

Trend Study 8B-11-00

Study site name: Triangle Meadow .

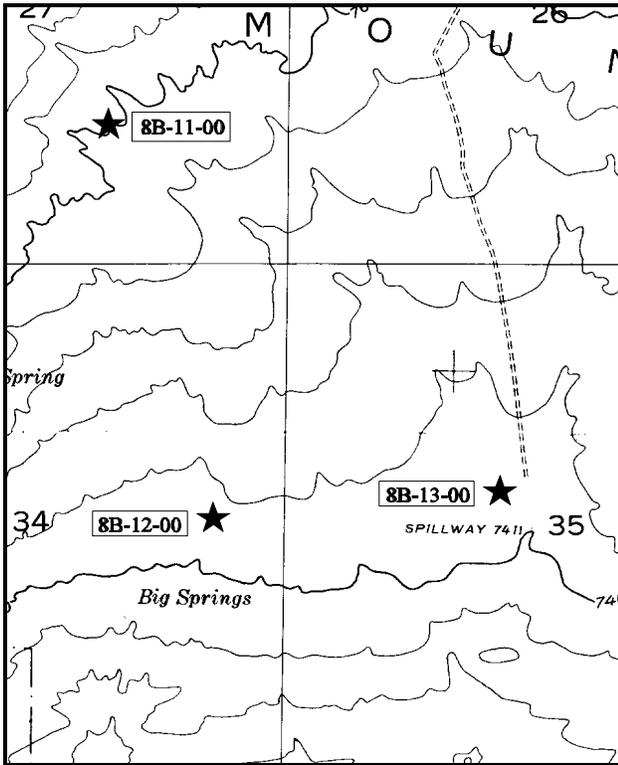
Range type: Dry Meadow .

Compass bearing: frequency baseline 95°M .

First frame placement on frequency belts 5 feet. Frequency belt placement; line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft).

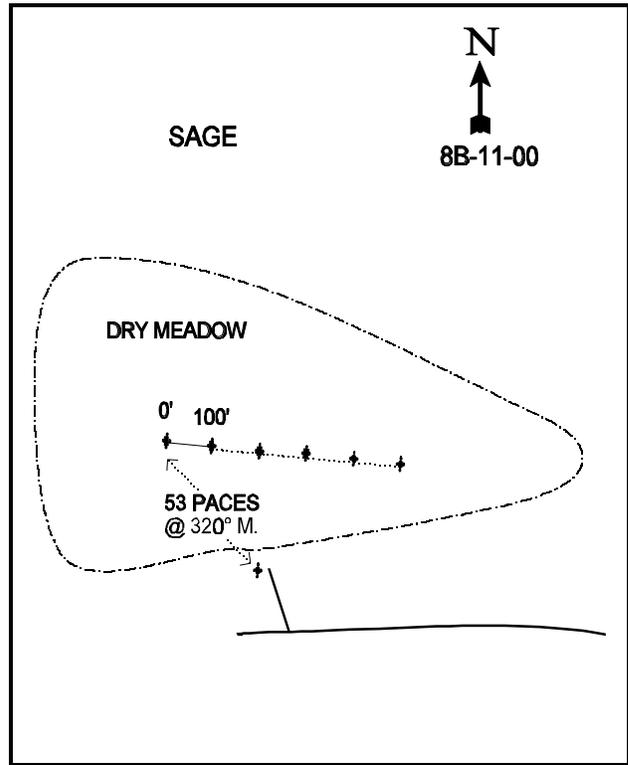
LOCATION DESCRIPTION

From Dutch John, proceed north towards Antelope Flat on Highway U.S. 191 for approximately 8 miles. Before the Wyoming border, turn east on the Antelope Flat Road towards Goslin Mountain. Go 2.8 miles and turn right towards Goslin Mountain. Bear right and drive 1.3 miles to a gate. Continue 4.5 miles to a fork. Bear right and proceed 0.8 miles passing study 8B-10-00 to a four-way intersection. Turn right and drive 0.4 miles to a fork by a meadow. Turn right and continue 0.1 miles to a meadow with a witness post. The 0-foot baseline stake is located 53 paces away at 320/M.



Map Name: Goslin Mtn.

Township 3N , Range 23E ,Section 27



Diagrammatic Sketch

UTM 4536054.932 N , 642562.193 E

## DISCUSSION

### Trend Study No. 8B-11 (9-22)

This study site, Triangle Meadow, was placed in a meadow less than one-half of a mile south of study #10. This meadow, which is on DWR land, receives light to moderate use by elk and deer with heavy use during the summer by cattle. The study was established in early July of 1995 before livestock were allowed onto the allotment. Elk were seen on the site and appear to use the area mostly in the spring and fall. Cattle use was heavy during the summer of 1994 as evidenced by the high quadrat frequency of cow pats in 1995 (see pellet group table). Pellet group data taken along the study site baseline in 2000, estimates only light wildlife use. Cattle use from the previous season (1999) was estimated at 49 cow days use/acre (121 cdu/ha). Several spring antelope pellet groups were also encountered and an antelope fawn was on the meadow during the 2000 reading. In addition, a bull moose was seen near the site and several sage grouse were observed in the area.

Slope on the meadow is nearly level (2% to 5%) with drainage to the east. This meadow was partially flooded when the site was established in 1995. The meadow appears to be sub-irrigated most of the summer by springs originating from the hillside a short distance to the west. During the 2000 reading, the meadow was very dry. No water was visible and the soil profile was extremely dry and compact.

The soil appears to be deep and relatively rock free. However, due to the dry conditions of 2000, the soil was very dry and compacted. Effective rooting depth was estimated at only 7 inches due to a hard compacted clay horizon which was encountered at about 4 inches in depth. Soil texture is a sandy loam with a neutral soil reaction (pH of 6.6). Erosion is not a problem on these meadows due to the extensive ground cover of sod forming grasses.

Very few browse occur on these meadows. The only species encountered on this site was a seedling and one young mountain big sagebrush in 1995. The high water table during most of the spring prohibits sagebrush from becoming established.

The important aspect of these meadows is the herbaceous species, especially the grasses which provide forage for wildlife and livestock. The grasses produced a total of 39% cover in 1995, increasing to 66% in 2000. Kentucky bluegrass, an increaser, was the most numerous species in 1995, accounting for 74% of the grass cover. Baltic rush, a less desirable species, was also common producing 11% of the grass cover. In 2000, nested frequency of Baltic rush increased significantly and cover rose five-fold from 5% to 26%. Kentucky bluegrass declined significantly in nested frequency while cover declined slightly from 29% to 25%. The key forage species on this meadow is Nebraska sedge which provided 13% of the grass cover in 1995, increasing to 22% by 2000. This sedge is highly palatable and a good indicator species.

Forbs provided a total cover value of 6% in 1995, and only 1% in 2000. The most common species is dandelion, an invasive plant, which accounted for 78% of the forb cover in 1995 and 96% in 2000. Most of the other forbs are annuals or low growing perennials.

### 1995 APPARENT TREND ASSESSMENT

Soil trend appears stable and there is no threat of erosion on this site as long as the sod cover is not broken. There are very few shrubs on site, but the shrub component is not an important aspect here with regard to transition or summer range. The herbaceous composition is the important aspect of this meadow type. Since there is no previous data to determine trends, vegetative condition will have to be assessed by composition only. The grass component is dominated by Kentucky bluegrass, an increaser under moderate to heavy grazing pressure. The second most abundant species is Nebraska sedge which is a palatable and highly sought after

forage plant. This species decreases with moderate to heavy grazing pressure. Forbs are dominated by dandelion and other low growing perennial and annual species. Trend is not very feasible without at least two sampling periods. However, trend would be considered stable, but in fair to poor condition due to the present species composition.

2000 TREND ASSESSMENT

Trend for soil is stable with no exposed bare ground and excellent herbaceous vegetation and litter cover. There are no shrubs on this site and they are not an important component on this spring/fall range. Trend for the herbaceous understory is mixed. Sum of nested frequency of perennial grasses increased slightly while sum of nested frequency of perennial forbs declined. Perennial grass cover has nearly doubled since 1995. Nested frequency for Nebraska sedge, which is the key forage species on this site, increased significantly. In addition, cover of Nebraska sedge has nearly tripled. Nested frequency of the increaser, Kentucky bluegrass, declined significantly since 1995. One negative aspect of the herbaceous trend is that Baltic rush, a low value increaser, increased significantly in frequency with cover increasing five-fold since 1995. The only common forb is dandelion which declined significantly in nested frequency due to a combination of drought and competition with the vigorous perennial grasses. The herbaceous trend is considered stable with the improvement of Nebraska sedge offset by the increase in Baltic rush and decline in perennial forbs. Drought conditions have obviously given the deep rooted Baltic rush and Nebraska sedge a competitive advantage over other perennial species.

TREND ASSESSMENT

soil - stable (3)

browse - no browse on site (NA)

herbaceous understory - stable, but composition still dominated by increasers (3)

HERBACEOUS TRENDS --

Herd unit 08B, Study no: 11

| T<br>y<br>p<br>e            | Species                     | Nested Frequency |      | Quadrat Frequency |     | Average Cover % |       |
|-----------------------------|-----------------------------|------------------|------|-------------------|-----|-----------------|-------|
|                             |                             | '95              | '00  | '95               | '00 | '95             | '00   |
| G                           | Agropyron spp.              | 7                | *-   | 3                 | -   | .39             | -     |
| G                           | Carex nebraskensis          | 271              | *309 | 79                | 82  | 5.09            | 14.48 |
| G                           | Juncus balticus             | 215              | *367 | 75                | 94  | 4.50            | 26.26 |
| G                           | Muhlenbergia richardsonis   | 6                | -    | 2                 | -   | .15             | -     |
| G                           | Poa pratensis               | 487              | *356 | 100               | 90  | 28.99           | 25.18 |
| G                           | Sitanion hystrix            | 1                | -    | 1                 | -   | .03             | -     |
| Total for Annual Grasses    |                             | 0                | 0    | 0                 | 0   | 0               | 0     |
| Total for Perennial Grasses |                             | 987              | 1032 | 260               | 266 | 39.16           | 65.93 |
| Total for Grasses           |                             | 987              | 1032 | 260               | 266 | 39.16           | 65.93 |
| F                           | Achillea millefolium        | 1                | 3    | 1                 | 2   | .00             | .03   |
| F                           | Aster spp.                  | 11               | *-   | 5                 | -   | .24             | -     |
| F                           | Astragalus spp.             | 4                | -    | 2                 | -   | .01             | -     |
| F                           | Chorispora tenella (a)      | 16               | *-   | 9                 | -   | .07             | -     |
| F                           | Collinsia parviflora (a)    | 18               | *-   | 7                 | -   | .08             | -     |
| F                           | Descurainia pinnata (a)     | 2                | -    | 1                 | -   | .00             | -     |
| F                           | Draba spp. (a)              | 48               | *-   | 18                | -   | .43             | -     |
| F                           | Gayophytum ramosissimum (a) | 10               | *-   | 3                 | -   | .01             | -     |

| Type                      | Species                     | Nested Frequency |     | Quadrat Frequency |     | Average Cover % |      |
|---------------------------|-----------------------------|------------------|-----|-------------------|-----|-----------------|------|
|                           |                             | '95              | '00 | '95               | '00 | '95             | '00  |
| F                         | Lappula occidentalis (a)    | 8                | *-  | 3                 | -   | .39             | -    |
| F                         | Lepidium spp. (a)           | 2                | -   | 1                 | -   | .00             | -    |
| F                         | Myosotis alpestris          | 15               | *-  | 6                 | -   | .03             | -    |
| F                         | Polygonum douglasii (a)     | 4                | -   | 2                 | -   | .01             | -    |
| F                         | Ranunculus testiculatus (a) | 1                | -   | 1                 | -   | .00             | -    |
| F                         | Taraxacum officinale        | 251              | *53 | 88                | 21  | 4.67            | .97  |
| F                         | Tragopogon dubius           | 2                | 1   | 1                 | 1   | .03             | .00  |
| F                         | Unknown forb-annual (a)     | 3                | -   | 1                 | -   | .00             | -    |
| Total for Annual Forbs    |                             | 112              | 0   | 46                | 0   | 1.02            | 0    |
| Total for Perennial Forbs |                             | 284              | 57  | 103               | 24  | 4.99            | 1.01 |
| Total for Forbs           |                             | 396              | 57  | 149               | 24  | 6.02            | 1.01 |

\* Indicates significant difference at % = 0.10

#### BROWSE TRENDS --

Herd unit 08B, Study no: 11

| Type             | Species                       | Strip Frequency |     | Average Cover % |     |
|------------------|-------------------------------|-----------------|-----|-----------------|-----|
|                  |                               | '95             | '00 | '95             | '00 |
| B                | Artemisia tridentata vaseyana | -               | -   | .01             | -   |
| Total for Browse |                               | -               | -   | 0.00            | 0   |

#### BASIC COVER --

Herd unit 08B, Study no: 11

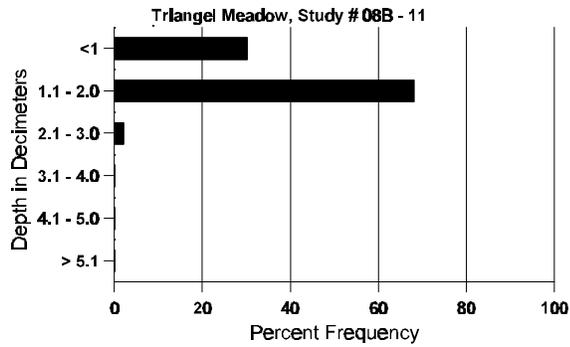
| Cover Type  | Nested Frequency |     | Average Cover % |       |
|-------------|------------------|-----|-----------------|-------|
|             | '95              | '00 | '95             | '00   |
| Vegetation  | 494              | 495 | 51.43           | 62.70 |
| Rock        | 17               | -   | .05             | 0     |
| Pavement    | 36               | -   | .06             | 0     |
| Litter      | 500              | 499 | 79.47           | 89.40 |
| Cryptogams  | 10               | -   | .02             | 0     |
| Bare Ground | 58               | -   | .43             | 0     |

#### SOIL ANALYSIS DATA --

Herd Unit 8B, Study # 11, Study Name: Triangle Meadow

| Effective rooting depth (inches) | Temp °F (depth) | pH  | %sand | %silt | %clay | %OM | PPM P | PPM K | dS/m |
|----------------------------------|-----------------|-----|-------|-------|-------|-----|-------|-------|------|
| 6.99                             | 50.8 (7.17)     | 6.6 | 64.0  | 19.7  | 16.3  | 4.3 | 15.3  | 76.8  | 1.3  |

## Stoniness Index



**PELLET GROUP FREQUENCY --**  
Herd unit 08B, Study no: 11

| Type     | Quadrat Frequency |     | Pellet Transect        |                        |
|----------|-------------------|-----|------------------------|------------------------|
|          | '95               | '00 | Pellet Groups per Acre | Days Use per Acre (ha) |
|          |                   |     | '00                    | '00                    |
| Rabbit   | 2                 | -   | -                      | -                      |
| Elk      | 7                 | -   | -                      | -                      |
| Deer     | 8                 | -   | 17                     | 1 (3)                  |
| Cattle   | 48                | 6   | 583                    | 49 (120)               |
| Antelope | -                 | -   | 61                     | 5 (12)                 |

**BROWSE CHARACTERISTICS --**  
Herd unit 8B, Study no: 11

| A<br>Y<br>G<br>R<br>E                          | Form Class (No. of Plants) | Vigor Class         |     |                  |     | Plants Per Acre   | Average (inches) Ht. Cr. | Total           |   |
|--|----------------------------|---------------------|-----|------------------|-----|-------------------|--------------------------|-----------------|---|
|  |                            | 1                   | 2   | 3                | 4   |                   |                          |                 |   |
| <i>Artemisia tridentata vaseyana</i>           |                            |                     |     |                  |     |                   |                          |                 |   |
| S  | 95                         | 1                   | -   | -                | -   | -                 | -                        | 1               |   |
|  | 00                         | -                   | -   | -                | -   | -                 | -                        | 0               |   |
| Y  | 95                         | 1                   | -   | -                | -   | -                 | -                        | 1               |   |
|  | 00                         | -                   | -   | -                | -   | -                 | -                        | 0               |   |
| % Plants Showing                               |                            | <u>Moderate Use</u> |     | <u>Heavy Use</u> |     | <u>Poor Vigor</u> |                          | <u>% Change</u> |   |
|  |                            | '95                 | 00% | 00%              | 00% |                   |                          |                 |   |
|  |                            | '00                 | 00% | 00%              | 00% |                   |                          |                 |   |
| Total Plants/Acre (excluding Dead & Seedlings) |                            |                     |     |                  |     | '95               | 20                       | Dec:            | - |
|  |                            |                     |     |                  |     | '00               | 0                        |                 | - |