

Overview of Bennett Mountain Management Area Rangeland Health Assessment of BLM Grazing Allotments

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Introduction

This overview document for the Bennett Mountain Management Area provides information that is common to allotments within the management area and is intended as a companion document to the allotment assessments which contain information specific to individual allotments. A map of the Management Area is provided with this document to show the extent of the management area and the position of the allotments within the management area. Allotment specific maps are included with individual allotment assessment documents.

General Description of Management Area

The Bennett Mountain Management Area is located near Glens Ferry, Idaho in Elmore County. It extends approximately 42 miles from south to north and approximately 16 miles from east to west. The Management Area is bounded on the north by Boise National Forest, on the south by the Snake River, on the west by Bennett Creek, and on the east by King Hill and the West Fork of King Hill Creek (See Map).

The Management Area encompasses three USDA Major Land Resource Areas (MLRA); the Snake River Plain (B11), Upper Snake River Plain (B10), and Northern Rocky Mountains (E43). Dominant landforms that make up the region are plateaus, river plains, and foothills. The soils are characteristically shallow to moderately deep with inclusions of deeper soils and generally well drained. The management area spans three zones of precipitation, the lowest elevation areas along the Snake River are in a 7-10 inch zone, as elevations increase towards Bennett Mountain precipitation increases to 10-16 inch zone and near Anderson Dam, precipitation zone is 16-23 inches (Appendix B). In the low elevation areas, the dominant plant communities include Wyoming big sagebrush with bluebunch wheatgrass, Thurber needlegrass, and Sandberg bluegrass. Antelope bitterbrush, rabbitbrush and low sagebrush are also common in this zone. In the mid elevation areas, the plant communities are dominated by mountain big sagebrush with bluebunch wheatgrass. Transitioning into the higher elevation zones the plant communities are dominated by Douglas fir, Aspen and mountain shrubs.

Approximately 70% of the Management Area, 115,436 acres, is public land administered by the BLM. Public lands are intermingled with private lands (approximately 36,377 acres, or 22%), Boise National Forest lands (approximately 1,242 acres, or 1%), and Idaho Department of Lands (IDL) (approximately 10,878 acres, or 7%).

Twelve perennial streams flow within the Bennett Mountain Management Area. Bennett Creek, which forms the western boundary of the Management Area, was not evaluated for this assessment, but will be included in the Mountain Home Management Area Assessment. All but two segments of King Hill Creek are within the administrative boundaries of the Shoshone Field Office of the Twin Falls District. Those two segments of King Hill Creek are included in this assessment area.

A total of 61.5-stream-miles were examined in the Bennett Mountain Management Area and rated for functioning condition, including both the Snake River tributaries (56.1 miles) and South fork Boise River tributaries (5.4 miles). The results are presented in Table 1, below. Fifteen percent of the streams were not-rated because the segments had intermittent/seasonal stream flows. Using ARCGIS® technology and digital satellite imagery (1998), total riparian acreage in the assessment area was calculated at approximately 380 acres, and average acreage of riparian area per stream-mile was 5.9 acres/mile.

Table 1: Summary of stream ratings

Group	Total Stream Miles	Proper Functioning Condition	Functioning at Risk Static	Functioning at Risk Downward	Non Functioning
Snake River Streams	56.1	22.8	21.8	2.3	1
S. F. Boise River Streams	5.4	5.4	0	0	0
Total	61.5	28.2	22.8	2.3	1
Percent of Total	100%	45%	36%	4%	1

A total of 19 springs were assessed in the Bennett Mountain MA (Table 2). Seven of the nineteen springs were rated in proper functioning condition, three were in non functioning condition, and the remaining were rated as functioning at risk with a static trend.

Table 2. Functioning condition of Springs and Wetlands in the Bennett Mtn. MA

Allotment	Spring	PFC	Functioning-at-Risk Trend			Non-Functioning
			Risk_U	Risk_S	Risk_D	
1038	Unnamed			X		
1038	Willow Springs	X				
1101	Unnamed			X		
1124	Cedar Spring	X				
1128	Coyote Complex-1	X				
	Coyote Complex-2			X		
1036	Rustican Spring			X		
	Un-named spring	X				
1033	Mud Spring					X
	Beer Can Spring	X				
	Twin Springs N.					X
	Twin Springs S.					X
	Groundhog Spring	X				
	Un-named Spring				X	
1103	Twin Deer N.			X		
	Twin Deer S.			X		
	Prince Albert Spring			X		
1045	Lower Ryegrass Spring	X				
1037	Upper Ryegrass			X		

Livestock Management

The Bennett Mountain Management Area is comprised of 31 individual grazing allotments. Collectively, these allotments have 16,932 animal unit months (AUMs) of authorized livestock grazing (cattle, sheep, and horses). The season of use, authorized AUMs and approximate acres of public lands administered by the BLM by allotment is presented below in Table 3. Note: some seasons of use may overlap due to having more than one permittee in an allotment.

Table 3 Bennett Mountain Management Area Livestock Grazing Allotments

Allotment Number & Name	Season(s) Of Use	Active AUMs	Public Acres
0895 Plateau	12/01 - 12/22	217	1,710
	01/06 - 01/31	256	
01028 Emigrant Crossing	04/10 - 06/30	270	3,223
	10/01 - 12/05	165	
01030 S W Alkali Seeding	03/25 - 05/31	170	1,070
	06/01 - 06/30	80	

Allotment Number & Name	Season(s) Of Use	Active AUMs	Public Acres
01033 Hammett #1	04/10 – 07/09	400	1,637
	04/01 – 06/30	1,822	
	10/01 – 11/30	1,817	
	04/10 - 07/09	96	
01034 Hammett #2	11/01 – 12/31	251	1,867
	06/01 – 06/30	80	
01035 Hammett #3	04/01 – 04/30	59	15,671
	08/01 – 11/30	112	
01036 Hammett #4	04/10 – 06/30	944	11,811
	10/15 – 12/31	1,162	
	04/10 - 06/30	40	
	06/01 - 06/30	1	
	06/01 – 06/30	100	
01037 E Hammett #5	04/10 – 06/30	863	6,178
	10/01 – 11/30	630	
01038 Hammett #6	03/27 – 05/25	911	
01039 Hammett #7	06/15 – 09/15	9	2,280
	07/01 – 07/31	57	
	07/01 – 09/30	142	
	07/01 – 11/30	137	
01040 Hammett #4-State	04/16 – 11/30	30	243
01041 King Hill Canyon	03/15 – 05/16	298	2,434
01043 South Camas	07/01 – 08/15	76	962
01044 North Slope	04/01 - 11/30	233	898
01045 Lower Bennett Creek	03/01 – 03/26	431	3643
01054 Hammett Individual	02/01 – 02/28	216	1,506
01068 Little Canyon	03/01 – 04/30	473	2,280
01091 Camas Creek Field	06/16 – 07/31	21	190
	08/01 – 11/15	21	
01097 Double Anchor FFR	03/01 – 04/10	5	405
	11/10 – 02/28	15	
01098 North Camas	07/01 – 08/15	115	559
01101 E Bennett Mountain	07/01 - 09/30	146	1,513
01103 Hot Springs	04/10 – 06/30	189	4,086
	07/01 – 11/30	5	
	10/15 – 12/31	310	
01104 Morrow Field	04/10 – 06/30	19	225
	06/01 – 06/30	1	
01124 Sugar Bowl	03/01 – 03/31	56	1,784
	11/15 – 02/28	186	
01127 Lower Alkali	04/10 – 06/09	301	2,201
01128 N Cold Springs	04/10 – 06/30	458	6,472
	10/16 – 11/30	130	
01129 SE Alkali Seeding	04/01 – 06/30	114	900
	10/15 – 12/31	121	
01130 S Cold Springs	04/01 – 06/30	748	8,786
	10/15 – 12/31	446	
	06/01 – 06/30	80	

Allotment Number & Name	Season(s) Of Use	Active AUMs	Public Acres
01195 Hammett Livestock CO	05/24 – 07/07 10/01 – 10/15	237 118	4,672
01198 Ballantyne Sec. 15	06/1 – 06/30	142	719
01199 Joost Sec. 15	05/01 – 06/30	0	400

Land Use Plan Objectives

The allotments within the Bennett Mountain Management Area have been managed by three different field offices over the last 20 years. The Jarbidge Field Office of the BLM Boise District managed these allotments at the time of the current Land Use Plan (1987). Subsequently, the Jarbidge FO was moved to Twin Falls, Idaho in 1991, and in 1992, management of the allotments within Bennett Mountain Management Area was transferred to the Bruneau Resource Area. In 2004, management was transferred to the Four Rivers Field Office. The Jarbidge Land Use Plan divided the present day Bennett Mountain Management Area into several Management Unit Areas (MUAs). These management unit areas are; MUA-1, Anderson Ranch/Boise River; MUA-2, Upper Bennett Hills; MUA-3, Lower Bennett Hills; and part of MUA-5, Snake River Birds of Prey. MUA objectives do not apply to all allotments within the MUA, and some of the allotments in this Management Area may span more than one MUA. Therefore management objectives may overlap an area or not pertain to an allotment.

Resource Management Objectives for the above listed MUAs are as follows;

MUA-1: Includes Allotments; #1195, #1198, #1199)

- Maintain existing wintering habitat to support current levels of 250 mule deer and 100 elk. The current populations are 200 mule deer and 70 elk.
- Protect scenic and recreational values of the parcels along the Boise River (S.F.) and around the reservoir but under custodial type management.
- Maintain the current condition of riparian habitat
- Make available 9,128 acres (82%) of the area for energy minerals exploration and development and 9,522 acres (86%) for nonenergy minerals.
- Manage 142 acres of suitable commercial forest lands to maximize timber productivity; manage 465 acres of noncommercial forest land and 350 acres of unsuitable commercial forest land to maintain productivity through salvage.

MUA-2: Includes Allotments; #1033, #1036, #1037, #1038, #1039, #1041, #1043, #1054, #1101, #1130

- Consider for transfer 40 acres of public lands via sale and retain 62,188 acres of public lands in federal ownership.
- Improve lands in poor ecological condition.
- Manage big game habitat to support 3,350 wintering mule deer, 350 mule deer the rest of the year, and 200 elk (existing populations are 3,350 mule deer and 70 elk).
- Improve 10.6 miles of fisheries habitat and 6.7 miles of riparian habitat by the year 2005.
- Designate 56,680 acres as the Bennett Hills Winter Recreation Area (SRMA).
- Make available 62,228 acres (100%) for energy and 62,133 acres (99%) for nonenergy mineral exploration and development.

- Manage 944 acres of suitable commercial forest lands to maximize timber productivity; manage 880 acres of noncommercial forest lands and 415 acres of unsuitable commercial forest land to maintain productivity through salvage and incidental harvest.

MUA-3: Includes Allotments; #1033, #1034, #1035, #1036, #1037, #1040, #1054, 1124, #1127, #1129, #1130

- Consider for transfer from federal ownership 380 acres through sale; 558 acres for exchange, and 5,683 acres of suitable agricultural land for potential DLE/CA development. Retain 43,170 acres of public lands in federal ownership.
- Continue soil stabilization practices on areas receiving critical erosion damage.
- Maintain existing range vegetation improvements
- Improve land in poor ecological condition
- Manage big game habitat to support 350 mule deer in winter, 75 mule deer year long, and 25 antelope. Improve sage grouse nesting and brood rearing habitat by 2005 (Existing populations are 300 mule deer in winter, 60 yearlong, and 0 antelope)
- Maintain the current condition of stream habitat and improve 2.2 miles of riparian habitat by 2005
- Protect and manage all remaining ruts and trail features of the Oregon Trail, the Sugar Bowl, and Glenns Ferry and McGinnis Ranch Paleontologic sites and develop interpretive marker program for the Oregon Trail.
- Make available 49,631 acres (99+ %) of the area for energy leasing exploration and development and 42,511 acres (86%) for nonenergy minerals. Maintain 40 acres as a material use site.

MUA-5: includes Allotment #1035

- Retain all public lands in federal ownership (49,286 acres).
- Improve lands in poor ecological condition.
- Maintain existing range vegetative improvements.
- Manage big game habitat to support 150 mule deer (existing population is 50 mule deer)
- Maintain current conditions of riparian habitat along the Snake River (12-miles) and CJ Strike Complex (9-miles).
- Protect the scenic and natural values surrounding the Bruneau Sand Dunes State Park.
- Protect and preserve all remaining ruts and trail features of the Oregon National Historic Trail and develop an interpretive marker program for the Oregon Trail.
- Make 49,286 acres (100%) available for energy mineral exploration and development and 33,671 acres (68%) for nonenergy minerals. Manage 50 acres as materials use sites.

Process

Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management

In 1997, Idaho BLM adopted Standards for Rangeland Health and Guidelines for Livestock Grazing Management in accordance with the code of federal regulations (43 CFR 4180 2(b)). The Standards and Guidelines were developed in consultation with the Idaho BLM Resource Advisory Councils (RAC) and are in conformance with the Jarbidge Resource Management Plan (RMP, 1987). There are eight Standards and twenty Guidelines, which may or may not apply to any one parcel of public land depending on available resources (Appendix A).

Rangeland Health in any given area is determined by comparing current physical condition, biological condition, and degree of functioning condition to the established Standards.

Comparisons are made based on the use of 17 indicators that use quantitative and qualitative information that may include: inventory data, monitoring data, health assessment information, or other measurements and observations.

Guidelines direct the selection of grazing management practices, and where appropriate, livestock management facilities, to promote significant progress toward, or the attainment and maintenance of the Standards. Grazing management practices are livestock management techniques that may include: manipulation of season, duration, intensity of use, as well as number, distribution, and kind of livestock.

Rangelands should be meeting or making significant progress toward meeting applicable Standards. Current livestock grazing management will be evaluated to determine if current Standards are being met or significant progress is being made toward meeting these standards. If Standards are being met, there should be proper nutrient cycling, hydrologic cycling, and energy flow within the ecosystem.

A conclusion as to whether allotments are meeting or making significant progress toward meeting the Standards and conforming to the Guidelines will be provided in a separate evaluation and determination document.

Assessment Methodology

Upland Vegetation

Rangeland Health Field Assessments – Interagency technical reference TR 1734-6 *Interpreting Indicators of Rangeland Health* (2000) and other available qualitative and quantitative data were used to assess the resources in the allotments in the Management Area. The rangeland health evaluation summary worksheet includes 17 resource indicators, each of which is given a rating for the degree of departure from expected conditions, based on the applicable ecological site description or ecological reference area. The indicators are compiled into three interlocking attribute categories representing soil/site stability, hydrologic function, and biotic integrity. The preponderance of evidence of each attribute determines the condition of the site.

Long-term Monitoring Studies – Permanent monitoring studies are established in grazing allotments at key areas to document changes in the composition of the plant community over time. These changes are evaluated to determine the trend of the plant community either towards, or away from, a desired condition which is based on the ecological site description (NRCS). There are two types of studies: photo-plots and nested plot frequency transects (NPFT) with photo-plots. At NPFT study sites, data are collected along five 100 ft transects and the following parameters are recorded: frequency, density, and ground cover. Frequency data documents the occurrence of individual plant species and is expressed as a percentage of total plots sampled. Density is the number of plants by species within a given area. Ground cover describes the percentage of ground covered by: plant material, biological soil crusts, gravel, rock, and litter. Shrub density is recorded in either 1/100th or 1/200th acre plots, depending on the density of shrubs. These data are expressed as plants per acre. A minimum of three photographs are taken at both types of studies (photo-plots, NPFT); two landscape views facing opposite directions, and one of the 1meter² photo-plot itself. Plant locations within the photo plot are sketched to illustrate the content of the plot which is used for future verification of the photographs.

Additional information collected at these studies includes phenology, utilization, and plant vigor. The methodology used to establish and collect data at these sites is described in full detail in BLM technical references TR 1730-2 *Sampling Vegetation Attributes*, and TR 1734-4 *Measuring and Monitoring Plant Populations* (1996).

Utilization - Utilization data is collected to document the amount of current year's growth removed through grazing and browsing. Utilization is generally expressed as a percentage of available forage, or number of plants, twigs, etc., that have been consumed or destroyed. Generally, utilization transects are conducted in key use areas (permanent NPFT or Photo-plot sites), although it may be collected anywhere throughout a pasture or allotment. A number of methods may be used including the Landscape Appearance Method, Key Species Method, Grazed Class Method, Cole Browse Method, or Extensive Browse Method (Interagency Technical Reference TR 1730-4 *Utilization Studies and Residual Studies*, 1996).

Riparian/Wetland

Streams/Creeks - Evaluations of whether allotments were meeting Standards 2 and 3 were based on field inventories and examination of streams and riparian areas from 2004 through 2007. Field inventories included data acquisition on functioning condition, delineation, distribution and composition of riparian plant communities, and examination of streambank, channel, and hydrologic conditions. Data sources used for inventory and assessment of streams, palustrine meadows, and springs included one or more of the following sources: low level (1:5000) digital color infrared aerial photographs (1998), standard (1:24,000) color aerial photography (1988), National Wetlands Inventory maps (1996), water rights verification photographs (1997), digital satellite photoimagery (2005) and on-site inspections (2004 thru 2007).

Standard Checklists, outlined in the BLM Technical Reference 1737-15, *A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas* (1998), and other available qualitative and quantitative data are used to determine if riparian areas are meeting the Idaho Standards for Rangeland Health. The standard checklist consists of 17 indicators that are used to assess the functioning condition of riparian areas. Indicators are compiled into three interlocking attribute categories representing erosion/deposition, hydrologic function and vegetative status. The presence of noxious weeds is also considered for riparian health.

All streams with perennial flow regimes were examined and rated for functioning condition. Intermittent (seasonal flow regime) and ephemeral (flowing only in response to rainfall and snow melt) stream segments were examined to determine if flow regimes validated delineations on National Wetlands Inventory maps (1996). Intermittent streams were rated for proper functioning condition only if obligate hydrophytic vegetation was present. Hydrophytic plants are found where water is at or near the soil surface, forming good indicators of riparian areas and wetlands. Typical hydrophytic vegetation includes cattails, bulrushes, most sedges and rushes, willows, cottonwood and many others.

To accurately identify the location of individual stream segments for monitoring purposes and mapping, each stream segment was assigned a unique identifier code. The code begins with the first five to seven letters of the stream name. Then, the following number code is determined by

measuring the distance in stream-miles, starting from the subject streams confluence with a higher order stream, to the downstream start of the subject segment. For example, segment “COLDSP-016.2” begins 16.2 stream miles upstream from its confluence with Snake River. Stream mileage and riparian area acreage was determined using ESRI ARCGIS® mapping technology.

Streams were stratified (divided) at allotment and ownership boundaries, and/or where geographic or hydrologic features changed the stream channel morphology (type), or where flow regimes changed. Streams are described and classified into “stream types” using the system developed by D. L. Rosgen (Applied River Morphology 1996).

Springs - Lentic Areas (wetlands, springs, meadows, and ponds) were assessed using protocols described in BLM Technical Reference TR 1737-16, *A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lentic Areas* (1999).

Spring wetland areas are assessed for proper functioning condition as outlined in BLM Technical Reference TR 1737-11, *Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas* (1994). Lentic areas are defined as wetland-riparian areas adjacent to standing water habitats such as lakes, ponds, seeps, and meadows.

Water Quality

Assessments for water quality (Standard 7) included deployment of dataloggers (Onset® Hobo Temp Pro) to measure daily stream temperatures over the critical summer months. Temperature measurements were recorded every hour. The information was then analyzed and where applicable, compared to the Idaho Department of Environmental Quality (IDEQ) standards for cold water biota and/or salmonid spawning. Standards for secondary contact recreation (bacterial levels) were determined by collecting water samples which were then analyzed for presence and concentration levels of E. coli bacteria.

TES Plants

Intuitive controlled inventories were conducted for Federally listed and Bureau Special Status plants in the spring and summer of 2004 by BLM botanists. The U.S. Fish and Wildlife Service (USFWS) considers all of Idaho to be within the potential range of Ute ladies'-tresses (*Spiranthes diluvialis*), a federally threatened orchid species. This plant occurs in spring, seep, and riparian habitats. Due to the difficulty in narrowly defining potential habitat for this species, USFWS has chosen to apply a loose definition and requires Section 7 consultation only in three counties of southeast Idaho or in areas where the plant is actually found (USFWS 2002). Surveys specifically for this plant are recommended prior to authorizing federal actions in southwest Idaho, but are not required.

Surveys revealed the presence of slickspot peppergrass (*Lepidium papilliferum*) proposed for listing as endangered. Surveys also revealed the presence of two Bureau Sensitive plant species; Fairfield milkvetch (*Astragalus atratus* var. *inseptus*), and Packard's desert parsley (*Lomatium packardiae*). Botanical survey results are reported under Standard 8.

Species	Status	Allotments in which species is present
<i>Lepidium papilliferum</i> Slickspot peppergrass	Proposed for listing as endangered	Double Anchor, Hammett Individual, Hammett #2, , Hammett#3, Hammett #4, Lower Alkali, S.E. Alkali, Seeding, S.W. Alkali Seeding
<i>Lomatium packardiae</i> Packard's desert parsley	2	Emigrant Crossing, Hammett #4
<i>Astragalus atratus var insepatus</i> Fairfield milkvetch	3	East Hammett #5, Emigrant Crossing, Hammett #1, Hammett #4, Hammett #4 State, Hot Springs, King Hill Canyon, Little Canyon, South Cold Spring, S.W. Alkali Seeding

TES Wildlife

The Northern Idaho Ground Squirrel (*Spermophilus brunneus brunneus*), Canada lynx (*Lynx canadensis*), and Bliss Rapids Snail (*Taylorconcha serpenticola*) are listed as threatened and potential habitat for these species occurs in the Four Rivers Field Office. However, potential habitat for these species does not occur in the Bennett Mountain Management Area.

The Southern Idaho ground squirrel (*Spermophilus brunneus endemicus*) and yellow-billed cuckoo (*Coccyzus americanus*) are both category 2 candidate species. The Bennett Mountain Management area occurs outside the Southern Idaho ground squirrels historic range and the area does not provide suitable habitat (extensive stands of cottonwood trees along riparian areas) for the yellow-billed cuckoo.

The status of the gray wolf (*Canis lupus*) under the Endangered Species Act (ESA) has been in ongoing flux since July 18, 2008. The USFWS published a new ruling on the status of the gray wolf in the Federal Register April 2, 2009 (Vol. 74 No. 62, 50 CFR part 17 pg. 15123). To meet ESA's requirements Idaho, Montana, and Wyoming needed to develop post-delisting wolf management plans to ensure that adequate regulatory mechanisms would exist should the wolf be delisted under ESA. Idaho and Montana have adopted state law, management plans and regulations that meet the requirements to conserve a recovered wolf population into the foreseeable future. Wyoming's law is determined to be inadequate to prevent extinction in a significant portion of the gray wolf's range. The new ruling plans to delist the wolf in the States of Idaho and Montana to be managed under state plans goes into effect May 4, 2009, barring further litigation to block the delisting. Wolves in Wyoming will continue to be regulated as a non-essential, experimental population.

Population surveys and monitoring - A number of other species classified as BLM "Sensitive Species" and/or State of Idaho "Species of Special Concern" are also known or likely to occur within this area. Wildlife species known to occur within the Bennett Mountain Management Area and or those with known potential habitat in the area are listed in Appendix C. It does not include all of the BLM sensitive wildlife species known or suspected to occur in Idaho.

Inventory and monitoring data are limited or absent for many of these species; therefore little is known about their distribution, population status, or trend within the allotment. Their occurrence within the allotments has been verified through field observation or assumed likely because the allotment falls within the species known range and contains habitat types potentially capable of

supporting viable populations of the species. The following is a brief description of specific surveys and/or monitoring efforts that have been conducted for special status animal species within these allotments.

General upland habitat evaluations - Upland habitat assessments for terrestrial special status animal species were conducted, primarily using the same data collected to assess native plant communities under Standard 4, including abundance, diversity, vigor, production, cover, utilization, trend, and the occurrence of noxious and invasive plants. Additionally, qualitative data specific to special status species habitat was collected during site visits of key allotments in the Management Area and is reported under Standard 8.

General riparian habitat evaluations - Riparian special status species habitats were assessed by using field data collected in accordance with information presented under Standard 2. While there is no direct correlation between stream functioning condition and special status species habitat, many riparian functionality indicators are also crucial components of habitat for many special status species and other wildlife dependent on this habitat, especially nesting neo-tropical migrant birds and amphibians. Indicators that assess structure, composition and vigor of hydric (riparian) vegetation are especially important because they also assess quality and quantity of shade, nesting/breeding habitat, forage, and escape cover. Additional special status species specific qualitative data were collected during field visits.

Sage-grouse breeding and brood-rearing habitat evaluations - Sage-grouse breeding and brood-rearing habitat evaluations were conducted using methodology described in the draft document entitled *A Framework to Assist in Making Sensitive Species Habitat Assessments for BLM-Administered Public Lands in Idaho* (as revised in May, 2001). The primary use of this evaluation is a means of evaluating suitability of the assessment areas as habitat for sage-grouse. However, limited sage-grouse habitat exists in the Bennett Mountain Management Area. Although specifically used for sage-grouse habitat requirements, it is also useful in assessing the general health of sagebrush steppe ecosystems and their suitability as habitat for a diversity of other sagebrush dependent special status species.

In addition to Standards 2 and 4 data, qualitative data specific to wildlife habitats was collected during site visits to major allotments in the Management Area. Habitat components investigated included shrub and understory species, wetland and riparian (including ephemeral drainages) condition relative to wildlife needs, and mountain shrub community health. On select allotments that contained high densities of bitterbrush, browse transects were read for utilization, age structure, and browsed form class (Interagency Technical Reference 1996 BLM/RS/ST-96/004+1730).

Fisheries

Redband Trout (*Oncorhynchus mykiss gairdneri*) - a salmonid species native to the intermountain west that has adapted to tolerate the higher water temperatures and lower oxygen levels commonly found in desert ecosystems. Redband trout are categorized by BLM and IDFG as a sensitive species. Within the Bennett Mountain Assessment area, they occur in Cold Springs Creek, W. Fork Cold Springs Creek, Dive Creek, the upper segments of Little Canyon Creek,

and upper King Hill Creek and its perennial tributaries. In the Boise River watershed, they occur in S.F. Boise River, Curlew, Lime, and Honey creeks.

Fish species diversity and distribution were used as one measurement of the condition of various waterways and are reported under Standard 8. Channel types characterized by Rosgen (1996) were inventoried and mapped based on dominant streambed material, channel entrenchment, width/depth ratio, sinuosity, and stream slope. Stream channel stability was rated by using a modified version of the Pfankuch methodology designed for fisheries habitat quality. Perennial flow regime streams were examined for fisheries habitat conditions, species presence and distribution. Direct observation or standardized electro-fishing surveys, were used to determine the abundance and distribution of fish species.

Favorable habitat conditions for native fish species include the following: low water temperatures; absence of exotic fish species such as brown and brook trout; adequate food sources; clean gravel, cobble/ rubble substrates, and stream channels that are barrier free and accessible for seasonal spawning migrations. In addition, deep pool habitat with abundant large woody debris in the channel and floodplains (where site potential allows it) with healthy functioning riparian areas are ideal.

The majority of streams inhabited by redband trout in the Bennett Mountain Assessment area provide suitable habitat for maintenance of viable trout populations. In general, these streams have mid to late seral plant species such as willows, alders, red-stem dogwood, black cottonwood, and quaking aspen, which provide dense cover and shade, stabilize banks and channels, and maintain temperatures suitable for salmonid spawning and cold water biota. The major factor affecting redband trout distribution and frequency in the assessment area is persistent drought.

Bull Trout (*Salvelinus confluentus*)

Bull trout are a species of Char and require cold, clean, and well oxygenated water. In 2004, USFWS published the final rule on designation of critical habitat for bull trout in the Federal Register (Vol. 69 No. 193, 50 CFR Part 17). The final ruling excluded all streams that were previously proposed in the Bennett Mountain Assessment area. However, BLM policy directs that streams or segments of streams which were proposed for listing as critical habitat will continue to have important status, and will be managed as if they were listed to avoid jeopardizing the species. "Critical habitat designations do not signal that habitat outside the designation area is unimportant to bull trout. Areas outside the critical habitat designation will continue to be subject to conservation actions that may be implemented under section 7(a) (1), and regulatory protections afforded by the section 7(b) jeopardy standard, and the section 9 take prohibition, as determined on the basis of the best available information at the time of the action" (Federal Register, Vol. 69 No. 193 pp.60022).

No populations of bull trout, or habitats suitable for bull trout occupation, occur in stream segments included within the boundaries of the Bennett Mountain Management Area. Water temperatures in all perennial streams in the Management Area are considered unsuitable for bull trout occupation. However, bull trout are known to occur in the South Fork Boise River. Bull

trout are present in Anderson Ranch Reservoir, and up and downstream of the reservoir. In addition, several tributary streams to South Fork Boise River have bull trout present.

In addition to the bull trout listed above, streams in the Boise River watershed may also host introduced kokanee salmon (*Oncorhynchus nerka*), brook trout (*Salvelinus fontinalis*), and native mountain whitefish (*Prosopis williamsonii*).

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Appendices and Maps

Appendix A – Idaho’s Standards for Rangeland Health and Guidelines for Livestock Grazing Management

Standard 1: Watersheds provide for the proper infiltration, retention, and release of water appropriate to soil type, vegetation, climate, and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Indicators may include, but are not limited to, the following:

1. The amount and distribution of ground cover, including litter, for identified ecological site or soil-plant associations are appropriate for site stability.
2. Evidence of accelerated erosion in the form of rills and/or gullies, erosional pedestals, flow patterns, physical soil crusts/ surface sealing, and compaction layers below the soil surface is minimal for soil type and landform.

Standard 2: Riparian-wetland areas are in proper functioning condition appropriate to soil type, climate, geology, and landform to provide for proper nutrient cycling, hydrologic cycling and energy flow.

Indicators may include, but are not limited to, the following:

1. The riparian/wetland vegetation is controlling erosion, stabilizing streambanks, shading water areas to reduce water temperature, stabilizing shorelines, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater, and increasing recharge of groundwater appropriate to site potential.
2. Riparian/wetland vegetation with deep strong binding roots is sufficient to stabilize streambanks and shorelines. Invader and shallow rooted species are a minor component of the floodplain.
3. Age class and structural diversity of riparian/wetland vegetation is appropriate for the site.
4. Noxious weeds are not increasing.

Standard 3: Stream channels and floodplains are properly functioning relative to the geomorphology (e.g., gradient, size, shape, roughness, confinement, and sinuosity) and climate to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Indicators may include, but are not limited to, the following:

1. Stream channels and floodplains dissipate energy of high water flows and transport sediment. Soils support appropriate riparian-wetland species, allowing water movement, sediment filtration, and water storage. Stream channels are not entrenching.
2. Stream width/depth ratio, gradient, sinuosity, and pool, riffle and run frequency are appropriate for the valley bottom type, geology, hydrology, and soils.
3. Streams have access to their floodplains and sediment deposition is evident.
4. There is little evidence of excessive soil compaction on the floodplain due to human activities.
5. Streambanks are within an appropriate range of stability according to site potential.
6. Noxious weeds are not increasing.

Standard 4: Healthy, productive, and diverse native animal habitat and populations of native plants are maintained or promoted as appropriate to soil type, climate, and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

Indicators may include, but are not limited to, the following:

1. Native plant communities (flora and microbiotic crusts) are maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species.
2. The diversity of native species is maintained.
3. Plant vigor (total plant production, seed and seedstalk production, cover, etc.) is adequate to enable reproduction and recruitment of plants when favorable climatic events occur.
4. Noxious weeds are not increasing.
5. Adequate plant litter and standing dead plant material are present for site protection and for decomposition to replenish soil nutrients relative to site potential.

Standard 5: Rangelands seeded with mixtures, including predominately non-native plants, are functioning to maintain life form diversity, production, native animal habitat, nutrient cycling, energy flow and the hydrologic cycle.

Indicators may include, but are not limited to, the following:

1. In established seedings, the diversity of perennial species is not diminishing over time.
2. Plant production, seed production, and cover are adequate to enable recruitment when favorable climatic events occur.
3. Noxious weeds are not increasing.
4. Adequate litter and standing dead plant material are present for site protection and for decomposition to replenish soil nutrients relative to site potential.

Standard 6: Exotic plant communities, other than seedings, will meet minimum requirements of soil stability and maintenance of existing native and seeded plants. These communities will be rehabilitated to perennial communities when feasible cost effective methods are developed.

Indicators may include, but are not limited to, the following:

1. Noxious weeds are not increasing.
2. Perennial species numbers are being maintained.
3. Native and introduced perennial species are vigorous enough to reproduce when climatic and other environmental conditions are favorable.
4. Litter and standing dead plant material is adequate to replenish soil nutrients relative to site potential.

Standard 7: Surface and groundwater on public lands comply with the Idaho Water Quality Standards.

Indicators may include, but are not limited to, the following:

1. Physical, chemical, and biologic parameters described in the Idaho Water Quality Standards.

Standard 8: Habitats are suitable to maintain viable populations of threatened and endangered, sensitive, and other special status species.

Indicators may include, but are not limited to, the following:

1. Parameters described in the Idaho Water Quality Standards.
2. Riparian/wetland vegetation with deep, strong, binding roots is sufficient to stabilize streambanks and shorelines. Invader and shallow rooted species are a minor component of the floodplain.
3. Age class structure diversity or riparian/wetland vegetation is appropriate for the site.
4. Native plant communities (flora and microbiotic crusts) are maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species.
5. The diversity of native species is maintained.
6. The amount and distribution of ground cover, including litter, for identified ecological site(s) or soil-plant associations are appropriate for site stability.
7. Noxious weeds are not increasing.

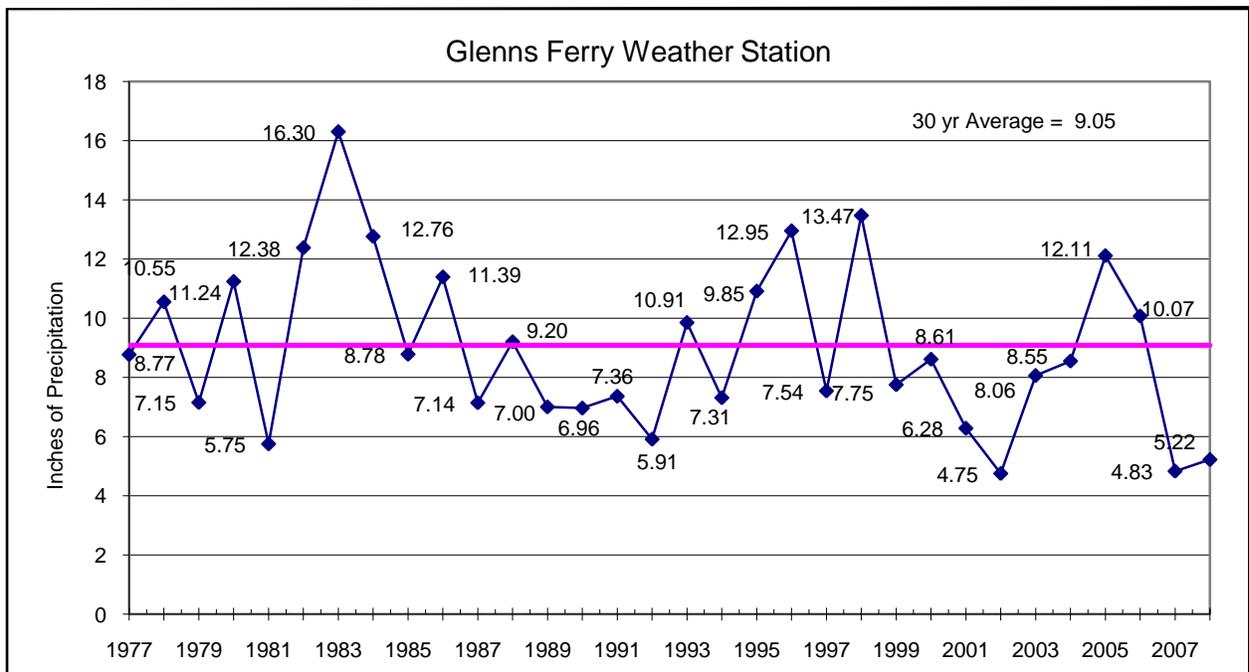
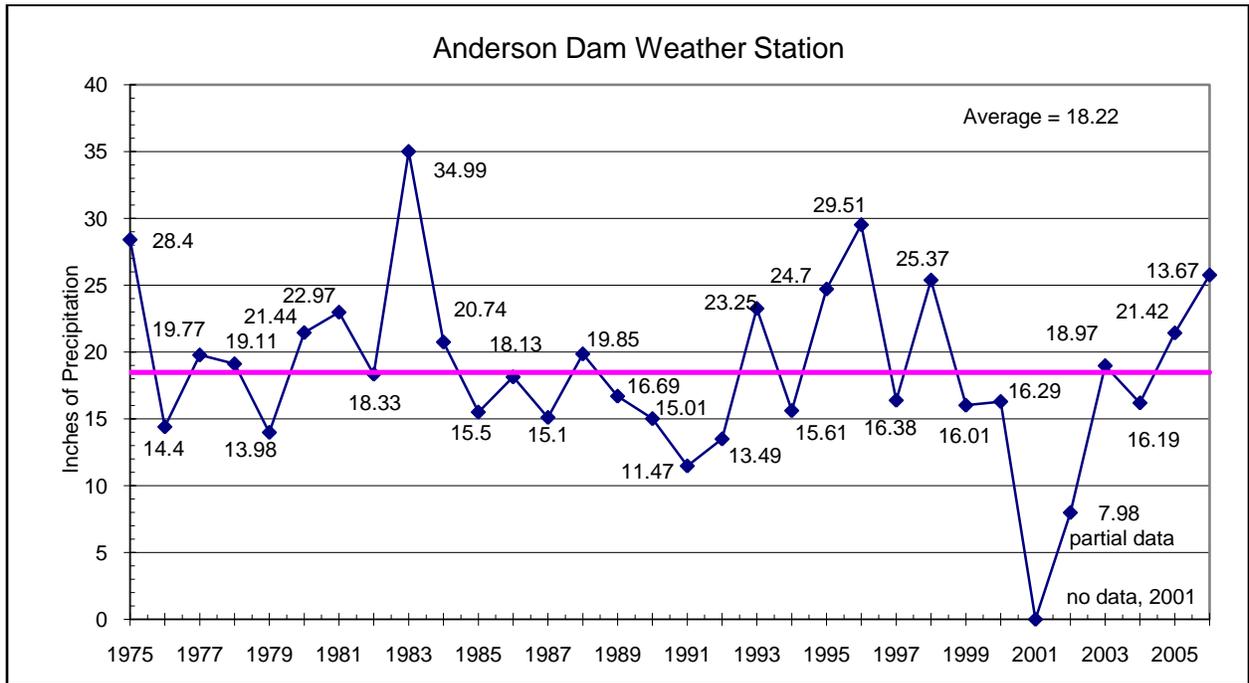
Guidelines:

1. Use grazing management practices and/or facilities to maintain or promote significant progress toward adequate amounts of ground cover to support infiltration, maintain soil moisture storage and stabilize soils.
2. Locate livestock management facilities away from riparian areas wherever they conflict with achieving or maintaining riparian-wetland functions.
3. Use grazing management practices and/or facilities to maintain or promote soil conditions that support water infiltration, plant vigor, and permeability rates and minimize soil compaction appropriate to site potential.
4. Implement grazing management practices that provide periodic rest or deferment during critical growth stages to allow sufficient regrowth to achieve and maintain healthy, properly functioning conditions, including good plant vigor and adequate vegetative cover appropriate to site potential.
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.
6. The development of springs, seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions, wildlife habitat, and significant cultural and historical/ archaeological/ paleontological values associated with the water source.
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.
8. Apply grazing management practices that maintain or promote the interaction of the hydrologic cycle, nutrient cycle, and energy flow that will support the appropriate types

and amounts of soil organisms, plants and animals appropriate to soil type, climate and landform.

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.
10. Implement grazing management practices and/or facilities that provide for complying with the Idaho Water Quality Standards.
11. Use grazing management practices developed in recovery plans, conservation agreements, and Endangered Species Act, Section 7 consultations to maintain or improve habitat for federally listed threatened, endangered, and sensitive plants and animals.
12. Apply grazing management practices and/or facilities that maintain or promote the physical and biological conditions necessary to sustain native plant populations and wildlife habitats in native plant communities.
13. On areas seeded predominantly with non-native plants, use grazing management practices to maintain or promote the physical and biological conditions to achieve healthy rangelands.
14. Where native communities exist, the conversion to exotic communities after disturbance will be minimized.
15. Use non-native plant species for rehabilitation only in those situations where:
 - a. native species are not readily available in sufficient quantities;
 - b. native plant species cannot maintain or achieve the standards; or
 - c. non-native plant species provide for management and protection of native rangelandsInclude a diversity of appropriate grasses, forbs, and shrubs in rehabilitation efforts.
16. On burned areas, allow natural regeneration when it is determined that populations of native perennial shrubs, grasses, and forbs are sufficient to revegetated the site. Rest burned or rehabilitated areas to allow recovery or establishment of perennial plant species.
17. Carefully consider the effects of new management facilities (e.g., water developments, fences) on healthy and properly functioning rangelands prior to implementation.
18. Use grazing management practices, where feasible, for wildfire control and to reduce the spread of targeted undesirable plants (e.g., cheatgrass, medusahead wildrye, and noxious weeds) while enhancing vigor and abundance of desirable native or seeded species.
19. Employ grazing management practices that promote natural forest regeneration and protect reforestation projects until the Idaho Forest Practices Act requirements for timber stand replacement are met.
20. Design management fences to minimize adverse impacts, such as habitat fragmentation, to maintain habitat integrity and connectivity for native plants and animals.

Appendix B – Precipitation Graphs



Appendix C – Threatened, Endangered, Sensitive Wildlife

Species	Category	Habitat
<i>Federally threatened, Endangered, Proposed and Candidate Species</i>		
Columbia river bull trout <i>Salvelinus confluentus</i> (T)	Type 1	Cool headwater streams; Seasonally in larger rivers, Anderson Ranch Reservoir Area only
<i>Rangewide/Globally Imperiled Species</i>		
Redband Trout <i>(Oncorhynchus mykiss gairdneri)</i>	Type 2	Perennial streams in the Intermountain west
Bald eagle <i>(Haliaeetus leucocephalus)</i>	Type 2 Delisted 2007	Wintering habitat
Greater sage-grouse <i>(Centrocercus urophasianus)</i>	Type 2 Under review for ESA listing	Sagebrush steppe habitat. Nesting, late and early brood rearing habitat
Pygmy rabbit <i>(Bracylagus idahoensis)</i>	Type 2 Under review for ESA listing	Sagebrush steppe habitat with usually dense canopy cover 25% or greater and deep soils
Northern Leopard Frog <i>(Rana pipiens)</i>	Type 2	Streams ponds and wetlands below 4600 ft
<i>Regional/Imperiled Species</i>		
Fringed Myotis <i>(Myotis thysanodes)</i>	Type 3	Roosting/hibernation: Caves, rock outcrops and trees. Foraging: sagebrush, meadows and forests
Spotted Bat <i>(Euderma maculatum)</i>	Type 3	Roosting/hibernation: Caves, rock outcrops. Foraging sagebrush, riparian areas
Townsend's Big-eared Bat <i>(Plecotus townsendii)</i>	Type 3	Roosting/hibernation. Caves, old mines. Foraging sagebrush, forested areas
Wolverine <i>(Gulo gulo luscus)</i>	Type 3	Foraging large territory areas . Confirmed sighting in Hammett
Peregrine Falcon <i>(Falco peregrinus anatum)</i>	Type 3	Nesting/foraging Rock outcrops, canyons. Foraging prefer high concentrations of bird species dove size or smaller
Prairie falcon <i>(Falco mexicanus)</i>	Type 3	Nesting/foraging Rock outcrops, canyons, foraging small birds and ground squirrels
Northern Goshawk <i>(Accipiter gentilis)</i>	Type 3	Nesting /foraging. Nesting dense mixed conifer stands or aspen stands. Foraging usually more open woodlands
Ferruginous Hawk <i>(Buteo regalis)</i>	Type 3	Nesting/Foraging Nesting elevated rock outcrops and phone or electrical poles. Foraging sagebrush steppe, ground squirrels and rabbits
Mountain Quail <i>(Oreortyx pictus)</i>	Type 3	Nesting/foraging riparian areas with a berry producing riparian plant species. Reintroduced into the Bennett Mountain Area 2006-2009
Flammulated owl <i>(Otus flammeolus)</i>	Type 3	Nesting/foraging Mixed conifer and ponderosa pine stands
Calliope Hummingbird <i>(Stellula calliope)</i>	Type 3	Nesting/foraging usually higher mountain shrub communities and forested areas

Species	Category	Habitat
Lewis Woodpecker (<i>Melanerpes lewis</i>)	Type 3	Forested areas especially after forest fires
Williamsons Sapsucker (<i>Sphyrapicus thyroideus</i>)	Type 3	Open coniferous forested areas
Willow Flycatcher (<i>Empidonax hammondi</i>)	Type 3	Nesting/foraging habitat willow thickets and shrubs adjacent or nearby riparian areas
Olive-sided Flycatcher (<i>Conopus borealis</i>)	Type 3	Nesting/foraging clearings and edges of forests
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	Type 3	Nesting/foraging: Nesting dense trees and shrubs. Forages in semi-open areas
Sage Sparrow (<i>Amphispiza belli</i>)	Type 3	Nesting/foraging in sage brush steppe sparse shrub cover arranged in patches.
Brewer's Sparrow (<i>Spizella breweri</i>)	Type 3	Nesting/foraging in sagebrush steppe usually above 2500' especially where bluebunch wheatgrass occurs
Mojave Black-collared Lizard (<i>Crotaphytus bicinctores</i>)	Type 3	Rocky areas with sparse vegetation, basalt outcrops
Longnose Snake (<i>Rhinocheilus lecontei</i>)	Type 3	Prefers brushy rocky areas
Western Ground Snake (<i>Sonora semiannulata</i>)	Type 3	Found in arid climates in talus slopes, canyon rims and rocky outcroppings
Common Garter Snake (<i>Thamnophis sirtalis</i>)	Type 3	Found in a variety of habitats usually associated with water nearby
Western Toad (<i>Bufo boreas</i>)	Type 3	Found in a variety of habitats both woodland and semi arid associated with some kind of water body: Springs streams, reservoirs or lakes.
Woodhouse Toad (<i>Bufo woodhousii</i>)	Type 3	Found in wooded bottomlands, mountain canyons, riverbanks, and irrigated farmlands

(T) = Federally listed as Threatened

(C) = Federal Candidate Species

(S) = State Species of Special Concern and/or BLM Sensitive Species and/or USFWS watch list

(XN) = Federal experimental/non-essential population

Categories

Type 1. Federally Threatened, Endangered, Proposed and Candidate Species

Type 2. Rangewide / Globally Imperiled Species

Type 3. Regional / State Imperiled Species

Type 4. Peripheral Species

Type 5. Watch Species (not considered as sensitive species)

Map