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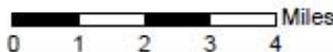
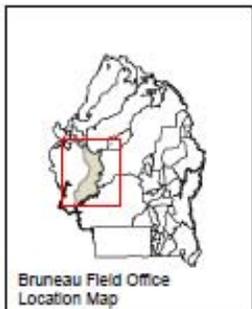
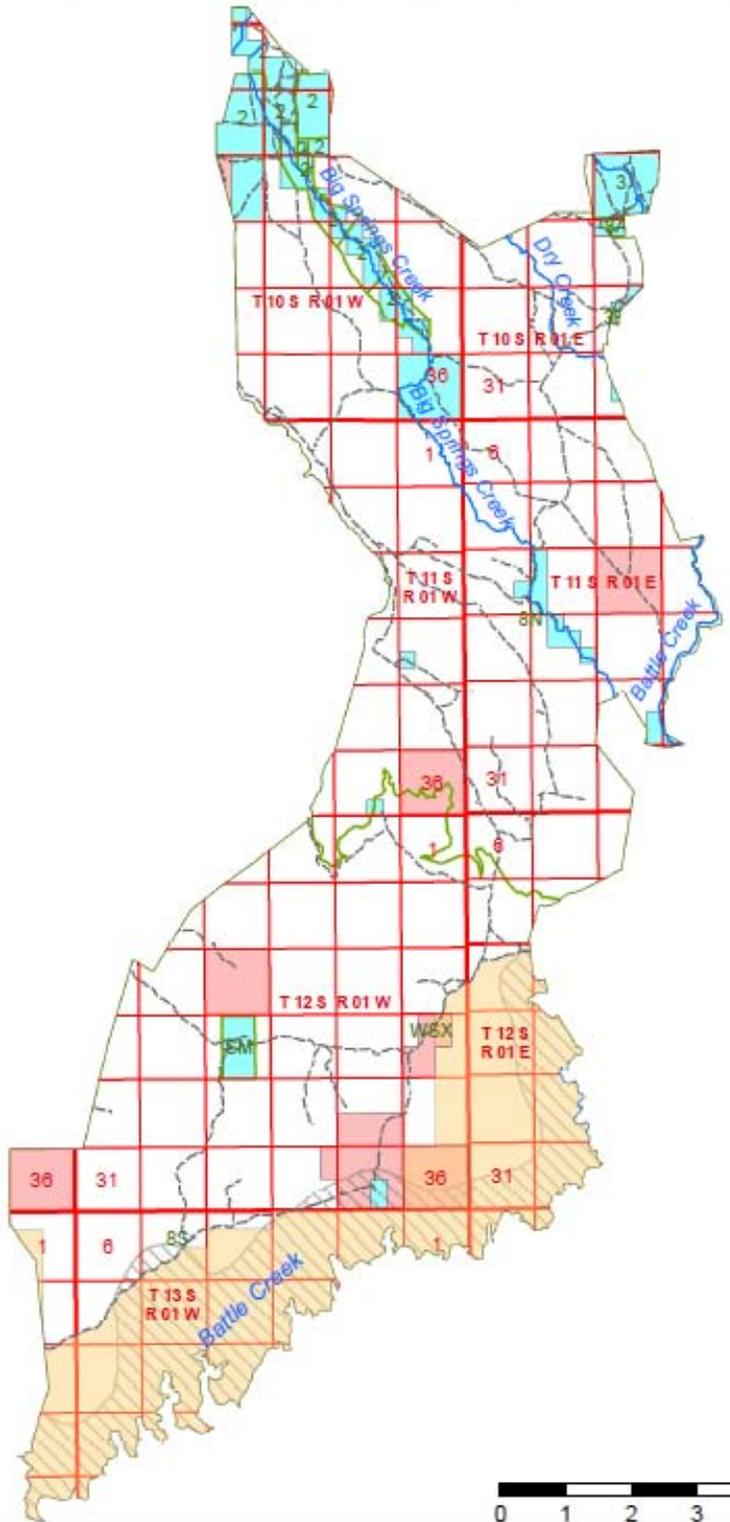
Note:

- Page numbers in this section's Table of Contents and text refer to pages in the Dickshooter Cattle Co. Use Area section of the Big Springs Allotment Assessment, unless in bold type.
- Page numbers in bold type refer to pages in the introductory section of the Big Springs Allotment Assessment and include the section number in that document.

XI. Dickshooter Cattle Co. Use Area



Big Spring Allotment - 0803 DCC Use Area



- Legend**
- DCC Use Area
 - Wilderness
 - BLM
 - Routes
 - Township Range
 - PRIVATE
 - Streams
 - ACEC
 - STATE



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Compiled: Apr 2009 BLM UTM NAD83 meters

Grazing Management and Implementation Monitoring

A. Grazing

Allotment and Pasture Boundaries

BLM has designated the Dickshooter Cattle Co. (DCC) Use Area as Pasture 8 within the Big Springs Allotment #0803. The DCC Use Area has been managed independently since 1988. In that year, the DCC Use Area was fenced except for some tableland escarpments on the east side of Big Springs Butte where extreme stoniness discourages any unintended livestock drift from the JB&S Use Area. In the 1990's, construction of the Lower Battle Creek Enclosure also blocked drift that formerly occurred between the DCC Use Area and the adjoining Northwest Allotment, facilitating a greater degree of independent management in both allotments by Dickshooter Cattle Co.

Construction of the division fences and Enclosure in concert with gap fencing and natural barriers that block livestock access has also facilitated independent management of Pastures 8S and 8N within the DCC Use Area. Fencing around the Big Springs Ranch base property, in conjunction with rimrock along Big Springs Creek, allows an additional degree of separation between the southwest and northeast portions of Pasture 8N. Pasture boundaries for the Dickshooter Cattle Co. (DCC) Use Area are shown above (map, page 2) and also in **Section VI, General Appendix -Map 1 (page 28)**. The fringes of Pasture 8S bordering the Battle Creek canyon are now within the Owyhee River Wilderness designated by Congress in 2009.

Season of Use, Grazing System, and Phenological Events

The season of use for each pasture within the DCC Use Area is not restricted under the current grazing permit, nor has it consistently been reported by pasture. The existing permit also does not specify any particular grazing system, but a 4 inch stubble height requirement at the end of the growing season was required on the DCC permit in 1999 for Big Springs Creek within Pasture 8N. Although the permitted period of use is April 1 to September 30, Dickshooter Cattle Co. has voluntarily shortened their actual season of use to end as early as mid-August in many years because water is poorly distributed and is usually available for a limited period after spring turnout.

Grazing management has consisted of varying the turnout date, the classes of livestock (pairs vs. yearlings), the rate of movement through the Use Area, the amount of use activated, and whether grazing during August or September occurs. It has generally been a voluntary measure by Dickshooter Cattle Co. to adjust to current conditions within permitted flexibility (Table 69), rather than a formalized grazing system.

Two phenological zones occur within the Dickshooter Cattle Co. Use Area:

- **Late Spring Use Area (4,700 to 5,600 feet elevation)**
The critical growth period for bluebunch wheatgrass (*Pseudoroegneria spicata*), Indian ricegrass (*Achnatherum hymenoides*), needle-and-thread (*Hesperostipa comata*), and Idaho fescue (*Festuca idahoensis*) occurs during late-May in the Late Spring Use Area, as defined by the Boise District Phenology Study (**Section V, page 20, Figure 1**). The critical growth period for Thurber needlegrass (*Achnatherum thurberianum*) probably is similar to that of Idaho fescue, although needlegrass tends to stay green later. The critical

growth period for squirreltail (*Elymus elymoides*) occurs in mid-May. The critical growth period for Sandberg bluegrass (*Poa secunda*) occurs during early May.

- **Early Summer Use Area (5,600 to 5,980 feet elevation)**

The critical growth period for bluebunch wheatgrass and Idaho fescue occurs during early to mid-June in the Early Summer Use Area. The critical growth period for Thurber needlegrass is probably similar to that of Idaho fescue. The critical growth period for squirreltail occurs during late May. The critical growth period for Sandberg bluegrass occurs primarily during May.

The critical growth period for perennial grasses occurs during the late boot (heads showing) stage of development. Grazing during that time potentially has the greatest impact upon vigor and reproduction.

Pasture 8N (Summer Use)

Season of Use

Pasture 8N has more springs, creeks, and bottoms where water collects than does Pasture 8S, and has more options for timing of use. Cattle use could begin on April 1, but usually does not begin until water becomes limiting in Pasture 8S; usually during early July. In Pasture 8N, cattle use occurs in July in the portion of the pasture lying south and west of Big Springs Creek. Pit-type reservoirs in basins and below rims are supplemented by access to Big Springs Creek above its canyon, the only reliable natural water source. Cattle are usually removed to the Big Springs Ranch base property around the end of July. A portion of the cattle are shipped at that time.

A portion of the DCC cattle herd is returned to the portion of Pasture 8N that lies north and east of Big Springs Creek in August and September when water and forage availability allow. Dry Creek Reservoir, Big Springs Creek, and water gaps into Battle Creek are major water sources for that late summer use. These are supplemented by storage in pit reservoirs in basin bottoms and below rims where snow banks accumulate (e.g., Figure 19, page 46) and by two springs near the Battle Creek Ranch base property.

Grazing During Phenological Events

Practically all of Pasture 8N lies within the Early Summer Use Area. Grazing currently begins after the critical growth period for perennial grasses in most years. Regrowth after use is probably very limited in Pasture 8N, and is entirely dependent on the amount and frequency of summer rainfall.

Pasture 8S (Mid-Spring/Early Summer Use)

Season of Use

Under the previous permittee (Owen Ranches), turnout was typically by April 16 and occurred as early as March 24 with a separate herd of cattle from that using the Northwest Allotment. During 1995 to 1998, spring turnout by Dickshooter Cattle Co. typically occurred between April 1 and April 14 into Pasture 8S. Since 1999, livestock have often begun their spring use on the Northwest allotment and been trailed into the DCC Use Area around May 1 after splitting a single herd between the two allotments. By then soils are usually dry. In 2005 and 2006, turnout into Pasture 8S was delayed until almost the end of May in part because of above average spring precipitation.

In Pasture 8S, cattle use occurs in May and June, extending into early July in most years, depending upon the availability of water. A few horses are also licensed during the entire permitted use period. Water is poorly distributed. Lower Battle Creek Crossing Reservoir #1 and Battle Creek Crossing Waterhole #1, Squaw Meadow Reservoirs #1 and #2, Frying Pan Spring, and Meadow Reservoir along Kelly Park Draw impound the only reliable natural water sources (springs). Water is also intermittently available along Willow Spring drainage, Dickshooter Creek, Cottonwood Draw, and at other locations along Kelly Park Draw, including storage in some other small reservoirs that may dry up early. There is no access to Battle Creek from this pasture.

Grazing During Phenological Events

Pasture 8S lies within the Late Spring Use Area, and grazing currently occurs during the critical growth period for perennial grasses in most years (no use occurred in 2008).

Although use during the critical period usually occurs in successive years, variation in the actual timing of the phenological events among years may reduce actual impacts to Sandberg bluegrass and squirreltail in Pasture 8S, since their critical period occurs near the beginning of the typical use period by livestock. Stocking this Use Area with yearlings and variations in the stocking rate among years also reduce the level of impact during the critical growth period in Pasture 8S. Some regrowth may also occur after use, dependent on the amount of moisture available during early summer.

Actual Use

For Pasture 8 as a whole (8-all), total available AUMs are 11,296 AUMs (10,627 for public land and 669 Exchange-of-Use). Actual/licensed use ranged between 158 AUMs in 1987 and 9,047 AUMs in 1995 (Figure 6), and averaged 4,202 AUMs between 1987 and 2009. For the period from 1987 through 1994, when Owens Ranches was the permittee, actual/licensed use averaged 3,309 AUMs. For the period from 1995 through 2009, when Dickshooter Cattle Co. was the

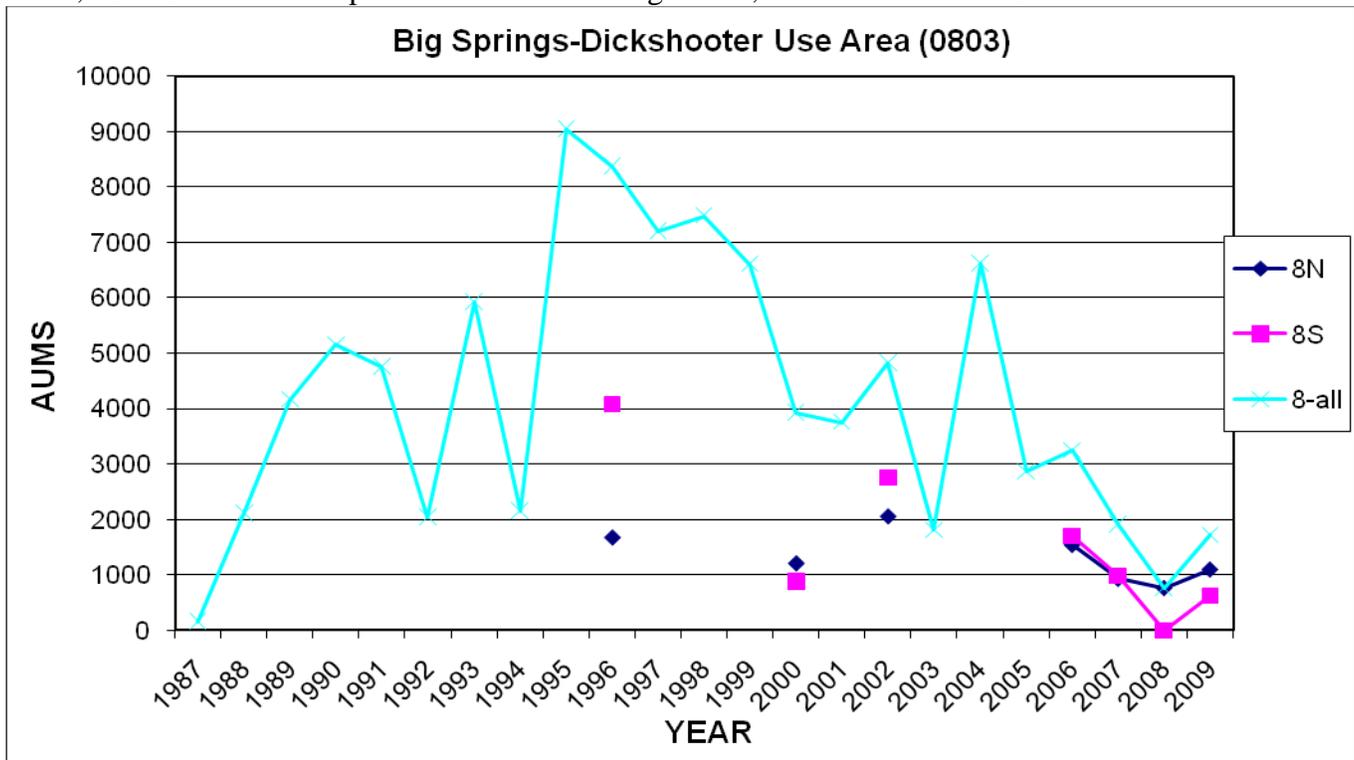


Figure 6. Actual/Licensed Livestock Use, entire Use Area (8-all) and Pastures 8N, 8S, DCC Use Area, Big Springs Allotment.

permittee, actual/licensed use averaged 4,678 AUMs. Most authorized use by Dickshooter Cattle Co. is by cattle; however, a small herd of horses is also licensed in the DCC Use Area at large. More detailed information is summarized in Table 69 from supporting spreadsheets, billings, actual use reports, and other information in the Administrative record.

Before 2005, livestock use was least during extended periods of drought and highest during periods of above-normal precipitation. Later fluctuations have resulted from the needs of the Dickshooter Cattle Co. livestock operation itself. In addition to the permitted use, 669 AUMs are currently allowed under an Exchange-of-Use Agreement for included private and State lands within the DCC Use Area as a whole. Nonuse for the DCC Use Area as a whole averaged 7,094 AUMs (63% of the total authorization) from 1987 to 2009.

Table 69. Actual/Licensed Livestock Use, Pastures 8N and 8S and the entire use area (8-all), Dickshooter Use Area, Big Springs Allotment.

Pasture	8N			8S			8-all		
	AUMs	# Lvst	Use Period	AUMs	# Lvst	Use Period	AUMs	# Lvst	Use Period
1987							158	300	9/15-9/30
1988							2109	400	4/1-8/31
1989							4161	1200	4/16-10/15
1990							5153	1100	3/24-10/31
1991							4763	800	3/25-9/30
1992							2048	959	4/5-7/1
1993							5920	1562	4/16-8/31
1994							2158	588	4/7-7/31
1995							9047	2000	4/1-9/30
1996	4286	2000	6/15-9/15	4079	2000	4/14-6/14	8365	2000	4/10-9/15
1997							7204	2000	4/8-7/30
1998							7481	1962	4/14-8/17
1999							6608	2000	5/6-8/20
2000	1212	1350	7/17-9/7	2724	1200	5/9-7/16	3935	1350	5/9-9/7
2001							3758	1200	5/24-10/10
2002	2063	1500	10/10-10/28	2763	1500	5/6-6/30	4826	1500	5/6-10/28
2003							1809	500	5/15-9/5
2004							6625	1979	5/4-8/18
2005							2870	1200	5/30-8/11
2006	1545	1210	7/6-8/17	1703	1210	5/25-7/10	3248	1210	5/25-8/17
2007	932	1190	6/12-7/9	979	1190	5/18-6/11	1910	1190	5/18-7/3
2008	763	800	9/15-10/13	0	0		763	800	9/15-10/13
2009	1099	478	6/16-10/10	619	294	5/13-7/15	1718	478	5/13-10/10
Avg (1987-1994)							3309		
Avg (1995-2009)	1328 ¹			1689 ¹			4678		
Avg (1987-2009)	1328 ¹			1689 ¹			4202		
							Total permitted=10627		
							Exchange of Use = 669		
							Total Authorized = 11296		

Average reported for years when detailed data available.

Stocking rates by pasture are not available for most years. The heaviest overall stocking rate for the DCC Use Area during 1987 to 2009 was 7.3 acres/AUM in 1995. Most of the heavier stocking rates are in the 8 to 10 acres/AUM range; the lighter ones are in the 12 to 19 acres/AUM range; and the DCC Use Area was stocked at over 30 acres/AUM in many drought

years. The consistently highest stocking rates occurred during 1995 to 1998 during a period of above normal precipitation.

Pasture 8N (Summer Use)

Levels of Use

Actual use in Pasture 8N was only reported separately in 2000, 2006, and 2008. The late summer use in Pasture 8N was also reported separately in 1996, 2002, and 2008. Pasture 8N was not known to be rested between 1987 and 2006, but use was completely deferred in 1987. Since the exact move dates between 8S and 8N are not known in all years, amounts of use shown in Table 69 for each pasture are approximations. Approximate stocking rates have ranged from 7.5 to 42.4 acres/AUM.

Pasture 8S (Mid-Spring/Early Summer Use)

Levels of Use

Actual use in Pasture 8S was only reported separately in 2000, 2006, and 2008. Pasture 8S was rested in 2008, and use was completely deferred in 1987. Approximate stocking rates when use occurred have ranged from 8.3 to 54.7 acres/AUM.

Utilization

Use Pattern Mapping was emphasized over completion of utilization transects by BLM because it reveals the level and pattern of livestock use for the landscape as a whole and it provides a link to the condition pattern and measured trends. Areas that were not inspected are shown as Not Surveyed on the maps. The BLM transect data were for key areas, some of which are Stony Clayey ecological sites and consequently receive very limited use by livestock. The USGS transect data characterized areas where cattle and bighorn use overlapped (Map 7, page 55).

In each pasture, the level of use on these preferred areas is influenced by stocking rate and by forage and water availability, but the pattern of use is consistent from year to year based upon Use Pattern Mapping (Appendix DCC-1, Figure 1, page 36). When forage growth and availability are poor, water also is limiting; and more use occurs in those preferred areas where water is still available. The seasonality of water availability restricts the season of use, particularly in Pasture 8S. In poor snowpack years, such as occurred in 2002-2003, inadequate water is available to maintain spring or stream flow or to fill dependent reservoirs. Water hauling is not practical because this Use Area is stony and remote, with a poor road network.

In 2005 and 2006, available biomass differed greatly from 2004, when the RHE and trend data were collected, based upon repeated photos of the same areas. 2004 was at the end of an extended period of below-normal precipitation, while 2005 and 2006 had favorable precipitation during the spring and summer months (**Section V, page 21, Figures 2 and 3**).

Pasture 8N (Summer Use)

Patterns of Use and Levels of Utilization

Use Pattern Mapping is available for Pasture 8N for 2000 and 2005 (Appendix DCC-1, Figure 1, page 36). In 2005 and 2006, available biomass differed greatly from 2004, when the RHE and trend data were collected, based upon repeated photos of the same areas (Appendices DCC-3a (pages 49-53), DCC-6 (pages 80, 81), and DCC-8 (page 96)).

Figure 1 reveals that the majority of Pasture 8N consistently receives no use and that cattle concentrate on fine-soiled areas in closed basins (e.g., page 51), on stream terraces (e.g., Figure 6, page 43), and on tableland escarpments and adjoining toe slopes (e.g., Figures 3a & 4, page 42). Churning Clay, Clayey, Loamy, Clay Seep, and riparian ecological sites predominate on those preferred portions of the landscape. The seasonality of water availability restricts the season of use in the portion of Pasture 8N that lies south and west of Big Springs Creek to the greatest degree. Water may be available in some years from pools along intermittent drainages and several small reservoirs, and from Big Springs Creek. Dry Creek Reservoir is larger, has greater storage, and is a dependable water source for late summer use in the northeast part of Pasture 8N (page 53).

2000 - In 2000, water was generally available from reservoirs, springs, or creeks (Appendix DCC-1, Figure 2, page 37). The portion of Pasture 8N that lies north and east of Big Springs Creek was not surveyed. Overall utilization in surveyed portions was 10% in 2000.

Utilization in 2000 was practically nil over much of the portion of Pasture 8N lying south and west of Big Springs Creek. Small mounds of fine soil and tableland escarpments were used preferentially to large areas of extremely stony intermounds. Use was locally moderate or heavy along fine-soiled portions of drainages, particularly where small wet meadows occur, and in Churning Clay bottoms near scattered reservoirs.

2005 – 2005 was an excellent water year; water was well distributed in reservoirs, springs, and creeks, and persisted late into the fall at most locations (Appendix DCC-1, Figure 3 (page 38) and Appendix DCC-3, Figure 1 (page 41)). The overall stocking rate was lighter than in 2000, and no August and September use was licensed in the northeast portion of the pasture. Overall utilization in Pasture 8N was 6% in 2005. Appendix DCC-3, Figures 2 through 29 (pages 41-48) illustrate the appearance of the portion of Pasture 8N south and west of Big Springs Creek after grazing.

2006 – Use pattern mapping was not conducted in Pasture 8N in 2006.

Multiple Years - Limited transect utilization data are available for Pasture 8N. Locations were not specified, but are at BLM key areas. Utilization of Idaho fescue, bluebunch wheatgrass, bluegrass, and squirreltail was nil in years when data were collected (Appendix DCC-2, page 40).

Pasture 8S (Mid-Spring/Early Summer Use)

Patterns of Use and Levels of Utilization

Use Pattern Mapping is available for Pasture 8S for 2000, 2005, and 2006 (Appendix DCC-1, Figure 1, page 36). In 2005 and 2006, available biomass differed greatly from 2004, when the RHE and trend data were collected, based upon repeated photos of the same areas (Appendices DCC-5b (pages 74-78), DCC-7 (pages 89-91), and DCC-8 (pages 96, 104, 107)).

Figure 1 reveals that the majority of Pasture 8S consistently receives no use and that cattle concentrate on fine-soiled areas on stream terraces, terrace escarpments and on adjoining toe slopes (Figures 31 & 32, page 66). Loamy, Clayey, and various riparian ecological sites predominate on those portions of the landscape. Mounds of fine soil that support low sagebrush (*Artemisia arbuscula*, Figures 7a-7c, page 107) and big sagebrush (*Artemisia tridentata*, Figure 13, page 60) communities are also preferred by cattle, but are less common than in the other two Use Areas. Water may be available from persistent pools occurring at intervals along intermittent streams (Figure 7, page 59) or at small areas of wet meadow (Figure 3, page 58).

Several reservoirs impound spring flow (pages 61, 63, 65, 67), and supply the most reliable water in Pasture 8S.

2000 - In 2000, water was generally available from reservoirs, springs, or intermittent streams (Appendix DCC-1, Figure 2, page 37). Overall utilization in Pasture 8S was 10% in 2000.

Utilization in 2000 was practically nil over most of Pasture 8S, particularly in stony low sagebrush areas bordering the Owyhee River and Battle Creek canyons. Within that portion of Pasture 8S, small mounds of fine soil were used preferentially to the predominant intermound areas. Areas of light and moderate use occurred around the Squaw Meadow base property and in and near Frying Pan Basin. Frying Pan Basin has substantial areas of fine-soiled big sagebrush communities on tableland escarpments, fine-soiled alkali sagebrush (*A. longiloba*) communities on toe slopes, and fine-soiled intermittent stream terraces. Wet meadows extend into Pasture 8S from the Squaw Meadow base and are attractive to cattle. Regrowth can be abundant on wet meadows prior to mid-July. Use was also locally heavy along some intermittent drainages near water.

2005 – 2005 was an excellent water year; water was well distributed in reservoirs, springs, and creeks, and persisted later (Appendix DCC-1, Figure 3 (page 38) and Appendix DCC-5, Figure 1 (page 57)). Turnout was delayed until May 30, and the overall stocking rate was lighter than in 2000. Overall utilization in Pasture 8S was 6% in 2005. Appendix DCC-5, Figures 2 through 38 (pages 58- 67) illustrate the appearance of Pasture 8S after grazing in 2005.

Utilization was light in fine-soiled portions of intermittent drainages, including wet meadows (Figure 7, page 59); and in most big sagebrush communities (Figure 31, page 66). Utilization was still locally heavy on wet meadows and moderate in big sagebrush communities near Lower Battle Creek Crossing Reservoir No. 1 and Lower Battle Creek Crossing Waterhole No. 1, respectively (Figures 25&25a, page 64). Regrowth on heavy use areas was good within spring-fed reservoirs (Figure 3, page 58).

2006 – 2006 was also an excellent water year. Water was well distributed in reservoirs, springs, and creeks, but dried up earlier in some cases due to the onset of sustained hot weather in July (Appendix DCC-1, Figure 4 (page 39) and Appendix DCC-5a, Figure 1 (page 68)). The Frying Pan Basin area was not surveyed in 2006. Turnout was delayed until May 25, and the overall stocking rate was again lighter than in 2000. Pasture 8S was stocked at 19.9 acres/AUM in 2006, and overall utilization in the surveyed portions was 7%. Appendix DCC-5a, Figures 2 through 16a (pages 69- 73) illustrate the appearance of surveyed portions of Pasture 8S after grazing in 2006.

Multiple Years - Limited transect utilization data are available for Pasture 8S (Appendices DCC-4 and 4a). Locations were not specified for the 1988 BLM transects, but were probably from key areas (Appendix DCC-4, page 54). Idaho fescue and bluebunch wheatgrass utilization was moderate and light, respectively, in 1988. Utilization of all species was nil at the key areas in 2005 (photos, pages 101, 104, 107).

Most data were collected under the USGS bighorn sheep study in 1996 and 1998 (Elroy Taylor, pers. comm.) and are summarized in Appendix DCC-4a (page 56). Utilization of Idaho fescue and bluebunch wheatgrass was light to moderate in both years in Pasture 8S.

Upland Rangeland Health Evaluations and Trend

Pasture 8N (Summer Use)

A total of 14 Rangeland Health Evaluations (RHEs) were completed in Pasture 8N of the DCC Use Area between July 14 and August 5, 2004 (**Section VI, General Appendix -Map 2 (page 29)** and Appendix DCC-6 (pages 79-86)). Ratings given to each individual indicator are listed for each RHE in Appendix DCC-6 (pages 79, 83).

Frequency and basal cover data were collected at two long-term trend sites (11S01W02 and 11S01E08) between 1983 and 2004 (**Section VI, General Appendix -Map 3 (page 30)**, Appendix DCC-9 (pages 108-109), and Appendix DCC-8 (pages 92-93)). Rangeland Health Evaluations were co-located with both of these trend sites.

The trend sites are located in very stony/rocky areas. Both are representative of the Stony Clayey 12-16 ecological site. No trend and photo sites are established in fine-soiled Churning Clay or Loamy ecological sites.

Pasture 8S (Mid-Spring/Early Summer Use)

A total of 10 RHEs were completed in Pasture 8S between July 14 and August 5, 2004 (**Section VI, General Appendix -Map 2** and Appendix DCC-7 (pages 87-91)). Ratings given to each individual indicator are listed for each RHE in Appendix DCC-7 (page 87).

Frequency and basal cover data were collected at two long-term trend sites (12S01W32 and 12S01W23) between 1983 and 2004 (**Section VI, General Appendix -Map 3**, Appendix DCC-9 (pages 110-111), and Appendix DCC-8 (pages 92-93, 99-107)). Rangeland Health Evaluations were co-located with both of these trend sites.

A long-term photo plot / view photo site (13S02W13A) was also monitored for visual evidence of changes in cover and species composition between 1983 and 2004. A Rangeland Health Evaluation was completed near this site.

Of these trend and photo plot sites, all are low sagebrush communities. One is located on a stony/gravelly concave intermound (12S01W23); one is located on a convex intermound near water (12S01W32), and one is located on a low mound within stony intermound areas (13S02W13A). No trend or photo sites were located on Loamy or Clayey ecological sites.

B. Standard 1: Watersheds

Rangeland Health Evaluations were completed in various ecological sites within the Dickshooter Cattle Co. Use Area in 2004. For each Evaluation worksheet, existing conditions were rated relative to “reference” or “potential” conditions for that ecological site. Evaluation areas are usually between 20 to 50 acres, though some were as much as 500 acres, and one was only one acre within the DCC Use Area. The “preponderance of evidence” approach was used to rate the degree of departure from reference conditions for the two rangeland health attributes considered under Standard 1 (Soil/Site Stability and Hydrologic Function) as explained in Technical Reference 1734-6, Version 3-2000.

The dominant indicators of soil erosion were in the form of flow patterns and pedestalled plants (Indicators 2 & 3). Shearing and other forms of mechanical damage to the soil can lead to surface sealing and compaction when they occur on clayey soils.

Soil factors affecting hydrologic function are adequate if good soil structure, sufficient organic matter levels in the surface horizons and desirable shrub, forb, and bunchgrass species colonizing the surface occur. This is particularly true for the interspatial areas, where decreaser bunchgrass species are common.

The large decreaser bunchgrass species provide more canopy cover (increased interception of rain and snow while providing more thermal and wind shielding), increased amounts of litter, and contribute more organic matter to the system than increaser bunchgrasses. Their large fibrous root systems also increase soil organic matter, soil pore space, and provide habitat for soil microorganisms. All these attributes increase infiltration and other hydrologic functions. Increaser species are structurally much smaller and do not provide for these functions nearly as well. The formation of physical soil crusts indicates long-term site degradation and severely affects the hydrologic cycles.

Repeated photos during 2004 through 2006 illustrate the influence of precipitation fluctuation on temporal variability in soil and vegetation characteristics. 2004 was at the end of an extended period of below-normal precipitation, while 2005 and 2006 had favorable precipitation during the spring and summer months (**Section V, page 21, Figures 2 and 3**). Consequently, bunchgrass vigor, mortality (crown die-out, available biomass, amount of bare ground, and other characteristics differed greatly from 2004, when the RHE and trend data were collected (Appendices DCC-3a (pages 49-53), DCC-5b (pages 74-78), DCC-6 (pages 80, 81, 84, 85), DCC-7 (pages 89-91), and DCC-8 (pages 96, 101, 104, 107)). Both typically grazed and ungrazed areas showed the same pattern throughout the DCC Use Area.

Responses in these characteristics have also been observed in trend data and photo sequences from other years during the 1987 to 2009 evaluation period. Particularly, the observed fluctuation in watershed cover categories at trend studies reflects plant dieback and expansion and litter accumulation or loss as influenced by fluctuation in growth year precipitation in possible combination with consumption by grazing livestock. Generally increased live vegetation between 1983 and 1987 may reflect favorable growing conditions during that period and the steep decline between 1987 and 1995 may similarly reflect unfavorable conditions at some locations. Fluctuation in increaser grass basal cover and persistent litter may also follow a broadly similar pattern. Although consumption by livestock could have contributed to the decline in non-persistent litter between 1983 and 1987, climatic conditions were adverse for litter accumulation in 1985 and 1987. 1987 was at the very beginning of an extended series of dry years.

Associated trend photos also reflect crown die-off, reduced production, or declining non-persistent litter cover during the period of lower precipitation from 1987 to 1994 (pages 99-100, 105-107) and document subsequent fluctuation in cover categories.

Rangeland Health Evaluation Summary (Indicators 1-11 and 14)

Pasture 8N (Summer Use)

Pasture 8N is dominated by the Clayey and Churning Clay ecological sites which form the bulk of the RHE areas. The Stony Clayey ecological sites have very stony to extremely stony

surfaces which aid in protecting them from disturbance. Various Loamy ecological sites are found throughout the pasture also, and the Loamy 13-16 ecological sites were evaluated.

The 2004 data indicate a slight to moderate degree of departure from those found in reference areas and ecological site guides for the site stability and watershed function-related Indicators (1-11 & 14) for Pasture 8N as a whole (Table 70, Appendix DCC-6 (page 79, 83)).

Table 70. Summary of upland data collected in Pasture 8N, DCC Use Area, Big Springs Allotment, 2004.

Ecological Site	Location	RHE Condition ¹ Watershed	RHE Comments	Basal Cover Trend
Stony Clayey 12-16	10S01E21	N-S		
Stony Clayey 12-16	10S01W22	S-M		
Stony Clayey 12-16	11S01W24	S-M		
Stony Clayey 12-16	11S01W02	N-S		Static
Stony Clayey 12-16	11S01E08	N-S		Static
Stony Clayey 12-16	11S01E22	N-S		
Clayey 12-15	12S01W03	N-S		
Churning Clay 12-16	10S01E30	S-M		
Churning Clay 12-16	10S01W13	S-M		
Churning Clay 12-16	10S01W35	S-M	Mechanical damage	
Churning Clay 12-16	11S01E09	N-S		
Loamy 13-16	12S01E06	S-M	Rare active pedestalling, mechanical damage	
Loamy 13-16	10S01E32	N-S		
Loamy 13-16	10S01E28	S-M		

¹ N-S = none-slight departure from reference conditions, S-M = slight-moderate departure from reference conditions, M = moderate departure from reference conditions, M-E = moderate-extreme departure from reference conditions.

The RHEs located mostly on tables and benches had little departure from reference conditions for the indicators. Rangeland Health Evaluations on bottom areas (Churning Clay and Loamy ecological sites) particularly those in the vicinity of water developments exhibited more of a departure than other areas. Some RHE areas (11S01E22, 12S01W03, 10S01E32) were close to reference condition and were used for comparison purposes during the assessment period.

Pasture 8S (Mid-Spring/Early Summer Use)

Pasture 8S is dominated by Shallow Claypan ecological sites which form the bulk of the Evaluation sites. Many of the Claypan sites have very stony to extremely stony or gravelly surfaces which tend to aid in protecting them from disturbance. Various Loamy ecological sites are found throughout this pasture also but they are a minor component of the landscape and were not evaluated in 2004.

The existing data indicate a slight to moderate departure from those found in reference areas and ecological site guides for the site stability and watershed function-related Indicators (1-11 & 14) within Pasture 8S as a whole (Table 71, Appendix DCC-7 (page 87)).

Table 71. Summary of upland data collected in Pasture 8S, DCC Use Area, Big Springs Allotment, 2004.

Ecological Site	Location	RHE Condition ¹ Watershed	RHE Comments	Basal Cover Trend
Clayey 12-15	12S01W12	M to S-M	Moderate active pedestalling, flow patterns more numerous than expected, bare ground high, litter and vegetative cover inadequate, physical crust	
Shallow Claypan 11-13	12S01W23	N-S		Static
Shallow Claypan 11-13	12S01W28	N-S		
Shallow Claypan 11-13	12S01W33	N-S		
Shallow Claypan 11-13	13S01W07A	N-S		
Shallow Claypan 11-13	13S01W07B	N-S		
Shallow Claypan 12-16	12S01W10	S-M		
Shallow Claypan 12-16	12S01W21	N-S		
Shallow Claypan 12-16	12S01W32	N-S		Static
Shallow Claypan 12-16	13S02W13	N-S		
Shallow Claypan 12-16	13S02W13A			

¹ N-S = none-slight departure from reference conditions, S-M = slight-moderate departure from reference conditions, M = moderate departure from reference conditions, M-E = moderate-extreme departure from reference conditions.

The Frying Pan Basin area showed the most departure from reference conditions for the indicators, while RHEs in the southern portions of the pasture (mostly on structural benches) showed little departure. Some RHE areas (12S01W33, 12S01W21) were close to reference conditions and were used for comparison for the entire Big Springs Allotment.

Soil and Site Stability (Indicators 1-6 and 8-11)

Pasture 8N (Summer Use)

Indicators of soil erosion varied across RHE areas, with most indicators showing a slight to moderate degree of departure from reference conditions. Flow patterns and pedestalled plants are mostly historic in nature with the exception of Loamy RHE area 12S01E06 (Figures 4 & 4a, page 85), where active erosion processes are documented as rare. This is a preferred plant community and is located within ½ mile of a water source.

The basin areas (Churning Clay ecological sites) in the pasture were also among those that showed the most departure from reference conditions, with key Indicators [mainly flow paths (2), pedestalling (3), amount of bare ground (4), and soil surface loss (9)] given more of a moderate rating. Indicators included pronounced and well defined surface flow paths, with associated pedestalled plants in the interspatial areas. These features indicate that soil loss and degradation has occurred in these areas.

The amount of bare ground was rated a slight to moderate departure from reference conditions on all RHE areas. Rangeland Health Evaluation areas 12S01E06 and 10S01W35 (Figure 2, page 84) exhibited more shearing and other forms of mechanical damage to the soil than expected in 2004 (documented by notes and photos). The Stony Clayey ecological sites have sufficient stone cover, as well as adequate amounts of litter to provide surface protection.

Pasture 8S (Mid-Spring/Early Summer Use)

Indicators of soil erosion varied across RHE areas with most indicators showing more of a slight to moderate departure from reference conditions. Flow patterns and pedestalled plants are

mostly historic in nature with the exception of the Clayey RHE completed in the Frying Pan Basin area, where these processes are still active.

The Clayey RHE near Frying Pan Basin (12S01W12) showed the most departure from reference conditions, with dominant indicators given a moderate rating. Pronounced and well defined surface flow paths were associated with pedestalled plants in the interspatial areas (Figures 10 & 10a, page 91). Both features indicate that active and historic soil loss and degradation have occurred at this site.

The amount of bare ground was rated a slight to moderate departure from reference conditions, with many areas in the Claypan ecological sites having sufficient stone or gravel cover as well as adequate amounts of litter to provide surface protection. However, the amount of bare ground is a concern at the Clayey RHE, which rated a moderate departure from reference conditions. The soils there have little stone or gravel cover; and litter and vegetative cover were inadequate for soil surface protection in 2004. Physical soil crusts were also present, indicating soil exposure to rain drop impact and to other soil surface-disturbing actions.

Watershed/Hydrologic Function (Indicators 1-5, 7-11 and 14)

Pasture 8N (Summer Use)

Soil factors affecting the hydrologic function on most areas are adequate. The Churning Clay ecological site evaluated in the northeast portion of the pasture (10S01E30) was rated as a moderate departure from reference conditions for the plant community Indicator (10) due to the imbalance of decreaser to increaser bunchgrass species (Figure 8, page 82).

Pasture 8S (Mid-Spring/Early Summer Use)

Soil factors affecting the hydrologic function at most RHE areas within Pasture 8S are adequate. The RHE (12S01W12) in the Clayey ecological site documented a general imbalance in decreaser to increaser species and lower than expected amounts of interspatial decreaser bunchgrass species.

Watershed Trend

Trend sites were monitored to determine quantitative changes in cover categories.

Pasture 8N (Summer Use)

NPFT Studies – The trend data indicated a generally static trend in persistent litter, bare ground, biological soil crusts, and basal cover of increaser and decreaser grasses at trend site 11S01W02 (Appendix DCC-9, Figure 1 (page 108)). Live vegetation basal cover showed some fluctuation, with greater basal cover in 2000 than in 1983. However, live vegetation basal cover was static overall between 1983 and 2004 (photos, page 96).

The trend data indicated a generally static trend in bare ground and basal cover of decreaser grasses at 11S01E08 (Figure 2 (page 109)). Live vegetation and increaser grass basal cover and persistent litter all showed some fluctuation between 1983 and 2004. Live vegetation showed greater basal cover in 1987 than in the other years; and increaser grass basal cover and persistent litter followed a broadly similar pattern. However, overall live vegetation and increaser grass

basal cover and persistent litter were all static between 1983 and 2004. Biological soil crusts were higher in 2004 than in preceding years.

There was no statistical relationship between bare ground and non-persistent litter cover during 1983 to 2004 at trend site 11S01E08, but one existed at trend site 11S01W02. Both trend sites have an inherently high cover of rock and gravel, although more fine soil is evident at the surface at trend site 11S01W02. Non-persistent litter cover declined, but recovered to its original level at both trend sites.

Pasture 8S (Mid-Spring/Early Summer Use)

NPFT Studies – The trend data indicated a generally static trend in live vegetation basal cover and in basal cover of increaser and decreaser grasses trend site at 12S01W23 (Figure 3 (page 110)). Biological soil crusts were higher in 1983 than in succeeding years. Bare ground cover showed some fluctuation, with greater bare ground in 2000 than in the other years. However, bare ground was static overall between 1983 and 2004, and there is no clear correlation with growth year precipitation during that period (photos, page 101). Persistent litter also showed some fluctuation, but with a static trend overall.

There was no statistical relationship between bare ground and non-persistent litter cover during 1983 to 2004 at trend sites 12S01W23 or 12S01W32. Both trend sites have an inherently high cover of rock and gravel, although more fine soil is evident at the surface at the latter trend site. Non-persistent litter cover declined, but recovered to its original level at both trend sites.

The trend data for 12S01W32 indicated a static trend in persistent litter, bare ground, biological soil crusts, and basal cover of increaser and decreaser grasses (Figure 4, page 111). Live vegetation basal cover showed some fluctuation, with greater basal cover in 1987 than in the other years. However, live vegetation basal cover was static overall between 1983 and 2004 (photos, page 104).

C. Standard 4: Native Plant Communities

Summary: Most of the Rangeland Health Evaluation (RHE) sites in this Use Area are near reference condition. Some departure from reference conditions was noted (according to RHEs) in small portions of Pastures 8N and 8S.

A total of 24 RHEs were conducted in this Use Area during the 2004 field season (**Section VI, General Appendix -Map 2, page 29**). Eighteen (18) of these showed none to a slight degree of departure from reference conditions from those found in reference areas and ecological site guides for similar ecological types. Correspondingly, utilization in this Use Area was minimal over most of this pasture with an overall utilization of 24% (according to utilization data collected in 2000). The other six showed a slight to moderate departure. Areas showing a slight to moderate departure in 2004 are associated with areas of moderate use. For example, the Frying Pan Basin area showed the most departure from reference conditions for the indicators. Most ecological sites have adequate native perennial bunchgrass cover and vigorous and reproductively capable populations of native plant species. Five RHE sites were close to reference conditions and were used as reference areas during the assessment period.

Rangeland Health Evaluation Summary (Indicators 8-9 and 11-17)**Pasture 8N (Summer Use)**

The evaluation areas in this pasture (mostly on tables and benches) displayed little departure for the native plant community Indicators (8-9 & 11-17) in 2004; see Table 72 and Appendix DCC-6 (pages 79, 83)).

Table 72. Summary of upland data collected in Pasture 8N, DCC Use Area, Big Springs Allotment, 2004.

Ecological Site	Location	RHE Condition ¹ Biotic	RHE Comments	NPFT Trend	Photo Trend
Stony Clayey 12-16	10S01E21	N-S			
Stony Clayey 12-16	10S01W22	N-S	Bulbous bluegrass in trace amounts		
Stony Clayey 12-16	11S01W24	S-M	Decreased perennial grass production		
Stony Clayey 12-16	11S01W02	N-S		Static	√
Stony Clayey 12-16	11S01E08	N-S		Static	√
Stony Clayey 12-16	11S01E22	N-S			
Clayey 12-15	12S01W03	N-S			
Churning Clay 12-16	10S01E30	S-M	Decreased sagebrush production, decadent shrubs, reduced vigor		
Churning Clay 12-16	10S01W13	S-M	Increase in annual forbs		
Churning Clay 12-16	10S01W35	S-M to N-S	Increase in annual forbs		
Churning Clay 12-16	11S01E09	N-S			
Loamy 13-16	12S01E06	S-M	Bulbous bluegrass common throughout site, increased sagebrush production, heavy bunchgrass utilization, reduced vigor, reduced reproductive capability, shrub decadence		
Loamy 13-16	10S01E32	N-S			
Loamy 13-16	10S01E28	N-S			

¹ N-S = none-slight departure from reference conditions, S-M = slight-moderate departure from reference conditions, M = moderate departure from reference conditions, M-E = moderate-extreme departure from reference conditions.

²√ indicates that a photo trend site co-located with a NPFT site.

Churning Clay and Loamy ecological sites within proximity of water developments exhibited more departure from reference conditions. Some Stony Clayey 12-16 (11S01E22) and Loamy 13-16 (10S01E28) RHEs in Pasture 8N were near reference condition and were used as reference areas in 2004.

Pasture 8S (Mid-Spring/Early Summer Use)

Most RHEs showed little departure for the native plant community Indicators in 2004; see Table 73 and Appendix DCC-7 (page 87).

Table 73. Summary of upland data collected in Pasture 8S, DCC Use Area, Big Springs Allotment, 2004.

Ecological Site	Location	RHE Condition ¹ Biotic	RHE Comments	NPFT Trend	Photo Trend ²	
					grasses	shrubs
Clayey 12-15	12S01W12	S-M	Substantial cattle use, moderate reduction in vegetative cover, reduced bunchgrass vigor and reproductive capability, some bunchgrass root exposure			
Shallow Claypan 11-13	12S01W23	N-S	Bulbous bluegrass scattered	Static to Downward	√	√
Shallow Claypan 11-13	12S01W28	N-S				
Shallow Claypan 11-13	12S01W33	N-S				
Shallow Claypan 11-13	13S01W07A	N-S				
Shallow Claypan 11-13	13S01W07B	N-S				
Shallow Claypan 12-16	12S01W10	S-M to N-S				
Shallow Claypan 12-16	12S01W21	N-S				
Shallow Claypan 12-16	12S01W32	N-S		Static to Upward	√	√
Shallow Claypan 12-16	13S02W13	N-S				
Shallow Claypan 12-16	13S02W13A				Downward	Static to Upward

¹ N-S = none-slight departure from reference conditions, S-M = slight-moderate departure from reference conditions, M = moderate departure from reference conditions, M-E = moderate-extreme departure from reference conditions.

²√ indicates that a photo trend site co-located with a NPFT site.

The Frying Pan Basin area showed the most departure from reference conditions for the indicators, while RHEs in the southern portions of the pasture showed little departure for the indicators from reference conditions. Some RHEs (12S01W33, 12S01W21, and 12S01W32) were close to reference conditions and were used as reference areas.

Integrity / Diversity (Indicators 8-9, 11-12, and 14-15)

Pasture 8N (Summer Use)

Plant community integrity and native species diversity indicators showed none to a slight departure from reference conditions at most RHEs. The evaluation sites support diverse vegetation communities with deep-rooted perennial bunchgrass, forb, and shrub components appropriate for each ecological site.

The greatest departure from reference conditions was observed at a Churning Clay RHE site (10S01E30) in the northern portion of the pasture, ½ mile away from two reservoirs. The RHE at this location noted a shift in community composition from decreaser grasses (primarily Idaho fescue) to increaser grasses (in this case Sandberg bluegrass and bottlebrush squirreltail). At this RHE, Idaho fescue occurred in trace amounts, with plants located primarily in rockier areas (Figure 8, page 82). Two other Churning Clay RHEs (10S01W35 and 10S01W13) also had a higher departure from reference conditions due to a greater than expected amount of annual forbs present. Community composition was appropriate otherwise and overall those two sites only showed none to slight degree of departure from reference conditions.

Two other exceptions occur in the southern portion of this pasture. These include a Loamy RHE and a Stony Clayey RHE. At the Loamy RHE (12S01E06), decreaser grasses are still dominant,

but are below potential. There is also a higher than expected amount of shrubs and invasive species (bulbous bluegrass, *Poa bulbosa*) at this site, which is located ½ mile from a reservoir in a preferred big sagebrush community (Figures 4 & 4a, page 85). It was also noted on the Stony Clayey RHE worksheet (11S01W24) that cattle congregate near drainages and springs in that area (Figures 1 & 1a, page 80). At that location, there is a lower than expected amount of decreaser grasses (Idaho fescue) and a greater than expected amount of increaser grasses (Sandberg bluegrass and bottlebrush squirreltail).

Annual production is within 80% of expected except at two locations. These include the Stony Clayey (11S01W24) RHE, which is slightly reduced due to the aforementioned composition changes; and the Churning Clay (10S01E30) RHE in the northern portion of the pasture which is slightly reduced due to lower than expected sagebrush production.

Shrub productivity overall is similar to reference areas. Exceptions exist at the Churning Clay (10S01W35) and Churning Clay (10S01E30) RHEs in the north, which have a slight decrease in sagebrush; and the Loamy (12S01E06) RHE in the Frying Pan Basin area which has a substantial increase in sagebrush. Leguminous species (lupine, clover, and milkvetch) important for nitrogen fixation were reported at six of the 14 RHEs.

Pasture 8S (Mid-Spring/Early Summer Use)

Plant community integrity and native species diversity indicators showed none to a slight departure from reference conditions, with most RHEs appearing to have desirable bunchgrass species colonizing the sites, particularly in the interspatial areas. In general, except for the Clayey RHE, species diversity nearly matches potential, and native bunchgrasses are dominant and occupy the interspaces.

The major exception is the Clayey RHE (12S01W12) in the Frying Pan Basin area of this pasture, where native perennial bunchgrasses (Idaho fescue) are still the dominant component, but slightly below potential; the site exhibits a moderate reduction in vegetative cover overall (Figure 10, page 91). Cattle were in this pasture at the time of the Evaluation and it was noted on the RHE worksheet that this area receives substantial use.

Annual production in this pasture is within 80% of expected except at RHE 12S01W12, which appears to have slightly lower than expected production due to the aforementioned composition changes. Overall shrub productivity is similar to reference areas. Leguminous species (lupine and milkvetch) important for nitrogen fixation were reported at six of the ten RHEs.

Plant Vigor (Indicators 13 and 17)

Pasture 8N (Summer Use)

Plant vigor varies among locations throughout this pasture. Grass species in the Churning Clay RHEs to the north are vigorous. Plant vigor at the Churning Clay (10S01E30) RHE in the northern portion of this pasture was rated as having a slight to moderate departure from reference conditions due to shrub decadence and low shrub vigor. However, perennial forbs and grasses appear reproductively capable, with adequate seedhead production observed on the grass species.

The three Stony Clayey RHEs located along the western edge of the northern pasture (10S01W22, 11S01W02, and 11S01W24) showed a slight to moderate departure from reference conditions for plant vigor, while the three located along the eastern edge (10S01E21, 11S01E08,

11S01E22) were rated as having none to a slight departure for this indicator. The dominant indicator for vigor (3) in all three western RHEs was a slightly greater than expected amount of active and historic pedestals which exhibit reduced vigor and reproductive capability. However, most non-pedestalled grasses at these RHEs were vigorous and reproductively capable.

The Loamy (12S01E06) RHE near the lower pasture fence is in the slight to moderate range for this indicator due to some shrub decadence and decreased vigor of Idaho fescue plants in the shrub interspaces. Idaho fescue plants at this RHE were rarely observed with seedheads. This area had recently been grazed and it was noted that the Idaho fescue plants were heavily grazed in 2004.

Pasture 8S (Mid-Spring/Early Summer Use)

Overall, plant vigor shows none to a slight degree of departure from reference conditions. However, at the Clayey RHE (12S01W12) near Frying Pan Basin, there is a moderate departure from reference conditions. Pedestalled grasses were more common than expected, and exposed roots were observed. Both pedestalled and non-pedestalled grasses exhibited reduced vigor, seedhead production and reproductive capability. With the exception of that RHE (12S01W12), grass species in this pasture are vigorous, with adequate seedhead production.

Noxious/Invasive Plants (Indicators 12 and 16)

Pasture 8N (Summer Use)

Noxious weeds were not observed. Overall, invasive plants show none to a slight departure from reference areas. Invasive plants were only observed at two RHEs. At the Stony Clay (10S01W22) RHE in the northwest portion of the pasture, a trace amount of bulbous bluegrass, a shallow-rooted exotic perennial grass, was observed. Presence of this grass was typically associated with disturbed areas, such as burrows. The Loamy (12S01E06) RHE located near the Lower Battle Creek Crossing Reservoir #2 shows a moderate to extreme departure; bulbous bluegrass is a common component of the community. The abundance of this invasive grass greatly contributed to the overall slight to moderate departure rating at this RHE.

Pasture 8S (Mid-Spring/Early Summer Use)

Noxious weeds were not observed. Invasive plants were only observed at the Claypan RHE (12S01W23) in the middle of this pasture, where there is a moderate departure from reference conditions due to the presence of scattered populations of bulbous bluegrass.

Upland Trend- BLM Studies

NPFT Studies – Trend for key species is displayed in Appendix DCC-8, Figures 1 & 2 (pages 92–93) for all four trend sites. Neither onspike oatgrass nor squirreltail were recorded in 1995, but were in earlier and later years. There may have been an identification problem in 1995.

Photo Plots/ View Photos – Photo plot and view photos accompany the trend sites to assist with data interpretation and will only be discussed where discrepancies occur or where no quantitative data accompany the photos.

Pasture 8N (Summer Use)

NPFT Studies – Both trend sites are very rocky. At trend site 11S01W02, frequencies of Sandberg bluegrass, Idaho fescue, and low sagebrush were static between 1983 and 2004. Frequencies of squirreltail and phlox declined. Frequencies of onespoke oatgrass (*Danthonia unispicata*), low sagebrush, and needlegrass were consistently too low for a valid statistical test. Idaho fescue and needlegrass may not have been identified consistently in earlier years.

At trend site 11S01E08, frequencies of Sandberg bluegrass, squirreltail, Idaho fescue, low sagebrush were static between 1983 and 2004. Frequency of onespoke oatgrass increased and frequency of phlox declined. Frequency of needlegrass was static; but was consistently too low for a valid statistical test.

Photo Plots/ View Photos – Photo site 11S01W02 is located near a reservoir. In the photo plot surface erosion and an increase in bare ground were observed (Appendix DCC-8, Figure 3, pages 94 - 95). However, the accompanying Rangeland Health Evaluation at that site indicated none to a slight departure from reference conditions (Appendix DCC-6, Figures 2 & 2a, page 80).

Photo trend for photo site 11S01E08 was static to upward trend for grasses (Figure 4, pages 97 - 98). This static to upward trend was determined based on the recruitment of both decreaser grasses and increaser grasses within the photo plot. Onespoke oatgrass (increaser) is moving into the photo plot, which is supported by the trend data presented above. Idaho fescue (decreaser) is also increasing in the photo plot. Based upon the photos, trend appeared to be static for shrubs between 1983 and 2000 which is consistent with the frequency data above. However, the accompanying Rangeland Health Evaluation at that site indicated none to a slight departure from reference conditions (Appendix DCC-6, Figures 3 & 3a, page 81).

Pasture 8S (Mid-Spring/Early Summer Use)

The frequencies of Idaho fescue and needlegrass and of Sandberg bluegrass and bulbous bluegrass were each combined because of inconsistent identification in earlier years at both trend sites (Appendix DCC-8, Figure 1 (page 92)).

NPFT Studies – At the stony/gravelly concave intermound (12S01W23) trend site, frequencies of squirreltail, needlegrass, and low sagebrush decreased between 1983 and 2004. This trend site shares characteristics of RHEs where Thurber needlegrass rather than Idaho fescue is the dominant decreaser grass. The frequency of Sandberg bluegrass and onespoke oatgrass increased. The photos also show onespoke oatgrass and Sandberg bluegrass increasing in the photo plot since 1995 (Figure 5, pages 99 – 100). Frequencies of phlox were consistently too low for a valid statistical test. The nearby Rangeland Health Evaluation indicates none to a slight degree of departure from reference conditions, with scattered amounts of bulbous bluegrass present.

At the convex intermound (12S01W32) trend site, frequencies of Sandberg bluegrass, squirreltail, and low sagebrush were static overall; although Sandberg bluegrass showed a pattern of decline and recovery that may be related to fluctuating growth conditions between 1983 and 2004. Frequencies of Idaho fescue increased, and the frequency of onespoke oatgrass was consistently too low for a valid statistical test. Idaho fescue is the dominant decreaser grass on the adjacent Rangeland Health Evaluation area, but Sandberg bluegrass is the dominant on the trend site itself, which has shallower soils (particularly, see Figure 6d, page 104). Idaho fescue communities on the RHE were near reference condition in 2004.

Photo Plots/ View Photos – Photo site 12S01W32 is also located within the major key use area for cattle in Pasture 8S because of the proximity of an access road and of water sources in Kelly Park Draw. Utilization on Sandberg bluegrass was heavy on this site in 2000. Photo trend was downward for decreaser (Idaho fescue) and increaser grasses and static to upward for shrubs within the photo plot between 1983 and 2004 (Figure 6, pages 102 – 103). Vigor appeared low and utilization appeared heavy on both increaser and decreaser grasses in 1983; an Idaho fescue plant present in the photo plot in 1983 was gone by 1995. Sandberg bluegrass has been the predominant species visible in photos during that entire period; these plants displayed prominent pedestalling. Shrubs appear taller and more vigorous in the 2004 photos.

An additional photo site (13S02W13A) is also located in Pasture 8S; and is paired with a similar one immediately across the division fence with the Joseph Black & Sons Use Area. Both were established immediately after completion of the fence. This photo plot is far from water sources, and receives almost no livestock use. No quantitative trend data were collected at either site. The nearby Rangeland Health Evaluation indicated none to a slight departure from reference conditions near this photo site (Appendix DCC-7, Figure 8, page 91).

At this low mound Shallow Claypan 12-16 (13S02W13A) photo site, trend within the photo plot was downward for decreaser bunchgrasses (Idaho fescue) and static to upward for shrubs between 1986 and 2004 (Figure 7, pages 105- 106). Complete crown die-off of most Idaho fescue plants was observed within the photo plot between 1987 and 1991, with no evidence of livestock use in any of the photos. Surviving portions of Idaho fescue plants recovered their vigor between 1995 and 2004.

Riparian Health Evaluations, Trend and Water Quality

D. Standard 2: Riparian Areas and Wetlands

The locations of the stream segments are shown in **Section VI, General Appendix -Map 4 (page 31)**, with the labels located at the downstream end of each segment. The spring locations are shown in **Section VI, General Appendix -Map 5 (page 32)**.

Pasture 8N (Summer Use)

Summary: Portions of Battle, Big Springs, and Dry creeks flow through Pasture 8N; about half of the streams (5.1 miles of 10.2 stream miles) in Pasture 8N are in proper functioning condition. Utilization levels of riparian vegetation on most of Battle Creek and portions of Big Springs Creek are conducive to bank stabilizing species (willows, sedges, and rushes) increasing in cover or remaining dominant in riparian plant communities. Dry Creek (1.8 miles of stream) is in proper functioning condition.

However, 4.4 miles of Big Springs Creek upstream of the Twin Bridges Exclosure and 0.3 mile of Battle Creek are functioning at risk. Streambanks there are not adequately vegetated with bank-stabilizing species to resist the erosive forces of high stream flows, and headcuts are present on Big Springs Creek inside and upstream of the exclosure. Willow cover is lacking and young-aged willows are not present or receive very high levels of utilization on much of Big Springs Creek upstream of the Twin Bridges Exclosure.

Of the three wetland-riparian areas located at springs on public land in Pasture 8N, two wetlands are in proper functioning condition and one wetland is functioning at risk due to trampling and shearing of wetland soils. One wetland located on public land within Pasture 2, which is predominantly private base property, was in proper functioning condition.

Stream Inventories/Assessments

Battle Creek

Battle Creek and adjacent canyon rims form the eastern boundary of the central portion of Pasture 8N, north of Big Springs Creek. Riparian areas of Battle Creek in narrow, rugged canyons that limit livestock access are generally vegetated with plant communities dominated by willows (*Salix lutea*, and *S. exigua*). These portions of Battle Creek are properly functioning (Segment 31.5; Table 74).

Approximately 4.6 miles of Battle Creek centered on the Big Springs Creek confluence, at the southern end of Pasture 8N, was excluded from livestock grazing in the mid-1990s (Segment 25.4). This area has a strong upward trend in functioning condition, with willow and sedge cover and vigor increasing, and the area is now in proper functioning condition.

The upper-most 0.2 to 0.3 miles of Battle Creek in Pasture 8N (Segment 33.6) is accessible to livestock and is functioning at risk with a static trend. Riparian vegetation is predominantly composed of herbaceous vegetation. Cover, density, and vigor of riparian herbaceous vegetation are low and willow cover is lacking. Previously, this site was monitored as part of the Northwest Allotment.

Table 74. Riparian areas and riparian-wetland indicators and overall functioning condition rating by stream segment, Pasture 8N, DCC Use Area, Big Springs Allotment, 2007.

Riparian/Wetland Indicators:	BLM Stream Segment										
	Battle 25.4 Exclosure	Battle 31.5	Battle 33.6	Big Springs 0.0 Exclo- sure	Big Spring 0.5 Exclo- sure	Big Springs 1.4	Big Springs 4.8	Big Springs 6.3	Dry 0.5	Dry 0.7	Dry 3.3
diverse age class/structure of hydric vegetation (6)	n	y	n	y	n	n	n	n	y	y	N
diverse composition of hydric vegetation (7)	y	y	n	y	y	y	y	y	y	y	Y
vegetation reflects maintenance of soil moisture (8)	y	y	y	y	y	y	y	y	y	y	Y
plant community comprised of bank stabilizing species (9)	y	y	n	y	y	y	n	n	y	y	Y
hydric vegetation exhibits high vigor (10)	y	y	n	y	y	n	n	n	y	y	N
adequate hydric vegetation cover to protect banks and dissipate energy (11)	y	y	n	n	y	n	n	n	y	y	N
adequate large woody material (12)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
point bars revegetating with hydric species (14)	y	y	y	y	y	y	y	y	y	y	Y
noxious weeds are not increasing	y	y	y	y	y	y	y	y	y	y	Y
Overall functioning condition*	PFC	PFC	FAR	FAR-up	FAR-up	FAR-down	FAR-down	FAR-down	PFC	PFC	FAR
Stream miles	4.6	3.3	0.3	0.5	1.0	1.1	1.3	2.0	0.2	1.6	0.4

(Y=yes, N=no)

() - indicator # on Function/Health Assessment

* PFC- proper functioning condition, FAR- functioning at risk, NF- nonfunctioning (overall rating determined from examination of both riparian and channel/floodplain indicators)

Big Springs Creek

Big Springs Creek is a tributary to Battle Creek and flows through the Twin Bridges Exclosure and the central portion of Pasture 8N. The lower 1.5 miles of this stream (Segments 0.0 and 0.5) are located in the Twin Bridges Exclosure. That portion of the stream is functioning at risk with

an upward trend in condition of riparian vegetation (Table 74). Riparian plant communities generally are dominated by sedges and rushes with willows (primarily *S. lasiandra* and *S. lutea*) increasing in cover and density. Approximately 0.43 miles of Big Springs Creek within the enclosure was incised during high stream flows in 1997 (see Standard 3) and is recovering from the impacts of the flood flows. However, the 1.1 miles of stream above the headcut resulting from the 1997 flood flows remain at risk of degradation due to the potential for the headcut to progress upstream.

Upstream of the enclosure in Pasture 8N, Big Springs Creek is functioning at risk with a downward trend (Segments 1.4, 4.8, and 6.3). There is a new headcut in Segment 1.4. Streambanks are not adequately vegetated with bank-stabilizing species to resist the erosive forces of high stream flows. Bank-stabilizing sedges are common within the wetted width of the stream channel, but are uncommon on most streambanks above the normal low flow level. Riparian plant communities above the wetted channel are dominated by Kentucky bluegrass (*Poa pratensis*) and Baltic rush (*J. balticus*), which increase when riparian areas receive high levels of utilization (Appendix DCC-10, Figures 1-3 (pages 112- 113) & Appendix DCC-3, Figure 29 (page 48)). Willow cover is lacking and young-aged willows are rare on these segments, particularly Segment 6.3. Utilization of young-aged willows in Segment 6.3 was severe when measured in the fall of 2005 and in 2006.

Dry Creek

Dry Creek is located in the northeastern portion of Pasture 8N, and is also a tributary to Battle Creek. A large irrigation reservoir is located on Dry Creek 2.3 miles upstream of its confluence with Battle Creek. Flows in Dry Creek in the 1.8 miles of stream downstream of the reservoir in Pasture 8N are dependent on releases of stored reservoir water. Streambanks have relatively low levels of bank alteration (80 to 85% stable banks) and the stream is properly functioning relative to the impacts of the upstream diversion (Appendix DCC-10, Figure 4, page 113). The stream is predominantly vegetated with sedges and rushes (predominantly *Carex nebrascensis* and *J. balticus*). However, the lower 0.2 miles of Dry Creek (Segment 0.5) is located in a rocky canyon that moderately confines the floodplain of stream. Willows (*S. lutea*, *S. lasiolepis*, and *S. geyeriana*) comprise about 10% of the vegetative cover of Segment 0.5.

About 0.8 miles of Dry Creek is located in Pasture 8N upstream of the reservoir. Stream flows above the reservoir are intermittent, with some portions of the stream retaining perennial pools of surface water. The lower one-half of this reach is periodically inundated by Dry Creek Reservoir when the reservoir is at full pool. That segment of Dry Creek (DRY_002.9) is functioning at risk because of the large fluctuations in reservoir water levels.

Springs and Playas

Three springs are located in Pasture 8N, which support areas of riparian/wetland vegetation (Table 75). None of these springs have been developed to provide livestock water. One spring wetland is in functioning at risk condition and the other two are in proper functioning condition. Two playas in Pasture 8N (Section 4, T.12S, R.1E) supported silver sagebrush (*Artemisia cana*) plant communities and their functioning condition did not appear to be impacted.

Table 75. Condition of wetland-riparian areas at springs located in Pastures 8N and 2, DCC Use Area, Big Springs Allotment, 1995-2007.

Spring Name	Location	Percent Bare Ground	Functioning Condition ^a	Wetland-Riparian Vegetation/Impacts to Wetland
Unnamed (#2)	10S01E17 SESW	40	FAR	rushes; trampling of vegetation, compaction of wetland soils, evidence of trailing
Unnamed (#1)	10S01E17SWSE	<20	PFC	spotted frogs present in pools
Unnamed (#3)	10S01E17SESW		PFC	Some bank erosion noted near Dry Creek and past evidence of livestock use where water pools.
Unnamed (#4)	10S01W3SWNW	<10	PFC	Site includes 4 springs forming the headwaters of Big Springs Creek. Some mechanical disturbance from livestock.

^aFrom 2004 -2007 assessment: FAR = Functioning at risk, PFC = Proper Functioning Condition, - = not assessed.

One spring (Unnamed #4) is located in Pastures 2, which are predominantly Dickshooter Cattle Co. private land. It forms the headwaters of Big Springs Creek. It is in proper functioning condition and is reported here for sake of completeness.

Riparian Trend

Functioning condition assessments were conducted on portions of Battle and Big Springs creeks in 1995 through 2007 (Table 76). Trends in functioning condition were upward on Battle Creek and inside the Twin Bridges exclosure. Trend was downward on Big Springs Creek upstream of the Twin Bridges exclosure.

Table 76. Stream functioning condition ratings 1995 to present on Battle and Big Springs creeks, Pasture 8N, DCC Use Area, Big Springs Allotment.

Stream (segments)	Segment Length (miles)	Year	Functioning Condition Rating ^a	Apparent Trend
Battle (25.4 and 28.0 – in Twin Bridges Exclosure)	4.6	1995	FAR	upward
		1998	FAR-upward	
		1999	PFC	
		2003	PFC	
Battle (31.5 – upstream of exclosure)	3.3	1995	FAR	upward
		1998	PFC	
		1999	PFC	
		2003	PFC	
Big Springs (0.0 – in Twin Bridges Exclosure)	0.5	1995	FAR -static	upward
		1998	FAR - downward	
		1999	FAR - upward	
		2003	FAR - upward	
		2007	FAR - upward	
Big Spring (0.5 – in Twin Bridges Exclosure)	1.0	1995	FAR - static	upward
		1998	FAR - downward	
		2007	FAR - upward	
Big Springs (6.3)	2.0	1998	FAR - downward	downward
		2005	FAR - downward	

^aFAR = functional at risk, PFC = proper functioning condition

Riparian Utilization

Utilization of riparian vegetation by livestock was high on accessible segments of Battle and Big Springs creeks in Pasture 8N (Table 77).

Table 77. Median stubble height and percent shrub utilization for streams in Pasture 8N, DCC Use Area, Big Springs Allotment, 1998-2006.

Stream	Site	Date	Median Stubble Height (inches)	Percent Shrub Utilization
Battle (33.6)	11S01E10 SESW	10/18/01	2.5	-
Big Springs (1.4)	11S01E21 SWSW	9/29/98	3.0 ^a	61-80 ^a
		2006	2-3 ^a	90-100 ^a
Big Springs (4.8)	11S01E07 NWSE	9/16/98	-	61-80 ^a
		10/4/05		90-100 ^a
Big Springs (6.3)	11S01E07 SWNW	9/16/98	-	61-80 ^a
		10/4/05	2-3 ^a	

^aOcular estimate (USBLM 1999).

Pasture 8S (Mid-Spring/Early Summer Use)

Summary: One mile of Cottonwood Draw supports riparian plant communities and is in proper functioning condition. Battle Creek is not accessible to livestock from Pasture 8S.

Of the nine riparian/wetland areas located at springs on public land in Pasture 8S, six are in functioning at risk condition. The functioning condition of three spring wetlands was not assessed.

Stream Inventories/Assessments

Battle Creek canyon forms the southeastern boundary of the pasture downstream of Pasture 16WA of the Northwest Allotment. Livestock do not access Battle Creek from Pasture 8S because of steep canyon walls and cliffs. The lower mile of Cottonwood Draw, which is a tributary to Battle Creek with intermittent stream flows was evaluated as in proper functioning condition.

The headwaters of Dickshooter Creek are located in the central portion of Pasture 8S and have intermittent to ephemeral stream flows. About 3.2 miles (80%) of the 3.9 miles of Dickshooter Creek in Pasture 8S are mapped as supporting seasonally flooded or temporarily flooded emergent wetlands, which are likely dominated by baltic rush (*Juncus balticus*) plant communities. This portion of Dickshooter Creek was not assessed for functioning condition.

Riparian Utilization

No sites were monitored for livestock utilization of riparian vegetation in Pasture 8S of the Dickshooter Cattle Co. Use Area.

Springs

Nine springs are located in Pasture 8S, all of which support areas of wetland-riparian vegetation (Table 78). Three springs have been developed to provide water for livestock by excavating a pond in the wetland. All of these wetlands are functioning at risk, one because of a headcut caused by spring development, and two because of trampling and shearing of wetland soils.

Table 78. Condition of wetland-riparian areas at springs located in Pasture 8S, DCC Use Area, Big Springs Allotment, 1995-2005.

Spring Name	Location	Percent Bare Ground	Functioning Condition ^a	Wetland-Riparian Vegetation/Impacts to Wetland
Kelly Park	13S01W08 SWNE	10	-	sedges/grasses/forbs; little utilization of wetland vegetation on 11/3/95; channel incised from historical impacts

Spring Name	Location	Percent Bare Ground	Functioning Condition ^a	Wetland-Riparian Vegetation/Impacts to Wetland
Unnamed	13S01W05 SWNE	-	FAR	sedges/rushes/grasses/forbs; 7 active headcuts in spring complex – result of historical impacts (photos, Appendix DCC-5, Figures 21 & 22, page 63, Appendix DCC-5a, Figures 12 & 12a, page71)
Squaw Meadows	12S01W17 SWSW	-	FAR	sedges/rushes/grasses/forbs; active headcut – caused by reservoir development; some bare soil from hoof action; <i>developed spring</i> - reservoir at lower end of spring (photos, Appendix DCC-5, Figure 14, page 61; Appendix DCC-5a, Figures 16 & 16a, pages 72, 73; Appendix DCC-5b, Figures 7 & 7a, page 77)
Unnamed	12S01W13 NWSW	-	-	sedges/grasses/forbs; little utilization of wetland vegetation on 9/7/95; little soil disturbance
Unnamed	12S01W13SESW	-	FAR	sedges/rushes/grasses; pugging, shearing, and compaction of wetland soils (photo, Appendix DCC-5, Figure 4, page 58)
Unnamed	12S01E18 NESW	0	-	sedges/rushes; little utilization of wetland vegetation or soil disturbance on 9/7/05
Unnamed	12S01E18 SWNW	25	FAR	sedges/rushes/forbs/grasses; moderate utilization of riparian vegetation on 7/19/95; <i>developed spring</i> - pond excavated in wetland; pugging of wetland soils; excessive bare ground at spring; trampling of soils at pond (photos, Appendix DCC-5, Figure 3, page 58, Appendix DCC-5a, Figure 4, page 69)
Unnamed	12S01E07 NESW	25	FAR	sedges/rushes/grasses/forbs; trampling and raw banks at spring source; <i>developed spring</i> - small pond excavated at lower end of wet meadow (photos, Appendix DCC-5b, Figures 4 & 4a, page75)
Frying Pan	11S01W35 SESE	35	FAR	rushes/sedges/grasses/forbs; pugging, shearing of wetland soils (photo, Appendix DCC-5, Figure 38, page 67)

^aFrom 2004-2005 assessment: FAR = Functioning at risk, PFC = Proper Functioning Condition, - = not assessed.

Of the six undeveloped springs located in Pasture 8S, three are functioning at risk. Two are impacted by excessive disturbance to wetland soils. One spring is functioning at risk because of active headcuts resulting from historical impacts to the wetland. Three undeveloped springs were not assessed for functioning condition.

E. Standard 3: Stream Channel and Floodplain

The locations of the stream segments are shown in **Section VI, General Appendix -Map 4 (page 31)**, with the labels located at the downstream end of each segment.

Pasture 8N (Summer Use)

Summary: About half of the stream channels (5.1 of 10.2 miles) located in Pasture 8N are in proper functioning condition. Riparian plant communities have adequate vegetative cover and bank-stabilizing species necessary for maintenance of stable channels and floodplains.

An exception is Big Springs Creek in and upstream of the Twin Bridges Enclosure. Active headcuts are present on several segments of Big Springs Creek and channels and streambanks are not adequately stabilized due to the lack of willow cover.

Stream Inventories/Assessments

Battle Creek

Stream channels of Battle Creek are stable and properly functioning where narrow, rugged canyons limit livestock access and use of riparian plant communities (Segment 31.2; Table 79). Battle Creek within the Twin Bridges Enclosure has a strong upward trend in functioning condition (Segment 25.4), with channel narrowing and deepening associated with increasing bank stability.

Table 79. Stream channel/floodplain indicators and functioning condition rating by stream segment, Pasture 8N, DCC Use Area, Big Springs Allotment, 2007.

Stream Channel/Floodplain Indicators:	BLM Stream Segment										
	Battle 25.4 (Exclosure)	Battle 31.2	Battle 33.6	Big Springs 0.0 (Exclosure)	Big Springs 0.5 (Exclosure)	Big Springs 1.4	Big Springs 4.8	Big Springs 6.3	Dry 0.5	Dry 0.7	Dry 3.3
floodplain inundated frequently (1)	y	y	y	n	y	y	y	y	y	y	n
beaver dams are active and stable (2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sinuosity, w/d ratio, gradient in balance with landscape setting (3)	n	y	n	n	y	n	y	n	y	n	n
riparian area is widening or has achieved potential extent (4)	y	y	n	y	y	n	n	n	y	y	n
upland watershed not contributing to riparian degradation (5)	y	y	y	y	y	y	y	y	y	y	y
floodplain and channel characteristics dissipate energy (13)	y	y	y	n	y	n	n	n	y	y	n
lateral stream movement associated with natural sinuosity (15)	y	y	y	y	y	y	y	y	y	y	y
system is vertically stable (16)	y	y	y	n	n	n	n	y	y	y	y
no excessive erosion or deposition (17)	y	y	n	n	n	n	y	n	y	y	n
Overall functioning condition*	PFC	PFC	FAR	FAR-up	FAR	FAR - down	FAR	FAR	PFC	PFC	FAR
Stream miles	4.6	3.3	0.3	0.5	1.0	1.1	1.3	2.0	0.2	1.6	0.4

(y=yes, n=no)

() - indicator # on Function/Health Assessment

PFC- proper functioning condition, FAR- functioning at risk, NF- nonfunctioning (overall rating determined from examination of both riparian and channel/floodplain indicators)

The upper-most 0.2 to 0.3 miles of Battle Creek in Pasture 8N (Segment 33.6, Upper Crossing) is accessible to livestock, and is functioning at risk with a static trend. Channels are overwidened and shallow relative to the landscape setting. Willow cover necessary for stabilizing channels is lacking.

Big Springs Creek

A large headcut (6-8 feet deep) is present at about mile 0.43 on Big Springs Creek within the Twin Bridges Exclosure. The headcut was formed when Big Springs Creek incised through a veneer of boulders and large cobble located on the floodplain surface into an underlying layer of very fine, highly erosive alluvium during a January 1997 flood. The flood was caused by two inches of rain melting the existing snowpack. This headcut is proceeding upstream through the alluvium material, which is at least 12 feet thick, as it has not yet reached a rock-armored or bedrock reach that will stop the upstream progression. Even though willows are increasing upstream within the exclosure, they may not be sufficient to stop the headcut. The incised channel is being colonized by sedges and willows, but 1.1 miles of stream channel upstream of the headcut are functioning at risk due to the progression of the headcut.

Upstream of the exclosure in Pasture 8N, Big Springs Creek is functioning at risk (Segments 1.4, 4.8, and 6.3; Table 79). Streambanks are not adequately vegetated with bank-stabilizing species to stabilize streambanks and channels. In particular, willow cover is lacking, which is a critical component in this B4 stream type to stabilize channels and knit together the surface veneer of boulders and large cobble and to prevent further channel incision and headcutting.

Segment 1.4 has one new headcut with unstable banks and vertical erosion and is at risk with a localized downward trend. The large headcut located downstream in Segment 0.5 may also progress upstream in the future. Segment 4.8 has 4 active headcuts, the largest of which is about 3 feet deep. The channel of Segment 6.3 is incised about 5 feet from past headcut events, and is

at risk of further incision due to the presence of eroding streambanks and floodplains, the lack of willow recruitment in Segment 6.3, and headcuts downstream in Segments 4.8 and 1.4.

Dry Creek

Stream channels and floodplains of Dry Creek (total of 1.8 miles of stream) located downstream of Dry Creek Reservoir are properly functioning relative to the impacts of the upstream storage reservoir (Table 79). Flow regulation is probably limiting development of a single channel with meander widths equal to the floodplain width. Channel and floodplain stability is aided by the presence of extensive amounts of rock in the floodplain. The lower 0.2 miles of Dry Creek (segment 0.5) has an extremely stable channel (B-channel type) dominated by cobble substrates. Upstream of Dry Creek Reservoir, 0.4 mile of channel is functioning at risk due to periodic inundation when the Reservoir is at full pool.

Pasture 8S (Mid-Spring/Early Summer Use)

Cottonwood Draw

The channel and floodplain of the lower one mile of Cottonwood Draw is in proper functioning condition.

F. Standard 7: Water Quality

Beneficial Use Support and TMDLs

The Idaho Department of Environmental Quality (IDEQ) evaluated the beneficial use support status of four assessment units (groups of streams) within the Dickshooter Use Area (Table 80). Three assessment units are not supporting the cold water aquatic life use (CWAL). In addition to the beneficial uses listed, all waters are assumed to support agriculture, industrial water supply, wildlife habitats and aesthetics. However, none of the waters within the Big Springs Allotment have been assessed for these other uses.

Table 80. Designated and existing beneficial use support status (IDEQ 2003, 2004a).

Name (Assessment Unit)	CWAL	SS	PCR	SCR
Battle Creek -4 th order-source to mouth (ID17050104SW023_04)	Not Supporting(1)	Not Supporting(2)	Fully(1)	Fully(2)
Battle Creek-3 rd order-source to mouth (ID17050104SW023_03)	Not Supporting(1)	Not Supporting(2)	Fully(1)	Fully(2)
Battle Creek -2 nd order-source to mouth (ID17050104SW023_02)	Not Supporting(1)	Not Supporting(2)	Fully(1)	Fully(2)
Big Springs Creek-1 st and 2 nd order (ID17050104SW025_02)	Fully(1)	---	---	---
Big Springs Creek-3 rd order (ID17050104SW025_03)	---	---	---	---
Dry Creek – 1 st and 2 nd order (17050104SW024_02)	---	---	---	---

CWAL=Cold Water Aquatic Life; SS=Salmonid Spawning; PCR=Primary Contact Recreation; SCR=Secondary Contact Recreation (1) = IDEQ 2004b (2) = IDEQ 2003 --- = Not Assessed

IDEQ conducted a Subbasin Assessment and Total Maximum Daily Load (TMDL) analysis for Battle Creek, which is the only 303(d) listed stream segment in the Upper Owyhee River watershed that is located in the DCC Use Area (IDEQ 2003). IDEQ then developed TMDL actions for three assessment units of Battle Creek (Table 81).

Table 81. Total Maximum Daily Load (TMDL) Actions (IDEQ 2003).

Name (Assessment Unit)	TMDL Action
Battle Creek -4 th order-source to mouth (ID17050104SW023_04)	De-list for bacteria; Add to 303(d) list for temperature
Battle Creek -2 nd order-source to mouth (ID17050104SW023_02)	De-list for bacteria; Add to 303(d) list for temperature
Battle Creek-3 rd order-source to mouth (ID17050104SW023_03)	De-list for bacteria; Add to 303(d) list for temperature

Water Temperature

IDEQ's subbasin assessment and TMDL process generally addresses only those streams that had been identified on 303(d) listings. The beneficial use support status in Table 80 (page 28) is based on IDEQ's analysis of water temperature data from various sources.

BLM monitored the water temperature of seven stream segments in the DCC Use Area of the Big Springs Allotment (Maximum Temperature and Maximum Average Temperature, Table 82). Locations of BLM water quality monitoring stations are shown in **Section VI, General Appendix -Map 4 (page 31)**. Water temperature data were evaluated following IDEQ's 10% exceedance policy and the temperature exemption (See definitions in Glossary, IDEQ 2002 and ID APA 58.01.02).

Table 82. Stream temperature monitoring of streams in the DCC Use Area of Big Springs Allotment (Battle Creek and tributaries).

Stream	Dates Sampled	Max T (°C)	Max Avg T (°C)	CWAL	SS
Big Springs Creek (Mile 0.1 ; Elev 5426') (Mile 0.2 ; Elev 5439')	6/21-7/11/98	25.3	21.7	NS	ND
	7/14-10/10/99	25.0	21.5	NS	ND
	7/11-9/07/00	28.1	22.7	NS	ND
Battle Creek (Mile 25.2 ; Elev 5339') (Mile 25.6 ; Elev 5340') (Mile 34.2 ; Elev 5434') (Mile 38.4 ; Elev 5690')	7/14-9/15/99	24.1	21.5	NS	ND
	7/12-9/26/95	26.0	22.6	NS	ND
	6/11-9/29/97	25.6	21.4	NS	ND
	7/08-9/28/98	29.6	24.7	NS	ND
Dry Creek (Mile 2.5; Elev 5813')	7/03/05	19.2 *	---	FS	ND

CWAL=Cold Water Aquatic Life (water temp. = 22° C or less, with a maximum daily average of < 19° C);

SS=Salmonid Spawning (water temp. = 13° C or less, with a maximum daily average of < 9° C)

FS=Fully Supports beneficial use; NS=Does Not Fully Support beneficial use; ND=No Data

* = instantaneous grab temperature at reservoir outlet

--- = No data or not measured

The amount of stream channel shading provided by topography (i.e., canyon walls) and vegetation is important in regulating the amount of direct solar radiation that reaches the water surface. While topography generally remains constant, activities that occur in and near the riparian areas may affect the amount and type of vegetation. The potential or capability for a stream system to support riparian shrubs and trees depends on the stream type (gradient, stream bed and bank materials, valley bottom width, flow regime, etc.) and landscape setting. In general 60-80% stream shading is needed to comply with water temperature standards, but specific shade targets will differ by stream.

Shade measurements were taken at seven discrete sites on streams in the Dickshooter Use Area (Table 83). BLM data were measured with a solar pathfinder and IDEQ data were collected with a spherical densiometer. The solar pathfinder data represent the average daily shade for July (typically the hottest month), while the densiometer readings represent a point-in-time measurement.

Table 83. Stream shade monitoring on streams in the DCC Use Area, Big Springs Allotment.

Stream	Date	Shade (%)	Stream Type	Agency
Battle Creek (BATTL23.7) (Mile 24.3; Elev 5325')	6/28/95	11	---	BLM
Battle Creek (BATTL25.4) (Mile 25.7; Elev 5349')	6/28/95	10	---	BLM
Battle Creek (BATTL25.4B) (Mile 26.5; Elev 5357')	6/29/95	16	---	BLM
Battle Creek (BATTL28.0) (Mile 28.2; Elev 5403')	6/29/95	05	---	BLM
Battle Creek (BATTL31.5) (Mile 38.0; Elev 5686')	6/27/95	08	---	BLM
Big Springs Creek (1999SBOIA016) (Mile 4.8; Elev 5650)	7/28/99	00	B	IDEQ
Dry Creek (1999SBOIA015) (Mile 1.6; Elev 5784')	7/27/99	00	C	IDEQ

Stream Type = Rosgen Stream Classification Level I (Rosgen 1996)

--- = No data or not measured

Fecal Coliform

The current maximum standard for primary contact recreation beneficial use designation is 406 *Escherichia coli* organisms/100 ml for a single sample and 576 *E. coli* organisms/100 ml for a single sample for secondary recreational contact (IDAPA 58.01.02). Table 84 summarizes BLM monitoring for coliform bacteria. Historical analyses reported only fecal coliform and total coliform counts, rather than *E. coli*. *E. coli* are one type of fecal coliform bacteria and the data presented in Table 84 include *E. coli*, but the laboratory analyses at the time did not differentiate organisms because the water quality standard was for fecal coliform only (for primary contact recreation the standard was 500 colonies/100 ml and for secondary contact recreation the water quality standard was 800 fecal coliform colonies/100 ml).

Table 84. Coliform bacteria analyses from streams in the DCC Use Area, Big Springs Allotment.

Stream	Date	Total Coliform	Fecal Coliform
Big Springs Creek (BSPRI) (Mile 0.0; Elev 5427')	7/29/97	---	1100
	6/17/98	---	9

--- = No data or not measured

Sediment

Water quality criteria for sediment are determined on a case-by-case basis (IDAPA 58.01.02.250.05). In the absence of specific criteria, sediment shall not exceed quantities that impair designated uses. Table 85 summarizes stream bed substrate monitoring conducted by BLM. IDEQ 2004b contains substrate data for IDEQ Beneficial Use Reconnaissance Protocol (BURP) sites (only Dry Creek data are shown below because beneficial use support status has

not yet been assessed and data for other unassessed streams have not been collected or the sample sites occur on private lands).

Table 85. Stream bed substrate composition (%) for streams in the DCC Use Area in Big Springs Allotment.

Stream	Date	Fines (1)	Gravel	Med. Gravel	Large Gravel	Small Cobble	Large Cobble	Small Boulder	Med. Boulder	Large Boulder
Battle Creek (BATT123.7) (Mile 24.3; Elev 5325')	6/28/95	6	6	33	35	15	5	0	0	0
Battle Creek (BATT125.4) (Mile 25.7; Elev 5340')	6/28/95	6	14	19	25	22	8	5	1	0
Battle Creek (BATT125.4B) (Mile 26.5; Elev 5357')	6/29/95	7	11	7	27	39	7	0	0	0
Battle Creek (BATT128.0) (Mile 28.2; Elev 5403')	6/29/95	7	17	17	24	22	10	3	0	0
Battle Creek (BATT131.5) (Mile 38.0; Elev 5686')	6/27/95	11	21	18	21	17	5	8	0	0
Dry Creek (1999SBOIA015) (Mile 1.6; Elev 5794')	7/27/99	57	3	5	4	8	18	5	0	0

(1) Fines = sand/silt/clay = < 0.1 inch (< 2 mm)

Water Chemistry

Table 86 summarizes BLM and IDEQ water chemistry monitoring only for stream segments where beneficial use support has not been assessed.

Table 86. Water chemistry monitoring in the DCC Use Area of Big Springs Allotment.

Stream	Date	pH	Conductivity (uS/cm)	Dissolved Oxygen (mg/L)	Instantaneous Temperature (°C)
Dry Creek (1999SBOIA015) (Mile 1.6; Elev 5784')	7/27/99	---	48.5	---	24
Water Quality Standard		6.5 – 9.0	---	>6	≤ 22

--- = No data or not measured

Other Data Reviewed

BLM reviewed the State of Idaho's Beneficial Use Reconnaissance Protocol (BURP) database (IDEQ 2004b). IDEQ uses these data, along with other information, to determine beneficial use support status. BURP data have not been analyzed in further detail in this Assessment.

Habitat Evaluation and Population Status of Dependent Wildlife and Sensitive Plants

G. Standard 8: Habitat for Special Status Species:

Wildlife

Summary: In the northern portion (**Pasture 8N**), there are flower-rich, seasonally wet meadows adjacent to strips of big sage under low mesa rims— a very good habitat combination for sage grouse (Photo right: June 13, 2005). These meadows and big sagebrush stringers are generally in good condition, with varied forbs and vigorous grasses. In the southern portion (**Pasture 8S**), shallow drainages such as the upper reaches of Dickshooter Creek support narrow, seasonally wet meadows that stay green into late summer, and these meadows are extensively used by sage grouse. After the spring use by cattle the plants regrow and conditions are generally suitable, with stabilizing vegetation of rushes and other graminoids. Some bare areas and a small headcut were observed above Squaw Meadows Reservoir #1.





The majority of streams in this Use Area are in properly functioning condition or improving, providing good wildlife habitat. Two exceptions are: Big Springs Creek above Twin Bridges (4.2 miles) and Battle Creek. Battle Creek below the private land is rated Functioning at Risk and receives high levels of livestock use. Columbia spotted frogs occur there. Big Springs Creek below the ranch is historically dncut up to 6 feet through a broad flat that is over 1 mile long. This flat could be wet meadow if the creek aggraded, and would provide some of the finest sage grouse brood rearing habitat in Owyhee County (lower photo on page 32: Oct. 4, 2005). Currently the banks are vegetated with sedges, but the benches just back from the water support bluegrass. Use levels are generally high, but the sedges at the water's edge regrow after use to almost full height (see also Standard 2).

Upland communities are in generally good habitat condition (Table 87), having appropriate amounts of the native plants, except for Frying Pan Basin where cover from grasses is low (See also Standard 4). Long strips of mountain big sage under rims, e.g., along the east side of Big Springs Butte, are in good condition with abundant grass and forb cover for nesting grouse. Populations of pygmy rabbits occur in patches and strips of big sage in the allotment. Habitat appears in good condition, because generally grass and forb cover is high, and the sage is thick. There are localized areas where the grass and forbs between the shrubs gets trampled.

Table 87. Sage Grouse Habitat Assessments for Dickshooter Cattle Co. Use Area in Big Springs Allotment, 2005. (See Table 7 in Section IV., pages 24-25 for indicators and values used to obtain ratings.)

Pasture	Township, Range, and Section	Rating	Vegetation	Season	Rationale for Ratings and Comments
8S	13S 1W 5	S	Wet meadow	Late brood	Minor erosion, Forbs great, low sagebrush is only cover adjacent

8S	12S 1W 13 NESW	M	Wet meadow at spring	Late brood	Minor erosion, forbs limited, xeric plants in center of meadow
8S	13S 2W 14 NWNW	S-M	Wet meadow	Late brood	Minor erosion, forbs limited, grazing use high
8S	12S 1W 23	S	Riparian area-Wet meadow	Late brood	Dickshooter Creek: stably vegetated, adequate forbs, sage grouse present
8S	12S 1W 21 NW	S	Mtn big sagebrush	Breeding	Small areas of big sagebrush in landscape of low sage; mostly <i>Poa</i> understory but cover ok, forbs good in low sagebrush areas adjacent.
8S	12S 1W 17 SWSW	S	Wet meadow	Late brood	Old headcut has lowered water table; minor erosion, forbs limited, but wetland plants dominate and big sagebrush cover is adjacent.
8S	12S 1E 18 NENE	M	Wyo big sagebrush	Breeding	One of few patches of big sagebrush in landscape of low sagebrush; trailing area from Lower Battle Creek Crossing so grasses are used.
8S	11S 1W 23 SE	S	Mtn big sagebrush	Breeding	Excellent grass cover, forbs available in adjacent low sagebrush, representative of long strip of big sage below rim of Big Springs Butte.
8N	10S 1W 13 SW	S	Mtn big sagebrush	Breeding	Good grass cover and forbs though grasses in interspaces are smaller than under cover of shrubs. Patch of big sagebrush in landscape of low sage.
8N	10S 1E 15 NW	S	Mtn big sagebrush	Breeding	Generally lots of grass cover and forbs abundant both in big sagebrush and low sagebrush adjacent. Strip of big sagebrush in landscape of low sagebrush.

S = Suitable, M = Marginal

Fish

Redband trout inhabit the headwaters of Big Springs Creek on private lands upstream of Pasture 8N. Trout have not been documented to utilize portions of Big Springs Creek located on public lands in Pasture 8N. Redband trout may be limited in their distribution to headwater springs because of irrigation practices on private land and/or because of elevated water temperatures in Big Springs Creek. Water temperatures are likely elevated in part because of the lack of willow cover on public land portions of Big Springs Creek. Redband trout are not known to currently inhabit Battle Creek in the Dickshooter Use Area.

Special Status Plants (SSP)

There is one SSP known to occur in the Dickshooter Cattle Co. Use Area. This species, Bach's downingia (*Downingia bacigalupii*), is currently listed as a Type 4 BLM Sensitive species (Table 88). Two populations of this plant have been located in Pasture 8N. Currently, no SSP are known from Pasture 8S.

Bach's downingia is an annual species typically found in drying mud of vernal pools, lakes, wet meadows, and streambanks. It has also been found in man-made structures such as reservoirs, roadsides and irrigation ditches. The population identified in this pasture was located in 1999 in a vernal pool depression. During that visit, which was conducted in late July, it was reported that

numerous plants were found fruiting, but the plants did not occupy all of the potential micro-habitat. Mechanical damage was noted as a potential threat to this population.

In 2005, only one plant was located at that site. Heavy mechanical damage was observed around the small ponded area. This population was not accessed during 2009 monitoring.

A new population was located nearby at the South Big Springs Reservoir (Figure 15, page 45, Figures 7 & 7a, page 51). Twenty-five plants were found in this heavily pugged water source. Population vigor was poor given the amount of potential habitat. Most wetland vegetation was restricted to the interior inaccessible portion of the pond and invasive and noxious weeds such as Canada thistle (*Cirsium arvense*) and Ventenata (*Ventenata dubia*) were present on the pond berm.

Table 88. Special Status Plants Known to Occur in the DCC Use Area, with species descriptions and a summary of the impacts to each population.

Species, EO# ¹	Pasture	Growth Duration	Habitat	Status	Summary of each Element Occurrence (EO)
Bach's downingia,	8N	Annual	Drying mud of vernal pools, muddy lake margins, wet meadows, roadsides, irrigation ditches, and streambanks.	BLM Sensitive, Type 4	EO#015 - 1999-approximately 30 to 50 plants, numerous in fruit, noted threats include habitat degradation and mechanical damage. 2005-heavy mechanical damage around ponded area, only one plant found; not accessed in 2009. New EO - Discovered in 2009. 25 Plants in flower and fruit. Heavy use and deep pugging of soils. Habitat in very poor condition for species persistence.

1-Idaho Conservation Data Center tracking number, Element of Occurrence (EO).
See **Table 6 in Section IV., page 16** for definitions of the plant types.

These two populations are part of a larger “metapopulation” in the area with eight additional populations in the adjacent Use Area (JB&S Use Area). If these two populations are placed in context with the other eight they would rank on the lower end for overall habitat condition and population vigor.

Figure 1. Yearwise Comparison of Utilization Levels and Pattern, Dickshooter Cattle Co. Use Area, Big Springs Allotment, 2000-2006

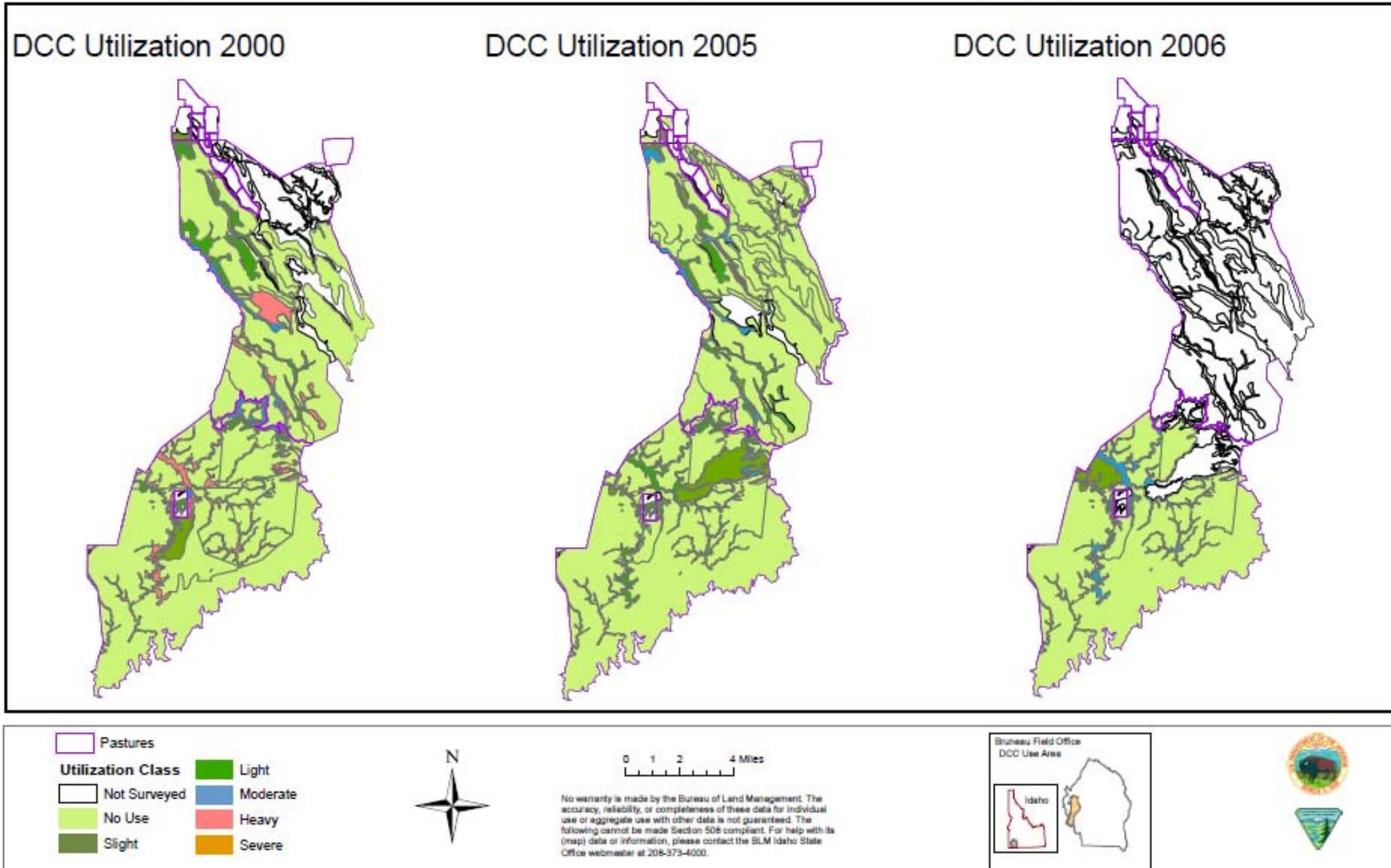


Figure 1. Yearwise Comparison of Utilization Levels and Pattern, Dickshooter Cattle Co. Use Area, Big Springs Allotment, 2000-2006.

Figure 2. BLM Utilization Pattern Map, DCC Use Area, Big Springs Allotment, July 2000

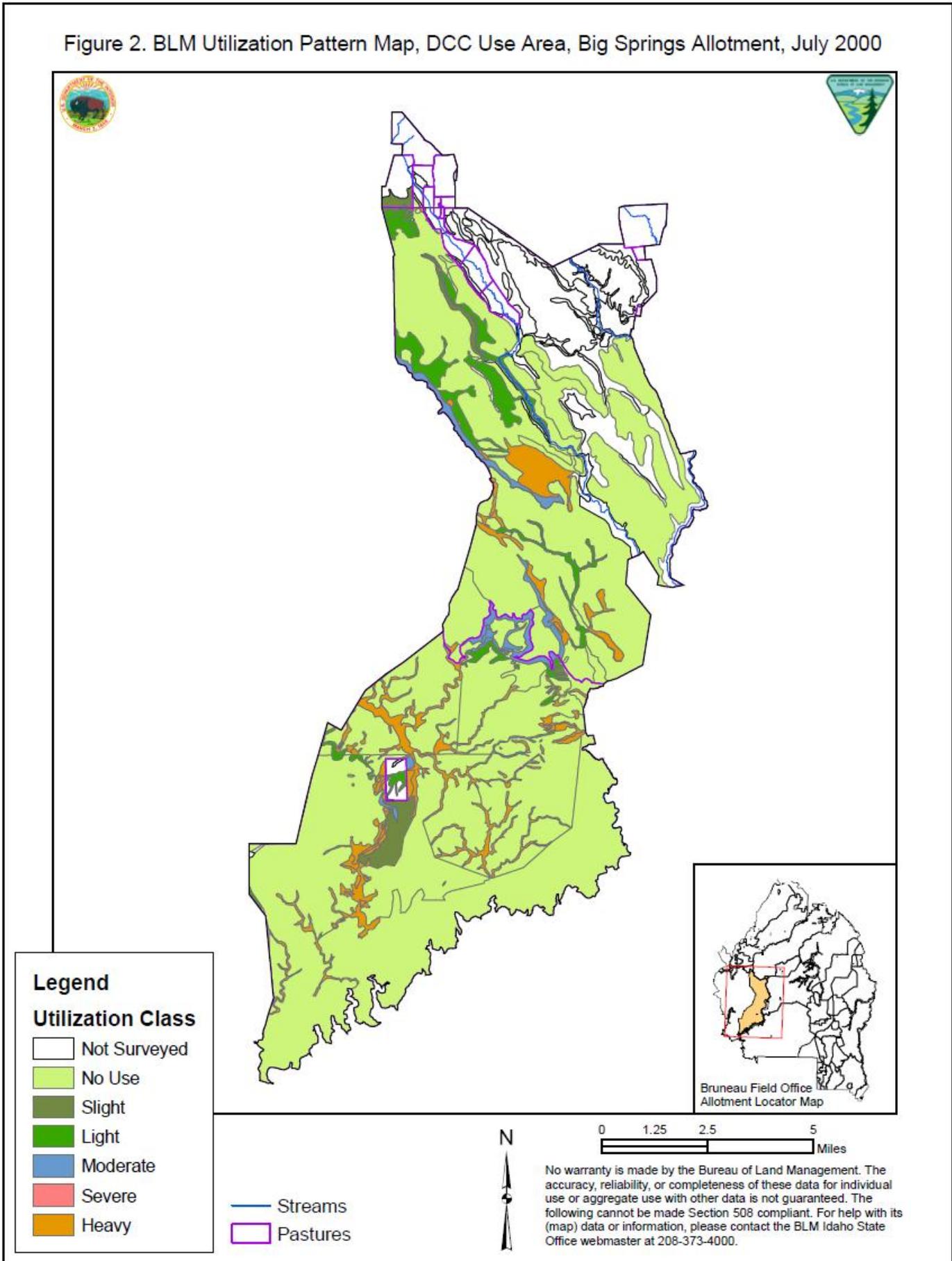


Figure 2. BLM Utilization Pattern Map, DCC Use Area, Big Springs Allotment, July, 2000.

Figure 3. BLM Utilization Pattern Map, DCC Use Area, Big Springs Allotment, Oct & Nov 2005

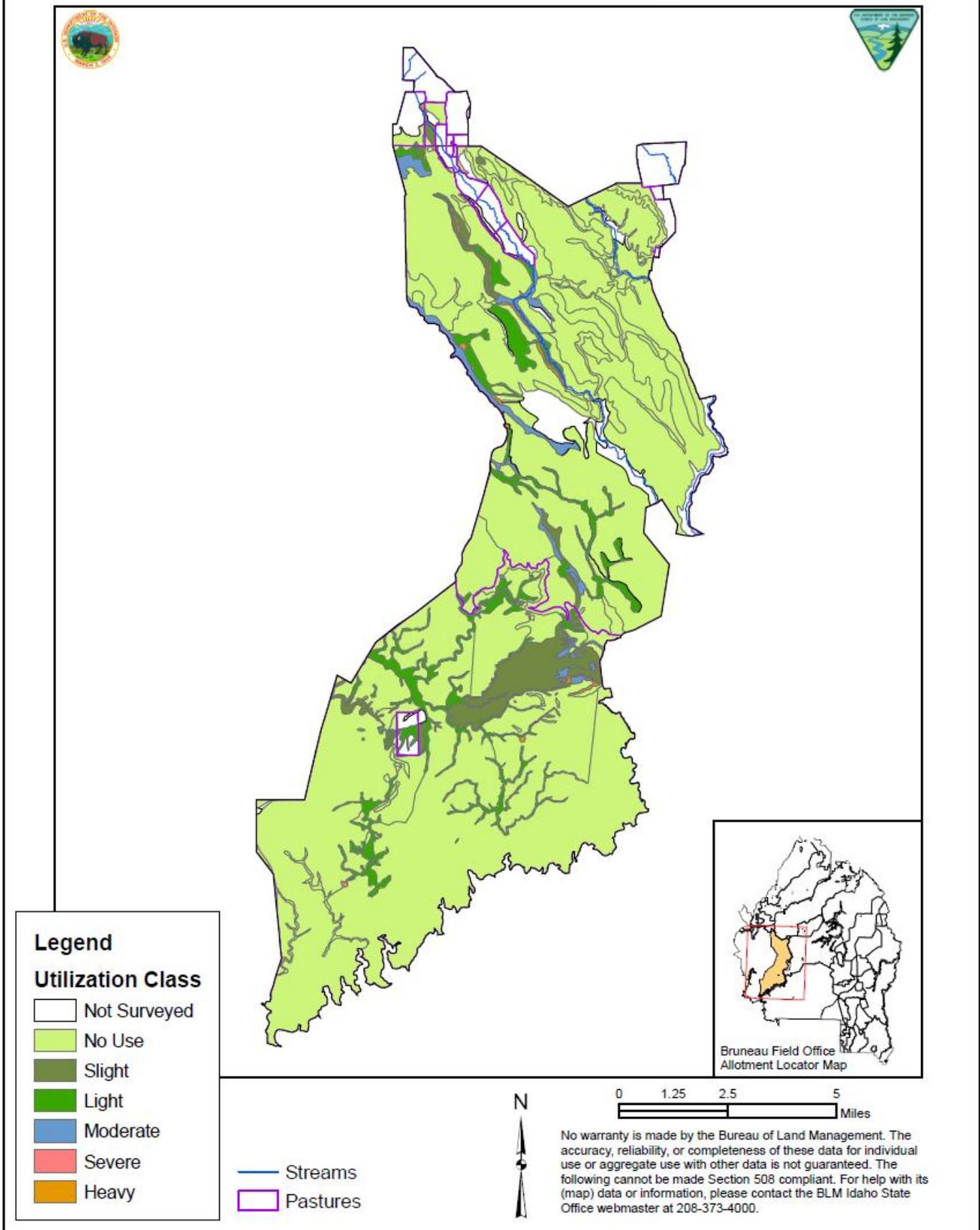


Figure 3. BLM Utilization Pattern Map, DCC Use Area, Big Springs Allotment, October, November, 2005.

Figure 4. BLM Utilization Pattern Map, DCC Use Area, Big Springs Allotment, July 2006

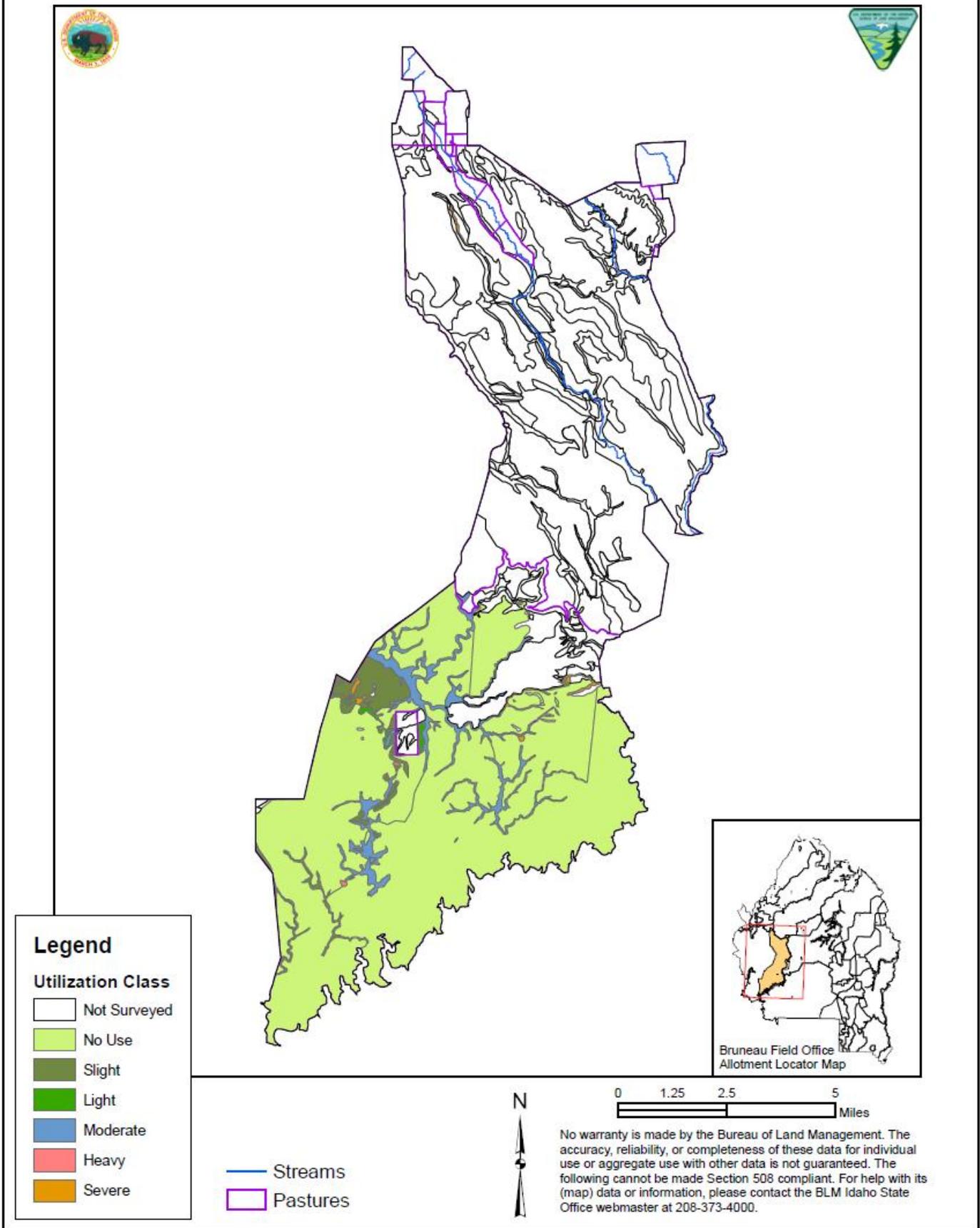
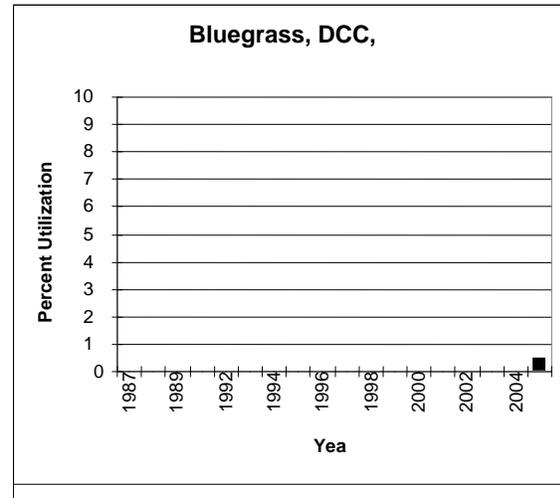
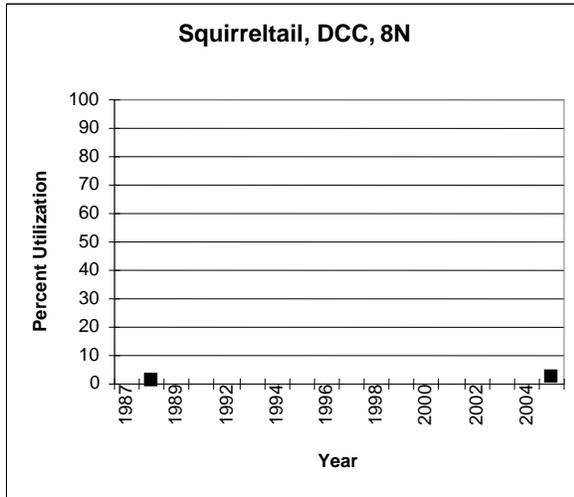
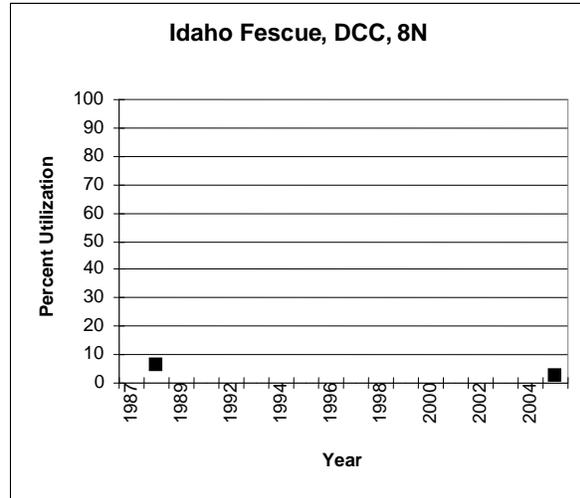
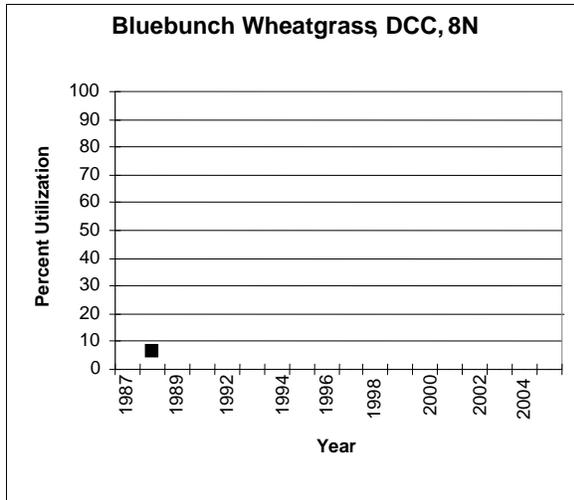


Figure 4. BLM Utilization Pattern Map, DCC Use Area, Big Springs Allotment, July, 2006.

Appendix DCC-2. BLM Transect Utilization, unspecified locations, Pasture 8N, Dickshooter Cattle Co. Use Area, Big Springs Allotment, 1987-2005.



Appendix DCC-3. Utilization photos, Pasture 8N, Dickshooter Cattle Co. Use Area, Big Springs Allotment, November 18 - 23, 2005.

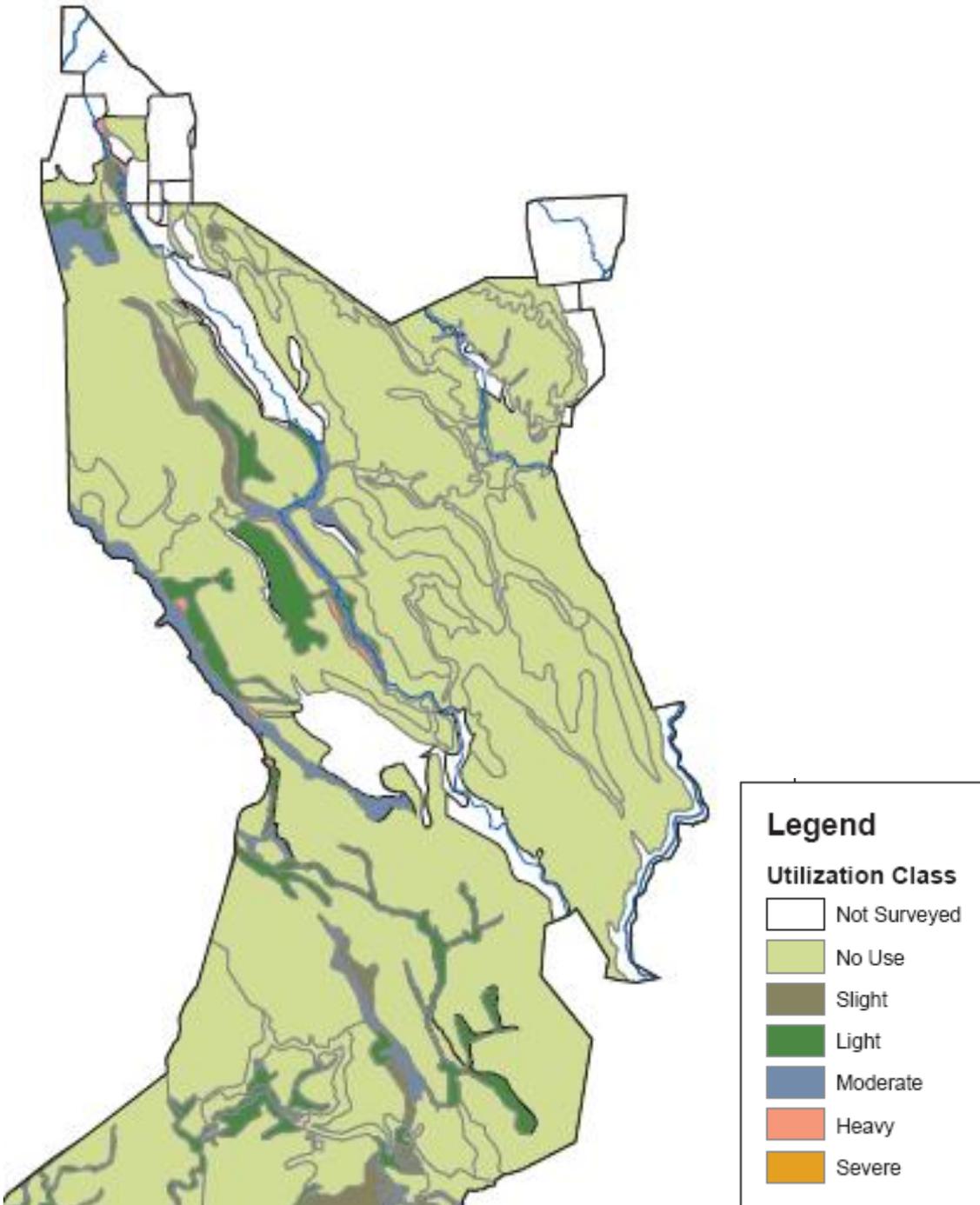


Figure 1. BLM 2005 Utilization pattern, Pasture 8N, DCC Use Area.

DCC Pasture 8S.
 Wet spring, late turnout. Mechanical impacts of concentrated spring trailing into Pasture 8S, near Lower Battle Creek Crossing. Very localized at this intensity.



Figure 2. T 12 S, R 1 E, sec 17 SENW, Northwest Allotment, 16WA, November 18, 2005.

DCC Pasture 8N. Grazed late June to 8/11/05.
 Stocking Rate 23.1 acres/AUM.
 Utilization predominantly 2.5% on low and alkali sagebrush communities.



Figure 3. T 12 S, R 1 E, sec 6 SENESW, looking SE along 8N/8S fence, 8N (L), November 18, 2005.

DCC Pasture 8N. Utilization 13% on fescue, 45% on bluebunch wheatgrass within inclusions of big sagebrush adjacent to fence. Extends N to ¼ mile from Lower Battle Creek Crossing Resv. #2.

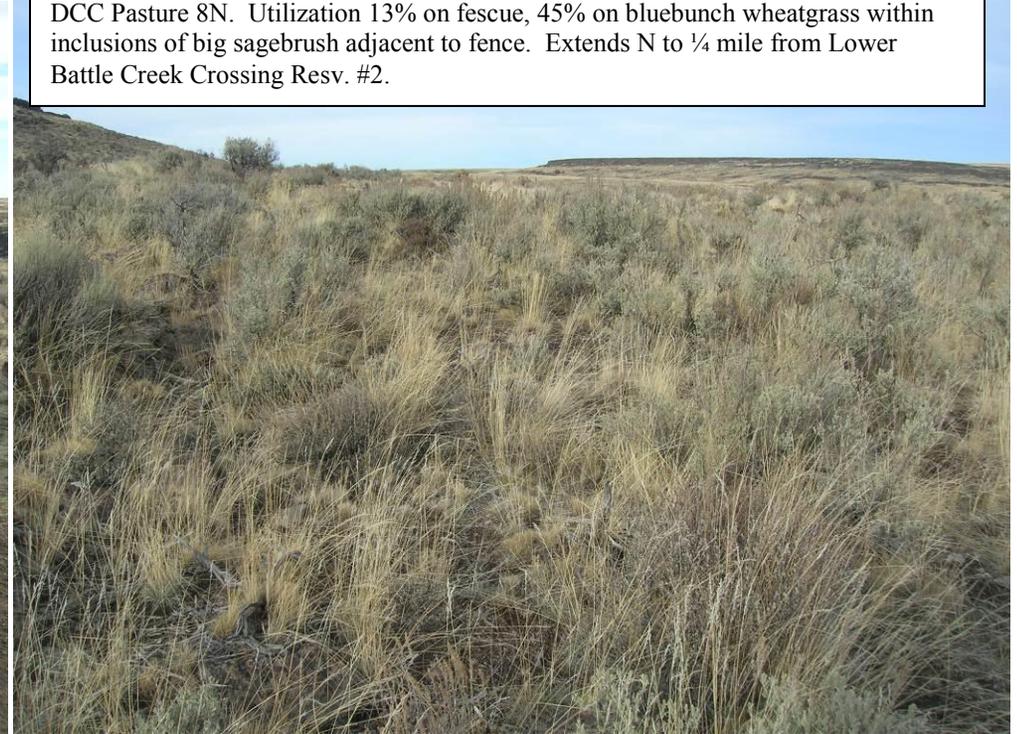


Figure 3a. Same location, looking NNE, 8N, November 18, 2005.

DCC Pasture 8N.
 Utilization 13% on fescue, 45% on bluebunch wheatgrass within inclusions of big sagebrush adjacent to fence. Extends N to ¼ mile from Lower Battle Creek Crossing Resv. #2.

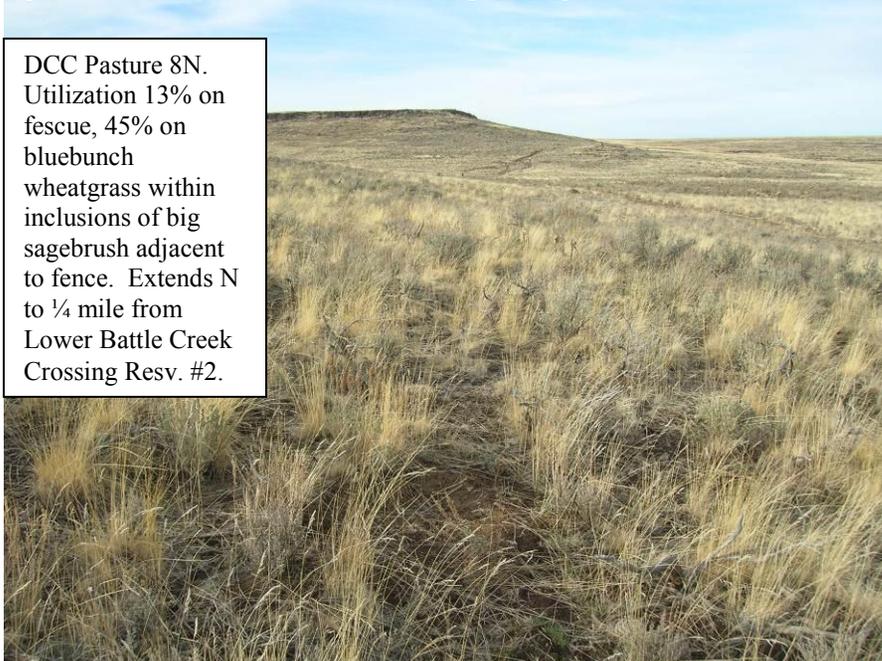


Figure 4. T 12 S, R 1 E, sec 6 NWNENW, looking N to Lwr. Battle Cr. Xing Resv. #2, 8N.

DCC Pasture 8N.
 Utilization 35% on fescue, 60% on bluebunch wheatgrass within inclusions of big sagebrush behind Resv; 2.5% on low sagebrush adjacent to Resv.



Figure 5. T 11 S, R 1 E, sec 31 NESWSW, looking SW to Lwr. Battle Cr. Xing Resv. #2, 8N, November 18, 05.

DCC Pasture 8N. Utilization 55% on drainage below Resv., extending along fine-soiled portions of intermittent drainage network.

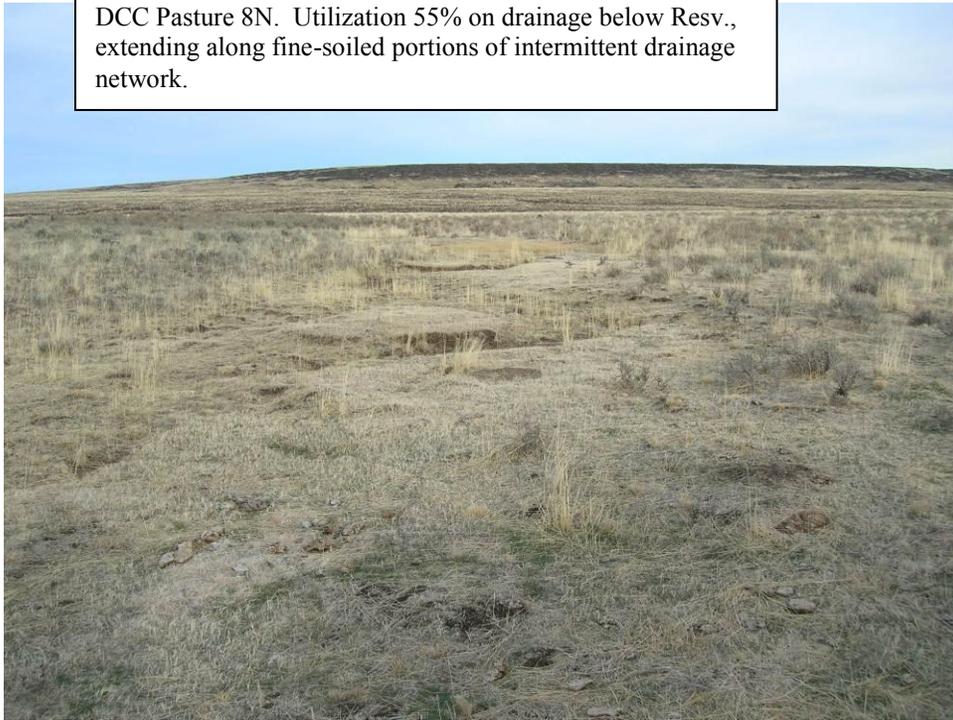


Figure 6. T 11 S, R 1 E, sec 31 NESWSW, looking E below Lwr. Battle Cr. Xing Resv. #2, 8N.

DCC Pasture 8N. Utilization 50% on fescue, 60% on bluebunch wheatgrass within inclusions of big sagebrush; 2.5% in predominant alkali sagebrush communities.



Figure 7. T 11 S, R 1 W, sec 36 NWNENE, looking NNW, 8N, November 18, 2005.

DCC Pasture 8N. Utilization 60% on dry meadows associated with big sagebrush communities on tableland escarpments. Repetitive vegetation and utilization pattern.



Figure 8. T 11 S, R 1 W, sec 25 SENWSE, looking N, 8N, November 18, 2005.

DCC Pasture 8N. Utilization 2.5% in stony channels of intermittent drainages. Repetitive vegetation and utilization pattern. Often dominated by bluegrass and oatgrass.



Figure 9. T 11 S, R 1 W, sec 25 SWNE, looking SE, 8N, November 18, 2005.

DCC Pasture 8N. Utilization 0% in Stony Clayey alkali sagebrush, the predominant upland community.



DCC Pasture 8N. Utilization 35% on fescue, 60% on bluebunch wheatgrass within inclusions of big sagebrush.



Figure 10. T 11 S, R 1 W, sec 25 NWNENW, looking N, near Dry Forty, 8N, November 18, 2005.

Figure 11. T 11 S, R 1 W, sec 24 NWSWSW, looking NNW, near Dry Forty, 8N, November 18, 2005.

DCC Pasture 8N. Utilization 60% on dry meadows associated with big sagebrush communities on tableland escarpments, both preferred by cattle. Clayey 12-16 alkali sagebrush communities are also common associates.



DCC Pasture 8N. Utilization 0% in Stony Clayey alkali sagebrush, the predominant upland community.



Figure 12. T 11 S, R 1 W, sec 23 NWSE, looking SE, near Dry Forty, 8N, November 18, 2005.

Figure 13. T 11 S, R 1 W, sec 14 SESENE, looking SE, near Dry Forty, 8N, November 18, 2005.

DCC Pasture 8N. Silver sagebrush communities occur in fine-soiled basins, preferred by cattle to the predominant Stony Clayey 12-16 uplands.



Figure 14. T 11 S, R 1 W, sec 14 NWSENE, looking E, 8N, November 18, 2005.

DCC Pasture 8N. South Big Springs Reservoir provides water to the adjoining silver sagebrush communities. 80% utilization right at Reservoir.



Figure 15. T 11 S, R 1 W, sec 11 NESWSE, looking E to S. Big Spr. Resv., 8N, November 18, 2005.

DCC Pasture 8N. Silver sagebrush and *Wyethia* communities. Preferred by cattle, but 30% utilization overall.



Figure 16. T 11 S, R 1 W, sec 11 NESW, looking N to S. Bench Resv., 8N, November 18, 2005.

DCC Pasture 8N. Utilization 45% on fescue, 60% on bluebunch wheatgrass within inclusions of big sagebrush on NE slopes of Big Springs Butte. Part of a repetitive complex of communities on tableland escarpments and adjoining toe slopes that are preferred by cattle.



Figure 17. T 11 S, R 1 W, sec 11 NESW, looking N toward S. Bench Resv., 8N, November 18, 2005.

DCC Pasture 8N. Utilization 30% in Clayey 12-16 alkali sagebrush and in silver sagebrush communities adjacent to South Bench Reservoir.



DCC Pasture 8N. Small areas of 70% utilization at reservoirs.



Figure 18. T 11 S, R 1 W, sec 11 NWNW, looking NE near S. Bench Resv., 8N, November 18, 2005. Figure 19. T 11 S, R 1 W, sec 11 NWNWNW, looking N at S. Bench Resv., 8N, November 18, 2005.

DCC Pasture 8N. Utilization 0% in Stony Clayey alkali sagebrush, the predominant upland community.



Figure 20. T 11 S, R 1 W, sec 3 NWSENE, looking SW at Big Springs Butte, 8N, November 22, 2005. Figure 21. T 10 S, R 1 W, sec 35 SENWSW, looking SE, 8N, November 22, 2005.

DCC Pasture 8N. Utilization 30% in silver sagebrush inclusion on tableland. Nearly all 2005 use was south and west of Big Springs Creek, including this area.



Figure 22. T 10 S, R 1 W, sec 35 SWNESW, looking SE, 8N, November 22, 2005.

DCC Pasture 8N. Utilization 13% in silver sagebrush inclusion in intermittent drainage.



Figure 23. T 10 S, R 1 W, sec 35 SESWNE, 8N, November 22, 2005.

DCC Pasture 8N. Utilization 13% in big sagebrush inclusion.



Figure 24. T 10 S, R 1 W, sec 35 SENENW, looking S, 8N, November 22, 2005.

DCC Pasture 8N. Utilization 40-65% in associated dry meadow inclusions.



Figure 25. T 10 S, R 1 W, sec 22 SESWSE, looking S to West Rim Resv. #2, 8N, November 22, 2005.

DCC Pasture 8N. Utilization 0% in Stony Clayey alkali sagebrush, the predominant upland community.



Figure 26. T 10 S, R 1 W, sec 15 SESWSW, looking N to Big Springs Ranch, 8N.

DCC Pasture 8N. Utilization 30% in silver sagebrush community, 13% in associated alkali sagebrush community at northwest corner of 8N.



Figure 27. T 10 S, R 1 W, sec 16 SENENE, looking SW to Big Springs Butte, 8N, November 22, 2005.

DCC Pasture 8N. Utilization 45% in silver sagebrush community, Big Springs Creek provides the most reliable water in the southwest part of 8N.



Figure 28. T 10 S, R 1 W, sec 35 NESE, looking E to Big Springs Creek, 8N, November 22, 2005.



Figure 29. T 10 S, R 1 W, sec 36 SESWSW, looking SE, Big Springs Creek, 8N, November 22, 2005.

DCC Pasture 8N. Utilization 45% in associated silver sagebrush community, Big Springs Creek provides the most reliable water in the southwest part of 8N. Over 10" stubble height on greenline since August 11. Area east of Big Springs Creek had no detectable use, no late summer use licensed there in 2005.

Appendix DCC-3a Retakes of 2004 BLM RHE view photos, Pasture 8N, Dickshooter Cattle Co. Use Area, Big Springs Allotment, November, 2005.



Figure 1. T 12 S, R 1 E, sec 6 SENESW, looking SE along 8N/8S fence, 8N (L), July 28, 2004. Figure 1. T 12 S, R 1 E, sec 6 SENESW, looking SE along 8N/8S fence, 8N (L), November 18, 2005.



Figure 1a. same location, looking N, 8N, July 28, 2004.

Figure 1a. same location, looking N, 8N, November 18, 2005.



Figure 4. T 11 S, R 1 W, sec 25 SENWSE, looking E below Lwr. Battle Cr. Xing Resv. #2, 8N, July 28, 2004. Figure 4a. same location, looking E, 8N, November 18, 2005.



Figure 5. T 11 S, R 1 W, sec 25 NWSWNE, looking SE, 8N, July 27, 2004.

Figure 5a. Nearly same location, looking SE, 8N, November 18, 2005.



Figure 6. T 11 S, R 1 W, sec 23 NWSE, looking SE, near Dry Forty, 8N, July 27, 2004.



Figure 6a. T 11 S, R 1 W, sec 23 NWSE, looking SE, near Dry Forty, 8N, November 18, 2005.



Figure 7. T 11 S, R 1 W, sec 11 NESWSE, looking E to S. Big Spr. Resv., 8N, July 27, 2004.



Figure 7a. nearly the same location, looking E to S. Big Spr. Resv., 8N, November 18, 2005.



Figure 8. T 11 S, R 1 W, sec 3 SWNE, looking SW at Big Springs Butte, 8N, July 27, 2004. Figure 8a. T 11 S, R 1 W, sec 3 NWSENE, looking SW at Big Springs Butte, 8N, November 22, 2005.



Figure 9. T 10 S, R 1 W, sec 35 SENENW, looking S, 8N, July 27, 2004.

Figure 9a. similar location, looking S, 8N, November 22, 2005.

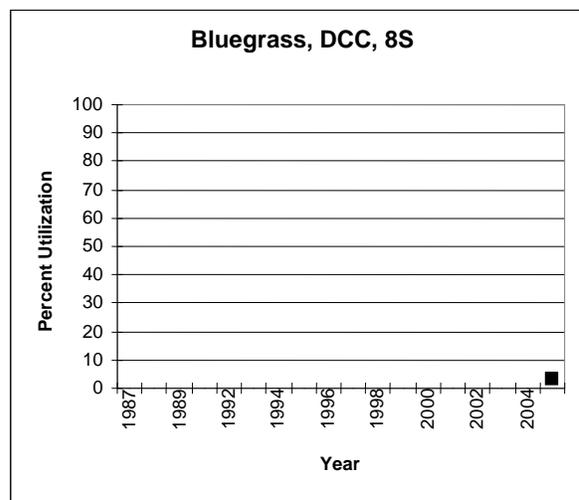
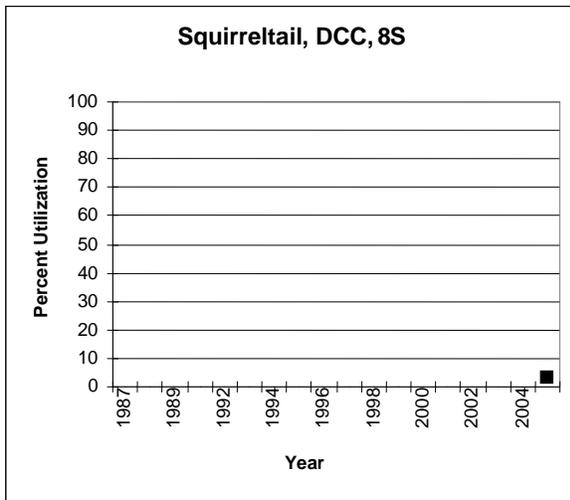
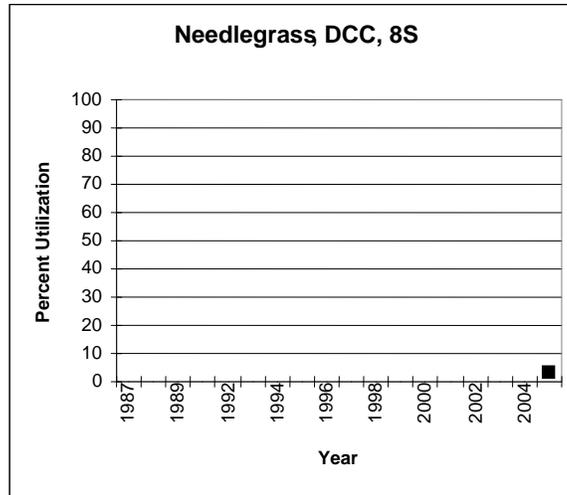
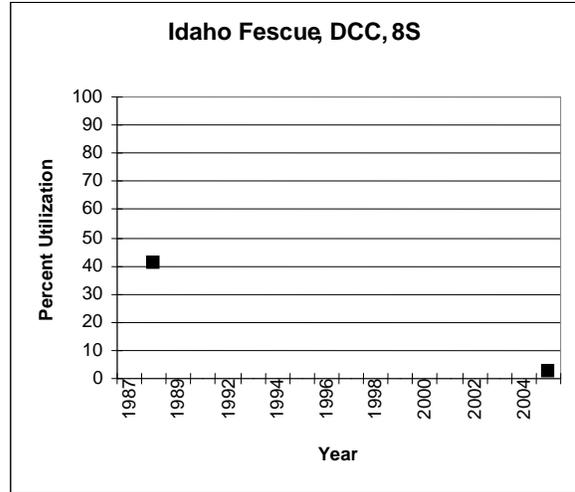
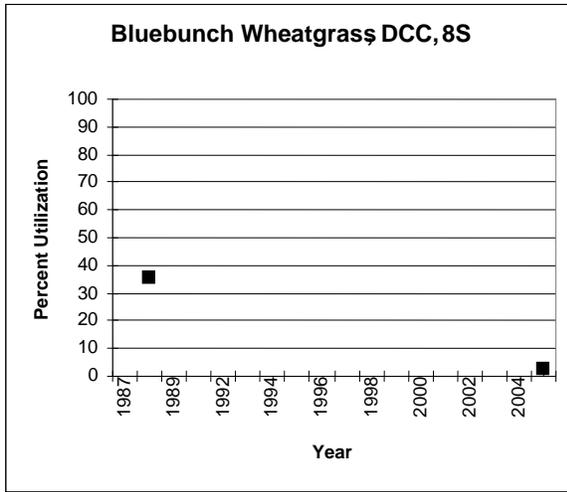


Figure 10. T 10 S, R 1 E, sec 19 NESW, looking ESE at Dry Creek Resv. #10, 8N, August 5, 2004. Figure 10a. T 10 S, R 1 E, sec 19 NESW, looking ESE at Dry Creek Resv. #10, 8N, November 23, 2005.



Figure 11. T 10 S, R 1 E, sec 29 NWNW, looking NE at Dry Creek Resv., 8N, August 5, 2004. Figure 11a. near same location, looking NE at Dry Creek Resv., 8N, November 23, 2005.

Appendix DCC-4. BLM Transect Utilization, Pasture 8S, Dickshooter Cattle Co. Use Area, Big Springs Allotment, 1987-2005.



Appendix DCC-4a. Transect Utilization, Pasture 8S, Dickshooter Cattle Co. Use Area, Big Springs Allotment, USGS bighorn sheep study, 1996-1998.

Map 7: Big Springs Allotment (0803)
USGS Utilization transects 1996, 1998

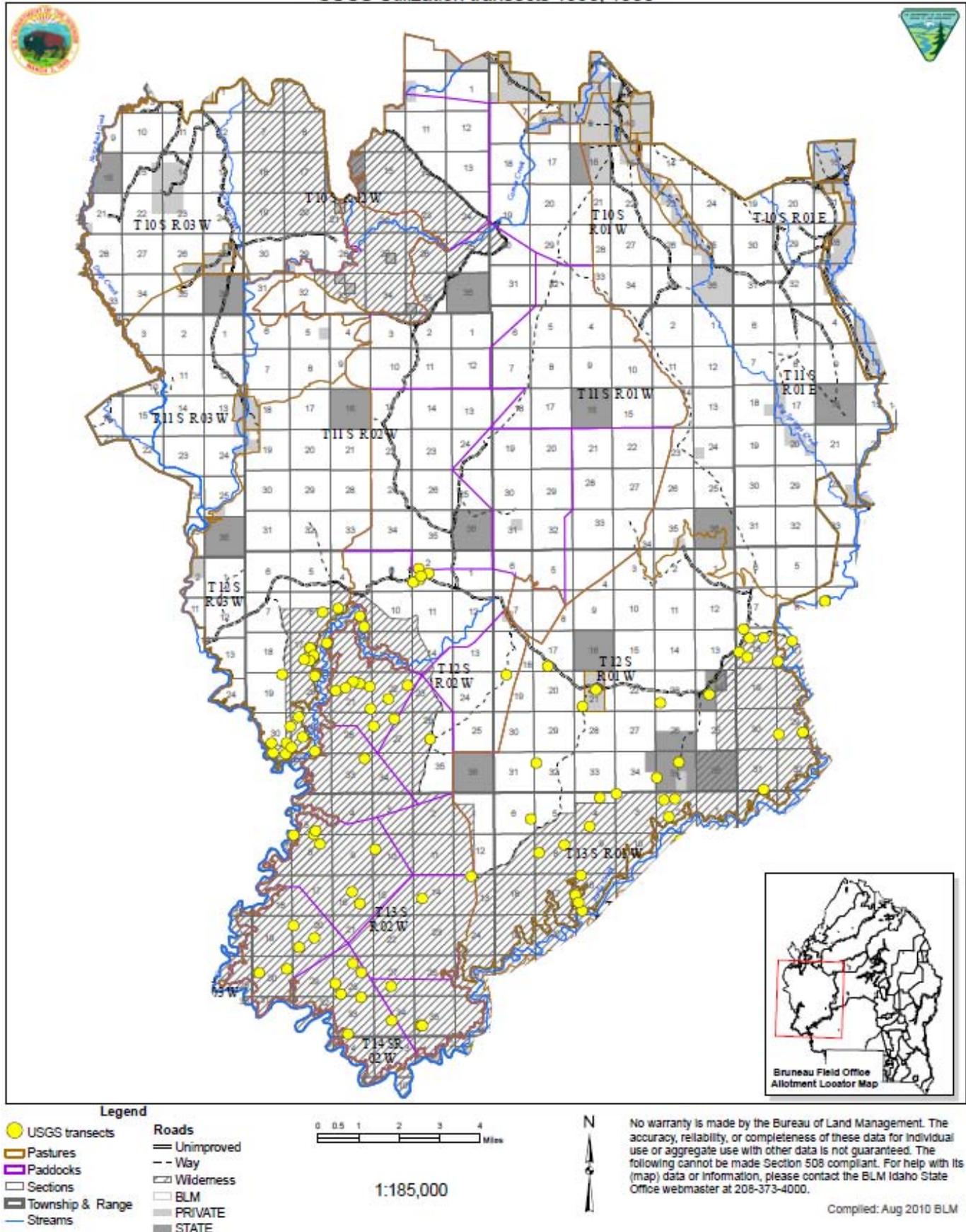
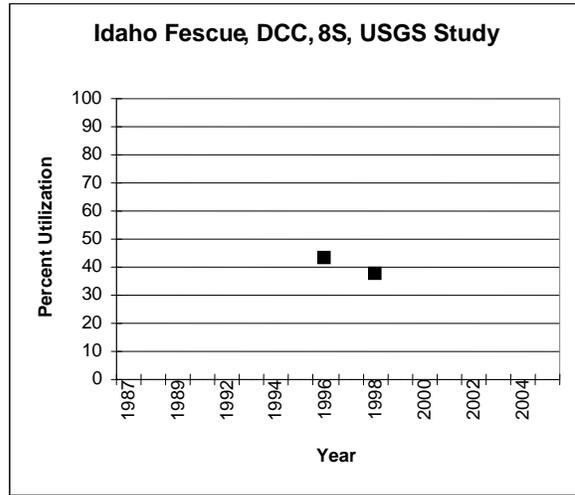
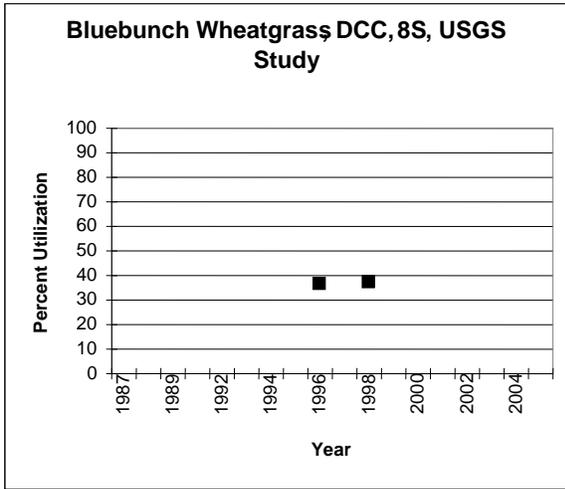


Figure 1. Locations of USGS utilization transects, 1996, 1998.



Appendix DCC-5. BLM Utilization photos, Pasture 8S, Dickshooter Cattle Co. Use Area, Big Springs Allotment, October and November, 2005.

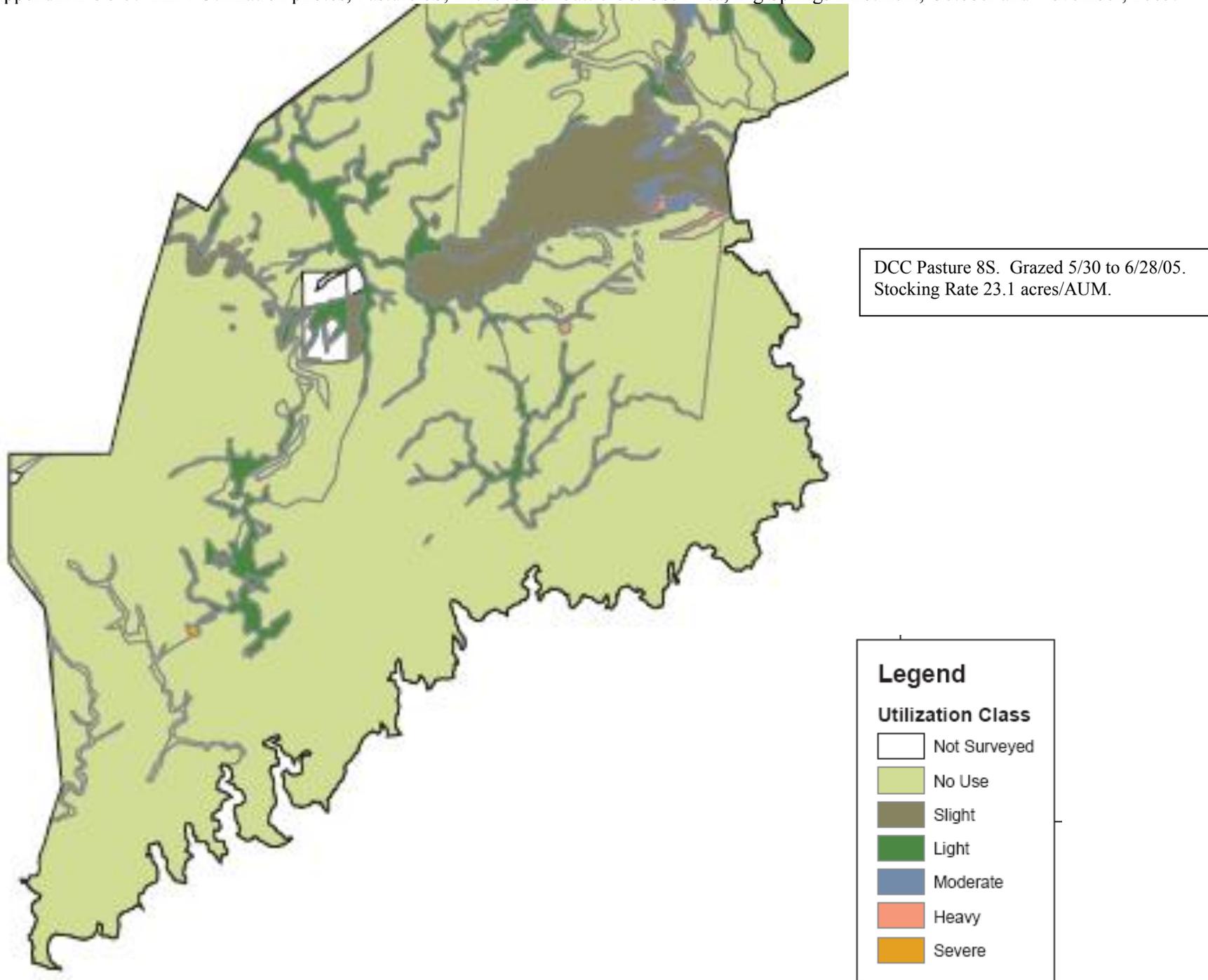


Figure 1. BLM 2005 Utilization pattern, Pasture 8S, DCC Use Area.

DCC Pasture 8S. Utilization 80% in small wet meadows draining from Lower Battle Creek Crossing Waterhole & Reservoir No. 1, respectively. These are spring fed, provide the most reliable water in the northeast part of 8S. Battle Creek is not accessible from this pasture.



Figure 2. T 12 S, R 1 E, sec 18 SENENW, looking WSW, 8S, October 25, 2005.

DCC Pasture 8S. Regrowth in small wet meadows draining from Lower Battle Creek Crossing Reservoir No. 1. Standing water allowed more regrowth after grazing ended than in Figure 2.



Figure 3. T 12 S, R 1 E, sec 18 SENWNW, looking E, 8S, October 31, 2005.

DCC Pasture 8S. Utilization 30% in small wet meadows associated with undeveloped springs or along drainages.



Figure 4. T 12 S, R 1 W, sec 13 SENENW, 8S, June 30, 2005.

DCC Pasture 8S. Utilization 2.5% on uplands except immediately around water or salt barrels. Looking toward Lower Battle Creek Crossing Waterhole No. 2.

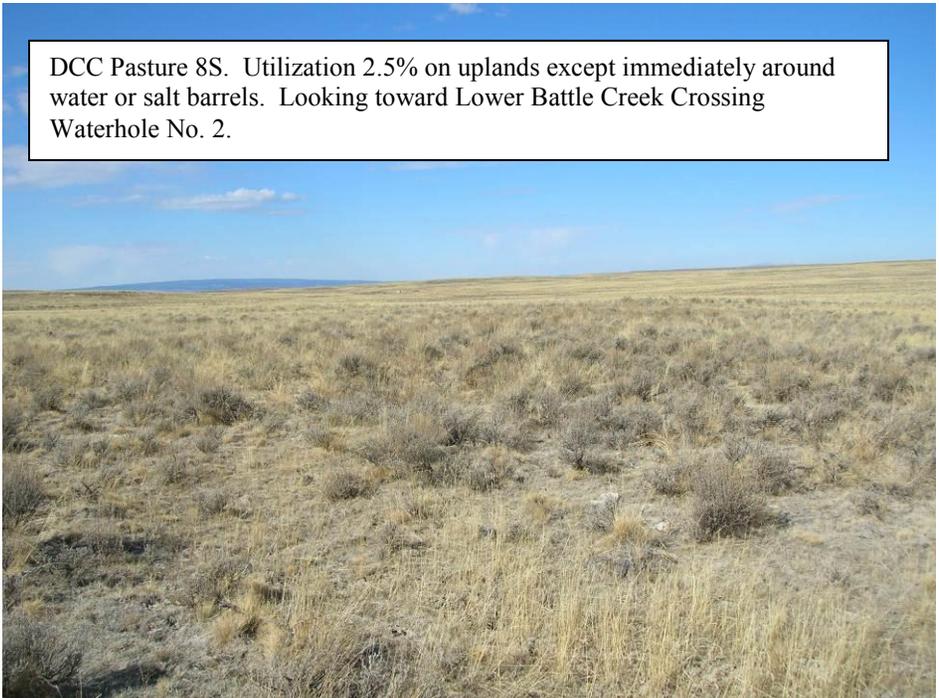


Figure 5. T 12 S, R 1 W, sec 13 SESENE, looking W, 8S, October 25, 2005.



Figure 6. T 12 S, R 1 W, sec 24 SENENW, looking NE at Willow Spring, 8S, October 25, 2005.

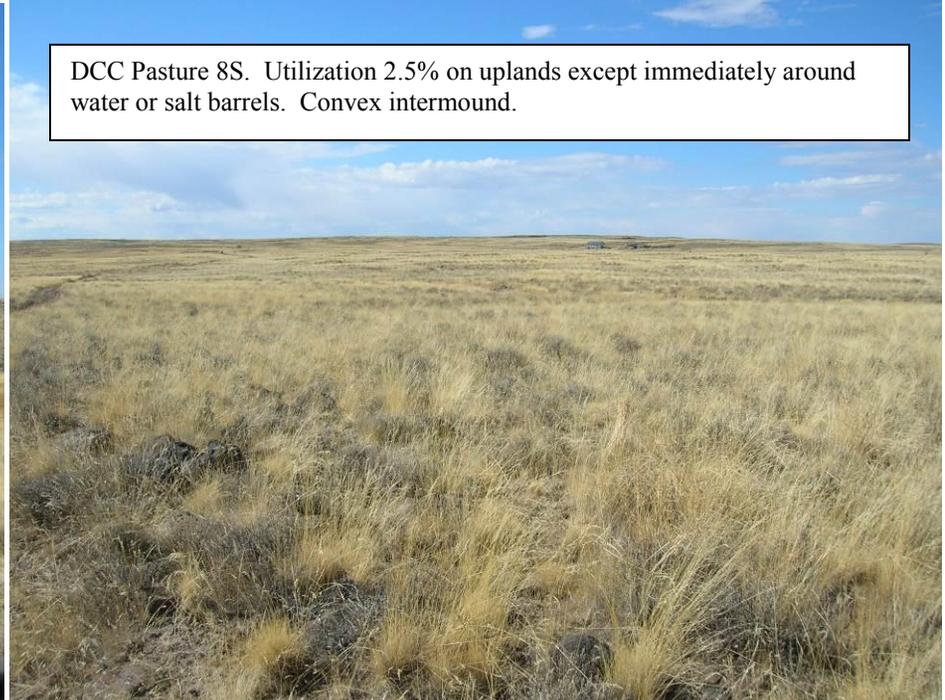


DCC Pasture 8S. Utilization 30% in small wet meadows associated with undeveloped springs or along intermittent drainages.

Figure 7. T 12 S, R 1 W, sec 24 NENWSW, looking SW down Willow Spring drainage, 8S.



Figure 8. T 12 S, R 1 W, sec 24 SENENW, looking SW down Willow Spring drainage, 8S.



DCC Pasture 8S. Utilization 2.5% on uplands except immediately around water or salt barrels. Convex intermound.

Figure 9. T 12 S, R 1 W, sec 22 SWNW, looking W to Squaw Mdw. Base, 8S, October 25, 2005.

DCC Pasture 8S. Utilization 2.5% on uplands except immediately around water or salt barrels. Concave intermount.



Figure 10. T 12 S, R 1 W, sec 22 SWNW, looking W to Squaw Mdw. Base, 8S, October 31, 2005. Figure 11. T 12 S, R 1 W, sec 21 SWSENE, looking N along Squaw Mdw. base fence, 8S, October 25, 2005.

DCC Pasture 8S. Utilization 2.5% on uplands except immediately around water or salt barrels. Convex intermount.



DCC Pasture 8S. Utilization 13% on preferred big sagebrush communities (mounds).



Figure 12. T 12 S, R 1 W, sec 21 SWNW, looking ESE to Squaw Mdw. Base, 8S, November 1, 2005. Figure 13. T 12 S, R 1 W, sec 20 SWNE, looking NW, 8S, November 1, 2005.

DCC Pasture 8S. Utilization 30% in small wet meadows associated with springs or along drainages except near Battle Creek Crossing.

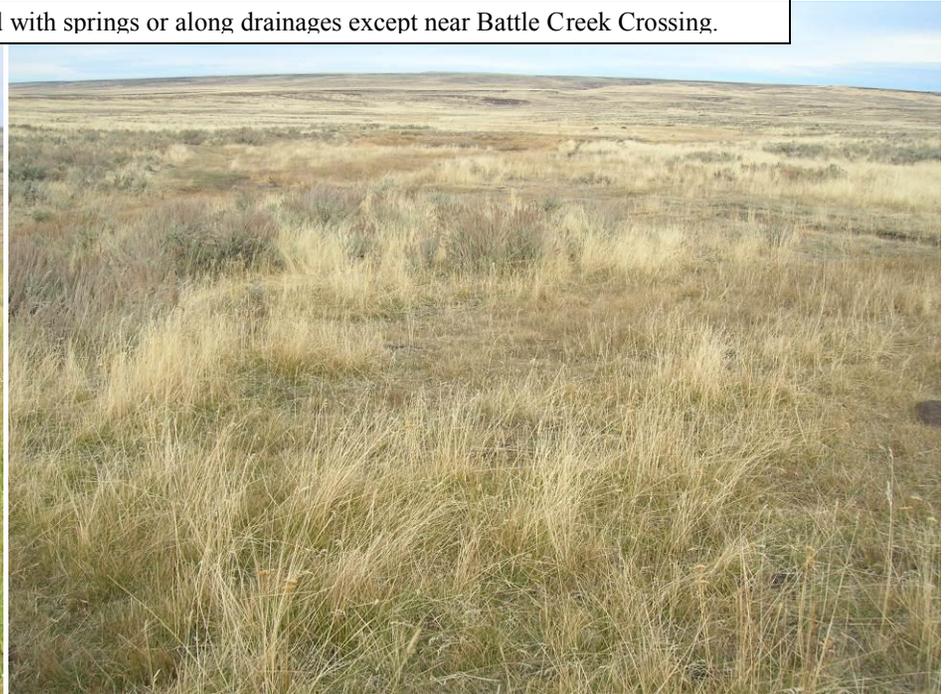


Figure 14. T 12 S, R 1 W, sec 17 SWNESW, looking N at Squaw Mdw Resv. #1, 8S, June 28, 2005.

Figure 14a. T 12 S, R 1 W, sec 17 SWNESW, looking N, 8S, November 1, 2005.

DCC Pasture 8S. Utilization 2.5% on uplands.



Figure 15. T 12 S, R 1 W, sec 18 SWNE, looking N, 8S (R), November 1, 2005.

Figure 16. T 12 S, R 1 W, sec 28 SENWNW, looking SSW at head of Kelly Park Draw, 8S, October 25, 2005.

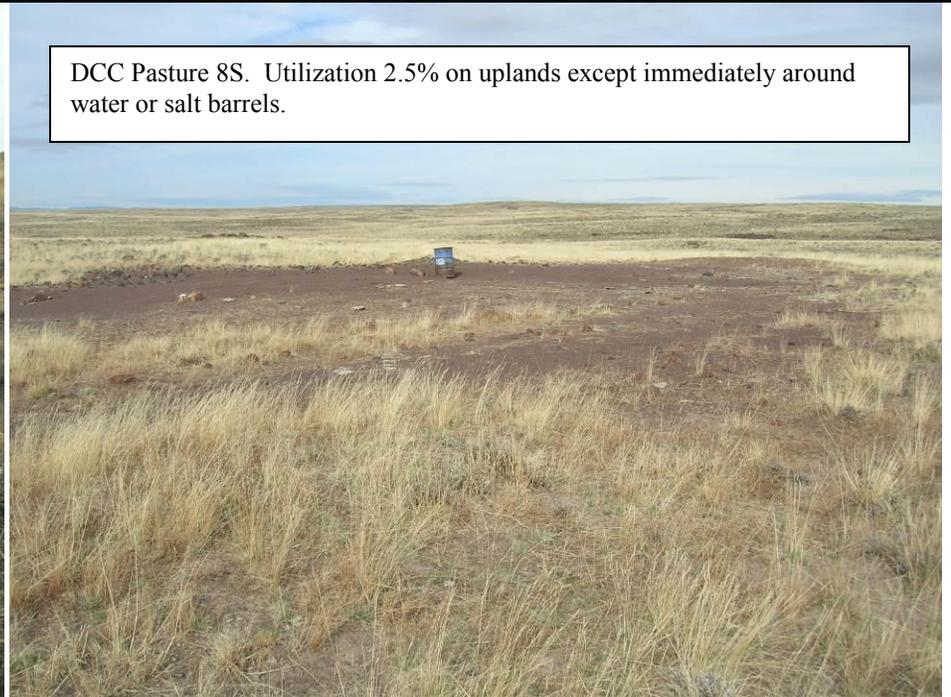


Figure 17. T 12 S, R 1 W, sec 28 NWSW, looking SW down Kelly Park, 8S, October 31, 2005.

Figure 18. T 12 S, R 1 W, sec 32 SENWNE, looking NW toward Squaw Mdw Resv #2, 8S, October 31, 2005.



Figure 19. T 12 S, R 1 W, sec 32 SWNWSE, looking NE, 8S, October 31, 2005.

Figure 20. T 12 S, R 1 W, sec 32 SWNWSE, looking SSW at BLM NPFT study, 8S, October 25, 2005.

DCC Pasture 8S. Utilization 2.5% to 13% in small wet meadows along Kelly Park Draw and tributaries.



Figure 21. T 13 S, R 1 W, sec 5 NESWNE, unnamed spring in Kelly Park Draw, 8S, June 30, 2005.

Figure 22. T 13 S, R 1 W, sec 5 NESWSW, looking NE to Kelly Park Draw, 8S, October 31, 2005.

DCC Pasture 8S. Utilization 2.5% on uplands.



Figure 23. T 13 S, R 2 W, sec 13 NWNWNE, looking W to gate, 8S, October 31, 2005.

Figure 24. T 13 S, R 2 W, sec 13 NWNWNE, looking N at gate, 8S (R), October 31, 2005.

DCC Pasture 8S. Utilization 60% in preferred big sagebrush inclusions near Lower Battle Creek Crossing Waterhole & Reservoir No. 1, respectively. Use predominantly 13% on low sagebrush communities in the area. This is the only area of detectable use on uplands in Pasture 8S.



Figure 25. T 12 S, R 1 E, sec 18 NWNENE, looking W at jnc, 8S, November 18, 2005.

Figure 25a. same location, looking W at jnc. into big sagebrush, 8S, November 18, 2005.

DCC Pasture 8S. Utilization predominantly 2.5% on uplands except for small area.



Figure 26. T 12 S, R 1 E, sec 7 SESWSE, looking E, 8S, November 18, 2005.

Figure 27. T 12 S, R 1 E, sec 7 NESES, looking NW, 8S, November 18, 2005.

DCC Pasture 8S. Utilization 2.5% on uplands except immediately around water or salt barrels. Battle Creek Crossing Waterhole No. 2 just down drainage.



Figure 28. T 12 S, R 1 E, sec 7 NWESW, looking NE, 8S, November 18, 2005.

Figure 28a. same location, looking E, 8S, November 18, 2005.

DCC Pasture 8S. Utilization 65% in preferred alkali sagebrush inclusion near Lower Battle Creek Crossing Waterhole No. 2, respectively. Use predominantly 2.5% on low and other alkali sagebrush communities in the area.



Figure 29. T 12 S, R 1 E, sec 7 NWSNW, looking W, 8S, November 18, 2005.

Figure 30. T 12 S, R 1 E, sec 7 NENENW, looking N, 8S, November 18, 2005.

DCC Pasture 8S. Utilization 30% in small portion of preferred big sagebrush inclusions near turnoff to Frying Pan Basin (terrace escarpments).



Figure 31. T 12 S, R 1 E, sec 7 NWNWNW, looking N, 8S, November 18, 2005.

DCC Pasture 8S. Utilization predominantly 2.5% on low and alkali sagebrush communities in the area (toe slopes, basins).



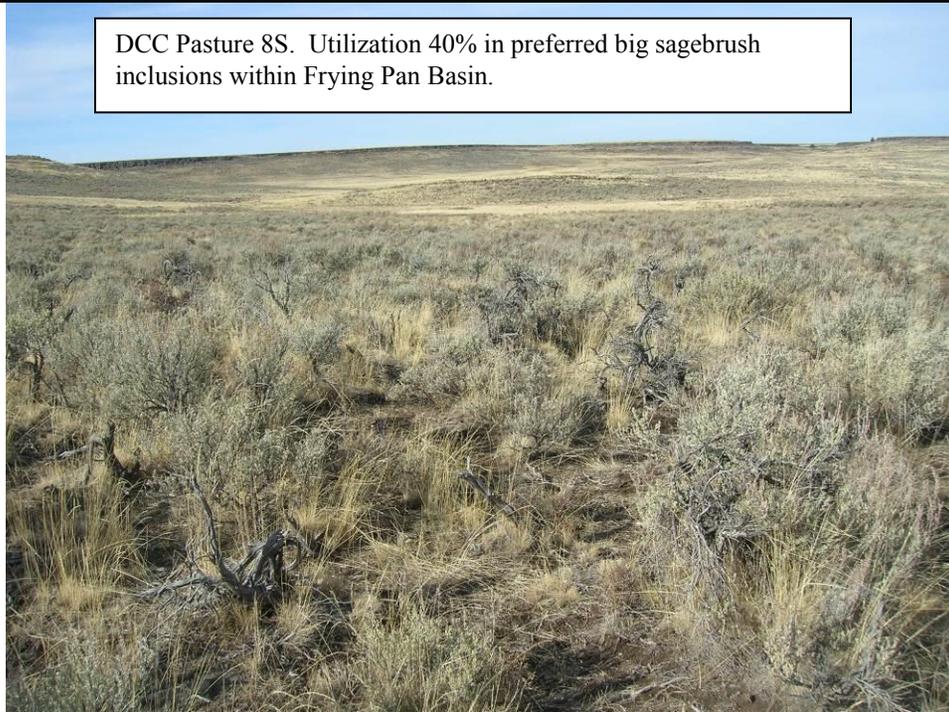
Figure 32. T 12 S, R 1 W, sec 1 SWSESE, looking N, 8S, November 18, 2005.



Figure 33. T 12 S, R 1 W, sec 1 NESWSE, looking W, 8S, November 18, 2005.



Figure 34. T 12 S, R 1 W, sec 1 SENWSW, looking N into Frying Pan Basin, 8S, November 18, 2005.



DCC Pasture 8S. Utilization 40% in preferred big sagebrush inclusions within Frying Pan Basin.



DCC Pasture 8S. Utilization 60% right at Frying Pan Spring

Figure 35. T 12 S, R 1 W, sec 1 NWNWSW, looking N into Frying Pan Basin, 8S, November 18, 2005. Figure 36. T 12 S, R 1 W, sec 2 SWNENE, looking N, Frying Pan Basin, 8S, November 18, 2005.



DCC Pasture 8S. Utilization 30% on Frying Pan Spring drainage.



DCC Pasture 8S. Utilization 60% right at Frying Pan Spring

Figure 37. T 11 S, R 1 W, sec 35 SESWSE, looking N, Frying Pan Basin, 8S, November 18, 2005. Figure 38. T 11 S, R 1 W, sec 35 SESWSE, looking N, Frying Pan Spring, 8S, November 18, 2005.

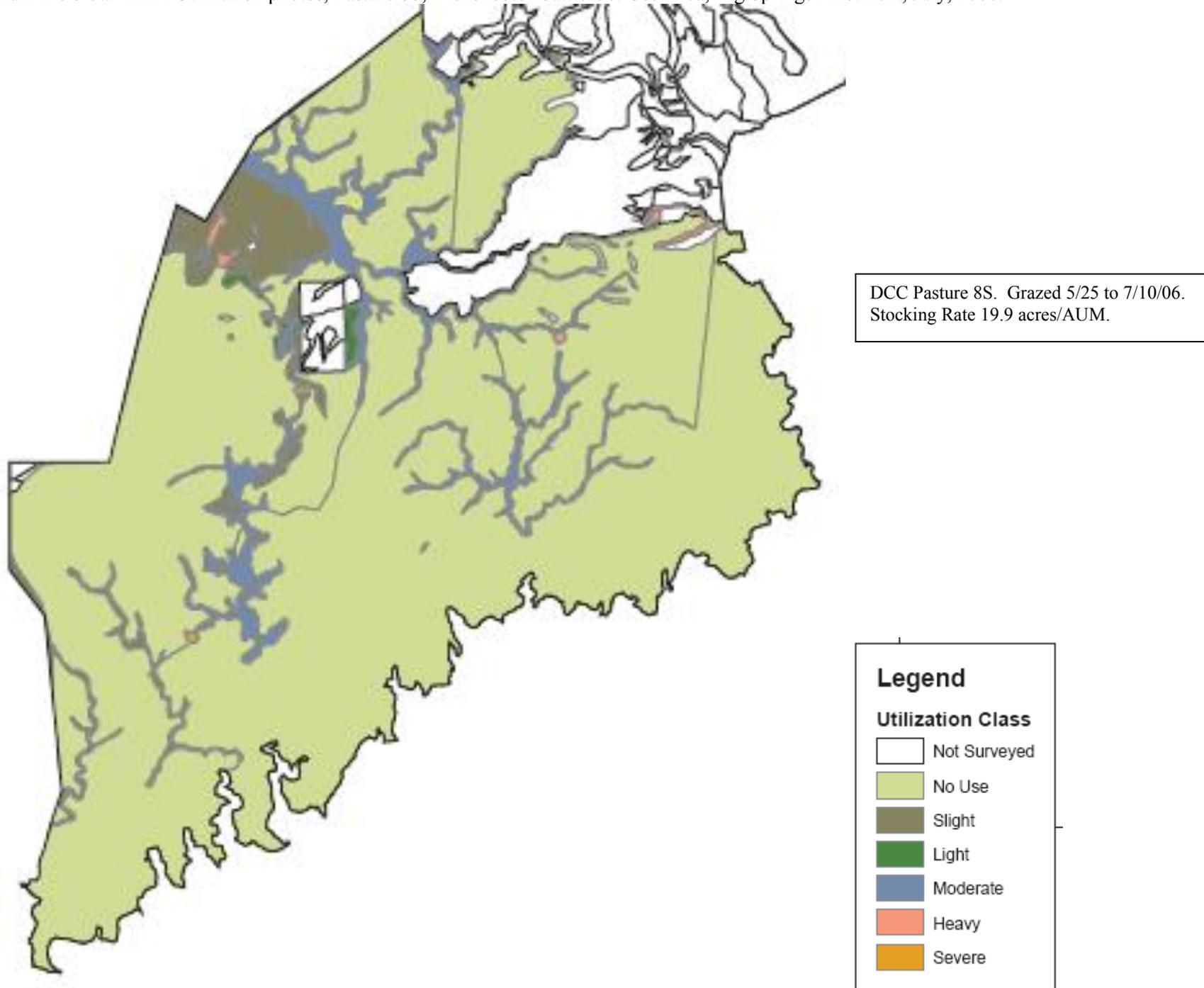


Figure 1. BLM 2006 Utilization pattern, Pasture 8S, DCC Use Area.

DCC Pasture 8S. Utilization 80% in small wet meadows draining from Lower Battle Creek Crossing Waterhole & Reservoir No. 1, respectively. These are spring fed, provide the most reliable water in the northeast part of 8S. Battle Creek is not accessible from this pasture.



Figure 2. T 12 S, R 1 E, sec 18 SWNWNE, looking W, 8S, July 25, 2006.



Figure 3. T 12 S, R 1 E, sec 18 SWNENW, looking E, 8S, July 25, 2006.



Figure 4. T 12 S, R 1 E, sec 18 SWNENW, looking SW to Lower Battle Cr. Rsv #1, 8S, July 25, 2006.



Figure 5. T 12 S, R 1 W, sec 24 SENENW, looking SW, 8S, July 25, 2006.

DCC Pasture 8S. Utilization 60% in small wet meadows associated with undeveloped springs or along drainages.

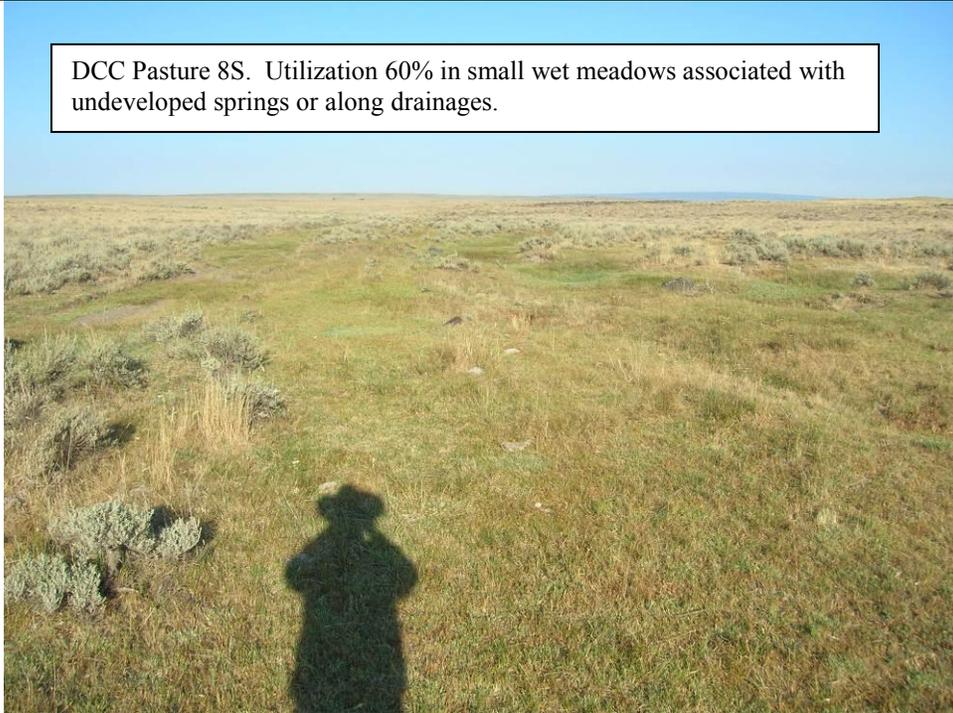


Figure 6. T 12 S, R 1 W, sec 24 NWSW, looking SW, 8S, July 25, 2006.

DCC Pasture 8S. Utilization predominantly 2.5% on uplands except for small area.

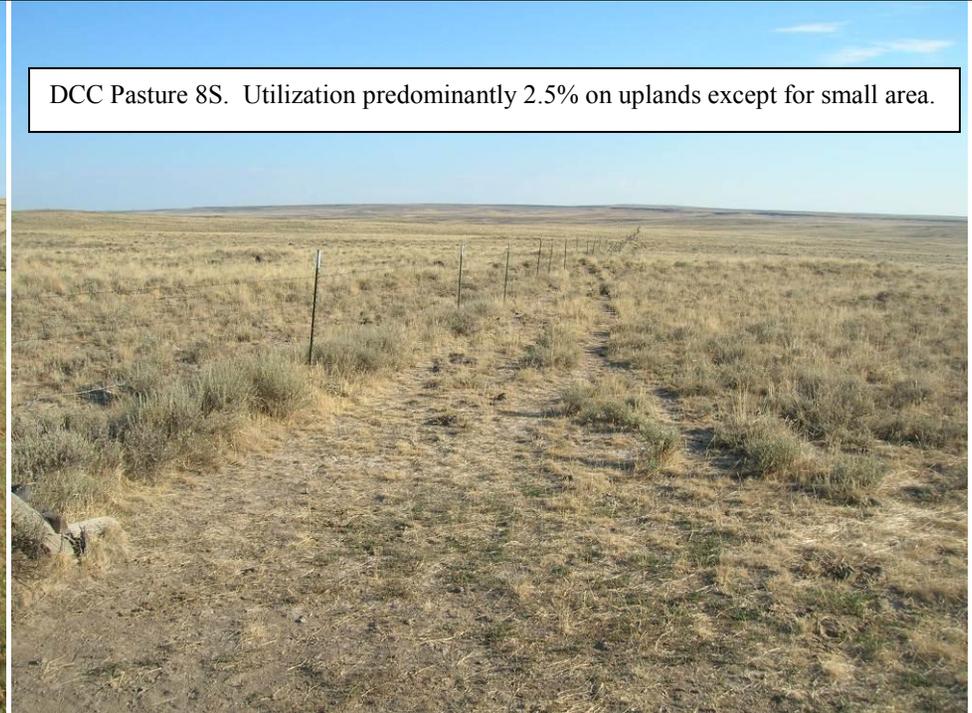


Figure 7. T 12 S, R 1 W, sec 21 SWSENE, looking N along Squaw Mdw. base fence, 8S, July 25, 2006.



Figure 8. T 12 S, R 1 W, sec 21 SWSENW, looking SW toward Squaw Meadows, 8S, July 25, 2006.



Figure 9. T 12 S, R 1 W, sec 32 SENWNE, looking NW toward Squaw Mdw Resv #2, 8S, July 25, 2006.

DCC Pasture 8S. Utilization 60% in small wet meadows associated with undeveloped springs or along drainages. Regrowth potential differs with moisture regime.



Figure 10. T 12 S, R 1 W, sec 32 SWSWNE, looking S down Kelly Park Draw, 8S, July 25, 2006. Figure 11. T 12 S, R 1 W, sec 32 SWNWNE, looking SW to BLM NPFT study site, 8S, July 25, 2006.



Figure 12. T 13 S, R 1 W, sec 5 NESWNE, unnamed spring in Kelly Park Draw, 8S, July 25, 2006. Figure 12a. nearby, unnamed spring in Kelly Park Draw, 8S, July 25, 2006.



Figure 13. T 13 S, R 1 W, sec 8 NWNE, looking up Kelly Park Draw, 8S, July 25, 2006.



Figure 14. T 13 S, R 1 W, sec 5 NESWSW, looking NE to Kelly Park Draw, 8S, July 25, 2006.

DCC Pasture 8S. Utilization predominantly 2.5% on uplands except for small area.

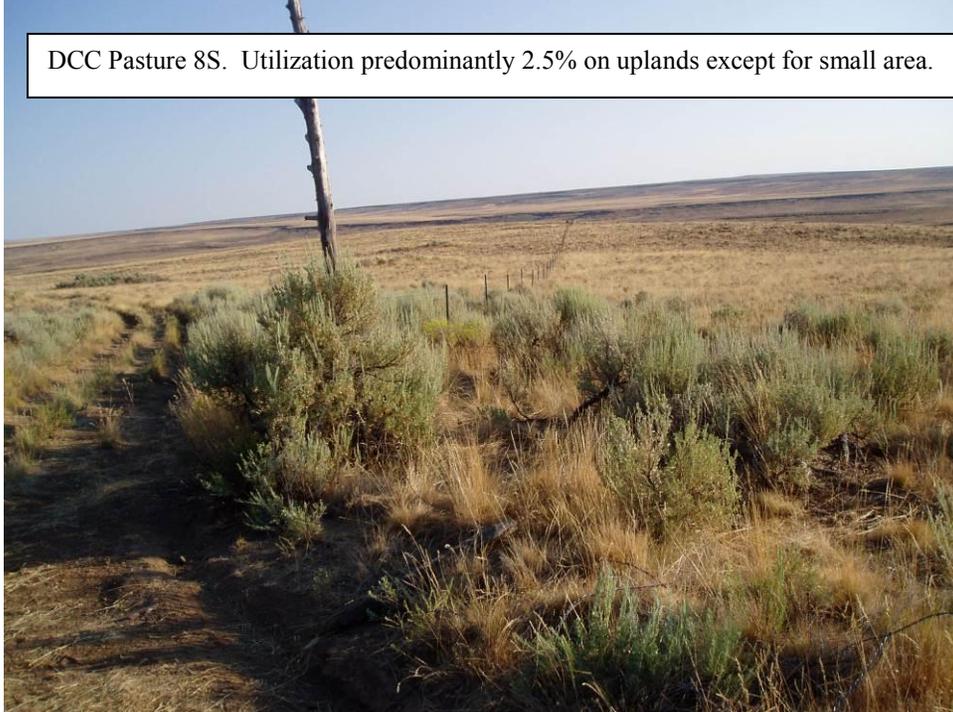


Figure 15. T 12 S, R 1 W, sec 18 SWNE, looking N, 8S (R), July 26, 2006.



Figure 16. T 12 S, R 1 W, sec 17 SWNESW, looking N at Squaw Mdw Resv. #1, 8S, July 26, 2006.



Figure 16a. same location, looking S at springhead for Squaw Mdw Resv. #1, 8S, July 26, 2006.

Appendix DCC-5b. Retakes of 2004 BLM RHE view photos, Pasture 8S, Dickshooter Cattle Co. Use Area, Big Springs Allotment, October, November, 2005; July 2006.



Figure 1. T 12 S, R 1 W, sec 2 SWNE, looking N, Frying Pan Basin, 8S, July 28, 2004.



Figure 1a. T 12 S, R 1 W, sec 2 SWNE, looking N, Frying Pan Basin, 8S, November 18, 2005.



Figure 2. T 12 S, R 1 W, sec 1 SENSW, looking N into Frying Pan Basin, 8S, July 28, 2004.



Figure 2a. T 12 S, R 1 W, sec 1 SENSW, looking N into Frying Pan Basin, 8S, November 18, 2005.



Figure 3. T 12 S, R 1 E, sec 6 SENESW, looking SE along 8N/8S fence, 8N (L), July 28, 2004. Figure 3a. T 12 S, R 1 E, sec 6 SENESW, looking SE along 8N/8S fence, 8N (L), November 18, 2005.



Figure 4. T 12 S, R 1 E, sec 7 NWNESW, 8S, July 28, 2004.

Figure 4a. same location, , looking E toward Battle Creek Crossing Waterhole No. 2, 8S, November 18, 2005.



Figure 5. T 12 S, R 1 W, sec 23 NWNWSW, looking W to Squaw Mdw. Base, 8S, July 13, 2004. Figure 5a. T 12 S, R 1 W, sec 22 SWNW, looking W to Squaw Mdw. Base, 8S, October 25, 2005.



Figure 6. T 12 S, R 1 W, sec 20 NWNWNE, looking NW, 8S, July 15, 2004.

Figure 6a. T 12 S, R 1 W, sec 20 SWNENE, looking NW, 8S, November 1, 2005.



Figure 7. T 12 S, R 1 W, sec 17 SWNESW, looking N at Squaw Mdw Resv. #1, 8S, July 15, 2004. Figure 7a. same location, looking N at Squaw Mdw Resv. #1, 8S, June 28, 2005.



Figure 8. T 12 S, R 1 W, sec 32 SENWNE, looking NW toward Squaw Mdw Resv #2, 8S, July 15, 2004. Figure 8a. same location at salt ground, 8S, October 31, 2005.

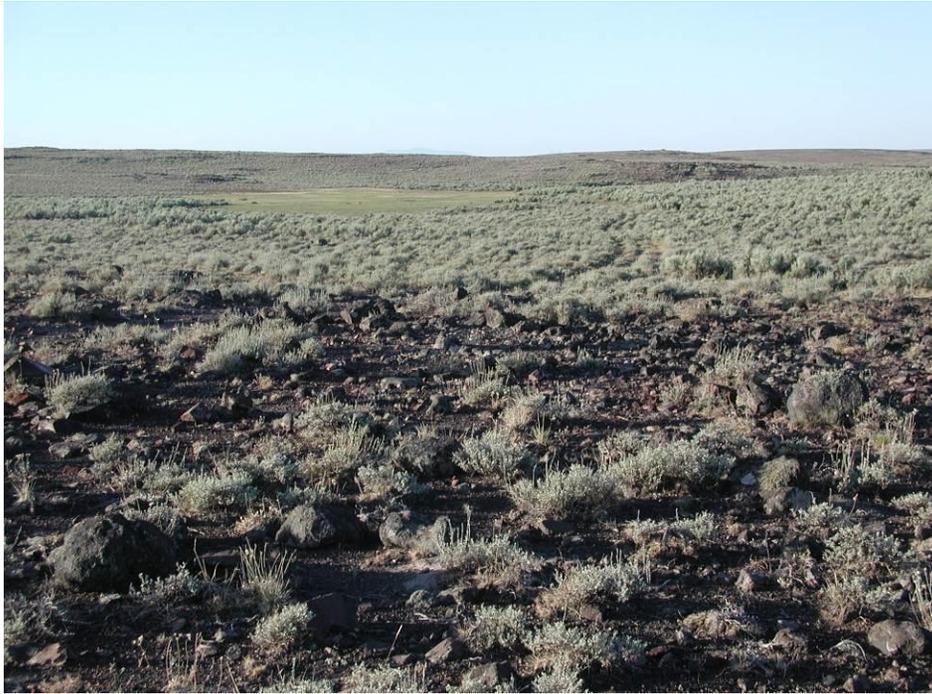


Figure 9. T 13 S, R 1 W, sec 5 NESWNE, looking S toward Kelly Park Draw, 8S, July 14, 2004. Figure 9a. same location, looking S toward Kelly Park Draw, 8S, July 25, 2006.

Appendix DCC-6. Rangeland Health Evaluation Indicator Ratings, Pasture 8N, DCC Use Area, Big Springs Allotment, 2004.

Pasture		8 North							
Community		Low sagebrush							
Worksheet Location		11S01W24	11S01W02	11S01E08	10S01E21	11S01E22	10S01W22	12S01W03	10S01E30
Ecological Site		Stony Clayey 12-16	Clayey 12-15	Churning Clay 12-15					
Overall Rating		S-M	N-S	N-S	N-S	N-S	SM to N-S	N-S	S-M
Indicator									
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	n-s	n-s	n-s	n-s	n-s	n-s	s-m	m-e
3. Pedestals/Terracettes	S,H	m	s-m	n-s	n-s	n-s	s-m	s-m	s-m
4. Bare Ground	S,H	s-m	n-s	n-s	n-s	n-s	n-s	n-s	s-m
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	H	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
8. Soil Surface Resistance to Erosion	S,H,B	n-s	n-s	n-s	n-s	n-s	n-s	n-s	s-m
9. Soil Surface Loss or Degradation	S,H,B	s-m	n-s	n-s	n-s	n-s	n-s	n-s	s-m
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	s-m	n-s	n-s	n-s	n-s	n-s	n-s	m
11. Compaction Layer	S,H,B	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
12. Functional/Structural Groups	B	s-m	n-s	n-s	n-s	n-s	n-s	n-s	m-e
13. Plant Mortality/Decadence	B	s-m	s-m	n-s	s-m	n-s	s-m	s-m	s-m
14. Litter Amount	H,B	s-m	n-s	n-s	n-s	n-s	n-s	n-s	n-s
15. Annual Production	B	n-s	n-s	n-s	n-s	n-s	n-s	n-s	s-m
16. Invasive Plants	B	n-s	n-s	n-s	n-s	n-s	s-m	n-s	n-s
17. Reproductive Capability of Perennial Plants	B	s-m	n-s	n-s	n-s		n-s	n-s	s-m

(S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator; n-s = none-slight, s-m = slight-moderate, m = moderate, m-e = moderate-extreme, e = extreme)



Figure 1. 11S01W24, DCC Use Area, Pasture 8N, July 27, 2004.



Figure 1a. 11S01W24, DCC Use Area, Pasture 8N, November 18, 2005.



Figure 2. 11S01W02, RHE, NPFT, DCC Use Area, Pasture 8N, July 7, 2004.



Figure 2a. 11S01W02, RHE, NPFT, DCC Use Area, Pasture 8N, November 22, 2005.



Figure 3. 11S01E08, RHE, NPFT, DCC Use Area, Pasture 8N, August 5, 2004.



Figure 3a. 11S01E08, RHE, NPFT, DCC Use Area, Pasture 8N, November 23, 2005.



Figure 4. 10S01E21, DCC Use Area, Pasture 8N, August 5, 2004.



Figure 5. 11S01E22, DCC Use Area, Pasture 8N, August 5, 2004.



Figure 6. 10S01W22, DCC Use Area, Pasture 8N, July 7, 2004.



Figure 7. 12S01W03, DCC Use Area, Pasture 8N, July 28, 2004.

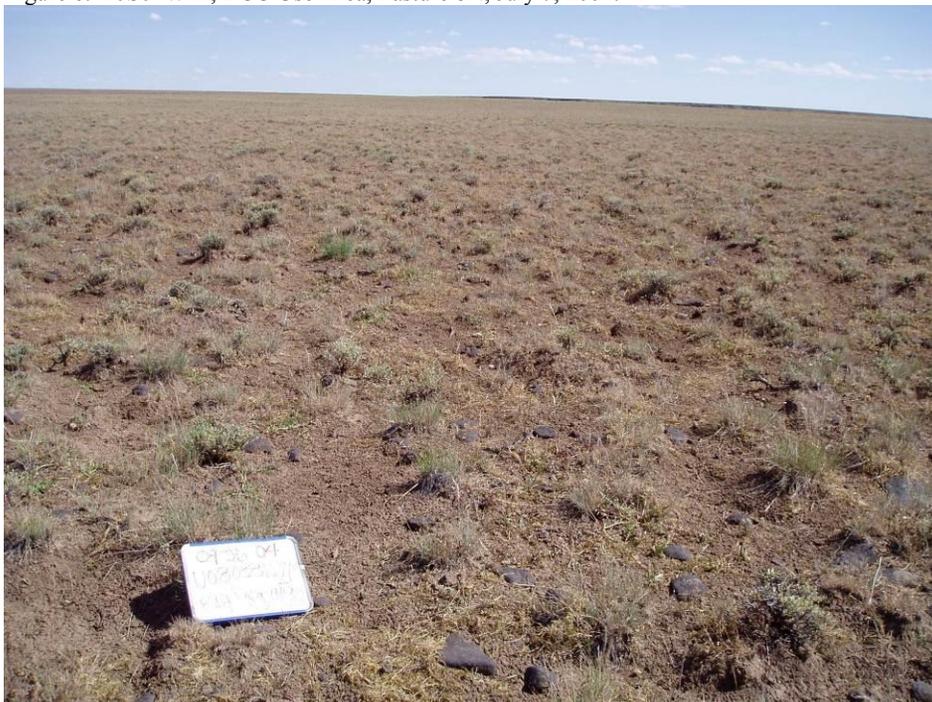


Figure 8. 10S01E30, DCC Use Area, Pasture 8N, July 6, 2004.

Appendix DCC-6 (cont.). Rangeland Health Evaluation Indicator Ratings, Pasture 8N, DCC Use Area, Big Springs Allotment, 2004.

Pasture		8 North					
Community		Silver sagebrush			Basin bigsagebrush	Mountain big sagebrush	
Worksheet Location		10S01W13	10S01W35	11S01E09	12S01E06	10S01E28	10S01E32
Ecological Site		Churning Clay 12-16	Churning Clay 12-16	Churning Clay 12-16	Loamy 12-16	Loamy 13-16	Loamy 13-16
Overall Rating		S-M	S-M	N-S	S-M	N-S	N-S
Indicator							
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	n-s	m-e	n-s	s-m	s-m	n-s
3. Pedestals/Terracettes	S,H	m	s-m	n-s	s-m	s-m	n-s
4. Bare Ground	S,H	s-m	n-s	s-m	s-m	s-m	n-s
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	H	n-s	n-s	n-s	n-s	n-s	n-s
8. Soil Surface Resistance to Erosion	S,H, B	s-m	s-m	s-m	s-m	s-m	n-s
9. Soil Surface Loss or Degradation	S,H, B	s-m	s-m	n-s	s-m	s-m	n-s
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	s-m	n-s	n-s	s-m	n-s	n-s
11. Compaction Layer	S,H, B	n-s	n-s	n-s	n-s	n-s	n-s
12. Functional/Structural Groups	B	s-m	n-s	n-s	s-m	n-s	n-s
13. Plant Mortality/Decadence	B	s-m	n-s	n-s	s-m	s-m	n-s
14. Litter Amount	H,B	n-s	n-s	n-s	s-m	n-s	n-s
15. Annual Production	B	n-s	n-s	n-s	n-s	n-s	n-s
16. Invasive Plants	B	n-s	n-s	n-s	m-e	n-s	n-s
17. Reproductive Capability of Perennial Plants	B	n-s	n-s	n-s	m	n-s	n-s

(S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator; n-s = none-slight, s-m = slight-moderate, m = moderate, m-e = moderate-extreme, e = extreme)



Figure 1. 10S01W13, DCC Use Area, Pasture 8N, July 6, 2004.



Figure 1a. Same enclosed basin, 10S01W13, DCC Use Area, Pasture 8N, November 23, 2005.

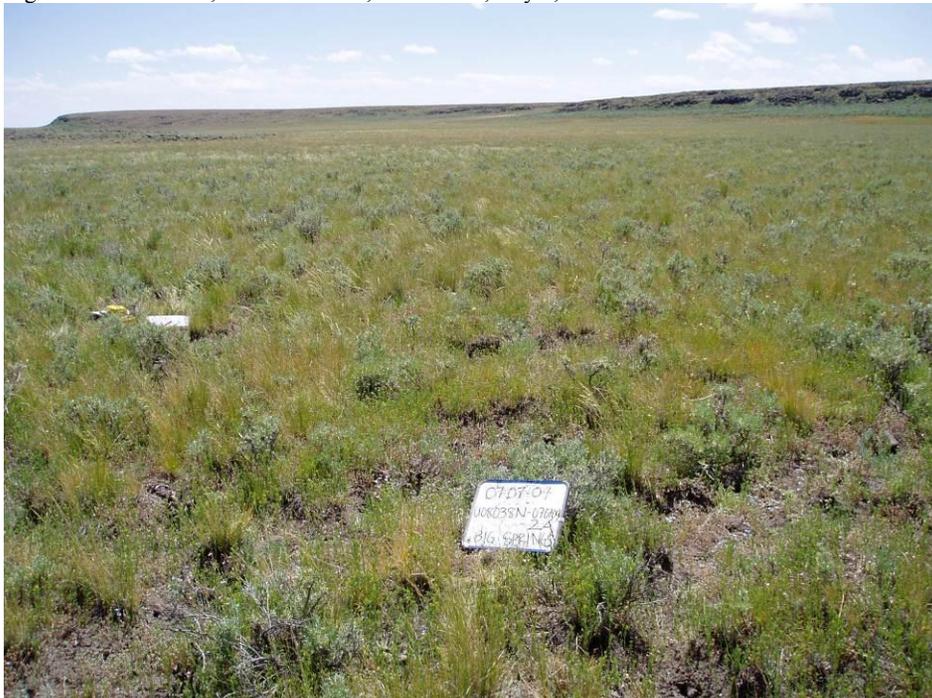


Figure 2. 10S01W35, DCC Use Area, Pasture 8N, July 7, 2004.



Figure 3. 11S01E09, DCC Use Area, Pasture 8N, August 5, 2004.



Figure 4. 12S01E06, DCC Use Area, Pasture 8N, July 27, 2004.



Figure 4a. 12S01E06, DCC Use Area, Pasture 8N, November 18, 2005.



Figure 5. 10S01E32, DCC Use Area, Pasture 8N, August 5, 2004.



Figure 5a. 10S01E32, DCC Use Area, Pasture 8N, November 23, 2005.



Figure 6. 10S01E28, DCC Use Area, Pasture 8N, August 5, 2004.

Appendix DCC-7. Rangeland Health Evaluation Indicator Ratings, Pasture 8S, DCC Use Area, Big Springs Allotment, 2004.

Pasture		8 South									
Community		Low sagebrush									
Worksheet Location		12S01W12	12S01W33	13S01W07A	13S01W07B	12S01W28	12S01W23	12S01W32	12S01W21	13S02W13	12S01W10
Ecological Site		Clayey 12-15	Shallow Claypan 11-13	Shallow Claypan 11-13	Shallow Claypan 11-13	Shallow Claypan 11-13	Shallow Claypan 11-13	Shallow Claypan 12-16	Shallow Claypan 12-16	Shallow Claypan 12-16	Shallow Claypan 12-16
Overall Rating		M to S-M	N-S	S-M to N-S							
Indicator											
1. Rills	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
2. Water Flow Patterns	S,H	m-e	n-s	s-m	n-s	s-m	n-s	s-m	n-s	s-m	m
3. Pedestals/Terracettes	S,H	m-e	s-m	s-m	s-m	s-m	n-s	s-m	s-m	n-s	s-m
4. Bare Ground	S,H	m	n-s	s-m							
5. Gullies	S,H	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
6. Wind Scoured, Blowouts and/or Depositions	S	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
7. Litter Movement	H	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
8. Soil Surface Resistance to Erosion	S,H,B	m	n-s	s-m							
9. Soil Surface Loss or Degradation	S,H,B	m	n-s	s-m							
10. Plant Community Comp. & Distribution Relative to Infiltration & Runoff	H	m	n-s	s-m							
11. Compaction Layer	S,H,B	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
12. Functional/Structural Groups	B	s-m	n-s								
13. Plant Mortality/Decadence	B	s-m	n-s	n-s	n-s	s-m	n-s	s-m	n-s	n-s	s-m
14. Litter Amount	H,B	m	n-s	s-m							
15. Annual Production	B	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s	n-s
16. Invasive Plants	B	n-s	n-s	n-s	n-s	n-s	m	n-s	n-s	n-s	n-s
17. Reproductive Capability of Perennial Plants	B	m	n-s	s-m							

(S = Soil/Site Stability Indicator, H = Hydrologic Function Indicator, B = Biotic Integrity Indicator; n-s = none-slight, s-m = slight-moderate, m = moderate, m-e = moderate-extreme, e = extreme)



Figure 1. 12S01W33, DCC Use Area, Pasture 8S (concave intermound), July 14, 2004.



Figure 2. 13S01W07A, DCC Use Area, Pasture 8S (concave intermound), July 14, 2004.



Figure 3. 13S01W07B, DCC Use Area, Pasture 8S (concave intermound), July 15, 2004.



Figure 4. 12S01W23, RHE, near NPFT, DCC Use Area, Pasture 8S (concave intermound), July 15, 2004.



Figure 4a. 12S01W23, NPFT, near RHE, DCC Use Area, Pasture 8S, August 3, 2004.



Figure 4b. 12S01W23, NPFT, near RHE, DCC Use Area, Pasture 8S, October 25, 2005.



Figure 5. 12S01W28, DCC Use Area, Pasture 8S (concave intermound), July 15, 2004.



Figure 5a. 12S01W28, DCC Use Area, Pasture 8S, October 25, 2005.



Figure 6. 12S01W32, RHE, near NPFT, DCC Use Area, Pasture 8S (convex intermound).



Figure 6a. 12S01W32, NPFT, near RHE, DCC Use Area, Pasture 8S, October 25, 2005.



Figure 7. 12S01W21, DCC Use Area, Pasture 8S (convex intermound), July 15, 2004.



Figure 7a. 12S01W21, DCC Use Area, Pasture 8S (convex intermound), November 1, 2005.



Figure 8. 13S02W13, DCC Use Area, Pasture 8S (convex intermound), July 14, 2004.



Figure 9. 12S01W10, DCC Use Area, Pasture 8S (convex intermound), July 28, 2004.

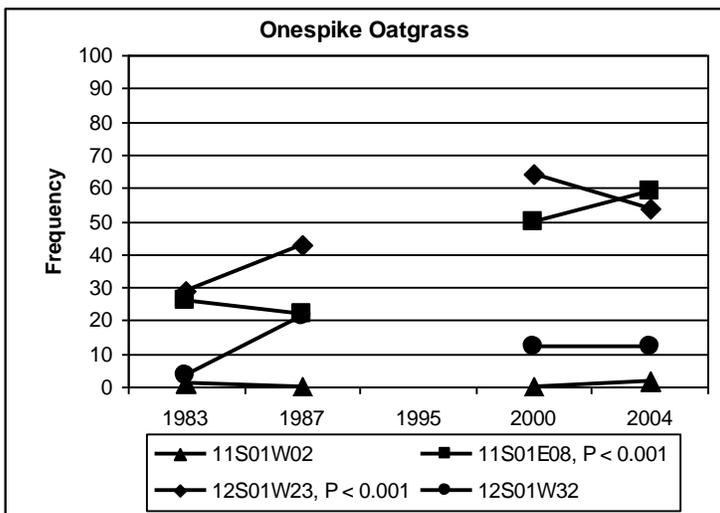
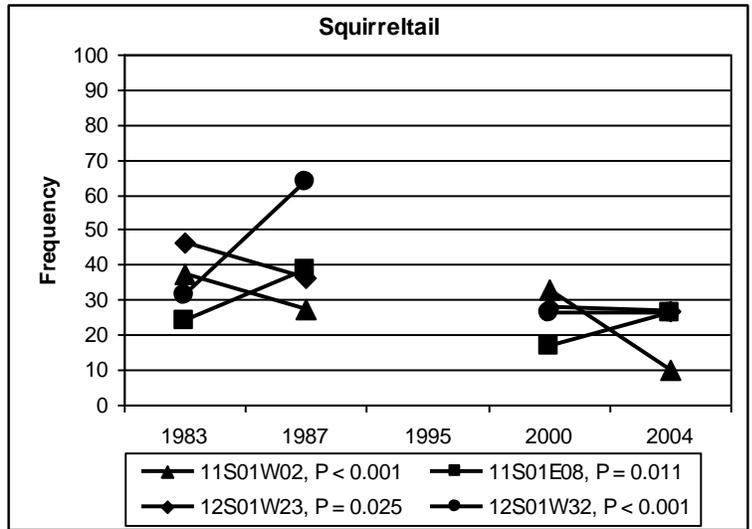
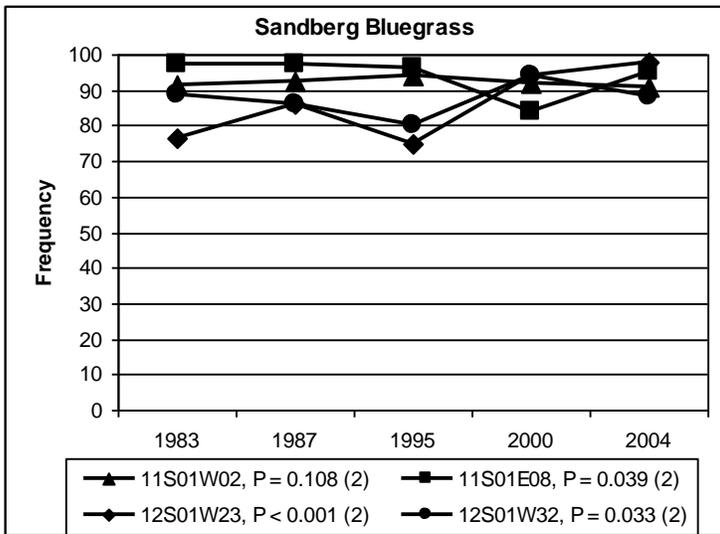
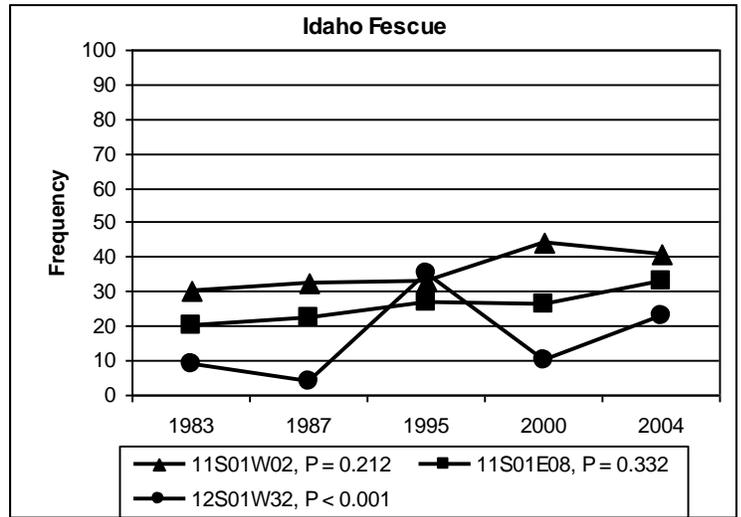
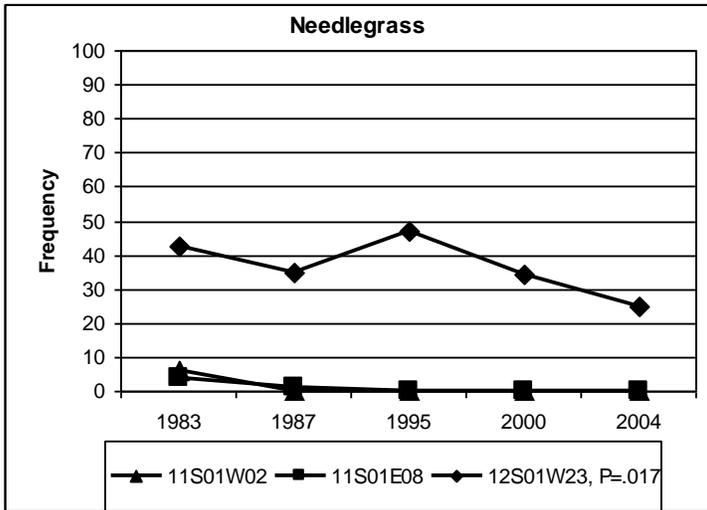


Figure 10. 12S01W12, DCC Use Area, Pasture 8S, July 28, 2004.

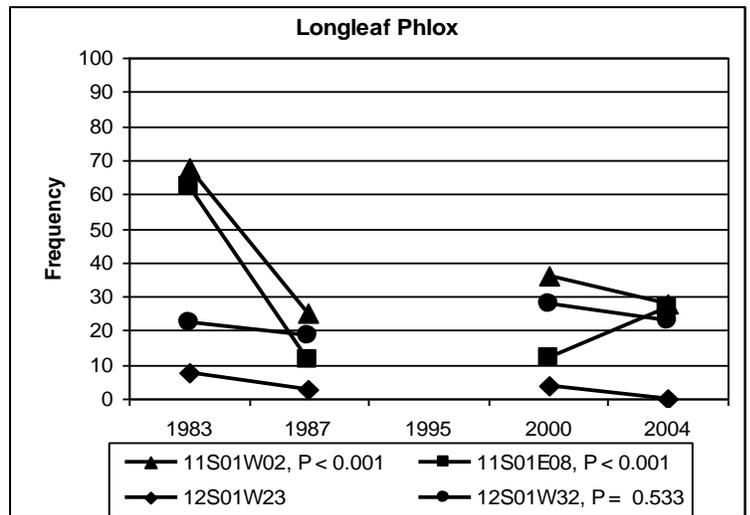
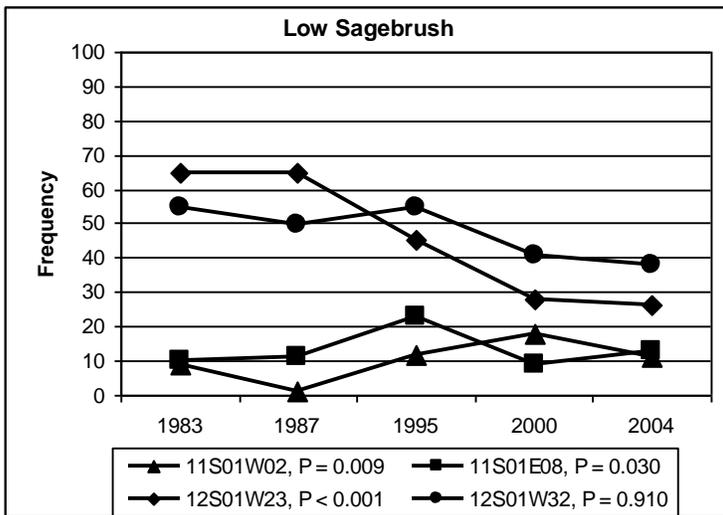


Figure 10a. 12S01W12, DCC Use Area, Pasture 8S, November 18, 2005.

Appendix DCC-8. Frequencies of perennial grasses, Nested Plot Frequency Transects, Pastures 8S and 8N, Dickshooter Cattle Co. Use Area, Big Springs Allotment, 1983-2004.



Appendix DCC-8 (cont.). Frequencies of perennial grasses, Nested Plot Frequency Transects, Pastures 8S and 8N, Dickshooter Cattle Co. Use Area, Big Springs Allotment, 1983-2004.



11S01W02

This is a Stony Clayey 12-16" ecological site. Alkali sagebrush, a form of low sagebrush, is the predominant shrub. Sandberg bluegrass, squirreltail, and Idaho fescue are the most prominent species.

1983



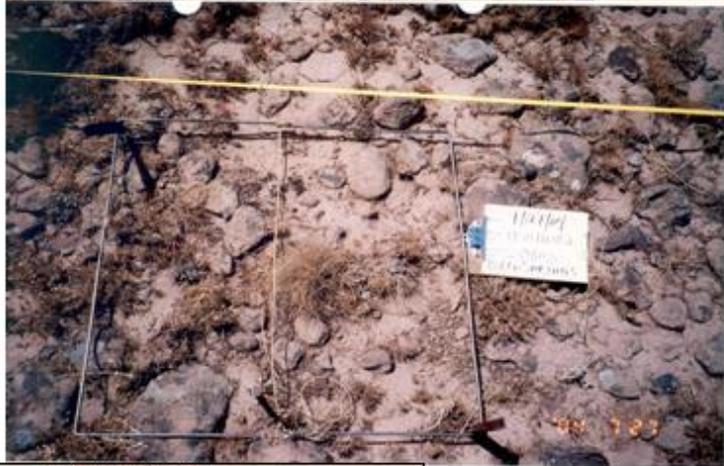
1987



1995



2004



2000



Figure 2. Mud Flat Remote Automatic Weather Station Growth (Crop) Year Precipitation, 1982-2004.

Figure 3. BLM photo plot 11S01W02, DCC Use Area, Pasture 8N. Co-located with RHE site 11S01W02.



Figure 3. BLM photo plot 11S01W02, DCC Use Area, Pasture 8N, November 22, 2005. Co-located with RHE site 11S01W02.



Figure 3a. BLM photo plot 11S01W02, DCC Use Area, Pasture 8N, August 11, 1983.



Figure 3b. BLM photo plot 11S01W02, November 22, 2005.



Figure 3c. BLM photo plot 11S01W02, July 27, 2004.



Figure 3d. BLM photo plot 11S01W02, November 22, 2005. Co-located with RHE site 11S01W02.

11S01E08

This is also a Stony Clayey 12-16" ecological site. Alkali sagebrush, a form of low sagebrush, is the predominant shrub. Sandberg bluegrass, onespike oatgrass, and squirreltail are the most prominent species. Idaho fescue is the major decrease grass.

1983



1987



2004



1995



2000



Figure 2. Mud Flat Remote Automatic Weather Station Growth (Crop) Year Precipitation, 1982-2004.

Figure 4. BLM photo plot 11S01E08, DCC Use Area, Pasture 8N. Co-located with RHE site 11S01E08.



Figure 4. BLM photo plot 11S01E08, DCC Use Area, Pasture 8N, November 23, 2005. Co-located with RHE site 11S01E08.

12S01W23

This is a concave intermound low sagebrush site, with large stones and complete cover of shrub interspaces by gravel. The predominant decreaser species is Thurber needlegrass. Sandberg bluegrass and onespike oatgrass are prominent increasers.

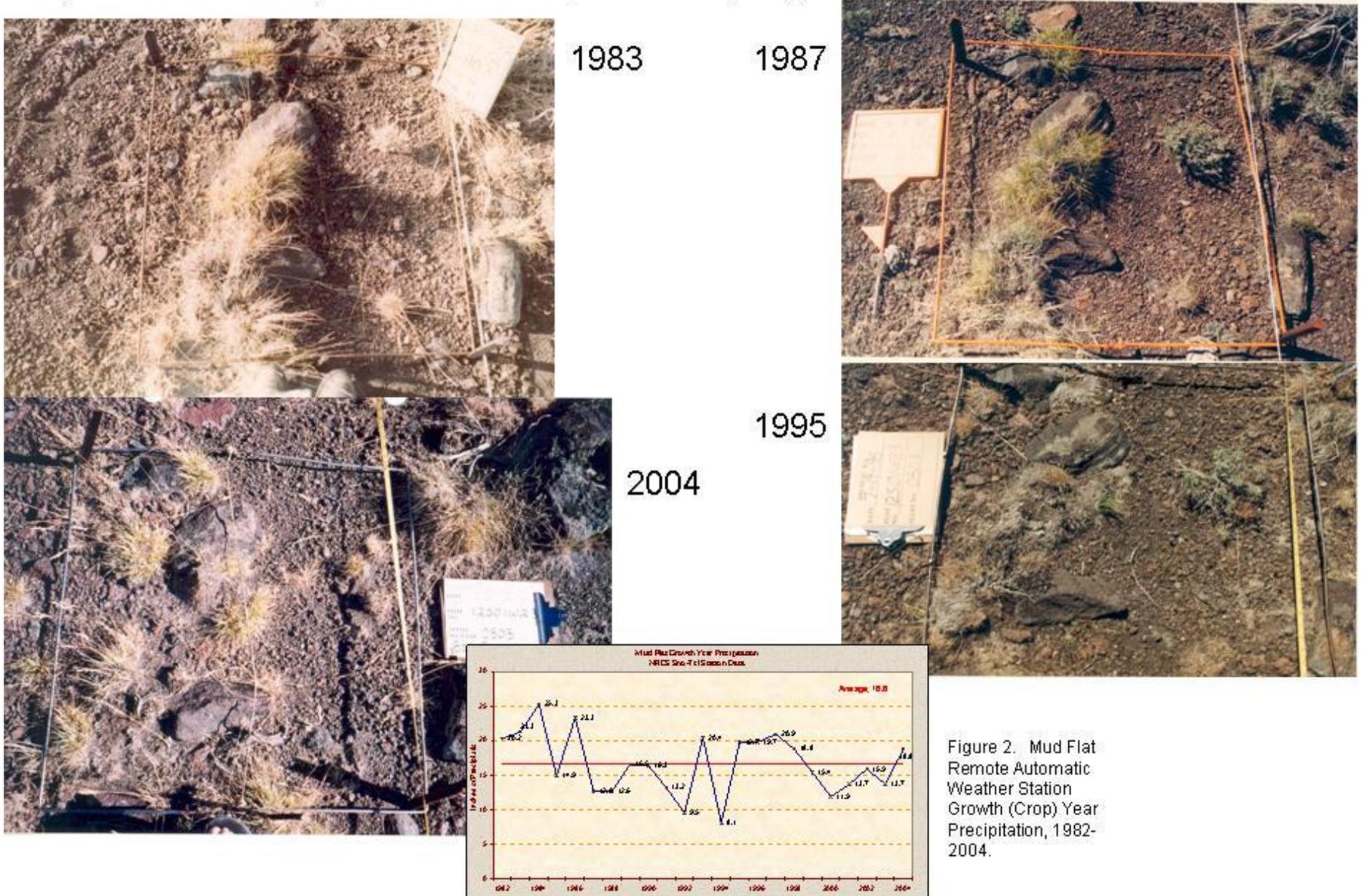


Figure 2. Mud Flat Remote Automatic Weather Station Growth (Crop) Year Precipitation, 1982-2004.

Figure 5. BLM photo plot 12S01W23, DCC Use Area, Pasture 8S. RHE site 12S01W23 is nearby, on the same ecological site.



Figure 5. BLM photo plot 12S01W23, DCC Use Area, Pasture 8S. RHE site 12S01W23 is nearby, on the same ecological site, essentially co-located.

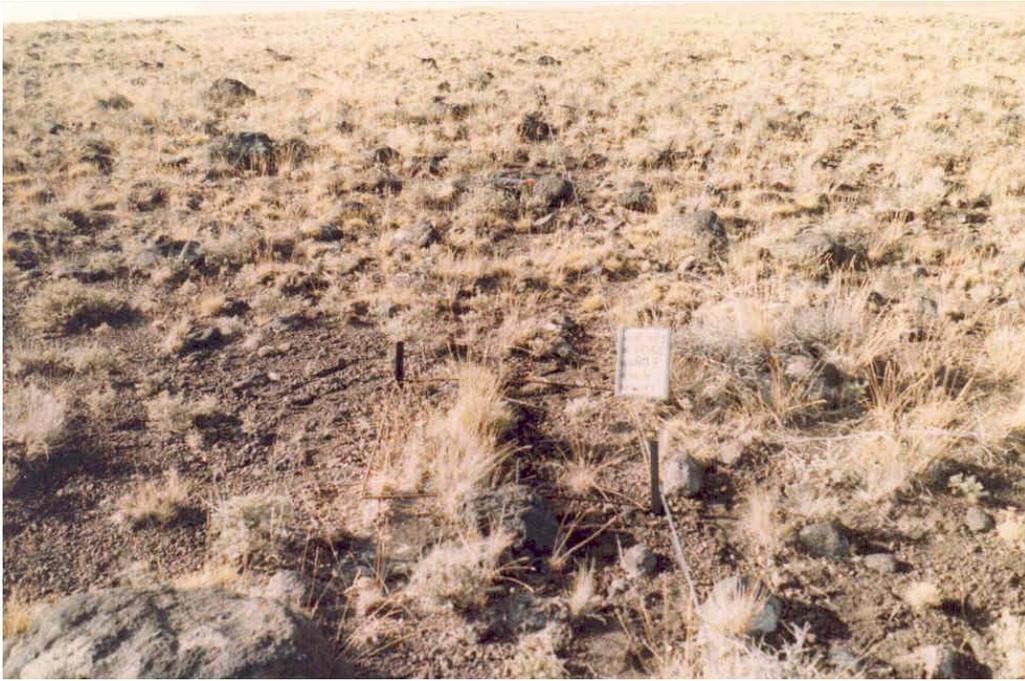


Figure 5a. BLM photo plot 12S01W23, DCC Use Area, Pasture 8S, August 9, 1983.



Figure 5b. BLM photo plot 12S01W23, DCC Use Area, Pasture 8S, October 25, 2005.



Figure 5c. BLM photo plot 12S01W23, DCC Use Area, Pasture 8S, August 3, 2004.

12S01W32

The photo plot is a convex intermound low sagebrush site. Most of the trend site is shallower concave intermound, with sparse Thurber needlegrass. Sandberg bluegrass and onespoke oatgrass are the predominant species on the trend site as a whole. Adjoining larger areas of convex intermound have dense, vigorous stands of Idaho fescue, but were not sampled by the trend study.

1983



1987



1995



2004



Figure 2. Mud Flat Remote Automatic Weather Station Growth (Crop) Year Precipitation, 1982-2004.

Figure 6. BLM photo plot 12S01W32, DCC Use Area, Pasture 8S. RHE site 12S01W32 is nearby, but on a more productive convex intermound ecological site.



Figure 6. BLM photo plot 12S01W32, DCC Use Area, Pasture 8S. RHE site 12S01W32 is nearby, but on a more productive convex intermound ecological site.

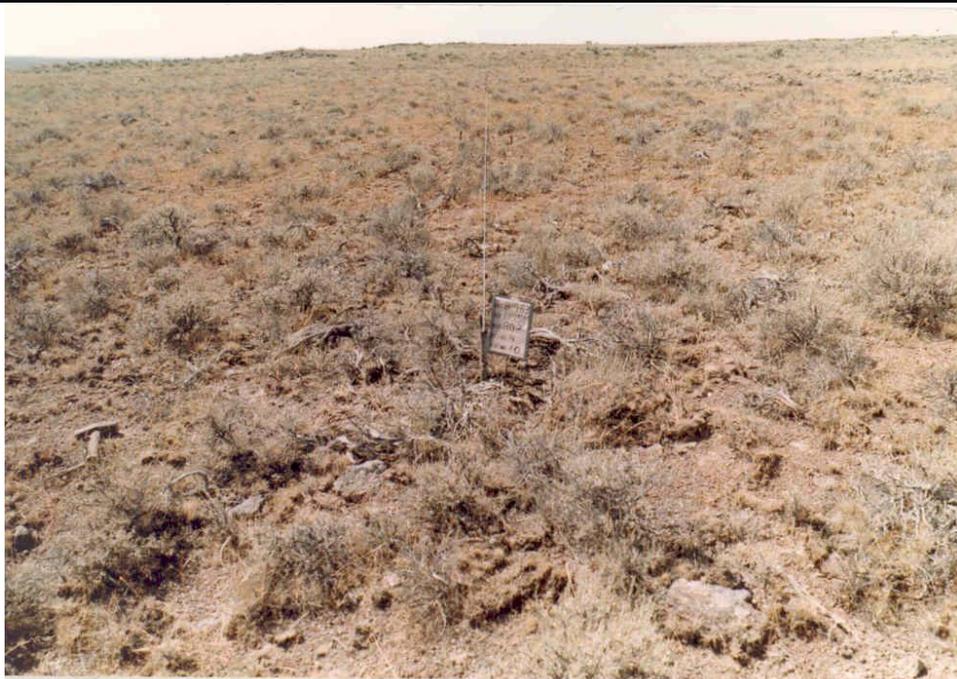


Figure 6a. BLM photo plot 12S01W32, DCC Use Area, Pasture 8S, August 9, 1983.



Figure 6b. BLM photo plot 12S01W32, DCC Use Area, Pasture 8S, August 4, 2004.



Figure 6c. BLM photo plot 12S01W32, DCC Use Area, Pasture 8S, October 25, 2005.



Figure 6d, October 25, 2005. Trend on shallower to left, RHE on deeper to right.

13S02W13A

This is one of two paired studies installed to evaluate changes resulting from allotment division between DCC and Black. The study is on a low mound inclusion within predominantly concave intermound low sagebrush sites. The predominant decreaser species is Idaho fescue, and Sandberg bluegrass is the prominent increaser.

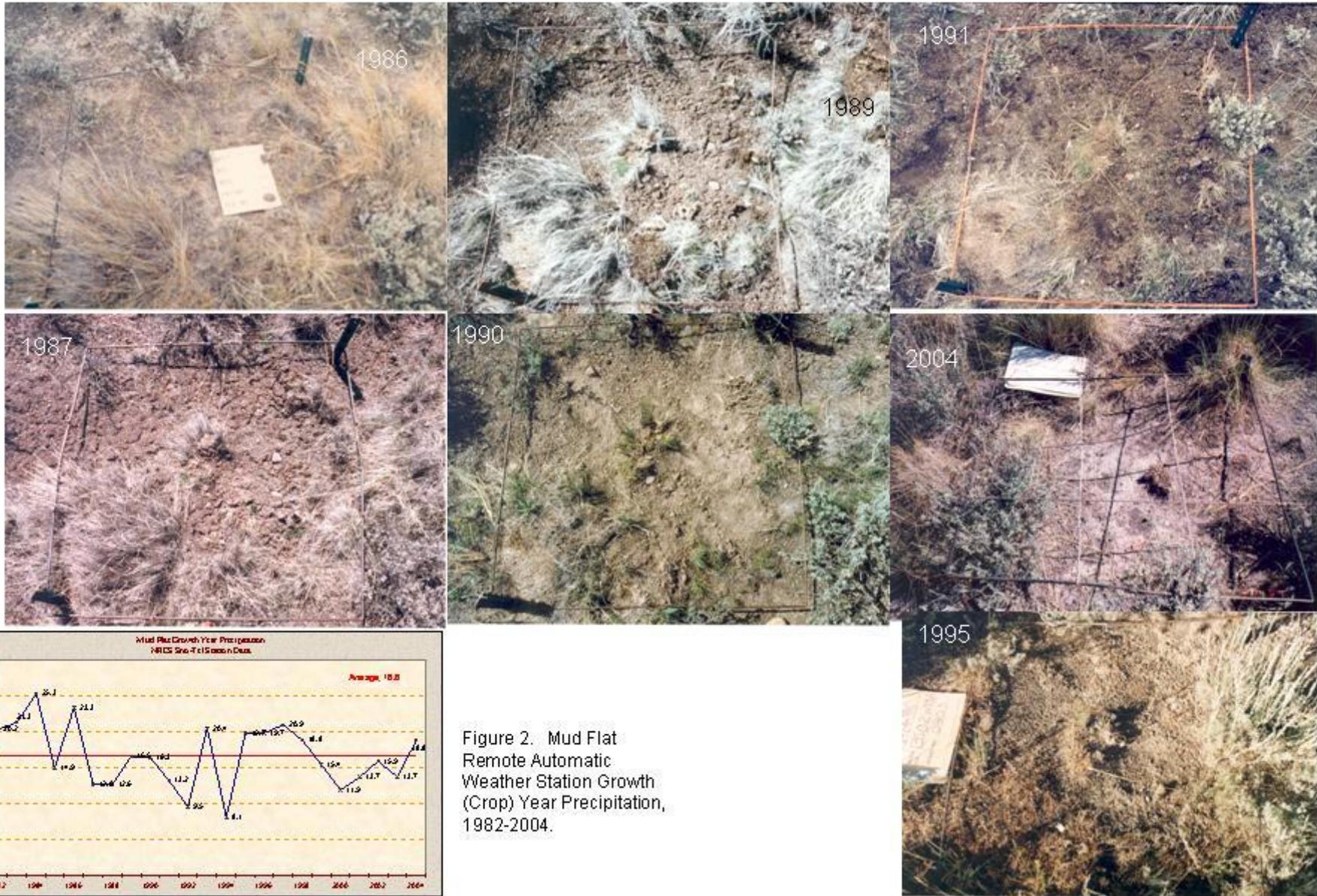


Figure 7. BLM photo plot 13S02W13A, DCC Use Area, Pasture 8S.



Figure 7. BLM photo plot 13S02W13A, DCC Use Area, Pasture 8S, October 31, 2005.



Figure 7a. BLM photo plot 13S02W13A, DCC Use Area, Pasture 8S, July 16, 1986.

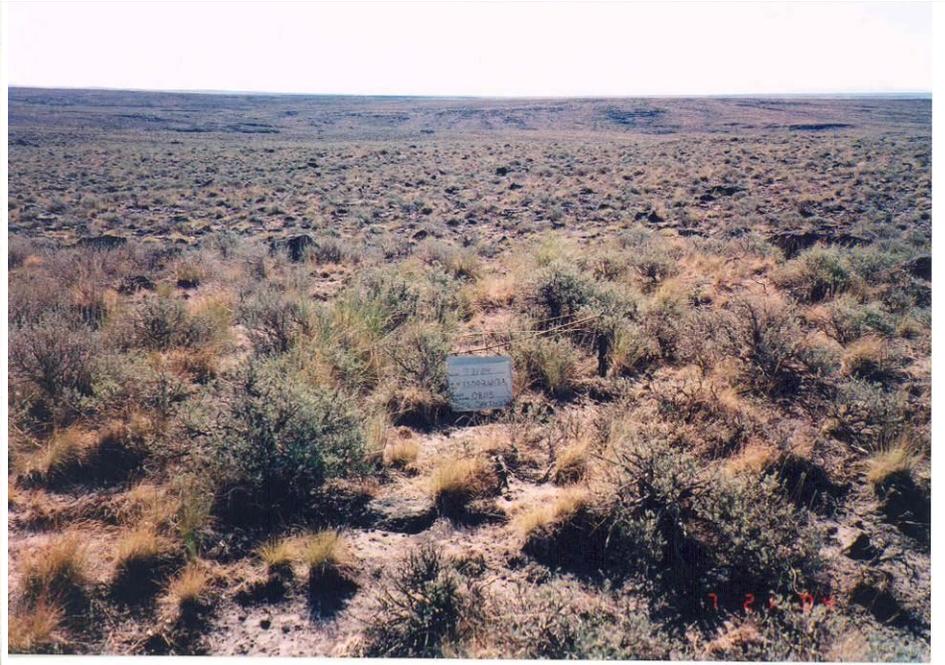


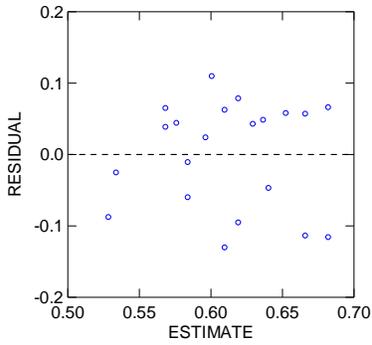
Figure 7b. BLM photo plot 13S02W13A, DCC Use Area, Pasture 8S, July 31, 2004.



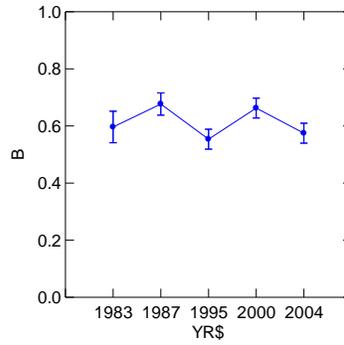
Figure 7c. BLM photo plot 13S02W13A, DCC Use Area, Pasture 8S, October 31, 2005.

Appendix DCC-9. BLM Trend Studies, DCC Use Area, Big Springs Allotment, 1983 through 2004.

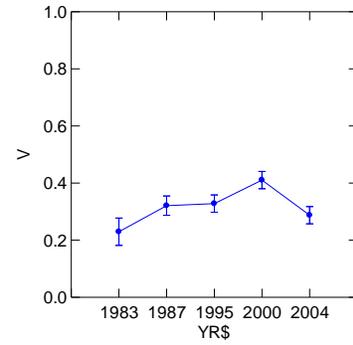
Plot of Residuals against Predicted Values



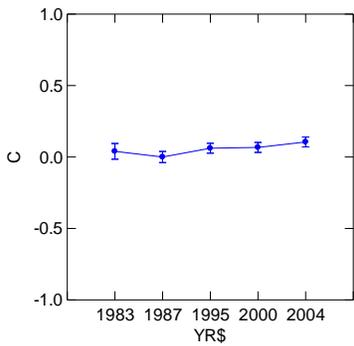
Least Squares Means



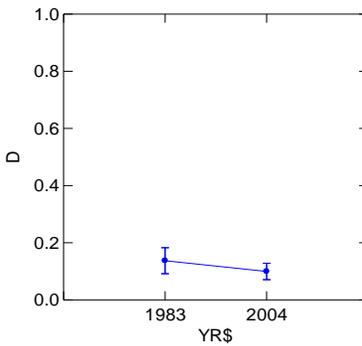
Least Squares Means



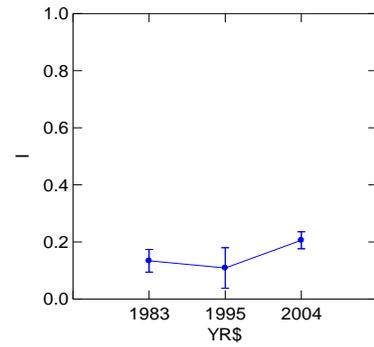
Least Squares Means



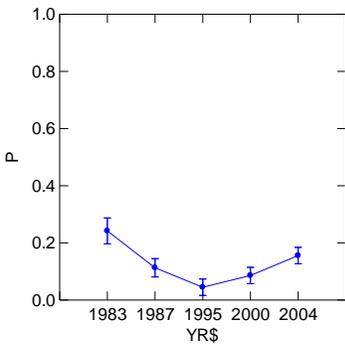
Least Squares Means



Least Squares Means



Least Squares Means



Least Squares Means

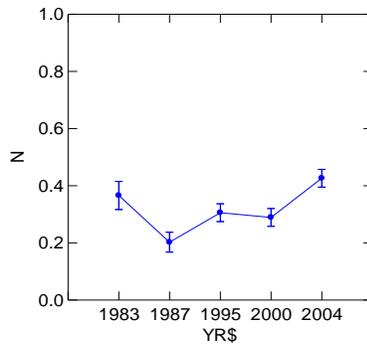


Figure 1. Basal Cover, Nested Plot Frequency Transects
DCC Pasture 8N, NPFT site 11S01W02
Transformed values (Arcsine square root), basal cover

B= bare ground
V= perennial vegetation
C= cryptogams
D= decreaser grasses

I=increaser grasses
P=persistent litter
N=non-persistent litter

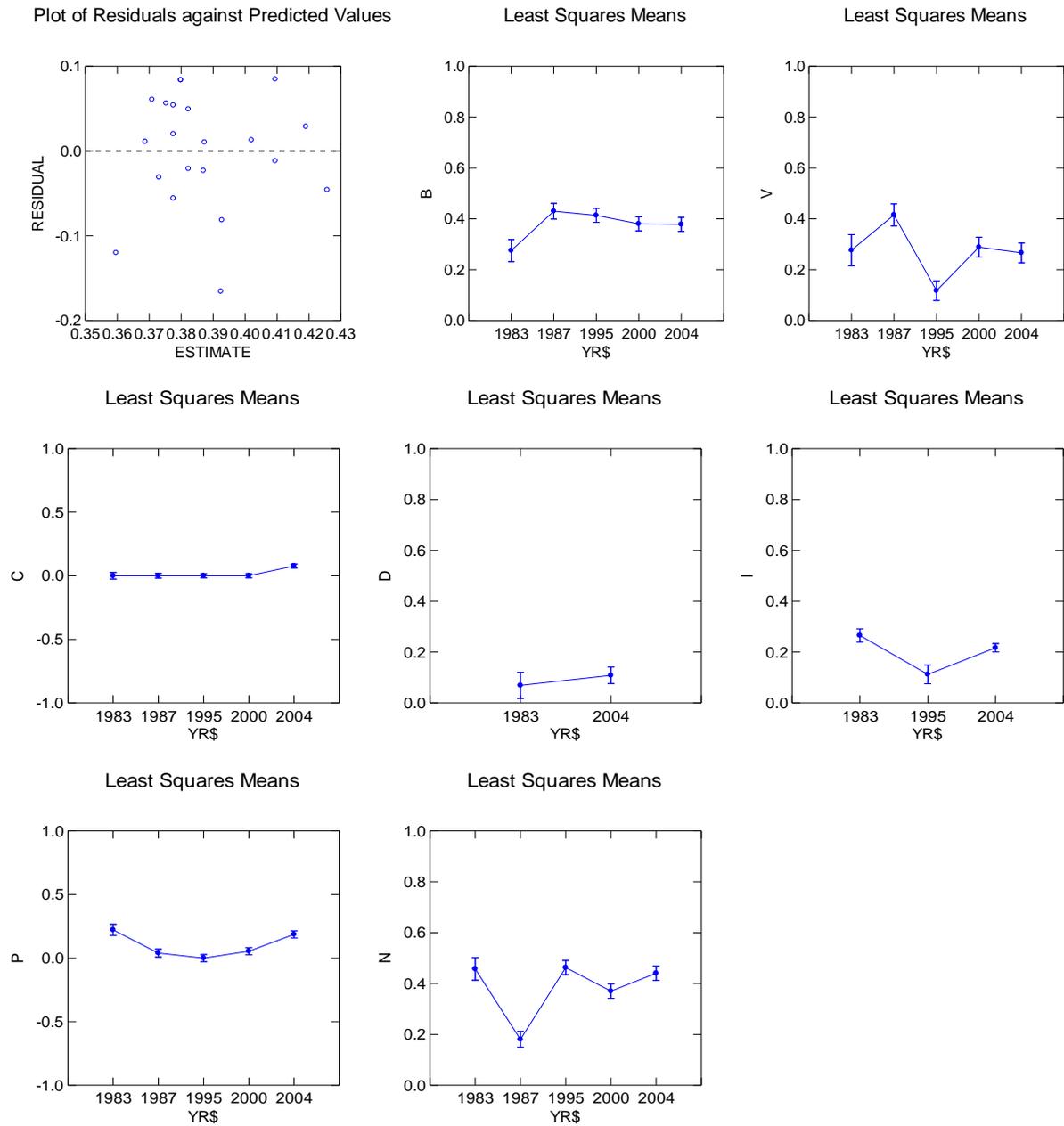


Figure 2. Basal Cover, Nested Plot Frequency Transects
 DCC Pasture 8N, NPFT site 11S01E08
 Transformed values (Arcsine square root), basal cover

B= bare ground
 V= perennial vegetation
 C= cryptogams
 D= decreaser grasses

I=increaser grasses
 P=persistent litter
 N=non-persistent litter

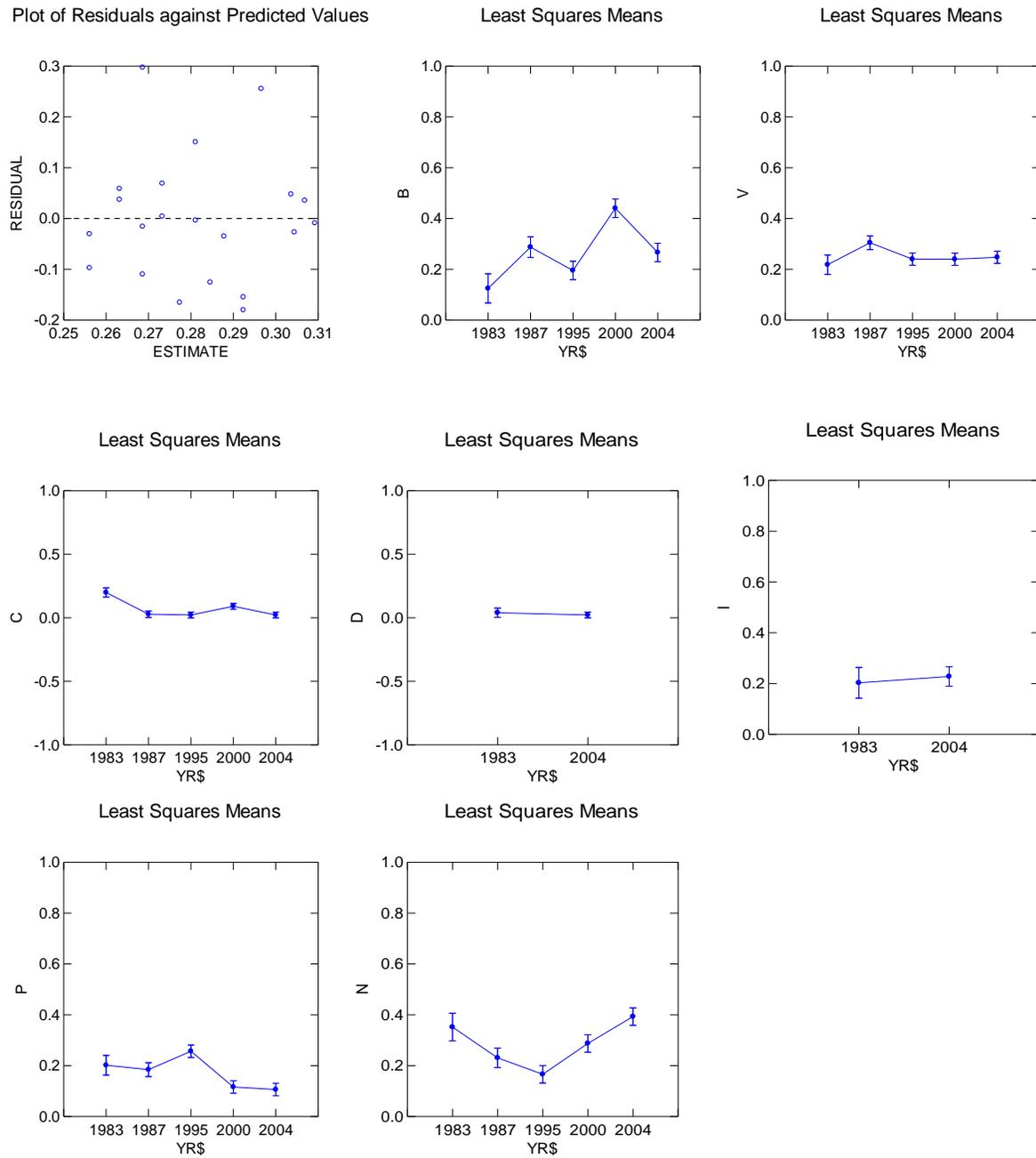


Figure 3. Basal Cover, Nested Plot Frequency Transects
 DCC Pasture 8S, NPFT site 12S01W23
 Transformed values (Arcsine square root), basal cover

B= bare ground
 V= perennial vegetation
 C= cryptogams
 D= decreaser grasses

I=increaser grasses
 P=persistent litter
 N=non-persistent litter

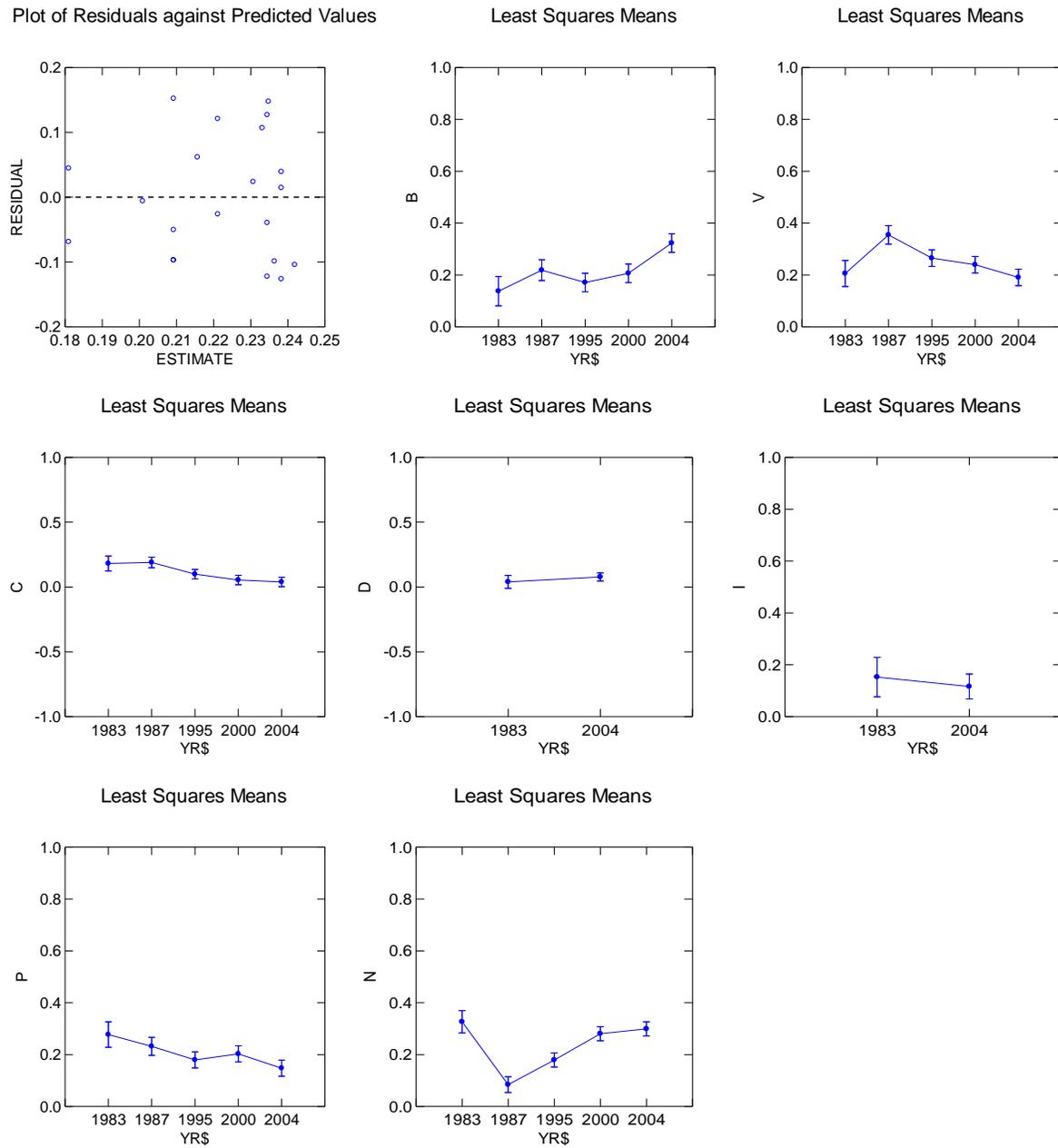


Figure 4. Basal Cover, Nested Plot Frequency Transects
 DCC Pasture 8S, NPFT site 12S01W32
 Transformed values (Arcsine square root), basal cover

B= bare ground
 V= perennial vegetation
 C= cryptogams
 D= decreaser grasses

I=increaser grasses
 P=persistent litter
 N=non-persistent litter

Appendix DCC-10. Trend photographs of Big Springs Creek (Segment 6.3) in Pasture 8N in 1999 and 2005, general view photograph showing incised channel of Segment 6.3 of Big Springs Creek, and a photograph of Segment 0.7 of Dry Creek in Pasture 8N in proper functioning condition.



Figure 1. View upstream on Big Springs Creek (Segment 6.3), showing opposite bank vegetated with sedges and near bank dominated by early seral grasses and rushes, 21 October 1999.



Figure 2. Same view on 4 October 2005. Near bank still dominated by grasses and rushes. Note residual stubble height of vegetation outside of wetted channel (median of about 2.5 inches).



Figure 3. Upstream view of Big Springs Creek (Segment 6.3) in Pasture 8N showing historically incised channel and high use of riparian vegetation on 4 October 2005.



Figure 4. Downstream view of Dry Creek (Segment 0.7) in Pasture 8N, downstream of Dry Creek Reservoir on 13 July 2005. This segment is in proper functioning condition.