

Trend Study 17-9-07

Study site name: Lower Big Hollow .

Vegetation type: Mixed Oak-Sage .

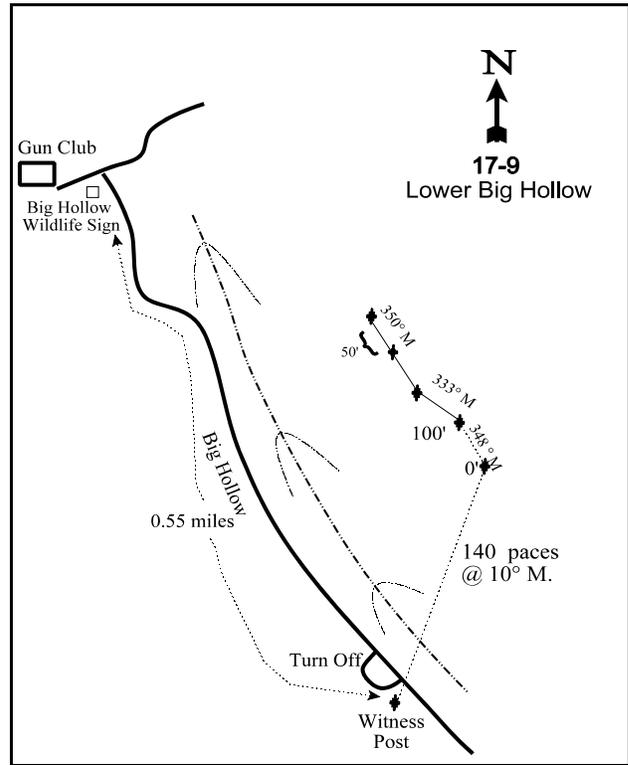
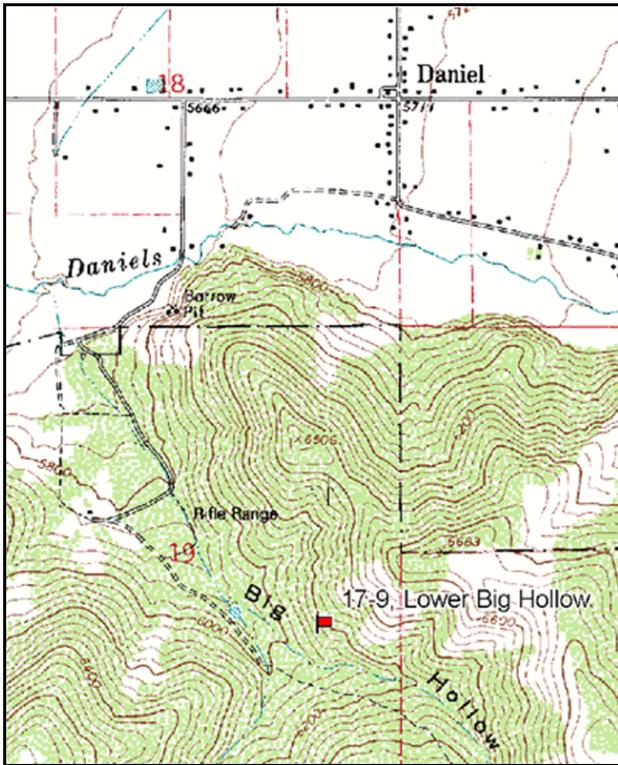
Compass bearing: frequency baseline 346 degrees magnetic.

Frequency belt placement: line 1 (11 & 95ft), line 2 (71ft), line 3 (59ft), line 4 [only 50 ft. long] (34ft).

Rebar: belt 5 on 3ft.

LOCATION DESCRIPTION

Beginning at the gun club parking lot at the mouth of Big Hollow, proceed east 0.10 miles to the road which runs up Big Hollow. Turn right and proceed up Big Hollow for 0.55 miles to a turnoff to the south and a green steel "T" fencepost. From the fencepost, the 0-foot baseline stake is located 140 paces away across Big Hollow, at an azimuth of 10 degrees magnetic. A red browse tag, number 67, is attached to the 0-foot stake of the frequency baseline.



Map Name: Charleston

Diagrammatic Sketch

Township 4S, Range 5E, Section 19,

GPS: NAD 83, UTM 12T 464569.7 E 4478191.0 N

DISCUSSION

Lower Big Hollow - Trend Study No. 17-9

Study Information

This study is located on Division of Wildlife Resources property approximately 0.5 miles (0.8 km) above the mouth of Big Hollow [elevation: 6,200 feet (1,890 m), slope: 30%-35%, aspect: southwest]. This is a mountain brush community with a rather sparse native understory. There is an ephemeral stream 200 feet (61 m) to the west, and a stock pond 750 feet (230 m) to the northwest. The majority of Big Hollow, at least the portion south of the stream, was consumed by an extremely hot fire in 1976. It was seeded the following fall with perennial grasses and forbs. Wildlife use during the winter is probably restricted to years with little snowfall. In management terms, the area may be equally or even more important as fawn-rearing habitat for deer and spring-fall range for elk. During 1983, at least two yearling bucks and several does with fawns were observed in the vicinity. In 1996, several deer and a deer carcass were observed on the study. From the pellet group transect, there were an estimated 38 deer days use/acre (94 ddu/ha) in 2002 and 29 deer days use/acre (73 ddu/ha) in 2007. Elk use was estimated at 4 days use/acre (10 edu/ha) in 2002 and 2 days use/acre (5 edu/ha) in 2007. Cattle were observed in the clearing below the study, and several deer skeletons were found on and around the study in 2007.

Soil

The soil is classified in the Wallsburg series and consists of shallow, well-drained, moderately-slowly permeable soils that formed in residuum and colluvium from limestone, sandstone and shale (USDA-NRCS 2007). Specifically at the study, the soil texture is a sandy clay loam and has neutral reactivity (pH of 7.1). The soil is moderately deep with many small rocks on the surface. Litter is abundant, but relative litter cover has decreased from 50% in 1996 to 42% in 2007. Relative cover of bare soil has been estimated at 10% or less in all sample years. The soil surface and profile have an abundance of large rocks and cobbles. The erosion condition was classified as stable-slight in 2002 and increased to slight in 2007, due to indications of surface litter, rock, and soil movement.

Browse

Although all sagebrush plants were classified as mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), some plants had characteristics of basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*). Sagebrush canopy cover was 17% in 2002 and 15% in 2007. The estimated density has oscillated between increasing and decreasing with alternate sample years. It has ranged from 1,500 plants/acre (3,713 plants/ha) in 2007 to 1,932 plants/acre (4,782 plants/ha) in 1989. Seedling sagebrush were sampled only in 1996. Young plants increased from 8% of the population in 1983 to 22% in 1996, and decreased to 0% by 2007. Decadence has fluctuated widely, accounting for 16%-76% of the population, and was greatest when the density was highest in 1989. There has been a steady increase in the density of dead plants from 580 plants/acre (1,436 plants/ha) in 1996 to 900 plants/acre (2,228 plants/ha) in 2007. The proportion of plants exhibiting poor vigor has ranged from 1% to 28%, and again was highest in 1989. Below-normal precipitation in 1989 (Utah Climate Summaries 2007) was likely the cause of the high decadence and poor vigor. The average crown measurements were also smaller in 1989 than in any other sample year. The average annual leader growth on sagebrush was 1.9 inches (4.8 cm) in 2002 and 2.1 inches (5.4 cm) in 2007. The population has shown light-moderate and moderate browse use.

Serviceberry (*Amelanchier alnifolia*) and antelope bitterbrush (*Purshia tridentata*) plants are present in low densities. Like the sagebrush population, the serviceberry density has oscillated, ranging from 40 plants/acre (99 plants/ha) in 2007 to 400 plants/acre (990 plants/ha) in 2002, and the majority of plants have been in the young or mature age classes. Vigor has been good except in 2002, when 45% of the population had poor vigor. Browse use has been light and moderate. The bitterbrush density increased from 66 plants/acre (163 plants/ha) in 1983 to 140 plants/acre (347 plants/ha) in 1996, and decreased to 20 plants/acre (50 plants/ha) in

2007. Most bitterbrush plants have been in the mature age class. Bitterbrush vigor has been good except in 2002, when 17% of the population was in poor vigor. Browse use has increased from exclusively light in 1983 to exclusively heavy in 2007.

Gambel oak (*Quercus gambelii*) is the second most abundant browse species, and comprised 9% canopy cover in 2002 and 6% in 2007. No oak were sampled in 1983 or 1989. However, after the sample area increased in 1996, the estimated density increased from 1,200 stems/acre (2,970 stems/ha) to 2,840 stems/acre (7,030 stems/ha) in 2002, and decreased to 1,900 plants/acre (4,703 plants/ha) in 2007. Decadent plants, and plants with poor vigor have been low in all sample years. Browse use has been light. The oak clones provide some escape and cover for wildlife during the summer and fall. Increaser shrubs are also present, including small numbers of broom snakeweed (*Gutierrezia sarothrae*) and pricklypear cactus (*Opuntia* sp.).

Herbaceous Understory

The herbaceous understory has fairly high diversity, but desirable species are limited. Perennial grass cover was 6% in 1996, and 7% in 2002 and 2007. Between four and nine perennial grass species have been sampled, and the dominant perennial species include bluebunch wheatgrass (*Agropyron spicatum*), smooth brome (*Bromus inermis*), and Sandberg bluegrass (*Poa secunda*). Collectively, the cover of these grasses has averaged 5% since 1996. Bulbous bluegrass (*Poa bulbosa*), which has a phenology similar to annual grasses (Stewart and Hull 1949), is present and quadrat frequency increased from 1% in 1996 to 7% in 2007. Cheatgrass (*Bromus tectorum*) and Japanese brome (*Bromus japonicus*) were sampled beginning in 1996. Cheatgrass has been the dominant grass and comprised an average 12% cover since 1996. Cheatgrass has had a higher quadrat frequency than all perennial grasses combined.

Forbs have been a small understory component and cover has decreased from 4% in 1996 to 3% in 2002, and 2% in 2007. The forb composition has included increaser species with little forage value. The dominant species have been pale alysium (*Alyssum alyssoides*) and arrowleaf balsamroot (*Balsamorhiza sagittata*).

1989 TREND ASSESSMENT

The browse trend is slightly down. Although the density of mountain big sagebrush increased 21%, decadence increased from 21% to 76% of the population. Thus, the density of non-decadent plants actually went down, decreasing from 1,266 plants/acre (3,134 plants/ha) to 466 plants/acre (1,153 plants/ha). The proportion of plants exhibiting poor vigor increased from 4% to 28% of the population. Browse use on sagebrush shifted from light to moderate. Despite the negative changes in the sagebrush population, the browse trend was determined to only be slightly down because serviceberry and true mountain mahogany (*Cercocarpus montanus*) were sampled for the first time, and bitterbrush density increased. The grass trend is slightly up. Although the sum of nested frequency of perennial grass increased nearly four-fold, abundance remained low. There was a significant increase in the nested frequency of Sandberg bluegrass. The forb trend is up. The sum of nested frequency of perennial forbs increased 72%, and the number of perennial species increased from seven to 13.

browse - slightly down (-1) grass - slightly up (+1) forb - up (+2)

1996 TREND ASSESSMENT

The browse trend is slightly up. The density of sagebrush decreased 20%. However, most other parameters indicate that the sagebrush stand is improving. Seedling sagebrush were sampled for the first time, and the young age class increased from 10% to 22% of the population. Decadence decreased to 18%, and only 1% of the population was classified as dying. The density of dead plants increased from 0 to 580 plants/acre (1,436 plants/ha). Browse use on sagebrush shifted from moderate to light. Serviceberry and true mountain mahogany densities decreased, and the density of bitterbrush remained stable. The grass trend is up. Excluding bulbous bluegrass, the sum of nested frequency of perennial grasses increased 58%. There was a significant increase in the nested frequency of bluebunch wheatgrass, and the number of perennial species that

were sampled increased from six to 11. Bulbous bluegrass was sampled for the first time, in one quadrat. Annual grasses were likely to have been present prior to 1996, but were not included. Cheatgrass was sampled in 84% of the quadrats and comprised 70% of the grass cover. The forb trend is slightly up. The sum of nested frequency of perennial forbs increased 24%, but the increase was muted by the poor forage value of the species. The Desirable Components Index (DCI) score was fair due to the moderate browse cover, low perennial grass and forb cover, and high annual grass cover.

winter range condition (DCI) - fair (55) Mid-level potential scale
browse - slightly up (+1) grass - up (+2) forb - slightly up (+1)

2002 TREND ASSESSMENT

The browse trend is slightly up. The density of sagebrush increased 25%. No seedlings were sampled and young plants declined to only 3% of the population. Decadence increased to 24%, and 10% of the population was classified as dying. Additionally, the density of dead plants increased 35%. The proportion of plants exhibiting poor vigor increased from 1% to 10%. Serviceberry density increased three-fold and bitterbrush density decreased 14%. The grass trend is stable. Excluding bulbous bluegrass, the sum of nested frequency of perennial grasses decreased 15%. However, there was a significant decrease in the frequency of cheatgrass. The forb trend is down. The sum of nested frequency of perennial forbs decreased 72%, including a significant decrease in pale stickseed (*Hackelia patens*). There were also six fewer perennial species sampled. The DCI score remained fair.

winter range condition (DCI) - fair (54) Mid-level potential scale
browse - slightly up (+1) grass - stable (0) forb - down (-2)

2007 TREND ASSESSMENT

The browse trend is down. The density of sagebrush decreased 22%. There were no seedling or young plants sampled. Decadence decreased to 16%, and 8% of the population was classified as dying. The density of dead plants increased 15%. The proportion of plants exhibiting poor vigor increased to 13%. The sagebrush defoliator moth (*Aroga websteri*) had infested 75% of the sagebrush. Serviceberry and bitterbrush densities decreased 90% and 83%, respectively, and both species were hedged. The grass trend is slightly down. Excluding bulbous bluegrass, the sum of nested frequency of perennial grass increased 10%. The increase was countered by significant increases in the nested frequencies of cheatgrass and bulbous bluegrass. The forb trend is stable. The sum of nested frequency increased 24%, but forb abundance remained low. Neither grasses nor forbs had animal use. The DCI score decreased to very poor-poor due to the decrease in browse cover, absence of young browse plants, and increase in annual grass cover.

winter range condition (DCI) - very poor-poor (35) Mid-level potential scale
browse - down (-2) grass - slightly down (-1) forb - stable (0)

HERBACEOUS TRENDS --
 Management unit 17 , Study no: 9

| Type | Species | Nested Frequency | | | | | Average Cover % | | |
|------|-----------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|------|
| | | '83 | '89 | '96 | '02 | '07 | '96 | '02 | '07 |
| G | Agropyron intermedium | - | - | _a 16 | _a 12 | _a 10 | .81 | .76 | .54 |
| G | Agropyron spicatum | _a 8 | _a 15 | _b 64 | _b 51 | _b 52 | 3.34 | 3.95 | 4.01 |
| G | Bromus inermis | - | _a 2 | _a 3 | _a 6 | _b 16 | .15 | .33 | 1.08 |
| G | Bromus japonicus (a) | - | - | _a 2 | _a 8 | _a 6 | .00 | .16 | .01 |

| Type | Species | Nested Frequency | | | | | Average Cover % | | |
|-----------------------------|-----------------------------------|------------------|------------------|------------------|------------------|------------------|-----------------|-------|-------|
| | | '83 | '89 | '96 | '02 | '07 | '96 | '02 | '07 |
| G | <i>Bromus tectorum</i> (a) | - | - | _b 298 | _a 240 | _b 311 | 13.48 | 7.15 | 16.84 |
| G | <i>Dactylis glomerata</i> | - | _a 3 | _a 1 | - | _a 1 | .00 | - | .00 |
| G | <i>Poa bulbosa</i> | - | - | _a 1 | _a 7 | _b 21 | .03 | .53 | .49 |
| G | <i>Poa fendleriana</i> | _a 1 | _a 8 | _a 9 | _a 5 | _a 2 | .56 | .18 | .03 |
| G | <i>Poa pratensis</i> | _a 6 | _a 19 | _a 24 | - | - | .28 | - | - |
| G | <i>Poa secunda</i> | _a 10 | _b 48 | _{ab} 32 | _b 50 | _b 46 | .62 | 1.14 | .89 |
| G | <i>Sitanion hystrix</i> | - | - | _a 1 | _a 3 | - | .03 | .15 | - |
| Total for Annual Grasses | | 0 | 0 | 300 | 248 | 317 | 13.49 | 7.31 | 16.85 |
| Total for Perennial Grasses | | 25 | 95 | 151 | 134 | 148 | 5.84 | 7.06 | 7.06 |
| Total for Grasses | | 25 | 95 | 451 | 382 | 465 | 19.33 | 14.38 | 23.92 |
| F | <i>Agoseris glauca</i> | - | _a 1 | - | - | _a 1 | - | - | .03 |
| F | <i>Alyssum alyssoides</i> (a) | - | - | _b 163 | _a 102 | _a 74 | 1.13 | .82 | .18 |
| F | <i>Arabis</i> sp. | _a 28 | _a 17 | _a 18 | - | - | .03 | - | - |
| F | <i>Aster</i> sp. | - | _a 7 | _a 7 | _a 6 | - | .03 | .03 | - |
| F | <i>Astragalus</i> sp. | - | 2 | - | - | - | - | - | - |
| F | <i>Balsamorhiza sagittata</i> | - | _a 7 | _a 5 | _a 9 | _a 2 | .68 | 1.14 | 1.11 |
| F | <i>Castilleja chromosa</i> | _a 3 | _a 2 | - | - | _a 3 | - | - | .03 |
| F | <i>Camelina microcarpa</i> (a) | - | - | - | _a 4 | _a 1 | - | .08 | .00 |
| F | <i>Calochortus nuttallii</i> | - | _a 3 | - | _a 2 | - | - | .00 | - |
| F | <i>Chaenactis douglasii</i> | - | - | 4 | - | - | .06 | - | - |
| F | <i>Cirsium</i> sp. | - | - | 6 | - | - | .23 | - | - |
| F | <i>Collomia linearis</i> (a) | _a 5 | - | _a 2 | _b 29 | _a 7 | .03 | .06 | .01 |
| F | <i>Comandra pallida</i> | - | - | _a 6 | _a 3 | _a 1 | .01 | .00 | .00 |
| F | <i>Collinsia parviflora</i> (a) | - | - | - | 3 | - | - | .00 | - |
| F | <i>Crepis acuminata</i> | - | - | - | 11 | - | - | .30 | - |
| F | <i>Descurainia</i> sp. (a) | - | - | _a 3 | - | _a 3 | .00 | - | .01 |
| F | <i>Epilobium brachycarpum</i> (a) | - | - | 2 | - | - | .00 | - | - |
| F | <i>Erigeron</i> sp. | - | - | 25 | - | - | .42 | - | - |
| F | <i>Galium</i> sp. | - | - | - | _a 3 | _a 6 | - | .15 | .15 |
| F | <i>Grindelia squarrosa</i> | - | - | 3 | - | - | .00 | - | - |
| F | <i>Hackelia patens</i> | _a 9 | _{ab} 26 | _b 37 | _a 9 | _{ab} 26 | .38 | .09 | .56 |
| F | <i>Holosteum umbellatum</i> (a) | - | - | - | _a 11 | _a 9 | - | .06 | .05 |
| F | <i>Ipomopsis aggregata</i> | - | _a 6 | _a 3 | - | _a 3 | .00 | - | .00 |
| F | <i>Lappula occidentalis</i> (a) | - | - | - | 4 | - | - | .03 | - |
| F | <i>Lactuca serriola</i> | - | _a 7 | _a 1 | - | - | .01 | - | - |
| F | <i>Machaeranthera canescens</i> | - | _a 16 | _a 20 | - | - | .22 | - | - |

| Type | Species | Nested Frequency | | | | | Average Cover % | | |
|---------------------------|--------------------------|------------------|-----------------|-----------------|-----------------|-----|-----------------|------|------|
| | | '83 | '89 | '96 | '02 | '07 | '96 | '02 | '07 |
| F | Microsteris gracilis (a) | - | - | - | 26 | - | - | .27 | - |
| F | Orobanche sp. | - | - | - | - | 9 | - | - | .04 |
| F | Orthocarpus tolmiei (a) | - | - | _a 3 | _a 12 | - | .03 | .02 | - |
| F | Phlox longifolia | - | - | - | - | 5 | - | - | .01 |
| F | Polygonum douglasii (a) | - | - | 2 | - | - | .00 | - | - |
| F | Senecio multilobatus | _b 25 | _b 25 | _a 3 | _a 2 | - | .07 | .00 | - |
| F | Solidago sparsiflora | 3 | - | - | - | - | - | - | - |
| F | Tragopogon dubius | _a 7 | _a 10 | _a 19 | - | - | .17 | - | - |
| F | Viguiera multiflora | - | - | 3 | - | - | .01 | - | - |
| Total for Annual Forbs | | 5 | 0 | 175 | 191 | 94 | 1.21 | 1.36 | 0.26 |
| Total for Perennial Forbs | | 75 | 129 | 160 | 45 | 56 | 2.37 | 1.74 | 1.94 |
| Total for Forbs | | 80 | 129 | 335 | 236 | 150 | 3.59 | 3.10 | 2.21 |

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --

Management unit 17 , Study no: 9

| Type | Species | Strip Frequency | | | Average Cover % | | |
|------------------|-------------------------------|-----------------|-----|-----|-----------------|-------|-------|
| | | '96 | '02 | '07 | '96 | '02 | '07 |
| B | Amelanchier alnifolia | 4 | 5 | 2 | 1.93 | 2.29 | .00 |
| B | Artemisia tridentata vaseyana | 49 | 59 | 52 | 11.55 | 12.98 | 10.48 |
| B | Gutierrezia sarothrae | 5 | 0 | 0 | .06 | - | - |
| B | Mahonia repens | 1 | 0 | 0 | - | - | - |
| B | Opuntia sp. | 7 | 6 | 5 | .18 | .03 | .03 |
| B | Purshia tridentata | 6 | 6 | 1 | 1.82 | .68 | - |
| B | Quercus gambelii | 24 | 30 | 25 | 6.91 | 6.28 | 5.18 |
| B | Symphoricarpos oreophilus | 4 | 7 | 8 | .06 | .56 | .21 |
| Total for Browse | | 100 | 113 | 93 | 22.52 | 22.85 | 15.91 |

CANOPY COVER, LINE INTERCEPT --

Management unit 17 , Study no: 9

| Species | Percent Cover | |
|-------------------------------|---------------|-------|
| | '02 | '07 |
| Amelanchier alnifolia | .86 | - |
| Artemisia tridentata vaseyana | 16.50 | 15.44 |
| Opuntia sp. | .18 | .11 |
| Purshia tridentata | 1.73 | 1.14 |
| Quercus gambelii | 8.56 | 6.33 |
| Symphoricarpos oreophilus | .20 | .46 |

KEY BROWSE ANNUAL LEADER GROWTH --

Management unit 17 , Study no: 9

| Species | Average leader growth (in) | |
|-------------------------------|----------------------------|-----|
| | '02 | '07 |
| Artemisia tridentata vaseyana | 1.9 | 2.1 |

BASIC COVER --

Management unit 17 , Study no: 9

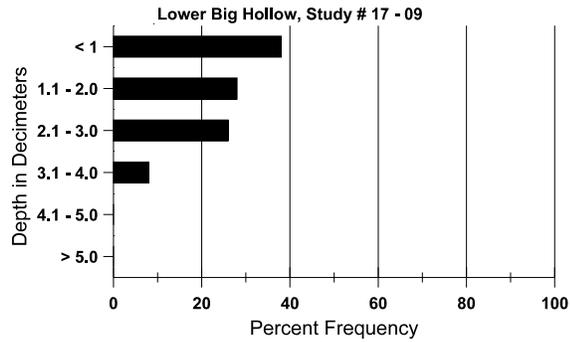
| Cover Type | Average Cover % | | | | |
|-------------|-----------------|-------|-------|-------|-------|
| | '83 | '89 | '96 | '02 | '07 |
| Vegetation | .50 | 5.50 | 43.07 | 38.29 | 44.39 |
| Rock | 7.75 | 13.75 | 10.48 | 13.89 | 11.75 |
| Pavement | 1.75 | 9.50 | 2.45 | 5.50 | 3.29 |
| Litter | 79.00 | 65.00 | 58.93 | 54.93 | 47.44 |
| Cryptogams | 1.50 | .75 | .15 | .56 | .07 |
| Bare Ground | 9.50 | 5.50 | 3.63 | 12.10 | 6.88 |

SOIL ANALYSIS DATA --

Herd Unit 17, Study no: 09, Lower Big Hollow

| Effective rooting depth (in) | Temp °F (depth) | pH | Clay loam | | | %OM | ppm P | ppm K | dS/m |
|------------------------------|-----------------|-----|-----------|-------|-------|-----|-------|-------|------|
| | | | %sand | %silt | %clay | | | | |
| 14.5 | 49.5 (16.0) | 7.1 | 49.8 | 19.4 | 30.7 | 3.0 | 13.2 | 128.0 | .6 |

Stoniness Index



PELLET GROUP DATA --

Management unit 17 , Study no: 9

| Type | Quadrat Frequency | | |
|--------|-------------------|-----|-----|
| | '96 | '02 | '07 |
| Rabbit | 3 | - | 3 |
| Elk | 3 | 2 | 2 |
| Deer | 8 | 8 | 8 |

| Days use per acre (ha) | |
|------------------------|---------|
| '02 | '07 |
| - | - |
| 4 (10) | 2 (5) |
| 38 (94) | 30 (73) |

BROWSE CHARACTERISTICS --

Management unit 17 , Study no: 9

| | | Age class distribution (plants per acre) | | | | | Utilization | | | | | |
|--------------------------------------|---------------------------------------|--|-------|--------|----------|------|-------------|---------|------------|---------|--------------|---------------------------|
| Y | Plants per Acre (excluding seedlings) | Seedling | Young | Mature | Decadent | Dead | % moderate | % heavy | % decadent | % dying | % poor vigor | Average Height Crown (in) |
| Amelanchier alnifolia | | | | | | | | | | | | |
| 83 | 0 | - | - | - | - | - | 0 | 0 | 0 | - | 0 | -/- |
| 89 | 266 | - | 266 | - | - | - | 0 | 0 | 0 | - | 0 | -/- |
| 96 | 120 | - | 40 | 80 | - | - | 17 | 0 | 0 | - | 0 | 47/73 |
| 02 | 400 | - | 260 | 80 | 60 | 20 | 65 | 15 | 15 | 10 | 45 | 29/24 |
| 07 | 40 | - | - | 40 | - | - | 100 | 0 | 0 | - | 0 | 36/55 |
| Artemisia tridentata vaseyana | | | | | | | | | | | | |
| 83 | 1599 | - | 133 | 1133 | 333 | - | 25 | 0 | 21 | - | 4 | 31/46 |
| 89 | 1932 | - | 200 | 266 | 1466 | - | 66 | 0 | 76 | 28 | 28 | 28/30 |
| 96 | 1540 | 140 | 340 | 920 | 280 | 580 | 22 | 0 | 18 | 1 | 1 | 26/50 |
| 02 | 1920 | - | 60 | 1400 | 460 | 780 | 15 | 1 | 24 | 10 | 10 | 28/43 |
| 07 | 1500 | - | - | 1260 | 240 | 900 | 29 | 5 | 16 | 8 | 13 | 32/46 |

| | | Age class distribution (plants per acre) | | | | | Utilization | | | | | |
|------------------------------|---------------------------------------|--|-------|--------|----------|------|-------------|---------|------------|---------|--------------|---------------------------|
| Year | Plants per Acre (excluding seedlings) | Seedling | Young | Mature | Decadent | Dead | % moderate | % heavy | % decadent | % dying | % poor vigor | Average Height Crown (in) |
| Cercocarpus montanus | | | | | | | | | | | | |
| 83 | 0 | - | - | - | - | - | 0 | 0 | - | - | 0 | -/- |
| 89 | 66 | - | - | 66 | - | - | 100 | 0 | - | - | 0 | 45/39 |
| 96 | 0 | - | - | - | - | - | 0 | 0 | - | - | 0 | -/- |
| 02 | 0 | - | - | - | - | - | 0 | 0 | - | - | 0 | 69/82 |
| 07 | 0 | - | - | - | - | - | 0 | 0 | - | - | 0 | -/- |
| Gutierrezia sarothrae | | | | | | | | | | | | |
| 83 | 200 | - | - | 200 | - | - | 0 | 0 | - | - | 0 | 13/6 |
| 89 | 1666 | - | - | 1666 | - | - | 0 | 0 | - | - | 0 | 11/12 |
| 96 | 360 | 40 | 60 | 300 | - | - | 0 | 0 | - | - | 0 | 12/16 |
| 02 | 0 | - | - | - | - | - | 0 | 0 | - | - | 0 | 9/10 |
| 07 | 0 | - | - | - | - | - | 0 | 0 | - | - | 0 | 13/18 |
| Mahonia repens | | | | | | | | | | | | |
| 83 | 0 | - | - | - | - | - | 0 | 0 | - | - | 0 | -/- |
| 89 | 0 | - | - | - | - | - | 0 | 0 | - | - | 0 | -/- |
| 96 | 20 | - | - | 20 | - | - | 0 | 0 | - | - | 0 | -/- |
| 02 | 0 | - | - | - | - | - | 0 | 0 | - | - | 0 | -/- |
| 07 | 0 | - | - | - | - | - | 0 | 0 | - | - | 0 | -/- |
| Opuntia sp. | | | | | | | | | | | | |
| 83 | 933 | - | - | 933 | - | - | 0 | 0 | 0 | - | 0 | 6/8 |
| 89 | 1200 | - | 600 | 600 | - | - | 0 | 0 | 0 | - | 0 | 6/14 |
| 96 | 200 | - | - | 200 | - | - | 0 | 0 | 0 | - | 0 | 5/14 |
| 02 | 160 | - | - | 80 | 80 | - | 0 | 0 | 50 | 38 | 38 | 4/11 |
| 07 | 100 | - | - | 100 | - | - | 0 | 0 | 0 | - | 0 | 5/10 |
| Purshia tridentata | | | | | | | | | | | | |
| 83 | 66 | - | - | 66 | - | - | 0 | 0 | 0 | - | 0 | 16/24 |
| 89 | 133 | - | - | 133 | - | - | 100 | 0 | 0 | - | 0 | 12/18 |
| 96 | 140 | - | - | 120 | 20 | - | 71 | 29 | 14 | - | 0 | 27/75 |
| 02 | 120 | - | - | 60 | 60 | - | 0 | 83 | 50 | 17 | 17 | 26/66 |
| 07 | 20 | - | - | 20 | - | 60 | 0 | 100 | 0 | - | 0 | 39/74 |
| Quercus gambelii | | | | | | | | | | | | |
| 83 | 0 | - | - | - | - | - | 0 | 0 | 0 | - | 0 | -/- |
| 89 | 0 | - | - | - | - | - | 0 | 0 | 0 | - | 0 | -/- |
| 96 | 1200 | - | 200 | 980 | 20 | 20 | 2 | 0 | 2 | 2 | 2 | 36/35 |
| 02 | 2840 | - | 440 | 2340 | 60 | 620 | 8 | 0 | 2 | 1 | 1 | 32/19 |
| 07 | 1900 | 40 | 180 | 1620 | 100 | 460 | 3 | 0 | 5 | - | 0 | 35/20 |

| | | Age class distribution (plants per acre) | | | | | Utilization | | | | | |
|----------------------------------|---------------------------------------|--|-------|--------|----------|------|-------------|---------|------------|---------|--------------|---------------------------|
| Year | Plants per Acre (excluding seedlings) | Seedling | Young | Mature | Decadent | Dead | % moderate | % heavy | % decadent | % dying | % poor vigor | Average Height Crown (in) |
| Symphoricarpos oreophilus | | | | | | | | | | | | |
| 83 | 0 | - | - | - | - | - | 0 | 0 | 0 | - | 0 | -/- |
| 89 | 0 | - | - | - | - | - | 0 | 0 | 0 | - | 0 | -/- |
| 96 | 100 | - | 20 | 80 | - | - | 0 | 0 | 0 | - | 0 | 19/29 |
| 02 | 160 | - | - | 160 | - | - | 0 | 13 | 0 | - | 0 | 25/29 |
| 07 | 160 | - | - | 140 | 20 | 40 | 0 | 0 | 13 | 13 | 13 | 21/30 |