

Allotment Assessment Pigtail Butte

I. Name and Number of Allotment

Pigtail Butte Allotment #01125
Permittees: Cedar Creek Cattle Company; Guerry, Inc

II. Livestock Use

1. Preference: 1813 AUMs (Cedar Creek), 2146 AUM (Guerry)
2. Historic Use Range: 1,731 to 6,544 AUMs
3. Suspended Preference: 0 AUMs
4. Season of Use: 04/01 to 11/30 (Cedar Creek), 3/15 to 5/14 (Guerry)
(TNR authorizations included grazing use through February 28)
5. Kind and Class of Livestock: 226 cattle (Cedar Creek), 5350 sheep (Guerry)
6. Percent Public Land: 100%

III. Allotment Profile

1. The Pigtail Butte Allotment is located in the southeast part of the Jarbidge Field Office Area. About 79 percent lies in MUA 13 and 21 percent in MUA 15. The Allotment is divided into 9 pastures of which 4 are exclusively used by Guerry, Inc. and 5 are exclusively used by Cedar Creek Livestock. The current permits were issued in 1999 authorizing Cedar Creek Cattle Company 1813 AUMs and in 1995 authorizing Guerry Inc 2146 AUMs. These permits are valid until February 28, 2005. Since 1990, TNR above the total permitted use was issued in 1990, 1996, 1997, 1998 and 2000. The allotment TNR authorizations are included in Table 1
2. Federal Acreage: 28,576
3. The Jarbidge RMP of 1987 Outlines Management Goals and Objectives for MUA 13 and MUA 15:
 - Increase AUMs of forage issued for livestock in MUA 13 from 18,748 to 20,169 by the year 2005 (II-51) and in MUA 15 increase from 25,098 AUMs to 26,466 AUMs (II-56). Twenty-year use in Pigtail Butte was to increase from 3848 AUMs to 5966 AUMs (Table D-1, page D-10). This increase use would result from the availability of additional forage from water developments, brush control and seeding projects and improvement in native range condition (II-3).
 - Maintain existing vegetative improvements (II-50 II-56); Pigtail Butte is 22% of MUA 13 and 3% of MUA 15.
 - Improve lands in poor (early seral) ecological condition (II-50, II-56); 16,701 acres were in poor condition in Pigtail Butte.
 - In MUA 13, manage big game habitat to support 175 mule deer and 50 antelope. Existing populations are 125 mule deer and 25 antelope (II-50).
 - In MUA 15, manage big game habitat to support 2,400 winter mule deer and 1,285 mule deer the rest of the year, and 1,170 antelope. Existing populations are 1,200 winter mule deer, 995 mule deer the rest of the year; and 900 antelope. Protect crucial winter big game habitat. (II-56).

- Improve 4900 acres of big game habitat in MUA 15 by 2005 (II-56).
 - In MUA 13, maintain present areas of sage grouse nesting habitat (II-51).
 - In MUA 13, maintain the current condition of riparian habitat and fisheries habitat (II-51).
 - In MUA 15, improve 4.7 miles of fisheries habitat and 9.6 miles of riparian habitat by 2005 (II-56).
4. Key Forage Species:
- Bluebunch wheatgrass
 - Crested wheatgrass
 - Bottlebrush squirreltail
5. Grazing System: This allotment is grazed by two operations that each use a certain portion of the allotment. Guerry Inc. uses the West Clark Seeding, East Clark Seeding, Trailing Field and the Pigtail Butte Pastures. Cedar Creek Cattle Co. makes grazing use in the Northeast Roseworth, Northwest Roseworth, South Pigtail Butte, Three-mile Crossing and the Holding Field pastures. Cedar Creek Cattle Co.'s grazing use in this Allotment is outlined in the Livestock Management Plan, Tews Land and Livestock. They use the Allotment by cattle in the late spring, summer and fall (May through December) in conjunction with other allotments which the permittees have permitted use. Guerry Inc. use the allotment in accordance with a formal Livestock Management Plan. The West Clark Seeding, East Clark Seeding and the Pigtail Butte Pastures are used by sheep and cattle in a three pasture rest rotation system in the spring and early summer (March to June) whereby two pastures are used in the spring and one is rested through the critical growth period. The Trailing Pasture is grazed as part of trailing use with no scheduled deferment in the critical growth period.

IV. Management Evaluation

The purpose of this evaluation is to determine the allotment's status in meeting the Standards for Rangeland Health and Guidelines for Livestock Management and to renew the grazing permit with management guidelines to meet these Standards.

A. Summary of Studies Data

1. Actual Use

Table 1 shows the actual use since from 1990 to 2002.

Table 1 - Actual Use

Grazing Season	Guerry Inc.	Cedar Creek Cattle	Total AUMs
1990	1238	3327	4,566
1991	929	802	1,731
1992	858	2407	2,920
1993	355	2142	2,497
1994	1977	789	2,766
1995	1296	2524	3,820
1996	2584	1981	4,565
1997	2909	3160	6,069
1998	3326	3218	6,544
1999	2980	1613	3,835
2000	2128	2155	4,283
2001	1945	1613	3,558
2002	1951	1648	3,599

2. Climate

The Hollister NOAA Weather station and the BLM Cedar Mesa and Heil Reservoir rain gauges are representative of the Pigtail Butte Allotment. The long term water year average precipitation (September through June) for the Hollister NOAA Weather Station is 9.62 inches,

The **Cedar Mesa** gauge, at 4,700 feet, best represents the lower and northern areas of the allotment with an annual average of 11.5 inches and the **Heil Reservoir** gauge, at 5,510 feet, represents the upper and southern areas with an annual average of 16.8 inches per year. Table 2 shows the yearly moisture totals for the past 10 water years at the Cedar Mesa and Heil Reservoir stations. Also shown is the Yield Index for the Hollister NOAA Weather Station. The Yield Index is a precipitation-yield relation which provides reliable and effective information for use in comparing annual production yields to what is expected in a normal year. The Yield Index is used in forecasting and adjusting range forage estimates.

**Table 2 - Water Year Precipitation
and Yield Index**

Year	Cedar Mesa (in inches)	Heil Reservoir (in inches)	Yield Index At Hollister
1993	4.5^	29.5*	1.55
1994	9.4	13.7	0.72
1995	16.4*	23.0*	1.94
1996	11.5	18.1*	1.28
1997	16.2*	23.9*	1.41
1998	16.3*	19.1*	1.72
1999	10.3	17.2*	1.05
2000	7.0	10.2	0.49
2001	8.2	9.4	0.52
2002	9.9	9.5	0.88
2003	9.6	11.6	0.75

^ Incomplete. Only 3rd and 4th quarters only.

*Above average precipitation.

3. Utilization

Table 3 shows the actual data from sampling crested wheatgrass at transects in the Allotment prior to issuance of TNR.

Table 3 - Utilization Data

Year	Utilization Range	Utilization Average
2001	17% to 58%	42%
2002	10.5% to 63%	31%

4. Production

Appendix 1 displays the production data that has been collected in the Pigtail Butte Allotment. It shows that about 13,333,117 pounds of forage vegetation is produced during a near normal production year. Forage vegetation refers to grasses and in seeded areas, alfalfa and sainfoin may be included. The production of forbs and shrubs is not included in this poundage. Considering precipitation data and its relationship to drought, as well as the needs of the watershed and wildlife, it is estimated that 5,532 AUMs of forage vegetation is available for livestock.

5. Condition and Trend

In either July 1987 or May 1989, 12 long-term vegetation/soil cover monitoring study sites were established in the Pigtail Butte Allotment in cooperation with the permittee. One additional site was established earlier in June of 1984. In accordance with the Minimum Monitoring Standards for BLM Rangelands in Idaho, the study methods initiated included nested plot frequency,

percent ground cover, shrub density, and 3X3 plot data and site photographs. All of the sites were located in most pastures of the allotment in a variety of vegetation types including native shrub communities, burned areas, or established seedings. The 13 sites are situated in the following legal locations (site #), ecological sites, and elevations:

- 12S13E33; Artrw/Stth2, Loamy 8-10", native site @ 4,770 feet,
- 12S13E33A; Artrw/Stth2, Loamy 8-10", now a seeding @ 4,745 feet,
- 13S12E11; Artrw/Stth2, Loamy 8-10", now a seeding @ 4,880 feet,
- 13S12E11A; Artrw/Stth2, Loamy 8-10", native site @ 4,885 feet,
- 13S13E10; Artrw/Stth2, Loamy 8-10", now a seeding @ 4,900 feet,
- 13S13E15; Artrw/Stth2, Loamy 8-10", now a seeding @ 4,960 feet,
- 13S13E18; Artrw/Stth2, Loamy 8-10", native site @ 4,975 feet,
- 13S13E19; Artrw/Stth2, Loamy 8-10", burned native site @ 5,110 feet,
- 13S13E27; Artrw/Stth2, Loamy 8-10", burned native site @ 5,230 feet,
- 13S13E35; Artrw/Agsp-Stth2, Loamy 10-12", now a seeding @ 5,310 feet,
- 13S14E32; Artrw/Stth2, Loamy 8-10", now a seeding @ 5,120 feet,
- 14S13E01; Artrw/Agsp-Stth2, Loamy 10-12", now a seeding @ 5,310 feet, and
- 14S14E06; Artrw/Stth2, Loamy 8-10", now a seeding @ 5,280 feet.

Although all of the baseline data was collected in either 1987 or 1989 (and one in 1984), none of the 13 study sites have since been revisited. Without follow-up readings, trend analysis of these studies cannot be evaluated; therefore true vegetative trends are currently unknown. However, each site's condition rating is defined and identified in Table 4 based on the 1982-83 vegetation inventories.

Table 4a - Condition and Trend Evaluation of Native Vegetation Study Sites

1982-83 Inventory Site	Inventory Site Location	Trend Site	Vegetation Type 1981-83 (2002-03)**	1982-83 Ecological Rating*	2002-03 Production Studies Name/Rating
LH-23	12S13E34	12S13E33	Artrw/Stth2	Early	
RA-45	13S12E10	13S12E11A	Artrw/Stth2	Early	
RA-41	13S13E18	13S13E18	Artrw/Stth2	Early	
RA-44	13S13E19	13S13E19	Stth2	Mid	
RA-42	13S13E28		Artrw/Agsp	Mid	
RA-43	13S13E28		Artrw/Agsp	Late	PB-10/Late
RA-46	13S13E35	13S13E35	Agsp	Early	PB-5/Late
TH-62	13S14E13		Artrw/Posa3 (Artrw/Stth2)	Early	PB-7/Mid

Table 4b – Condition and Trend Evaluation of Seeding Study Sites

1981-83 Inventory Site	Inventory Site Location	Trend Site	Vegetation Type	1981-83 Condition Rating*
LH-20	13S13E16	12S13E33A	Agcr	Excellent
RA-41 <i>Before burn</i>	13S13E18	13S12E11	Agcr	Poor
LH-20	13S13E16	13S13E10	Agcr	Excellent
LH-20	13S13E16	13S13E15	Agcr	Excellent
		13S13E27	Burn	Poor
LH-5	13S14E32	13S14E32	Artrw/Agcr	Excellent
RA-31 <i>Before burn</i>	13S13E30	14S13E01	Agcr	Poor
LH-3 <i>Before burn</i>	14S14E06	14S14E06	Agcr	Poor

* Condition was determined from vegetation inventories in 1982-83 or best estimate for seedings based on relative frequency levels of seeded species and shrub densities. Jarbidge RMP referred to Range Condition as: Excellent, Good, Fair, Poor. Since that time these terms have been related to; Potential Natural Community, Late Seral, Mid Seral & Early Seral, respectively. Value terms of excellent, good, fair, poor are only used as a value rating for areas rehabilitated with *Agropyron cristatum* and *Agropyron intermedium*.

** “()” indicate the current vegetation if different from 1981-83 Inventory.

Trend site files are maintained by the field office in the Allotment Study cabinet and the vegetative condition site write-up files are in the Range Allotment file cabinet. Both files can be reviewed upon request.

The RMP objectives state that rangelands in poor (early seral) condition are to be managed for improvement (improve one condition class) for all multiple use areas and that fair (mid-seral) condition lands need to improve to good (late seral) condition for sage grouse and other wildlife. The native sites were initially rated as in either poor or fair condition based on the 1981-82 vegetation inventories. In 2002, three sites were sampled in the allotment on native vegetation communities on the Loamy 10 to 12 inch ppt ecological sites. One site (PB-10) is in late seral condition and two sites (PB-5, 7) are in mid-seral ecological condition. A new permittee acquired the allotment in 1999. Since that time the allotment has been grazed only to end of May or early June whereas before it was grazed into July and early August. This change of season of use may have allowed for improved ecological condition. The RMP objective to improve poor condition rangelands to fair (mid-seral) or good (late seral) condition is being met.

It is indicated by the table above that the seven seeding study sites are all satisfactory with a “new” to fair to good condition rating based on the appearance and initial trend monitoring data. Condition ratings of seedings are based on shrub re-invasion densities (low to high) and seeded grass species frequencies (low to high). Overall, and as indicated by the monitoring data, these seedings in the Pigtail Butte allotment are meeting the RMP objective for sustaining existing vegetative improvements.

B. Rangeland Health Assessment

In 2002, rangeland health data was gathered on the Allotment at six ecological sites within native range, and four ranges site with seedings. Rangeland health data was collected per Technical Reference 1734-6, *Interpreting Indicators of Rangeland Health*. The rangeland health data was collected by an interdisciplinary team for the purposes of making a quantitative assessment of the soil/site stability, hydrologic function, and the integrity of the biotic community for the various ecological sites.

Ten transects were read at various ecological sites and are identified as PB-1 to PB-10. The “Preponderance of Evidence” based on the ten transects, is shown in Table 5. The degree of departure or deviation from the potential ecological site description (None to Slight, Slight to Moderate, Moderate, Moderate to Extreme, or Extreme) is made based on an evaluation of the data.

Table 5 - Preponderance of Evidence

Attribute (The sites are considered meeting attributes if not mentioned)		Deviation From Potential				
		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil Site Stability Rationale: Bareground is higher than expected (PB-1,2,3,4,5,9). Soil surface pedon dissolves easily in water readily (PB-1,4) or it dissolved partly (PB-2,3,5) Pedestals taller than expected on bunchgrasses (PB-1,3). Soil deposition areas around plants (CC-5,6). Some soil loss in the interspaces (PB-2, 3). Wind scouring in past but stable now (PB-1,4).	Native					PB-5, PB-7, PB-10
	Seedings				PB-1, PB-2, PB-3, PB-4, PB-9	PB-6, PB-8,
Biotic Integrity Rationale: Bur buttercup common (PB-1,3, 9). Perennial native grasses low in composition (PB-1,2, 3. Forbs low in composition as is N fixing legumes (PB-1,2,3, 8). Annual production is 25 to 50 percent because of the low grass composition (PB-1, 2, 3). Shrubs more decadent than expected (PB-1). Grasses low in vigor with low seedstalks (PB-1).	Native					PB-5, PB-7, PB-10
	Seedings			PB-1	PB-2, PB-3, PB-4, PB-6, PB-9	PB-8,
Hydrologic Function Rationale: Flow patterns slightly to moderately longer than expected (PB-5) The high amount of bareground allows for moisture loss from runoff and evaporation (PB-2, 3, 4). Litter on ground is low in cover (PB-2, 3).	Native					PB-5, PB-7, PB-10
	Seedings				PB-1, PB-2, PB-3, PB-4, PB-6, PB-9	PB-8

1. Standard 1 - Watershed

Six sites had more bare ground than was expected. At three of these sites soil loss is apparent in the interspaces as indicated by pedestals on bunchgrass in the Northeast Pasture. In native areas bare ground varied from a low of 7 percent to a high of 13 percent and from 4 percent to 26 percent in the areas seeded to crested wheatgrass. The soil surface resistance to erosion was weak at a couple of sites. Some wind scouring has take place in seeded areas in the Northwest and Pigtail Butte Pastures. This erosion occurred following the fire when there was no cover on the soil. There had been no recent wind scouring.

2. Standard 2 - Riparian Zones and Wetlands and Standard 3 - Stream

Channel/Floodplain

The two riparian zones in the Pigtail Butte Allotment are Cedar Creek from near Cedar Reservoir Dam down stream to the diversion dam, and House Creek upstream of Cedar Creek Reservoir. Livestock from this allotment also have access to Cedar Creek Reservoir. These stream reaches and their functioning condition are shown in Table 6.

Table 6 - Stream Reach Functionality Rating

Stream (year inventoried)	Inventory Reach #	Miles	Dominant Vegetation	Functionality Rating	Comments
Cedar Creek	15.2 – 17.3	2.1	Rush/ <i>Poa</i> / Red-osier/ Currant	NF Non-functioning	irrigation releases and livestock use influence this stream segment
Cedar Creek 1998, 2002	17.3 – 18.8	1.5	<i>Carex</i> /Reed canarygrass/ Rush/ <i>Cornus</i>	FAR Funtional-at risk	stream flows occur as a result of water release from reservoir
House Creek	0.0 – 0.3	.3	<i>Poa</i> /Rush/ Willow	NF	increase in riparian type species has occurred since last assessment

The stream channel along the portion of Cedar Creek below the dam (17.3 – 18.8) is affected by irrigation releases from the reservoir. Because of this, normal riparian processes are not able to take place. The stream bed is cobbled and bouldered which helps to dissipate water energy but the stream banks lack adequate riparian species along their lengths for protection during high flow regimes. Stream banks and point bars are not able to build and form because of the scouring effects of irrigation releases. Livestock use along this stretch of Cedar Creek also exacerbates the formation and build up of point bars and stream banks. However, this stretch does have more stream banks and riparian indicator species present than the next segment immediately downstream and consequently is rated functional-at risk. As long as irrigation releases continue, it is unlikely that the current functionality of this portion of Cedar Creek will improve.

Cedar Creek segment 15.2 to 17.3 is also affected by reservoir irrigation releases which have resulted in erosion of the floodplain and stream banks. Subsequently, the stream channel is very wide, and relatively straight and ditch-like. The composition ratio of sedges to non-riparian type species such as Kentucky bluegrass is low. There is also a lack of willows within this system. Another factor contributing to the loss of stream banks is livestock use. Livestock regularly trail along this portion of Cedar Creek and are trampling and actively shearing a large percentage of the banks. Active sloughing of what stream banks are left is occurring. There are also very wide trails leading into the creek bottom from the uplands which are a source of sediment to the system. The functionality of this portion of Cedar Creek could improve with the reduction of grazing use by livestock.

House Creek runs through the allotment from segment 0.0 to 0.3. This segment is immediately above the Cedar Creek Reservoir and approximately 2.9 miles of the creek runs through private land before entering the allotment. Since this segment was evaluated in 1998, more willows and riparian herbaceous species (both early seral type species) have become established. Consequently, the number of cut-banks has decreased as riparian vegetation has increased. A lot of sediment continues to be deposited into the channel. The stream channel is also still too wide, shallow, and ditch-like. Because of the observed improvements in this reach since the 1998 interdisciplinary assessment, it is likely that this part of House Creek is functional—at risk. It is recommended that another assessment be conducted by an interdisciplinary team to determine current functionality.

3. Standard 4 - Native Plant Communities

Five study sites in two different native ecological sites were evaluated in the Pigtail Butte Allotment. The ecological sites evaluated were Loamy 8-12” (PB-5, PB-10) and Loamy 10-13” (PB-7). Wyoming big sagebrush was the dominant shrub in the native sites. Other shrubs present included rubber and green rabbitbrush.

At the Loamy 10-13” ecological site (PB-7), sagebrush cover was 30 percent and averaged 13.9 inches tall. The majority of the plants were young. Perennial native grass cover was 43 percent. Sandberg bluegrass was at 25 percent cover, bottlebrush squirreltail at 14 percent, and Thurber’s needlegrass at 4 percent. Thurber’s needlegrass should be the dominant late seral grass on this ecological site. The average grass height was only 5.2 inches. The perennial native forb community was diverse and abundant, however, the only forbs intercepted (hit) were in the Phlox genus. Cheatgrass and bur buttercup were present in low amount (0 hits) and were generally restricted to the jeep trail. Bare ground was 7 percent cover and biological soil crusts were at 19 percent.

The two sites in the Loamy 8-12” ecological site have 16 percent (PB-5) and 14 percent (PB-10) sagebrush cover, with sagebrush heights of 21.5 and 20.2 inches, respectively. Perennial grass cover varied from 32 percent (PB-5) to 63 percent cover (PB-10). Average grass height exceeded 7 inches at both locations (7.6 inches at PB-5 and 9.6 inches at PB-10). The most abundant grass at both locations was Sandberg bluegrass. Bluebunch wheatgrass provided 16 percent of the perennial grass cover at (PB-10), but was not measured at PB-5. Thurber needlegrass was present at both sites; 6 percent cover at PB-5 and 4 percent at PB-10. Bottlebrush squirreltail was the second most common grass at 10 percent at PB-5 and 3 percent at PB-10. Native forbs were present at both areas providing 7 percent and 4 percent cover, respectively. Of the native forbs, *Phlox* was the most abundant. Bare ground was somewhat

higher at PB-5 (13 percent) compared to PB-10 (10 percent). Both sites evaluated had the same cover of biological soil crusts (14 percent). Exotic annuals (cheatgrass and bur buttercup) were much more common at PB-5 (7 percent), whereas they were present but not measured at PB-10.

Two of the four native sites (PB-5 and 7) are rated in mid-seral ecological condition based on the Similarity Index described in Ecological Site Inventory, Technical Reference 1734-7. At these sites, Thurber needlegrass and/or bluebunch wheatgrass (the late seral species) were very near what was expected for the Loamy 8 to 12 inch PPT ecological site.

Western juniper stringers were present in the Cedar Draw area of the Pigtail Butte Allotment. No evaluation was done for this habitat area. Crucial and general mule deer winter range is present in the southern portion of the Pigtail Butte Allotment. Most of it burned in a wildfire in 1985. Sagebrush and seeded four-wing saltbush were hedged on the winter range.

4. Standard 5 - Seedings

Seven sites in the Pigtail Butte Allotment were in areas seeded to crested wheatgrass. Four seeding sites (PB-1, BP-2, PB-3, and PB-8) have been invaded by sagebrush which provide 25 percent, 15 percent, 23 percent and 19 percent cover, respectively. At PB-1, PB-2 and PB-3 native perennial grass, primarily Sandberg bluegrass provides 13 percent, 12 percent and 3 percent cover, respectively. Crested wheatgrass provide a trace¹, 7 and 4 percent cover, respectively. At PB-8 Sandberg bluegrass provides 18 percent cover crested wheatgrass provided 54 percent cover. The amount of native forb cover varied from 0 percent (PB-2), to 1 percent (PB-3) to 3 percent (PB-8). All forbs intercepted were members of the genus *Phlox*. Penstemons, paintbrush, pussy-toes, and biscuitroot are lacking. Exotic annuals were widespread and fairly abundant in these three seedings varying from 5 percent to 6 percent. Exotic species were dominated by bur buttercup, with some cheatgrass, Russian thistle, halogeton, and tumble mustard present.

In the seedings with little sagebrush cover (PB-4, PB-6 and PB-9), crested wheatgrass cover averaged 21 percent, 38 percent, and 58 percent respectively. Sandberg bluegrass was present in all three seedings (10 percent, 7 percent and 2 percent cover respectively), but it declined as crested wheatgrass increased. Mid and late seral native grasses (Bottlebrush squirreltail, Thurber needlegrass, bluebunch wheatgrass, thickspike wheatgrass) were present only at very low levels, 1 percent cover or less. The only native forbs intercepted were in the phlox genus. The forbs expected to occur on this site, penstemon, paintbrush, pussy-toes, onion and biscuitroot, were lacking. The amount of biological soil crust varied from 0 percent (PB-6) to 1 percent (PB-9) to 5 percent cover (PB-4), with the species present (primarily bluegreen algae and some crustose lichens) indicative of early seral conditions. Bare ground varied from a low of 16 percent (BP-6) to 18 percent (BP-9) to 21 percent cover (BP-4). Exotic annuals, including cheatgrass, contributed from 3 to 11 percent of the cover in these seedings. Diffuse knapweed was present in the vicinity of the dam on Cedar Creek.

Four-wing saltbush seeded in the Pigtail Butte Allotment was heavily hedged where present. Some of the four-wing saltbush shrubs had low vigor. Livestock browsing on these plants in the

¹ The seeding in the pasture in which PB-1 was located was variable in its composition of crested wheatgrass. This was demonstrated by the cover transect and the production transects not agreeing.

fall were considered to be a significant cause. Most of the remaining plants were now dominated by male plants because of higher mortality on female plants.

5. Standard 6 – Exotic Plant Communities, Other Than Seedlings

Not Applicable.

6. Standard 7 - Water Quality

The two main perennial surface waters associated with the Pigtail Butte allotment include lower Cedar Creek (just below the dam for 4 miles), and about 1/4 mile length of House Creek that is in the extreme southern end of the allotment. Other than these live waters, there are no other notable streams, springs or ponds in the allotment. Although Cedar Mesa Reservoir is within the boundary of the allotment, it is fenced out from livestock access and not used by the allotment for watering purposes. Cedar Mesa Reservoir is solely used by the Roseworth farming community for irrigation purposes.

Although the **Idaho Department of Environmental Quality (DEQ)** has identified and nominated the lower segment of Cedar Creek from Roseworth Reservoir to Salmon Falls Creek and the entire length of House creek as “water quality limited” on the **1996 303(d)** list in Hydrologic Unit Code (HUC) #17040213 for concerns of nutrients, sediments, dissolved oxygen (DO), pathogens and flow alterations, with severities rated as low for both creeks, only the lower portion of Cedar Creek currently remains on the updated **1998 303(d)** list. As of 1998, House Creek has been delisted by DEQ and is no longer of concern.

Despite DEQ’s listing and delisting of some of creeks in the area since 1996-98, the BLM has been monitoring the water quality of the upper segment of Cedar Creek, which is not associated with the Pigtail Butte allotment and the lower segment of House Creek which does enter into the allotment at its mouth since 1995. This has been done mainly for the Bureau’s own knowledge of water quality characteristics of these creeks. However, the BLM has not done any water quality monitoring for the lower segment of Cedar Creek that flows through the allotment, therefore the water quality of this stretch is unknown.

As for House Creek, the BLM has been water quality monitoring this lower portion of the creek for the past seven of eight years. Data summaries for each year (1995-2002, excluding 1999) of the water quality sampling for temperatures and chemical attributes for House Creek can be found in **Appendix II**.

A brief water quality summary discussion of House Creek concludes that; the water temperatures for both the maximum and average daily standards have been exceeded most years since 1995, especially during the exceptionally low flow years of 2000 and 2001 (the lower the flow, the more likely for warming). The highest temperature (MAX) recorded was **30.5° C** on August 16th, 2001. It was also during this month and year that the daily average temperatures averaged **24.1° C** for the entire month. No other yearly data comes close to these extremes, however the maximum (22° C) and daily average (19° C) temperature standards have been exceeded several days routinely during the months of June, July and August for most years. It is believed that the elevated temperatures in this creek are a direct result from the use of creek water on private lands for flood irrigation (and their return to the creek) above the BLM monitoring location, and the very low flows during the late summer months.

All other State water quality standards are within acceptable ranges except for fecal coliform. Fecal coliform exceeded the State's Standard on two occasions, on 9/11/96 (4,200 ct) and on 8/12/97 (1,700 ct). This fecal coliform, bedload sediments, and the routinely high temperatures are the greatest concerns in this creek. Presumably, fish (trout) use this creek to migrate from Cedar Creek (Roseworth) Reservoir to spawn in the cooler, higher elevation areas. No biological water parameters have been monitored by the BLM in this creek.

For the most part, the water for livestock and wildlife use is distributed and controlled throughout the Pigtail Butte allotment by means of pipelines and troughs. The source for these pipeline systems come from a ground water source known as the Signal Butte Well on public land. The water quality of the well is not monitored by the BLM, but it is assumed to be of good quality since it comes directly from a ground source.

7. Standard 8 – Threatened and Endangered Plants and Animals

A number of species presently designated as Sensitive are present in the allotment. For the most part, the allotment has not been inventoried for sensitive species. Sensitive species occurrences are frequently noted from incidental observations. Also, a number of wildlife species presently designated as “watch” are present. Watch species are **not** presently designated as Sensitive species, but may be added to the sensitive list in future years. BLM has not inventoried for pygmy rabbit nor any bat species in this allotment. No sensitive plants are known to occur in this allotment. Only limited surveys for sensitive plants have been conducted in this allotment and more species may occur. It is unknown whether the standard was being met for special status plant species. There is no information available to determine whether livestock grazing management was having a significant impact on sensitive plant species. All these species are shown in Table 7.

Table 7 - Idaho BLM Sensitive and Watch species in the Pigtail Butte Allotment

Common Name	Scientific Name	Status	Presence
Greater sage grouse	<i>Centrocercus urophasianus</i>	S	C
Prairie falcon	<i>Falco mexicanus</i>	S	C
Ferruginous hawk	<i>Buteo regalis</i>	S	C
Loggerhead shrike	<i>Lanius ludovicianus</i>	S	C
Brewer's sparrow	<i>Spizella breweri</i>	S	C
Sage sparrow	<i>Amphispiza belli</i>	S	C
White-faced ibis	<i>Plegadis chihi</i>	S	C
Redband trout	<i>Oncorhynchus mykiss gairdneri</i>	S	C
Spotted bat	<i>Euderma maculatum</i>	S	L
Townsend big-eared bat	<i>Corynorhinus townsendii</i>	S	L
Swainson's hawk	<i>Buteo swainsoni</i>	W	C
Wilson phalarope	<i>Phalaropus tricolor</i>	W	C
Sage thrasher	<i>Oreoscoptes montanus</i>	W	C
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	W	C
Western burrowing owl	<i>Speotyto cunicularia</i>	W	C
Western pipit	<i>Pipistrellus hesperus</i>	W	L
Western small-footed myotis	<i>Myotis ciliolabrum</i>	W	L
Yuma myotis	<i>Myotis yumanensis</i>	W	L
Grasshopper sparrow	<i>Ammodramus savannarum</i>	W	L
Short-eared owl	<i>Asio otus</i>	W	L
Slickspot peppergrass	<i>Lepidium papilliferum</i>	C	L
Status codes: S = designated Sensitive species; C = FWS candidate species; W = Watch category			
Presence codes: C = presence confirmed in allotment; L = presence likely in the allotment; H = historic, likely extirpated			

Sage Grouse. There are seven sage grouse leks in the Pigtail Butte Allotment and another nine within 2 miles of the Pigtail Butte Allotment. Male sage grouse numbers at leks are down in the overall geographical area. Data for the specific leks are in Table 7. Wild fires, including one arson fire, have reduced nesting habitat in the Pigtail Butte Allotment. In plant communities where Sandberg bluegrass, Thurber needlegrass, and bottlebrush squirreltail are the dominant grasses, use at the 40% level will not provide adequate residual herbaceous nesting cover for sage grouse nesting 0.5 miles or more from water. In areas where bluebunch wheatgrass is the dominant grass, grazing at 40% use will provide adequate residual herbaceous cover at or near 0.5 miles from water. Grazing use of 50% on crested wheatgrass will not leave adequate residual nesting cover for sage grouse within 0.5 or more miles from water.

Table 8 - Numbers of male sage grouse at leks in or near the Pigtail Butte Allotment for which there is data.

Lek #	# Males	Year of Recent Count	High # Males	Year of Count
2O-009	0	2001	18	1991
2T-018	0	2002	12	1960
2T-021	9	2002	9	2002
2T-022	0	2000	42	1971
2T-047	0	2000	20	1982
2T-141	0	2003	27	1992
2T-150	0	2003	13	2000
2T-160	0	2002	98	1967
2T-162	8	2002	18	2000
2T-164	4	2002	4	2002
2T-165	*		25	2000
2T-166	0	2003	5	2000
2T-167	5	2001	9	2000
2T-168	*		16	2000
2T-169	*		3	2000
2T-170	2	2001	10	1999
* No counts on these leks after they were found in 2000 during aerial survey				

Prairie falcon. Prairie falcons have been observed flying over the allotment. Two prairie falcon nest sites have been documented in Cedar Creek Canyon, downstream from the dam. On the western side of the allotment, suitable nesting habitat occurs just beyond the allotment boundary in Devil Creek.

Ferruginous hawk. Four ferruginous hawk nests (F05, F08, F31, and F35) are known to be present in the Pigtail Butte Allotment. Adults at these nests have successfully produced young to fledging size. The nests are all located in junipers. The entire allotment has not been inventoried for ferruginous hawk nests.

Loggerhead shrike. Loggerhead shrike nests have been found in the vicinity of Cedar Draw and east of Cedar Creek. They have been observed in another area (along Big Bend Crossing Road where four-wing saltbush was planted) and are probably present in other areas.

Brewer's and sage sparrows. These species have been seen in areas where there is suitably tall sagebrush cover.

White-faced ibis. White-faced ibis have been observed at Cedar Mesa Reservoir and feeding in the mud flats at Cedar Creek Reservoir. These observations were in the fall. Nesting habitat, (large marshes with reeds, bulrush and/or willows), is lacking at both sites. Bulrush was planted at Cedar Mesa Reservoir but has not established well. The fluctuating water levels at Cedar Creek Reservoir, as well as high use by livestock, limits the establishment of bulrush in the backwater area.

Redband trout. Redband trout are present in Cedar Creek and House Creek. Some redband trout likely winter in Cedar Creek Reservoir. For the most part, Cedar Creek below the dam is not considered as suitable habitat for redband trout due to the operation of the dam. Water flows are stopped in the fall through spring reducing water levels for fish while the reservoir is filled for the summer irrigation season. Water temperatures and low flows in House Creek exceed the tolerance for redband trout. Water temperatures and low dissolved oxygen in Cedar Creek Reservoir can also reach a level that impacts trout survival. Higher water temperatures result in lower dissolved oxygen content in water. When the dissolved oxygen gets too low, it can result in mortality to fish, including redband trout.

Spotted bat. Spotted bats are known to be present in Salmon Falls Creek to the east. Suitable cliff habitat for roosting is present along Cedar Creek Canyon for this species. No inventory of this or any bat species has been attempted in the Pigtail Butte Allotment.

Slickspot peppergrass. Slickspot peppergrass is not known to occur in this allotment, however, 1686 acres of suitable habitat does occur. Threats to this species include degradation of slickspots and surrounding area habitat, trampling from livestock, and weed invasion.

C. Guidelines for Grazing Management

The current grazing management plan provides for periodic rest during the critical growth period between the boot stage and flowering in all pastures except the two pastures in the Trailing Field. The western boundary fence is six strands of barbed wire which is not conducive for pronghorn movements and does not meet BLM standards. Some of the water troughs lack functional wildlife escape ramps. Per the *Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management* the following Guidelines need to be implemented to promote significant progress toward the Standards:

Guideline 1 – Use grazing management practices and/or facilities to maintain or promote significant progress toward adequate amounts of ground cover.

Guideline 4 – Implement grazing management practices that provide periodic rest or deferment during critical growth stages to allow sufficient regrowth to achieve good plant vigor and adequate vegetative cover.

Guideline 5 – Maintain or promote grazing management practices that provide sufficient residual vegetation to improve, restore, or maintain healthy riparian-wetland functions and structure for energy dissipation, sediment capture, ground water recharge, streambank stability, and wildlife habitat appropriate to site potential.

Guideline 7 – Apply grazing management practices to maintain, promote, or progress toward appropriate stream channel and streambank morphology and functions. Adverse impacts due to livestock grazing will be addressed.

Guideline 9 – Apply grazing management practices to maintain adequate plant vigor for seed production, seed dispersal, and seedling survival of desired species relative to soil type, climate, and landform.

Guideline 20 – Design management fences to minimize adverse impacts, such as habitat fragmentation, to maintain habitat integrity and connectivity for native plants and animals.

V. Conclusions

All indicators for the applicable Standards for Rangeland Health are not being met in the allotment for Standard 1 (Watershed), Standard 2 (Riparian/Wetlands), Standard 3 (Stream Channels/Floodplains), Standard 7 (Water Quality) and Standard 8 (Special Status Species). Most of the indicators for Standard 4 (Native Vegetation) are being met.

VI. Consultation

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Arnold Pike, Range Conservationist
Clare Josaitis, Natural Resource Specialist
Jeff Ross, Archaeologist
Sheri Hagwood, Botanist
John Ash, NRS - Climate, Trend and WQ
Cedar Creek Cattle Co.-Chuck Jones

VII. Recommendations

Maintain current grazing permitted use of 2,146 AUMs for Guerry Inc. and increase Cedar Creek Cattle from 1813 AUMs to 3,386 AUMs. Split allotment into two allotments and allocate available forage accordingly, based on consultation with permittees.

Conduct Ecological Site Inventory of those acres previously determined to be in poor condition to quantify current status. Seed or plant native shrubs, grasses and forbs into poor condition range sites and rest as necessary to ensure establishment. This would result in improvement of poor condition range.

Maintain the current 6,000 acres of existing vegetative improvements.

Manage for light utilization levels (up to 40%) in native pastures in order to maintain the existing native communities. Also manage for light utilization levels (up to 40%) in pastures with greater than 50 percent seedings with greater than 15 percent sagebrush cover. Under the forage allocation proposed, a portion of the forage production would be allocated to watershed and wildlife, and would maintain the native plant communities and provide habitat for wildlife.

Manage for moderate utilization levels (up to 50 percent) in pastures predominately seeded to crested wheatgrass. In areas of seeded pastures where crested wheatgrass plants are becoming decadent or “wolfy” allow higher utilization (up to 70 percent) on an occasional basis (once in 5 years) to condition plants and remove standing dead material. This treatment will promote plant vigor, increase ground litter, overall palatability and maintain healthy stands of crested wheatgrass in accordance with the Jarbidge RMP. Increased palatability of seeded species will decrease grazing pressure on native species thus resulting in better plant vigor in the native herbaceous component. This level will be cumulative between livestock and wildlife. When 70 percent grazing use is authorized at key areas within a seeded pasture, use in the remaining seeded pastures would be at 50 percent or less; in the native pastures and seeded pastures with greater than 15 percent sagebrush cover at 40 percent or less; and total grazing use would be limited to the permitted use in the allotment.

Monitor seeded areas reverting to sagebrush to ensure re-establishment of big game habitat and upland game bird nesting and cover habitat. Allow no more than 50% frequency of nipping on current year leaders on key woody species*. Under the forage allocation proposed, approximately 67 % of the forage production would be allocated to watershed and wildlife, and would allow the native plant communities to recover, and over the long term provide habitat for wildlife.

Construct a water gap at the Three Mile Crossing and drift fences to exclude cattle from the majority of the Cedar Creek riparian area and to protect important cultural resources. No salting should occur within 0.25 miles of Cedar Creek or Cedar Creek Reservoir.

Adopt riparian management guidelines to limit livestock use of riparian vegetation, both woody and herbaceous, and streambank alteration.

Fence the rim above Cedar Creek Reservoir to limit livestock access to the reservoir.

Seed four-wing saltbush and other browse species into seedlings within crucial winter range to improve habitat for wintering mule deer.

Modify the grazing system to provide rest from grazing in the fall and winter in the Northeast Roseworth Pasture which is in crucial deer winter range.

Modify all 6 strand or net wire fence to BLM standards (3 strand fence with wire spacing of 18, 28 and 40 inches from ground level or four strand where necessary with the bottom strand barbless and spacing of 16, 22, 32 and 42 inches for the ground with **no** stays between T posts) to facilitate the movement of pronghorn.

Correctly install and maintain wildlife escape ramps in all water troughs. Assure that water is in troughs for wildlife from May into October, even when livestock are not in the pasture.

*Note: 50% use on key woody species is not allocated to livestock. Use is expected to be low except for during the winter if snow covers herbaceous vegetation. Crucial winter range was identified in this allotment.

Appendix II

Water Temperatures (°C) Summary Report For the House Creek

	1995			1996			1997			1998		
	Ave	Max	Min									
June				16.2	19.2	13.4	15.3	17.5	13.3	13.7	16.4	11.1
July	17.0	19.7	14.4	18.9	21.4	16.3	16.6	19.4	14.0	17.8	20.4	15.5
Aug.	16.6	19.9	13.7	17.4	20.2	14.7	17.2	20.4	14.7	16.9	18.9	14.8
Sept.	14.1	17.2	11.5	12.3	14.3	10.4	14.6	17.5	11.9	14.5	15.6	13.6

	1999			2000			2001			2002		
	Ave	Max	Min	Ave	Max	Min	Ave	Max	Min	Ave	Max	Min
June				16.9	20.8	13.3	16.2	20.9	12.1	16.6	20.1	13.4
July	No			18.9	22.6	15.3	18.8	22.6	15.8	19.3	22.6	16.0
Aug.	Data			19.0	24.1	15.1	19.0	23.3	15.2	15.4	17.8	13.2
Sept.		Collected		13.0	16.4	10.0	15.6	21.5	11.3	13.3	16.0	11.0
Oct.				8.2	10.8	5.8				8.8	10.9	7.1

	2003			2 to 7 Year Averages		
	Ave	Max	Min	Ave	Max	Min
June				15.8	19.2	12.8
July				18.2	21.2	15.3
Aug.				17.4	20.7	14.5
Sept.				13.9	16.9	11.4
Oct.				8.5	10.9	6.5

- Temperatures in RED exceed the average daily or max. temperature standard.

Temperature Extremes (Highs/Lows) for each Month by Year

Years	1995		1996		1997		1998	
	<u>Hi's</u>	<u>Lo's</u>	<u>Hi's</u>	<u>Lo's</u>	<u>Hi's</u>	<u>Lo's</u>	<u>Hi's</u>	<u>Lo's</u>
June			23.1	9.9	20.9	9.8	19.6	8.6
July	22.1	10.8	24.6	13.7	22.7	9.5	22.6	14.0
Aug.	21.7	10.1	23.2	11.7	22.6	12.2	21.4	12.8
Sept.	21.1	5.5	18.1	6.3	20.7	7.7	19.8	8.6

Years	1999		2000		2001		2002	
	<u>Hi's</u>	<u>Lo's</u>	<u>Hi's</u>	<u>Lo's</u>	<u>Hi's</u>	<u>Lo's</u>	<u>Hi's</u>	<u>Lo's</u>
June			24.6	10.2	27.6	7.1	24.1	8.1
July	None		25.3	12.2	25.5	12.2	26.2	13.7
Aug.			30.5*	12.8	26.4	11.7	22.2	10.6
Sept.	Done		21.4	3.5	26.7	5.7	20.9	7.4
Oct.			15.4	3.0	Dried up 10/5		13.1	6.0

Monthly High and Low Averages

	<u>Highs</u>	<u>Lows</u>	<u>Years Averaged</u>
June	23.3	8.9	6
July	24.1	12.3	7
Aug.	24.0	11.7	7
Sept.	21.2	6.4	7
Oct.	14.3	4.5	2

Bold temperatures denotes max. and daily average temperatures that have exceeded State WQ standards for a cold water biota stream.

* - May have been air temperature in dry creek.

House Creek Summary Report for Other Water Quality Attributes

Years	1995	1996	1997	1998♣	1999*	2000	2001*	2002	2/7 Yr.
	<u>Ave.</u>								
DO (mg/l)	8.5	7.5	7.9	6.5	8.0	8.7	8.5	7.3	7.9
%DO		80.5	83.6	59.5	86.8	92.0	93.9	85.3	83.1
pH	9.1	8.1	8.4	7.6	7.6	7.3	7.5	8.1	8.0
Sp. Cond (uS/cm)		72.6	65.7	52.4	60.3	46.6	92.5	96.9	69.6
TDS (g/l)		.046	.041	.034	.039	.030	.059	.062	.044
Nitrates (mg/l)				.13					n/a
T. Phos. (mg/l)				.09					n/a
F. Coli. (cfu/100ml)^		4200♦	80	100					90
Total Susp. Solids (TSS)						5		5	5

* - one time readings only. Not averages.

♦ - One fall reading.

♣ - Average of upper + lower one time June readings.

n/a – not applicable