PLANT COMMUNITY SURVEY OF THE BUCK DEMONE RANCH, FERGUS COUNTY, MONTANA

Robert L. DeVelice
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Abstract.—Plant communities of the Buck Demone Ranch in the Big Snowy
Mountains of central Montana are described and mapped. These
results are based on 28 reconnaissance "fast plots" and one reconnaisance "standard plot" located along environmental gradients.
Floristic data were grouped into community types based on existing
classifications. Results indicate the presence of 15 community types
(10 upland forest; 1 grassland; 4 riparian). Three of the 15 communi-
ity types observed on the ranch are globally rare (i.e., Populus
tremuloides/Osmorhiza occidentalis, Pseudotsuga menziesii/Viola
canadensis, and P. menziesii/Cornus stolonifera). These results are
based on two-days of fieldwork and must be regarded as tentative
pending more intensive sampling.

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INTRODUCTION

At the request of The Nature Conservancy’s Montana Field Office, I surveyed the Buck Demone Ranch (260 acres) on July 5 and 6, 1990. The ranch is located in the southwestern portion of the Big Snowy Mountains, Montana (Figure 1). Access to the ranch is via gravel and dirt roads leading east from Garneill (circa 5 miles north of Judith Gap on US Highway 191). The objective of the survey was to provide a description of plant community/environmental relationships on the ranch and preliminary interpretations of the ranches biodiversity significance.

The ranch primarily occurs on the west end of a east-to-west trending ridge with drainage bottoms defining the north and south boundaries (Figure 2). Elevations range from approximately 5300 to 6400 feet. Parent materials are predominately Madison limestone in the northeastern portion of the ranch and the Quadrant formation (predominantly limestone) in the southwestern portion (Reeves 1930). Both of these formations are of Carboniferous age (225-280 million years old) with the Madison formation being the oldest. Limestone outcrops occur sporadically throughout the ranch. Descriptive information for the five soil types mapped on the ranch (Figure 3) is presented in Table 1 (note: soil types defined by Clark 1988).

The southern drainage bottom contains the ranch access road and is being used for hay production (B. Demone, personal communication). This hay production area is the only heavily impacted area of the ranch. Over 70 percent of the ranch occurs on a south- to southwest-facing slope featuring open forests and savannas. The northly slopes present are predominantly covered by closed forests.

Mr. Demone briefly discussed his management plans for the ranch with me on July 5, 1990. He does not plan to graze livestock. However, I observed no fences separating Mr. Demone’s property from adjacent properties that are being grazed (note: Mr. Demone indicated that an adjacent ranch is grazing buffalo). Mr. Demone also suggested possibly enhancing wildlife habitat for ungulates via small-scale logging to open dense stands and the installation of small water tanks to provide
drinking water for wildlife. *Euphorbia esula* (leafy spurge) occurs sporadically on the ranch and Mr. Demone is currently using spot herbicide applications to control the species.

**METHODS**

Samples were subjectively selected using a variation of the "gradsect" method described by Gillison and Brewer (1985). The method involved preferential sampling along local transects following the maximum perceived environmental gradients. Representation of the range of vegetation, elevation, topographic, and soil conditions was strived for.

Of the 29 reconnaissance plots established, 28 were "fast plots" where the basic information recorded included location of the plot on a topographic field map, community type name, canopy cover estimates of the five to ten dominant plant species (recorded on 16 of the plots), and general comments regarding the community occurrence. A Montana Natural Heritage Program community survey form (1990 version) was completed at one location. This "standard plot" included a list and individual cover estimates of all vascular plant species present, detailed measurements of environmental features (e.g., landform type, slope, aspect, ground cover estimates) and vegetation structure, conservation rank, and general comments.

This report represents a summary and interpretation of the information collected on the 29 survey plots.

Species nomenclature follows Hitchcock and Cronquist (1973).

**RESULTS AND DISCUSSION**

The locations of the 29 study plots are shown in Figure 2. Environmental characteristics for each of these plots are presented in Table 2 ordered by moisture index (basically a composite of topographic position and aspect) and community type. Community type map units and their characteristic soils are presented in Table 3 and mapped in
Figure 4. Descriptions of the 15 community types encountered and their general environmental relationships follow:

**Riparian Areas.** The riparian meadows community observed was a heavily disturbed hay field dominated by exotic species with *Melilotus officinalis* having 95 percent cover or more and *Phleum pratense* and *Poa pratensis* both well represented.

Three riparian forest types were observed: POTR/OSOC*, PSME/VICA, and PSME/COST. All of these types are species rich. The PSME/VICA type likely represents the "climax" riparian forest situation on the ranch and was found to feature an abundance of *Pseudotsuga menziesii* and *Acer glabrum*, with *Pinus ponderosa*, *Viola canadensis*, *Berberis repens*, *Osmorchiza chilensis*, and *Symphoricarpos albus* well represented.

**Upland Forests.** Although *Pinus ponderosa* is common on the south slopes, *Pseudotsuga menziesii* is usually present and reproducing successfully. Therefore, representations of the *P. ponderosa* climax series appear rare on the ranch.

*PSME/LIBO,SYAL** was found on the most mesic slope situations on the ranch. *Pseudotsuga menziesii, Pinus contorta, Linnaea borealis*, and moss cover were characteristically abundant. In drier situations of this type *Juniperus communis* is well represented to abundant. Maximum diameters and heights for *P. menziesii* observed were 20 inches and 50 feet, respectively.

*note: the predominant *Osmorchiza* in the POTR/OSOC plots is *O. chilensis* not *O. occidentalis.*

**Symphoricarpos albus** (SYAL) is characteristically minor on the ranch. However, as suggested by Daubenmire and Daubenmire (1968), *Spiraea betulifolia* (SPBE) was regarded as an ecological equivalent of SYAL. SPBE was generally well represented in the communities identified with SYAL.
The single detailed community survey "standard plot" sample was located in a PICO/LIBO community. This approximately 1/10 acre plot contained 28 vascular plant species including: *Pinus contorta* (80% canopy cover), *Juniperus communis* (60% cc), *Linnaea borealis* (10% cc), *Clematis pseudoalpina* (10% cc), *Berberis repens* (3% cc), *Arctostaphylos uva-ursi* (3% cc), and *Shepherdia canadensis* (3% cc). Additionally, about 30 *Cypripedium montanum* orchids (trace cover) were in flower on the plot at the time of the survey. The stand appears to be self-replacing even though *P. contorta* regeneration is scant. No other tree species appears to be gaining dominance.

PSME/SYAL, SYAL and PSME/SYAL, AGSP have generally similar vegetation and site characteristics. The SYAL phase occurs on slightly more mesic sites than the AGSP phase and is the predominant community type of the ranches southerly slopes. Essentially, occurrences in the SYAL phase are closed forests while AGSP phase occurrences are open forests (savannahs) transitional to grasslands (i.e., the FEID-AGSP community type). In either phase, *Pinus ponderosa* may be abundant while *Pseudotsuga menziesii* is only well represented (but reproducing successfully). *Spiraea betulifolia* and *Symphoricarpos albus* are characteristically well represented in both phases. *Festuca idahoensis, Agropyron spicatum, Balsamorhiza sagittata* are additional species characteristic of the AGSP phase undergrowths. Maximum diameters and heights for trees observed in these communities was 20 inches and 40 feet, respectively.

The most xeric slope communities on the ranch include PSME/AGSP, PIPO/FEID, FEID, and FEID-AGSP. PSME/AGSP is the most common of these three communities on the ranch and is represented by open forests and savannahs. Generally, *Pinus ponderosa* predominates over the successfully reproducing *Pseudotsuga menziesii*. In the few areas where *Pseudotsuga menziesii* is absent either the PIPO/FEID, FEID type (where trees are present) or the FEID-AGSP type (where trees are absent) are expressed. In some areas, trees appear to be "invading" grasslands and such sites would likely be classified as FEID-AGSP communities under conditions of a frequent fire regime. Species characteristically well represented in the PSME/AGSP occurrences are: *Pseudotsuga menziesii, Pinus ponderosa*,
Agropyron spicatum, Festuca idahoensis, and Balsamorhiza sagittata. Maximum diameters, heights, and ages for P. menziesii observed were 20 inches, 40 feet, and 80 years, respectively.

The remaining four community types (PICO/JUCO; PIFL/JUCO; PSME/JUCO; and PIFL/FEID,FEID) are all predominantly found on upper slopes and ridges on the ranch. Pinus flexilis and Pseudotsuga menziesii are both absent from the PICO/JUCO occurrence which is dominated by Pinus contorta (70% canopy cover), Juniperus communis (30% cc), and Arctostaphylos uva-ursi (15% cc). In contrast, the PIFL/JUCO occurrences generally feature co-dominance of Pinus flexilis and Pseudotsuga menziesii. Pinus ponderosa and/or P. contorta were sometimes well represented. PIFL/JUCO undergrowths were dominated by Juniperus communis, with Arctostaphylos uva-ursi, Aster conspicuus, Berberis repens, and Spiraea betulifolia sometimes well represented. Maximum diameters and heights for trees observed in the PIFL/JUCO occurrences was 20 inches and 45 feet, respectively.

PSME/JUCO and PIFL/FEID,FEID communities were both sampled only once. Characteristics of the PSME/JUCO type were basically the same as for PIFL/JUCO except that Pinus flexilis was not present. Pinus flexilis and Pseudotsuga menziesii co-dominate the overstory of the PIFL/FEID,FEID occurrence and Pinus ponderosa is present. Undergrowth composition features Festuca idahoensis (20% canopy cover), Agropyron spicatum (10% cc), and Juniperus communis (15% cc).

CONSERVATION SPECIFIC COMMENTS

Based on the best information currently available, three of the 15 community types observed on the ranch are globally rare (i.e., POTR/OSOC, PSME/VICA, and PSME/COST). All three of these communities are riparian or lower slope types. Of the occurrences observed for these types, plots 7 and 8 (see Table 2 and Figure 2) are the most disturbed. A small jeep trail traverses these occurrences and the exotic grasses Phleum pratense and Poa pratensis are both present. Plots 11 and 20 represent quality occurrences (Table 2; Figure 2) with few weeds despite the presence of a faint jeep trail in plot 11 and the close proximity of
plot 20 to the *Melilotus officinalis*-dominated meadow (plot 1) and the ranch access road.

The upland forests and savannahs are in generally good condition (from a conservation standpoint) although the exotics *Melilotus officinalis* and *Medicago lupulina* are locally well represented on the lower and mid southerly slopes above the access road. *Bromus tectorum* is scattered throughout but was not found in abundance at any location. Charred stumps were observed in and around plot 14 suggesting past logging (post-fire salvage? the oldest living tree cored in the vicinity of these stumps was circa 100 years). However, for the most part, the forests do not show signs of timber harvest. Additionally, the generally steep slopes present and distance to water has apparently minimized heavy livestock use (note: Mr. Demone is not currently grazing livestock on his property and does not plan to).

Small patches of *Euphorbia esula* were observed just below plots 5 and 16 (see Figure 2 for plot locations). This species appears in small enough numbers on the ranch that it could likely be easily eliminated (as Mr. Demone is attempting).

One small limestone cave was discovered during the plant community fieldwork. Perhaps other caves occur on the property and a cave survey may be warranted to identify cave locations and their faunal composition.

Finally, the ranch may contain *Goodyera repens*, a rare plant in Montana (ranked G5S1) and a survey for the species may be warranted. I found no rare plants during my survey.
LITERATURE CITED


Reeves, F. 1930. Geology of the Big Snowy Mountains, Montana. USDI Geological Survey, Professional Paper 165-D.

Table 1. Soil map units (as defined by Clark (1988)) on the Buck Demone Ranch. See Figure 3 for soils map.

<table>
<thead>
<tr>
<th>MAP CODE</th>
<th>UNIT #</th>
<th>SUBGROUP</th>
<th>PARENT MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>Pachic Cryoboroll</td>
<td>alluvium</td>
</tr>
<tr>
<td>2</td>
<td>124</td>
<td>forested = Udic Haploboroll grassland = Calcic Cryoboroll</td>
<td>limestone residuum/colluvium</td>
</tr>
<tr>
<td>3</td>
<td>262</td>
<td>Typic Ustochrepts and Udic Haploborolls</td>
<td>limestone residuum/colluvium</td>
</tr>
<tr>
<td>4</td>
<td>263</td>
<td>same as 262 but with a higher frequency of rock outcrops</td>
<td>limestone residuum/colluvium</td>
</tr>
<tr>
<td>5</td>
<td>264</td>
<td>Typic Cryochrept</td>
<td>limestone residuum/colluvium</td>
</tr>
</tbody>
</table>
Table 2. Moisture index (1=most mesic; 5=most xeric), elevation (feet), aspect, topographic position, global and state abundance ranks (1=very rare; 5=very common), and plot numbers for plots on the Buck Demone Ranch. See code definitions and community type authorities at bottom of table.

<table>
<thead>
<tr>
<th>PLOT</th>
<th>CT</th>
<th>INDEX</th>
<th>ELEV</th>
<th>ASP.</th>
<th>POS.</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>riparian meadows (weedy)</td>
<td>1</td>
<td>5320</td>
<td>NW</td>
<td>draw</td>
<td>G5S5</td>
</tr>
<tr>
<td>7</td>
<td>POTR/OSOC</td>
<td>1</td>
<td>5400</td>
<td>SW</td>
<td>draw</td>
<td>G3S3</td>
</tr>
<tr>
<td>11</td>
<td>POTR/OSOC*</td>
<td>1</td>
<td>5480</td>
<td>NE</td>
<td>draw</td>
<td>G3S3</td>
</tr>
<tr>
<td>8</td>
<td>PSME/VICA</td>
<td>1</td>
<td>5420</td>
<td>SW</td>
<td>draw</td>
<td>G3S3</td>
</tr>
<tr>
<td>20</td>
<td>PSME/VICA</td>
<td>1</td>
<td>5360</td>
<td>NE</td>
<td>lower</td>
<td>G3S3</td>
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<tr>
<td>12</td>
<td>PSME/LIBO,SYAL</td>
<td>2</td>
<td>5520</td>
<td>NE</td>
<td>lower</td>
<td>G4S4</td>
</tr>
<tr>
<td>13</td>
<td>PSME/LIBO,SYAL</td>
<td>2</td>
<td>5680</td>
<td>N</td>
<td>mid</td>
<td>G4S4</td>
</tr>
<tr>
<td>9</td>
<td>PSME/LIBO,SYAL</td>
<td>3</td>
<td>5480</td>
<td>NW</td>
<td>lower</td>
<td>G4S4</td>
</tr>
<tr>
<td>A</td>
<td>PICO/LIBO</td>
<td>3</td>
<td>5760</td>
<td>NW</td>
<td>mid</td>
<td>G5S5</td>
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<tr>
<td>3</td>
<td>PSME/SYAL,SYAL</td>
<td>4</td>
<td>5440</td>
<td>SW</td>
<td>mid</td>
<td>G5S5</td>
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<tr>
<td>21</td>
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<td>5760</td>
<td>W</td>
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<td>G5S5</td>
</tr>
<tr>
<td>22</td>
<td>PSME/SYAL,SYAL</td>
<td>4</td>
<td>5960</td>
<td>SW</td>
<td>mid</td>
<td>G5S5</td>
</tr>
<tr>
<td>28</td>
<td>PSME/SYAL,SYAL</td>
<td>4</td>
<td>5900</td>
<td>S</td>
<td>mid</td>
<td>G5S5</td>
</tr>
<tr>
<td>2</td>
<td>PSME/SYAL,AGSP</td>
<td>4</td>
<td>5420</td>
<td>SW</td>
<td>mid</td>
<td>G5S5</td>
</tr>
<tr>
<td>4</td>
<td>PSME/SYAL,AGSP</td>
<td>4</td>
<td>5480</td>
<td>S</td>
<td>mid</td>
<td>G5S5</td>
</tr>
<tr>
<td>17</td>
<td>PSME/SYAL,AGSP</td>
<td>4</td>
<td>5900</td>
<td>SW</td>
<td>upper</td>
<td>G5S5</td>
</tr>
<tr>
<td>5</td>
<td>PSME/AGSP</td>
<td>4</td>
<td>5780</td>
<td>S</td>
<td>upper</td>
<td>G5S4</td>
</tr>
<tr>
<td>15</td>
<td>PSME/AGSP**</td>
<td>4</td>
<td>6020</td>
<td>NW</td>
<td>ridge</td>
<td>G5S4</td>
</tr>
</tbody>
</table>

*and PSME/COST (rank = G3S3)

**FEID-AGSP community being "invaded" by trees (rank = G4S4)
Table 2. (continued)

<table>
<thead>
<tr>
<th>PLOT</th>
<th>CT</th>
<th>INDEX</th>
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<th>ASP</th>
<th>POS</th>
<th>RANK</th>
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<td>PSME/AGSP</td>
<td>4</td>
<td>5960</td>
<td>SW</td>
<td>upper</td>
<td>G5S4</td>
</tr>
<tr>
<td>19</td>
<td>PSME/AGSP***</td>
<td>4</td>
<td>5720</td>
<td>SW</td>
<td>mid</td>
<td>G5S4</td>
</tr>
<tr>
<td>27</td>
<td>PSME/AGSP</td>
<td>4</td>
<td>6100</td>
<td>SW</td>
<td>ridge</td>
<td>G5S4</td>
</tr>
<tr>
<td>24</td>
<td>PICO/JUCO</td>
<td>5</td>
<td>6220</td>
<td>S</td>
<td>upper</td>
<td>G5S3</td>
</tr>
<tr>
<td>6</td>
<td>PIFL/JUCO</td>
<td>5</td>
<td>5840</td>
<td>W</td>
<td>ridge</td>
<td>G5S4</td>
</tr>
<tr>
<td>10</td>
<td>PIFL/JUCO</td>
<td>5</td>
<td>5640</td>
<td>N</td>
<td>ridge</td>
<td>G5S4</td>
</tr>
<tr>
<td>14</td>
<td>PIFL/JUCO</td>
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<td>5940</td>
<td>N</td>
<td>upper</td>
<td>G5S4</td>
</tr>
<tr>
<td>18</td>
<td>PIFL/JUCO</td>
<td>5</td>
<td>5760</td>
<td>W</td>
<td>mid</td>
<td>G5S4</td>
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<tr>
<td>23</td>
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<td>6240</td>
<td>W</td>
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<td>G5S4</td>
</tr>
<tr>
<td>25</td>
<td>PIFL/FEID,FEID</td>
<td>5</td>
<td>6360</td>
<td>SE</td>
<td>ridge</td>
<td>G5S4</td>
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<tr>
<td>26</td>
<td>PSME/JUCO</td>
<td>5</td>
<td>6100</td>
<td>SE</td>
<td>mid</td>
<td>G5S4</td>
</tr>
</tbody>
</table>

***patches of PIPO/FEID,FEID appear to be present at the driest extreme of forested sites at low elevations (rank=G5S3)

FEID-AGSP:  *Festuca idahoensis*-Agropyron spicatum (Mueggler and Stewart 1980)

PICO/JUCO:  *Pinus contorta*/Juniperus communis (Roberts 1980)

PICO/LIBO:  *P. contorta*/Linnaea borealis (Pfister et al. 1977)

PIFL/JUCO:  *P. flexilis*/J. communis (Pfister et al. 1977)

PIFL/FEID,FEID:  *P. flexilis*/Festuca idahoensis, *F. idahoensis* phase (Pfister et al. 1977)

PIPO/FEID,FEID:  *P. ponderosa*/*F. idahoensis*, *F. idahoensis* phase (Pfister et al. 1977)

POTR/OSOC:  *Populus tremuloides*/Osmorhiza occidentalis (Hansen et al. 1990)

PSME/AGSP:  *Pseudotsuga menziesii*/A. spicatum (Pfister et al. 1977)

PSME/COST:  *P. menziesii*/Cornus stolonifera (Hansen et al. 1990)

PSME/JUCO:  *P. menziesii*/J. communis (Pfister et al. 1977)
Table 2. (continued)

<table>
<thead>
<tr>
<th>PSME/LIBO,SYAL:</th>
<th><em>P. menziesii</em>/<em>L. borealis</em>, <em>Symphoricarpos albus</em> phase (Pfister et al. 1977)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSME/SYAL,AGSP:</td>
<td><em>P. menziesii</em>/<em>S. albus</em>, <em>A. spicatum</em> phase (Pfister et al. 1977)</td>
</tr>
<tr>
<td>PSME/SYAL,SYAL:</td>
<td><em>P. menziesii</em>/<em>S. albus</em>, <em>S. albus</em> phase (Pfister et al. 1977)</td>
</tr>
<tr>
<td>PSME/VICA:</td>
<td><em>P. menziesii</em>/<em>Viola canadensis</em> (Roberts 1980)</td>
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Table 3. Community type map units on the Buck Demone Ranch. See Table 2 for code definitions.

<table>
<thead>
<tr>
<th>CODE</th>
<th>CT’s/SITES INCLUDED</th>
<th>CHARACTERISTIC SOIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>riparian meadows (weedy)</td>
<td>Pachic Cryoboroll</td>
</tr>
<tr>
<td>B</td>
<td>POTR/OSOC; PSME/COST; PSME/VICA riparian</td>
<td>alluvial (subgroup not identified)</td>
</tr>
<tr>
<td>C</td>
<td>PSME/LIBO,SYAL very mesic N-slope protected basin</td>
<td>Typic Cryochrept</td>
</tr>
<tr>
<td>D</td>
<td>PICO/LIBO; PSME/LIBO,SYAL moderately mesic NW-slope</td>
<td>Typic Ustochrept</td>
</tr>
<tr>
<td>E</td>
<td>PICO/JUCO; PIFL/FEID,FEID; PIFL/JUCO; PSME/JUCO ridges and upper slopes</td>
<td>Typic Ustochrept</td>
</tr>
<tr>
<td>F</td>
<td>FEID-AGSP; PIPO/FEID,FEID; PSME/AGSP; PSME/SYAL,AGSP; PSME/SYAL,SYAL; S-slope +/- mesic to xeric sites</td>
<td>Udic Haploboroll</td>
</tr>
</tbody>
</table>
Figure 1. Map showing location of the Buck Demone Ranch in central Montana. The ranch boundary is defined as the black area in the center of the circle (T12N, R17E, Section 29).
Figure 2. Map of Buck Demone Ranch showing locations of the 29 study plots and small limestone cave (indicated by square near east boundary). Numbers 1 through 28 (and corresponding dots) refer to "fast plot" samples while the "A" (and corresponding star) refer to the "standard plot" sample.
Figure 3. Map of Buck Demone Ranch showing soil map units (as defined by Clark (1988)). See Table 1 for key to map unit codes and descriptive information for each map unit.
Figure 4. Map of Buck Demone Ranch showing plant community type map units. See Table 3 for key to map unit codes.
July 5, 1990 Buck Demone Ranch Survey (Snowies)

Start: 11:30 am  
End: 8 pm

Map #

X = 1 this meadow is dominated by: MELLOFF 95-100% COOPER  
PHLPR (timothy)  
PAPRA  
BROINE - present  

thus it is basically totally exotic. Buck has given Roy Luther (adjacent ranch) permission to continue haying this meadow.

X = 3 PSME/SPAL, AGSP: PSEMEN 10% ; PINPON 30% ; IRIFRA 20%  
(open forest)  
FESIDA 10% ; AGRSPL 29% ; SYMALB 1-5%  
grassland  
(closed forest)  
MELOFF 15% ; BALSAG 25% ; SPIBET 5%  
transition (dominant trees = 20'-dia, 35' tall)

X = 5 PSME/SPAL, SPAL (slightly more woody than #2 with bureen pines)  
(closed forest) + or - absent  
PSEMEN 15% ; PINPON 70% ; SPIBET 20% ; SYMALB 5%  
BERREP 10% ; ARNCOR 3% ; SMIRAC 2%  
PRUVR 7% ; BALSAG 5%  
(dominant trees = 20'-dia, 40' tall)

X = 4 PSME/SPAL, AGSP (xeric site again relative to #3)  
IRIFRA collected here

2 photos X = 5 PSME/AGSP (xeric forest/grassland)  
Xerox PSEMEN 5% ; PINPON 10% ; AGRSPL 10% ; FESIDA 20%  
BALSA 35% ; AMEALN 39% ; PRUVR 5% ; JUNCON 5%  
SYMALB 2%  
(note: a .1ac patch of EUPES (spurge) is just below  
this recent plot)  
however, these upper slopes are generally less weedy than the lower slopes, e.g.  
vicinity of plots 1-4.

X = 6 PSME/JUCO  
PIPL/JUCO  
PSEMEN 40% ; PINFLE 40% ; JUNCON 40%  
SLEHIRT (ASTCON coll) 15% ; ROSSAY 2% ; PINPON 10%  
AKEN  
most recog is PSEMEN (i.e.; PINFLE does not appear = "climax")  
Max dia = 20' ; Max height = 45'

(Handwritten note: BROTHER is scattered throughout but is now more abundant)
July 6, 1990 Buck Demone Ranch Survey (Snowies)

Start: 7 am
End: 3 pm

General note: Most of the ranch is pristine (forest except for pasture in SW and weeds in on the S slope (partly)

- POTR/OSOC (Hume et al.) - jeep trail travels up this lower slope
- PSME/COST (Hume et al.) - however no COST found. This key to no other type in a satisfactory way. It represents a more advanced stage of succession from plot 7

**Type #7 is predom. over 8. in this vicinity and should receive emphasis in mapping**

**PSME/LIBO, SYAL probably the predom. type of this slope.**

- PINCOM is abundant however but PSEMEN is repro. successfully

- PSME/LJUCO -> PIFL/JUCO (trans. to PSEM/ARUV/ALCO)
  - PSEMEN 25%; PIFL 20%; PINCOM 15%
  - ARUCV 5%; JUNCOM 40%

- Combo of POTR/OSOC (mostly asp.chi) and PSME/COST (but no COST)
  - the jeep track still goes up this drainage (see plots 7 & 8) but is less used up here. Woody debris etc... cross it. Exotics are minor elements up here.
  - Slightly drier sites (but still in this bottom feature PSME/LIBO, SYAL)

- PSME/LIBO, SYAL lower slope
  - Max dio = 20' max lat = 50'

- Note drop in JUNCOM cover relative to other PSME - PICO/LIBO block
July 6, 1990  Buck Dewone Ranch Survey (Snowies)

+ 13 (look inside the "264" on field base map)
PSME-PICO/LIBO, SYAL  this whole N-slope is likely this
adapt.  I am (have been) using SPISET as a +
all Daul.  Daul. (1968) (ecological equivalent of) SYMALB. SYMALB has been
characteristically minor on all sites.

+ Found Gooduya oblong. at 5900' above this plot
(along the 5 transect). Looked for GOORED but did not
find it.

+ 14 PIFL-PSME/JUCO  with some PINPON (trace)
PINCON 25%
* (many stumps present, dating back to old fire?)
PIFL dimensions (max): height - 25'
age - circa 100 yrs. (notes: all ages in this
study are 10
dia - 33 cm
  8 H)

* 15 PSME/AGSP  wi. FESIDA 25% cc; AGRSPI 5% cc;
BALSAG 15%; PINPON present as reg.
PSENEF at edge  (only tree present

* This is basically a FESIDA-AGRSPI comm. (as M+S)
that is being "invaded" by trees

4 16 PSME/AGSP  very open stand  AGRSPI 65%; FESIDA 15%;
BALSAG 1%; POTFRU 1%

(a 30' x 30' patch of badly spaced, isolated balsag
was present - however this veg. is generally non-existent
B-ranked)

- photo taken down & across this plot, towards the
Ray Luthor Ranch + Little Belt Mts.

* 17 PSME-PICO/SYAL  AGSP  more naive site (slightly) than #16
SYMALB 790 cc

* Most of this slope is dominated by PINPON, but
PSENEF is present + successfully reproducing in most
areas
July 6, 1990 Buck Remone Ranch Survey

X 18 (PSME - PIFL/JUCO ?) PSME/SYAL, SYAL (more magic than #)
  PSemen 10%; PinFle 15%; PinCON 30%
  Pinpon 50%; Juncom 30%; SheCan 17
  Berrep 20%; Spibet 20%; Symalb 15
  AstCON (coll) 20%

X 19 PSME/AGSP very open stand (most trees are Pinpon
  but PSEMEN is present.
  Junco present)

** it appears that there are patches of PIP/ped, Feid at
the very driest extreme of sites at the lowest alt.

X 20 + PSME/SYAL, SYAL (music extreme of type) call it PSME/VICA
(Robert)

(look at Roberts thesis to check for PSME/VICA)
  PSemen 90% ==; Pinpon 10%; ArcRGla 30%
  ViOcan 15%; Symalb 5%; OsMche 5%; GoOble 7
  Berrep 10% (herb + shrub rich site)
  ** definitely not central concept of type

- quite pristine area, in view of close proximity to
  meloff meadow + access road. Fe + rank
  - old cow pies on flats below plot

This whole slope is likely problem. This type (i.e., the AGSP ph. is likely minority or absent)

X 21 5-x
X 22 5-x
X 23 5-x

5-x 23 PSME - PICO/SYAL, SYAL
X 24 5-x

4-x 24 PICO (PSME)/JUCO

PINFLE + PSEMEN are absent

PINCON 70%; Juncom 30%; Arcuva 15%

(Check for PICO/Aruv)

Some PSEMEN just outside plot: PINFLE also

Call + PSME/JUCO

X 25 5-x
X 26 5-x

4-x 26 PICO - PSME/JUCO

5-x 27 PSME/AGSP

5-x 28 PSME/SYAL, SYAL
COMMUNITY SURVEY FORM

GENERAL PLOT DATA

IDENTIFICATION AND LOCATION

F1 KEY_ID (Plot #) 90D025  F5 MO 07  F6 DAY 05  YEAR 90
F2 EXAMINER R.L. DeVault  F3 EDIT
F4 STATE MT  COUNTY Fergus
F7 SITE NAME Meadow Creek
F8 PLOT TYPES 34
F11 QUADNAME Crystal Lake
F15 DIRECTIONS TO PLOT From Garnett, MT, leave US Highway 191 and proceed E 3.6 mi to Meadow Creek Junction. Take left fork and proceed 2.9 mi to Ray Luther Ranch. Ask permission to continue and proceed.
F16 12N T/17E/R29 S/WW4S/WW4/4
F30 COMMUNITY SIZE (acres) ~15ac
F31 F9 PLTRL 10.9 m F10 PLOT W 000
F32 QUADCODE 4610975

ENVIRONMENTAL FEATURES

F32 ECO TYPE 1 F33 PNC PINCON/LINBOR - PINCON/JUNC/M INTERGRADE
F33 CT -
F34 SOIL TAXON Typic Ustodryp
t
F35 LANDFORM -
F36 PLOT POSITION M
F37 SOIL SOIL SURFACE
F38 EROSION 0

VEGETATION STRUCTURE AND PRODUCTION

F54 STRUC 5
F55 VEG CHANGE
F56 TOT TREE COV 9
F60 TOT SHRUB COV 8
F64 TOT GRAM COV 0
F65 TOT FORB COV 1
F71 HERB/BROWSE PROD CLASS 2
F72 FUEL LOADING CLASS 0

CONServation

OWNER PROTECTION N**
F77 ANIMAL USE 12.7
F78 GROUND COVER DISTURBANCE 0
THREATS Logging: configuration fires

CONS./MANAG. NEEDS Protect from logging

CONSERVATION RANKING

QUALITY A
CONDITION A
VIABILITY B
DEFENSE B
RANK A

1) Cypripedium mont.
2) Linnaea bor.
3) across plot

Comments: Very pristine site
Comments: No exotics; no recent grazing
Comments: Fires would greatly change structure (is natural)

** data fields preceded by an "F#" are described in the USDA Forest Service R-1 Ecosystem Classification Handbook

** see Soil Survey of Fergus County (SCS)
*** but owner is interested in TNC easement (see Joan Bird)
7/3/90 Buck Demone Ranch Survey (Snowy Mts)

T/2N, R 17E, S. 29

- W/2NE 1/4 NW 1/4
- NW 1/4 NW 1/4
- S 1/2 NW 1/4
- SW 1/4 NE 1/4
- N 1/2 SW 1/4

260 acres

Enter via road from Garreill. Go through Ray Luther ranch (take left 3 mi in from Garreill, ask permission to cross Luther property)

Buck's plans for property:
1) will not graze livestock (though no fences exist and adjacent properties are grazed)
2)Currently spraying leafy spurge (check for impacts on natives)
3) He plans some "minor" logging to improve "wildlife" habitat (he's a bow hunter)
4) Plans to put in water developments (plastic-lined tanks) for wildlife watering
5) Says lady's slippers occur in draw
* 6) Lisa S. says look for Goodenia repens
* 7) Dave G. says look for Mountain plover
Site Name: Buck Demeec Ranch

Quad Name(s): 

Quad Code(s): 10/10 locator: 

State: County(ies): 

Town(s): 

Township/Range/Section: 

Field Quad Margin #: 

Source of lead: 

Other individuals knowledgeable about site and/or EO's: 

Current use of site: 

Tract ownership or managed area name (names, addresses, phone #). Continue on last page for others.

INDEX

Under "Element Name", list all heritage-listed species/communities sought, found or reported from site. Under "Code on Base Map", indicate a simple code number or letter to be used in identifying element locations on the base map. Indicate occurrence numbers, if known. Lastly, indicate whether the element was found (Y,N,N/A) on each particular date, whether the EOR was transcribed or updated and whether a return visit is needed.

--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
- Piptre /Osmoc | G450 | | | | | | | | | | | | | |
- Psemen/Trimen | G353 | | | | | | | | | | | | | |
- Psemen/Limbor | G454 | | | | | | | | | | | | | |
- Pincon/Limbor | G555 | | | | | | | | | | | | | |
- Pinte /Truncam | G554 | | | | | | | | | | | | | |
- Bluff/Esida | G554 | | | | | | | | | | | | | |
- Psemen/Truncam | G554 | | | | | | | | | | | | | |
- Psemen/Symeh | G555 | | | | | | | | | | | | | |
- Psemen/Agro | G554 | | | | | | | | | | | | | |
- Pincon/Esida | G553 | | | | | | | | | | | | | |
Habitat map - The purpose of the sketch is to show fine details of the site which are not shown on the topographic base map. Sketch the habitat area searched, and show: (1) the route taken, (2) any listed species/communities and their boundaries, (3) landmarks, and (4) evidence of disturbance (e.g., structures, dumps, exotic flora). Include scale and indicate north.
July 6, 1990  Bank Demone Ranch Survey (Snowos) -  

Rank along a meadown gradient 

E 4 - Piñon/Juniper, ridge type (Typic Ustochrept) 

D 3 - Pinyon/Libo/Sabal, and Pico/Libo, mesic NW slope (soil 262) (Typic Ustochrept) 

C 2 - Pinyon/Libo/Sabal v. mesic NW slope, protected basin (soil 264) (Typic Haploboroll) 

F 5 - Pinyon/Sabal, Sabal/Sabal, Agspj, Pinyon/Sabal, Pinyon/Pine, Feild, Feild 

Slope complex from mesic to xeric (Udic Haploboroll) 

A 6 - Riparian meadows (wet) (Typic Argiboroll, Haploboroll)
merge Psme/Juco and Pf/Juco