

Range Creek Upland Monitoring Report

Summary of Data Collected July 12-13, 2011

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Purpose

Monitoring transects were established in summer 2011 to collect baseline vegetation/ground cover data in the upland areas of Range Creek Canyon. The need for these data became apparent in spring 2011, as plans were developed to reintroduce livestock grazing to the canyon and to implement vegetation treatments to reduce wildfire potential. Data will be collected every year for the first 3-5 years that livestock are grazed in the canyon, and every 5 years thereafter.

Methods

Nine 100-m transects were established throughout the canyon in areas with homogenous vegetation. A landscape photo was taken at the starting point of each transect. A 1-m² quadrat was then placed along the transect every 10 meters. Percent cover values for vegetation by species, litter, rock, pavement, cryptobiotic crust, and bare ground were recorded in each quadrat, along with mean perennial grass height. Presence and species of wildlife pellets were noted. Additionally, photo points were established in 2 wet meadow locations. At least 2 monitoring points were placed in each of the five pastures in the canyon. Six points were located on SITLA land that is leased to the University of Utah, 4 were located on BLM land, and 1 was located on private land.

Results

Six transects were located in areas dominated by basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*). Mean sagebrush cover along these transects was 28% (range = 18 - 39). The understory was dominated by grasses. Four transects were dominated by cheatgrass (*Bromus tectorum*), with a mean cover value of 24% (range = 16 - 29). One transect was dominated by perennial grasses, with a mean cover value of 28%. Common perennial grasses in these areas include Kentucky bluegrass (*Poa pratensis*), crested wheatgrass (*Agropyron cristatum*), slender wheatgrass (*Elymus trachycaulus*), sand dropseed (*Sporobolus cryptandrus*), and needle and thread (*Hesperostipa comata*). Mean perennial grass height was 14 inches (range = 9 - 19). Mean forb cover was 6%. Common forbs in these areas include white sagebrush (*Artemisia ludoviciana*), common dandelion (*Taraxacum officinale*), prickly lettuce (*Lactuca serriola*), Fremont's goosefoot (*Chenopodium fremontii*), and cryptantha (*Cryptantha* sp.). Ground cover was dominated by litter, with a mean cover value of 62% (range = 48 - 72). Mean bare ground cover was 5% (range = 0 - 12).

Two transects were located in pastures dominated by perennial grasses, mostly tall wheatgrass (*Thinopyrum ponticum*). Mean perennial grass cover along these transects was 57% (range = 47 - 68). Mean perennial grass height was 27 inches (range = 27 - 27). Mean forb cover was 11% (range = 9 - 14), and consisted of perennial species such as alfalfa (*Medicago sativa*) and field bindweed (*Convolvulus arvensis*). Ground cover was dominated by litter, with a mean cover value of 35% (range = 23 - 48). Mean bare ground cover was 6% (range = 5 - 7).

One transect was located in an area that burned in 2007 and was dominated by grasses. Mean basin big sagebrush cover was 13%. Western wheatgrass (*Pascopyrum smithii*) was the dominant perennial grass species, with a mean cover value of 19% and a mean height of 18 inches. Cheatgrass was the most abundant species with a mean cover value of 35%. Mean forb cover was 1% and consisted of mostly annual species. Mean litter cover was 50%, and mean bare ground cover was 5%.

Wildlife species present, based on pellets noted along all transects, include elk, mule deer, moose, and rabbit.

APPENDIX A - RANGE CREEK UPLAND MONITORING SITES



APPENDIX B - RANGE CREEK SPECIES LIST

Symbol	Scientific Name	National Common Name	Symbol	Scientific Name	National Common Name
SHRUB			FORB		
ACNE2	<i>Acer negundo</i>	boxelder	AGGL	<i>Agoseris glauca</i>	pale agoseris
ARTRT	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	basin big sagebrush	ALAL3	<i>Alyssum alyssoides</i>	pale madwort
ATCA2	<i>Atriplex canescens</i>	fourwing saltbush	ARAB12	<i>Arabis</i> sp.	rockcross
CHVI8	<i>Chrysothamnus viscidiflorus</i>	yellow rabbitbrush	ARDR4	<i>Artemisia dracunculus</i>	tarragon
ERNA10	<i>Ericameria nauseosa</i>	rubber rabbitbrush	ARLU	<i>Artemisia ludoviciana</i>	white sagebrush
JUOS	<i>Juniperus osteosperma</i>	Utah juniper	ASTER	<i>Aster</i> sp.	aster
OPUNT	<i>Opuntia</i> sp.	pricklypear	ASTRA	<i>Astragalus</i> sp.	milkvetch
RHTR	<i>Rhus trilobata</i>	skunkbush sumac	CETE5	<i>Ceratocephala testiculata</i>	curvedseed butterwort
ROWO	<i>Rosa woodsii</i>	Woods' rose	CHFR3	<i>Chenopodium fremontii</i>	Fremont's goosefoot
SALIX	<i>Salix</i> sp.	willow	CHTE2	<i>Chorispura tenella</i>	crossflower
GRASS			CIIN	<i>Cichorium intybus</i>	chicory
AGCR	<i>Agropyron cristatum</i>	crested wheatgrass	CIRSI	<i>Cirsium</i> sp.	thistle
BOGR2	<i>Bouteloua gracilis</i>	blue grama	COAR4	<i>Convolvulus arvensis</i>	field bindweed
BRTE	<i>Bromus tectorum</i>	cheatgrass	COPA3	<i>Collinsia parviflora</i>	maiden blue eyed Mary
ELEL5	<i>Elymus elymoides</i>	squirreltail	CRYPT	<i>Cryptantha</i> sp.	cryptantha
ELTR7	<i>Elymus trachycaulus</i>	slender wheatgrass	CYOF	<i>Cynoglossum officinale</i>	gypsyflower
HECO26	<i>Hesperostipa comata</i>	needle and thread	DEPI	<i>Descurainia pinnata</i>	western tansymustard
LECI4	<i>Leymus cinereus</i>	basin wildrye	DRABA	<i>Draba</i> sp.	draba
PASM	<i>Pascopyrum smithii</i>	western wheatgrass	EPILO	<i>Epilobium</i> sp.	willowherb
POFE	<i>Poa fendleriana</i>	muttongrass	EQUIS	<i>Equisetum</i> sp.	horsetail
POPR	<i>Poa pratensis</i>	Kentucky bluegrass	ERIGE2	<i>Erigeron</i> sp.	fleabane
PSJU3	<i>Psathyrostachys juncea</i>	Russian wildrye	GARA2	<i>Gayophytum ramosissimum</i>	pinyon groundsmoke
SPCR	<i>Sporobolus cryptandrus</i>	sand dropseed	GILIA	<i>Gilia</i> sp.	gilia
THIN6	<i>Thinopyrum intermedium</i>	intermediate wheatgrass	LAOC3	<i>Lappula occidentalis</i>	flatspine stickseed
THPO7	<i>Thinopyrum ponticum</i>	tall wheatgrass	LASE	<i>Lactuca serriola</i>	prickly lettuce
			MACHA	<i>Machaeranthera</i> sp.	tansyaster
			MEOF	<i>Melilotus officinalis</i>	sweetclover
			MESA	<i>Medicago sativa</i>	alfalfa
			OEPA	<i>Oenothera pallida</i>	pale evening primrose
			PAMU11	<i>Packera multilobata</i>	lobeleaf groundsel
			PHHEF	<i>Physalis hederifolia</i> var. <i>fendleri</i>	Fendler's groundcherry
			RUCR	<i>Rumex crispus</i>	curly dock
			SCLI	<i>Schoenocrambe linifolia</i>	flaxleaf plainsmustard
			SIAL2	<i>Sisymbrium altissimum</i>	tall tumbledustard
			SPGR2	<i>Sphaeralcea grossulariifolia</i>	gooseberryleaf globemallow
			TAOF	<i>Taraxacum officinale</i>	common dandelion
			TRDU	<i>Tragopogon dubius</i>	yellow salsify
			Unk perennial		
			VETH	<i>Verbascum thapsus</i>	common mullein
			VIAM	<i>Vicia americana</i>	American vetch

APPENDIX C - RANGE CREEK BASIC COVER SUMMARY

VEGETATION TYPE: ARTRT

	Shrub % Cover	ARTRT % Cover	Grass % Cover	Perennial Grass % Cover	Perennial Grass Mean Ht (in)	Annual Grass % Cover	Forb % Cover	Perennial Forb % Cover	Annual Forb % Cover	Litter % Cover	Rock % Cover	Pavement % Cover	Cryptogam % Cover	Bare Ground % Cover
Transect 2	21.8	18.4	30.3	27.9	14.0	2.4	7.7	6.4	1.3	65.0	2.9	0.3	0.3	3.4
Transect 3	29.0	24.0	29.2	13.2	19.0	16.0	8.4	2.6	5.8	62.5	0.5	0.1	0.3	1.8
Transect 4	35.2	34.0	35.0	6.0	13.2	29.0	7.7	2.3	5.4	67.0	1.0	0.3	0.1	0.0
Transect 5	42.0	39.0	9.9	4.3	12.2	5.6	7.7	6.6	1.1	47.5	9.2	3.5	3.7	12.2
Transect 6	23.0	23.0	26.6	0.1	9.0	26.5	1.9	1.3	0.6	57.5	6.0	0.3	6.7	5.8
Transect 11	31.8	31.2	23.5	0.0		23.5	0.7	0.2	0.5	72.0	0.2	0.1	2.2	4.5
Mean	30.5	28.3	25.8	8.6	13.5	17.2	5.7	3.2	2.5	61.9	3.3	0.8	2.2	4.6

VEGETATION TYPE: PERENNIAL GRASS

	Shrub % Cover	Grass % Cover	Perennial Grass % Cover	Perennial Grass Mean Ht (in)	Annual Grass % Cover	Forb % Cover	Perennial Forb % Cover	Annual Forb % Cover	Litter % Cover	Rock % Cover	Pavement % Cover	Cryptogam % Cover	Bare Ground % Cover
Transect 7	0.0	68.2	68.1	26.5	0.1	14.0	14.0	0.0	22.5	0.0	0.0	0.0	5.2
Transect 8	0.0	46.7	46.5	27.2	0.2	8.6	8.6	0.0	48.0	0.0	0.1	0.0	7.4
Mean	0.0	57.5	57.3	26.9	0.2	11.3	11.3	0.0	35.3	0.0	0.1	0.0	6.3

VEGETATION TYPE: ARTRT/PERENNIAL GRASS (BURN)

	Shrub % Cover	Grass % Cover	Perennial Grass % Cover	Perennial Grass Mean Ht (in)	Annual Grass % Cover	Forb % Cover	Perennial Forb % Cover	Annual Forb % Cover	Litter % Cover	Rock % Cover	Pavement % Cover	Cryptogam % Cover	Bare Ground % Cover
Transect 9	13.2	54.1	19.0	18.1	35.1	1.1	0.1	1.0	50.0	0.3	0.3	0.0	4.6

APPENDIX D – RANGE CREEK PHOTOS

WET MEADOW PASTURE



NELSON CANYON PASTURE



CALF CANYON PASTURE



FARM PASTURE



CHERRY MEADOW PASTURE



