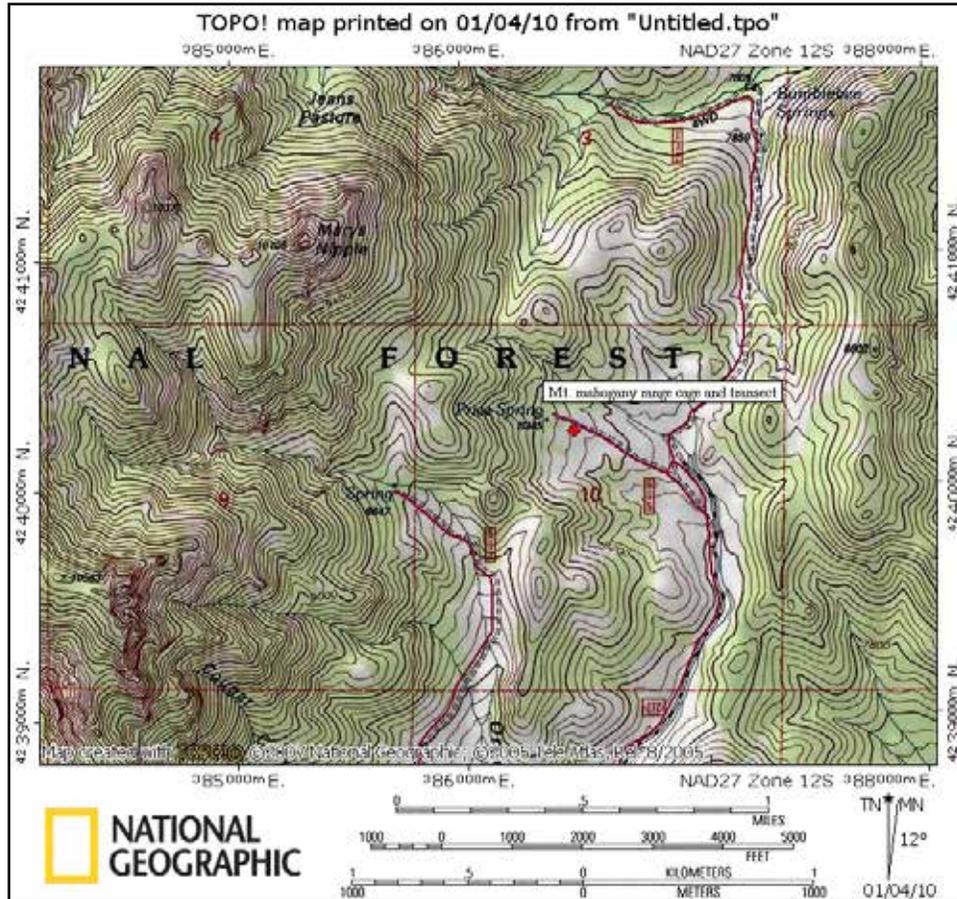


Ten Mile Allotment
Mt. Mahogany Permanent Range Cage
 Established May 20, 2009

- (1) October 14, 2009
 (2) September 29, 2010
(3) September 7, 2011



| | |
|---|--|
| Ten Mile Allotment | Established May 20, 2009 |
| Mt Mahogany Permanent Range Cage | |
| Fishlake NF/Beaver RD | Allotment: Ten Mile Pasture: Price/Cougar |
| Aspect: gentle, east facing slope | Elevation: 8283 ft. |
| Range Cage Location: (NAD CONUS 27) 12N 386501 E 4240265 NAD83: 386436E 4240469 N | Outside Transect Location (2009) Begins 12N 386499 E 4240250 N Ends 12 N 386486 E 4240222 N (2010 and 2011) Begins 12N 386501 E 4240248 N NAD83: 386436E 4240452N Ends 12N 386531 E 4240249 N NAD83: 386466E 4240453N |

| | |
|--|--|
| <p>Inside Transects Two transects run E to W from within 6” of cage fence. A: 3rd wire from south side. B: 9th wire from north side.</p> | <p>Outside Transect 37’ from and 108° south of SE corner. Starts in a sage brush.</p> |
| <p>Transect readings: (1) October 14, 2009 surveyors: Hoskisson/O’Brien (2) September 29, 2010; Hoskisson/ Wheeler (3) August 28, 2011 and September 9, 2011 Hoskisson/ Young/ Ratcliff</p> | |

The Ten Mile Allotment mountain mahogany permanent range cage is in Price/Cougar Pasture. This 16’ X 16’ permanent range cage (Fig. 1) is adjacent to FS 614 on a sagebrush toe slope with aspen, oak, and pinyon-juniper, downslope from Price Spring. A small brook flows from Price Spring along the northern edge of the 100’ transect. The drainage joins Order Canyon and eventually flows into City Creek. City Creek Peak is the dominant peak above Price Spring. City Creek eventually flows out of the Tushar Mountains just north of the town of Junction and enters Piute Reservoir. A low pass separates the Price Spring drainage from the Ten Mile Creek drainage just to the north.

The mountain mahogany in the area are heavily browsed by ungulates, generally being browsed back to the height of sagebrush that are otherwise protecting the mountain mahogany (Fig. 4). Sedges in the area are also closely grazed (Fig. 5).

On May 20, 2009, Grand Canyon Trust photographed each mountain mahogany within the enclosure for a record (e.g., Figs. 2-3). No detailed survey of all species within and outside the enclosure has been made.

On October 14, 2009, Grand Canyon Trust read two point-intercept transects running N-S within the transect (starting 6” from inside the cage fence). The height of all plants intercepted in addition to the ground cover were recorded every 6”. In addition, the height and location of each mountain mahogany plant within the range cage were recorded.

The outside comparison to this permanent mountain mahogany range cage is a 100’ point-intercept transect located 37’ and 180 from the SE corner of the range cage. On October 14, 2009 Grand Canyon Trust read the outside transect as within the range cage, but at 2’ intervals rather than 6”. The height of all mountain mahogany within 3’ of either side of the transect was recorded.

In 2010, a 45 acre enclosure was built around the Price Spring area to protect the resources. This large enclosure also encompassed about ¼ of the ‘outside’ mountain mahogany transect. Thus, the outside transect had to be moved slightly so as to have a full length transect to assess. New GPS coordinates are listed at the beginning of this report.



Fig. 1 (5/20/09) Mt. mahogany permanent range cage



Fig. 2 (5/20/09) 4' mt. mahogany protected within sagebrush, SE quadrant of enclosure



Fig. 3 (5/20/09) 5" mountain mahogany within SW quadrant of exclosure.



Fig. 4. (10/14/09) Mt. mahogany in area of transect and exclosure are often browsed back to height of protective sagebrush.



Fig. 5 (10/14/09) Watercourse outside of enclosure

Transect Readings

(1) October 14, 2009

(2) September 29, 2010

(3) August 28, 2011 (inside cage)

and September 9, 2011 (outside cage)

The first transect reading was made just four months after the mountain mahogany range cage was established, but it encompassed the mid- and later portions of the growing season. The range cage encompasses more mountain mahogany than were encountered within the 6-foot wide belt transect. Perhaps in 2010 it would be wise to add a second belt 6' transect.

The height structure inside and outside the range cage is similar, with both missing any shrubs in the 2.1'-2.5' height class. The fate of the five seedlings within the range cage (Fig. 6) and the 4.5" young mt. mahogany on the transect (Fig. 9) will be interesting to track.

The understory grass heights are quite different (15" inside; 6" outside). *Carex* accounts for 24% of the cover inside (Fig. 8), while none was encountered on point-intercept transect outside, though the outside transect does cross a narrow waterway (Fig. 5).

Graminoid and forb cover within the cage is 57%; 26% outside. Bare ground is similar inside (6%) and outside (8%).

Sedges outside the range cage are being grazed beyond the standard of 4".

(2010) The transect outside the range cage had to be moved slightly because the new large enclosure built around the Price Spring enclosed about ¼ of the 'outside' mountain mahogany transect for this area.

Inside the range cage, total vegetation cover was 59%, while litter accounted for 30% and bare ground was 10%. Sagebrush was the dominant vegetation at 16% and stood at an average of 34" in height, with snowberry and elk sedge were both 13% cover. Snowberry averaged 29" in height and elk sedge averaged 4" tall. Native perennial grasses contributed 5% cover and stood at an average of 11", while the introduced pasture grass crested wheatgrass was 3% cover and 10" in height. Perennial forbs as a whole contributed 5% cover. Mountain mahogany was intercepted by the pointer to contribute 3% cover, and stood at an average of 20" in height.

Outside the range cage, total vegetation cover was only 38%, litter was 24% and bare ground was much higher at 37%. Sagebrush was the dominant vegetation cover on this transect as well with 23% cover, and stood at an average of 30". Needle leaf sedge (*Carex duriuscula*) contributed 7% cover at an average of 3" in height, while native perennial grasses were 6% cover at an average of 5' in height. Silky lupine was 2% cover. Mountain mahogany was present along the belt transect, but was not intercepted by the pointer.

(2011)

2011 was a relatively wet year, and may account for the increase in total vegetation cover both inside and outside the range cage. Price/Cougar Pasture, in which this cage is located, had a 30% utilization limit for the first time in 2011. Total vegetation cover was similar with 83% inside the range cage and 81% outside the range cage, however bare ground was higher outside the range cage (13%) than inside (0%) when overhead plants were included as "ground cover." The difference in bare ground is also seen when the ground under plants is included with bare ground at 7% inside the range

cage and 32% outside the range cage. Sagebrush and snowberry remain the dominant cover both inside and outside the range cage at 49% cover inside the range cage and 29% outside. There was very little browse noted inside the range cage with 5% browse on the tall leaders and no browse on the subleaders. Outside the range cage, 69% of all mountain mahogany encountered were inaccessible to cattle since they are growing inside sagebrush bushes or dead sagebrush skeletons, and not extending above (See Fig 25). The browse on these shrubs was much higher with 15% browse on tall leaders and 94% browse on subleaders.

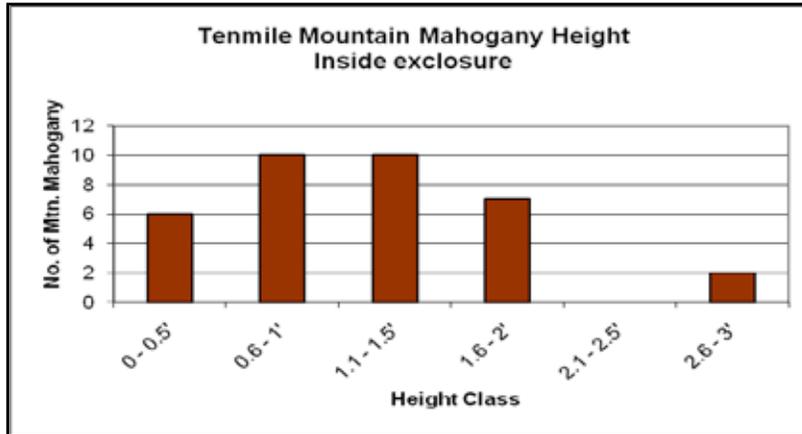
Six mountain mahogany were dead or dying inside the range cage for unknown reasons, but 19 shrubs remain; in 2009 34 were counted; perhaps competition is playing a role?. In 2009 the tallest mt. mahogany inside the cage was one individual between 2.1' and 3'. In 2011, six mt mahogany were 2.1'-3'; and one 4.1'-5'.

It is that 4.1'-6' height that seems to be lacking in the area where not fenced.

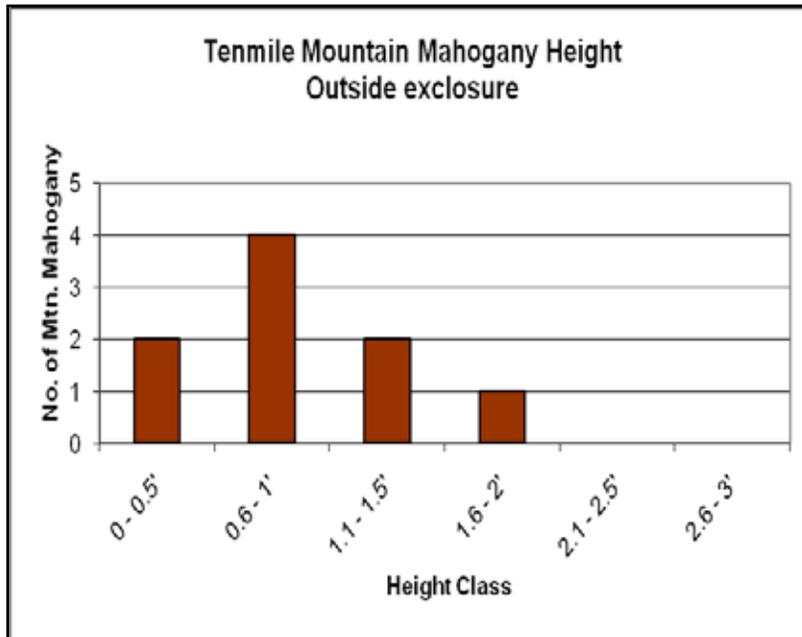
Two of the 13 mt mahogany outside the exclosure are 2.1'-3'. Trends over time aren't available for the outside transect, because the 2009 transect had to be moved in 2010 because an exclosure was built around part of it and height and browse data were mistakenly not taken in the new transect or inside the cage in 2010.

Mt. Mahogany Height Distribution

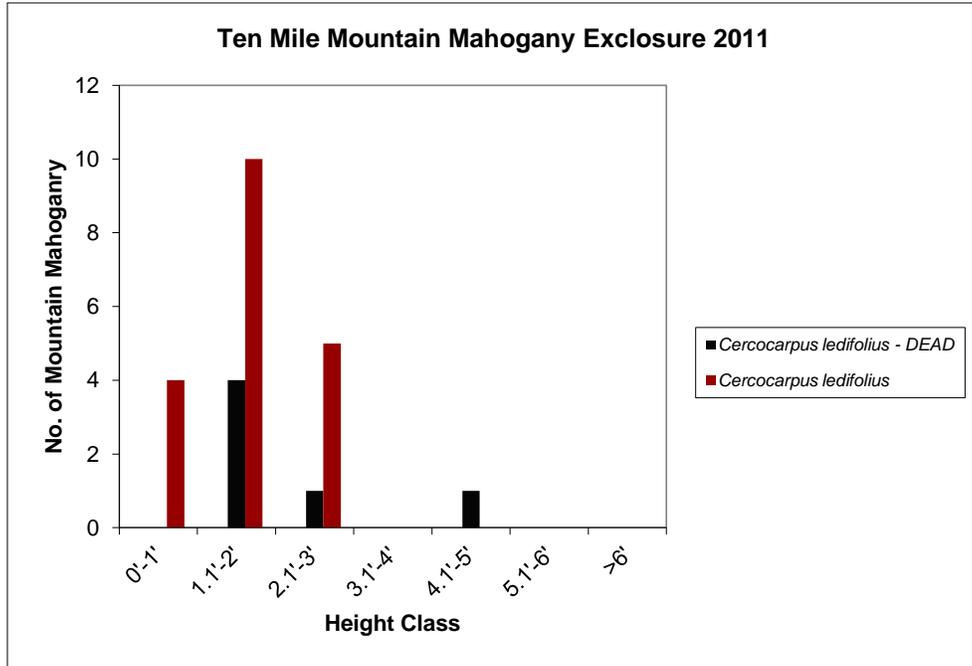
2009 Inside Exclosure



2009 Outside Exclosure



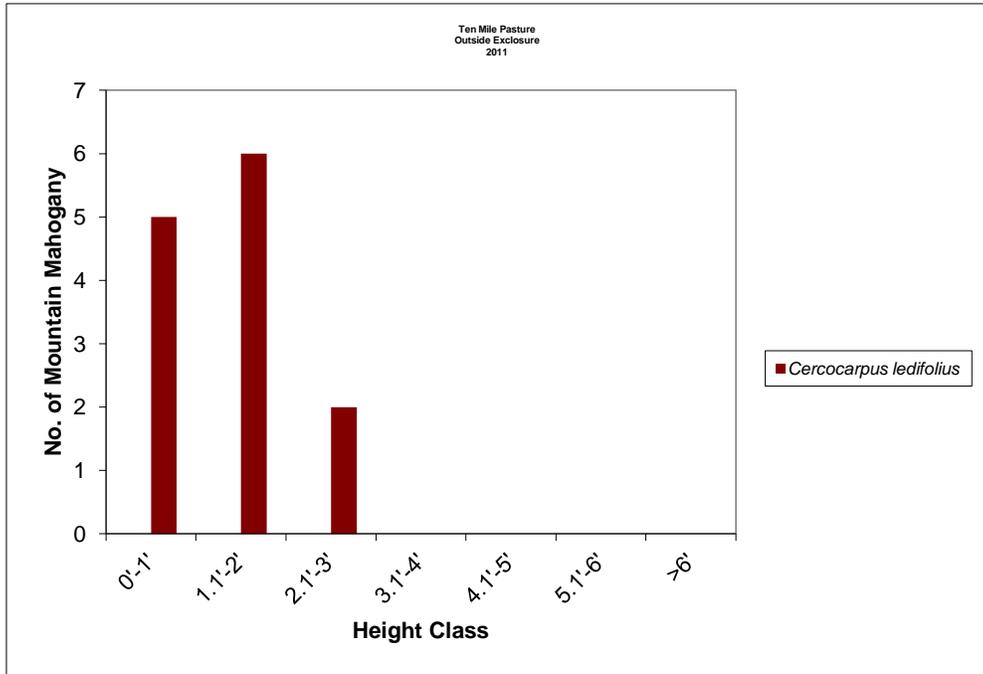
2011 Inside Exclosure



Browse

| Ten Mile Pasture Mountain Mahogany Exclosure 6 Dead Mountain mahogany 19 Mountain mahogany <6' | |
|---|-----------------------------------|
| | <i>Cercocarpus ledifolius</i> |
| % tall leaders browsed | 5.3 |
| % tall leaders browsed or dead | 10.5 |
| % subleaders browsed | N/A |
| % subleaders browsed or dead | N/A |

2011 Outside Exclosure



Browse

| Ten Mile Pasture Outside Exclosure 13 <i>Cercocarpus ledifolius</i> <6' | |
|--|-------------------------------|
| | <i>Cercocarpus ledifolius</i> |
| % tall leaders browsed | 15.4 |
| % tall leaders browsed or dead | 15.4 |
| % subleaders browsed | 93.8 |
| % subleaders browsed or dead | 93.8 |

*****NOTE:** 69% of mountain mahogany inaccessible to livestock as they are growing inside sagebrush bushes or old sagebrush skeletons

Understory/Ground Cover

Inside Exclosure - 2009

| Plants: | Cover (%) | # Species | Height (in.) (average) | Two most common species |
|--------------------|-----------|-----------|---------------------------|--|
| Mountain Mahogany | 3 | 1 | 31 | <i>Cercocarpus</i> sp. |
| Shrub | 43 | 1 | 31 | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> , <i>Symphoricarpos</i> sp., |
| Grass | 27 | 6 | 15 | <i>Poa fendleriana</i> , <i>Elymus trachycaulus</i> |
| Grass-like Plant | 24 | 1 | 4 | <i>Carex</i> sp. |
| Forb | 6 | 2 | 17 | <i>Lupinus</i> sp., perennial forb |
| All Veg Types | 83 | 11 | | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> , <i>Carex</i> sp. |
| Non-plant Cover %: | Bare | Rock | Litter | Lichen, moss, biological crust |
| | 6 | 2 | 92 | 0 |

Plants intercepted on transect inside exclosure, in order of frequency

| | |
|--|----|
| <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> | 18 |
| <i>Carex</i> sp. | 15 |
| <i>Poa fendleriana</i> | 6 |
| <i>Elymus trachycaulus</i> | 4 |
| <i>Lupinus</i> sp. | 3 |
| <i>Mahonia aquifolium</i> | 3 |
| <i>Agropyron cristatum</i> | 2 |
| <i>Agropyron repens</i> | 2 |
| <i>Cercocarpus</i> sp. | 2 |
| <i>Bromus tectorum</i> | 1 |
| Perennial forb | 1 |

Inside Enclosure - 2010

| Plants: | Cover (%) | # Species | Height (in.) (average) | Two most common species |
|--|-----------|-----------|---------------------------|---|
| Mountain Mahogany | 3 | 1 | 20 | <i>Cercocarpus ledifolius</i> . |
| Shrub | 29 | 2 | 32 | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> , <i>Symphoricarpos oreophilus</i> . |
| Grass | 5 | 3 | 11 | <i>Achnatherum lettermanii</i> , <i>Elymus elymoides</i> |
| Introduced Grass | 3 | 1 | 10 | <i>Agropyron cristatum</i> |
| Grass-like Plant | 13 | 1 | 4 | <i>Carex geyeri</i> |
| Forb | 5 | 2 | 17 | <i>Lupinus</i> sp., perennial forb |
| Total vegetation cover | 59 | 10 | | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> , <i>Carex geyeri</i> |
| Ground Cover (%): | Bare | Rock | Litter | Lichen, moss, biological crust |
| Ground Cover (no overhead plants) | 10 | 2 | 30 | |
| Ground Cover (includes beneath plants) | 13 | 2 | 85 | |

**Plants intercepted on transect inside enclosure (2010),
in order of frequency**

| | | |
|--------------------------|--|----|
| Mountain big sagebrush | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> | 16 |
| Elk sedge | <i>Carex geyeri</i> | 13 |
| Snowberry | <i>Symphoricarpos oreophilus</i> | 13 |
| Crested wheatgrass | <i>Agropyron cristatum</i> | 3 |
| Lesser rushy milkvetch | <i>Astragalus convallarius</i> | 3 |
| Nodding brome | <i>Bromus anomalus</i> | 2 |
| Letterman's needlegrass | <i>Achnatherum lettermanii</i> | 2 |
| Bottlebrush squirreltail | <i>Elymus elymoides</i> | 2 |
| Beardtongue | <i>Penstemon</i> sp | 2 |

Inside Exclosure – 2011

| Plants: | Cover (%) | # Species | Height (in.) (average) | Two most common species |
|--|-----------|-----------|---------------------------|---|
| Mountain Mahogany | 0 | 1 | 0 | <i>Cercocarpus ledifolius.</i> |
| Shrub | 49 | 2 | 32 | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> , <i>Symphoricarpos oreophilus.</i> |
| Grass | 17 | 5 | 11 | <i>Achnatherum lettermanii</i> , <i>Elymus elymoides</i> , <i>Poa sp</i> , <i>Hesperostipa comata</i> |
| Introduced Grass | | | | |
| Grass-like Plant | 26 | 1 | 4 | <i>Carex geyeri</i> |
| Forb | 3 | 1 | 12 | <i>Penstemon sp.</i> , |
| Total vegetation cover | 83.3 | 9 | | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> , <i>Carex geyeri</i> |
| Ground Cover (%): | Bare | Rock | Litter | Lichen, moss, biological crust |
| Ground Cover (no overhead plants) | 0 | 0 | 17 | |
| Ground Cover (includes beneath plants) | 7 | 0 | 93 | |

**Plants intercepted on transect inside exclosure (2011),
in order of frequency**

| | | |
|--------------------------|--|----|
| Mountain big sagebrush | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> | 35 |
| Elk sedge | <i>Carex geyeri</i> | 26 |
| Snowberry | <i>Symphoricarpos oreophilus</i> | 14 |
| Bluegrass | <i>Poa sp</i> | 6 |
| Letterman's needlegrass | <i>Achnatherum lettermanii</i> | 3 |
| Bottlebrush squirreltail | <i>Elymus elymoides</i> | 3 |
| Beardtongue | <i>Penstemon sp</i> | 3 |
| Needle and thread | <i>Hesperostipa comata</i> | 3 |

Outside Exclosure - 2009

| Plants: | Cover (%) | | # Species | Height (in.) (average) | | Two most common species |
|-----------------------|-----------|---|-----------|---------------------------|--------|---|
| | | | | | | |
| Shrub | 33 | 4 | 2 | 41 | 22 | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> , <i>Symphoricarpos</i> sp. |
| Grass | 20 | | 4 | 6 | | <i>Poa pratensis</i> ; single occurrence of three other grass spp. |
| Grass-like Plant | 0 | | 0 | | | |
| Forb | 6 | | 2 | 5 | | <i>Astragalus convallarius</i> , perennial forb |
| Totals | 61 | | 8 | | | |
| Non-plant Cover %: | Bare | | Rock | | Litter | Lichen, moss, biological crust |
| | 8 | | 0 | | 92 | |

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

| | |
|--|----|
| <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> | 15 |
| <i>Poa pratensis</i> | 8 |
| <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> | 2 |
| (dead) | |
| <i>Astragalus convallarius</i> | 2 |
| <i>Symphoricarpos</i> sp. | 2 |
| <i>Agropyron cristatum</i> | 1 |
| <i>Bromus inermis</i> | 1 |
| <i>Agropyron cristatum</i> | 1 |
| <i>Poa fendleriana</i> | 1 |
| Perennial forb | 1 |

Outside Exclosure - 2010

| Plants: | Cover (%) | # Species | Height (in.) (average) | Two most common species |
|--|-----------|-----------|---------------------------|--|
| Mountain Mahogany | | | | |
| Shrub | 23 | 1 | 30 | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> , |
| Grass | 4 | 2 | 5 | <i>Poa sp</i> , <i>Achnatherum lettermanii</i> , <i>Elymus elymoides</i> |
| Grass-like Plant | 7 | 1 | 3 | <i>Carex duriuscula</i> |
| Forb | 2 | 1 | 22 | <i>Lupinus sericeus</i> |
| Total vegetation cover | 38 | 6 | | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> , <i>Carex duriuscula</i> |
| Ground Cover (%): | Bare | Rock | Litter | Lichen, moss, biological crust |
| Ground Cover (no overhead plants) | 37 | 1 | 24 | |
| Ground Cover (includes beneath plants) | 42 | 1 | 57 | |

**Plants intercepted on transect outside exclosure (2010),
in order of frequency**

| | | |
|-------------------------|--|----|
| Mountain big sagebrush | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> | 23 |
| Needle leaf sedge | <i>Carex duriuscula</i> | 7 |
| Bluegrass | <i>Poa sp</i> | 3 |
| Silky lupine | <i>Lupinus sericeus</i> | 2 |
| Blue grama | <i>Bouteloua gracilis</i> | 2 |
| Letterman's needlegrass | <i>Achnatherum lettermanii</i> | 2 |

Outside Exclosure 2011

| Plants: | Cover (%) | # Species | Height (in.) (average) | Two most common species |
|--|-----------|-----------|---------------------------|--|
| Mountain Mahogany | 10 | 1 | 19" | <i>Cercocarpus ledifolius</i> |
| Shrub | 29 | 2 | 30 | <i>Artemisia tridentata</i> subsp. <i>Vaseyana</i> , <i>Symphoricarpos oreophilus</i> |
| Grass | 36 | 3 | 8 | <i>Poa sp</i> , <i>Achnatherum lettermanii</i> , <i>Elymus elymoides</i> |
| Forb | 23 | 4 | 13.5 | <i>Lupinus sericeus</i> , <i>Aster spp</i> , <i>Penstemon sp</i> |
| Total vegetation cover | 81 | 10 | | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> , <i>Carex duriuscula</i> |
| Ground Cover (%): | Bare | Rock | Litter | Lichen, moss, biological crust |
| Ground Cover (no overhead plants) | 13 | 0 | 7 | |
| Ground Cover (includes beneath plants) | 32 | 4 | 64 | |

**Plants intercepted on transect outside exclosure (2011),
in order of frequency**

| | | |
|--------------------------|--|----|
| Letterman's needlegrass | <i>Achnatherum lettermanii</i> | 23 |
| Snowberry | <i>Symphoricarpos oreophilus</i> | 19 |
| Mountain big sagebrush | <i>Artemisia tridentata</i> subsp. <i>vaseyana</i> | 10 |
| Mountain mahogany | <i>Cercocarpus ledifolius</i> | 10 |
| Aster sp | <i>Aster/Symphotrichium sp</i> | 7 |
| Bottlebrush squirreltail | <i>Elymus elymoides</i> | 7 |
| Unknown Grass | | 7 |
| Silky lupine | <i>Lupinus sericeus</i> | 2 |
| Beardtongue | <i>Penstemon sp</i> | 7 |
| Unknown Forb | | 3 |



Fig. 6 (10/14/09) Three of five mt. mahogany seedlings, SE quadrant



Fig. 7 (10/14/09) Two mt. mahogany with new growth inside the enclosure



Fig. 8 (10/14/09) Sedges are increasing within the enclosure.



Fig. 9 (10/14/09) Mt. mahogany 4.5'', outside enclosure under shrub, not browsed.



Fig. 10 (10/14/09) Mt. mahogany outside transect, in open, browsed to 5”.



Fig. 11 (10/14/09) Sedge on bank crossed by transect; grazed to 1” (standard is 4”)



Fig 12 (9/28/2010) Inside permanent mtn mahogany range cage



Fig 13 (9/28/2010) Inside permanent mountain mahogany range cage



Fig 14 (9/28/2010) Different view of inside permanent range cage.



Fig 15 (9/28/2010) New transect outside mountain mahogany range cage



Fig 16 (9/28/2010) New outside permanent range cage looking toward beginning of transect.



Fig 17 (9/28/2010) Outside mountain mahogany transect.



Fig 18 (9/28/2010) Bare ground along outside mountain mahogany transect.



Fig 19 (8/28/2011) Dying sagebrush in range cage



Fig 20 (8/28/2011) Dead 4' Mountain mahogany inside range cage



Fig 21 (8/28/2011) Overstory of sage and snowberry inside range cage



Fig 22 (9/9/2011) Closely browsed mountain mahogany outside range cage



Fig 23 (9/9/2011) Browsed mountain mahogany outside range cage



Fig 24 (9/9/2011) Outside mountain mahogany transect



Fig 25 (9/9/2011) Mt mahogany on outside transect, browsed where it reaches outside the sagebrush skeleton.

Appendix A – 2010 cover data in table format

Inside mountain mahogany permanent range cage Ten Mile Pasture

| | | | | | |
|--------------------------------------|---------------------------|--------------------------|-------|-----------|-----------------|
| Mtn Mahogany | 10 mile Inside | | | | |
| Total Vegetation Cover | | | 59.0 | | |
| Litter | | | 29.5 | | |
| Rock | | | 1.6 | | |
| Bare Soil | | | 9.8 | | |
| Total Ground Cover | | | 90.1 | | |
| | | | | | |
| | Scientific Name | common Name | Cover | Rel Cover | avg height (in) |
| Cool season perennial grasses | | | | | |
| | Bromus anomalus | Nodding brome | 1.6 | 2.7 | 5 |
| | Elymus elymoides | Bottlebrush Squirreltail | 1.6 | 2.7 | 8.5 |
| | Stipa lettermanii | Letterman's stipa | 1.6 | 2.7 | 13.6 |
| | | <i>Subtotal</i> | 4.8 | 8.1 | |
| Grasslike plants | | | | | |
| | Carex geyeri | Elk sedge | 13.1 | 22.2 | 4 |
| | Carex spp | Sedges | P | P | |
| | | <i>Subtotal</i> | 13.1 | 22.2 | |
| Introduced perennial grasses | | | | | |
| | Agropyron cristatum | Crested Wheatgrass | 3.3 | 5.5 | 10 |
| | Agropyron intermedium | Intermediate Wheatgrass | P | P | |
| | | <i>Subtotal</i> | 3.3 | 5.5 | |
| Perennial forbs | | | | | |
| | Astragalus convallarius | Lesser rushy milkvetch | 3.3 | 5.5 | 20 |
| | Castilleja linariifolia | Indian paintbrush | P | P | |
| | Eriogonum racemosum | Red root buckwheat | P | P | |
| | Lotus utahensis | Utah trefoil | P | P | |
| | Lupinus sericeus | Silky lupine | P | P | |
| | Penstemon sp | Penstemon | 1.6 | 2.7 | 10 |
| | Trifolium gymnocarpon | Nuttall's clover | 0.0 | 0.0 | |
| | | <i>Subtotal</i> | 4.9 | 8.2 | |
| Sub-shrubs | | | | | |
| | Mahonia repens | Oregon grape | P | P | |
| | | | | | |
| Shrubs | | | | | |
| | Artemisia tridentata | Big Sagebrush | 16.3 | 27.7 | 34 |
| | Symphoricarpos oreophilus | Snowberry | 13.1 | 22.2 | 29 |
| | | <i>Subtotal</i> | 29.4 | 49.9 | |
| Trees | | | | | |
| | Cercocarpus ledifolius | Mountain Mahogany | 3.3 | 5.5 | 20 |
| | | <i>Subtotal</i> | 3.3 | 5.5 | |

P= present, but not intercepted by the pointer, 8 second hits

Outside permanent mountain mahogany permanent range cage Ten Mile Pasture

| | | | | | |
|--------------------------------------|---------------------------|--------------------|-------|-----------|-----------------|
| Mtn mahogany | 10 mile out | | | | |
| Total Vegetation Cover | | | 38.0 | | |
| Litter | | | 24.0 | | |
| Rock | | | 1.0 | | |
| Bare Soil | | | 37.0 | | |
| Total Ground Cover | | | 63.0 | | |
| | | | | | |
| | Scientific name | Common name | Cover | Rel cover | Avg height (in) |
| Cool season perennial grasses | | | | | |
| | Poa spp | Blugrass | 3.0 | 7.9 | 4.6 |
| | Stipa lettermanii | Letterman's stipa | 1.0 | 2.6 | 6.7 |
| | | | 4.0 | 10.5 | |
| Warm season perennial grasses | | | | | |
| | Bouteloua gracilis | Blue Grama | 2.0 | 5.3 | 1 |
| | | | 2.0 | 5.3 | |
| Grasslike plants | | | | | |
| | Carex duriuscula | Sedge | 7.0 | 18.4 | 3 |
| | | | 7.0 | 18.4 | |
| Introduced perennial grasses | | | | | |
| | Agropyron cristatum | Crested Wheatgrass | P | P | |
| | Bromopsis inermis | Smooth brome | P | P | |
| | | | | | |
| Perennial forbs | | | | | |
| | Eriogonum racemosum | Red root buckwheat | P | P | |
| | Lupinus sericeus | Silky lupine | 2.0 | 5.3 | 22 |
| | | | 2.0 | 5.3 | |
| Annual and biennial forbs | | | | | |
| | Cerastium sp | Chickweed | P | P | |
| | | | | | |
| Shrubs | | | | | |
| | Artemisia tridentata | Big Sagebrush | 23.0 | 60.5 | 30 |
| | Symphoricarpos oreophilus | Snowberry | P | P | |
| | | | 23.0 | 60.5 | |
| Trees | | | | | |
| | Cercocarpus ledifolius | Mountain Mahogany | P | P | |

P= present, but not intercepted by the pointer

11 second hits

| | | | | | |
|--|-------------------------------------|--------------------------|-------------|----------------|-------------|
| Ten Mile Mountain Mahogany Inside Range Cage September 2011 | n=30 | 7 secpnd hits | | | |
| | Scientific Name | Common Name | Cover | Relative Cover | Ave ht (in) |
| Total Vegetation Cover | | | 83.3 | | |
| Litter | | | 16.7 | | |
| Total Ground Cover | | | 100.0 | | |
| Cool season perennial grasses | | | | | |
| | <i>Elymus elymoides</i> | Bottlebrush Squirreltail | 2.7 | 3.1 | 14" |
| | Other cool season perennial grasses | | 2.7 | 3.1 | |
| | <i>Poa</i> sp | Blugrass | 5.7 | 6.2 | 5" |
| | <i>Stipa comata</i> | Needle-and-thread Grass | 2.7 | 3.1 | 36" |
| | <i>Stipa lettermanii</i> | Letterman's stipa | 2.7 | 3.1 | 10" |
| | | <i>Sub-total</i> | 16.5 | 18.6 | |
| Grasslike plants | | | | | |
| | <i>Carex geyeri</i> | Elk sedge | 26.2 | 21.8 | 4.3" |
| Perennial forbs | | | | | |
| | <i>Penstemon</i> sp | Penstemon | 2.7 | 3.1 | 12" |
| Shrubs | | | | | |
| | <i>Artemisia tridentata</i> | Big Sagebrush | 35.1 | 40.6 | 37.2" |
| | <i>Symphoricarpos oreophilus</i> | Snowberry | 13.5 | 15.6 | 16" |
| | | <i>Sub-total</i> | 48.6 | 56.2 | |

| | |
|-------------------------|------|
| Ground Cover (%) | |
| Litter | 93.3 |
| Bare Soil | 6.7 |

| | | | | | |
|---|-------------------------------------|--------------------------|-------------|---------------|-------------|
| Ten Mile Mountain Mahogany Outside Range Cage September 2011 | n=31 | 5 second hits | | | |
| | Scientific Name | Common Name | Cover | Relative Cove | Ave ht (in) |
| Total Vegetation Cover | | | 80.6 | | |
| Litter | | | 6.5 | | |
| Bare Soil | | | 12.9 | | |
| Total Ground Cover | | | 87.1 | | |
| Cool season perennial grasses | | | | | |
| | <i>Elymus elymoides</i> | Bottlebrush Squirreltail | 6.5 | 6.7 | 7.5" |
| | Other cool season perennial grasses | | 6.5 | 6.7 | 7" |
| | <i>Stipa lettermanii</i> | Letterman's stipa | 22.6 | 23.3 | 8.7" |
| | <i>Sub-total</i> | | 35.6 | 36.7 | |
| Perennial forbs | | | | | |
| | <i>Aster spp</i> | Aster | 6.5 | 6.7 | 9.5" |
| | <i>Lupinus sericeus</i> | Silvery Lupine | 6.5 | 6.7 | 26" |
| | <i>Penstemon sp</i> | Penstemon | 6.5 | 6.7 | 14" |
| | Unknown Perennial Forb | | 3.2 | 3.3 | 4" |
| | <i>Sub-total</i> | | 22.7 | 23.4 | |
| Shrubs | | | | | |
| | <i>Artemisia tridentata</i> | Big Sagebrush | 9.7 | 10.0 | 29" |
| | <i>Symphoricarpos oreophilus</i> | Snowberry | 19.3 | 20.0 | 32" |
| | <i>Sub-total</i> | | 29.0 | 30.0 | |
| Trees | | | | | |
| | <i>Cercocarpus ledifolius</i> | Mountain Mahogany | 9.7 | 10.0 | 18.7" |

| Ground Cover (%) | |
|-------------------------|------|
| Litter | 64.2 |
| Rock | 3.6 |
| Bare Soil | 32.1 |