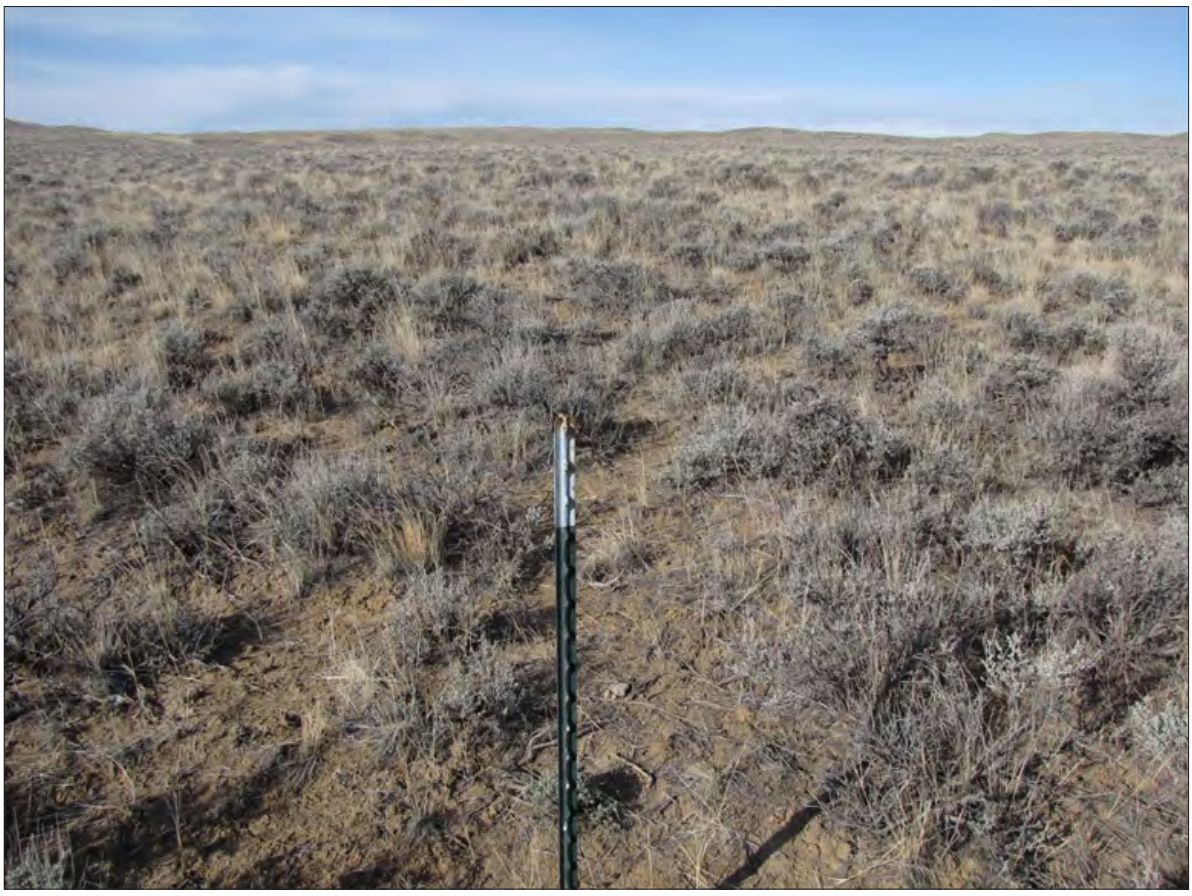
# Environmental Assessment
# South Gooseberry Group
# Allotment No. 00507
# Livestock Grazing Permit Renewals

Location: Township. 45-46 N.  Range 94-96 W.
Section(s) Various/Multiple
Applicant: Baird Cattle Co. (ls. Buckle), Tom Jackson



BLM

Wind River/Bighorn Basin District – Worland Field Office

NATIONAL SYSTEM OF PUBLIC LANDS

**May, 2010**

The BLM manages more land – 253 million acres – than any other Federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western States, including Alaska. The Bureau, with a budget of about $1 billion, also administers 700 million acres of sub-surface mineral estate throughout the nation. The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

**DOI-BLM-WY-R010-2010-0010-EA**

# TABLE OF CONTENTS



# MAPS, TABLES and PHOTOGRAPHS

# 1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of renewing the grazing permits on the South Gooseberry Group Allotment, as well as to address proposed management changes on the allotment. This EA is a site-specific analysis of potential impacts that could result with the implementation of the analyzed alternatives. The EA assists the BLM in planning and ensuring determination as to whether any "significant" impacts could result from the analyzed actions. An EA provides evidence for determining whether an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI) should be prepared. If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared. If not, a "Finding of No Significant Impact" (FONSI) and Decision Record (DR) may be signed for the EA approving the selected alternative.

## 1.1 Conformance with Applicable Land Use Plan

This action is subject to the following land use plan:

NAME OF PLAN: Grass Creek Planning Area Resource Management Plan (RMP)
DATE APPROVED: September, 1998

REMARKS: The Grass Creek Resource Management Plan (RMP) established the following Management Objective for Livestock Grazing Management:

> "Improve forage production and range condition to provide a sustainable resource base for livestock grazing while improving wildlife habitat, watershed protection, and forage for wild horses." [Page 13]

The RMP also specified the following Management Actions necessary to achieve the above objective:

> "The amounts, kinds, and seasons of livestock grazing use will continue to be authorized until monitoring indicates a grazing use adjustment is necessary, or an environmental assessment indicates that a permittee's application to change grazing use is appropriate." [Page 13]
>
> "In Salt Desert Shrub and Salt Bottom plant communities that are grazed during the growing season, grazing strategies will be designed to allow a combined forage utilization of 25 to 35 percent of the current year's growth." [Page 14]
>
> "In other plant communities that are grazed during the growing season, grazing strategies will be designed to allow a combined forage utilization of 30 to 50 percent of current year's growth." [Page 14]

The RMP has been reviewed and it is determined that the Alternatives conform with the land use plan Management Objectives and Actions as required by 43 CFR 1610.5.

## 1.2 Relationships to Statutes, Regulations, Policies, Plans or Other Environmental Analyses

This and other grazing related Environmental Assessments are being prepared in accordance with Washington Office (WO) Instruction Memoranda WO-IM-99-039 and 2000-022 as well as WY-IM-2000-20, which instruct all Bureau of Land Management (BLM) Field Offices to conduct National Environmental Policy Act (NEPA) review on grazing permit renewals. The primary regulations governing the analysis are 40 CFR 1500 (RE: The President's Council on Environmental Quality implementing regulations for procedural provisions of NEPA). The principal Bureau permitting regulations for livestock grazing are found in 43 CFR 4100. The principal statutes governing livestock grazing on public land are the Taylor Grazing Act of 1934, the Federal Land Policy and Management Act of 1976, and the Public Rangelands Improvement Act of 1978.

## 1.3 Regulatory Decisions

The Authorized Officer (AO) must determine whether or not to issue a grazing permit to the applicant(s). The applicant for the renewal or issuance of a new grazing permit or lease, and any affiliate, shall have a satisfactory record of performance and be in substantial compliance with the terms and conditions of the existing Federal grazing permit or lease for which a new permit is sought. The AO could decide not to issue a permit, or to remove the grazing preference from the RMP grazing base, if it would cause unnecessary or undue degradation to the public lands, if it would threaten to violate another Federal law, or if the applicant has an unsatisfactory record of performance or is not in compliance with the existing permit or lease. If the AO decides to remove the grazing preference from the RMP grazing base through an RMP revision, the potential effects of removal of the grazing preference would be analyzed during the RMP revision process.

The AO must identify specific terms and conditions that apply to the permit. Livestock grazing permits and leases shall contain terms and conditions appropriate to achieve management and resource condition objectives for the public lands. These grazing permits and leases shall specify the kind and number of livestock, the period(s) of use, the allotment(s) to be used, and the amount of use, in animal unit months, for every grazing permit or lease. The authorized use shall not exceed the livestock carrying capacity of the allotment. All permits and leases shall be made subject to cancellation, suspension, or modification for any violation of these regulations or any term or condition of the permit or lease (43 CFR 4130.3). The environmental assessment will be used to identify the appropriate terms and conditions that should be included with the renewed permit.

Finally, the AO must determine whether or not implementation of the selected alternative could result in significant impact to the human environment. If not, this determination would be documented in a Finding of No Significant Impact (FONSI). If the impacts could be significant, an environmental impact statement would be necessary.

As per Worland Field Office (WFO) policy, the following statement shall be incorporated into the Terms and Conditions of all grazing permits issued by the WFO: "Grazing permit modifications (e.g., Season of Use) as well as permit transfers shall be for a period of not less than 3 years without prior approval by the authorized officer (43 CFR 4110.2-3(f) and 4130.3)."

## 1.4 Need And Purpose Of Action

BACKGROUND

In order for livestock grazing to occur on public land, the livestock permittees must hold a valid grazing permit. The Code of Federal Regulations, 43 CFR 4130.2(a), states that "Grazing permits or leases shall be issued to qualified applicants to authorize use on the public lands and other lands under the administration of the Bureau of Land Management that are designated as available for livestock grazing through land use plans." The Grass Creek RMP has designated the South Gooseberry Group Allotment as available for livestock grazing. The permit applicants control base property associated with a grazing preference on the allotment and have been determined to be qualified applicants. Grazing permits are subject to renewal in accordance with the provisions of the Taylor Grazing Act, Federal Land Policy and Management Act, Public Rangelands Improvement Act, Administrative Procedures Act, Grass Creek Resource Management Plan, and the grazing regulations at 43 CFR Part 4100.

The South Gooseberry Group Allotment is a common use allotment with 9 livestock grazing permits. Two of these grazing permits have recently expired, and several other permits are due to expire in the near future. This EA will address all current and future permitted livestock grazing on the allotment.

NEED: The need for the action is to renew the existing grazing permits on the South Gooseberry Group Allotment which are due to expire, or have already expired.

PURPOSE: The purpose of this action is to continue, modify, or cancel the current grazing management to promote healthy, sustainable rangeland ecosystems and to meet/continue to meet rangeland health standards. This action focuses on the environmental issues specific to livestock grazing management on the allotment, and the renewal of the term grazing permits associated with the allotment.

DECISION TO BE MADE: BLM must decide whether to renew grazing permits in the South Gooseberry Allotment and if so, under what terms and conditions.

## 2.0 DESCRIPTION OF ALTERNATIVES

Section 102(2)(E) of the National Environmental Policy Act provides that agencies of the Federal Government shall "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources" (H-1790-1 – National Environmental Policy Act Handbook). Alternatives must be considered and assessed whenever unresolved conflicts involve alternative uses of resources or options offering meaningful differences in environmental impacts. The following alternatives were developed based upon issues identified though internal scoping as well as through cooperation with the livestock permittees, to analyze the impacts of livestock grazing on the South Gooseberry Group Allotment under various livestock grazing management scenarios, including any requests for modifications made by the livestock grazing permittees. During the development of this EA, there were no unresolved conflicts or issues that resulted in the development of additional alternatives.

### 2.1 Alternative 1 – Renew Grazing Permits

Under Alternative 1, new grazing permits would be issued to the permittees in the South Gooseberry Group Allotment whose permits have expired. These grazing permits would be issued for a term of ten years, or for the duration of a valid base property lease, if applicable. The permits would authorize the same level of livestock grazing use as the previous grazing permits, with no changes in livestock kind or permitted use period. A forage utilization stipulation would be added to the terms and conditions of the grazing permits, as per the Grass Creek RMP, as well as a stipulation regarding off-road travel in the course of livestock management. To comply with current policy and to account for any unplanned cultural discoveries during the life of the permit, standard cultural stipulations would also be added. New grazing permits would be issued for the following livestock grazing use on the allotment, shown below in Table 1:

**Table 1 – South Gooseberry Group Allotment –Livestock Grazing Permits Issued (Alternative 1)**

| *Permittee* | *No. & Kind of Livestock* | *Season of Use* | *Percent Public Land* | *AUMs* | *Expiration Date* |
|---|---|---|---|---|---|
| *Baird Cattle Co. (ls. Buckle)* | *51 Cattle* | *10/15-11/16* | *72%* | *40* | *02/28/2013* |
| *Tom Jackson* | *34 Cattle* | *06/01-10/29* | *100%* | *169* | *02/28/2020* |

*Terms and Conditions*

*Grazing strategies for cool season bunchgrass plant communities that are grazed partially during the growing season will be designed to allow a combined forage utilization of up to 50 percent of current year's growth.*

*Limited cross-country vehicle travel is allowed for the purpose of maintaining existing range improvements or animal husbandry efforts if established access routes do not exist. Travel on wet or muddy roads should be avoided to prevent rutting and soil erosion.*

*Grazing permit modifications (e.g., Season of Use) as well as permit transfers shall be for a period of not less than 3 years without prior approval by the authorized officer (43 CFR 4110.2-3(f) and 4130.3).*

*The operator is responsible for informing all persons in the area who are associated with this undertaking that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO). Within five working days the AO will inform the operator as to:*

*-whether the materials appear eligible for the National Register of Historic Places;*

*-the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,*

*-a timeframe for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction measures.*

## 2.2 Alternative 2 – Do Not Renew Grazing Permits / Eliminate Livestock Grazing

Under Alternative 2, the expired livestock grazing permits on the South Gooseberry Group Allotment would not be renewed. Current valid livestock grazing permits would be allowed to expire, and would not be renewed. The grazing preference for the allotment would then be removed from the Grass Creek RMP grazing base.

# 3.0 AFFECTED ENVIRONMENT

## 3.1 General Setting

The South Gooseberry Group Allotment is located approximately 10 miles south-west of Worland, WY. The allotment encompasses approximately 64,000 acres, of which approximately 58,500 acres are public land, with the remainder state and private lands (Map 1). For management priorities, the allotment is classified in the "I" (Improve) category.

Elevation within the allotment ranges from 4,200 feet in the eastern part of the allotment along Gooseberry Creek, to 6,400 feet in the western part of the allotment on Blue Mesa. The average annual precipitation in the area ranges from approximately 6 inches per year in the eastern portion of the allotment (BLM Spring Creek Rain Gauge), to approximately 9 inches per year or more in the western portion of the allotment (BLM Grass Creek Rain Gauge). The majority of the allotment is considered to be within the 5-9 inch precipitation zone (pz), with the far western part of the allotment within the 10-14 inch precipitation zone (pz).

The following general climate description is provided by the US Department of Agriculture, Natural Resources Conservation Service (NRCS), Ecological Site Description, Sandy Range Site, 5-9" Big Horn Basin Precipitation Zone (Site ID R032XY150WY):

> Annual precipitation ranges from 5-9 inches per year. The normal precipitation pattern shows peaks in May and June and a secondary peak in September. This amounts to about 50% of the mean annual precipitation. Much of the moisture that falls in the latter part of the summer is lost by evaporation and much of the moisture that falls during the winter is lost by sublimation. Average snowfall is about 20 inches annually. Wide fluctuations may occur in yearly precipitation and result in more dry years than those with more than normal precipitation.
>
> Temperatures show a wide range between summer and winter and between daily maximums and minimums, due to the high elevation and dry air, which permits rapid incoming and outgoing radiation. Cold air outbreaks from Canada in winter move rapidly from northwest to southeast and account for extreme minimum temperatures. Chinook winds may occur in winter and bring rapid rises in temperature. Extreme storms may occur during the winter, but most severely affect ranch operations during late winter and spring.
>
> High winds are generally blocked from the basin by high mountains, but can occur in conjunction with an occasional thunderstorm.

Growth of native cool-season plants begins about April 1 and continues to about July 1. Cool weather and moisture in September may produce some green up of cool season plants that will continue to late October.

The following information is from the "Emblem" climate station:

| | Minimum | Maximum | 5 yrs. out of 10 between |
|---|---|---|---|
| **Frost-free period (days):** | 98 | 171 | May 13 – September 19 |
| **Freeze-free period (days):** | 120 | 184 | May 1 – October 5 |
| **Mean Annual Precipitation (inches):** | 3.22 | 10.97 | |

Mean annual precipitation: 7.42 inches
Mean annual air temperature: 45.01°F (31.2°F Avg. Min. to 58.7°F Avg. Max.)
For detailed information visit the Natural Resources Conservation Service National Water and Climate Center at http://www.wcc.nrcs.usda.gov/ website. Other climate station(s) representative of this precipitation zone include "Basin", "Deaver", "Lovell" and "Worland".

## 3.2 Hydrology / Riparian

The allotment is located in five different watersheds (Map 2) known by the US Geologic Survey as a Level #6 Hydrologic Unit, or by (HUC #) as listed below in Table 2:

**Table 2**

| Watershed (HUC) Level #6 | Total Acres | Acres Within Allotment | % of Acres of Watershed in the Allotment |
|---|---|---|---|
| Little Gooseberry Creek-100800070405 | 20,823 | 20,600 | 98.9 |
| Cottonwood Creek-Spring Gulch-100800070609 | 43,602 | 27,270 | 62.5 |
| Gooseberry Creek-Holly and Niccolls Ditch-100800070709 | 25,945 | 6,000 | 23.1 |
| Gooseberry Creek-Rankine Basin-100800070708 | 28,900 | 5,700 | 19.7 |
| Bighorn River-Tie Down Gulch-100800070404 | 42,344 | 2,760 | 6.5 |

These watersheds contain modifications of inter-basin transfer of water and receive oil field discharge water with multiple private land owners who divert water from the drainages for agriculture and livestock watering uses. The water of the perennial streams originates from the Absaroka Mountain range that is located over 30 miles to the west of the allotment. The main drainage that flows through the southern portion of the allotment is Cottonwood Creek, with segments crossing state land, private, and public lands. Gooseberry Creek is located just north of the allotment, and a portion of the northern end of the allotment flows into Gooseberry Creek from the Holly and Niccolls Ditch and Rankine Basin watersheds. There are also other lower elevation watersheds such as the Little Gooseberry watershed that is almost entirely (98.9%) within the allotment, and Tie Down Gulch located at the bottom of the allotment. The drainages are located over the Tertiary Fort Union and Willwood formations that contain very fine grained sediment and are susceptible to hydrologic erosion with high amounts of suspended sediment in the water following infrequent intense storm events that produce runoff at lower elevations. The average gradient of the streams is generally <2% and are generally considered as Rosgen C type streams that are generally found in meandering lowlands the stream types are defined using the channel characteristics as found in *A Classification of Natural Rivers, Rosgen 1996.* The rating is based on the gradient, sinuosity, and width depth ratio of drainage. These watersheds are similar to other lower elevation watersheds in the Bighorn Basin as these drainages have ephemeral flow regimes with flow occurring less in the channel for brief periods of the year following snow melt in the early spring and typically contain flow following storm events during mid and late summer for a total of less than 10 percent of the year.

Gooseberry and Cottonwood Creeks have perennial flow regimes with flow in the channel greater than 80% of the year due in part to oil field water discharge from Hamilton Dome Oil Field upstream from the allotment, and some of the other larger sub-watersheds on the western end of the allotment have an intermittent flow regime with flow in the channel 10-80% of the year, while the majority of the watersheds along the lower elevations in the allotment have an ephemeral flow regime with flow in the channel <10% of the year. Ephemeral streams are defined as those streams/reaches that flow only in response to precipitation events, and where any groundwater inflows are insufficient to sustain stream flow due to losses from evaporation, transpiration, and seepage.

There are a total of four different riparian segments on Cottonwood Creek totaling 2.55 miles, located on public land. The flow from these segments originates as base flow from runoff and also from outflow from the Hamilton Dome Oil Field located further up in the watershed. There are approximately 35 reservoir impoundments along ephemeral drainages within the allotment that have an effect on the watershed hydrology. These reservoirs have been historic attempt to capture marginal amounts of runoff in the spring and have short life spans due to high amounts of sedimentation and silting of reservoirs from these watersheds. There are several shallow wells ranging from 20 feet to 400 feet in depth that are completed in the Fort Union, Willwood, and shallow unconsolidated Quaternary aquifers along the corridors of Gooseberry and Cottonwood Creeks.

## 3.3 Soils

The soils reflect the desert-like environment in which they formed. They are highly variable reflecting differences in parent material (sandstone, shale and/or mixed alluvium), aspect and elevation, and precipitation zone. These soils are typified by a light brown surface layer. Surface textures are loams, fine sandy loams, very fine sandy loams, clay loams, sandy clay loams, and silty clay loams. Subsoil textures often reflect an increase in clay content and calcium carbonate, being expressed as an argillic or calcic horizons. Slopes range from 0 to 70 percent, but are generally less than 40 percent.

The ecological sites found in the in the allotment are listed below:

| | |
|---|---|
| Loamy 5-9 in. pz. | R032XY122WY |
| Shallow Loamy 5-9 in. pz. | R032XY162WY |
| Sandy 5-9 in. pz. | R032XY150WY |
| Shallow sandy 5-9 in. pz. | R032XY166WY |
| Clayey 5-9 in. pz. | R032XY104WY |
| Shale 5-9 in. pz. | R032XY154WY |
| Gravelly 5-9 in. pz. | R032XY112WY |
| Lowland 5-9 in. pz. | R032XY128WY |
| Saline lowland 5-9 in. pz. | R032XY138WY |
| Saline Subirrigated 5-9 in. pz. | R032XY142WY |
| Saline Upland 10-14 pz | R032XY344WY |
| Loamy 10-14 in. pz. | R032XY322WY |
| Sandy 10-14 in. pz | R032XY350WY |
| Shallow Sandy 10-14 pz | R032XY366WY |

## 3.4 Upland Vegetation

Vegetative communities within the allotment are highly variable. Basin Grassland / Shrub Communities are predominately found on sandy and loamy type sites. These sites are dominated by Wyoming big sagebrush *(Artemisia tridentata)*, with an under story of bluebunch wheatgrass *(Agropyron spicatum)*, western wheatgrass *(Agropyron smithii)*, needle-and-thread *(Stipa comata)*, and Indian ricegrass *(Oryzopsis hymenoides)*. These sites provide the majority of the livestock forage in the allotment. Salt Desert Shrub and Salt Bottom Communities are predominately found on saline upland and saline lowland type sites. These sites are dominated by Gardner's saltbush *(Atriplex gardneri)*, bottlebrush squirreltail *(Sitanion hystrix)*, Sandberg bluegrass *(Poa secunda)*, and Indian ricegrass. No known threatened or endangered or BLM sensitive plant species have been documented in the allotment.

Range site mapping conducted in the Grass Creek Planning Area from 1977 to 1979 concluded that 77 percent of the allotment was in fair to good range condition. During the range site mapping, approximately 4,700 acres, or 7 percent of the allotment were unclassified, and therefore considered to be unsuitable for livestock grazing (Grass Creek RMP / Draft EIS, Table 3-4, page 247). The remaining acreage within the allotment, approximately 59,300 acres, are considered suitable for livestock grazing.

Noxious weed species documented to exist within the allotment include Saltcedar. These infestations are primarily occurring around existing reservoirs. Treatment records indicate that most these infestations were less than 1/10 of an acre in size and were treated in 2004. The floodplain along Cottonwood Creek is also heavily infested with Saltcedar. Other noxious weed species documented to exist in the area include Whitetop, Russian knapweed, and Canada thistle. Approximately half of this allotment lies within the Gooseberry Creek Weed Management Area. This area is intensively managed and monitored for noxious and invasive weed species using an integrated pest management strategy with cooperation between private and public land managers within the area. Cheatgrass occurs across the allotment in varying abundances. However, visual observation indicates that perennial grasses are present with adequate densities and cheatgrass densities are not limiting perennial grass productivity or diversity.

## 3.5 Range / Livestock Grazing

The South Gooseberry Group Allotment is a common use allotment with 9 individual livestock grazing permits. Most of the grazing permits authorize cattle grazing during the spring, summer, and fall months. For the past several years, most of the livestock permittees have been voluntarily delaying livestock turnout early in the year to lessen the impact of grazing during the growing season. A total of 4,427 animal unit months (AUMs) of livestock grazing use are permitted on the public land. Livestock grazing use is permitted as shown below in Table 3:

**Table 3 – South Gooseberry Group Allotment – Permitted Livestock Grazing**

| Permittee | No. & Kind of Livestock | Season of Use | Percent Public Land | AUMs | Permit Expiration Date |
|---|---|---|---|---|---|
| Baird Cattle Co. (ls. Buckle) | 51 Cattle | 10/15-11/16 | 72% | 40 | 02/28/2010 |
| Tom Jackson | 34 Cattle | 06/01-10/29 | 100% | 169 | 02/28/2010 |
| Tom Jackson (ls. Pilot Butte) | 25 Cattle | 05/17-11/15 | 100% | 150 | 03/10/2012 |
| LU Sheep Co. | 1422 Sheep | 04/01-04/20 | 100% | 187 | 02/28/2013 |
| Jim & Phyllis Roseberry | 8 Cattle | 05/01-09/23 | 100% | 38 | 02/28/2013 |
| Steve & Kelli Bond | 218 Cattle | 05/01-11/30 | 87% | 1334 | 02/28/2014 |
| Sundown Inc. | 125 Cattle | 05/01-11/30 | 100% | 879 | 02/28/2014 |
| Jim & Phyllis Roseberry | 91 Cattle | 05/15-11/14 | 100% | 550 | 02/28/2015 |
| Irish Acres LLC | 199 Cattle | 04/20-11/10 | 88% | 1180 | 02/28/2017 |

Livestock grazing actual use levels have varied considerably from year to year, based upon annual fluctuations of the permittees livestock operations, as well as reductions in grazing use during periods of drought. Overall, the Bighorn Basin was in varying degrees of drought from 2000 through 2004. A significant reduction in livestock grazing on the allotment in 2002 and 2003 was a direct result of drought conditions. Actual livestock grazing that has occurred on the South Gooseberry Group Allotment for the past ten years is summarized below in Table 4:

| Table 4 – Livestock Actual Use | | |
|---|---|---|
| **Year** | **AUMs Used** | **Percent of Permitted Use** |
| 2009 | 2160 | 49% |
| 2008 | 2039 | 46% |
| 2007 | 2314 | 52% |
| 2006 | 2542 | 57% |
| 2005 | 2467 | 56% |
| 2004 | 2837 | 64% |
| 2003 | 1631 | 37% |
| 2002 | 1514 | 34% |
| 2001 | 2638 | 60% |
| 2000 | 3350 | 76% |
| **10 Year Average** | **2349** | **53%** |

## 3.6 Wildlife

This allotment provides habitat for several big game species, as well as many other non-game and special status wildlife species, during all seasons of the year. The western half and the eastern quarter of the allotment is predominantly rolling sagebrush grasslands, and the remaining acreage is characterized as badlands, with a mix of grassland, saline uplands and sagebrush patches. Portions of these sagebrush grasslands provide crucial winter range for antelope, and comprise about 30% of the allotment. Upland portions buffering both the Gooseberry Creek riparian corridor on the north and Cottonwood Creek corridor to the south end of the allotment provide crucial winter range for mule deer, making up approximately 10% of the allotment. The western and larger portion of this allotment is higher in elevation and receives more precipitation, and is characterized by fairly continuous rolling sagebrush habitats. This area, that comprises approximately 50% of the allotment, provides winter concentration areas, breeding, nesting, and early brood rearing habitats for a fairly large population of sage-grouse, as well as breeding, nesting, and foraging habitat for other sagebrush obligate bird species like the sage thrasher, sage and Brewer's sparrows, and loggerhead shrike. Although they have not been documented through formal inventory efforts, these species, like the sage-grouse, are also BLM sensitive species, are common residents of the sagebrush communities in the area, and are the only other sagebrush obligate BLM sensitive species likely to occur within this allotment. The Ferruginous hawk, burrowing owl, white tailed prairie dog and mountain plover would be the other BLM sensitive species likely to inhabit the Salt Desert Shrub type plant communities found within the allotment. Other species like the badger, bobcat, and a variety of small mammals, passerines, and raptors species inhabit the allotment as well. No known threatened or endangered animal species have been documented in the allotment.

There are 9 active sage-grouse leks identified in or near the South Gooseberry Group Allotment. Lek count data is available for 5 out of the 9 leks with data dating back at least 20 years (Map 3). Lek counts for 4 of these leks show a rather static trend over time with sporadic highs and lows occasionally observed, and an increased trend for Blue Mesa #25 (GC-25), the largest lek in the allotment, with male attendance in the single digits in the 1980's to a high count of 75 males in 2008. Lek counts can be quite variable, and are not always the best indicator of habitat quality. Weather and/or predators can often affect lek activity and lek monitoring. As stated earlier sagebrush habitats in the western portions of the allotment are providing sage-grouse wintering habitat. This wintering has been documented with ground and air surveys within the past 5 years. Other areas of the allotment are likely providing nesting and early brood rearing habitat for sage grouse as well. Several nests have been observed in the western part of the allotment also.

Three representative key area locations were selected in the allotment to monitor and measure soil and vegetative parameters, and to conduct an evaluation of the 17 Indicators of Rangeland Health, in the summer of 2009. The East Key Area is located at the eastern edge of the allotment in crucial antelope winter range. The North Key Area in the north central portion of the allotment, and the West Key Area, located within crucial antelope winter range in the west central part of the allotment, were both also within sage-grouse wintering, nesting and early brood rearing

habitats, and were within 2 miles or less of active sage-grouse leks (Map 3). Sagebrush canopy cover was measured at the key areas. The monitoring data collected is presented in Section 4.2 of this document. Sagebrush canopy cover at both the North and West Key Areas were within the range of sagebrush canopy covers anticipated for sage-grouse winter habitats for Wyoming. For the Rangeland Health Assessment, plant community composition and distribution as well as the functional structural groups (indicator #s 10 and 12) were found to be slight to moderate and moderate deviations from those anticipated for the East Key Area. At the North and West Key Areas, a none to slight and slight to moderate finding was observed. Habitats within the rangelands evaluated here are providing wildlife forage and cover needs, and are capable of sustaining viable populations and a diversity of native plant and animal species appropriate to these habitats.

## 3.7 Non-Renewable Resources

A total of eight oil or gas wells have been drilled within the South Gooseberry Group Allotment. All eight wells are Plugged and Abandoned. The area is open to leasing and there are current leases held within the allotment boundary; however, there is no current oil and gas activity within this area and no proposals for new activity. Because there are no active production sites within the allotment, non-renewable resources will not be considered in any further analysis within this document.

## 3.8 Recreation / Visual Resources

The allotment is located within the Extensive Recreation Management Area, where recreational resources and associated uses are recognized, but are not managed for at a high priority. Recreation management is custodial and addresses public health and safety, use and user conflicts, and resource protection. The majority of the allotment is in a semi-primitive setting, where the settings include naturally-appearing landscape except for obvious primitive roads, and on or near four-wheel drive roads, but at least ½ mile from all improved roads, though they may be in sight. County Road 431 (Gooseberry Highway), US Highway 20, and East Cottonwood County Road boarders the north, east, and southern portions of the allotment, which provides a rural setting for the allotment. The natural recreation resources in this area provides for recreational opportunities and experiences that cater to both primitive-type activities such as sightseeing, wildlife viewing, and solitude; and motorized activities on the two-tracks that exist within the allotment. Recreational use for this area consists of such activities such as sightseeing, hunting, camping, driving for pleasure (OHV and 4WD), destination travel for viewing the area and general dispersed recreation. Comprehensive Travel and Transportation manages this area as all motorized use is limited to existing roads and trails. The southern and western fringes of the allotment are located within BLM-administered public lands inventoried as containing wilderness characteristics. The interdisciplinary team identified the fringes as containing naturalness, unconfined recreation, and outstanding opportunities for solitude. Such features inventoried in these areas include scenic, wildlife, sage grouse, unique topography, and cultural values.

Scenic quality rating units (SQRU) within the allotment were inventoried as a C scenic quality, low to high sensitivity ratings, and front and middle country distance zones, which resulted in Visual Resource Management (VRM) Class III and IV. The objective of class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. The objective of class IV is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements of form, line, color, and texture.

## 3.9 Cultural Resources

The South Gooseberry Group Allotment contains fifty-four (54) recorded cultural resource sites. Within the allotment, there are no cultural resource sites that would be adversely affected by livestock grazing as currently permitted. In accordance with the Wyoming State Protocol at Appendix B.27, renewal of grazing permits is exempt from class III inventory. Standard cultural stipulations apply.

## 4.0 Monitoring Data

### 4.1 Hydrology / Riparian

Three of the four riparian segments on public land within the allotment were evaluated in the field by an interdisciplinary team for a rangeland health assessment in the summer of 2009. The other segment was previously evaluated in the spring of 1992, and due to time constraints was not evaluated again in 2009. The segments were evaluated for the Proper Functioning Condition using *BLM Technical Reference 1737-15*. Some of the segments were also rated using the Rosgen Stream Classification System, in order to better understand the riparian potential and classification of the flow regime and flow conditions. Table 5 below contains a summary of the ratings of the segments along with the Rosgen Classification of the streams:

**Table 5 – Riparian Segments**

| BLM ID# | Riparian Area | (mi) | Water Type | Date Monitored | Gradient (%) | Rosgen Class | Function | Trend | Rating Scale |
|---|---|---|---|---|---|---|---|---|---|
| P0039X | COTTONWOOD CK | 0.17 | Perennial | 9/18/2009 | 0.2 | C | FAR | DN | 2 |
| P0051X | COTTONWOOD CK | 0.13 | Perennial | 9/18/2009 | 0.2 | C | FAR | N/A | 4 |
| P0401X | COTTONWOOD CK | 1.43 | Perennial | 9/18/2009 | 0.2 | C | NF | N/A | 0 |
| P0402X | COTTONWOOD CK | 0.82 | Perennial | 3/3/1992 | 0.2 | C | NF | N/A | 0 |
| Total: | | 2.55 | | 0% PFC/11.8% FAR/ 88.2% NF | | | | | |

*PFC=Proper Functioning Condition FAR=Functioning at Risk N/A= Not Apparent U=Unknown*
*Rating Scale= 0- Non Functioning, 1-9 Functioning at Risk, 10-19 PFC, 20=Potential Natural Community.*

Photos of Cottonwood Creek show an intense invasion of tamarisk along the floodplain and within the bank-full channel. In areas where tamarisk has encroached up to the active banks, there is instability along the banks. There is also no recruitment of riparian vegetation along point bars that are dominated by gravel and sand. The riparian area is limited to a small band of carex species with a width of two to three feet in sections. The segments have limited capability due to excessive flows in a wide channel with some blowout sections of side channels have occurred.

### 4.2 Upland Vegetation / Soils

Very little historical vegetation monitoring data has been collected on the South Gooseberry Group Allotment. Periodic allotment inspections over the years have not identified any significant management problems on the allotment. In the summer of 2009, three key management areas (key areas) for the purpose of vegetation monitoring were selected on the allotment. Key areas are indicator areas that are able to reflect what is happening on a larger area as a result of on-the-ground management actions. Ecological site, soil type, vegetative community, topography, location of water sources, and livestock grazing history are some of the factors that were considered in the selection of these key areas. While some areas of Salt Desert Shrub Plant Communities can be found within the South Gooseberry Group Allotment, the Perennial Grass/Big Sagebrush Plant Community is considered the dominant plant community on the allotment. The high priority wildlife habitat on the allotment is predominately found in the Perennial Grass/Big Sagebrush Plant Community type, and these sites also receive the majority of the livestock grazing use on the allotment. All three key areas selected are located within the Perennial Grass/Big Sagebrush Plant Community type. The key areas selected were designated the East Key Area, North Key Area, and West Key Area. The key areas will also be used for future monitoring studies on the allotment. If future monitoring of the allotment indicates that additional key areas are needed in other plant community types, new key areas would be established at a later date. The current key area locations are indicated on Map 1, located at the end of this document.

Step point cover transects (approximately 200 points per transect) were run in each key area in the summer of 2009. Additionally, 300 foot sagebrush canopy cover transects were run in the North and West Key Areas, since these key areas are located within the designated core habitat area for sage-grouse. A summary of the cover data collected from each key area is shown in Table 6 below:

**Table 6 – Vegetation Monitoring Data**

| Key Area | Range Site | Basal Vegetative Cover | Litter | Bare Ground | Sagebrush Canopy Cover |
|---|---|---|---|---|---|
| East | Sandy 5-9 | 58% | 16% | 22% | --- |
| North | Sandy 5-9 | 41% | 36% | 19% | 19% |
| West | Loamy 10-14 | 48% | 32% | 14% | 18% |

In addition to the cover data illustrated above, three rangeland health assessments were conducted (one at each key area) by an interdisciplinary team on 8/4/2009 using the 17 Indicators of Rangeland Health as described in BLM Technical Reference 1734-6. Individual ratings for the *Rangeland Health Indicators* are displayed for each transect location below in Table 7:

**Table 7 – Rangeland Health Indicators**

| Indicator | Departure from Reference Sheet | | |
|---|---|---|---|
| | East Key Area | North Key Area | West Key Area |
| 1. Rills | N-S | N-S | N-S |
| 2. Water-flow patterns | N-S | S-M | N-S |
| 3. Pedestals and/or terracettes | N-S | S-M | N-S |
| 4. Bare ground | N-S | N-S | N-S |
| 5. Gullies | N-S | N-S | S-M |
| 6. Wind-scoured, blowouts, and/or deposition areas | N-S | N-S | N-S |
| 7. Litter movement | N-S | N-S | N-S |
| 8. Soil surface resistance to erosion | N-S | N-S | N-S |
| 9. Soil surface loss or degradation | S-M | S-M | N-S |
| 10. Plant community composition and distribution relative to infiltration | S-M | N-S | N-S |
| 11. Compaction layer | N-S | N-S | N-S |
| 12. Functional / structural groups | M | S-M | S-M |
| 13. Plant mortality / decadence | N-S | N-S | N-S |
| 14. Litter amount | S-M | N-S | S-M |
| 15. Annual production | M | S-M | S-M |
| 16. Invasive plants | M | N-S | N-S |
| 17. Reproductive capability of perennial plants | N-S | N-S | N-S |

N-S None to Slight S-M Slight to Moderate M Moderate M-E Moderate to Extreme E-T Extreme to Total

Overall attribute ratings for *Soil & Site Stability* were rated as "None to Slight" at the East and West Key Areas and "Slight to Moderate" at the North Key Area. *Hydrologic Function* was rated as "Slight to Moderate" at all three key areas. These determinations were made using rangeland health indicators 1 through 11 and 14. Following is a brief discussion of the observations made at each key area:

South Gooseberry – East Key Area

Rill formation was not observed. Water-flow patterns were disconnected, extending 3 to 6 feet in length. Recent heavy rains had made the flow patterns more pronounced. Blue grama and cactus were sitting on 1 to 2 inch pedestals. Transect data determined bare ground to be 22 percent and litter cover to be 16 percent. Bare ground was evenly distributed as small bare patches. Both bare ground and litter are within the guidelines described in the reference sheet and are adequate to maintain hydrologic function. No gullies or active headcuts were observed. No wind scour or blows-out areas were observed. Minimal litter movement was observed. The soil stability index (SSI), an indicator of the soil surface resistance to

erosion, was 5.4. Few biological soil crusts were observed. When the SSI is combined with vegetation and litter cover, the soil is stable and resistant to rain drop impact and to the erosive force of overland flow. A thin 1 to 2 inch A horizon is indicative of historic soil loss. The plant community composition is lacking in mid-stature grasses, nonetheless, it is adequate to facilitate infiltration and reduce runoff. No soil compaction was observed.

South Gooseberry - North Key Area

Rill formation was not observed. Water-flow patterns were 3 to 6 feet long; some connectivity was observed. Pedestals were observed to be 2 to 4 inches tall; this expression is due in part to a 8 to 10 percent slope. Transect data determined bare ground to be 19 percent and litter cover to be 36 percent. Bare ground was evenly distributed as small bare patches. Both bare ground and litter are within the guidelines described in the reference sheet and are adequate to maintain hydrologic function. No gullies were observed. No wind scour or blows-out areas were observed. Recent litter movement was observed as small piles caught behind bunch grasses and at slope breaks, probably the result of recent heavy rains. The soil stability index (SSI), an indicator of the soil surface resistance to erosion, was 4.7. Few biological soil crusts were observed. When the SSI is combined with vegetation and litter cover, the soil is stable and resistant to rain drop impact and to the erosive force of overland flow. A thin A horizon is indicative of historic soil loss. The plant community composition and distribution is adequate to facilitate infiltration and reduce runoff due in part to a healthy stand of needle and thread grass. No soil compaction was observed.

South Gooseberry - West Key Area

Rill formation was not observed. Few water-flow patterns were observed; all were short and disconnected. Pedestals were observed averaging only 1 to 2 inches tall. Transect data determined bare ground to be 14 percent and litter cover to be 32 percent. Bare ground was evenly distributed as small bare patches. Both bare ground and litter are within the guidelines described in the reference sheet and are adequate to maintain hydrologic function. Existing gullies are grassed over and healing with little advancement. No wind scour or blows-out areas were observed. Minimal litter movement was observed behind bunch grasses, probably the result of recent heavy rains. The soil stability index (SSI), an indicator of the soil surface resistance to erosion, was 4.3. Few biological soil crusts were observed. When the SSI is combined with vegetation and litter cover, the soil is stable and resistant to rain drop impact and to the erosive force of overland flow. There was no evidence to soil loss as indicated by a 3 inch A horizon. The plant community composition and distribution is adequate to facilitate infiltration and reduce runoff. No soil compaction was observed.

The key areas were selected to be representative of the range sites and resource conditions over the majority of the South Gooseberry Group Allotment. According to the range site guides locally developed by the NRCS, the Historic Climax Plant Community for these range sites is dominated by cool season bunchgrasses, with a variety of forbs and woody species. This would be considered excellent condition rangeland. Over time, with moderate, continuous season-long grazing, and/or prolonged drought, the plant community can shift to a Perennial Grass/Big Sagebrush Plant Community. This plant community would be considered good condition rangeland. In this plant community, the sites are still dominated largely by cool season grasses, but mid to short statured grasses are more common, and big sagebrush is more prevalent. With severe grazing, and protection from fire, the preferred cool season grasses can be significantly reduced or eliminated. At this stage, the plant community would be dominated by big sagebrush, with a short to mid grass understory of blue grama, Sandberg bluegrass, and threadleaf sedge. This plant community would be considered fair to poor condition range.

Based upon the data collected at the three key areas, as well as allotment-wide observations, cool season perennial bunchgrasses are found in abundance throughout the South Gooseberry Group Allotment. In the West Key Area, cool season perennial grasses comprise 42% of the basal vegetative cover. In the North Key Area, these species comprise 36% of the basal vegetative cover. In the East Key Area, these species comprise 14% of the basal vegetative cover. While areas of blue grama and Sandberg bluegrass can be found in parts of the allotment, particularly in close proximity to water sources and historic sheep bedground areas, they are not the dominant species. The cool season perennial bunchgrasses in all key areas exhibit good vigor and seed production.

During the rangeland health assessment, the vegetative community observed in each key area was compared to the reference sheet for the corresponding ecological site, developed by the NRCS. The *Biotic Integrity* in each key area was rated as a "Slight to Moderate" departure from the reference sheet. These determinations were made using rangeland health indicators 8 and 9, as well as 11 through 17. Bare ground and litter were well within the guidelines described in the reference sheets. Most plant communities found on the allotment represent the Perennial Grass/Big Sagebrush Plant Community type, which is considered to be an extremely stable and sustainable plant community as pertaining to soil stability, watershed function, and biological integrity.

## 4.3 Utilization Studies

Forage utilization studies have not been conducted historically on the South Gooseberry Group Allotment. With the increased focus on sage-grouse habitat, and the importance of residual forage for sage-grouse nesting, utilization studies were conducted on the South Gooseberry Group Allotment following the 2009 grazing season. The 2009 grazing season was considered an average forage production year based upon precipitation. As previously stated in Section 3.5, actual livestock grazing use during the 2009 grazing season was 2,160 AUMs, or 49 percent of permitted use. An allotment inspection was conducted on March 26, 2010. Key perennial bunchgrasses exhibited good vigor and seed production. Residual forage was abundant throughout the allotment. Overall livestock use was estimated as slight to light throughout the allotment. Additionally, height/weight utilization transects were completed in each key area to measure the level of utilization on the key forage species. The results of these transects are displayed below in Table 8:

**Table 8 – Forage Utilization, 2009 Grazing Season**

| Key Area | Key Species | Average Un-Grazed Plant Height | Average Grazed Plant Height | Measured Utilization |
|---|---|---|---|---|
| West KA | Bluebunch wheatgrass | 16 inches | 9 inches | 7% |
| North KA | Needle-and-thread | 18 inches | 7 inches | 28% |
| East KA | Needle-and-thread | 16 inches | 6 inches | 27% |

Photos of each key area, taken during the Rangeland Health Assessment in the summer of 2009, and repeated in March, 2010, are located at the end of this document. As previously noted, the North and West Key Areas are located within the prime sage-grouse habitat within the allotment. Residual forage levels were determined to be more than adequate to provide for sage-grouse hiding and nesting cover.

## 4.4 Rangeland Health Standards Conformance

The BLM grazing regulations at 43 CFR 4130.3-1(c) require that grazing permits issued by the BLM contain terms and conditions that ensure conformance with BLM regulations at 43 CFR 4180, which are the regulations under which the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Land Administered by the Bureau of Land Management in the State of Wyoming were developed. Recently, the Worland Field Office completed an assessment of the achievement of these standards on the South Gooseberry Group Allotment. The complete report was distributed to all interested publics, and is available from the Worland Field Office. The approved Rangeland Health Standards, and a summary of the assessment on the South Gooseberry Group Allotment, are as follows:

Standard #1: Within the potential of the ecological site (soil type, landform, climate, and geology), soils are stable and allow for water infiltration to provide for optimal plant growth and minimal surface runoff.
**Standard MET**

Standard #2: Riparian and wetland vegetation has structural, age and species diversity characteristic of the state of channel succession and is resilient and capable of recovering from natural and human disturbance in order to provide forage and cover, capture sediment, dissipate energy, and provide ground water recharge.
**Standard NOT MET**

*This Standard was determined to be Not Met due to the Functioning At Risk and/or Non-Functioning state of the four riparian segments located on public land on Cottonwood Creek. It was determined that current livestock grazing management was NOT the cause of this standard not being met.*

Standard #3: Upland vegetation on ecological site consists of plan communities appropriate to the site which are resilient, diverse, and able to recover from natural and human disturbance.
**Standard MET**

Standard #4: Rangelands are capable of sustaining viable populations and a diversity of native plant and animal species appropriate to the habitat. Habitats that support or could support threatened species, endangered species, species of special concern, or sensitive species will be maintained or enhanced.
**Standard MET**

Standard #5: Water quality meets State standards.
**Standard MET**

Standard #6: Air quality meets State standards.
**Standard UNKNOWN**

*This Standard was determined to be Unknown since no information is currently available to indicate that this standard is or is not being met.*

## 5.0 Environmental Consequences

### 5.1 Alternative 1- Renew Grazing Permits

#### 5.1.1 Hydrology/Riparian

The prescribed use levels would likely provide for continued upland vegetative health and in turn provide for the maintenance and stability of the watersheds. Other projects such as the planned removal of dense Tamarisk invasion along Cottonwood Creek, along with proper livestock use levels would likely improve the riparian areas on public land.

#### 5.1.2 Soils

Improvements to the soil resource are anticipated to continue with the renewal of the grazing permits, along with an improvement in overall watershed health. Rangeland health determinations conducted in 2009 determined that the allotment is responding well to current management. The soils are stable and resistant to rain drop impact and to the erosive force of overland flow, and the plant community composition and distribution is adequate to facilitate infiltration and reduce runoff.

#### 5.1.3 Upland Vegetation

The issuance of the grazing permits under Alternative 1 would comprise 5 percent of the total authorized grazing use on the South Gooseberry Group Allotment. The impacts of Alternative 1 detailed in the following analysis refer to all permitted livestock grazing on the allotment, even though Alternative 1 pertains only to issuing grazing permits to Baird Cattle Co. (ls. Buckle) and Tom Jackson at this time.

Livestock grazing management on the allotment would occur in the same manner as in the past. A portion of the annual forage production would be removed by grazing livestock. Part of this forage removal would occur during the critical growing season, generally defined as May and June. Considering the numbers of livestock, and the large size of the allotment, livestock grazing use during this period would be very light. Approximately 1,300 AUMs of livestock grazing use are permitted during this period. With 59,300 acres considered suitable for livestock grazing, the stocking rate on the allotment during the critical growing season would be approximately 46 acres per AUM (A/AUM). Most rangeland plants would still have the opportunity to complete their growth cycle, produce seed, and replenish root reserves. This would result

in increased plant vigor and increased percent composition of desirable plant species within the vegetative community over time. The light stocking rate reduces the frequency of multiple grazing events per plant which could inhibit or delay completion of physiological processes (seed production, carbohydrate root reserve storage, etc.) in the long term.

Repeated growing season use on the South Gooseberry Group Allotment could have an effect on the key forage plants over time. Consistent growing season use of the sagebrush-grassland ecosystem by livestock could impact plant composition and vigor, watershed conditions, and wildlife habitat conditions. Particularly in the 5-9 inch precipitation zone, water sources, and the surrounding habitats, are very valuable to both wildlife and livestock. Grazing during the hot summer months would concentrate livestock use around water sources. Heavy to moderate use of the herbaceous/forb understory could result in decreased frequency and composition of the desired native species over time. This could impact those wildlife species that depend on the understory for forage or nesting cover. At this time, allotment specific monitoring data is not available to indicate that the existing level of growing season use, at a stocking rate of 46 acres per AUM during this period, is contributing significant impacts to the public land resources in the allotment.

Approximately 73 percent of the total permitted livestock grazing use on the allotment would occur during the summer, fall, and winter months, when rangeland plants are in a largely dormant stage, with little to no active plant growth taking place. This grazing use would not have a significant impact on the key forage plants physiological and morphological processes. Before plants are defoliated by fall and winter grazing, most plants will have had the opportunity to grow, reproduce, and replace carbohydrate root reserves consumed to initiate growth. Limiting combined forage utilization levels on the key forage plant species to the levels specified in the Grass Creek RMP (25 to 35 percent of the current year's growth in Salt Desert Shrub Plant Communities, and 30 to 50 percent of the current year's growth in the Perennial Grass/Big Sagebrush Plant Communities) would ensure that adequate residual forage would remain following livestock grazing for watershed protection. This ground cover, or litter, would help to reduce soil erosion by wind and water, retain soil moisture, reduce soil surface temperatures, and maintain nutrient cycling.

Livestock grazing use on the South Gooseberry Group Allotment is widely dispersed, low density grazing. Although topography and the location of livestock water affect livestock distribution, average livestock density would be approximately one animal per 92 suitable acres during the critical growing season. The combined stocking rate for the entire grazing year is approximately 13.4 A/AUM, considering suitability. This stocking rate is well within the range suggested in the range site guides locally developed by the NRCS. The range site guides for the 5-9 inch precipitation zone suggest a stocking rate of 6 to 10 A/AUM for loamy and sandy sites in fair to good range condition, and 12.5 to 20 A/AUM for saline upland sites in fair to good range condition. For the parts of the allotment located within the 10-14 inch precipitation zone, the range site guides suggest a stocking rate of 3.3 to 5 A/AUM for loamy and sandy range sites in fair to good range condition.

The prescribed grazing under this alternative would likely maintain or improve the upland rangeland health conditions by providing a stocking rate that is appropriate throughout the year, that defers the majority of grazing to post seed ripe and provides for a timeframe during the critical growing season for unabated growth-the entire month of May. The prescribed grazing provides a light stocking rate of 46 A/AUM during the critical growing season which would help to ensure that the majority of the key species within the allotments would either be used lightly or not used at all during that timeframe. Plants that are grazed lightly during this timeframe would have the vegetative matter and capability to grow, produce a viable seed, and replenish energy reserves. The vast majority of the rangeland plants on public land would grow and complete a growth cycle without any domestic grazing pressure. Grazing post seed ripe would also occur at a proper stocking rate and at a time that would be least likely to cause an interruption to the plants physiological or morphological processes. After seed ripe there is little or no active plant growth that would occur because the plants would have completed the annual cycle of producing seed and the climatic conditions are often unfavorable for further plant growth. The South Gooseberry Group Allotment is determined to be in conformance with the Standards for Healthy Rangelands, with respect to livestock grazing, and would continue to be in conformance under this alternative.

The stocking rates cited above for the South Gooseberry Group Allotment assume that the allotment is being grazed at the full permitted use level. As previously stated, the allotment has not been used at the full permitted use level for several years. Actual use for the past ten years has averaged 53 percent of the permitted use level, with a high of 76 percent of the permitted use level in 2000, and a low of 34 percent of the permitted use level in 2002, during a severe drought. Forage utilization studies conducted following the 2009 grazing season indicate that even if the allotment were used at the full permitted use level, forage utilization should still be within the prescribed use levels, in a normal vegetative production year.

Grazing as described under this alternative would continue to ensure that native vegetation communities are healthy and intact. With a healthy native herbaceous community, such as that found on this allotment, there is an inherent amount of protection from invading weeds. In contrast, areas that are disturbed to the point of having exposed mineral soils present an

opportunity for non-native encroachment. Areas that are commonly disturbed to a bare ground situation are the main roadways and manmade water sites. These areas may not necessarily be invaded by noxious or invasive non-native species; however, given the opportunistic characteristics of many invasive species, the opportunity for such an event to occur is greater. As has been done in the past, the area would continue to be monitored for the presence of noxious weeds, in cooperation with local partners, as per the Bighorn Basin Weed Management Plan. Treatment methods for any existing or new noxious weed infestations located would be evaluated on a site specific basis.

### 5.1.4 Wildlife

Based on field inventories, along with past, present and proposed livestock use levels, the prescribed livestock grazing proposed in this alternative should provide for the sustainability of wildlife habitats identified above in the affected environment, throughout all seasons of the year. Because there is little dietary overlap between cattle and wintering sage-grouse, mule deer or antelope, the cattle grazing proposed in this alternative would have little direct effect on wintering sage-grouse, mule deer or antelope use of the allotment. And the light to moderate livestock use levels observed and anticipated from the grazing prescribed in this alternative, would in average years, allow for adequate amounts of herbaceous residue and litter necessary for the sagebrush obligate species nesting, foraging and brood rearing habitat needs, as well as for the long term maintenance and sustainability of the Perennial Grass/Big Sagebrush Plant Communities, and Salt Desert Shrub Plant Communities. In the absence of established habitat plans, conservation plans, or strategies for BLM sensitive species, other than the sage-grouse, addressed in the Affected Environment, the habitat management for these species is being addressed by utilizing Land Health Standards which are covered in Section 4.4 of this document.

### 5.1.5 Recreation/Visual Resources

Impacts to recreation are expected to be minimal and would not limit the recreational activities which may occur in the area. The presence of livestock may interfere with goals of some visiting the area which may displace those visitors to alternative areas. Impacts to the recreation settings would be temporary in nature where site specific soil compaction and vegetation trampling will be evident from the livestock. Such impacts would be nearly unnoticeable for the casual observer. The recreational physical and social settings would not be impacted by the livestock operations due in part by historical land use which is widely accepted and expected in primitive-like settings such as this allotment. Livestock operations may minimally impact the inventoried wilderness characteristics in the fringes of the allotment. Livestock operations are part of the anthropogenic history of the landscape, and some of these areas still contain wilderness characteristics. Continuing use would not adversely impact the fringes containing wilderness characteristics.

Livestock operations working under the necessary tasks allowance may introduce new two tracks to the landscape; however this has not been observed or documented within the allotment. Limiting the use of motorized use off of existing roads and trails to only when it is necessary and restricting off road use during conditions such as wet soils and inclement weather where the land is susceptible to resource damage, impacts to travel management would be minimized.

Livestock operations would create contrasting elements of form, line, color, and textures created by the vegetation trampling, soil compaction, and the resultant erosional impacts from the surface disturbances. These impacts would be temporary in nature and dispersed. Impacts of livestock operations would go nearly unnoticed to the casual observer due to the natural appearance of the surface disturbance. These surface disturbance impacts would be minimal. The livestock operations are completely within the Visual Resource Management (VRM) class III and IV management objectives. Impacts to visual resources would be negligible.

### 5.1.6 Cultural Resources

Under the current policy (IM WO-99-039, IM WY-99-020, and Wyoming State Protocol) when a permit remains substantially unchanged a cursory review of cultural records can be used to identify affects to known historic or unevaluated properties. Results of the file search indicate that South Gooseberry Group Allotment contains 12 historic properties. None of these properties are sensitive (rock art, rock shelters, or structures) with regard to animal use of the area. Consultation was conducted with the State Historic Preservation Officer (SHPO) under the Wyoming State Protocol Agreement between the BLM and the SHPO. Under current policy no additional consideration of historic properties is required. Implementation of Alternative 1 would have no adverse affect on cultural properties.

There is a direct relationship between the rangeland health and potential effects to cultural resources. Provided rangelands remain in satisfactory condition and are not overgrazed, the potential effects to cultural resources from grazing permit renewals are expected to be minimal. Rangeland deterioration could constitute a viable threat to cultural properties. Alternative 1 is not expected to affect cultural resources given the fact that the Rangeland Health Standards are being met with respect to livestock grazing, the recent rangeland monitoring results are acceptable, and the permitted use level remains constant. Affects to cultural resources are most probable in high use areas such as around water wells or bottlenecks where

livestock congregate. Many of these facilities have been in place prior to the 1966 National Historic Preservation Act, thus are considered an existing disturbance. Per Section 3-D of the Wyoming State Protocol Agreement between the BLM and the State Historic Preservation Officer (SHPO), after a determination by cultural resource specialists, undertakings within previously disturbed areas are generally authorized to proceed without additional class III inventory. Away from livestock focal points, surface disturbance would be minimal and impacts to cultural resources would be negligible. Any and all future range development projects proposed within the allotment would comply with the section 106 process, would be subject to relevant cultural investigations prior to permit issuance, and would be analyzed under a separate and site specific EA.

Because livestock grazing is a dynamic ongoing process, cultural resource specialists, in conjunction with BLM range management specialists and the permittees, would periodically monitor and inspect heavy use areas and cultural resource sites following current policy (Grass Creek RMP and BLM Manual 8100 series). Any adverse effects discovered would be mitigated accordingly at the discretion of BLM in consultation with the Wyoming SHPO. Standard cultural stipulations apply.

## 5.2 Alternative 2 - Do Not Renew Grazing Permits / Eliminate Livestock Grazing

### 5.2.1 Hydrology/Riparian and Upland Vegetation

Under Alternative 2, impacts to the public land resources from livestock grazing on the South Gooseberry Group Allotment noted under Alternative 1 would be lessened, but not eliminated. Selection of this alternative would eliminate 5 percent of the total authorized grazing use on the allotment immediately. The allotment would continue to be grazed by the other livestock grazing operators that are currently authorized to use the allotment until their existing grazing permits expire over the next seven years. The impacts of Alternative 2 detailed in the following analysis essentially refer to no livestock grazing on the allotment in general, even though selection of this alternative would pertain only to the Baird Cattle Co. (ls. Buckle) and Tom Jackson grazing preferences at this time.

Under this Alternative, rangeland, watershed, and wildlife habitat conditions may improve at a faster rate than under Alternative 1. The most rapid rate of improvement in ecological condition could occur, and livestock grazing would not impede the natural maintenance of maximum ecological status on the allotment. In the absence of livestock grazing, plant growth would be optimized and plant material would accumulate as litter. Surface litter provides for raindrop interception, slows runoff and thereby increases infiltration, reducing surface temperatures and evaporation. Additionally, litter helps to maintain nutrient cycling and energy flows to support healthy biotic and abiotic systems. While the estimated timeframe to achieving maximum ecological status and condition would undoubtedly be shorter in the absence of livestock grazing, it would still require several decades, and perhaps longer.

Disturbed areas associated with past livestock grazing management activities on the allotment would still be present, and the opportunity for noxious weeds to be introduced and/or spread by livestock grazing on neighboring allotments, vehicular travel, waterways, wildlife movements, and other human influences would still exist on the allotments. In the long term, the potential natural community resulting from the elimination of livestock grazing would minimize opportunities for invasion by undesirable plants.

### 5.2.2 Soils

Soil and watershed health are anticipated to continue to improve under this alternative. With the immediate reduction of only 209 AUMS of livestock grazing, the rate of improvement would initially remain essentially the same as the current management.

### 5.2.3 Wildlife

Livestock grazing generally occurs with some variable influence to ungulate wildlife populations, so the elimination of livestock grazing could benefit these species. However, it is worth noting that all of the wildlife habitats and species described above in the affected environment section have evolved with some degree of an ungulate grazing disturbance regime. In the absence of livestock grazing, any competition for forage between livestock and wildlife would be eliminated, and the public land within the allotments would be available for exclusive use by wildlife, without disturbance by the presence of livestock and by livestock management activities.

### 5.2.4 Recreation/Visual Resources

Recreational use of the area would not be adversely affected by the selection of this alternative. The recreational settings would be altered to a more primitive landscape where as the lack of livestock grazing operations would lessen surface disturbance, new trails, new two-track roads, and reduce the potential for introducing or spreading noxious weeds.

Additional recreational opportunities, experiences, and benefits such as solitude, scenery, and to escape from personal and social pressures may be realized without the presence of livestock operations. The potential for new roads or surface disturbance to be created by motorized livestock grazing management activities would not exist. In the absence of livestock grazing, healthy rangeland conditions would be maintained within the allotment. Maintaining healthy rangelands is the basis for maintaining an overall healthy landscape that provides a variety of multiple use opportunities for recreational users of the public lands.

Visual resource management objectives would not be adversely affected under this alternative. The lack of livestock grazing presence including disturbed soils and trails would not introduce contrasting elements of form, line, color, and texture which would maintain or enhance the VRM goals and objectives for VRM Class II and III.

### 5.2.5 Cultural Resources

Under the Alternative 2, the proposed grazing permit renewals would not occur. A review of the historical records on file in the Worland Field Office indicates that the South Gooseberry Group Allotment is not eligible for the National Register of Historic Places (36CFR§60.4(a) and (b)). No historic properties would be affected by the selection of this alternative.

*ALTERNATIVE 2 CONCLUSIONS*
*The Grass Creek RMP states as a resource management objective, "Improve forage production and range condition to provide a sustainable resource base for livestock grazing while improving wildlife habitat, watershed protection, and forage for wild horses." The RMP further states, as a management action, "The amounts, kinds, and seasons of livestock grazing use will continue to be authorized until monitoring indicates a grazing use adjustment is necessary, or an environmental assessment indicates that a permittee's application to change grazing use is appropriate." Denying the renewal of these grazing permits would not be in conformance with the Grass Creek RMP and would require an RMP revision to remove the grazing preference from the RMP grazing base. No data is available to rationally support the selection of Alternative 2 at this time.*

## 6.0 Cumulative Impact Analysis

The lands involved in the application have historically been used for livestock grazing, wildlife habitat, and occasional recreational use. The incremental impacts identified within Alternative 1 or 2, when added to other past, present, and reasonably foreseeable future actions would not significantly contribute to any Cumulative Impacts.

There are no other known existing or proposed uses or activities on or near the allotment with the potential to cause cumulative impacts with livestock grazing.

## 7.0 EA Preparation/Consultations

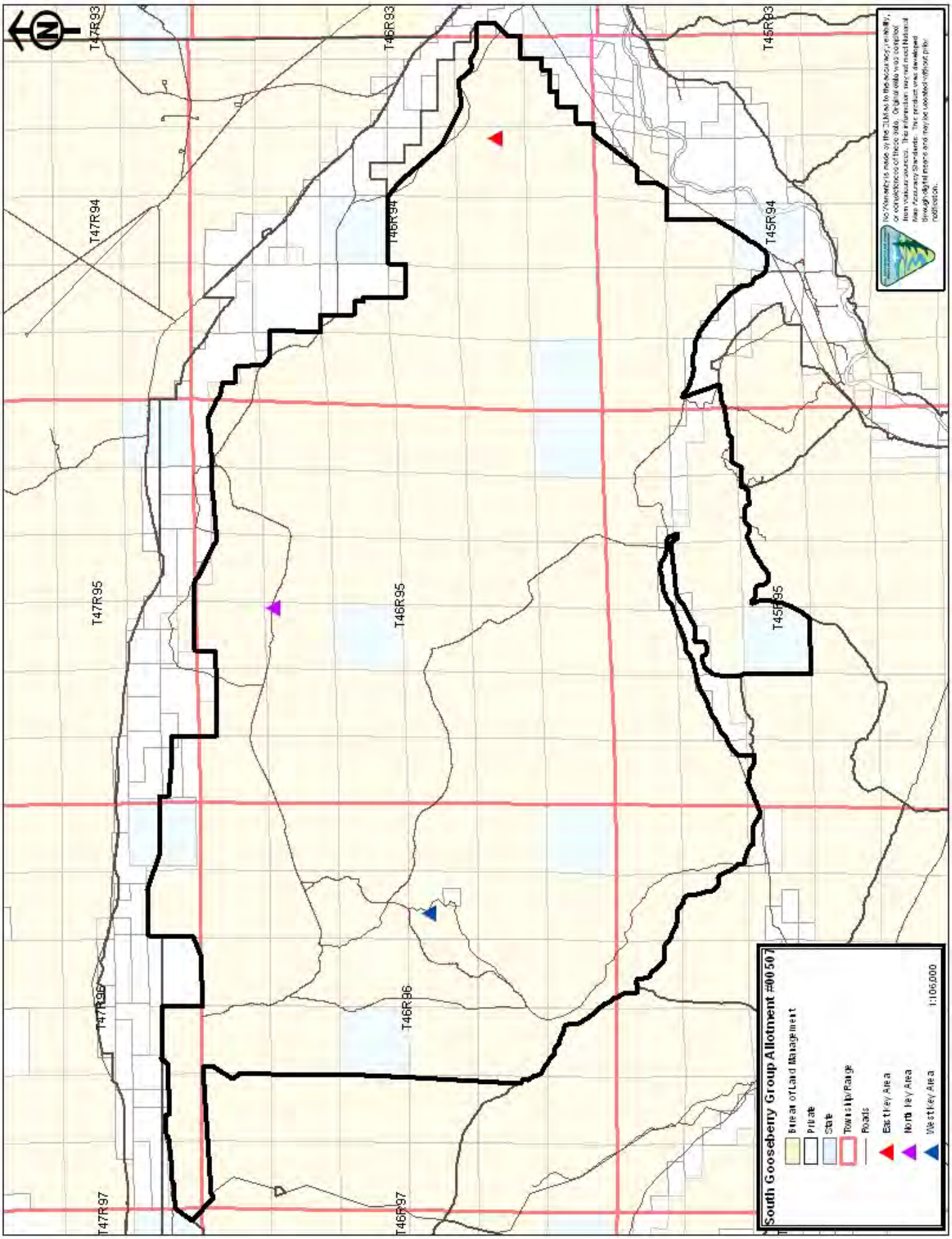
Other Persons/Agencies Consulted: Baird Cattle Company
Tom Jackson
South Gooseberry Group Permittees

*If the Authorized Officer determines that an Alternative is to be implemented, the BLM will issue a Proposed Decision in accordance with 43 CFR 4160, furthering the opportunity for any affected party to make comments, provide data, or make a Protest prior to the Decision becoming Final.*

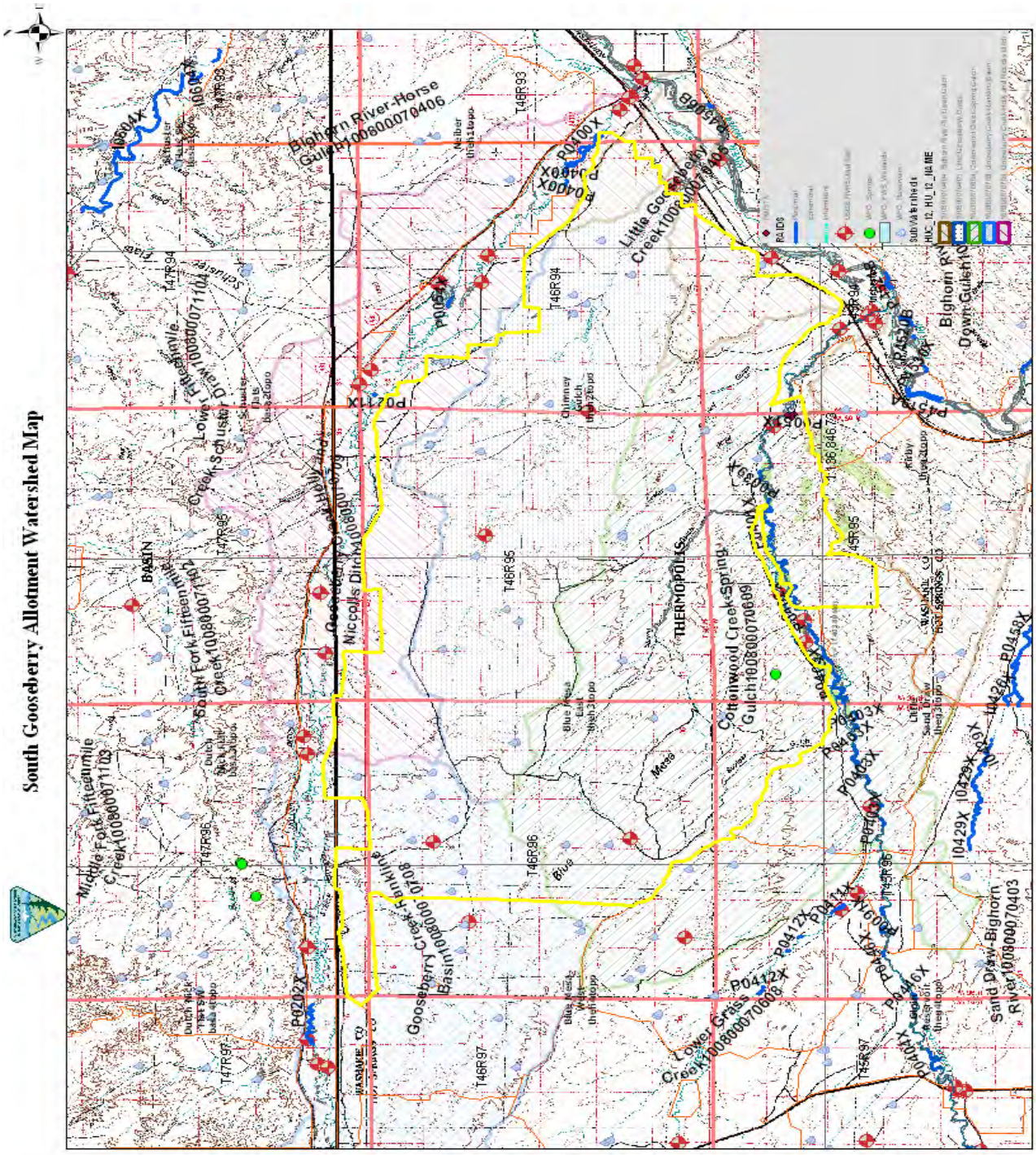
Reviewers: Karen Hepp, Rangeland Management Specialist, BLM
Tim Stephens, Wildlife Biologist, BLM
Marit Bovee, Archaeologist, BLM
Jared Dalebout, Hydrologist, BLM
Paul Rau, Recreation Specialist, BLM
Steve Kiracofe, NRS-Soils, BLM
Holly Elliott, NRS-Oil and Gas, BLM
Mike Tietmeyer, Supervisory Rangeland Management Specialist, BLM

Preparer(s): Cameron Henrichsen, Rangeland Management Specialist, BLM
Date: April 29, 2010

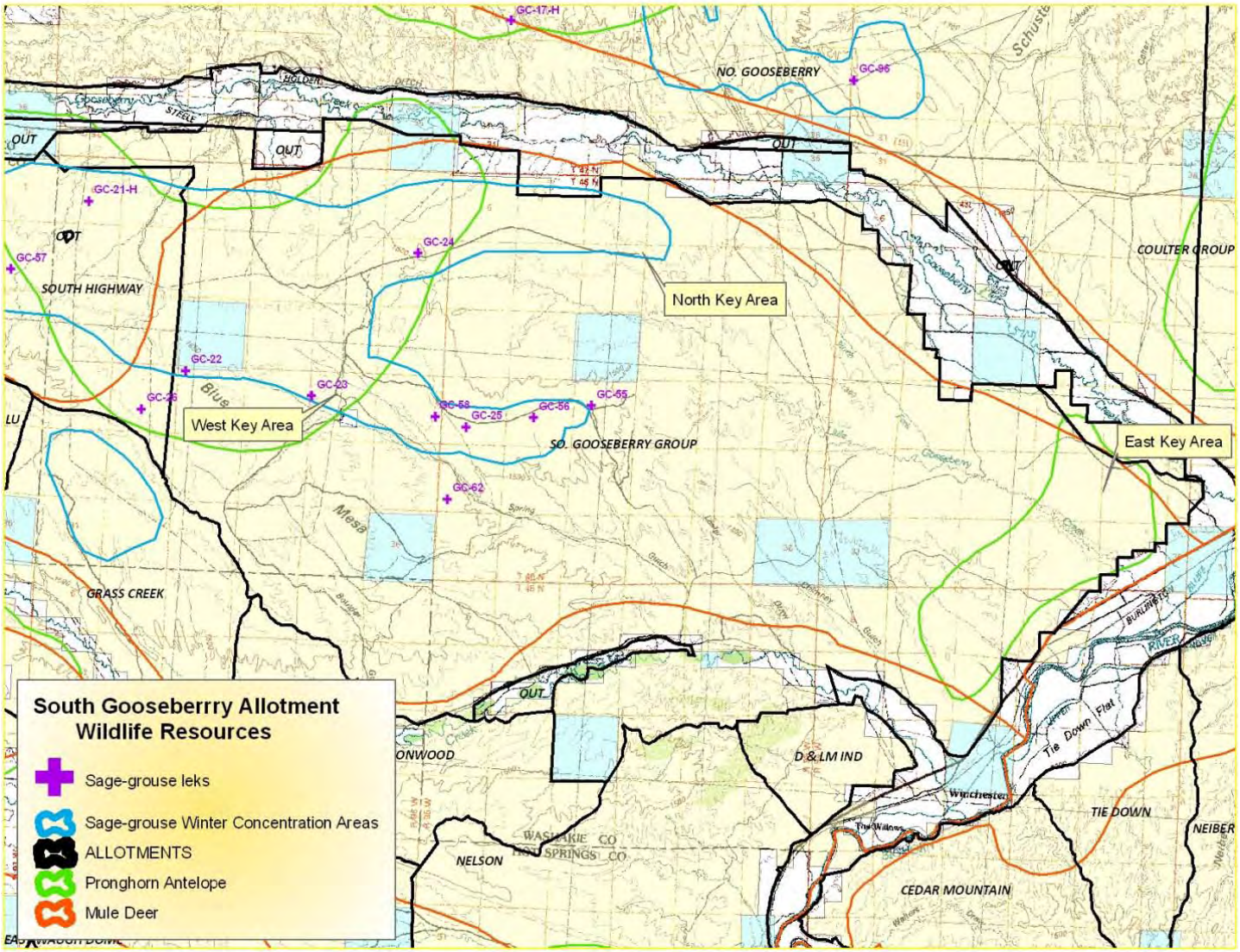
**Map 1: Allotment Map (Not to Scale)**



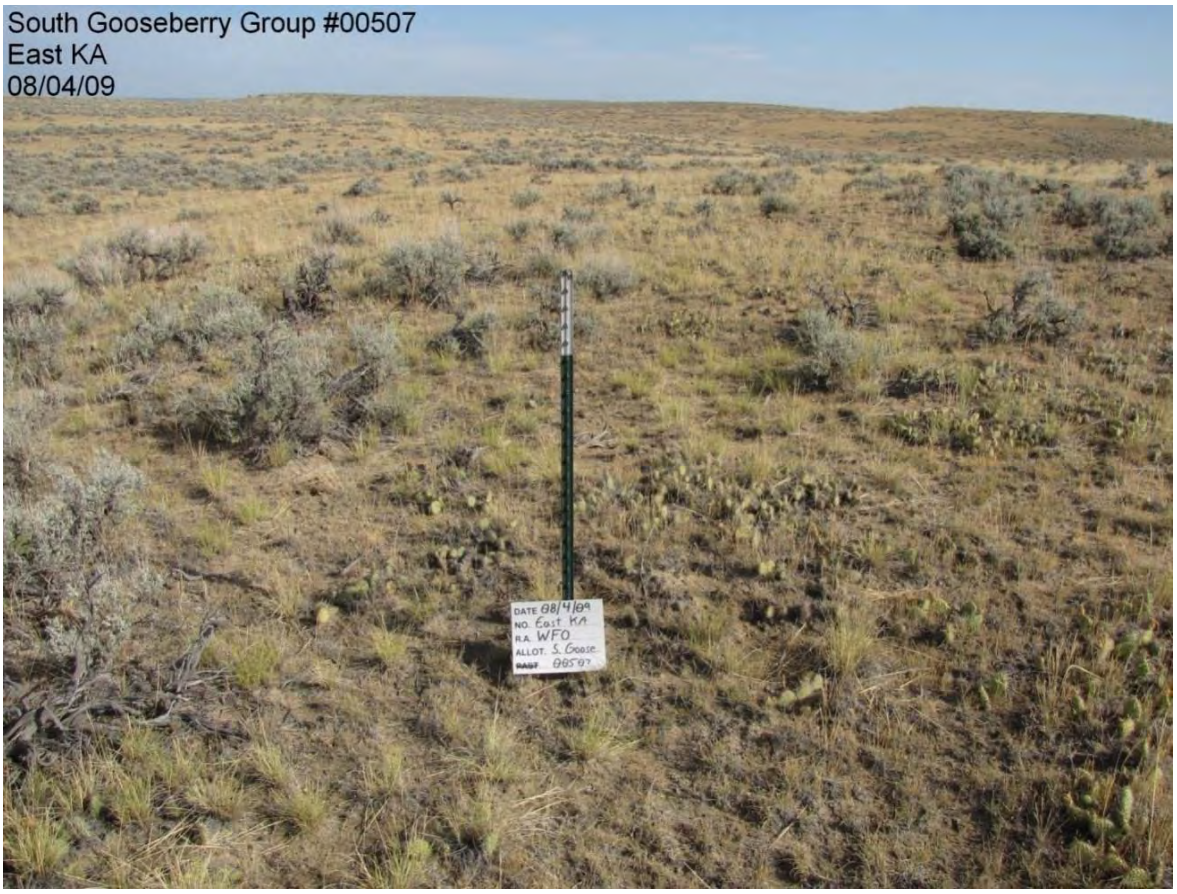
**Map 2: Hydrology/Riparian**



**Map 3: Wildlife Habitat Areas**

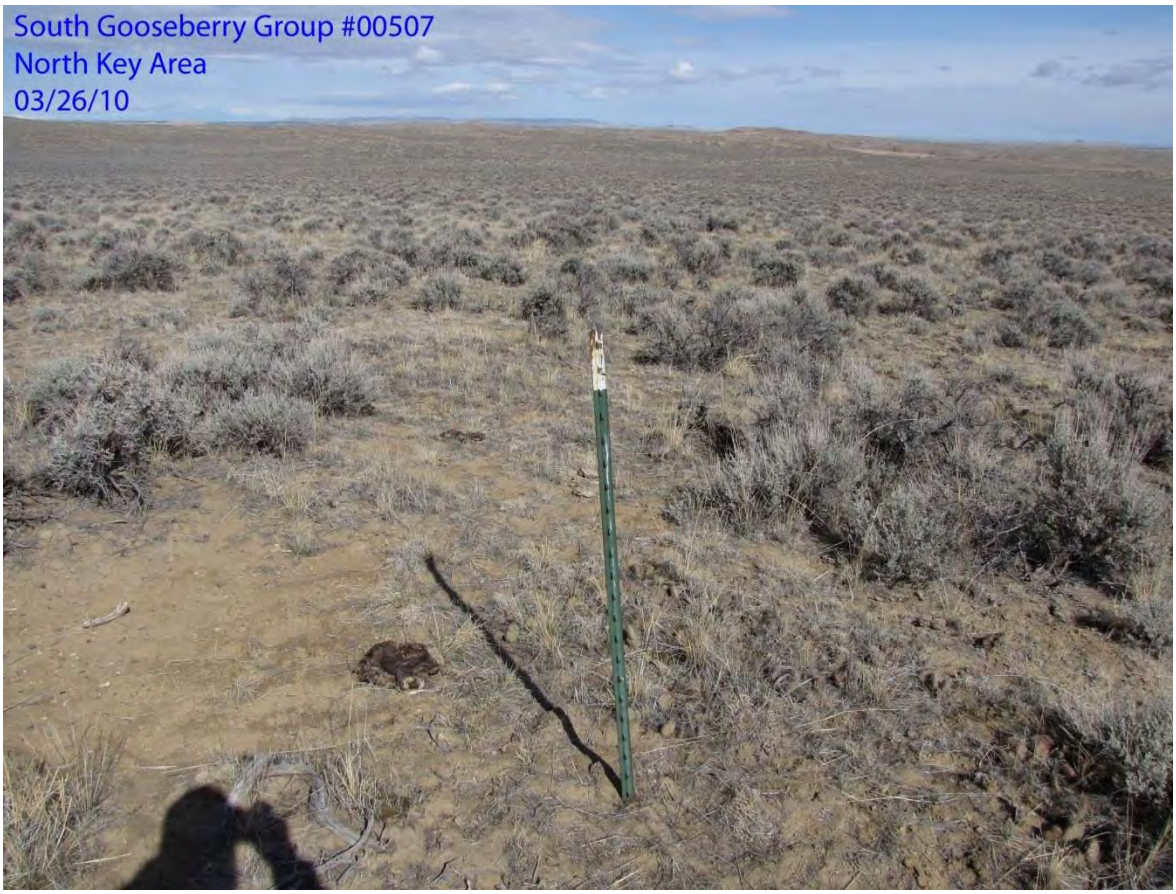


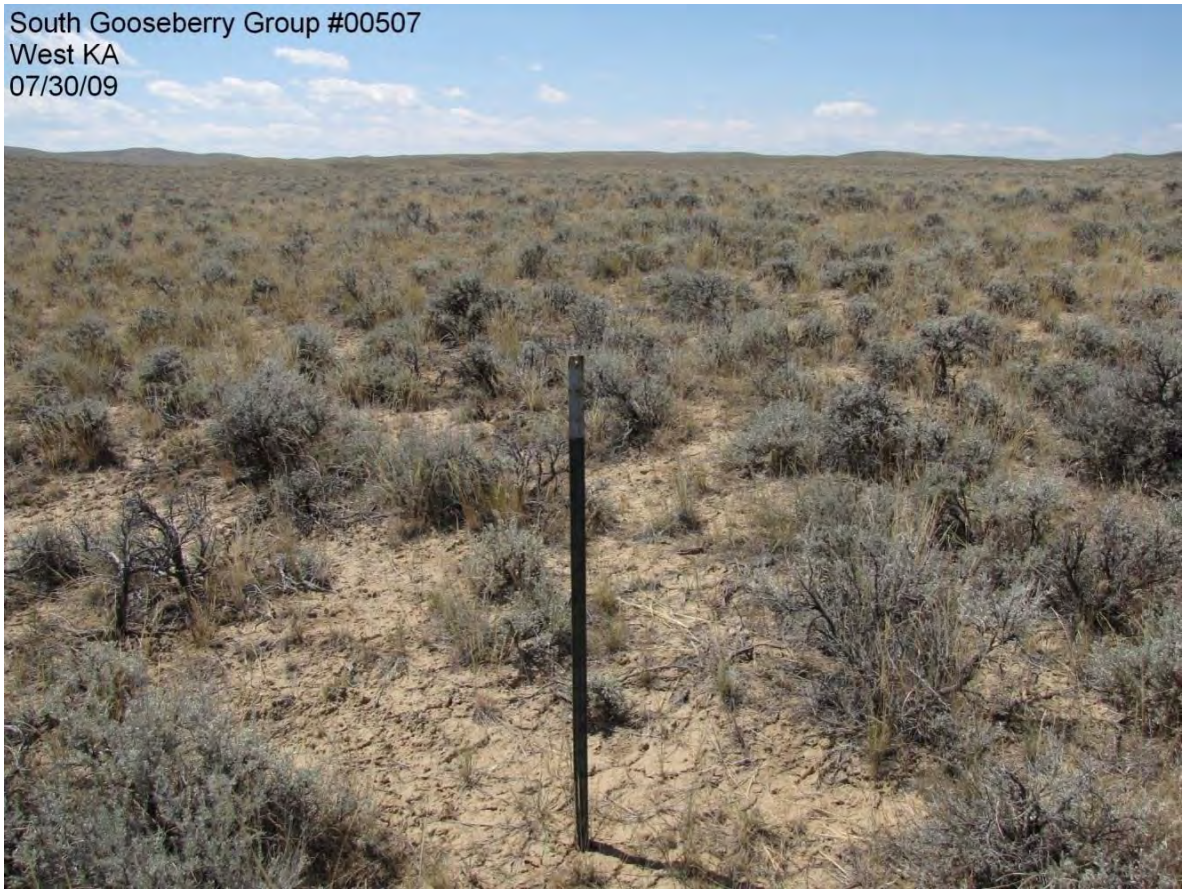
**PHOTOS**


South Gooseberry Group #00507
East KA
08/04/09
DATE 08/4/09
NO. East KA
R.A. WFO
ALLOT. S. Goose
~~PAST~~ 00507


South Gooseberry Group #00507
East Key Area
03/26/10


South Gooseberry Group #00507
North KA
07/30/09


South Gooseberry Group #00507
North Key Area
03/26/10


South Gooseberry Group #00507
West KA
07/30/09


South Gooseberry Group #00507
West Key Area
03/26/10