Thunder Basin National Grassland

2005 Monitoring and Evaluation Report

October 1, 2004 through September 30, 2005

United States Forest Service
Rocky Mountain Region

October, 2006

Table of Contents

Forest Certification

The Thunder Basin National Grassland Land and Resource Management Plan (Thunder Basin Plan) was approved on July 31, 2002. The Plan is a dynamic document, subject to change based on annual monitoring and evaluation as we implement. Monitoring is intended to provide me with information necessary to determine whether the Plan is sufficient to guide management of the Thunder Basin National Grassland for the subsequent year or whether modification of the plan or modifications of management actions are necessary.

Overall, the 2005 Monitoring and Evaluation results indicate that the management of the Thunder Basin Grassland is meeting the goals, objectives, standards and guidelines, and management area prescriptions in the Thunder Basin National Grassland Plan. I have reviewed the 2005 Annual Monitoring and Evaluation Report that was prepared by the Forest Interdisciplinary Team. It contains the monitoring data and results from the past fiscal year. A technical team of experts is assisting the ID team in developing monitoring protocols that will be implemented in future years.

The Forest ID Team has identified several emphasis areas for continued monitoring, including sage grouse and prairie dog colonies. During the process of developing the prairie dog strategy (in draft), a potential management area adjustment was identified for the Black-Footed Ferret Reintroduction Habitat Management Area (3.63). The Douglas Ranger District will continue to work on this issue to determine what type of changes to the TBNG plan are necessary to fully implement this strategy when it is finalized. The Thunder Basin Plan is sufficient to continue to guide management of the National Grassland.

Please contact Frank Romero at the Medicine Bow-Routt National Forests and Thunder Basin National Grassland, 2468 Jackson Street, Laramie, Wyoming, 82070, or call (307) 745-2300, if you have any specific concerns, questions, or comments about this report.

/s/Mary H. Peterson
MARY H. PETERSON
Forest Supervisor

OCTOBER 13, 2006
Date

Introduction

The Thunder Basin National Grassland (TBNG) is located in northeastern Wyoming in the Cheyenne and Powder River Basins between the Big Horn Mountains and the Black Hills. The Grassland ranges in elevation from 3600 feet to 5200 feet and the climate is semi-arid. Land patterns are very complex because of the intermingled federal, state and private lands. The Grassland abounds with wildlife year-round, provides forage for livestock and is underlain with vast mineral resources. There are opportunities for recreation including hiking, sightseeing, hunting and fishing.

The Thunder Basin National Grassland Plan was revised as part of the Northern Great Plains Management Plans Revision process. The revision issued a combined EIS for the revision of 8 national grasslands and 2 national forests in the northern Great Plains. Separate Records of Decision (ROD) were then signed for each unit, with the TBNG ROD being issued in July, 2002. The documents associated with the plan revision and ROD can be viewed at: http://www.fs.fed.us/ngp/docs.html

This Monitoring Report is organized according to the *USDA Forest Service Government Performance and Results Act Strategic Plan: 2000 Revision* goals where practicable. These goals are: Ecosystem Health, Multiple Benefits to People, Scientific and Technical Assistance, and Effective Public Service.

Scientific Technical Review Committee

As outlined in the Record of Decision, dated July 31, 2002, the Regional Forester realized that there are still concerns by some that the projected effects in the EIS underestimate what the real effects will be and that there is uncertainty about the effects of implementing the revised standards and guidelines. In an attempt to address this concern, the Regional Forester directed the Forest Supervisor to establish a scientific technical review committee composed of representatives from Wyoming Game and Fish Commission, University of Wyoming, Office of the Governor, USDA Forest Service, and Wyoming Department of Agriculture and Oil and Gas Conservation Commission.

The purpose of the committee is to develop a monitoring implementation plan that will describe the methods of monitoring needed to determine how well we are implementing the direction in the Revised Plan, to determine how effective implementation of Revised Plan direction is in meeting desired conditions, and to help us validate assumptions and direction used in the Revised Plan.

On May 21, 2004 individuals from the participating agencies met at the Medicine Bow – Routt National Forest and Thunder Basin National Grassland Supervisor Office in Laramie, WY (see box on the following page):

The purpose of this meeting was to establish the need, purpose and interest of agency representatives to serve on the committee, and to discuss the expectations of what the product outcome would be.

An example of a Monitoring and Implementation Guide was presented that displayed the monitoring questions, measures and protocols. The group also reviewed Chapter Four of the Thunder Basin National Grassland Land and Resource Management Plan - Monitoring and Evaluation.

From this chapter, the group decided to use a format for their Monitoring and Implementation Guide that displays the Monitoring Question, Monitoring Items, Protocols, Frequency of measure, Cost and Responsibility.

On August 5, 2004 a Memorandum of Understanding (MOU) was signed between the Medicine Bow – Routt National Forest and Thunder Basin National Grassland and the State of Wyoming to formalize the Scientific Technical Review Committee.

Scientific Technical Review Committee Participating Agencies

- University of Wyoming:
  - College of Agriculture
    - Dept. of Agriculture and Applied Economics
    - Dept. of Renewable Resources
    - Wyoming Natural Diversity Database
- Office of Governor:
  - Planning and Policy
  - Endangered Species Coordinator
- State of Wyoming:
  - Wyoming Dept. of Agriculture
  - Wyoming Game and Fish
  - Department of Environmental Quality
    - Water Quality Division
    - Air Quality Division
  - Oil and Gas Conservation Commission
- USDA Forest Service
  - Medicine Bow – Routt NFs and TBNG
  - US Forest Service Research

During 2005, the Scientific Technical Review Committee will work with the Thunder Basin Grassland Plan Monitoring and Evaluation Interdisciplinary Team to finalize the monitoring methods to provide an adaptive management approach to make changes and/or evaluate the effectiveness of changes made to the 2002 Revised Plan.

Goals and Objectives

Chapter 1 of the TBNG Grassland Plan lists Goals and Objectives to be accomplished through grassland management. Goals and objectives provide broad, overall direction regarding the type and amount of goods and services the national grasslands and national forests provide and focus on achieving ecosystem health and ecological integrity.

Many of the objectives are due to be accomplished over the life of the plan, usually considered to be 15 years. However, some objectives have earlier due dates, or are annual objectives. For the objectives due by 2005 or earlier, in addition to the annual objectives, the progress made towards these objectives is listed in Appendix 1.

Goals are concise statements that describe desired conditions, and expected to be achieved sometime in the future. They are generally timeless and difficult to measure. Goals describe the ends to be achieved, rather than the means of doing so.

Objectives are concise, time-specific statements of measurable planned steps taken to accomplish a goal. They are generally achieved by implementing a project or activity.

The goals and objectives in the TBNG Grassland Plan are tiered to the *USDA Forest Service Government Performance and Results Act Strategic Plan: 2000 Revision*. This strategic plan presents the goals, objectives and activities that reflect the Forest Service's commitment to a sustainable natural resource base for the American people. All goals and objectives fall under the overall mission of the Forest Service, which is to sustain the health, productivity, and diversity of the land to meet the needs of present and future generations. "Caring for the Land and Serving People" expresses the spirit of this mission. Implicit in this statement is the agency's collaboration with people as partners in caring for the nation's forests and rangelands.

The Forest Service's mission and strategic goals and objectives are derived from the laws defining and regulating the agency's activities. Goals and objectives describe tangible progress toward achieving the agency's mission through implementing land and resource management plans. These plans guide on-the-ground natural resource management to ensure sustainable ecosystems and to provide multiple benefits. The Forest Service is committed to these goals and objectives:

Projects Completed During FY05

Environment analysis (EA or EIS) was completed for the following projects on the TBNG. In addition, 15 smaller projects were also completed using a Decision Memo, the Categorical Exclusion authority appropriate for smaller projects such as range improvements, road access permits and rights of ways. These fifteen projects included 6 range improvements, 4 utility line and pipeline projects, 3 special use permits / easements and 2 minerals projects.

Table 1. EA and EIS Projects Completed in FY05

Name	EA/EIS	Date Signed	Primary Purpose
Spring Creek AMP's	EA	9/30/05	Range
Yates Thunder Basin CBM Wells POD	EA	1/14/05	Minerals

Conclusions Recommendations and Action Plan

Based on the information gained through the annual monitoring efforts, described in this report, the Interdisciplinary Team recommends the following actions.

- Continue work with the U.S. Fish and Wildlife Service to finalize the experimental/non-essential designation (10j Rule) in able to permit the reintroduction of ferrets on Thunder Basin.
- In partnership with Wyoming Game and Fish Department, apply for an allocation of black-footed ferrets from the USFWS for reintroduction on Thunder Basin National Grassland in fiscal year 2007.

- Continue to monitor sage grouse populations, especially in the Hilite Bill Geographic Area.
- Incorporate mountain plovers into the Viability 1 monitoring item, which includes reporting on sensitive species (reported every 5 years), and drop this monitoring item since mountain plovers are no longer being considered for ESA listing. This monitoring will next be reported in the TBNG 5 Year Review, scheduled for completion in 2008.
- Develop a prairie dog management strategy in cooperation with The Thunder Basin Prairie Ecosystem Association, Wyoming Game and Fish, Fish and Wildlife Service, Biodiversity Conservation Association and other partners. This strategy may involve an adjustment of the 3.63 Black-Footed Ferret Reintroduction Habitat Management Area boundary, in addition to modifications to the standards relating to the use of rodenticides. This may require a TBNG Plan amendment.

Forest Plan Appeals

Sixteen appeals were filed by a variety of groups and individuals who disagreed with the decisions made as a result of the Northern Great Plains Management Plan Revision Process. The Thunder Basin National Grassland Land and Resource Management Plan Revision was upheld in a decision by the Chief of the Forest Service on February 6, 2004. This appeal decision can be viewed at:

http://www.fs.fed.us/ngp/plan/appeals/appeals.html

Administrative Changes to the Forest Plan

Amendment 1: Dakota, Minnesota, and Eastern Railroad Corporation (DM&E)
One amendment to the TBNG plan has been completed to date. This amendment was signed on September 4, 2003 by the Regional Forester and authorizes rail line construction, operation and maintenance on the Thunder Basin National Grassland, Wyoming. The amendment is in response to a proposal from the DM&E railroad to expand rail operations into the Powder River Basin. The USFS participated as a Cooperating Agency with the Surface Transportation Board in the analysis and preparation of the final Environmental Impact Statement (EIS) for the DM&E proposal.

The EIS concluded that there was a need for the DM&E to construct and operate a rail line across portions of the TBNG. It also concluded that approval of the project on NFS lands would be inconsistent, in some instances, with the standards and guidelines in the revised Land and Resource Management Plans (LRMP).

This amendment modifies specific standards and guidelines for the railroad corridor and adjacent areas. The amendment can be found on the forest website:

http://www.fs.fed.us/r2/mbr/projects/specper/adobepdf/appxEdoc.pdf

New Laws, Regulations and Policies

Planning Regulations

On January 5, 2005, a final planning rule was published in the Federal Register. This rule supercedes the 2000 rule and implements the 1976 National Forest Management Act (NFMA). The 2005 Rule contains direction for modifying Forest and Grassland Plans that were developed under previous planning rules. If this review results in a decision to correct, amend or revise the 2002 Plan, the Forest will adhere to the 2005 rule, specifically 36 CFR 219.14 to accomplish that work. Information concerning the new planning rule can be found at the following website:

http://www.fs.fed.us/emc/nfma/index2.html

Travel Management

In November, 2005, the US Forest Service announced new travel management regulations. The new travel management policy requires each national forest and grassland to identify and designate those roads, trails and areas that are open to motor vehicle use. Local units will seek public input and coordinate with federal, state, county and other local governmental entities as well as tribal governments before any decision is made on a particular road, trail or area. Unplanned, user-created routes will be considered at the local level during the designation process.

The agency expects that it will take up to four years to complete the designation process for all 155 national forests and 20 grasslands. Each unit will also publish a motor vehicle use map. The final rule addresses the more than 80,000 comments received on last year's proposed rule. Most comments strongly supported the concept of designating routes and areas for motor vehicle use.

Once the designation process is complete, motor vehicle use off these routes and outside those areas (cross-country travel) will be prohibited. This prohibition will not affect over-snow vehicles, such as snowmobiles.

The rule will impact motor vehicle use on roads, trails and areas under Forest Service management. State, county or other public roads within national forest and grassland boundaries will not be included in the designation process. Travel management on the Thunder Basin National Grassland is scheduled to be completed in 2007. More information, included a link to the new regulation can be found at the following website:

http://www.fs.fed.us/r2/recreation/travel_mgmt/

Roadless Area Conservation

Roadless Area Conservation, also known as the roadless rule, has undergone many challenges and changes over the past several years. Currently, the previous interim roadless direction was extended with slight changes on January 16, 2006. This direction guides the current management of the Forest's roadless areas until such time as this direction is removed or enjoined.

This roadless direction established the State Petitions Rule, which is a process to provide Governors an opportunity to establish or adjust management requirements for National Forest System inventoried roadless areas within their States. USDA will accept state petitions until November 13, 2006. Wyoming had not filed a petition as of August, 2006.

The current interim direction and other information regarding roadless area direction and management can be found at the following website:

http://www.roadless.fs.fed.us/

Monitoring items

The National Forest Management Act (NFMA) requires specific legally required monitoring items for forest and grassland plan implementation as well as additional monitoring that will be conducted based on the availability of funding and personnel. The discussion and results of the monitoring items are given below. These items are listed in Chapter 4 in the TBNG Plan.

Ensure Sustainable Ecosystems

Aquifer Protection

Goal 1.a, Objective 5
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring items asks the question:

> ***To what extent have aquifers been protected from contamination from abandoned wells?***

Monitoring protocol/ data collected: Compliance monitoring is conducted to determine if wells currently being abandoned are plugged properly. Monitoring to determine if past abandoned wells have been plugged occurs infrequently.

Figure 1. Well supplying water for a stock water development.

Results / Evaluation: Groundwater aquifers on the Grassland provide water for domestic and livestock uses. Abandoned wells, if not properly sealed, can provide a direct conduit for surface water carrying pollutants to groundwater. Groundwater contamination could limit or increase the costs of water use for domestic or livestock purposes.

Oil and Gas Wells

There are an estimated 727 abandoned conventional oil wells on the Grassland. Of the conventional oil wells abandoned from 2003 to 2005, 100 percent were found to be properly plugged based on monitoring conducted by Douglas Ranger District Minerals Staff. The Wyoming Oil and Gas Conservation Commission regulates plugging of oil and gas wells in part to prevent pollution of freshwater supplies. Since standard procedures are in place to ensure oil wells are plugged before they are abandoned, it is assumed that most of the 727 abandoned oil wells have been properly plugged.

Water Wells

The number of abandoned domestic and livestock water wells has not been summarized, but efforts are underway to update this information. WYDEQ regulations require the plugging of abandoned stock and municipal wells, but it is unknown to what extent these regulations have been followed on the Grassland. There are no known incidents of aquifer cross contamination on the Grassland.

Recommendations: Continue efforts to monitor oil and gas wells currently being closed to ensure they are properly plugged to prevent contamination of freshwater supplies. A comprehensive effort to determine if historic abandoned wells have been properly plugged could be adopted when funding allows. Efforts should continue to update information related to abandoned stock and domestic water wells on the Grassland.

Specific Recommendations: As time and funding allow, consider:

1. Determine the number of abandoned domestic and stock wells on the Grassland (i.e. query files, NFS databases, State Engineer Database),
2. Determine whether the abandoned domestic and stock wells on the Grassland have been properly plugged (i.e. query State Engineer Database and Water Rights Records),
3. Determine whether oil wells abandoned on the Grassland before 2003 have been properly plugged (i.e. query Wyoming Oil and Gas Conservation Commission Records),
4. Develop and implement a field sampling protocol to validate the results of recommendations #1-3.

Black Footed Ferret

Goal 1.b, Objective 2
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***To what extent are NFS lands and their management contributing to the recovery and viability of black-footed ferrets?***

Monitoring Protocol/Data Collected: Acres of active prairie dog colonies (forage for ferrets, should they be reintroduced in the future); Acres planned for ferret reintroduction; Progress toward such a reintroduction effort.

Results/Evaluation: In 2005, Thunder Basin managed 47,890 acres for the potential reintroduction of the black-footed ferret; and black-tailed prairie dogs – the primary forage of ferrets – continued to increase in this area. Prairie Dog populations decreased sharply in 2001 due to a sylvatic plague epidemic. Populations have since rebounded.

Within the entire National Grassland there were 15,531 acres of active prairie dog colonies. The Ferret Family Rating, or FFR, a measure of an area's ability to support

ferrets, is evaluated in selected years. The figure below demonstrates that the increase in prairie dogs, since the plague die-off in 2001, has led to an increased capacity to support breeding ferret families. In 2005, Thunder Basin exceeded the FFR previously required to qualify for ferret reintroduction. Additionally, the District continued work on a Black-footed Ferret Reintroduction Strategy and the Prairie Dog Management Strategy.

The District is continuing to assist in the on-going development of a "10J Rule" which would designate ferrets reintroduced to Thunder Basin as an experimental and non-essential population. All of this effort is designed to eventually contribute to the recovery of the black-footed ferret.

Figure 2. Black Footed Ferrets. (Photo courtesy of USFWS)

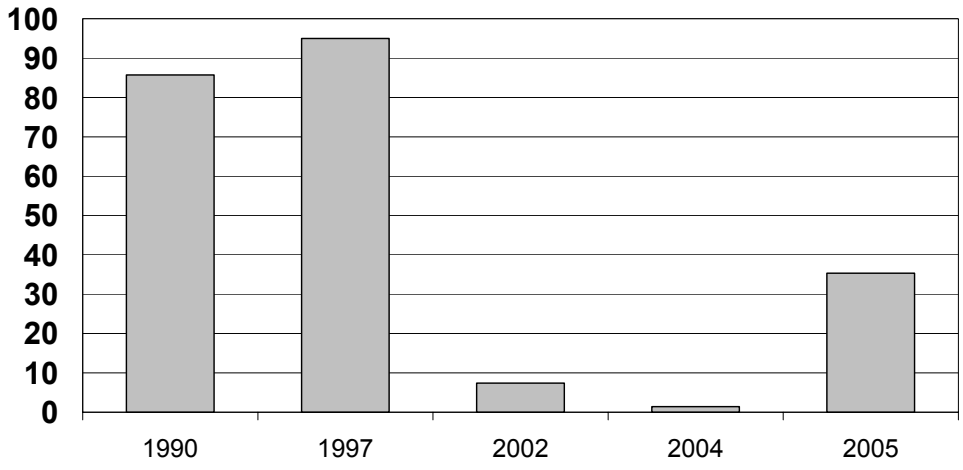

Figure 3. Ferret Family Rating on TBNG 1990-2005.

Recommendations: Continue to manage for increasing prairie dog numbers – especially in and around the Black-footed Ferret Reintroduction Management Prescription Area (MA 3.63). Continue to plan and prepare for a ferret reintroduction.

Bald Eagle

Goal 1.b, Objective 2
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***To what extent are NFS lands and their management contributing to the recovery and viability of bald eagle?***

Monitoring Protocol/Data Collected: Number of winter-roost and nest sites of bald eagles.

Results/Evaluation: In 2005, Thunder Basin monitored and managed habitat around 12 bald eagle winter-roost sites. In addition, one known nest site on NFS lands and three on neighboring lands were tracked for activity. No nesting bald eagles were documented on NFS lands in 2005. However, one pair of nesting bald eagles was documented on neighboring lands. Powerline construction may be creating a potential adverse affect on bald eagle and other avian species at risk.

Recommendations: Continue to implement mitigation measures, including burying powerlines, to minimize effects of powerline collision on bald eagles and other avian species at risk. The TBNG Plan Special Use Guideline P3 directs burial of all electrical utility lines of 33 kV or less in most areas. Exceptions to burying of powerlines are evaluated on a site specific basis and may occur where the protection of human health or safety would be better accomplished with an above ground line due to ongoing development in the area, where the line would be in existence for less than 5 years, or where the line is within 5 miles of an active coal mine and is in the direction of mine development.

Mountain Plover

Goal 1.b, Objective 2
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***To what extent are NFS lands and their management contributing to the recovery and viability of mountain plovers?***

Monitoring Protocol/Data Collected: Acres of active prairie dog colonies that provide suitable habitat for plovers. Number of projects incorporating design features to reduce adverse effects to the mountain plover.

Results/Evaluation: The USFWS deemed the mountain plover "not warranted" for listing under the ESA. Therefore, the mountain plover is not longer a proposed ESA-listed species, however the plover continues to be a R2 Regional Forester Sensitive Species. In 2005, Thunder Basin National Grassland supported 15,531 acres of active prairie dog colonies that served as potential habitat for mountain plovers. Projects

continued to incorporate considerations for mountain plover as appropriate as a Sensitive Species.

Recommendations: Incorporate mountain plovers into the Viability 1 monitoring item, which reports on the status of sensitive plant and animal species found in grassland and sagebrush habitats. This monitoring item is reported every 5 years and will be included in the TBNG 5 Year Review, scheduled to be completed in 2008. The annual Mountain Plover monitoring item (T & E 3, Goal 1.b, Objective 2) would be dropped as it would be redundant with Viability I. The grassland will continue to manage for increased acres of prairie dog colonies, which provide suitable habitat for mountain plover. Project design will continue to minimize or eliminate adverse effects to mountain plover, a sensitive species.

Multiple Benefits to People

Effects of Off Road Vehicles

Legally Required Monitoring Item
Goal 2.a and 4.a
Frequency of Measurement: Two Year
Reporting Period: Two Year

This monitoring item asks the question:

What are the effects of vehicle use off roads?

Monitoring protocol/ data collected: No organized on-site monitoring was conducted during 2005 for this monitoring item, however the 2005 IDT field trip discussed OHV use and impacts; and is described below under *Implementation of Standards and Guidelines.*

Figure 4. Broken road sign in an area of high illegal OHV use.

Results / Evaluation: Off road vehicle use is having impacts on TBNG, including effects on soils, vegetation and wildlife disturbance. The primary areas being affected are the Weston area within the Spring Creek Geographic Area. Efforts are being directed towards law enforcement to reduce OHV impacts.

Recommendations: Starting in 2007, as a part of the implementation of the Travel Management/OHV Rule, a site specific analysis of existing roads will be completed for the Thunder Basin National Grassland to determine which roads will be designated for motorized use. All other roads will then be closed to motorized use. Once this designation is completed, enforcement of illegal vehicle use off roads should be improved.

Outdoor Recreation

Goal 2.a Objectives 1 and 7
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***To what extent are trails managed to meet regional standards and to minimize conflicts among users?***

Monitoring protocol/ data collected: Miles of trail maintained to standard, reports of conflicts among trail users.

Results/Evaluation: The Thunder Basin National Grassland has 20 miles of single track motorized trail. This trail is maintained annually by a local volunteer group – The Inya Kara Riders. They maintain the trail to meet or exceed regional standards and also run an annual enduro race over this trail network. There are no conflicts with hikers, however there are starting to be conflicts with a few ATV riders who are attempting to ride the single track trail with ATVs.

Recommendations: Continue to work with volunteer groups to help accomplish trail maintenance. Develop methods to deter unauthorized use by ATVs on single track trails.

Community Relations

Goal 2.c
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***What are the effects of National Forest System Management on adjacent communities?***

Monitoring protocol/ data collected: This monitoring item is answered using National Grasslands 25% payments to counties from the National Grassland.

Results/Evaluation: The 25% payment to counties for National Grasslands (7 U.S.C. 1012) provides 25% of net (rather than gross) receipts from grazing, minerals and other uses of the national grasslands directly to counties where the grasslands are located. These funds are to be used for roads and schools. These funds are calculated on a calendar year basis. The payments to counties decreased approximately 24% from

2004 to 2005. This may not reflect all minerals revenues returned from the NFS to the counties.

Table 2. 25% Payments to Counties for Thunder Basin National Grassland (in dollars).

County	TBNG Acres	2004 Payment	2005 Payment
Campbell	145,654	287,141	215,602
Converse	175,798	346,567	267,680
Crook	302	595	453
Niobrara	804	1,656	1,260
Weston	226,625	446,767	336,599
Total	549,219	1,082,726	821,594

Recommendations: Consider reporting on this item using the payments to county information. Evaluate the data source for this information to determine how to report all revenues returned to the counties from the NFS. If additional information concerning employment and/or tourism related to TBNG becomes available, include in this monitoring item.

Comparison of Estimated and Actual Outputs and Services

Legally Required Monitoring Item
Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***Are the projected annual outputs and services being met annually and at anticipated costs?***

The outputs tracked for this monitoring report include forage provided to domestic livestock; noxious weed control, terrestrial wildlife habitat, and minerals permit processing and operations, as these are the primary outputs of the Thunder Basin National Grassland. Costs are tracked for the Douglas District, of the Medicine Bow – Routt NFs and Thunder Basin National Grassland. These figures (Figure 8) do not reflect administrative costs, which are common to all program areas (cost pools). Costs shown do include costs for the Laramie Peak Unit as that area is also administered by the Douglas District; with current financial processes it is not possible to separate those costs from the TBNG. Fiscal Year (Oct 1 – Sept. 30) allocated budgets for 2003 to 2005 are given below.

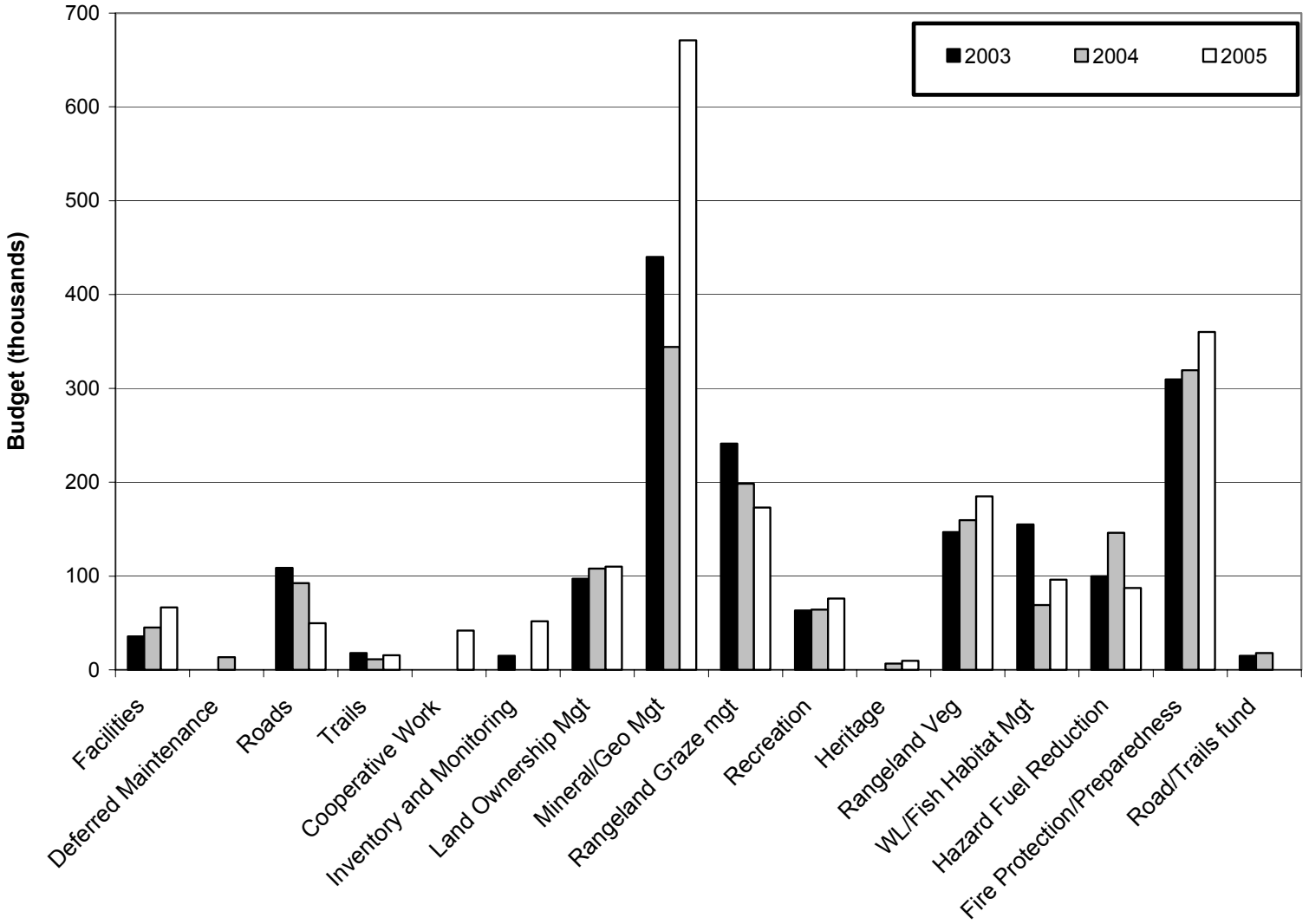

Figure 8. Budget for 2003 - 2005 for The Douglas District of the Medicine Bow - Routt NFs and Thunder Basin National Grassland. (Graph does not include costs for administrative programs common to all program areas).

Rangeland Outputs

Year 2005 was the sixth consecutive year of this extended drought, with 2002 being the driest year since Wyoming became a state in 1890. Up until 2004, the Grassland had received scattered, moderate amounts of winter and spring moisture, and conditions had been somewhat better than other areas of the state. However, in 2004 it became the Grassland's turn as the Thunder Basin had probably the worst climatic conditions to be found anywhere across the state and the Region; some areas, particularly along the Antelope Creek and Cheyenne River drainages, had little winter and no spring moisture, and much of that area did not ever green up. Rainfall patterns in 2005 were quite variable, with some places showing little improvement over the previous grazing season while many others had very timely spring rains that produced slightly above-average forage production. Nearly all the areas cured out earlier than usual with the extended hot, dry summer, and overall livestock use was less than normal.

Non-use of animal numbers for resource protection ranged from 10-15%, with the total amount of grazing use at about 93% of the projected Grassland Plan level. Still about one-third of the producers have not replaced their depleted herd numbers, and are waiting for land and water resources to better recover before doing so.

Table 3. Livestock Grazing Use for 2004 – 2005.

Livestock Grazing	Planned Level[1]	2004 Output (animal unit months)	2005 Output (animal unit months
Cattle		89,580	102,432
Sheep		3,881	4,739
Total Use	**115,430**	**93,461**	**107,171**

Grazing use is measured using animal unit months (AUMs) which is a standard unit for each type of livestock, for example, 1 AUM for cattle is the amount of forage that one cow would eat in one month.

Rangeland Health

Rangeland vegetation structure and composition classes on the 48,740-acre Spring Creek Geographic Area (GA) were measured in 2001 and analyzed in 2002 as a part of the landscape analysis for that area. The information, among other efforts, was used in the completion of allotment management planning updates for the 15 allotments located in the GA. The structure and composition objectives for the area from chapter 2 of the TBNG Plan are as follows:

Table 4. Desired Vegetation Structure for the Spring Creek Geographic Area.

Vegetation Structure	Objective	Current Conditions acres / percent
High	35- 45%	20,011 / 42%
Moderate	35 -45%	19,186 / 40%
Low	15 -25%	8,935 / 18%

[1] From Supplemental Table S-2 of the FEIS.

Vegetation structure and composition objectives (high, moderate or low) for each pasture were established by the Interdisciplinary Team for all allotments. Acres of pastures within each structure objective were added up and it was determined that 100% of the acres in the Geographic Area were currently within the range of desired conditions stated in the Grassland Plan for the Spring Creek Geographic Area.

It was noted that the results indicated that more acres are moving toward the upward end of seral stage and structural objectives (with fewer toward the lower end) and vegetative treatments may be needed in the future to maintain the desired range across all classes.

Table 5. Desired Vegetation Seral Stage for the Spring Creek Geographic Area.

Seral Stage	Objective	Current Conditions acres / percent
Late	10-20%	5,193 / 11%
Late Intermediate	30-40%	14,818 / 31%
Early Intermediate	30-40%	19,186 / 40%
Early	10-20%	8,935 / 18%

Noxious Weed Control

Primary species treated were leafy spurge, diffuse knapweed, saltcedar, and Canada thistle. The district is focusing much of it's efforts on inventorying for the presence of saltcedar (tamarisk) because it is still possible at this point that we can eradicate this species from the Grassland. Saltcedar is not classified as a noxious weed by the state of Wyoming (although it is by most western states). However this non-native invasive tree species is a serious threat to riparian ecosystems.

Figure 5. Saltcedar (light colored shrubs) on TBNG.

Table 6. Noxious Weed Treatment (acres).

2004	2005
327	430

All 5 counties, all 3 Grazing Associations, and the Thunder Basin Prairie Ecosystem Association are cooperating parties with the Forest Service in controlling noxious weed infestations.

Terrestrial Wildlife

In Fiscal Year 2005, after numerous years of extended drought, precipitation remained below average yet occurred with optimal timing such that the upland game habitat began to respond with increased vegetative growth.

Black Tailed Prairie Dogs

In 2005, a complete inventory of active prairie dog colonies was completed in compliance with Biological Resources, (F) Fish, Wildlife and Rare Plants, Standard #65 (LRMP, page 1-20)

> *Evaluate prairie dog management 3 years after management plan approval. Evaluate prairie dog management again when the total acres of active prairie dog colonies expand to 35,000 acres (approximately 7%) of suitable habitat on the Thunder Basin National Grassland.* ***Standard***

The results of this inventory show that black-tailed prairie dog numbers continued to rise - increasing by about 63%, from about 9,550 active acres in 2004 to about 15,531 active acres in 2005 (see graph). This recovery from the 2001 epizootic plague event positions Thunder Basin well for a potential reintroduction of black-footed ferrets in future years.

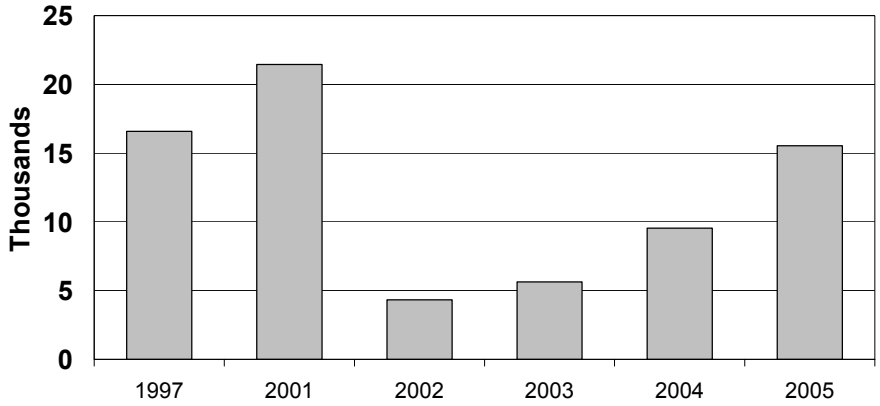

Figure 6. Acres of Active Prairie Dog Colonies.

Based on the information from the 2005 inventory the Douglas District drafted a prairie dog assessment and management strategy. This strategy looks at opportunities to use all management tools available to manage prairie dog colony sizes and locations. The draft strategy was developed, in part, through discussions with neighboring landowners and other interested parties, including the Thunder Basin Grasslands Prairie Ecosystem Association. This cooperative effort provides an opportunity to manage prairie dog colonies on an ecosystem level rather than based on land ownership boundaries.

The draft strategy has identified a potential need to amend the grassland plan to be able to fully use all tools available for the management of prairie dogs. Currently, the plan limits use of rodenticides to areas where human health and safety are a concern or where public or private facilities, such as cemeteries and residences, are being damaged. The strategy also identified a potential need to adjust the boundary of Management Area 3.63 (Black Footed Ferret Reintroduction Habitat) to better fit with topographical and biological boundaries of suitable prairie dog habitat.

Sage Grouse

In the highly industrialized mineral development area of the Grassland (Hilight Bill Geographic Area), habitat alteration, disturbance, and powerline construction has further reduced the habitat suitability for sage grouse. Correspondingly, sage grouse numbers appear to be declining in this portion of the Grassland. In addition, powerline construction may be creating a potential adverse affect on bald eagles and other avian species at risk. Sage grouse appear to be stable or increasing in other areas of the grassland.

Recommendations: Continue to track the habitat suitability of various species and manage for an increasing number of prairie dogs, especially in the Black-footed Ferret Reintroduction Management Area (3.63). Whereever possible, bury all powerlines to reduce their effects on avian species at risk.

Minerals

The following administration and permit processing was accomplished on the TBNG during 2005.

Figure 7. Loading a coal truck at a coal mine on TBNG.

Energy Operations Processed: In 2005, 40 Energy Operations were processed, and are broken down as follows:

- 11 Oil/gas
- 9 Oil/Gas Sundry Notices
- 20 Mineral Related Special Use Permits (tank batteries, powerlines to wellsites, pipelines, etc)
- 3 Coal Mine Plans
- 7 Mineral Material Permits processed (1,183,865 tons for $591,932)

Operations Administered to Standard: In 2005, 525 operations were administered to standard, including:

- 2 Bonded Mineral Material Sales
- 495 Oil/Gas wells
- 5 Surface Coal Mine Plans
- 20 Mineral related special Use Permits
- 3 Geologic Resources

Oil and Gas Wells: There were 61 new oil/gas wells drilled, 2 wells plugged and abandoned, and 4 spills inspected and administered. Inspections in 2006 will determine if these sites have been properly remediated.

Geologic Resources: 24 Geologic Permits and Reports were prepared.

Scientific and Technical Assistance

Administration

Goal 3, Objectives 1,2 & 3
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***Are the action plans identified in Goal 3 - Scientific and Technical Assistance, being completed on schedule?***

Monitoring Protocol/Data Collected: A review of the opportunities to implement national recovery plans and a description of any actions taken in support of a National Recovery Plan.

Results/Evaluation: ***Objective 1; Inventory and Monitoring:*** Inventories were conducted for nesting raptors, breeding sage grouse, breeding sharp-tailed grouse, and foraging bats. Monitoring was conducted for known raptor nests, and known sage and sharp-tailed grouse leks. Breeding song birds were not surveyed on Thunder Basin NG during 2005. Prairie dogs were monitored as well, and that work is described in more detail under Goal 1b regarding black-footed ferret recovery and in the *Comparison of Estimated and Actual Outputs and Services* monitoring item.

Figure 9. Sage Grouse displaying on a Lek.

<u>Sage Grouse and Sharp-tailed grouse:</u>
In developing the population trend analysis for both sage grouse and sharp-tailed grouse, the WGFD equations were used through 2004 so that the USFS could directly compare results with the state and regional trends. In this approach, an estimate of total grouse numbers is developed for each lek complex by taking the peak male attendance and adding two females for each male observed.

The population estimate is then the average complex estimate times the total number of known complexes. Population estimates should represent the minimum population levels because not all lek complexes within the TBNG have been documented. As more complexes are identified, the accuracy of the population estimate may improve.

Newer methods exist for estimating population trend by calculating mean males per lek. This is the new protocol being used by the WGFD and has been adopted by the local sage grouse working groups across the state of Wyoming. Results from both types of analyses are displayed in the graphs below.

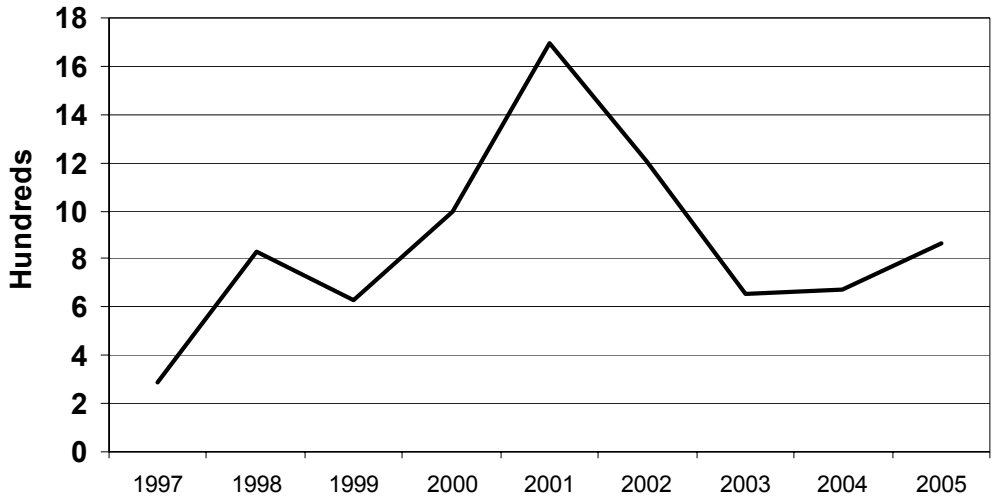

Figure 10. 1997 to 2005 TBNG Sage Grouse Population Estimate.

Sage Grouse- Because of minerals development, West Nile Virus, cropland conversion, and other threats, and its status in the Forest Service as Sensitive and as an MIS, it is important that we continue to monitor sage grouse populations on the grassland.

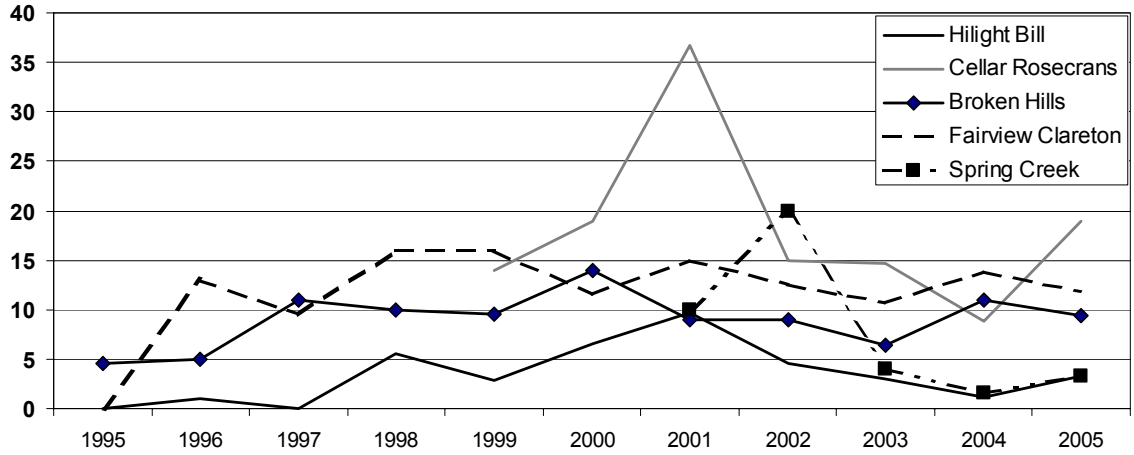

Figure 11. Average Sage Grouse Males per Lek for Geographic Areas on TBNG.

When looking at the population estimate of sage grouse, the following graphs show that the population estimate has increased across the Thunder Basin National Grassland from 2003 to present (Figure 10). However, the Hilight Bill Geograhpic Area has very low numbers of sage grouse, with some leks disappearing (Figure 11). Therefore, other Geographic Areas are sustaining large enough increases in sage

grouse numbers to mask the declines observed in the highly industrialized portions of the Grassland. The apparent increase in sage grouse numbers across the entire Thunder Basin may also be an artifact of increased survey effort. In comparison, Wyoming State population estimates, as well as those within the area covered by the Northeast Wyoming Sage Grouse Working Group, show a decline starting in 2000 and suggest some increase in sage grouse numbers in 2005. All population estimates presented show some similarities.

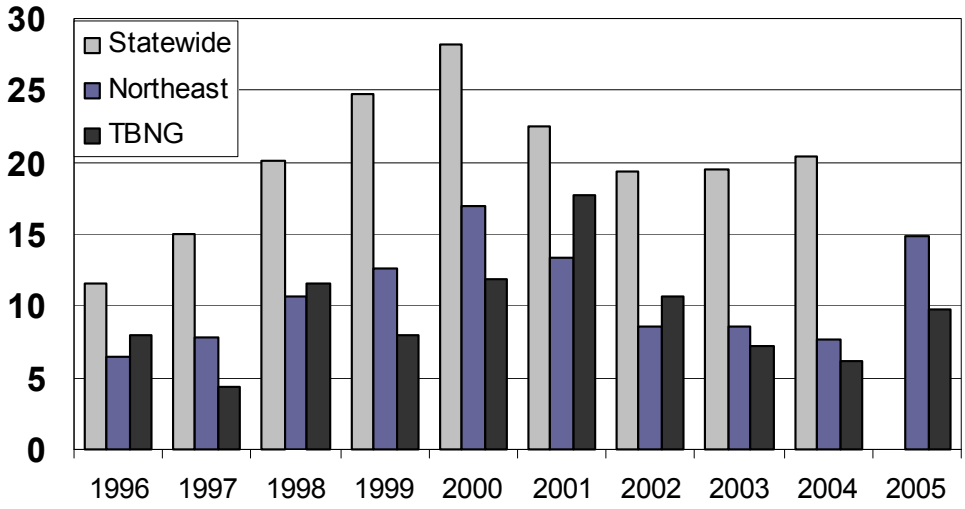

Figure 12. Average Sage Grouse Males per Lek Estimates for the State of Wyoming, Northeast Wyoming and TBNG.[2]

Sharp-tailed grouse – Sharp-tailed grouse (*Tympanuchus phasianellus*) is a management indicator species (MIS) for Thunder Basin National Grassland. Sharp-tailed grouse require the open-lands of grassland and prairies as well as the critical winter shelter and forage provided by sagebrush and other shrub/brush species.

Table 7. Sharp-tailed Grouse Lek Count Results.

Lek Name	2003	2004	2005
Duck Creek			9
York 1		2	0
York 2			3
York 3		4	
York 4			7
York 5	5		
York 6		7	2
ZV Creek 1		15	
ZV Creek 2			3
Total Males	**5**	**28**	**27**
Average Males per Lek	**5**	**7**	**4.5**

There has been very little data collected on sharp-tailed grouse. In order to establish population trend, it is important to continue collecting data on this species. Since the designation of sharp-tailed grouse as an MIS, surveys have been conducted annually with increasing effort. Lek observation information is presented in the Table 7. There has been an increase in

[2] 2005 statewide sage grouse lek data not available at the time of this report and will be reported in the 2006 report.

numbers from 2002 to 2005, but this may reflect an increase in survey effort.

Bats: In 2005, the Douglas District performed active and passive surveys for all species of bats, to detect presence or absence. We have 3 sensitive species of bats in Region 2, all three of which have potential to occur on Thunder Basin National Grassland. Currently there is little to no information on bat use on TBNG, so surveys are important to determine any use and what species are present.

Table 8. Results of 2005 Bat Surveys.

Species	Number of calls detected	Number trapped
Myotis lucifugus	124	3
Eptesicus fuscus	85	1
Myotis evotis		19
Myotis volans	9	
Myotis thysanodes	6	
Myotis ciliolabrum	34	1
Lasiurus borealis		1

Of note, this was the first record of an eastern red bat (*Lasiurus borealis*) for the TBNG, and for this area of the state of Wyoming (new record for the Wyoming Game and Fish Atlas). Also, fringed myotis (*Myotis thysanodes*), an R2 sensitive species. was detected at two different sites surveyed.

Objective 2; Provide Research Results: Reports were provided during 2005 on the following: (1) A Tri-National Investigation of Ferruginous Hawk Migration, (2) A summary of black-tailed prairie dog abundance and the occurrence of sylvatic plague, and (3) the Spatial dynamics of a bacterial pathogen: sylvatic plague in black-tailed prairie dogs (a Master's thesis).

Objective 3; Establish new monitoring and implement existing monitoring for MIS. Monitoring was continued for all known sage and sharp-tailed grouse leks. New leks were added into the established monitoring plan. We continued to monitor activity of black-tailed prairie dog colonies and new colonies were entered into monitoring plans.

Recommendations: Continue to monitor, inventory, and pursue administrative studies, as appropriate. Especially maintain inventory and monitoring of sensitive species, MIS, and species of local interest

Effective Public Service

Threatened and Endangered Species

Goal 4b
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***Are actions identified in national recovery plans for threatened and endangered species being implemented where opportunities exist on the national grasslands and forests?***

Monitoring Protocol/Data Collected: A review of the opportunities to implement national recovery plans and a description of any actions taken in support of a National Recovery Plan.

Wildlife

Results/Evaluation: There is an opportunity to implement actions in support of the Black-footed Ferret Recovery Plan. In 2005, the District continued work on a Black-footed Ferret Reintroduction Strategy, continued work on a Prairie Dog Management Strategy, and assisted the U.S. FWS in the on-going development of a "10J Rule" for the reintroduction of black-footed ferrets in eastern Wyoming.

In 2005, as in the past, bald eagle considerations were incorporated into project design as appropriate - including the use of a 1-mile no surface occupancy buffer prohibiting construction of new above-ground structures. In addition, bald eagle communal roosts sites were identified and monitored in compliance with the Recovery Plan. Otherwise, no further opportunities were identified to implement action items in the Bald Eagle Recovery Plan on TBNG.

Recommendations: Continue to manage for increasing prairie dog numbers – especially in and around the Black-footed Ferret Reintroduction Management Prescription Area. Continue to plan and prepare for a ferret reintroduction beginning as early as Fall 2006.

Plants

There are no documented occurrences of Threatened or Endangered Plant Species on the Thunder Basin National Grassland. On-going project and other inventory work continues to seek out the presence of T/E plant species that might occur.

Recommendations: Continue to monitor this item yearly over the life of the plan.

Implementation Monitoring

Implementation of Standards and Guidelines

Legally Required Monitoring Item
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***Have site-specific decisions successfully implemented the Land and Resource Management Plan Direction?***

Monitoring Protocol/Data Collected: There were two Interdisciplinary Team (IDT) monitoring trips, one on August 25, 2005 by the Forest Plan Monitoring and Evaluation Team. A field evaluation of the effects of Oil and Gas activities (including CBM) occurred in July and was conducted by the Douglas District IDT with associated Forest specialists.

Forest Plan Monitoring and Evaluation Field Trip, August 25, 2005

Black Footed Ferret Habitat

Management Area 3.63 is the black footed ferret management area and is managed for prairie dogs, their primary prey base. The district has mapped the prairie dog towns, and conducted transects to estimate prairie dog populations. Even though the plague eliminated much of the population 3 years ago, the prairie dogs have rebounded and numbers are now likely adequate to start re-introducing ferrets. The Douglas district biologists are supporting the USFWS in their reintroduction effort by developing an "experimental non-essential" designation for a future ferret population on Thunder Basin National Grassland. Such a designation, known as the 10J rule, will allow more management flexibility. For instance, if a private landowner or the Forest Service accidentally harms a ferret there would be none of the usual repercussions associated with a take of an ESA-listed species.

Figure 13. Prairie Dog.

Black Footed Ferret Summary:

Did we do what we said we would do?

Yes, we are doing the work needed to re-introduce ferrets.

What did we learn? / What would we do different in the future?

We learned the value in identifying our partners and in including the private landowners and other agencies in the re-introduction effort. It is important to keep connected with everyone with an interest or stake in the ferret re-introduction.

Did we meet overall Project Objectives?:

The district is on track to meet the goal in the Grassland Plan to re-introduce ferrets.

Additional Monitoring Needs?:

Continue to monitor prairie dog towns and populations.

Follow up Actions Needed:

Continue to pursue partnership funding and in-kind services to be able to implement this project, particularly once the ferrets are released.

Sauerkraut Pasture Improvements

This project is located within the black-footed ferret management area. This allotment (Fiddleback) has 900 cow/calf pairs for a 6 week season in the spring. There has been a lack of water, which has resulted in the cows having to be moved early. The Sauerkraut water project, which included a well drilled on state land leased by the permittee, was funded through the NRCS EQUIP Program. The project was to expand the pipelines to provide several water troughs on NFS lands. The pipeline is underground so it can be used throughout the year.

The project was implemented following existing standards and guidelines. The pipeline did not cross any prairie dog town areas and complied with the ferret standards in the plan. The troughs and pipeline were kept off of the horizon to maintain scenic integrity. Tanks were placed away from eroded areas to prevent additional disturbance in those areas. The work was scheduled to avoid raptor nesting season.

Sauerkraut Pasture Improvements Summary:
Did we do what we said we would do?
Yes, the project was implemented within existing standards and guidelines.

What did we learn? / What would we do different in the future?
The range conservationist worked the NEPA process – complying with the grassland plan and using available resource specialists to accomplish this project.

Did we meet overall Project Objectives: Yes, although monitoring will determine how the water developments change cattle use patterns.

Additional Monitoring Needs: Monitor cattle use to determine if these water developments are keeping the cattle away from the river valley.

Follow up Actions Needed: None identified.

Effects of Off Road Vehicles

The TBNG Grassland Plan differs from the Medicine Bow and Routt plans for motorized vehicle use. The Plan states that use may occur on "existing" roads and trails. The other Plans say use may occur on "designated" roads and trails. There are many roads in the area that go to oil wells, and OHV use is creating roads which branch off of these roads. The district will be working on a travel management plan for this area in 2007, which will look at designating which of the existing roads should remain open or be closed to motorized use.

Oil and Gas / Coal Bed Methane Field Review

In July, 2005, the Douglas District IDT reviewed 3 oil well projects (Ballard 14-31, Brown 1-18, Devon 21-11 and True 22-31) and 2 Coal Bed Methane (CBM) projects (Big Porcupine and Prima Tuit). The purpose of the review was to determine the extent of effects and to determine if these types of projects result in significant individual or cumulative effects. The findings in all cases was that the projects did not individually or cumulatively have significant effects on the human environment pursuant to 40 CFR §1508.4 (Hays, 2005).

Oil Well Projects

The IDT found that for all 4 of the oil well projects:

1. No public health and safety concerns were identified.
2. No unique characteristics were found in the project area.
3. Districts, Sites, highways, structures or objects listed in National Register of Historic Places were avoided during construction of the project. No impacts were found.
4. No federal state or local laws have been violated during implementation or operation on this project.

Implementation and Effectiveness of Mitigation Measures for Oil Well Projects:

BMP Implementation:

Some mitigation measures prescribed in the EA and the DN were not implemented as planned.

Cheatgrass / Noxious Weeds

Observations ranged from some observations of weeds and cheatgrass to one well site being covered in cheatgrass.

Infrastructure

Concern was noted over the size of one well pad and over the fence around another site needing repair.

Recommendations

Monitor and treat cheatgrass and other weeds at oil well sites.

Coal Bed Methane (CBM) Projects

The IDT found that for both of the CBM projects:

- Mitigation measures were identified to reduce impacts to public health and safety related to air quality and water quality. Implementation of these mitigation measures was generally good. For those mitigation measures not implemented, impacts were localized and not significant. Specific recommendations to improve implementation are given below.
- Actual CBM produces water discharge amounts were less than predicted during project planning. Therefore less infrastructure (e.g. discharge points and reservoirs) was necessary to accommodate that water.
- Produced CBM water and any associated water resource related effects have been largely contained within the project area. Water is used, evaporated or infiltrates before leaving the project area and so is not translated to major drainages downstream.
- Implementation and effectiveness of BMPs appears very good at water discharge points. Discharge points and reservoir outlets are armored and constructed to accommodate perennial flow. An existing reservoir in a stream channel receiving CBM produced water, was chosen to be breached

instead of being used as an evaporation pond, and the fill in the stream channel was removed and the natural floodplain re-established.

- BMP implementation was not as consistent for downstream pipeline crossings and for stream channels receiving CBM produced water.
- No unique characteristics were found in the project area.
- Districts, Sites, highways, structures or objects listed in National Register of Historic Places were avoided during construction of the project. No impacts were found.
- Wyoming DEQ is monitoring water quality and some exceedances have been noted for dissolved iron in discharged waters all of these discharges are currently being mitigated.

Implementation and Effectiveness of Mitigation Measures for CBM Projects:

Soils / revegetation

- Use of roads under wet conditions causing rutting (rutting was observed at one stream crossing)
- Some well sites were settling and minor soil erosion was occurring.

Stream Channels

- BMPs / Mitigation Measures for streams and stream crossings were not implemented consistently. There were some instances where wording for BMP's was different between the water resources report, the decision notice and the Conditions of Approval (COA), which may result in the project complying with the COA but not achieving the necessary mitigation.
- 3 Headcuts, identified during project planning downstream of discharge points. Of these, two of the three had produced CBM water running over the headcut. One headcut had eroded back 1to 2 feet since project implementation. The mitigation measure to stabilize (armor) headcuts in stream channels receiving CBM produced water was not implemented.
- Road / stream crossing changed from the planned hardened crossing to a small diameter pipe which may cause additional sediment loading during future storm events.

Pipeline crossings of streams and drainages:

- Revegetation success was poor at pipeline crossings (7 of 8 observed pipeline crossings had poor revegetation success). This mitigation measure was likely implemented but not effective.
- Waste material (soil) deposited below high water line (2 of 8 pipeline crossings at streams left waste material below high water line). This does not meet TBNG Standard Water #14 p 1-10.
- None of the 7 pipeline crossings with flowing streams and/or streams receiving produced CBM water (streams which will likely become perennial) were constructed with erosion control materials.
- 1 of 8 pipeline crossings was not perpendicular to stream.

- Water bar pipeline crossings as they approach streams (0 of 8 pipeline crossings had waterbars). This mitigation is to dissipate runoff and sediment before it reaches the channel.

For pipeline improvements (pipe vents, outlets, etc.):

- 1 of 8 pipeline crossings had a vent pipe constructed in the bottom of the stream channel).

Cheatgrass / Noxious Weeds

- Some observation of weeds and cheatgrass near clean stands of native perennials. These areas will require treatment.

Wildlife General

- One power line and one road were not located in the same corridor
- One construction timing limitation was not being followed

Ferriginous Hawks

- One ferruginous hawk nest that moved in after the DN but prior to implementation may be impacted due to proximity of well.
- One additional existing ferruginous hawk (in the same birds territory) may be impacted due to increased traffic associated with an existing road that had been improved as a part of this project

Recommendations:
Ensure BMPs are included in the decision notice and that the Conditions of Approval meet the intent of the BMPS.

Schedule additional monitoring of BMP implementation and effectiveness for CBM projects. Revisit sites monitoring in 2005 during the 2006 field season to determine if improvements have been made.

Determine which BMPs, when implemented, may need changes to be effective. One such BMP is revegetation of pipeline crossings of stream channels. The seeding did not appear to be successful at some of the stream crossings.

Monitor and treat cheatgrass and other weeds – reseed if necessary.

Figure 14. Badger on TBNG.

References

USDA Forest Service, 2005. Finding of Environmental Effects. July 28, 2005. Finding of Environmental Effects for the Ballard 14-31, Brown 1-18, Devon 21-11, True 22-31, Big Porcupine and Prima Tuit projects. by Misty Hays, Deputy District Ranger on July 28, 2005. On file at Medicine Bow – Routt National Forests and Thunder Basin National Grassland.

Interdisciplinary Team

Carol Purchase	Monitoring and Evaluation Team Leader
Jena Hickey	Terrestrial Wildlife Biologist
Greg Eaglin	Fisheries Biologist
Gary DeMarcay	Archeologist
John Proctor	Botanist
Dave Gloss	Hydrologist
Jeff Tupala	Landscape Architect
Derek Milner	Soil Scientist
Ann Marie Verde	Transportation Planner
Ray George	Recreation Planner
Bob Mountain	Rangeland Management Specialist
Tom Florich	Minerals Specialist
Bob Sprentall	Douglas District Ranger, Scientific Technical Review Committee Liaison

Douglas District Staff contributed much of the content in addition to photographs for this report.

Photographs are from USFS personnel unless otherwise noted.

Acronyms

AMP	Allotment managment plan
APD	Application of Permit to Drill
AUM	Animal Unit Months
BLM	Bureau of Land Management
BMPS	Best Management Practices
CBM	Coal Bed Methane
COA	Conditions of Approval
DM&E	Dakota, Minnesota, and Eastern Railroad Corporation
DN	Decision Notice
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FFR	Ferret Family Rating
GA	Geographic Area
GIS	Geographic Information System
IDT	Interdisciplinary Team
LRMP	Land and Resource Management Plan
MIS	Management Indicator Species
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NFIM	National Forest Inventory and Monitoring funds
NFMA	National Forest Management Act
NFS	National Forest System
NGP	Northern Grasslands Plan
OHV	Off-Highway Vehicle
PFC	Proper Functioning Condition
PSD	Prevention of Significant Deterioration
R2	Region 2 (Rocky Mountain Region of USFS)
SLC	Species of Local Concern
SOPA	Schedule of Proposed Actions
SS	Sensitive Species
T&E	Threatened and Endangered Species
TBNG	Thunder Basin National Grassland
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WGFD	Wyoming Game and Fish Division
WYDEQ	Wyoming Department of Environmental Quality
WYNDD	Wyoming Natural Heritage Database

Appendix 1. Goals and Objectives

Goal 1: Ensure Sustainable Ecosystems: Promote ecosystem health and conservation using a collaborative approach to sustain the Nations forests, grasslands and watersheds.	
Goal 1.c: Increase the amount of forests and grasslands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects and diseases, and invasive species.	
Objective 4. Within 3 years, develop and implement a certified noxious weed-free forage program in consultation with appropriate state agencies	**Year Due 2005**
A certified weed-free forage program has been in place for all National Forest System lands in the state of Wyoming since 1995. The existing Closure was strengthened in 2005 to include products such as hay cubes and pelleted forage products.	
Objective 7. Immediately initiate hazardous material cleanup on identified sites	**Year Due Annually**
All previously identified hazardous material sites have been cleaned up. Hazardous material spills associated with on-going minerals operations are administered through the minerals permits.	
Objective 8. In a timely manner, review Prevention of Significant Deterioration (PSD) permit applications, and make recommendations where needed to reduce impacts to air quality related values for all Class I and Class II areas.	**Year Due Annually**
There have been no known PSD permits for review. All Class II areas on TBNG are currently in attainment of National Ambient Air Quality Standards. There has been no need to reduce impacts to air quality related values for any Class I and Class II airsheds.	
Goal 2: Multiple Benefits to People: Provide a variety of uses, values, products, and services for present and future generations by managing within the capability of sustainable ecosystems.	
Goal 2.a: Improve the capability of the Nation's forests and grasslands to provide diverse, high-quality outdoor recreation opportunities.	
Objective 1. Annually maintain or reconstruct 20% of National Grassland trails to regional	**Year Due Annually**

standards	
The Inya Kara trail is maintained through a partnership with a user group. See the *Outdoor Recreation* monitoring item for more details.	
Objective 6. Provide nonmotorized and motorized trails for a wide variety of uses and experiences.	**Year Due Annually**
The Travel Management Phase II planning should address the need for motorized trails. Budgets have been too restrictive to create any plans for a non-motorized trail system.	
Objective 7. Manage trail systems to minimize conflicts among users.	**Year Due Annually**
The Travel Management Phase II planning process should help to identify conflicts by type, user groups, and geographical locations.	
Objective 8. When appropriate, authorize special use permits for outfitter-guide services on NFS lands.	**Year Due Annually**
Outfitter and guide permits are regularly authorized.	
Objective 9. Through partnerships, encourage, establish, and sustain a diverse range of recreational facilities and services on NFS lands. Encourage outfitters and guides who support interpretive and educational awareness of grassland ecosystems or who provide services to people with disabilities. .	**Year Due Annually**
Outfitters are encouraged to provide educational and interpretive awareness in their programs.	
Objective 10. When appropriate, designate, and manage outfitted camp locations.	**Year Due Annually**
There are no outfitter camps on the Grassland.	
Goal 2.b: Improve the capability of wilderness and protected areas to sustain a desired range of benefits and values.	
Heritage Sites Objectives:	

Objective 3. Within 3 years, identify and protect traditional cultural properties in consultation with federally recognized American Indian tribes	**Year Due 2005**
In a recent meeting with the Northern Arapaho the tribe offered to send a list of site types on which they wish to consult. We are also working with the tribe to identify plant gathering areas. These areas would be eligible to the National Register of Historic Places.	
Objective 5. Educate, interpret, and promote partnerships to increase public awareness, protect heritage resources, and further the goals of research.	**Year Due Annually**
This is accomplished through Passport in Time projects and talks to schools. Currently a partnership exists between the Douglas District and the University of Wyoming, American Studies Department and the National Park Service for work at LaPrele Guard Station.	
Goal 2.c: Improve the capability of the Nation's forests and grasslands to provide a desired sustainable level of uses, values, products, and services. :	
Livestock Grazing Objectives	
Objective 1. Annually, provide forage for livestock on suitable rangelands. Annual grazing levels will be adjusted, as needed, during periods of drought or for other conditions	**Year Due Annually**
The current drought, that began in 2000, has required many operators to liquidate all or parts of their base livestock herds. The economic effect has been felt in most of the counties of Wyoming as up to 40-50% of the herds were sold. The Thunder Basin Grassland weathered the drought better than many areas of the state until 2004, when much of the area received very little winter snow and virtually no spring/summer rains. Nearly 30% of the permitted grazing use was set aside for non-use for resource protection by the ranchers. Rains were a little more prevalent across parts of the Grassland for 2005. Ranchers still took non-use for rangeland resource protection for nearly 15% of their permitted numbers and slightly less than 10% of total use, averaged across the entire Grassland.	
Objective 2. As needed, revise allotment management plans (AMP) to meet desired vegetative conditions described in Geographic Areas and to implement all appropriate management plan direction	**Year Due Annually**
AMPs were analyzed and revised, as needed, for the 15 allotments (covering 48,740 acres) in the Spring Creek GA in 2005. AMPs for 72 allotments in the main Thunder Basin main Grassland area are scheduled for analysis and completion during 2007. Analysis of the 95 allotments in the Inyan Kara portion of the Grassland will begin in 2006, with AMPs scheduled for completion/revision during 2008.	

Mineral and Energy Resources Objectives:	
Objective1. Ensure reclamation provisions of operating plans are completed to standard.	**Year Due Annually**
Bonds can not be released until inspections are completed and formal approval is sent to the State Department of Environmental Quality.	
Objective 2. Honor all valid existing legal mineral rights,	**Year Due Annually**
Operating plans are addressed annually. New proposals are addressed through the NEPA Process. Mitigations necessary to ameliorate concerns are included in the approved Plans of Operations.	
Miscellaneous Products Objective:	
Objective1. Provide appropriate opportunities to satisfy demand for miscellaneous products (special forest and grassland products, such as mushrooms, floral products and medicinal plants) through environmentally responsible harvest and collection methods on National Forest System Lands.	**Year Due Annually**
The Forest/Grassland receives a minimal number of requests for the collection of floral products, seed collection, or medicinal plants. Each request is addressed as it is received, and authorized with the appropriate permits if approved.	
Special Uses Objective:	
Objective1. Ensure all special use permits are meeting requirements for customer service and are in compliance with the terms of their permits or contracts.	**Year Due Annually**
Customer service requirements will continue to be met through the cost recovery process. The grassland meets or exceeds its' target for permits "Administered to standard".	
Goal 4: Effective Public Service Ensure the acquisition and use of an appropriate corporate infrastructure to enable the efficient delivery of a variety of uses.	
Goal 4.b: Provide appropriate access to NFS lands and USDA Forest Service programs.	
Land Ownership and Access Objectives	

Objective 1. Within 3 years, develop and implement approved land ownership adjustment plan in response to resource management and public needs. The plan shall be coordinated, reviewed, and updated annually.	**Year Due 2005**
A landownership adjustment plan has not proven to be the best tool due to the existing pipeline of projects and the political nature of the land exchange process. The pipeline of projects is addressed each year and priorities are set in conjunction with resource management needs and budget. The current pipeline of projects exceeds five years of projects.	
Objective 2. Within 3 years, develop and implement a 5-year Rights-of-Way Acquisition Program in response to resource management programs and access needs. This 5-year plan will be coordinated, reviewed, and updated annually.	**Year Due 2005**
A Rights of Way Acquisition plan will be developed over the next several years as a necessary by product of implementing the Travel Management Decision.	
Unauthorized Uses Objective:	
Objective 1. Take appropriate law enforcement or administrative actions on all unauthorized uses.	**Year Due Annually**
All discovered or reported unauthorized use is investigated and followed up with. Where appropriate, law enforcement action is taken.	