

WILDLIFE MANAGEMENT UNIT 9 - SOUTH SLOPE, VERNAL

Boundary Description

Wasatch, Summit, Daggett, Uintah, Duchesne counties - Boundary begins at the junction of Highway US-40 and Highway SR-87 in Duchesne; then north on SR-87 to Highway SR-35; then northwest on SR-35 to the Provo River; north along the Provo River to the North Fork Provo River; north along the North Fork Provo River to Highway SR-150; northerly along SR-150 to the Summit/Duchesne county line (summit of the Uinta Mountains); east along the summit of the Uinta Mountains to Highway SR-191; north along SR-191 to Cart Creek; northeast along Cart Creek to Flaming Gorge Reservoir; east along Flaming Gorge Reservoir to the Green River; east along the Green River to the Utah-Colorado state line; south along the Utah-Colorado state line to the White River; west along the White River to the Green River; north along the Green River to the Duchesne River; northwest along the Duchesne River to US-40 at Myton; west along US-40 to SR-87 in Duchesne and beginning point; excludes Dinosaur National Monument and all Indian Tribal Lands.

Management Unit Description

The South Slope, Vernal Wildlife Management Unit is located along the south slope of the Uinta Mountains and extends south into the Uintah Basin in Duchesne and Uintah counties. The unit encompasses the land area of two former deer herd units, the Vernal Unit (11) and the South Slope Unit (12). Elevation ranges from 13,528 feet at Kings Peak, the highest point in Utah, to 4,650 feet at the confluence of the White River and the Green River. Habitat also varies widely from alpine tundra above the timberline, to aspen and conifer communities, to sagebrush and mountain brush communities along the foothills of the Uintah Mountains, to desert shrub communities in the desert below Vernal and Roosevelt.

The South Slope unit contains an estimated 2.8 million acres of deer range with summer, year-long and winter ranges making up 40%, 34% and 26% of this area, respectively. Of all the land area classified as deer range, 32% is managed by the U.S. Forest Service, 25% by the Bureau of Land Management, and 22% are privately owned lands. In addition, 13% are Native American trust lands, and 5% are State of Utah trust lands. The South Slope unit also contains about 1.8 million acres classified as elk range. Of this amount, 64% is classified as elk summer range, 32% elk winter range, and 4% year-long range. The U.S. Forest Service and Bureau of Land Management manage 53% and 13%, respectively, of the acreage classified as elk range, with private and Native American trust lands each making up 15% of the area.

Winter range within the old Vernal deer herd unit (11) is comprised mainly of closely associated areas of pinyon-juniper woodlands on the south-facing slopes and foothill benches of the Diamond, Blue and Taylor Mountains. The upper limits generally follow the 8,500 foot contour. The lower limits are defined by agricultural lands and the desert below Vernal. Winter ranges within the old South Slope (12) unit are more limiting, and management is complicated in that a large portion of these lands are part of Uintah and Ouray Indian Reservations. Summer range within the new South Slope unit are plentiful, ranging from aspen and conifer communities, to mountain big sagebrush and mountain brush communities.

Key areas for winter range consist of the small sagebrush/grass parks found throughout the pinyon and juniper woodlands, especially on the Vernal side of the unit. Sparse pinyon and juniper communities dominate the foothills where diversity and productivity of desirable browse is usually relatively low. Areas with a sagebrush understory or sagebrush/grass associations are more productive. Therefore, these areas normally receive more use by big game and livestock. Key areas that represent this are Red Mountain, Dry Fork Mountain, Island Park, and Brown's Park. Key areas at Toliver Creek and Brown's Park represent winter range in pinyon and juniper communities, including areas that have either been chained or burned. Higher winter ranges in the mountain brush and mountain big sagebrush zones also provide important winter range for big game in this unit, especially along the south slope of the Uinta Mountains. Key areas within these

vegetation types include Little Hole, John Starr Flat, Mosby Mountain, Gooseberry Spring and Seep Hollow. Key areas in transitional and summer ranges are sampled on the Taylor, Mosby, and Diamond Mountains.

Range Trend Studies

Twenty interagency range trend studies were sampled on Unit 9 in 2010. Thirteen of the studies were established in the summer of 1982 with continued monitoring through 2010. Six of these studies [Little Hole (9-9), John Starr Flat (9-13), Mud Springs Draw (9-15), Gooseberry Spring (9-18), Mosby Mountain South (9-19) and Seep Hollow (9-20)] sample mountain brush communities, four studies [Taylor Mountain (9-2), Sawtooth-Flat Spring (9-4), Warren Draw (9-7) and Mosby Mountain (9-16)] sample mountain big sagebrush communities, two studies [Red Mountain Allotment (9-1) and Island Park (9-5)] sample Wyoming big sagebrush communities and one study [Dry Fork Mountain (9-3)] samples a basin big sagebrush community. Another study [Toliver Creek Chaining (9-10)] was established in 1988 to monitor a chained and seeded pinyon and juniper community. One more study [Farm Creek (9-17)] was established in 1995 and monitors a mountain big sagebrush community. Two further studies [Browns Park River Corridor-Livestock (9-21) and Browns Park River Corridor-Wildlife (9-22)] were established in 2000 in Wyoming big sagebrush communities to monitor differences in grazing. One study [Rock Creek (9-23)] was established in 2005 and samples a mountain big sagebrush community. Two studies, Brush Creek Substation (9-24) and Buckhorn Canyon (9-25), were established as special studies in 1997 and 2001, respectively. Both studies were converted to regular range trend studies in 2005 and sample Wyoming big sagebrush communities. There were five range trend studies [Above Steineker Draw (9-6), Rye Grass (9-8), Toliver Creek P-J (9-11), Browns Park Burn & P-J (9-12) and Red Pine Canyon (9-14)] that have been suspended for various reasons and were not monitored in 2010. For further info on suspended studies, refer to past reports at <http://wildlife.utah.gov/range/>.

SUMMARY
WILDLIFE MANAGEMENT UNIT 9 - SOUTH SLOPE, VERNAL

Community Types

Deer winter range within a unit is summarized into three categories based on ecological potentials which include low potential, mid-level potential and high potential. Low potential sites include desert shrub, Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) and cliffrose (*Cowania mexicana* ssp. *stansburiana*) communities. Mid-level potential sites include mountain big sagebrush (*A. tridentata* ssp. *vaseyana*) communities. High potential sites include mountain brush communities. Black sagebrush (*A. nova*) and basin big sagebrush (*A. tridentata* ssp. *tridentata*) communities are placed within the low potential or mid-level potential scales based on precipitation and elevation. Deer summer range is summarized separately from winter range as a fourth category and typically includes aspen (*Populus tremuloides*) and high elevation mountain brush communities. Eighteen interagency range trend studies were sampled in Unit 9 during the summer of 2010. Five of the range trend studies in the unit [Little Hole (9-9), John Starr Flat (9-13), Mud Springs Draw (9-15), Gooseberry Spring (9-18) and Seep Hollow (9-20)] are categorized as high potential sites for deer winter range and sample mountain brush communities. Many of these high potential sites are also used as summer range by deer. All of these studies are also classified as crucial elk winter range. Eight of the studies [Taylor Mountain (9-2), Dry Fork Mountain (9-3), Sawtooth Flat Spring (9-4), Warren Draw (9-7), Toliver Creek Chaining (9-10), Mosby Mountain (9-16), Farm Creek (9-17), Mosby Mountain South (9-19) and Rock Creek (9-23)] are categorized as mid-level potential sites for deer winter range and sample mountain big sagebrush communities. Though categorized as deer winter range in this summary, many of the studies are also considered to be crucial deer summer range and fawning habitat. Also, all of these studies are considered to be crucial elk winter range with summer use by elk occurring on many of the sites. Six of the studies [Red Mountain Allotment (9-1), Island Park (9-5), Browns Park River Corridor Cattle (9-21) and Wildlife (9-22), Brush Creek Substation (9-24) and Buckhorn Canyon (9-25)] are classified as low potential deer winter range sites and sample Wyoming big sagebrush communities. The Island Park and Brush Creek Substation studies are considered to be crucial year-long deer habitat. All of the studies except the two Browns Park River Corridor studies are also considered to be crucial elk winter range. There were no studies in this unit that were considered to be strictly summer range.

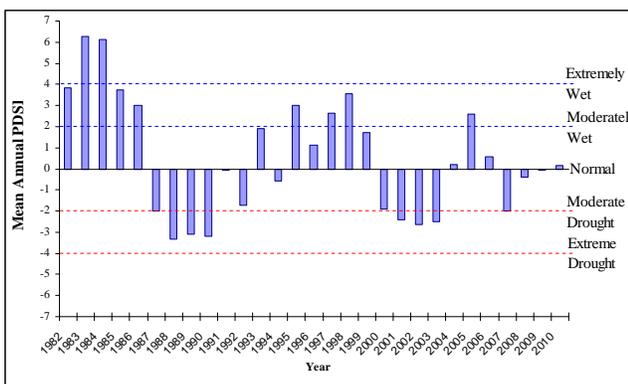


Figure 1. The 29 year mean annual Palmer Drought Severity Index (PDSI) for the Northern Mountains (Division 5). The PDSI is based on climate data gathered from 1895 to 2010. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet and negative deviations indicate drought. Classification of the scale is ≥ 4.0 = Extremely Wet, 3.0 to 3.9 = Very Wet, 2.0 to 2.9 = Moderately Wet, 1.0 to 1.9 = Slightly Wet, 0.5 to 0.9 = Incipient Wet Spell, 0.4 to -0.4 = Normal, -0.5 to -0.9 = Incipient Dry Spell, -1.0 to -1.9 = Mild Drought, -2.0 to -2.9 = Moderate Drought, -3.0 to -3.9 = Severe Drought and ≤ -4.0 = Extreme Drought (Time Series Data 2011).

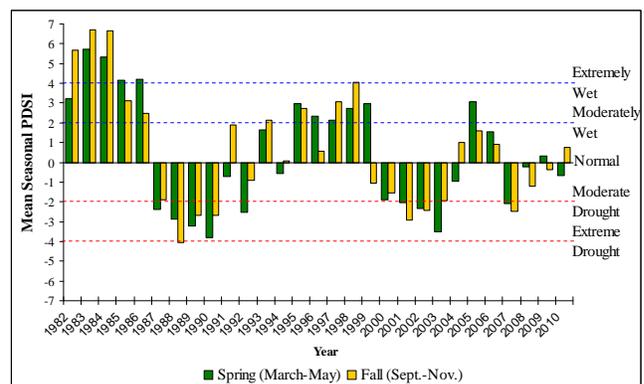


Figure 2. The 29 year mean spring (March-May) and fall (Sept.-Nov.) Palmer Drought Severity Index (PDSI) for the Northern Mountains (Division 5). The PDSI is based on climate data gathered from 1895 to 2010. The PDSI uses a scale where 0 indicates normal, positive deviations indicate wet and negative deviations indicate drought. Classification of the scale is ≥ 4.0 = Extremely Wet, 3.0 to 3.9 = Very Wet, 2.0 to 2.9 = Moderately Wet, 1.0 to 1.9 = Slightly Wet, 0.5 to 0.9 = Incipient Wet Spell, 0.4 to -0.4 = Normal, -0.5 to -0.9 = Incipient Dry Spell, -1.0 to -1.9 = Mild Drought, -2.0 to -2.9 = Moderate Drought, -3.0 to -3.9 = Severe Drought and ≤ -4.0 = Extreme Drought (Time Series Data 2011).

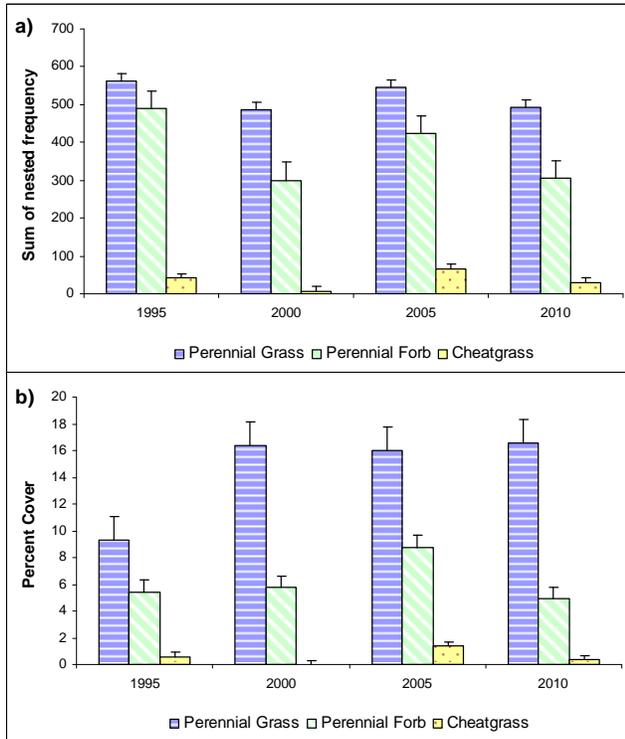


Figure 3. a) High potential sites mean perennial grass, perennial forb and cheatgrass sum of nested frequency (n=5) by year for WMU 9, South Slope, Vernal. b) High potential sites mean perennial grass, perennial forb and cheatgrass cover (n=5) by year for WMU 9.

Precipitation

Vegetation trends are dependent upon annual and seasonal precipitation patterns. Precipitation and Palmer Drought Severity Index (PDSI) data for the unit were compiled from the National Oceanic and Atmospheric Administration (NOAA) Physical Sciences Division (PSD) as part of the Northern Mountains (Division 5). Most of the studies in Unit 9 fall along the border between the Northern Mountains and the Uintah Basin (Division 6), with several studies (Red Mountain Allotment and Island Park) falling within the Uintah Basin. Only precipitation data for the Northern Mountains is included in this summary. For further information on precipitation for the Uintah Basin, refer to the Unit 10 Summary section. The Northern Mountains had a historic annual mean precipitation of 19.11 inches from 1895 to 2010. The mean annual PDSI of the Northern Mountains displays a cycle of several wet years followed by several drought years, over the course of study years in the unit. Wetter than normal years in the Northern Mountains included 1982-1986, 1993, 1995-1999 and 2005, and drought years included 1987-1992, 2000-2003 and 2007 (Figure 1 and Figure 2) (Time Series Data 2011).

Mountain Brush Communities (High Potential)

Browse: The high potential cumulative median browse trend increased from 1982 to 1995, but decreased through 2005 before increasing again in 2010 (Figure 10a). The browse composition in the mountain brush studies tends to be a mixture of four predominant species; serviceberry (*Amelanchier utahensis*), mountain big sagebrush, true mountain mahogany (*Cercocarpus montanus*) and bitterbrush (*Purshia tridentata*). Dominance in cover of these four browse species varies across the studies, though mountain big sagebrush

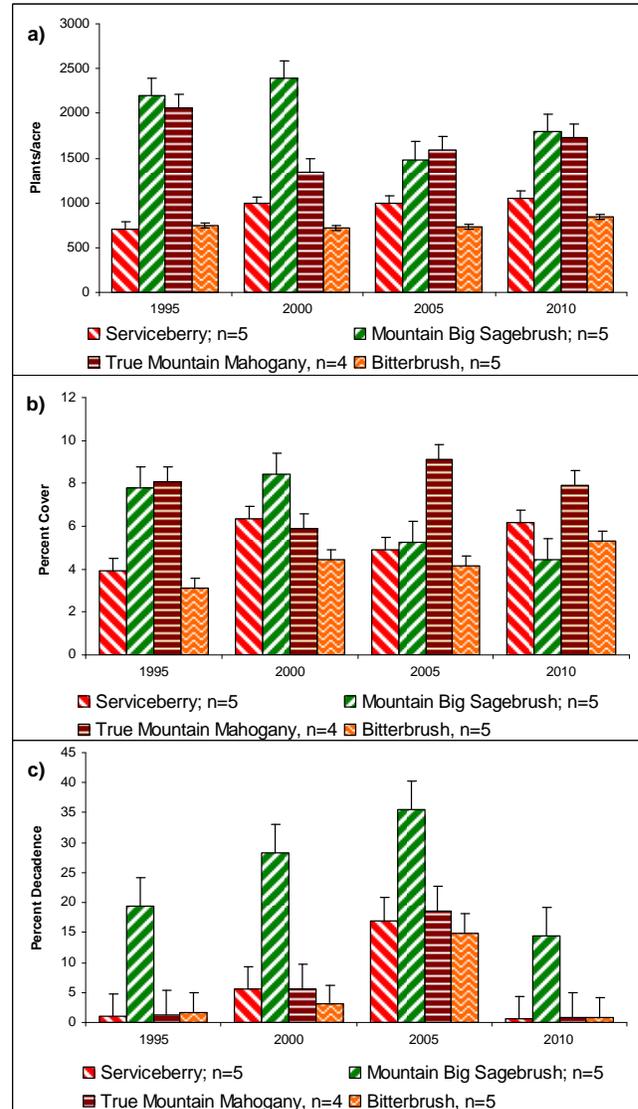


Figure 4. a) High potential sites mean density of mountain brush by year for WMU 9, South Slope, Vernal. b) High potential sites mean cover of mountain brush by year for WMU 9. c) High potential sites mean population decadence of mountain brush by year for WMU 9.

typically has the highest density. True mountain mahogany was not sampled on the Gooseberry study. The Mud Springs Draw study was not sampled in 2000 which influences the trend for that year, particularly for true mountain mahogany which is dominant on the study. The density of serviceberry increased substantially from 1995 to 2000, then remained stable throughout the remaining sample years. Density of mountain big sagebrush decreased significantly in 2005. There was a significant decrease in the density of true mountain mahogany in 2000 due to the Mud Springs Draw study not being sampled, but density was also significantly lower than 1995 in the 2005 and 2010 study years. Density of mahogany did increase in 2010, though not significantly. The density of bitterbrush remained similar throughout the early study years, then increased slightly, but significantly, in 2010 (Figure 4a). Cover of serviceberry and mountain big sagebrush displayed similar trends as the density of the two species, though cover of mountain big sagebrush did not increase in 2010 like density did. The cover of true mountain mahogany was significantly lower in 2000, but was similar in all other sample years. The decrease in cover of mahogany in 2000 is likely an artifact of the Mud Springs Draw study not being sampled in that year. Cover of bitterbrush increased significantly in 2000, then increased significantly again in 2010 (Figure 4b). Decadence has been low in most of the mountain brush species on the studies, though decadence of mountain big sagebrush has been moderate to high. There was a general increase in decadence in all of the species in 2005 (Figure 4c), following several drought years (Figure 1 and Figure 2) as well as increased use by wildlife in that year (Figure 11a).

Herbaceous Understory: Despite a general downward trend in the high potential median cumulative grass trend since 1988 (Figure 10a), grasses on these studies appear to be in good condition. Grasses within these communities are diverse and abundant. The annual species cheatgrass (*Bromus tectorum*) is present, but is not overly abundant on any of the study sites. The mean sum of nested frequency of perennial grasses was significantly lower in 2000 and 2010 than in 1995 and 2005 (Figure 3a). Mean cover of perennial grasses increased significantly in 2000 and remained higher throughout the following sample years (Figure 3b). Much of the discrepancy between the general trend and the mean trends of sum of nested frequency and cover of perennial grasses is due to composition changes on the study sites. In general across the studies, there was a decrease in the sum of nested frequency of low cover producing species as one high cover producing species increased in dominance on the site. Examples are the increase of Kentucky bluegrass (*Poa pratensis*) on the Little Hole study, and the increase of needle-and-thread (*Stipa comata*) on the Mud Springs Draw and Seep Hollow studies. These composition changes caused the sum of nested frequency of perennial grasses to decrease, thus decreasing the general trend, while cover often times increased.

The high potential median cumulative forb trend for the unit has fluctuated since 1998 (Figure 10a). Perennial forbs are also diverse within the sampled communities, but are typically not nearly as abundant as perennial grasses. The mean sum of nested frequency of perennial forbs was significantly lower in 2000 and 2010 than in 1995 and 2005 (Figure 3a). Cover of perennial forbs was significantly higher in 2005 than any other sample year (Figure 3b).

Utilization: Pellet group transect data indicates that both deer and elk predominantly use the area. The mean deer and elk days use/acre on the unit was moderate in 2000 and 2010 with a marked increase in use for both species in 2005. Cattle use appears to be light on these studies (Figure 11a). Moose pellets have also occasionally been sampled on the Little Hole and Mud Springs Draw studies.

Deer Desirable Components Index (DCI): The high potential deer DCI has remained relatively similar, though with a slight general trend upward over the sample years. The ranking of the DCI has been good throughout the sample years (Table 1 and Figure 9).

| Year | Preferred Browse Cover | Preferred Browse Decadence | Preferred Browse Young | Perennial Grass Cover | Annual Grass Cover | Perennial Forb Cover | Noxious Weeds | Total Score | Ranking |
|------|------------------------|----------------------------|------------------------|-----------------------|--------------------|----------------------|---------------|-------------|----------------|
| 95 | 29.4 | 12.9 | 8.0 | 18.6 | -0.3 | 8.5 | 0.0 | 77.2 | Good |
| 00 | 29.3 | 10.6 | 6.9 | 29.3 | 0.0 | 8.0 | 0.0 | 84.0 | Good |
| 05 | 28.9 | 9.3 | 7.7 | 28.3 | -0.8 | 9.5 | 0.0 | 82.8 | Good |
| 10 | 29.6 | 13.9 | 10.5 | 27.5 | -0.2 | 8.2 | 0.0 | 89.5 | Good-Excellent |

Table 1. High potential scale mean deer DCI scores (n=5) by year for WMU 9, South Slope, Vernal. The deer DCI scores are divided into three categories based on ecological potentials which include low, mid-level and high.

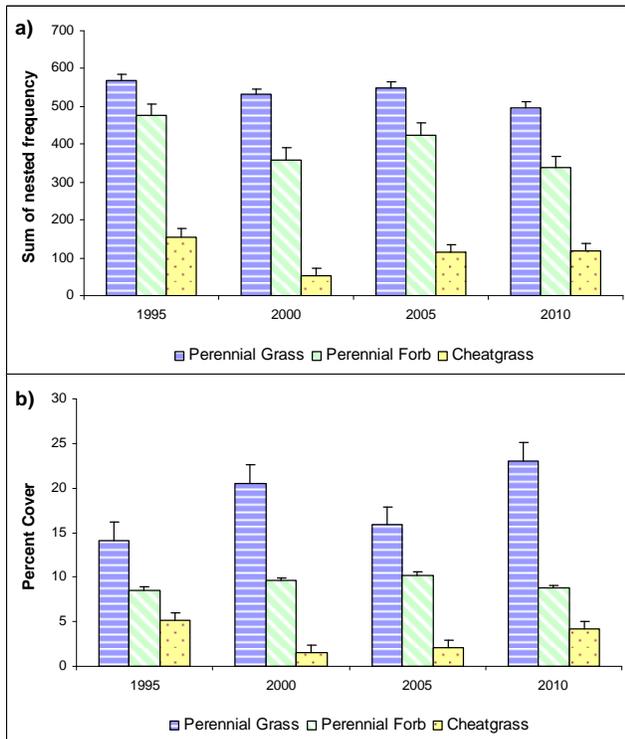


Figure 5. a) Mid-level potential sites mean perennial grass, perennial forb and cheatgrass sum of nested frequency (n=9) by year for WMU 9, South Slope, Vernal. b) Mid-level potential sites mean perennial grass, perennial forb and cheatgrass cover (n=9) by year for WMU 9.

Mountain Big Sagebrush Communities (Mid-Level Potential)

Browse: The mid-level potential studies cumulative median browse trend increased from 1982 to 2000, but then decreased again in both 2005 and 2010 (Figure 10b). The dominant browse species on all of the mid-level potential studies is mountain big sagebrush, though many of the studies also have a large component of bitterbrush. The Mosby Mountain and Mosby Mountain South studies also have a small, but healthy, component of serviceberry. The Toliver Creek Chaining study samples a pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) chaining done in 1986 that has had limited reestablishment of mountain big sagebrush. The Dry Fork Mountain study was not sampled in 2005 due to a

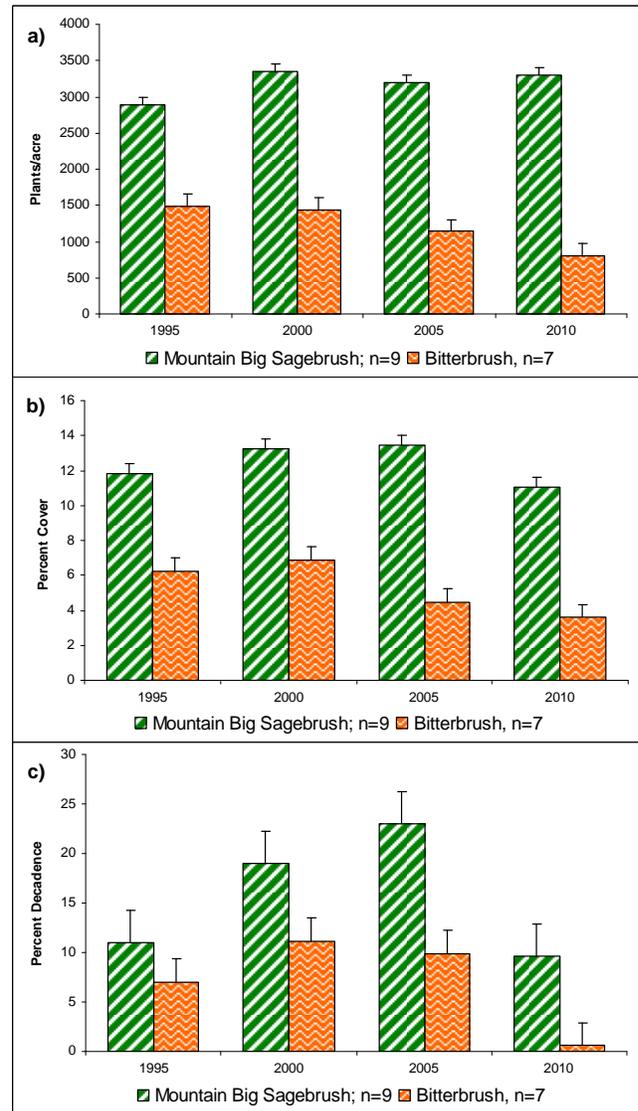


Figure 6. a) Mid-level potential sites mean density of mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and bitterbrush (*Purshia tridentata*) by year for WMU 9, South Slope, Vernal. b) Mid-level potential sites mean cover of mountain big sagebrush and bitterbrush by year for WMU 9. c) Mid-level potential sites mean population decadence of mountain big sagebrush and bitterbrush by year for WMU 9.

wildfire that burned the site that summer and the Farm Creek study was burned in the Neola wildfire in 2007. Following the wildfires, the browse component decreased substantially on each of these studies. Density of mountain big sagebrush increased significantly in 2000 and has remained higher throughout the remaining sample years (Figure 6a). Cover of mountain big sagebrush also increased significantly in 2000, but decreased significantly in 2010 to around 1995 levels (Figure 6b). Decadence of sagebrush increased significantly in 2000 with another large, but not significant increase in 2005 before decreasing significantly to 1995 levels in 2010 (Figure 6c). Bitterbrush has decreased steadily in density on the studies since 2000. The decrease in density was significant in 2010, but not in 2005 (Figure 6a). Cover of bitterbrush decreased significantly in 2005, but remained similar in 2010 (Figure 6b). Decadence of bitterbrush increased in 2000, but not significantly, and remained elevated in 2005. Decadence of bitterbrush decreased significantly in 2010 on the studies (Figure 6c)

Herbaceous Understory: The mid-level potential median cumulative grass trend has decreased slightly for several years since 1995, but grasses generally remained in very good condition for these studies (Figure 10b). Grasses within these communities are diverse and very abundant. The annual species cheatgrass (*Bromus tectorum*) was sampled on most of the studies, but tends not to be a prevalent component on the sites. The exception is the Toliver Creek Chaining study which has been dominated by cheatgrass in several sample years. The mean sum of nested frequency of perennial grasses was significantly higher in 1995 than all other sample years and significantly lower in 2010 than all other sample years (Figure 5a). Despite the decrease in frequency the cover of perennial grasses was significantly higher in 2000 and 2010 than in 1995 and 2005 (Figure 5b). The nested frequency of cheatgrass was significantly lower on the studies in 2000 than in the other sample years (Figure 5a).

The mid-level potential median cumulative forb trend has fluctuated over the sample years with slight increases and decreases in each sample year. The overall trend has remained fairly stable (Figure 10b). Perennial forbs are also diverse and fairly abundant within most of the sampled communities. The mean sum of nested frequency of perennial forbs was significantly lower in 2000 and 2010 than in 1995 and 2000, though mean cover increased slightly, but significantly, in 2000 and decreased significantly in 2010 (Figure 5a and Figure 5b).

Utilization: Pellet group transect data indicates that deer predominantly use these study areas. The mean deer days use/acre on the unit has been moderate to moderately heavy over the course of the study years with the highest use occurring in 2005. The mean elk days use/acre has been mostly light on the sites. Cattle use also appears to be light on the studies (Figure 11b).

Deer Desirable Components Index (DCI): The mid-level potential deer DCI remained fairly stable over the sample years with rankings ranging from fair to good throughout the sample years (Table 2 and Figure 9).

| Year | Preferred Browse Cover | Preferred Browse Decadence | Preferred Browse Young | Perennial Grass Cover | Annual Grass Cover | Perennial Forb Cover | Noxious Weeds | Total Score | Ranking |
|------|------------------------|----------------------------|------------------------|-----------------------|--------------------|----------------------|---------------|-------------|-----------|
| 95 | 18.6 | 10.4 | 4.0 | 25.1 | -2.9 | 7.4 | 0.0 | 62.6 | Fair |
| 00 | 20.2 | 8.2 | 4.1 | 28.5 | -0.4 | 7.0 | 0.0 | 67.6 | Good |
| 05 | 20.7 | 7.3 | 3.6 | 26.3 | -1.0 | 7.1 | 0.0 | 63.9 | Fair-Good |
| 10 | 17.2 | 9.5 | 4.8 | 28.3 | -2.5 | 7.9 | 0.0 | 65.1 | Fair-Good |

Table 2. Mid-level potential scale mean deer DCI scores (n=9) by year for WMU 9, South Slope, Daggett. The deer DCI scores are divided into three categories based on ecological potentials which include low, mid-level and high.

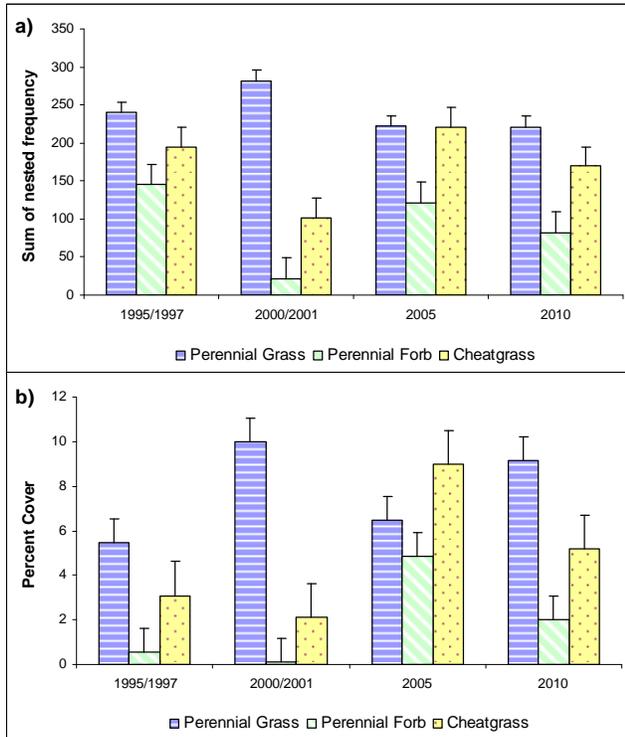


Figure 7. a) Low potential sites mean perennial grass, perennial forb and cheatgrass sum of nested frequency (n=6) by year for WMU 9, South Slope, Vernal. b) Low potential sites mean perennial grass, perennial forb and cheatgrass cover (n=6) by year for WMU 9.

Wyoming Big Sagebrush Communities (Low Potential)

Browse: The low potential site cumulative median browse trend has decreased substantially and steadily since 1995/1997 (Figure 10c). The dominant browse species on these low potential studies is Wyoming big sagebrush. A small wildfire removed most of the browse on the Island Park study in 2010, but cover and density of sagebrush was already fairly low on that study. There was a significant decrease in the mean density of Wyoming big sagebrush in 2000/2001, though this decrease appears to be an artifact of the high density Brush Creek Substation study not being read during those sample years. There was also a general die-off of sagebrush on the Island Park, Brush Creek Substation and Buckhorn Canyon studies sampled in 2005 that decreased the mean density of the studies significantly in 2005. Density increased slightly, but remained at depressed levels in 2010 (Figure 8a). The mean cover of Wyoming big sagebrush reflected the changes in density throughout the sample years (Figure 8b). The mean decadence of Wyoming big sagebrush increased significantly from moderate levels to high levels in 2000/2001, and remained elevated throughout the remaining sample years (Figure 8c).

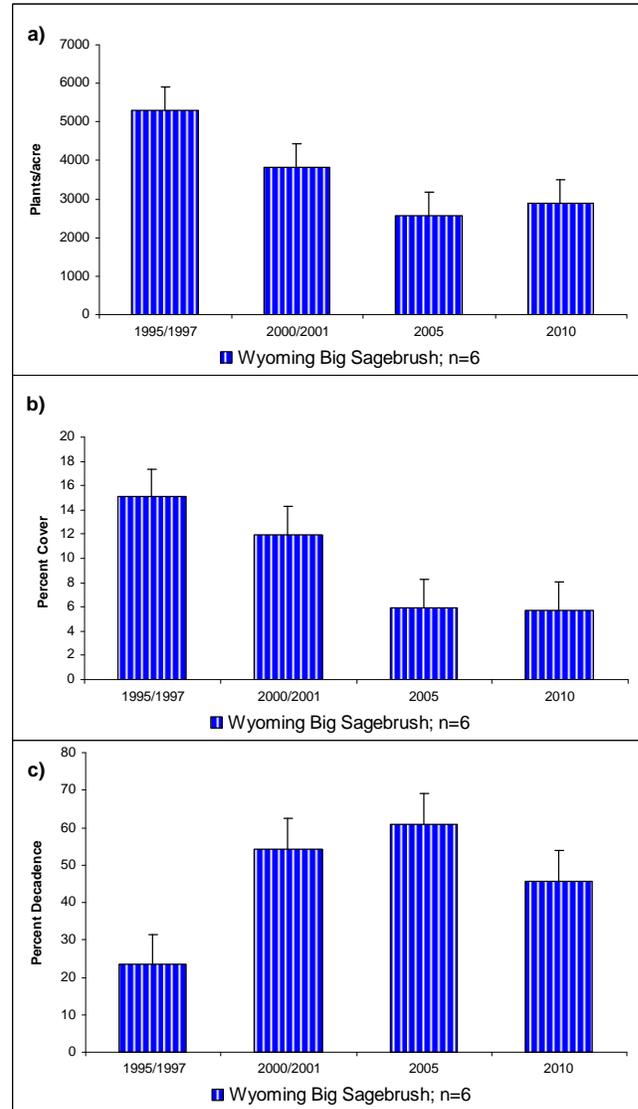


Figure 8. a) Low potential sites mean density of Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) by year for WMU 9, South Slope, Vernal. b) Low potential sites mean cover of Wyoming big sagebrush by year for WMU 9. c) Low potential sites mean population decadence of Wyoming big sagebrush by year for WMU 9.

Herbaceous Understory: The low potential median cumulative grass trend decreased substantially from 1995/1997 to 2005 (Figure 10c). Grasses within these communities are typically fairly diverse and abundant, except for the Red Mountain Allotment and Brush Creek Substation studies which are limited in grasses. The annual species cheatgrass (*Bromus tectorum*) is fairly common on the studies, but is the dominant grass species on the Red Mountain Allotment and Brush Creek Substation studies. The cheatgrass mean nested frequency was significantly lower in 2000/2001 than the other sample years (Figure 7a). The mean cover of cheatgrass was significantly higher in 2005 than the other sample years (Figure 7b). Mean sum of nested

frequency of perennial grasses was significantly higher in 2000/2001 than all of the other sample years (Figure 7a). The mean cover of perennial grasses was significantly higher in 2000/2001 and 2010 than in the 1995/1997 and 2005 sample years (Figure 7b).

The low potential median cumulative forb trend has remained relatively stable throughout the study years (Figure 10c). Perennial forbs are not as frequent or abundant as perennial grasses or cheatgrass within the sampled communities. The mean sum of nested frequency of perennial forbs was significantly lower in 2000/2001 than the other sample years (Figure 7a). Mean cover of perennial forbs was significantly higher in 2005 than the other sample years (Figure 7b).

Utilization: Pellet group transect data indicates that deer predominantly use these study areas, though elk use was heavier on the Island Park study than deer use. The mean deer days use/acre on the unit has been mostly heavy over the course of the study years, though there was a substantial decrease in use in 2005. The mean elk and cattle days use/acre have been mostly light on the study sites (Figure 11c), though cattle use was moderate on the Buckhorn Canyon study. Cattle are excluded from the Island Park and Browns Park River Corridor-Wildlife studies.

Deer Desirable Components Index (DCI): The low potential deer DCI decreased steadily from 1995/1997 to 2005 before increasing slightly again in 2010. Most of the decrease is due to decreases in the cover of preferred browse and an increase in decadence. The ranking ranged from fair to poor-fair (Table 3 and Figure 9).

| Year | Preferred Browse Cover | Preferred Browse Decadence | Preferred Browse Young | Perennial Grass Cover | Annual Grass Cover | Perennial Forb Cover | Noxious Weeds | Total Score | Ranking |
|-------|------------------------|----------------------------|------------------------|-----------------------|--------------------|----------------------|---------------|-------------|-----------|
| 95/97 | 19.3 | 9.0 | 5.1 | 11.2 | -3.8 | 1.2 | 0.0 | 41.9 | Fair |
| 00/01 | 16.5 | -0.3 | 1.4 | 14.6 | -1.8 | 1.3 | 0.0 | 31.8 | Fair |
| 05 | 10.5 | 1.4 | 3.7 | 12.3 | -6.5 | 3.5 | 0.0 | 24.9 | Poor-Fair |
| 10 | 8.2 | 1.9 | 3.4 | 16.1 | -3.3 | 3.0 | 0.0 | 29.3 | Fair |

Table 3. Low potential scale mean deer DCI scores (n=6) by year for WMU 9, South Slope, Vernal. The deer DCI scores are divided into three categories based on ecological potentials which include low, mid-level and high.

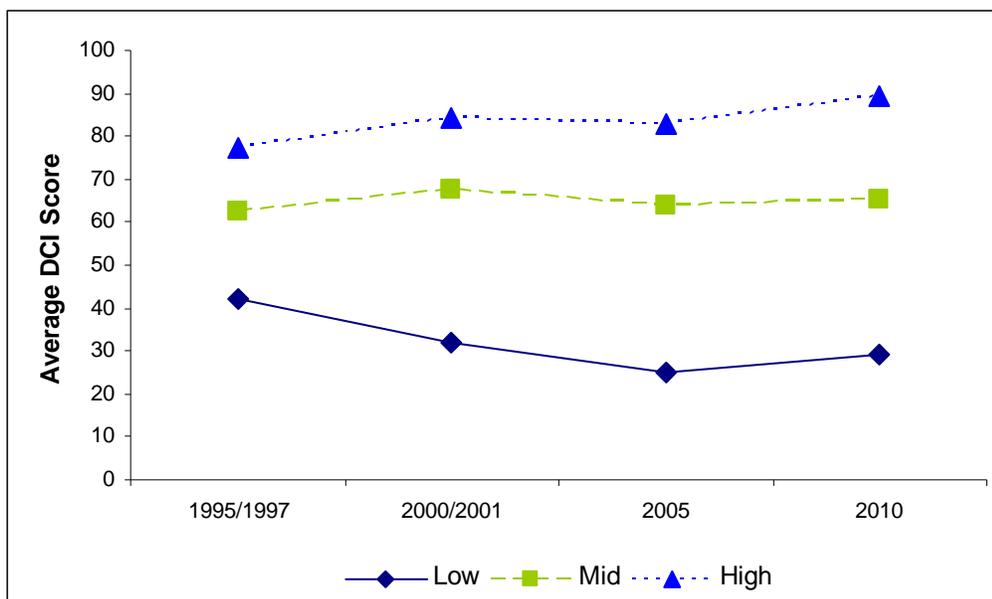


Figure 9. Mean low (n=6), mid-level (n=9) and high (n=5) potential scale deer DCI scores by year for WMU 9, South Slope, Vernal. The deer DCI scores are divided into three categories based on ecological potentials which include low, mid-level and high.

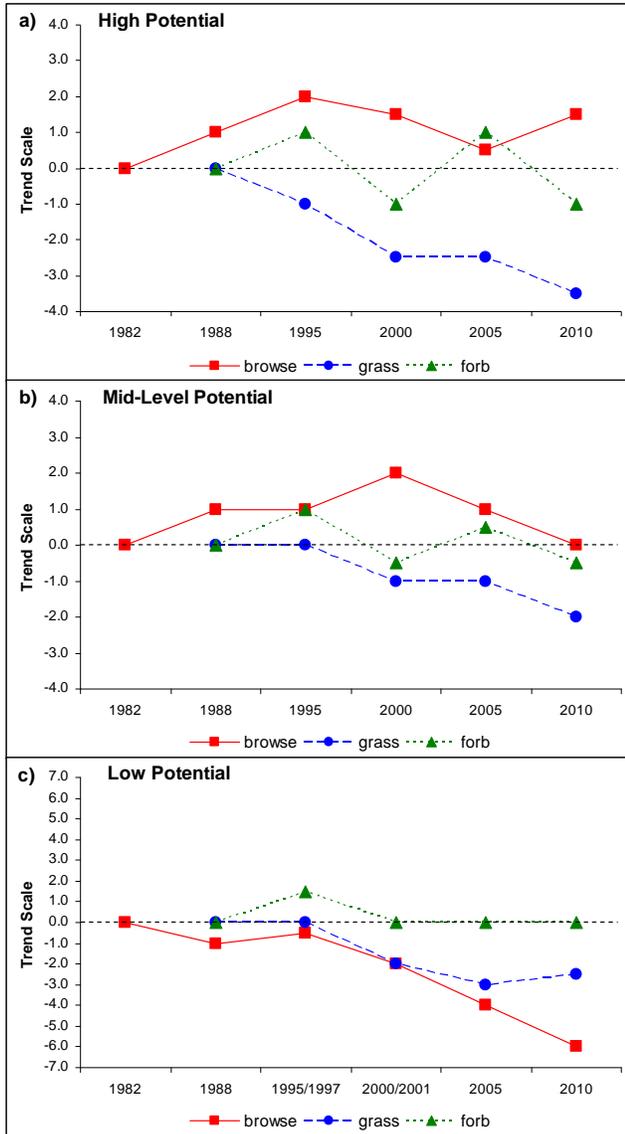


Figure 10. a) High potential sites (n=5) cumulative median browse, grass and forb trends by year for WMU 9, South Slope, Vernal. b) Mid-level potential sites (n=9) cumulative median browse, grass and forb trends by year for WMU 9. c) Low potential sites (n=6) cumulative median browse, grass and forb trends by year for WMU 9.

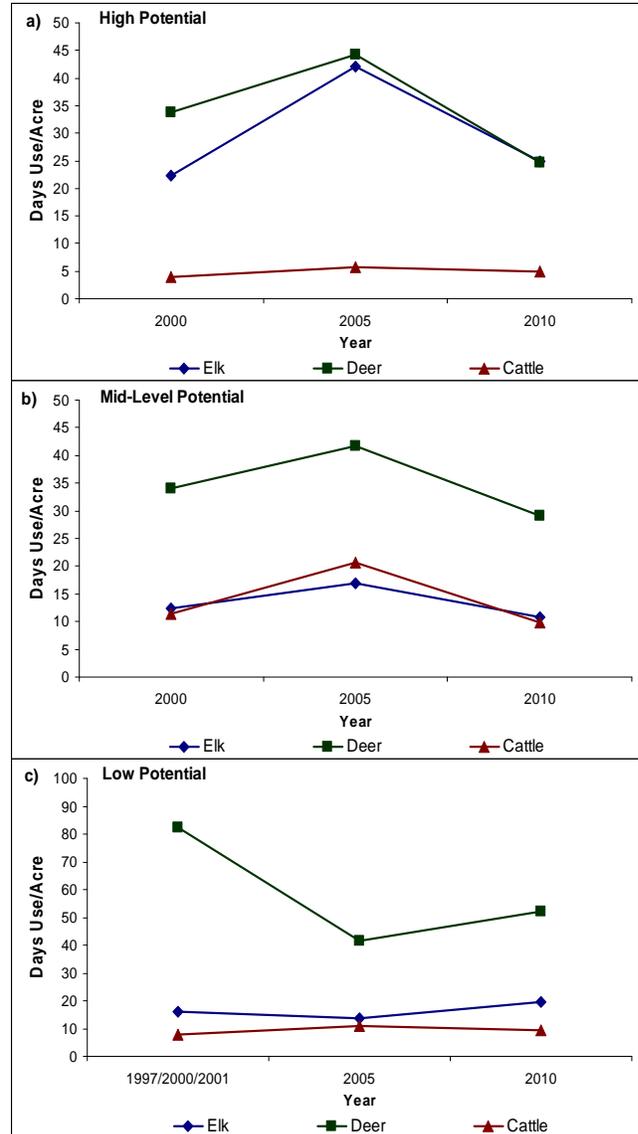


Figure 11. a) High potential sites (n=5) mean animals days use/acre by year for WMU 9, South Slope, Vernal. b) Mid-level potential sites (n=9) mean animal days use/acre by year for WMU 9. c) Low potential sites (n=6) mean animal days use/acre by year for WMU 9.