

Pine Creek/Sulphurbeds Allotment

Sagebrush Permanent Range Cage

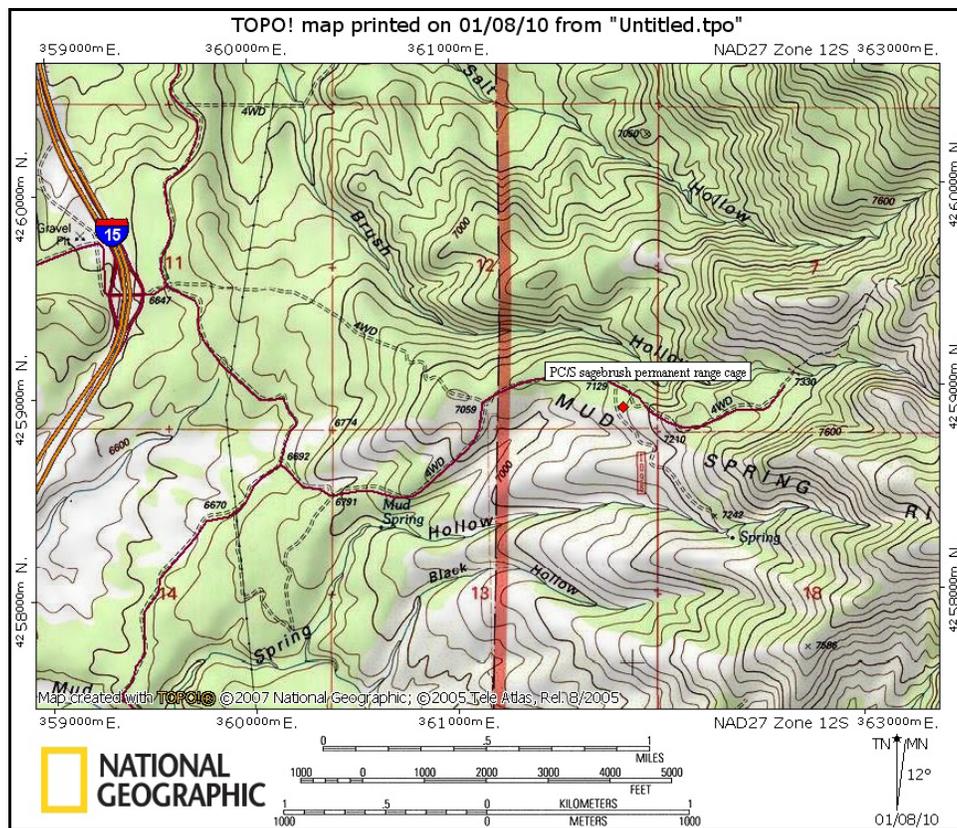
Established May 21, 2009

This 16' X 16' permanent range cage is located adjacent to FR 1098, a route to a spring on Mud Spring Ridge. The site is north of Wildcat Creek and south of Brush Hollow and south fork Pine Creek in the southwest portion of Pine Creek Pasture.

The Forest Service and Grand Canyon Trust constructed the range cage on May 21, 2009. Grand Canyon Trust photographed the range cage from all corners. No detailed record of all species within the enclosure has been established.

On October 12, 2009, Grand Canyon Trust read two point-intercept transects running N-S across the range cage, recording the height and species or genus of each plant and ground cover every 6'.

The outside comparison to this permanent sagebrush range cage is a transect starting 48.5' from the NW corner of the range cage and running 100' west. The height and species or genus of each plant and ground cover intercepted along the transect were read on the transect every 2' were recorded.



Map 1. Location of PC/S Sagebrush Permanent Range Cage and outside transect

Pine Creek/Sulphurbeds Sagebrush Permanent Range Cage	Established May 21, 2009
Fishlake NF/Beaver RD	Allotment: Pine Creek/Sulphurbeds Pasture: Pine Creek Pasture
Range Cage Location: (NAD CONUS 27) 12N 0361784E 4258906N	Range cage transects: A: S to N, 6 th wire from the East B: N to S, wire not recorded.
Aspect: Elevation: 7,150'	Outside Transect 48.5 feet from NW corner of the range cage, running west.
Transect readings: October 12, 2009 surveyors: Hoskisson/O'Brien/Otting	



Fig. 1 (10/12/09) Pine Creek/Sulphurbeds sagebrush permanent range cage (background), and 0' of transect



Fig. 2 (05/21/09) SE corner of the sagebrush range cage



Fig. 3 (05/21/09) Ground cover in the range cage looking north from the middle of the south side of the cage.

Transect Readings (1) October 12, 2009

(2009) Of particular interest with a sagebrush range cage is the understory grasses and forbs, over time.

Grass cover within the range cage was recorded as 17%; 25% outside. The average height of grasses within the range cage was 12"; 6" outside. Sagebrush cover is higher along the transect (35% outside; 19% inside), and bare ground less (10% outside; 17% inside). This site was seeded at some time in the past: exotic crested wheatgrass is present inside and outside; exotic intermediate wheatgrass was encountered on the outside transect. The exotic peppergrass, *Alyssum parviflorum*, is the most common forb encountered.

Similar percent of grass/forb cover was recorded inside and outside the range cage (i.e., 33% inside; 31% outside, despite the higher sagebrush cover outside.

Understory/Ground Cover

Sagebrush Range Cage October 12, 2009

Plants:	Cover (%)	# Species	Height (in.) (average)	Two most common species
Sagebrush	19	1	26	<i>Artemisia tridentata</i> subsp. <i>vaseyana</i>
Other Shrub	5	1	13	<i>Tetradymia</i> sp.
<i>Poa pratensis</i>	0	0		
Other Grass	17	5	12	Each at 3 occurrences: <i>Agropyron cristatum</i> , <i>Pseudoregneria spicata</i> , <i>Poa secunda</i>
Grass-like Plant	0	0		
Forb	16	3	2.5	<i>Allysum desertorum</i> , <i>Collinsia parviflora</i>
Totals	26	10		
Non-plant Cover %:	Bare	Rock	Litter	Lichen, moss, biological crust
	17	3	78	0

Plants intercepted on transects inside enclosure, in order of frequency

<i>Artemisia tridentata</i> subsp. <i>vaseyana</i>	11
<i>Allysum desertorum</i>	4
<i>Agropyron cristatum</i>	3
<i>Poa secunda</i>	3
<i>Pseudoregneria spicata</i>	3
<i>Tetradymia</i> sp.	3
<i>Cirsium</i> sp.	2
<i>Collinsia parviflora</i>	2
<i>Bromus tectorum</i>	1
<i>Lupinus</i> sp.	1

**Outside Transect
October 12, 2009**

Plants:	Cover (%)	# Species	Height (in.) (average)	Two most common species
Sagebrush	35	1	29	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>
Other Shrub	2	1	3	<i>Chrysothamnus</i> sp.
<i>Poa pratensis</i>	0	0		
Other Grass	25	6	6	2 occurrences each of <i>Thinopyrum intermedium</i> , <i>Agropyron cristatum</i> , and <i>Poa secunda</i>
Grass-like Plant	0	0		
Forb	6	3	1	<i>Allysum desertorum</i> , annual forb
Totals	57	11		
Non-plant Cover %:	Bare	Rock	Litter	Lichen, moss, biological crust
	10	0	80	0

**Plants intercepted on transect outside enclosure,
in order of frequency**

<i>Artemisia tridentata</i> subsp. <i>vaseyana</i>	18
<i>Bromus tectorum</i>	5
<i>Allysum desertorum</i>	2
<i>Poa secunda</i>	2
<i>Pseudoregneria spicata</i>	3
<i>Thinopyrum intermedium</i>	2
Annual forb	1
<i>Balsamorhiza sagittata</i>	1
<i>Chrysothamnus</i> sp.	1
<i>Elymus elymoides</i>	1
Perennial bunchgrass sp.	1



Fig. 4 (10/12/09) Ground cover in the range cage looking north from the middle of the south side of the cage (Compare with Fig. 3, May 21)



Fig. 5. (10/12/09) Transect A inside sagebrush range cage.



Fig. 6 (10/12/09) Outside transect 0' looking west to 100'



Fig. 7 (10/12/09) Stubble height along outside transect.