03
Vegetation	30.63
Rock	35.03
Pavement	4.69
Litter	48.98
Cryptogams	.10
Bare Ground	6.78

SOIL ANALYSIS DATA --
 Management unit 28, Study no: 20, Study Name: South Canyon

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	ds/m
8.7	63.2 (9.4)	6.2	30.6	35.2	34.2	3.5	9.6	489.6	0.4

Stoniness Index



PELLET GROUP DATA --

Management unit 28 , Study no: 20

Type	Quadrat Frequency '03	Days use per acre (ha) '03
Rabbit	11	-
Elk	1	1 (3)
Deer	15	15 (38)

BROWSE CHARACTERISTICS --

Management unit 28 , Study no: 20

		Age class distribution (plants per acre)					Utilization				
Y e a r	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% poor vigor	Average Height Crown (in)
<i>Artemisia nova</i>											
03	4300	-	260	2700	1340	2100	5	0	31	7	12/20
<i>Gutierrezia sarothrae</i>											
03	240	-	160	80	-	-	0	0	-	0	8/6
<i>Juniperus osteosperma</i>											
03	20	-	-	20	-	-	0	0	-	0	-/-
<i>Opuntia spp.</i>											
03	0	-	-	-	-	-	0	0	-	0	10/15
<i>Pediocactus simpsonii</i>											
03	20	-	-	20	-	-	0	0	-	0	2/7
<i>Pinus edulis</i>											
03	420	20	120	300	-	-	0	0	-	0	-/-
<i>Purshia tridentata</i>											
03	800	-	-	540	260	-	43	38	33	8	32/55