Trend Study 18-29-02

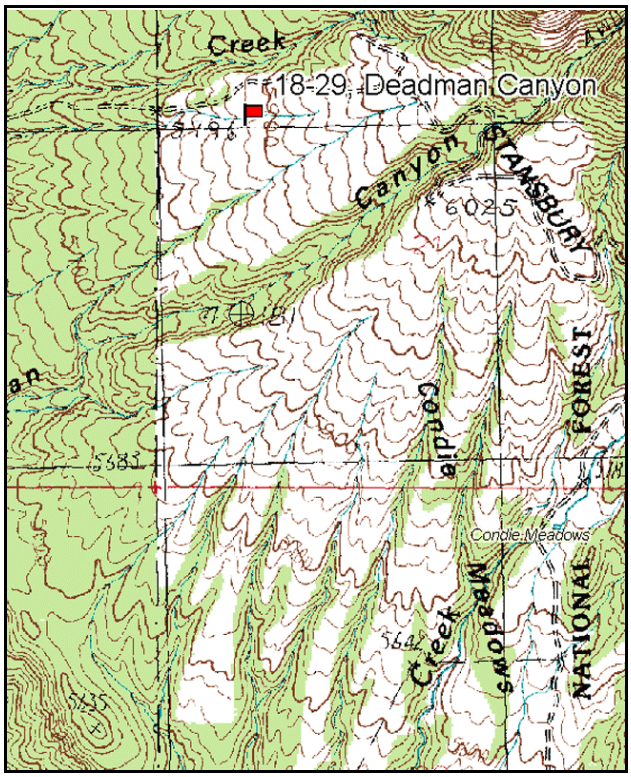
Study site name: Deadman Canyon . Vegetation type: Chained, Seeded PJ .

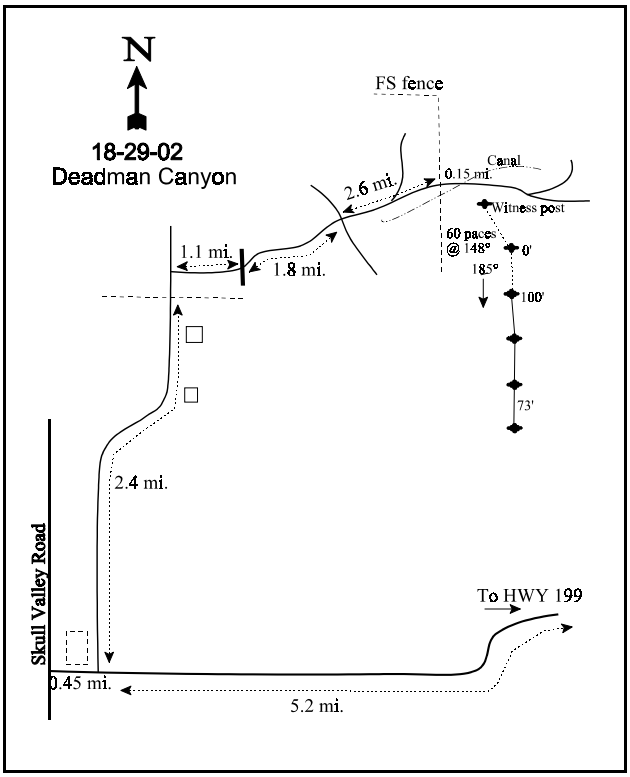
Compass bearing: frequency baseline 185 degrees magnetic.

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

LOCATION DESCRIPTION

From U-l99, go 5.2 miles west on Old Lincoln Road. Turn north and go 2.0 miles to the Williams Ranch. Continue 0.4 mile and turn right at the fork just past a fence. Go 1.1 miles to a gate. Continue 1.8 miles to an intersection, continue northeasterly. Go 2.6 miles to the Forest Service boundary fence. From the cattle guard, go 0.15 miles to a witness post on the right side of the road. From this fence post, walk 60 paces south (148 degrees) to the 0-foot baseline stake. It is marked by a red browse tag, number 3927.




Map Name: Terra

Diagrammatic Sketch

Township 5S , Range 7W , Section 21

GPS: NAD 27, UTM 12S 4470005 N 360261 E

## DISCUSSION

### Deadman Canyon - Trend Study No. 18-29

The Deadman Canyon study, although located only a short distance from study 18-28, Condie Meadows, samples a markedly different community. This study occurs at an elevation of 5,880 feet with a 10% slope and a west aspect. The area is a former juniper-pinyon woodland site that has been chained and seeded with perennial grasses. Initially there was no evidence that any shrub or forb species was included in the seed mixture. Nevertheless a fair browse stand remains, while forbs occur infrequently. Deer use, as evidenced by pellet group frequency, was much heavier than at Condie Meadows in 1983. Deer use was moderate in 1997, with a quadrat frequency of 29%. Pellet group transect data from 2002 estimated 58 deer days use/acre (142 ddu/ha). Rabbit pellets were also very common.

Soil is moderately deep and rocky in the upper horizons. Effective rooting depth is estimated at a little over 10 inches with a soil temperature of 60°F at about 12 inches. The soil reaction is neutral (pH of 7.3). The amount of phosphorus in the soil is low at 6.8 ppm. Values less than 10 ppm could be a limiting factor for plant establishment and development. Seeded grasses have established well and provide valuable protection from erosion. Moderate erosion was thought to be occurring initially. Currently erosion is negligible and the soil erosion condition class was determined as slight in 2002.

Browse composition consists of a mixed stand of Stansbury cliffrose, Wyoming big sagebrush, and Utah juniper. Except for the occasionally abundant broom snakeweed, other shrub species occur infrequently. Both key browse species occur in relatively low numbers, but are vigorous. Population estimates for both species have remained relatively stable at about 800 plants/acre for sagebrush and 150 plants/acre for cliffrose. When the study was setup, browse utilization was light to moderate for sagebrush and heavy for cliffrose. In 1997, use was light for both species. Utilization increased for each in 2002, but both species show good vigor and low decadence. Annual leader growth was poor in 2002 due to drought conditions. It averaged only 1.2 inches for sagebrush and 1.4 inches for cliffrose. Utah juniper appeared to be increasing but not an immediate threat in 1983. Point quarter data from 2002 estimated 89 juniper trees/acre with an average diameter of 6.5 inches.

Perennial grasses comprise the bulk of the herbaceous cover. Initially, common species included the seeded types, crested and intermediate wheatgrass. Both of these species have steadily declined since. The natives, bluebunch wheatgrass and Sandberg bluegrass, provided most of the grass cover in 1997 and 2002. Cheatgrass was abundant in 1997, providing 29% of the total grass cover. Due to drought conditions, it declined significantly in nested frequency and cover in 2002. Forb composition and density continue to be poor. Forage production from this component is still low and few desirable species can be found. Due to drought conditions, forbs were essentially eliminated on this site in 2002.

### 1983 APPARENT TREND ASSESSMENT

Soil trend appears stable or perhaps slightly downward. Most soil parameters indicate a moderate level of ongoing erosion. This is essentially a less stable site than the area sampled by the Condie Meadow study. Vegetative condition for deer winter range is fair. Unless Utah juniper increases rapidly and becomes more competitive than expected, there should be a steady increase in browse production over the next 10 to 15 years.

1989 TREND ASSESSMENT

An obvious and significant change has occurred on the Deadman Canyon chaining since the initial reading. Sum of nested frequency shows a significant decline in intermediate wheatgrass and reciprocally a significant increase for crested wheatgrass. This will happen with drought. Native grass species, namely bluebunch wheatgrass and Sandberg bluegrass, are the most prevalent. Although still sparse, big sagebrush increased in density to 832 plants per acre. The majority of the population is young plants (56%). The mature plants have grown well and are vigorous and moderately hedged. The cliffrose was not as well sampled due to its relatively low density, but overall the largely mature population is vigorous though often unavailable due to its height. Ground cover shows a decrease in litter and an increase in pavement. The percentage of bare soil remains stable at around 15%. Erosion problems are spotty, but the soil trend is stable. The chaining provides good forage for both livestock and wildlife with vegetative trends continuing to improve.

TREND ASSESSMENT
soil - stable (3)
browse - slightly upward (4)
herbaceous understory - stable (3)

1997 TREND ASSESSMENT

The trend for soil is continuing to improve with percent bare soil now down to 8% and herbaceous cover providing 67% of the total vegetative cover. The trend for browse is stable for both key species, Wyoming big sagebrush and cliffrose. Both have improved vigor and use is mostly light at this time. The trend for the herbaceous understory is slightly improved overall with most of the herbaceous cover coming from bluebunch wheatgrass, Sandberg bluegrass, and intermediate wheatgrass. The forbs have improved also, but they still only provide about 13% of the total herbaceous cover.

TREND ASSESSMENT
soil - slightly up (4)
browse - stable (3)
herbaceous understory - slightly up (4)

2002 TREND ASSESSMENT

Trend for soil is down slightly. Cover of bare ground has increased from 8% to 20% and total herbaceous cover has declined slightly due to drought. Litter cover remains stable and the soil erosion condition class was determined as slight in 2002. Trend for the key browse species, Wyoming big sagebrush and cliffrose, is stable. Densities of these species have remained similar to 1997 estimates. Use has increased but vigor remains good and the number of decadent plants is low. Trend for the herbaceous understory is mixed. Sum of nested frequency for perennial grasses remained similar to 1997, but composition has changed to a more native grass dominated stand. Bluebunch wheatgrass increased significantly while intermediate wheatgrass declined significantly. Drought conditions have also caused a significant decline in cheatgrass. Sum of nested frequency for forbs has declined dramatically. Ten forb species were encountered in 1997 but only three annual forb species remained in 2002. Since forbs have never been very abundant on this site, the overall herbaceous understory trend is considered stable.

TREND ASSESSMENT
soil - slightly sown (2)
browse - stable (3)
herbaceous understory - stable for grasses (3)

HERBACEOUS TRENDS --
Herd unit 18 , Study no: 29

| Type | Species | Nested Frequency | | | | Quadrat Frequency | | | | Average Cover % | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | '83 | '89 | '97 | '02 | '83 | '89 | '97 | '02 | '97 | '02 |
| G | Agropyron cristatum | $_{b}$50 | $_{c}$133 | $_{ab}$31 | $_{a}$2 | 16 | 46 | 10 | 1 | 1.17 | .03 |
| G | Agropyron intermedium | $_{c}$98 | $_{a}$6 | $_{b}$50 | $_{a}$7 | 34 | 3 | 18 | 3 | 2.03 | .41 |
| G | Agropyron spicatum | $_{a}$159 | $_{a}$165 | $_{a}$211 | $_{b}$253 | 54 | 63 | 71 | 87 | 10.55 | 15.70 |
| G | Bromus tectorum (a) | - | - | $_{b}$228 | $_{a}$20 | - | - | 74 | 9 | 6.31 | .04 |
| G | Oryzopsis hymenoides | - | - | 2 | 3 | - | - | 1 | 1 | .03 | .15 |
| G | Poa bulbosa | $_{b}$13 | $_{a}$- | $_{a}$- | $_{ab}$2 | 5 | - | - | 1 | - | .00 |
| G | Poa secunda | $_{b}$122 | $_{a}$51 | $_{b}$91 | $_{b}$117 | 54 | 22 | 36 | 47 | 1.72 | 1.67 |
| G | Sitanion hystrix | $_{b}$17 | $_{a}$1 | $_{ab}$8 | $_{a}$- | 9 | 1 | 4 | - | .07 | - |
| Total for Annual Grasses | | 0 | 0 | 228 | 20 | 0 | 0 | 74 | 9 | 6.31 | 0.04 |
| Total for Perennial Grasses | | 459 | 356 | 393 | 384 | 172 | 135 | 140 | 140 | 15.59 | 17.98 |
| Total for Grasses | | 459 | 356 | 621 | 404 | 172 | 135 | 214 | 149 | 21.90 | 18.02 |
| F | Agoseris glauca | 4 | - | - | - | 2 | - | - | - | - | - |
| F | Alyssum alyssoides (a) | - | - | $_{b}$241 | $_{a}$17 | - | - | 74 | 7 | 1.79 | .03 |
| F | Allium spp. | - | - | 1 | - | - | - | 1 | - | .03 | - |
| F | Antennaria rosea | 3 | - | - | - | 2 | - | - | - | - | - |
| F | Arabis spp. | $_{a}$- | $_{b}$14 | $_{b}$13 | $_{a}$- | - | 7 | 6 | - | .08 | - |
| F | Calochortus nuttallii | $_{b}$19 | $_{a}$4 | $_{a}$3 | $_{a}$- | 12 | 2 | 2 | - | .05 | - |
| F | Chaenactis douglasii | 7 | - | - | - | 3 | - | - | - | - | - |
| F | Crepis acuminata | 3 | - | - | - | 2 | - | - | - | - | - |
| F | Cruciferae | - | 1 | - | - | - | 1 | - | - | - | - |
| F | Erigeron spp. | 2 | - | - | - | 1 | - | - | - | - | - |
| F | Erigeron pumilus | 2 | - | - | - | 1 | - | - | - | - | - |
| F | Holosteum umbellatum (a) | - | - | - | 2 | - | - | - | 1 | - | .00 |
| F | Lathyrus brachycalyx | $_{c}$83 | $_{d}$133 | $_{b}$48 | $_{a}$- | 32 | 47 | 19 | - | .58 | - |
| F | Lactuca serriola | - | - | 1 | - | - | - | 1 | - | .00 | - |
| F | Petradoria pumila | $_{b}$17 | $_{b}$12 | $_{ab}$5 | $_{a}$- | 9 | 6 | 2 | - | .02 | - |
| F | Phlox longifolia | 8 | 3 | 8 | - | 4 | 1 | 3 | - | .21 | - |
| F | Ranunculus testiculatus (a) | - | - | $_{b}$107 | $_{a}$2 | - | - | 39 | 1 | .39 | .00 |
| F | Sisymbrium altissimum (a) | - | - | 2 | - | - | - | 2 | - | .03 | - |
| Total for Annual Forbs | | 0 | 0 | 350 | 21 | 0 | 0 | 115 | 9 | 2.22 | 0.04 |
| Total for Perennial Forbs | | 148 | 167 | 79 | 0 | 68 | 64 | 34 | 0 | 0.98 | 0 |
| Total for Forbs | | 148 | 167 | 429 | 21 | 68 | 64 | 149 | 9 | 3.21 | 0.04 |

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

BROWSE TRENDS --
Herd unit 18 , Study no: 29

| Type | Species | Strip Frequency '97 | Strip Frequency '02 | Average Cover % '97 | Average Cover % '02 |
|---|---|---|---|---|---|
| B | Artemisia tridentata wyomingensis | 27 | 21 | 3.38 | 5.01 |
| B | Cowania mexicana stansburiana | 9 | 6 | 4.37 | 2.73 |
| B | Gutierrezia sarothrae | 36 | 4 | .77 | - |
| B | Juniperus osteosperma | 3 | 3 | 3.97 | 5.91 |
| Total for Browse | | 75 | 34 | 12.50 | 13.67 |

CANOPY COVER -- LINE INTERCEPT
Herd unit 18 , Study no: 29

| Species | Percent Cover '97 | Percent Cover '02 |
|---|---|---|
| Artemisia tridentata wyomingensis | - | 5.25 |
| Cowania mexicana stansburiana | 3 | 5.00 |
| Juniperus osteosperma | 6 | 6.17 |

Key Browse Annual Leader Growth
Herd unit 18 , Study no: 29

| Species | Average leader growth (in) '02 |
|---|---|
| Artemisia tridentata wyomingensis | 1.2 |
| Cowania mexicana stansburiana | 1.4 |

Point-Quarter Tree Data
Herd unit 18 , Study no: 29

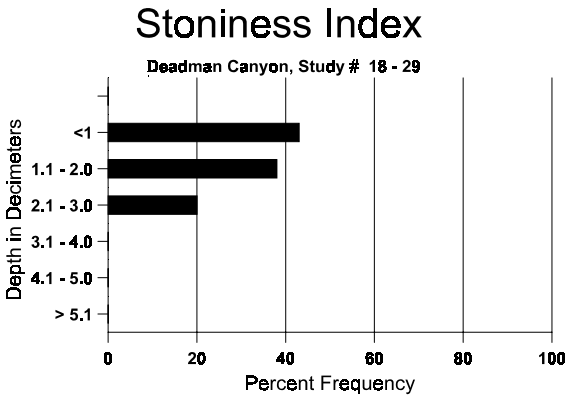
| Species | Trees per Acre '02 | Average diameter (in) '02 |
|---|---|---|
| Juniperus osteosperma | 89 | 6.6 |

BASIC COVER --
Herd unit 18 , Study no: 29

| Cover Type | Nested Frequency | | Average Cover % | | | |
|---|---|---|---|---|---|---|
| | '97 | '02 | '83 | '89 | '97 | '02 |
| Vegetation | 365 | 293 | 3.25 | 6.00 | 34.40 | 31.05 |
| Rock | 137 | 165 | 1.50 | 3.75 | 1.70 | 3.20 |
| Pavement | 246 | 273 | 3.25 | 17.00 | 7.44 | 11.06 |
| Litter | 392 | 377 | 73.50 | 57.25 | 51.37 | 50.00 |
| Cryptogams | 150 | 97 | 1.50 | 1.50 | 1.52 | 2.13 |
| Bare Ground | 208 | 255 | 17.00 | 14.50 | 7.66 | 20.22 |

SOIL ANALYSIS DATA --
Herd Unit 18, Study no: 29, Deadman Canyon

| Effective rooting depth (in) | Temp °F (depth) | pH | %sand | %silt | %clay | %0M | PPM P | PPM K | dS/m |
|---|---|---|---|---|---|---|---|---|---|
| 10.6 | 59.5 | 7.3 | 42.7 | 28.7 | 28.6 | 3.7 | 6.8 | 198.4 | 0.6 |




PELLET GROUP FREQUENCY --
Herd unit 18 , Study no: 29

| Type | Quadrat Frequency | |
|---|---|---|
| | '97 | '02 |
| Rabbit | 47 | 55 |
| Deer | 29 | 22 |

| Pellet Transect | |
|---|---|
| Pellet Groups per Acre | Days Use per Acre (ha) |
| '02 | '02 |
| - | - |
| 748 | 58 (142) |

BROWSE CHARACTERISTICS --
Herd unit 18 , Study no: 29

| AGE | YR | Form Class (No. of Plants) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Vigor Class 1 | 2 | 3 | 4 | Plants Per Acre | Average (inches) Ht. | Cr. | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Artemisia tridentata wyomingensis | | | | | | | | | | | | | | | | | | |
| S | 83 | 2 | - | - | - | - | - | - | - | - | 2 | - | - | - | 66 | | | 2 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | 2 | - | - | - | - | - | - | - | - | 2 | - | - | - | 40 | | | 2 |
| | 02 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| Y | 83 | 7 | - | - | - | - | - | - | - | - | 7 | - | - | - | 233 | | | 7 |
| | 89 | 3 | 11 | - | - | - | - | - | - | - | 14 | - | - | - | 466 | | | 14 |
| | 97 | 18 | 1 | - | - | - | - | - | - | - | 19 | - | - | - | 380 | | | 19 |
| | 02 | - | 1 | - | - | - | - | - | - | - | 1 | - | - | - | 20 | | | 1 |
| M | 83 | 3 | 5 | - | - | - | - | - | - | - | 8 | - | - | - | 266 | 38 | 45 | 8 |
| | 89 | - | 9 | 1 | - | - | - | - | - | - | 10 | - | - | - | 333 | 30 | 45 | 10 |
| | 97 | 18 | 2 | - | - | - | - | - | - | - | 20 | - | - | - | 400 | 24 | 33 | 20 |
| | 02 | 26 | 13 | - | - | - | - | - | - | - | 39 | - | - | - | 780 | 27 | 39 | 39 |
| D | 83 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 89 | - | 1 | - | - | - | - | - | - | - | 1 | - | - | - | 33 | | | 1 |
| | 97 | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - | 20 | | | 1 |
| | 02 | 2 | 1 | - | - | 1 | - | - | - | - | 4 | - | - | - | 80 | | | 4 |
| X | 83 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | - | - | - | - | - | - | - | - | - | - | - | - | - | 140 | | | 7 |
| | 02 | - | - | - | - | - | - | - | - | - | - | - | - | - | 60 | | | 3 |

| % Plants Showing | Moderate Use | Heavy Use | Poor Vigor | %Change |
|---|---|---|---|---|
| '83 | 33% | 00% | 00% | +40% |
| '89 | 84% | 04% | 00% | - 4% |
| '97 | 08% | 00% | 00% | + 9% |
| '02 | 36% | 00% | 00% | |

| Total Plants/Acre (excluding Dead & Seedlings) | | | Dec: |
|---|---|---|---|
| | '83 | 499 | 0% |
| | '89 | 832 | 4% |
| | '97 | 800 | 3% |
| | '02 | 880 | 9% |

| AGE | YR | Form Class (No. of Plants) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Vigor Class 1 | 2 | 3 | 4 | Plants Per Acre | Average (inches) Ht. | Cr. | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cowania mexicana stansburiana | | | | | | | | | | | | | | | | | | |
| S | 83 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | 1 | - | - | 2 | - | - | - | - | - | 3 | - | - | - | 60 | | | 3 |
| | 02 | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - | 20 | | | 1 |
| Y | 83 | - | - | 1 | - | - | - | - | - | - | 1 | - | - | - | 33 | | | 1 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - | 20 | | | 1 |
| | 02 | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - | 20 | | | 1 |
| M | 83 | - | 1 | 3 | - | - | - | - | - | - | 4 | - | - | - | 133 | 38 | 33 | 4 |
| | 89 | - | 2 | - | - | - | - | - | - | - | 2 | - | - | - | 66 | 33 | 38 | 2 |
| | 97 | 5 | - | - | 1 | - | - | 2 | - | - | 8 | - | - | - | 160 | 77 | 75 | 8 |
| | 02 | 1 | 2 | - | - | - | 1 | - | 1 | - | 5 | - | - | - | 100 | 74 | 82 | 5 |
| D | 83 | - | - | 1 | - | - | - | - | - | - | - | - | 1 | - | 33 | | | 1 |
| | 89 | - | 2 | 1 | - | - | - | - | - | - | 2 | - | - | 1 | 100 | | | 3 |
| | 97 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 02 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| X | 83 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | - | - | - | - | - | - | - | - | - | - | - | - | - | 40 | | | 2 |
| | 02 | - | - | - | - | - | - | - | - | - | - | - | - | - | 20 | | | 1 |

| % Plants Showing | Moderate Use | Heavy Use | Poor Vigor | %Change |
|---|---|---|---|---|
| '83 | 17% | 83% | 17% | -17% |
| '89 | 80% | 20% | 20% | + 8% |
| '97 | 00% | 00% | 00% | -33% |
| '02 | 33% | 17% | 00% | |

| Total Plants/Acre (excluding Dead & Seedlings) | | | | |
|---|---|---|---|---|
| '83 | 199 | Dec: | 17% |
| '89 | 166 | | 60% |
| '97 | 180 | | 0% |
| '02 | 120 | | 0% |

| AGE | YR | Form Class (No. of Plants) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Vigor Class 1 | 2 | 3 | 4 | Plants Per Acre | Average (inches) Ht. | Cr. | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gutierrezia sarothrae | | | | | | | | | | | | | | | | | | |
| S | 83 | 2 | - | - | - | - | - | - | - | - | 2 | - | - | - | 66 | | | 2 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 02 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| Y | 83 | 12 | - | - | - | - | - | - | - | - | 12 | - | - | - | 400 | | | 12 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | 18 | - | - | - | - | - | 1 | - | - | 19 | - | - | - | 380 | | | 19 |
| | 02 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| M | 83 | 7 | - | - | - | - | - | - | - | - | 7 | - | - | - | 233 | 10 | 13 | 7 |
| | 89 | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - | 33 | 11 | 9 | 1 |
| | 97 | 56 | - | - | - | - | - | - | - | - | 56 | - | - | - | 1120 | 9 | 10 | 56 |
| | 02 | 4 | - | - | - | - | - | - | - | - | 4 | - | - | - | 80 | 5 | 9 | 4 |
| D | 83 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | 10 | - | - | - | - | - | - | - | - | 4 | - | - | 6 | 200 | | | 10 |
| | 02 | 2 | - | - | - | - | - | - | - | - | 1 | - | - | 1 | 40 | | | 2 |
| X | 83 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | - | - | - | - | - | - | - | - | - | - | - | - | - | 240 | | | 12 |
| | 02 | - | - | - | - | - | - | - | - | - | - | - | - | - | 40 | | | 2 |

| % Plants Showing | Moderate Use | Heavy Use | Poor Vigor | %Change |
|---|---|---|---|---|
| '83 | 00% | 00% | 00% | -95% |
| '89 | 00% | 00% | 00% | +98% |
| '97 | 00% | 00% | 07% | -93% |
| '02 | 00% | 00% | 17% | |

| Total Plants/Acre (excluding Dead & Seedlings) | | | | |
|---|---|---|---|---|
| | '83 | 633 | Dec: | 0% |
| | '89 | 33 | | 0% |
| | '97 | 1700 | | 12% |
| | '02 | 120 | | 33% |

| AGE | YR | Form Class (No. of Plants) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Vigor Class 1 | 2 | 3 | 4 | Plants Per Acre | Average (inches) Ht. | Cr. | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Juniperus osteosperma | | | | | | | | | | | | | | | | | | |
| Y | 83 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - | 20 | | | 1 |
| | 02 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| M | 83 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | - | - | 0 |
| | 89 | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - | 33 | 124 | 63 | 1 |
| | 97 | - | - | - | - | - | - | 2 | - | - | 2 | - | - | - | 40 | - | - | 2 |
| | 02 | 1 | - | - | - | - | - | 1 | - | - | 2 | - | - | - | 40 | - | - | 2 |
| D | 83 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 02 | - | - | - | - | - | - | - | 1 | - | 1 | - | - | - | 20 | | | 1 |
| X | 83 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 89 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 | | | 0 |
| | 97 | - | - | - | - | - | - | - | - | - | - | - | - | - | 60 | | | 3 |
| | 02 | - | - | - | - | - | - | - | - | - | - | - | - | - | 40 | | | 2 |

| % Plants Showing | Moderate Use | Heavy Use | Poor Vigor | %Change |
|---|---|---|---|---|
| '83 | 00% | 00% | 00% | |
| '89 | 00% | 00% | 00% | +45% |
| '97 | 00% | 00% | 00% | + 0% |
| '02 | 00% | 00% | 00% | |

| Total Plants/Acre (excluding Dead & Seedlings) | | | | |
|---|---|---|---|---|
| | '83 | 0 | Dec: | 0% |
| | '89 | 33 | | 0% |
| | '97 | 60 | | 0% |
| | '02 | 60 | | 33% |