



# **MONITORING AND EVALUATION REPORT**

**FY 2002**

Bighorn National Forest  
Region 2



United States  
Department of Agriculture



Forest Service  
Sheridan, Wyoming

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## **CERTIFICATION**

I have reviewed the Annual Monitoring and Evaluation Report for the Bighorn National Forest for fiscal year 2002. I believe that the monitoring and evaluation requirements of the Forest Plan (Chapter IV) have been met and that decisions made in the Forest Plan are still valid. I have noted and considered the recommendations and will implement those that I decide are appropriate after further analysis and required public notification and involvement.

I am especially proud of the work accomplishments reported here. Despite budget constraints and shifting priorities, we, along with our cooperators and volunteers, accomplished a great deal of project work on the ground, where it ultimately counts.

*/s/ William T. Bass*

William T. Bass  
Forest Supervisor

*9/30/2003*

Date

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## INTRODUCTION

The Bighorn National Forest Land and Resource Management Plan (Forest Plan) was approved on October 4, 1985. The plan was developed over a five-year period, based on, among other things, a comprehensive public notification and comment process. An Environmental Impact Statement and Record of Decision accompanied the Forest Plan.

The Forest Plan established direction and process so all future decisions would include an interdisciplinary approach to achieve integrated resource management. The Forest Plan provides direction to coordinate multiple uses on the Bighorn National Forest on a sustained basis. The plan also fulfills legislative requirements and addresses local, regional, and national issues. The Forest Plan, Chapter IV requires monitoring and evaluation of management activities to determine the following:

1. How well Forest Plan objectives have been met.
2. Consistency of activities with standards and guidelines contained in the Forest Plan.
3. The need for amendment or revision.

This report is the annual Monitoring and Evaluation Report. It displays the results of monitoring and provides the Forest Supervisor and the public with information on the progress being made toward achieving the goals, objectives, and management requirements in the Forest Plan. It also indicates how well we are fulfilling public demand for goods and services while protecting the Forest resources. An annual Monitoring and Evaluation Report is to be prepared for each existing Forest Plan, including those plans under revision. Funds are provided for the preparation of the report based on information and data collected under agency direction. A target of one report has been assigned to each Forest.

## BACKGROUND

Monitoring is the quality control aspect of forest planning; therefore, it requires data collection and observations of activities to provide a basis for periodic evaluation of the planning process and the Forest Plan. Evaluation is the analysis and interpretation of monitoring results. It addresses the goals, objectives, long-term relationships, management direction, and significant management activities occurring. There are four aspects to monitoring and evaluation:

**Implementation Monitoring** – Forest personnel conduct monitoring as part of their routine assignments and management responsibilities. Their results are documented in project files. Monitoring is performed to determine if management activities are designed and carried out in compliance with forest plan direction and management requirements.

**Effectiveness Monitoring** – this type of monitoring determines if management activities are effective in driving the Forest toward the desired future condition described for the various management areas.

**Validation Monitoring** – this type of monitoring determines whether the initial data, assumptions, and coefficients used in development of the Forest Plan were correct or if there is a better way to meet goals and objectives and achieve the desired future condition.

**Evaluation and Conclusions** – the purpose of evaluation is to interpret monitoring results and reach some conclusions about what the monitoring results really mean with regard to

Forest Plan implementation. The interdisciplinary team (I.D Team) may make recommendations and identify research needs as a result of the evaluation process.

## **FIVE-YEAR MONITORING REQUIREMENTS**

Every five years monitoring is to be evaluated to determine if the Forest Plan needs to be revised. FY 2002 is the 17th year of implementation for the Bighorn National Forest Plan. Specific items requiring a revision include:

1. Changes in public demand.
2. Changes in condition of the land or resource used to conduct the analysis, catastrophic events, or monitoring results.
3. National Forest Management Act requirement to update every 15 years.

This evaluation is included in the monitoring results for FY 2002 (see below).

## **PLANNING ACTIVITIES**

### **Forest Plan Revision**

According to the National Forest Land Management Act, the Forest Plan must be revised every 15 years. The first attempt to begin this revision process occurred in the fall of 1997. However, the Interior and Related Agencies Fiscal Year 1998 Appropriations Bill (as amended according to Commerce Bill H.R. 2267) contained language that limited spending for forest plan revision activities. Only those Forests with a formally published "Notice of Intent" (NOI) to prepare an Environmental Impact Statement (EIS) were authorized to proceed with revision. The Bighorn had not published an NOI and consequently, was not funded to revise its plan.

In fiscal year 1999, eleven Forests approaching the 15-year anniversary for approval of their plans were once again funded for revision. The Bighorn was one of these forests. In earnest, we began to refine our data needs and make necessary arrangements for supporting studies.

The Notice of Intent (NOI) to revise the Land and Resource Management Plan for the Bighorn National Forest was published in the Federal Register on November 10, 1999. At that time, the Forest Service invited comments on the information contained in the NOI and asked that they be forwarded to us for inclusion in the revision process. The following five major revision topics were proposed in the NOI:

1. Biological diversity.
2. Timber suitability and management of forested lands.
3. Roadless area allocation and management.
4. Special areas.
5. Travel management and dispersed recreation.

In early February 2000, funding for revision was significantly reduced due to other planning issues at the national level. These included revising the current Forest Service planning

regulations, drafting a national policy on managing our remaining roadless areas, and a proposed new Forest Service roads policy. The result was another delay in the revision process.

In October 2000, funding allowed us to once again undertake forest plan revision. An initial round of public meetings occurred in six towns surrounding the Forest, and the public involvement process is ongoing. To the greatest extent possible, all work completed as of this date, including prior studies and public comments, will be incorporated into the process and final product. The Bighorn forest plan revision is scheduled for completion in 2005.

## **Forest Plan Amendments**

The Forest Plan has been amended 14 times since it was approved in 1985. The amendments are summarized below and the changes in management area allocations resulting from the amendments are displayed at the end of these summaries in a table.

**Forest Plan Amendment One** updated the Ten-Year Timber Sale Summary (Appendix A) – updated through 1990, Arterial and Collector Road Construction and Reconstruction Summary (Appendix B)--updated through 1993, Trail Construction and Reconstruction Summary (Appendix C)--updated through 1993 and Developed Recreation Site Construction/Reconstruction Summary (Appendix H)--updated through 1993.

**Forest Plan Amendment Two** updated the implementation schedules, including the Ten Year Timber Sale Summary in Appendix A, Trail Construction and Reconstruction Summary in Appendix C, and Developed Recreation Site Construction and Reconstruction Summary in Appendix H. It was necessary to update these schedules annually to reflect changes in planned activities due to such factors as differences between program budgets and actual appropriations, economic considerations, site-specific analysis, and other natural and physical factors.

**Forest Plan Amendment Three** updated the Ten Year Timber Sale Summary in Appendix A. Schedules are updated as needed to reflect changes in planned activities due to differences between budgets, actual appropriations, economic considerations, site-specific analysis, and other natural and physical factors. The changes in the schedules did not represent a change in management direction.

**Forest Plan Amendment Four** changed and improved some of the monitoring requirements for wildlife, range, soils, water, riparian, and fish habitat. The Forest Interdisciplinary Team had discovered that some of the procedures and standards did not provide the best means for monitoring.

**Forest Plan Amendment Five** was issued to change the projected expenditures and returns shown in Forest Plan Table III-1. This change updated the costs for plan implementation.

**Forest Plan Amendment Six** added the Forest's Recreation Strategy as Appendix J and the designation of three scenic byways as Appendix K. These documents did not change the overall Forest Plan direction, but did clarify the goals and objectives of the recreation program.

**Forest Plan Amendment Seven** replaced the seven-year regeneration standard with a five-year regeneration standard, which applied to final harvest of lodgepole pine. The amendment added additional Standards and Guidelines to be used in making a determination that regeneration could be assured within five years following final harvest. The amendment also made corrections to the lands designated as suited for timber harvest, reducing the amount of land suited for timber harvest by about 4,000 acres to 262,062 acres.

**Forest Plan Amendment Eight** changed the visual quality objectives for the Twin Lakes Reservoir special-use permit area, Sections 34 and 35, Township 54 North, Range 87 West, Sixth Principle Meridian. The visual quality objectives in management areas 4B and 9A were changed from Retention and Partial Retention to Maximum Modification. This change allowed for the expansion of the Twin Lakes Reservoir to proceed and be consistent with Forest Plan direction.

**Forest Plan Amendment Nine** changed management prescriptions on 83 acres of lands because of the Tie Hack Dam and Reservoir, which is located on the South Fork of Clear Creek. This amendment changes 47 acres of management prescription 4B (wildlife management) and 36 acres of management prescription 7E (timber management) to 83 acres of management prescription 9E (water impoundment).

**Forest Plan Amendment Ten** changed 22 acres of 6B (livestock grazing) to 1A (Developed Recreation Management – Tie Hack Campground). In addition, the timber suitability on these 22 acres of Management Area 1A changed from suited forestland - timber emphasis (511 timber component) to unsuited forestland - land not appropriate for timber production (825 timber component).

**Forest Plan Amendment Eleven** changed the management prescriptions on 101 acres of National Forest lands located at the Twin Lakes Dam and Reservoir site located on Coney Creek, Tongue Ranger District. This amendment changes 86 acres of management prescription 4B (wildlife management) and 15 acres of management prescription 9A (riparian management) to 101 acres of management prescription 9E (water impoundment).

**Forest Plan Amendment Twelve** changed the Standards and Guidelines in the Area of Consultation described in the Medicine Mountain Historic Preservation Plan. The current Forest Plan land allocations within the Area of Consultation will remain the same.

**Forest Plan Amendment Thirteen** changed 40 acres from 7E and 2B designation to 1A to accommodate the Tie Hack Campground.

**Forest Plan Amendment Fourteen** changed the Cloud Peak Wilderness Area from four management areas to two, and revised or added 10 Standards and Guidelines for management. These fourteen amendments redistributed the management area allocations for 206 acres, which is .019 percent of the total Bighorn Forest.

**Forest Plan Amendment Fifteen** revised the list of Management Indicator Species (MIS) for the Forest from twenty-four to six species. The amendment refined the species being monitored because the Forest could not monitor population trends of 24 species, nor were many of the species reflective of management issues tied to specific habitats. The following six species were designated as MIS: elk, red squirrel, red-breasted nuthatch,

white-crowned sparrow, lark sparrow, and three-toed woodpecker. The amendment also included monitoring requirements for MIS and certain TES species.

Table 1. Current management area allocations on the Bighorn National Forest compared with those in the 1985 forest plan.

<b>Management area</b>	<b>Emphasis</b>	<b>Acres Allocated in 1985 Forest Plan</b>	<b>Current Allocated Acres</b>
1-A*	Existing & proposed developed recreation facilities	913	935
1-B	Existing & potential winter sports sites	559	559
2-A	Semi-Primitive Motorized recreation opportunities	42,378	42,378
2-B	Rural & Roaded Natural recreation opportunities	15,220	15,220
3-A	Semi-Primitive Nonmotorized recreation opportunities	44,660	44,660
3-B	Primitive recreation in unroaded areas	45,980	45,980
4-B*	Wildlife habitat management for one or more management indicator species	206,237	206,104
4-D	Aspen stand management	11,171	11,171
5-A	Wildlife winter range in non-forested areas	15,500	15,500
5-B	Wildlife winter range in forested areas	10,153	10,153
6-A	Livestock grazing, improve forage condition	26,494	26,494
6-B	Livestock grazing, maintain forage condition	242,541	242,541
7-E*	Wood fiber production	202,500	202,442
1.11	Pristine wilderness	130,803	130,803
1.13	Wilderness, semi-primitive	61,094	61,094
9-A*	Riparian and aquatic ecosystem management	11,744	11,729
9-B	Increase water yield	4,080	4,080
9-E*	Needed water impoundment sites	0	184
10-A	Research natural areas	1,320	1,320

<b>Management area</b>	<b>Emphasis</b>	<b>Acres Allocated in 1985 Forest Plan</b>	<b>Current Allocated Acres</b>
10-C	Scenic, geologic, historic, and other Special Interest Areas	165	165
10-D	Wild and scenic rivers corridors	30,559	30,559
<b>Total Forest Acres</b>		<b>1,107,670</b>	<b>1,107,670</b>

\* Note: Management Area 1A (Recreation Facilities) increased by 22 acres.  
Management Area 4B (Wildlife), decreased by 133 acres.  
Management Area 7E (Wood Fiber Production) decreased by 58 acres.  
Management Area 9A (Riparian) decreased by 15 acres.  
Management Area 9E (Water Impoundment) increased by 184 acres.

### Forest Plan Projected vs. Actual Outputs

The following table compares projected forest plan average annual outputs, costs, and returns to actual fiscal year (FY) 2002 accomplishments. A direct comparison of projected outputs is not always appropriate due to variables such as allocated budgets.

Table 2. Projected forest plan average annual outputs, costs and returns compared to actual FY 2002 accomplishments.

<b>Activity</b>	<b>Unit of Measure</b>	<b>2002-2010 Avg. Annual Projected Outputs</b>	<b>FY 2002 Outputs</b>
<b>Soils</b>			
Soil and Water Resource Improvements (i.e., improved watershed condition)	Acres	38.5	40
Annual Soil Survey	Acres	Not estimated	Completed
Soil Loss (incremental increase due to timber harvest and road construction)	M tons	9.3	~
<b>Water</b>			
Water Yield	MAF	699	699
Water Meeting Water Quality Goals	MAF	Not estimated	~
Water Not Meeting Water Quality Goals	MAF	Not estimated	~
<b>Minerals</b>			
Leasing Availability Recommendations			0
No Lease	M Acres	211.98	0
Lease	M Acres	723.84	0
Lease Without Surface	M Acres	171.85	0
Minerals Operating Plans	Total Number	5	1

Activity	Unit of Measure	2002-2010 Avg. Annual Projected Outputs	FY 2002 Outputs
<b>Fire</b>			
Fire Management -Most Efficient Level	Million \$s	1.16	1.762
Fuels Breaks and Natural Fuels (includes prescribed burns)	Acres	300	2,729
<b>Wildlife and Fish</b>			
Wildlife Habitat Improvement	Acres	2,560	1,887
Big Game Winter Range Carrying Capacity			
Elk	Number	527	527
Deer	Number	1,053	1,053
Riparian Area Improvement	Acres Improved Annually		100
Aspen Treatment	Acres	527	18
Changes in Habitat Capability of Indicator Species			~
Early Successional Stage	% change (mean of 8 species)	Not estimated	~
Mid Successional State	% change (mean of 8 species)	Not estimated	~
Late Successional Stage	% change (mean of 6 species)	Not estimated	~
Fisheries Improvement Structures	Structures Constructed Annually	60	2
Wildlife Structures	Structures Constructed Annually	15	6
Threatened and/or Endangered Species Habitat Management	Number of Animals	0	2
<b>Range</b>			
Permitted Livestock Grazing	MAUMs	140	122.4
Areas of Grazing, Recreation & Wildlife Conflicts Where Conflict are Reduced	M Acres (Cumulative totals rather than annual outputs)	22	58
<b>Timber</b>			
Total Programmed Sale Volume Offered	Million BF	16.4	1.70
Total Programmed Sale Volume Offered	Million CF	4.2	0.42
Sawtimber Volume (7'+)	Million BF	14.5	0.50
Sawtimber Volume (7"++)	Million CF	3.8	0.11

<b>Activity</b>	<b>Unit of Measure</b>	<b>2002-2010 Avg. Annual Projected Outputs</b>	<b>FY 2002 Outputs</b>
Roundwood Volume Offered (live 5" - 6.5")	Million BF	0.5	0.12
Roundwood Volume Offered (live 5" - 6.5")	Million CF	0.08	0.03
Mortality Volume	Million BF	1.4	1.14
Mortality Volume	Million CF	0.37	0.28
Timber Stand Improvement	Acres	400	0
Reforestation (planting and seeding	Acres	360	790
Clearcutting	Acres	1,194	38
Shelterwood Cutting	Acres	625	0
Uneven-aged Selection Cutting	Acres	100	0
Catastrophic Salvage	Acres	0	30
<b>Insects and Disease</b>			
Insect and Disease Survey	M Acres	800	1
<b>Developed Recreation</b>			
Developed Recreation Capacity (except downhill skiing)	MRVDs	1,137	1,109
Developed Recreation Use (including visitor information services, not including downhill skiing	MRVDs	735	667
Subcategories of Developed Recreation			
Developed Recreation Capacity, public sector	MRVDs	592	614
Developed Recreation Use, public sector	MRVDs	490	407
Developed Recreation Capacity, private Sector (except downhill Skiing)	MRVDs	545	495
Developed Recreation Use, private Sector (except downhill Skiing)	MRVDs	245	260
<b>Downhill Skiing</b>			
Downhill Skiing Capacity	MRVDs	25	25
Downhill Ski Use	MRVDs	18	9
<b>Dispersed Recreation</b>			
Total Dispersed Recreation Capacity (not including wilderness	MRVDs	2,163	2,174
Total Dispersed Recreation Use (not including Wilderness	MRVDs	1,063	899
Dispersed Recreation Capacity by Recreation Opportunity Spectrum Setting			

<b>Activity</b>	<b>Unit of Measure</b>	<b>2002-2010 Avg. Annual Projected Outputs</b>	<b>FY 2002 Outputs</b>
Primitive & Semi Primitive Nonmotorized Setting (outside of wilderness)	MRVDs	215	215
Semi-Primitive Motorized Setting	MRVDs	311	311
Roaded Natural and Rural Setting	MRVDs	1,648	1,648
Dispersed Recreation Use by Recreation Opportunity Spectrum Setting			
Primitive & Semi Primitive Nonmotorized Setting (outside of wilderness)	MRVDs	129	54
Semi-Primitive Motorized Setting	MRVDs	290	216
Roaded Natural and Rural Setting	MRVDs	644	629
Number of Trailheads with Access for all Classes of Vehicles (incremental over previous period)	Total number (1978-1998)	Not Estimated	Not Estimated
Trail Construction/reconstruction	Miles	2.9	0
<b>Wilderness</b>			
Wilderness Management	Acres	189,000	189,000
Wilderness Capacity	MRVDs	124	124
Wilderness Use	MRVDs	110	62.5
<b>Lands</b>			
Land Purchase and Acquisition	Acres	Not Estimated	0
Land Exchange Offers	Acres	Not Estimated	3
Right-of-Way Acquisitions	Total Cases Each Period	0	0
Occupancy Trespass	Cases	4	1
Landline Location	Miles	38	3
<b>Facilities</b>			
Road Construction			
Arterials	Miles	1.9	0
Local Roads	Miles	18	0
Road Reconstruction			
Arterials	Miles	1.9	0
Local Roads	Miles	8	0.7
<b>Human and Community Development</b>			
Human Resource program (includes all programs except YCC and Job Corp)	Enrollee years	12	5.6
Job Corp	Enrollee years	Not estimated	~

<b>Activity</b>	<b>Unit of Measure</b>	<b>2002-2010 Avg. Annual Projected Outputs</b>	<b>FY 2002 Outputs</b>
<b>Expenditures</b>			
Operation and Maintenance	Million Dollars	6.16	6.16
Capital Investment	Million Dollars	2.15	0.27
General Administration	Million Dollars	1.26	1.75
Long Range Fixed Costs	Million Dollars	0.76	0.44
Total Budget	Million Dollars	10.33	8.62
<b>Returns to Treasury</b>	Million Dollars	2.16	0.66

## **ACHIEVING OBJECTIVES OF THE FOREST PLAN**

A review of the previous table indicates the variability in accomplishments. Outputs often vary substantially from year to year as funding levels change. The trends in various resource areas over a three- to five-year period are a better reflection of whether or not the Forest Service is progressing toward accomplishment of its goals and objectives to reach the desired future condition. A more detailed discussion is contained in the narratives for individual resource areas.

The single factor that has the most influence on outputs and program effectiveness is the annual budget. Distribution of our funds often reflects national direction and priorities of the administration and Congress. Traditionally, we have been funded at a level significantly below what was projected to implement the forest plan. The fiscal year 2000 funding level was approximately 80 percent of our projected forest plan need. Moreover, the dollars were not adequately distributed to meet the needs for individual program areas.

For the past several years, we have been using a system of project budgeting, often referred to as a "unified budget." Employees plan this budget and execute projects on a Forestwide basis and trade-offs are realized at the beginning of the fiscal year. We have made an effort to "cap" our fixed costs (permanent employees' salaries, vehicles, rent and utilities, etc.,) at 70 percent of the annual budget. The remaining 30 percent of the annual budget is to be used to provide flexibility to fund a seasonal workforce, provide training, purchase equipment, and deal with unplanned events. At present, we have little control at this organizational level in budget planning and distribution into the future.

## **MONITORING RESULTS**

### **PHYSICAL COMPONENTS**

#### **Introduction**

This report describes the various monitoring and target accomplishments completed by the Bighorn National Forest aquatics group. The Forest aquatics program encompasses the individual soil, air, water, fish, and minerals programs.

#### **AIR QUALITY**

The 189,000-acre Cloud Peak Wilderness is a Class II airshed that is subject to protection under the Clean Air Act. It has beautiful views and outstanding scenery that could be impacted by air pollution. There are few threats to the air quality from local sources, but sources outside the area such as global acid rain depositions and coalbed methane development east of the Forest may pose a larger threat in the future.

#### **MONITORING REQUIREMENT—AIR QUALITY**

Early in the summer of 1995, a camera to monitor visibility was installed on Grouse Mountain. The purpose of the camera is to monitor the long-term air resource of the Cloud Peak Wilderness. Two photographs of Mather Peaks are taken daily. These photographs are analyzed to determine if there has been an increase in particulate matter over time.

The Forest is currently working with the state of Wyoming to place an automated air quality monitoring station on Hunter Mesa. This station was operational at the end of FY01 and will replace the existing visibility camera.

#### **Implementation Monitoring**

#### **MONITORING REQUIREMENT—MEET AIR QUALITY STANDARDS FOR PRESCRIBED BURNING**

Compliance with federal and state air quality standards is adhered to during prescribed fire projects. Prior to the burn event, the Forest Supervisor approves a prescribed fire plan, and a request for burn permit is filed with the Wyoming Department of Environmental Quality – Air Quality office. The request for permit is accompanied by burn data that includes the number of acres to be burned, type of fuels, and a Simple Approach Smoke Estimation Model (SASEM) report, which predicts the amount of particulate matter to be produced and models smoke drift under various weather conditions. When the permit is approved, a weather forecast is obtained the day prior to, or the day of, the actual burn. The forecast is used to predict weather conditions and associated smoke and fire behavior. Wind direction and smoke dispersal are monitored during the prescribed burn to ensure compliance with air quality regulations.

## FIRE

The emphasis for the fire program is safety—for firefighters and the public. Many nationally mandated actions were implemented in the fire program as part of the Thirtymile Hazard Abatement. These actions were all directed to providing a safe working environment for firefighters.

Staffing of permanent, semi-permanent, and seasonal fire positions has increased to meet 100% of the established Most Efficient Level (MEL). The national demand for experienced fire personnel has created challenges in hiring and retaining qualified individuals; some positions have been left vacant until qualified candidates can be found. In response to this, the Forest decided to increase the tour of duty for Module Leaders at each of the Work Center locations from 13/13 to 18/8 in order to be more competitive with other locations with the goal of retaining people on the Bighorn for a longer period of time (instead of training them and losing them to locations offering longer work seasons). Increasing the tours will also allow employee's work season to overlap with fire seasons for prescribed burning, which occur outside the regular fire suppression season. The program for 2002 included 7 permanent full time positions, 10 permanent seasonal positions, and 25 temporary (summer) positions (vacant positions are not included in these numbers). This reflects staffing to provide fire suppression coverage seven days a week over the entire wildfire season.

Although radio communication continues to be an issue, noticeable improvements have been made. In general, communication between Cody Interagency Dispatch Center and fire crews worked well for initial attack dispatching of units on the Forest, routine crew check-in, and weather broadcasting to field units.

Fire crews assisted with transportation and installation of equipment at the Black Mountain Radio Repeater and with removal of radio equipment from Dome Peak. The crew also helped with preparing a helispot at Black Mountain and preparing the repeater site. A helicopter ferried equipment to and from Black Mountain and this provided a training opportunity to maintain qualifications (helicopter crew members) of the fire crew.

Maintenance of all of the weather stations occurred during fiscal year 2002. There are currently five weather stations on the Forest, and all can be accessed via Internet to obtain current and historical weather observations. The maintenance included installing new equipment, such as sensors and other components. All five weather stations now operate under the new Forest Technology Systems (FTS), which greatly reduces long-term maintenance costs to the Forest.

When not engaged in fire suppression, fire crews assisted other resource areas with project work throughout the Forest.

Table 3. Resource projects supported by fire crews.

<b>Activity</b>	<b>Location(s)</b>	<b>Purpose</b>
Hazard tree removal	Various Forest campgrounds Along roadways and powerlines	Removal of hazard trees for public safety
Thinning – KV	Twin Nickel Timber Sale	Removal of diseased or defective trees/improve

<b>Activity</b>	<b>Location(s)</b>	<b>Purpose</b>
		stand health and vigor
Cutting dead trees and brushing encroaching trees away from trails	Sibley Lake Cross Country Ski Trails	Improve trail quality and increase safety for visitors
Facilities maintenance	Big Goose Ranger Station Burgess Ranger Station Hunter Ranger Station Porcupine Ranger Station Tyrrell Ranger Station Various locations on Forest	Upgrade/Maintain/ Improve Facilities
Assisted in marking trees for timber sales	WYDOT Expansion Pussyfoot Timber Sale	Field preparation of timber sales
Hazard tree removal and firewood stocking	Administrative cabins	Protect structures, increase safety, provide firewood

**MONITORING REQUIREMENT—FIRE CONTROL OBJECTIVE**

Although Energy Release Components (ERC) were at record or near record highs and 1,000-hour fuel moistures were at record or near record lows, fire occurrence in 2002 represented an average year. Fire restrictions were put into effect from early July until significant precipitation had been received in early September. Eleven fires burned approximately 41 acres of National Forest System (NFS) land during the fiscal year. The 2002 fire danger ranged from moderate to high through the season but remained primarily in the high-to-very-high range during much of the fire season. The Forest and surrounding area was tinder dry, but the Bighorn did not have a large fire event. Occasional rains from thunderstorms, while not enough to significantly reduce fire danger, did provide temporary relief at crucial times during the summer.

Table 4. Fire reports – Bighorn National Forest FY 2002 wildfires.

<b>Ownership</b>	<b>Name</b>	<b>Date of Ignition</b>	<b>Size (acres)</b>
Forest Service	High Park Creek 1	06/16/02	0.1
	Wagon Box	07/07/02	0.1
	Piney Creek	07/16/02	20
	Torry Gulch	07/16/02	0.1
	Columbus Creek	07/18/02	0.5
	High Park 2	07/23/02	0.1
	Half Ounce	08/08/02	0.1
	Little Horn	08/21/02	20

<b>Ownership</b>	<b>Name</b>	<b>Date of Ignition</b>	<b>Size (acres)</b>
	Garland Gulch	08/21/02	0.1
	Cave Creek	08/31/02	0.1
	Rock Chuck	09/19/02	0.1
		<i>Total</i>	<i>41.3</i>
Non-Forest Service	Poison Creek	07/18/02	0.1
	She Bear Mountain	06/30/02	135

The Forest Service managed the She Bear Mountain Fire (on private land adjacent to the Forest) for Sheridan County as a Type 3 incident. The Piney Creek Fire was also managed as a Type3 incident.

Several members of the East and West Zone fire crews were utilized to fill out the Wyoming Interagency Hotshot Crew (IHC) on a rotating basis. In addition, the Bighorn provided one squad to each Bighorn Basin Type 2 IA Crew dispatched during the season. These were excellent opportunities for employees to gain experience, while maintaining response capabilities and leadership coverage for the Forest. Due to the high level of fire activity across the West in 2002, both the IHC and the Bighorn Basin Type 2 IA were on assignments continually from May through September.

In addition to crew activities, the Forest provided support to fires in other geographic areas by providing “single resources” (overhead). These people, both full-time fire employees and employees who work in other resource areas, contributed to the national fire suppression effort by participating in large fire suppression across the western United States in various fire positions.

The Forest also provided personnel to rotate as helicopter crewmembers for the Bighorn/Shoshone/BLM severity helicopter, based out of Worland.

#### **MONITORING REQUIREMENT—FUEL TREATMENT OF ACTIVITY FUELS**

There were 2,729 acres treated with prescribed burning, pile burning, and mechanical treatments for fiscal year 2002. Treatment projects included prescribed burning, thinning and hand piling of fuels at Ranger Stations, summer homes, and campgrounds and burning of piles throughout the Forest to reduce the backlog of hand and machine piles.

Specifically, fuels reduction (including thinning, hand piling, and burning of hand piles) was conducted adjacent to cabins in Little Bighorn Canyon, West Tensleep, Paintrock, Porcupine Ranger Station, Burgess Ranger Station, Big Goose Ranger Station and various summer homes located within the Forest boundary. Prescribed fire was used to treat sagebrush communities that are decadent due to the elimination of fire over the past 50 – 100 years and to improve forage production for livestock and wildlife.

Hazard tree removal is an ongoing project to remove hazard trees in campgrounds, around Ranger Stations, and along various roads. Trees were felled where needed in campgrounds and slash was piled away from roads.

The quality of the Burgess Ranger Station firebreak was improved by thinning the adjacent timber stands. This project needs to be done on an annual basis for maintenance purposes, due to the new growth and mortality within lodgepole stands. Dead trees, ladder fuels, and thinning in denser areas were the main focus in this area, as well as, in stands adjacent to the burn project.

### **Effectiveness Monitoring**

Forest Plan direction for fire management is very general. The standards and guidelines provide limited direction for fire management, while the Fire Management Action Plan has been written to provide specific fire management direction for suppression in the various management areas. Preliminary data and mapping projects continue to be prepared for the Forest Plan revision.

The National Fire Management Analysis System (NFMAS) and the Fire Management Plan provide the necessary direction to fund the organization and implement direction to meet the forest plan standards.

## **FISHERIES**

Managing for native and non-native game fish is a priority on the Forest. Currently, the Bighorn has one subspecies of native cutthroat trout (Yellowstone cutthroat) that is listed as sensitive. The aquatics group has been working cooperatively with the Wyoming Game and Fish Department to monitor and inventory fish populations across the Forest. To date, the Forest has helped fund and support four graduate students to inventory and monitor Yellowstone cutthroat populations, as well as water quality and riparian conditions on the Bighorn National Forest. Once the populations are found, habitat improvement and recovery efforts will soon follow.

### **MONITORING REQUIREMENT—FISH/RIPARIAN HABITAT RATING**

FY02 TARGET - Riverine Stream Reach or Channel Unit Scale Inventory		
Measurement Unit	FY02 Target	FY02 Accomplishment
Miles	5	10

This item relates to the number of stream miles for which maps and/or descriptions have been accomplished during the past year. During FY02, the aquatics team inventoried and/or described hydrologic and aquatic conditions on over 10 miles of stream channel across the Forest. The accomplished miles are so much higher than the projected target due to improved GIS capabilities, and a sampling design that allows us to extrapolate conditions based on stream type.

Reach-level aquatic inventories were conducted as part of large-scale watershed analyses for range allotment management plan (AMP) revisions. The inventories were done using stratified sampling of stream reaches classified during the 1998 Integrated Resource Inventory (IRI). Once the distribution of stream types was known from IRI maps, the crew sampled reaches that were known to be in reference or impacted condition. The inventories were conducted using the R1/R4 Fish Habitat Inventory Protocol. Information was then extrapolated across the watershed based on stream type and condition class.

The Tensleep watershed was inventoried during FY02

FY02 TARGET - Stream Aquatic Biota Inventory		
Measurement Unit	FY02 Target	FY02 Accomplishment
Miles	5	10

This target refers to the creation of a formally documented, stream-related data gathering/collection process that addresses issues and decisions associated with land management actions. The inventory assess the distribution and condition of aquatic resources and is integrated into the planning, analysis, and execution of projects and activities on the Forest, such as roads analysis, forest planning, and NEPA.

This information was collected as part of large-scale watershed analyses. Data on the abundance and distribution of aquatic plants and fish was collected using snorkeling and electrofishing techniques. Data was collected in the Tensleep watershed.

FY02 TARGET - Landscape/Watershed Scale Assessments		
Measurement Unit	FY02 Target	FY02 Accomplishment
Assessments	0	1

Assessments are characterizations of ecosystems above the project level that provide information relevant to land management decisions. During FY02, the aquatics group completed watershed analyses on several large watersheds across the Forest. The Porcupine Creek watershed project was completed during FY02.

**MONITORING REQUIREMENT—FISH POPULATION TRENDS**

During FY02, the Forest co-sponsored inventories of populations of Yellowstone cutthroat trout. These inventories were conducted by graduate students with the intent of filling in data gaps identified by the Wyoming Game and Fish Department. The Forest has a PowerPoint slide show of the work done to date on the Yellowstone cutthroat trout. The following watersheds have been inventoried over the last several years:

- Little Bighorn
- South Fork Paintrock Creek
- Cedar Creek
- North and South Beaver Creek
- Deer Creek
- Trout Creek

FY02 TARGET - Inland Fish Lakes Restored/Protected		
Measurement Unit	FY02 Target	FY02 Accomplishment
Acres	0	0

This measure reports the surface acres of inland fish bearing lakes, ponds, and reservoirs that were enhanced using structural or non-structural improvements. These restoration/enhancement activities address features limiting the productive capability of a body of water, for the express purpose of improving fish habitat.

In FY02, Casey's Pond in the Shell Creek watershed was planned to have the inlet redesigned to prevent icing. However, this project was not accomplished due to funding reallocations; hopefully it will be completed in the near future.

FY02 TARGET - Inland Fish Streams Restored or Enhanced		
Measurement Unit	FY02 Target	FY02 Accomplishment
Miles	9	11

This measure reports the miles of inland fish bearing rivers and streams that were restored or enhanced using structural or non-structural improvements. The restoration/enhancement activities address features limiting the productive capability of a body of water, for the express purpose of improving fish habitat.

In FY02, streams were protected with construction and maintenance of riparian exclosures, along with changing grazing strategies in riparian areas. These activities were conducted across the Forest as part of AMP revisions.

The Dead Swede contract was awarded to a consultant that prepared a natural channel design for a 0.6 mile reach of South Tongue near the Dead Swede campground. The construction phase is scheduled for FY03.

## MINERALS

### MONITORING REQUIREMENT—COMPLIANCE WITH TERMS OF OPERATING PLANS AND CONSISTENCY WITH PLAN

FY02 TARGET - Non-Bonded Non-Energy Operations Processed		
Measurement Unit	FY02 Target	FY02 Accomplishment
Operations	0	0

This report contains the number of operations processed that did not require a reclamation bond, such as Plans of Operations for which bond requirements were waived, Notices of Intent, or free-use mineral material permits for the public. Accomplishment is reported when an operation plan is processed to a decision. There is a decision document signed by a line officer that verifies each operation reported as processed.

### Other Projects

The aquatics crew provides support to other functions on the Forest. This year the team supported the Swamp, Woodrock, Pussyfoot, and Sourdough timber NEPA projects. We also supported the Story fuels project and the Tongue and Devil's Canyon AMP revision plans. During the severe fire season, the team provided up to a month of time individually supporting fire suppression efforts across the Region.

## **Plans for FY 2003**

The next fiscal year is expected to bring new challenges to the program. The forest plan revision effort will consume a large percentage of our time during the coming fiscal year. Currently, the work required to support this effort is unknown, however, additional people may be required to accomplish the intended results.

During FY03, we will be completing channel and riparian restoration work on one mile of the South Tongue River near Dead Swede Campground. This site will be used as a demonstration project with Wyoming Game and Fish Department to show how fish and water objectives can be used to restore the structure and function of a large fishery stream on the Forest.

### **EFFECTIVENESS MONITORING**

Forest Plan standards and guidelines are addressed during project planning; however, during project implementation, they may not always be reviewed due to time and personnel limitations. Project monitoring where standards and guidelines and Best Management Practices have been implemented demonstrates that Forest Plan direction will protect the soil and water resources.

During the summer of 2000, the state of Wyoming reviewed Best Management Practice (BMP) implementation and effectiveness across the state. One of the randomly selected timber sales was Caribou. The audit found that streamside management zones were effective in preventing water quality impacts as well as maintaining channel stability.

### **VALIDATION MONITORING**

The difference between natural erosion and erosion resulting from management activities needs to be defined. In addition, we need to ensure that standards and guidelines are being met at the project level.

## **SOIL AND WATER**

Water quality across the Forest ranges from severely degraded to pristine, with the overall water quality generally considered to be good. The most common cause for degradation of water quality is chronic sediment delivery from roads, stream crossings, and channel scour.

The condition of riparian areas across the Forest ranges from severely degraded to fully functional. The riparian areas most at risk are those located in meadows and grasslands. Timbered riparian areas are generally in good condition and are adequately protected when Best Management Practices (BMPs) are properly applied; however, non-timbered riparian areas are subject to improper grazing by livestock and wildlife. Changes are being made during allotment management plan revisions in the type of grazing system, season of use, riding plans, exclosures, and livestock numbers. These changes are reducing the level of impact on riparian ecosystems.

Other impacts to water quality and riparian health come from recreation, off-road travel, and roads. Timber sale BMP reviews show that when Best Management Practices are properly applied, there is no detectable change in water quality or riparian health.

**MONITORING REQUIREMENTS—GROUND-DISTURBING ACTIVITIES WITH THE POTENTIAL TO ALTER SOIL PRODUCTIVITY - WATER QUALITY**

FY02 TARGET - Soil and Water Resource Improvement		
Measurement Unit	FY02 Target	FY02 Accomplishment
Acres	20	20

This includes acres treated with improvement measures to increase the quality and quantity of water, and maintain or improve soil productivity in accordance with land management plans.

The Forest replaced of approximately 25 culverts in the Tongue watershed in FY02. This work began several years ago as part of a watershed analysis. Three large culverts are being designed by the Regional Office to replace existing culverts in FY03.



Figure 1. An example of a poor stream crossing in the South Tongue watershed.

**BIOLOGICAL COMPONENTS**

**INSECTS AND DISEASE**

In 2002, the Forest and the Forest Health Management Service Center in Rapid City conducted follow-up ground surveys from the 2001 aerial survey.

**Ponderosa pine** forests continue to see relatively high levels of **mountain pine beetle** (*Dendroctonus ponderosae*) on the eastern edge of the Forest. The Forest is in the third year of drought, and that is contributed to the epidemic levels of beetle in this timber type.

**Limber pine decline** that was reported as far back as 1989 in Tensleep Canyon has progressed to some level into most every limber pine stand on the Forest. Limber pine decline is a combination of mountain pine beetle, white pine blister rust (*Cronartium ribicola*), dwarf mistletoe (*Arceuthobium cyanocarpum*), porcupines, and possibly needle cast diseases. White pine blister rust is an exotic rust that the native limber pine did not evolve with and thus has very limited resistance to. Shell Canyon and Red Grade road both now show high rates of infection, while other areas are just starting their infection. The drought conditions have exacerbated the problem by stressing the trees, making them more susceptible to the other vectors described above. It is now estimated that 90% of the limber pine on the Forest will succumb to this.

**Subalpine fir decline** has become even more evident on the Forest. After it dies, subalpine fir retains its red needles longer than other conifer species. Because of this, they continue to be seen years (2, 3, or even 4 years) and then decrease due to needle drop. Subalpine fir decline is caused primarily by a combination of western balsam bark beetle (*Dryocoetes confusus*) attacks and root disease (Armillary or Annosus).

The **spruce beetle** (*Dendroctonus rufipennis*) has become very active this past year, in part due to the drought conditions, as well as the age and condition of the spruce on the Forest. Populations can be seen adjacent to older blowdown, especially those not salvaged. Spruce beetle populations are known to increase in blowdown and then move to neighboring stands. While populations on the Bighorn National Forest have increased, they are not at the level of nearby forests such as the Shoshone, which has seen complete hillsides die from these beetles.

**Douglas-fir beetle** (*Dendroctonus pseudotsugae*) caused significant mortality increases in Shell Canyon. It is now estimated that over 100 acres have died in one patch alone.

The **lodgepole needlecast fungus** (*Lophodermella montivaga*) continues to be on the decline with no known epicenters detected since 1997.

Large areas of dead tops of **lodgepole pine** continue to be observed throughout its range; these areas appear gray from a distance because of all the weathered tops. This is caused by **Comandra blister rust** (*Cronartium comandrae*) that kills the tree from the top down. As most of the cones are produced near the top of lodgepole pine, this reduces the amount of seed produced to regenerate these stands.

**Gypsy moth** trapping on the Forest and by cooperating agencies off-Forest has been ongoing. No moths were trapped in 2002. Continued detection monitoring is needed to keep this exotic pest from becoming established.

#### **MONITORING REQUIREMENT—LEVEL OF INSECT AND DISEASE ORGANISM, COMPLIANCE WITH SCHEDULE AND OUTPUTS**

The 1985 Forest Plan projected 800,000 acres of insect and disease survey to be done annually. Per agreement with the Forest Health Management Service Center in Rapid City, complete Forest surveys are scheduled for every three years and were last completed in 2001. Spot surveys, such as those accomplished in 2002, are conducted to determine the extent and intensity of specific agents.

#### **Effectiveness Monitoring**

Aerial surveys are effective in determining levels of infestation of various pests but are not cost effective annually. Ground validation and spot aerial survey sampling are necessary to determine the exact Forest pest, population levels, and what, if any, management actions may be warranted.

### **FOREST VEGETATION AND TIMBER**

Forest vegetation, its condition, management, and the resultant timber commodity outputs are included in this monitoring and evaluation section.

The 2002 Forest outputs for forested vegetation and related activities are shown in the table of projected and actual outputs (see Table 2), along with the 17-year trends. The outputs are those included in the Forest Plan monitoring section. The data in this report are from cut-and-sold, PTSAR, and STARS reports, and planned accomplished records in the Forest RMACT database.

## **Implementation Monitoring**

### **MONITORING REQUIREMENT—CLEARCUT HARVEST UNIT SIZE**

Silvicultural prescription, sale design plans, sale maps, and on-the-ground layout of sales were reviewed for compliance with the maximum size limits; no created openings greater than 40 acres were found.

### **MONITORING REQUIREMENT—ASSURE REGENERATION WITHIN ALLOWABLE TIME FRAMES OF FINAL HARVEST**

In FY 2002, the Forest surveyed approximately 2,061 acres of commercial timber sales to determine the status of the regeneration on final harvest units, as defined in 36 CFR 219.27. The 2002 surveys will be reviewed and certifications made from them in 2003. Continued monitoring and/or corrective actions are planned for those areas not certified as regenerated. Surveys of past tree plantings indicate generally good success. Harsh site conditions and dry planting years have reduced some survival in the Boyd Ridge and Lick salvage areas.

Non-traditional vegetation management projects continue to be implemented without silvicultural prescriptions on the Forest, including highway right-of-way plantings, ski area expansion, prescribed burning, and habitat improvement projects. Current policy is to have a silvicultural prescription prepared for all vegetation manipulation projects. Without a prescription, assurance of regeneration is not documented.

There is no evidence in the database of surveys to assure regeneration or certification that past aspen regeneration treatments have met forest plan stocking requirements.

Qualitative surveys of recent wildfires have shown varied levels of regeneration. Without harvest, there is no legal timeframe to regenerate these wildfires; however, it is good management to monitor their progress and schedule supplemental treatments where necessary. The West Pass Fire shows very little regeneration, while there are indications that Stockwell and Moncreif have some areas with good regeneration starting. Continued monitoring of these and other recent fires should continue to determine status of regeneration.

### **MONITORING REQUIREMENT—ASSURE REFORESTATION AND TSI TREATMENTS ARE CURRENT AND NO BACKLOG CREATED**

Funds for all planned TSI treatments were taken back to fund the extreme fire season of 2002, thus no TSI was accomplished in 2002. While the reforestation data reflect an accurate assessment of our needs, the needs section for TSI and release will have to be cleaned in order to use this system to accurately calculate the needs.

Currently, we are at 109% of the projected TSI output for the planning period. This is within 25% of the 1985 Forest Plan projections. The monitoring plan recommends deviation beyond 20% be investigated further. .

The reforestation needs report in RMACT shows 1,467 acres needing reforestation (2,219 last year). To continue this progress, the Forest should continue the commitment to the reforestation program.

The RMACT database shows no change in the needs with no treatments or additions, and 6,920 acres needing Timber Stand Improvement (TSI), and 2,683 acres needing release

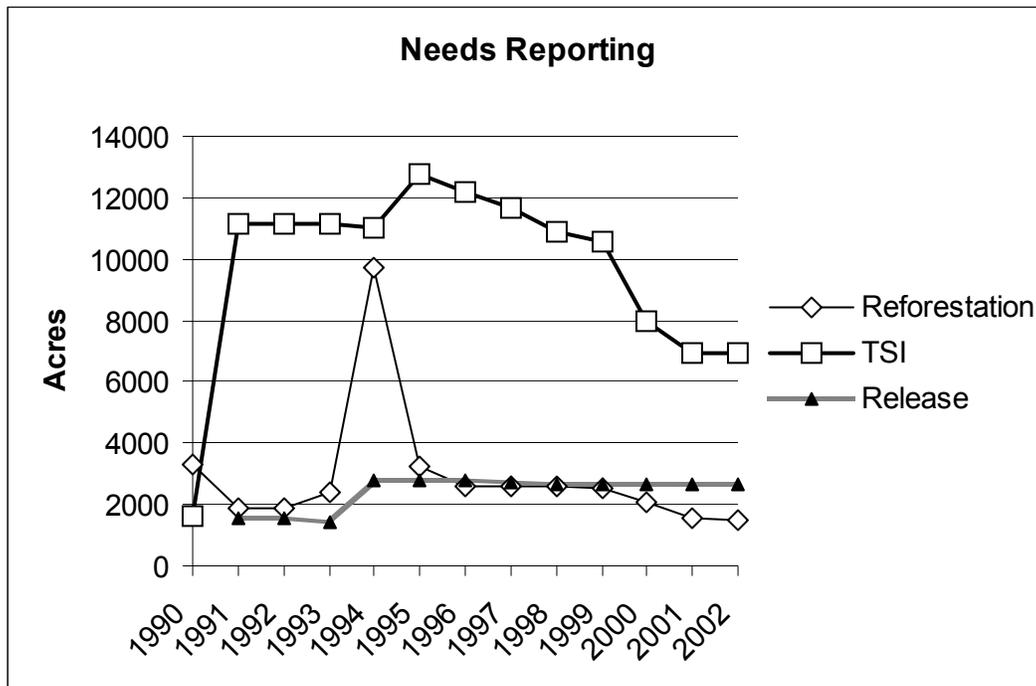


Figure 2. Reforestation, TSI, and release needs since 1990.

**MONITORING REQUIREMENT—COMPLIANCE WITH SCHEDULE AND OUTPUTS**

The 1985 Forest Plan included a schedule of timber sales and a table of outputs projected over the planning period. The table of outputs for timber includes the volume offered and the acres thinned, reforested, and harvested by regeneration method. The forest plan (Chapter IV - monitoring and evaluation) identifies a need to initiate further evaluation when there is a deviation of 25% over a three-year period in compliance with scheduled outputs (page IV-3).

The timber sale schedule was updated with forest plan amendments 1, 2, and 3, after which time, it was determined that the schedule was an administrative decision and did not need to be formalized with a plan amendment.

A comparison of accomplished vs. projected outputs has been done with the annual monitoring reports. Table 2 shows the annual accomplishments and compares the total to what was projected in the forest plan.

Current commercial timber offerings are below forest plan projections. Through the end of FY 2001, after seventeen years of implementation, the Forest has offered 33.5 million cubic feet, MMCF (134.0 million board feet, MMBF), compared to a projected output of 71.6 MMCF (278.0 MMBF), or 47 percent of the projected ASQ output (49% last year). The acres offered

for harvest by regeneration method are also below projected outputs by over 1/2. There are a number of reasons for this difference:

Given a choice between meeting forest plan standards and guidelines and the outputs projected, the Forest has meet or exceeded the standards and guidelines. This has produced lower than projected outputs.

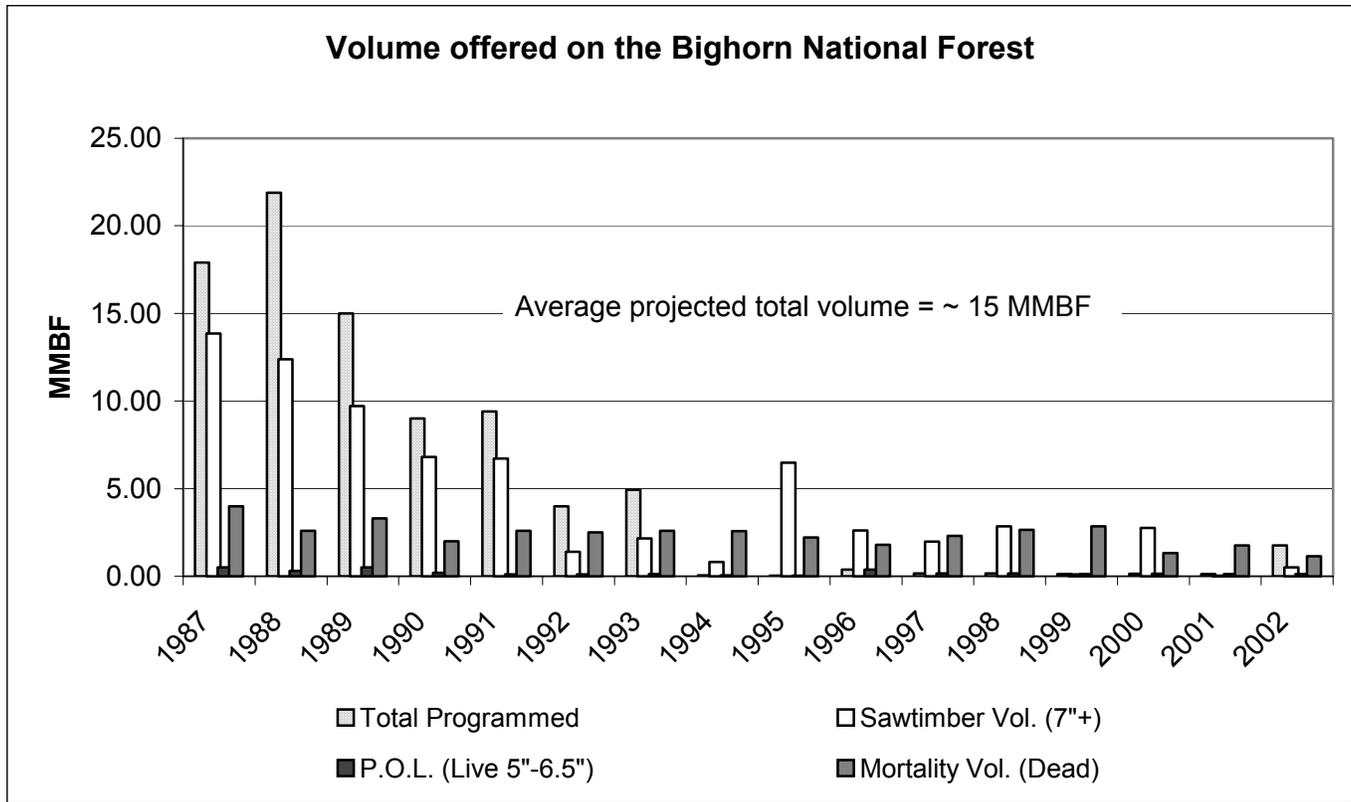
Funding levels for many programs are below forest plan projected levels.

Appeals and litigation of harvest decisions.

Since 1993, the Forest has been under an administrative timber sale offer cap of between 4.5 to 5.5 MMBF per year. This was the outcome of an ASQ amendment prepared in 1993 but not signed due to concerns over the breadth of the decision. It was determined that the more complete analysis provided in the plan revision scheduled to start a few years later was needed to withstand anticipated appeals.

The following figure graphically shows the difference between the projected allowable sale quantity (ASQ) and our current outputs. A more accurate projection of timber harvests methods and resultant output in wood fiber is scheduled to occur during the forest plan revision process.

Figure 3. Comparison of projected ASQ and current output on the Bighorn National Forest from 1987 to 2002.



The Ranger Districts have seen demand for fuelwood and POL sales decline as other sources of fuel became more cost efficient. Because of the extreme fire season in 2002, the Forest implemented restrictions designed to reduce the risk of man-caused fires. These resulted in a reduced amount of fuelwood and post and poles harvested. The cumulative removal continues to exceed projections (180%), the same as last year.

The 1985 Forest Plan failed to identify whether direction was a standard or a guideline. This has sometimes resulted in inconsistent application and, in some cases, more or less stringent application than was intended in the plan.

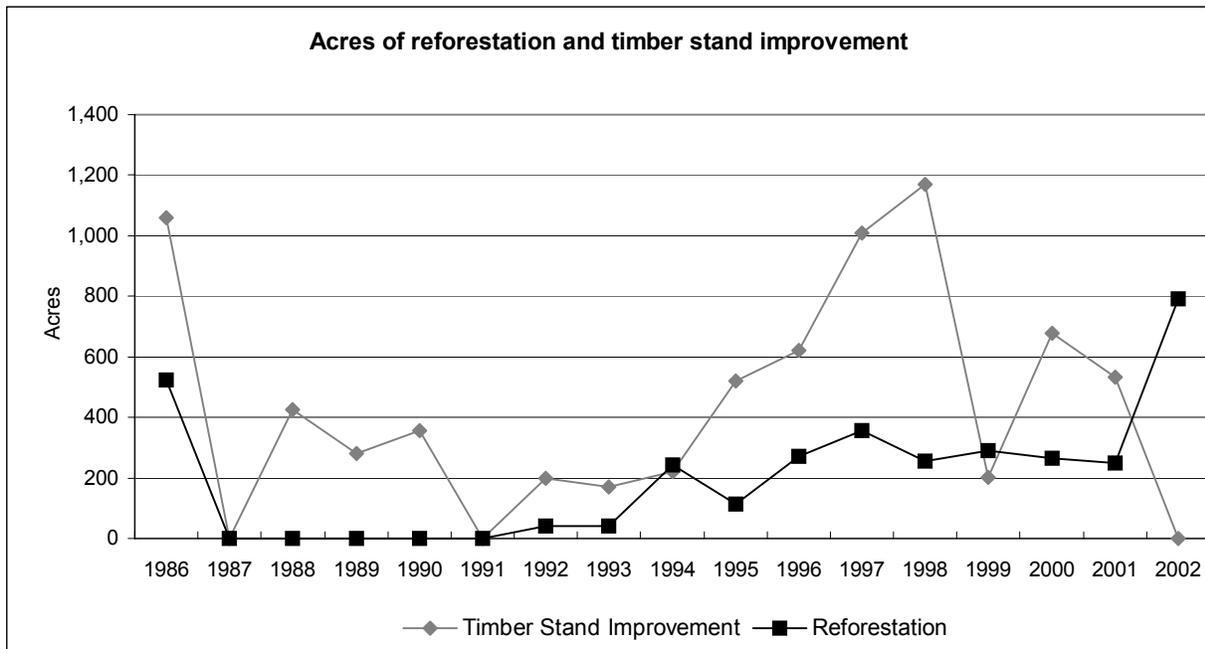


Figure 4. Reforestation and timber stand improvement acres on the Bighorn National Forest from 1986 to 2002.

The Forest completed 237 acres of tree planting and 553 acres of site preparation for natural regeneration (see figure above). Over the planning period, the Forest accomplished 60% of the projected amount of reforestation, up from 49% last year.

According to the Forest database, no regeneration cutting of aspen was accomplished in 2001. The Forest Plan objective was to treat 85 acres of aspen annually, but to date the records show only 26% of that projected output met.

**MONITORING REQUIREMENT – STATUS OF LANDS NOT SUITED FOR TIMBER PRODUCTION**

The status of lands not suited for timber production is scheduled for re-evaluation every tenth year in the Forest monitoring plan. The last analysis was completed in 1991 with forest plan amendment number seven. The plan lists the “Variability which would Initiate Further Evaluation” as “Data indicates unsuitable lands may be suited”. Monitoring has identified some areas recorded as unsuitable that may be suited, most notable the lower elevation Fool Creek #1 clearcuts, and the lower elevation clearcuts of the Ghastly timber sale, and Douglas-fir sites on north and east aspects. These areas have been noted, and will be included in the suitability analysis underway are part of the forest plan revision process that began in 2000.

**Effectiveness Monitoring**

The standards and guidelines pertaining to vegetation management can have a significant affect on the amount and kind of vegetation management allowed, and the resultant outcomes and outputs available, including desired forest conditions and wood fiber volume offered.

There is inconsistent interpretation of the standards and guidelines and how they are to be administered throughout the Forest. Standards are not being interpreted as a standard, but a minimum, with the optimum level above the forest plan standard. The difference between standards and guidelines is also inconsistently interpreted, resulting in guidelines being applied as a standard and visa versa. This has resulted in a different set of standards than those described in the Forest Plan, different outcomes, and fewer outputs than projected.

The Forest often receives pressure to change standards and guidelines when new studies, research, or philosophies are proposed. This pressure must be tempered with the need to apply consistent standards and guidelines over the planning period, as the standards and outputs need to be developed and applied in an integrated manner.

Current standards and guidelines for silviculture do not provide a full range of silvicultural methods. The current Regional Guide provides revised standards and guidelines for silviculture that if adopted, would help the Forest move towards ecosystem management.

Monitoring in 2002 has again identified a need for the Forest to clarify the requirements for certification of regeneration. Use of the Regional Guide standards is recommended.

### **Validation Monitoring**

The acres of treatment by method from the Forest Plan are displayed in the following figure and table. Since the plan was implemented, the Forest has not matched this projected mix, or the projected wood fiber outputs. Total acres harvested are 39% of the total projected for the planning period, while reforestation acres are 60% of the projected output, and ASQ is 47% of projected output. It appears that although the total amount of acres and outputs are less than ½ the projected amounts, the ratio of acres and volume are consistent. During the forest plan revision process, there should be a concerted effort to validate the scheduled outputs, and the mix of each of these treatment methods.

The Bighorn National Forest management area designations have been found to be too small in size and too numerous in a given watershed to manage for a dominant use on a watershed scale. Watersheds currently do not have a dominant use, or management emphasis, but rather the management emphasis areas are averaged together. This averaging results in management for the average rather than managing for any particular emphasis area. Because of this, management areas are often overlooked in project initiation and implementation. This affects the ability to meet forest plan objectives, outcomes, and outputs.

Figure 5. Treated acres, by method, on the Bighorn National Forest from 1986 – 2002.

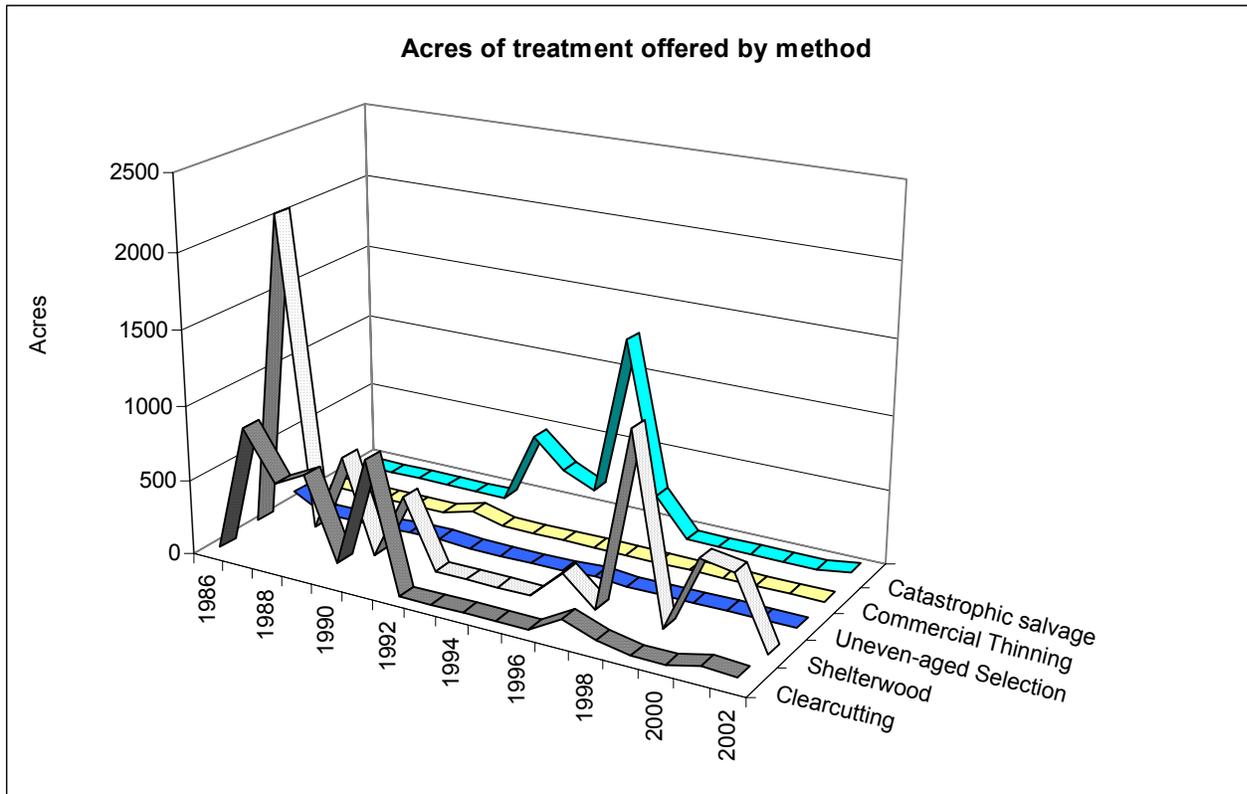


Table 5. Review of activity and outputs.

Activity Unit of Measure	Total Programmed MMBF	Sale Volume Offered MMCF	Sawtimber Vol. (7"+) MMBF	Sawtimber Vol. (7"+) MMCF	POL (Live 5"- 6.5") MMBF	POL (Live 5"- 6.5") MMCF	Mortality Volume (dead) MMBF	Mortality Volume (dead) MMCF
2001-2010 Average Projected Output	16.5	4.30	14.50	3.80	0.60	0.10	1.40	0.37
1986	14.50	3.30	9.85	2.58	0.70	0.11	4.40	1.16
1987	17.90	4.70	13.86	3.63	0.50	0.08	4.00	1.06
1988	21.90	5.80	12.39	3.25	0.30	0.05	2.60	0.69
1989	15.00	4.00	9.72	2.55	0.50	0.08	3.30	0.87
1990	9.00	2.30	6.80	1.78	0.20	0.03	2.00	0.53
1991	9.40	2.50	6.72	1.76	0.10	0.02	2.60	0.69
1992	4.00	1.00	1.40	0.37	0.10	0.02	2.50	0.66
1993	4.94	1.17	2.16	0.57	0.13	0.02	2.59	0.68
1994	3.45	0.87	0.82	0.19	0.05	0.01	2.58	0.68
1995	8.74	2.17	6.48	1.57	0.04	0.01	2.22	0.59
1996	4.79	1.11	2.62	0.56	0.38	0.10	1.79	0.45
1997	4.43	1.03	1.97	0.41	0.16	0.04	2.30	0.58

Activity Unit of Measure	Total Programmed	Sale Volume Offered	Sawtimber Vol. (7"+)	Sawtimber Vol. (7"+)	POL (Live 5"-6.5")	POL (Live 5"-6.5")	Mortality Volume (dead)	Mortality Volume (dead)
	MMBF	MMCF	MMBF	MMCF	MMBF	MMCF	MMBF	MMCF
1998	5.67	1.15	2.85	0.63	0.16	0.04	2.66	0.48
1999	3.10	0.75	0.11	0.03	0.13	0.02	2.86	0.70
2000	4.23	0.84	2.76	0.57	0.15	0.02	1.32	0.24
2001	1.21	0.38	0.03	0.07	0.13	0.03	1.06	0.28
2002	1.76	0.42	0.50	0.11	0.12	0.03	1.14	0.28
Total Projected Output	278.0	71.6	246.5	64.6	8.2	1.3	23.3	6.1
Total Actual Output	134.0	33.5	81.0	20.6	3.8	0.7	41.9	10.6
% of Projected Output	48%	47%	33%	32%	47%	54%	180%	173%

Table 5, cont.

Activity Unit of Measure	Timber Stand Improvement	Reforestation	Clear-cutting	Shelter-wood	Uneven-aged Selection	Commercial Thinning	Catastrophic Salvage	Other	Total of Area Cut
	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
2001-2010 Average Projected Output	400	300	1,006	696	89	0	0	0	1,791
1986	1,060	525	22	52	106	0	0	0	180
1987	0	0	881	2,159	0	0	0	0	3,040
1988	426	0	555	108	0	0	0	0	663
1989	280	0	657	629	0	0	0	0	1,286
1990	357	0	118	10	13	0	0	0	141
1991	0	0	852	458	17	54	0	0	1,381
1992	200	40	0	0	0	0	486	0	486
1993	170	40	0	0	0	0	297	0	297
1994	220	242	0	0	0	0	198	0	198
1995	519	113	0	0	0	0	1,282	0	1,282
1996	622	272	0	202	15	0	256	84	557
1997	1,009	355	124	14	0	0	0	0	138
1998	1,169	255	43	1,227	0	0	0	10	1,280
1999	201	290	0	0	0	0	0	0	0
2000	678	264	0	507	0	0	0	0	507
2001	534	248	50	470	0	0	0	0	520
2002	0	790	38	0	0	0	30	0	68
Total Projected Output	6,800	5,750	18,777	10,642	1,773	none	none	none	31,192
Total Actual Output	7,445	3,434	3,340	5,836	151	54	2,549	94	12,024
% of Projected Output	109%	60%	18%	55%	9%	n/a	n/a	n/a	39%

## RANGE

The 2002 grazing season was the fourth year of below average moisture for the Forest and the grazing program is reflecting this impact. Vegetation production is down, plants are stressed in many cases and water sources are drying up decreasing available forage. The total authorized use in 2001 was 114,378 AUMs and that dropped to 91,478 AUMs in 2002. Permittees are taking fewer animals to the Forest and having to leave the Forest earlier.

The following data summarizes the monitoring results for the 2002 grazing season.

Table 6. Riparian vegetation monitoring results.

<b>I. Number of Allotments<sup>1</sup></b>	<b>MW/PN</b>	<b>PR</b>	<b>TNG</b>	<b>Forest</b>
<b>Total Number of Active Allotments</b>	<b>34</b>	<b>28</b>	<b>28</b>	<b>90</b>
Allotments Monitored by Permittee	6	12	1	19
Allotments Monitored by Forest Service	24	8	14	46
Allotments in Non-use	3	0	0	3
Percent of Allotments Monitored by Permittees	17	42	3	21
Percent of Allotments Monitored by FS	70	28	50	551
Total Percent of Allotments Monitored (does not mean 100% of allotment acreage)	70	48	50	56
Allotments Exceeding Standards to the Point of Discussing/Implementing Resource Recovery Period	3	1	11	15
<b>II. Number of Permittees</b>	<b>MW/PN</b>	<b>PR</b>	<b>TNG</b>	<b>Forest</b>
<b>Total Number of Active Permittees</b>	<b>37</b>	<b>26</b>	<b>33</b>	<b>96</b>
Number of Permittees Providing Transect Data	12	20	2	34
Permittees with data, but not turned in yet	1		1	2
Permittees not known if collected data	0	3	23	26
Percent of Permittees Providing Transects	32	76	6	38
Permittees in Non-use <sup>2</sup>	2	5	3	10

<sup>1</sup> MW/PN is Medicine Wheel/Paintrock Ranger District, PR is Powder River Ranger District, and TNG is Tongue Ranger District.

<sup>2</sup> Numerous permittees are in partial non-use due to the drought

<b>III. Number of Forage Utilization Transects<sup>3</sup></b>	<b>MW/PN</b>	<b>PR</b>	<b>TNG</b>	<b>Forest</b>
Transects Read by Permittees	14	44	4	62
Number that Met Standards	11	38	0	49
Percent that Met Standards	78	86	0	55
<b>Transects Read/Spot-checked by USFS</b>	<b>8</b>	<b>43</b>	<b>41</b>	<b>92</b>
Number that Met Standards	7	28	19	54
Percent that Met Standards	87	65	46	58
<b>Transects Read by FS/Permittee Together</b>	<b>0</b>	<b>2</b>	<b>12</b>	<b>14</b>
Number that Met Standards	0	1	6	7
Percent that Met Standards	0	50	50	50
<b>Total Number of Transects Read</b>	<b>22</b>	<b>87</b>	<b>57</b>	<b>166</b>
Total Number of Transects Meeting Standards	18	66	25	109
Total Percent of Transects Meeting Standards	81	75	43	65
<b>IV. Number of Willow Utilization Transects<sup>4</sup></b>	<b>MW/PN</b>	<b>PR</b>	<b>TNG</b>	<b>Forest</b>
Transects Read by Permittees	1	3	0	4
Number that Met Standards	0	0	0	0
Percent that Met Standards	0	0	0	0
<b>Transects Read/Spot-checked by USFS</b>	<b>7</b>	<b>0</b>	<b>11</b>	<b>18</b>
Number that Met Standards	6	0	0	6
Percent that Met Standards	85	0	0	33
<b>Transects Read by FS/Permittee Together</b>				
Number that Met Standards				
Total Percent of Transects Meeting Standards				
<b>Total Number of Transects Read</b>	<b>8</b>	<b>0</b>	<b>11</b>	<b>19</b>
Total Number of Transects Meeting Standards	6	0	0	6
Total Percent of Transects Meeting Standards	75	0	0	33

<sup>3</sup> Not all monitoring information has been turned in to date by permittees, so there will be additional numbers of photo points and transects read for the 2002 monitoring that are not reflected above.

<sup>4</sup> No intensive monitoring of willow utilization by wildlife and domestic livestock was conducted on various allotments during the 2002 grazing season.

<b>V. Number of Aspen Utilization Transects<sup>5</sup></b>	<b>MW/PN</b>	<b>PR</b>	<b>TNG</b>	<b>Forest</b>
<b>Transects Read by Permittees</b>	5	0	0	5
Number that Met Standards	5	0	0	5
Percent that Met Standards	100	0	0	100
<b>Transects Read/Spot-checked by USFS</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>6</b>
Number that Met Standards	3	0	1	4
Percent that Met Standards	60	0	100	66
Transects Read by FS/Permittees Together				
Number that Met Standards				
Percent that Met Standards				
<b>Total Number of Transects Read</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>10</b>
Total Number of Transects Meeting Standards	8	0	0	8
Total Percent of Transects Meeting Standards	80	0	0	80
<b>VI. Photo Points<sup>6</sup></b>	<b>MW/PN</b>	<b>PR</b>	<b>TNG</b>	<b>Forest</b>
<b>Recorded by Permittees</b>	31	13	0	44
<b>Recorded by Forest Service</b>	17	0	28	45
<b>Recorded by FS/Permittees</b>	2	0	0	2
<b>Total Photo Points Recorded</b>	50	13	28	91

## DISTRICT SUMMARIES

### MEDICINE WHEEL/PAINTROCK RANGER DISTRICT

The Medicine Wheel/Paintrock District initiated the NEPA analysis on the Devil's Canyon Analysis area in the winter of 2001 with projected completion of the Decision Notice during the winter months of 2003. The inventory to support the analysis covered 65,052 acres.

The Medicine Wheel/Paintrock District treated 2260 acres of sagebrush with fire. The treatment was conducted on decadent sagebrush stands in order to reduce fuel loadings, improve wildlife habitat, and enhance species diversity.

### MONITORING REQUIREMENT—RANGE CONDITION AND TREND

Condition or trend data was collected during the 2002 field season on the Trapper Creek, Forks, and Dry Fork-Medicine Lodge C&H allotments. The data is expected to be summarized by spring of 2003. No riparian classification data was collected in 2002 on the Medicine Wheel/Paintrock District.

<sup>5</sup> Utilization measures conducted in the aspen understory.

<sup>6</sup> Majority of the photo points are tied to aspen, willow, and streambank transects.

### MONITORING REQUIREMENT—FORAGE UTILIZATION (UPLAND RANGE SITES)

Utilization refers to the range of utilization levels that occurred within a given pasture in the upland sites. Blank fields indicate permittee has not submitted data or utilization has not been analyzed.

Table 7. Utilization levels by allotment and pasture on the Medicine Wheel/Paintrock Ranger District.

Allotment	Pasture	Veg Type	Method Used	Utilization (%)
Granite Creek	Middle	Feid-Artr	Ocular	60-70% +
Granite Creek	Upper	Feid-Artr	Ocular	30-60
Granite Creek	Lower	Feid-Artr	Ocular	
Granite Creek	Tomb	Feid-Artr	Ocular	20-60
Salt Creek	East Willett	Feid-Dain	Ocular	20-50
Salt Creek	West Willett	Feid Artr	Ocular	50
Salt Creek	Big Spring	Feid-Artr	Ocular	Rest
Salt Creek	Ski Area	Slx-Deca	Ocular	40-60
Salt Creek	Salt Creek	Feid-Artr	Ocular	20
Salt Creek	Upper Cabin	Fied-Artr	Ocular	60+
Salt Creek	Lower Cabin	Feid-Artr	Ocular	60+
Salt Creek	Upper Beef	Feid-Artr	Ocular	40-50
Salt Creek	Lower Beef	Feid-Artr	Ocular	0-60
Shell Creek	Upper Shell	Des-Car	Ocular	70+
Shell Creek	Lower Shell	Feid-Artr	Ocular	40-70+
Shell Creek	Antelope Butte	Feid-Artr	Ocular	40-50
Crooked Creek	Crooked Creek	Feid-Artr	Ocular	35-40
Trapper Creek	Mill Creek	Feid-Artr	Ocular	40-50
Trapper Creek	Black Butte	Feid-Artr	Ocular	45-60+
Medicine Ldg	Lower	Feid-Dain	Ocular	30
Medicine Ldg	North High	Feid-Carex		30-40
Medicine Ldg	Lakes of Rough	Des-Car	Ocular	Rest
Forks	Lower Cold Sp	Feid-Artr	Ocular	45-55
Forks	Upper Cold Sp	Feid-Artr	Ocular	45-60+
Forks	Medicine Lodge	Aspen	Ocular	40-60
Forks	Anthony Park	Feid-Dain	Ocular	20-30
Paintrock Basin	North High	Feid-Dain	Ocular	30-40
Paintrock Basin	Willow Swamp	Aspen-Poa	Ocular	10
Paintrock Basin	East Cement	Feid-Artr	Ocular	40-50
Paintrock Basin	Toe of Cement	Feid-Artr	Ocular	40
Paintrock Basin	West Bench	Poa-Bro	Ocular	40-60

<b>Allotment</b>	<b>Pasture</b>	<b>Veg Type</b>	<b>Method Used</b>	<b>Utilization (%)</b>
Paintrock Basin	S. High Park	Feid-Artr	Ocular	
Paintrock Basin	Lower Woodchuck	Poa-Artr	Ocular	
Paintrock Basin	Upper Woodchuck	Feid-Artr	Ocular	
Paintrock Basin	Battle Park	Feid-Dain	Ocular	
Paintrock Basin	Long Park Ck.	Aspen-Poa	Ocular	
Shell Basin	Buckley Creek	Carex-Slx	Ocular	50-65
Sunlight Mesa	Cottonwood	Artr-Feid		
Sunlight Mesa	Torry Gulch	Feid-Dain-Artr		
Sunlight Mesa	Deer Springs	Feid		
Sunlight Mesa	East/West Sunlight	Artr-Feid		
Grouse Creek	Grouse Creek	Artr-Feid	Ocular	Rested
Wiley Sundown	Wiley Sundown	Dain-Feid	Ocular	Rested
Finger Creek	Finger Creek	Artr-Feid	Ocular	Rested
Wallrock-Hidden Tepee	East Tepee	Feid-Dain		Rested
Wallrock-Hidden Tepee	West Tepee	Feid-Dain		Rested
Wallrock-Hidden Tepee	West Fork	Artr-Feid		Rested
Wallrock-Hidden Tepee	Eastside	Feid-Dain		Rested
Wallrock-Hidden Tepee	West Wallrock	Artr-Feid		Rested
Wallrock-Hidden Tepee	East Wallrock	Artr-Feid		Light
Pole Creek	Ice Creek	Dain-Feid		
Pole Creek	Middle	Dain-Feid		
Pole Creek	Tongue	Dain-Feid		
Pole Creek	Hunt Mtn.	Dain-Feid	Ocular	30-50%
Little Horn S&G	West	Artr-Feid	Ocular	
Little Horn S&G	East	Artr-Feid	Ocular	30-50%
Little Horn S&G	Little Baldy	Artr-Feid	Ocular	30-45%
Little Horn S&G	South Beaver	Artr-Feid	Ocular	
Medicine Mtn.	Lower Porcupine	Artr-Feid	Ocular	
Medicine Mtn.	Upper Porcupine	Artr-Feid	Ocular	30-60
Medicine Mtn.	South Medicine	Artr-Feid	Ocular	30-50
Medicine Mtn.	Five Springs	Artr-Feid		
Little Horn C&H	Lower	Artr-Feid		

<b>Allotment</b>	<b>Pasture</b>	<b>Veg Type</b>	<b>Method Used</b>	<b>Utilization (%)</b>
Little Horn C&H	Trail	Artr-Feid	Ocular	40-60%+
Little Horn C&H	West Burnt	Artr-Feid	Ocular	40-55
Little Horn C&H	East Burnt	Artr-Feid	Ocular	10-60+ by unauth lvstk
Little Horn C&H	Willow	Artr-Feid	Ocular	35-50
Little Horn C&H	Wagon Box	Artr-Feid	Ocular	30-50
Devil's Canyon	Cookstove	Artr-Feid		
Devil's Canyon	Bucking Mule/TP	Artr-Feid		
Devil's Canyon	Res. Hole	Artr-Feid		
Devil's Canyon	Lodge Grass	Artr-Feid	Ocular	
Devil's Canyon	Tillet's Hole (Elk Springs)	Artr-Feid	Ocular	20-45
Devil's Canyon	Railroad Springs	Artr-Feid	Ocular	20-50
Devil's Canyon	Cottonwood-Marcus	Artr-Feid	Ocular	40-50
Devil's Canyon	Little Mountain	Artr-Feid	Ocular	40
Lodge Grass	Upper Lodge Grass	Artr-Feid	Ocular	50-60
Red Springs	Mann Creek	Feid	Ocular	20-50%
Red Springs	Cub Creek	Feid	Ocular	30-60%
Sage Basin	Sage Basin	Artr-Feid	Ocular	20-50
Sage Basin	Above Camp	Brome-Dain	Ocular	30-50
Sage Basin	Below Camp	Brome-Dain	Ocular	30-50
Wyoming Gulch	Half Ounce	Feid-Dain	Ocular	30-50
Wyoming Gulch	Rooster Hill	Feid-Dain		20-50
Wyoming Gulch	Bald Mountain	Feid-Dain		
Whaley Creek	East Bald	Feid-Dain		
Whaley Creek	Whaley	Feid-Dain		
Whaley Creek	Cabin	Feid-Dain		
Whaley Creek	Hudson Falls	Feid-Dain		Rested
Spring Creek	Spring Creek	Artr-Feid		20-45%
Bear/Crystal	Mountain	Dain-Feid	Ocular	
Bear/Crystal	Buck	Artr-Feid	Ocular	

The following table displays forage utilization in riparian and aspen range sites. Stubble height is the height of forage remaining after grazing. Aspen and willow browse transects monitor the percent of current growth removed by livestock/wildlife or wildlife alone.

Table 8. Utilization levels in riparian and aspen rangeland sites on the Medicine Wheel/Paintrock Ranger District.

Allotment	Pasture	WL/Cattle	Veg Type	Method Used	Std	% Use or Residual Ht.
Granite	Middle	Cattle	Carex	Stubble Ht		
Granite	Middle	Cattle	Willow	Height	Trend	Up on interior
Shell Creek	Antelope Basin	Cattle	Carex	Ocular	5"	6+"
Shell Creek	Upper Shell	Cattle	Carex	Ocular	5"	5+"
Shell Basin	Buckley Ck	Cattle	Carex	Ocular	7"	4"
Shell Basin	Buckley Ck	Cattle/WL	Willow	Marked twig	30%	
Shell Basin	Buckley Ck	Wildlife	Willow	Marked twig	30%	
Crooked Ck	Johnny Ck	Cattle	Carex	Stubble Ht.	7"	6+"
Crooked Ck	Jack Creek	Cattle	Carex	Stubble Ht.	7"	4-5"
Crooked Ck	Crooked Ck	Cattle	Carex	Stubble Ht.	7"	3-6+
Salt Creek	Big Spring	Cattle	Carex	Stubble Ht.	7"	Rest
Paintrock	Toe Cement #1	Cattle/WL	Aspen	Marked twig	10%	
Paintrock	Toe Cement #1	Wildlife	Aspen	Marked twig	10%	
Paintrock	Toe Cement #2	Cattle/WL	Aspen	Marked twig	10%	
Paintrock	Toe Cement #2	Wildlife	Aspen	Marked twig	10%	
Paintrock	East Cement	Cattle/WL	Aspen	Marked twig	10%	
Paintrock	East Cement	Wildlife	Aspen	Marked twig	10%	
Paintrock	Will. Swamp#1	Cattle/WL	Willow	Ocular	10%	5%
Paintrock	Will. Swamp#1	Wildlife	Willow	Marked twig	10%	
Paintrock	Will. Swamp#2	Cattle/WL	Willow	Ocular	10%	0%
Paintrock	Will. Swamp#2	Wildlife	Willow	Marked twig	10%	
Paintrock	Sheep Ck#1	Wildlife	Willow	Marked twig	10%	
Paintrock	Sheep Creek#1	Cattle/WL	Willow	Marked twig	10%	
Paintrock	Sheep Ck#2	Wildlife	Willow	Marked twig	10%	
Paintrock	Sheep Ck#2	Cattle/WL	Willow	Marked twig	10%	
Paintrock	Sheep Ck#3	Wildlife	Willow	Marked twig	10%	
Paintrock	Sheep Ck#3	Cattle/WL	Willow	Marked twig	10%	
Medicine Ldg	Medicine Lodge	Cattle/WL	Carex	Ocular	7"	8+"
Medicine Ldg	Medicine Lodge	Cattle/WL	Willow	Height/Photo	Trend	Static
Trapper Ck	Mill Creek	Cattle	Carex	Ocular	7"	4"
Forks	Medicine Lodge	Cattle	Aspen	Ocular	4"	2+"

Allotment	Pasture	WL/Cattle	Veg Type	Method Used	Std	% Use or Residual Ht.
Forks	Meadow Creek	Cattle	Carex	Ocular	7"	6+
Forks	Anthony Park	Cattle	Carex	Ocular	5"	8+"
Sunlight Mesa	Deer Springs	Cattle	Under Aspen	Stubble Ht.		
Medicine Mtn	S. Medicine T3	Cattle	Carex	Stubble Ht.	5"	13.9 pmtee
Medicine Mtn	Runaway T4	Cattle	Carex	Stubble Ht.	5"	7.6" pmtee
Medicine Mtn	South 14A T6	Cattle	Carex	ocular	5"	MET pmtee
Medicine Mtn	South of Sawmill T10	Cattle	Carex	Stubble Ht.	7"	7" pmtee
Medicine Mtn	Duncom Creek T14	Cattle	Carex	Stubble Ht.	7"	7" pmtee
Medicine Mtn	Willow Basin	Cattle	Carex	Stubble Ht.	7"	7.9" FS
Medicine Mtn	Willow Basin	Cattle	Caro	Stubble Ht.	7"	7.7" FS
Medicine Mtn	Willow Basin	Cattle	Carex	Stubble Ht.	7"	6.6" FS
Whaley Ck	Whaley Creek	Sheep	Carex	Stubble Ht.		
Whaley Ck	East Bald	Sheep	Carex	Ocular		
Little Horn S&G	East Little Horn	Sheep	Carex	Stubble Ht.		
Little Horn C&H	Willow T1 Forks	Cattle	Aspen	Stubble Ht. Avg leaf	4"	6.4" pmtee
Little Horn C&H	Willow T2 Forks	Cattle	Rip	Stubble Ht. Avg leaf	6"	5.3" pmtee
Little Horn C&H	Willow T3 big aspen inside	Cattle	Aspen	Stubble Ht. Avg leaf	4"	9.6" pmtee
Little Horn C&H	Willow T4 big aspen edge	Cattle	Aspen	Stubble Ht. Avg leaf	4"	8.3" pmtee
Little Horn C&H	Willow T5	Cattle	Rip	Stubble Ht. Avg leaf	6"	6.5" pmtee
Little Horn C&H	Willow T6 bdry Rock	Cattle	Rip	Stubble Ht. Avg leaf	6"	5.4" pmtee
Little Horn C&H	Wagon Box T2	Cattle	Rip	Stubble Ht. Avg leaf	6"	7" pmtee
Little Horn C&H	Wagon Box T4 N fork spring	Cattle	Carex	Stubble Ht. Avg leaf	6"	5.3" pmtee
Little Horn C&H	Trail-Kerns Flat	Cattle	Carex	Stubble Ht.	5"	9.5"

Allotment	Pasture	WL/Cattle	Veg Type	Method Used	Std	% Use or Residual Ht. pmtee
Little Horn C&H	Trail-Coulee side	Cattle	Aspen	Stubble Ht.	4"	4.9" FS <sup>7</sup>
Little Horn C&H	Trail- Coulee side	Cattle	Aspen	Stubble Ht.	4"	4.0" FS <sup>8</sup>
Little Horn C&H	Trail- Coulee side	Cattle	Carex	Stubble Ht.	5"	8" FS <sup>9</sup>
Little Horn C&H	Trail East	Cattle	Carex	Stubble Ht.	7"	6.8" pmtee
Little Horn C&H	Trail-Clay Bank	Cattle	Carex	Stubble Ht.	7"	8.5" FS <sup>10</sup>
Little Horn C&H	Trail-behind Horse pasture	Cattle	Caro	Stubble Ht.	7"	10.8" FS <sup>11</sup>
Little Horn C&H	Horse	Cattle	Carex	Stubble Ht.	7"	6.7" pmtee
Little Horn C&H	West Burnt-near ½ oz fence	Cattle	Carex	Stubble Ht.	7"	8.5" FS <sup>12</sup>
Little Horn C&H	West Burnt-hunter camp	Cattle	Carex	Stubble Ht.	7"	8.6" FS <sup>13</sup>
Little Horn C&H	West Burnt	Cattle	Carex	Stub Ht. Avg 2 transects	7"	7.7" pmtee
Sage Basin	Below Camp T1 edge of aspen	Cattle	Aspen	Stubble Ht Under Aspen	4"	4.0" pmtee
Sage Basin	Below Camp T2 middle of aspen	Cattle	Aspen	Stubble Ht Under Aspen	4"	5.6" pmtee
Devil's Canyon	Ckstove/Granary (Corpses Hole T1)	Cattle	Carex	Stubble Ht.	6"	
Devil's Canyon	Cookstove T2 (south FDR103)	Cattle	Carex	Stubble Ht.	6"	
Devil's	Cookstove T3	Cattle	Carex	Stubble Ht.	6"	

<sup>7</sup> Cattle were still in the pasture at the time of the measurements

<sup>8</sup> Cattle were still in the pasture at the time of the measurements

<sup>9</sup> Cattle were still in the pasture at the time of the measurements

<sup>10</sup> Cattle were still in the pasture at the time of the measurements

<sup>11</sup> Cattle were still in the pasture at the time of the measurements

<sup>12</sup> Cattle were still in the pasture at the time of the measurements.

<sup>13</sup> Cattle were still in the pasture at the time of the measurements

Allotment	Pasture	WL/Cattle	Veg Type	Method Used	Std	% Use or Residual Ht.
Canyon	(upper)					
Devil's Canyon	Cookstove T4 Gumps	Cattle	Carex	Stubble Ht.	6"	
Devil's Canyon Cattle were still in the pasture at the time of the measurements	Big TP Ck T1 below camp	Cattle	Carex	Stubble Ht.	6"	
Devil's Canyon	Big TP Ck T2 above camp	Cattle	Carex	Stubble Ht.	6"	
Devil's Canyon	Main Fork B Mule T3	Cattle	Carex	Stubble Ht.	6"	
Devil's Canyon	North Fork B Mule T4 (lower)	Cattle	Carex	Stubble Ht.	6"	
Devil's Canyon	Main Fork B Mule T5 (lower)	Cattle	Carex	Stubble Ht.	6"	
Devil's Canyon	Reservation Hole	Cattle	Carex	Stubble Ht.	6"	
Devil's Canyon	Lodge Grass (Gunstock) T2	Cattle	Carex	Stubble Ht.	6"	
Devil's Canyon	Lodge Grass (above Kerns) T1	Cattle	Carex	Stubble Ht.	6"	
Devil's Canyon	Lodge Grass (Crater Lake)	Cattle	Carex	Stubble Ht.		

#### MONITORING REQUIREMENT—CARRYING CAPACITY

There is one active Coordinated Resource Management Plan (CRMP) which is an ongoing process, and changes in management are made as needed.

#### TONGUE RIVER RANGER DISTRICT

**Willow Transects:** The following table displays the results of browse transects in willow communities to monitor the amount of the current years growth of marked willows by wildlife and livestock. Transects identified as wildlife/cattle show the percentage of marked twigs browsed during the time period livestock were in the pasture. Transects identified as wildlife show the percentage of marked twigs browsed during the time period or partial time period when livestock were not in the pasture.

Table 9. Results of browse transects in willow communities on the Tongue River Ranger District.

Allotment	Pasture/Area	Wildlife/Cattle	Method	Period Monitored	Percent Use
Copper Creek	Copper Creek	WL/Cattle	Marked Twigs	7/08/02 - 9/11/02	72%
	South Tongue	WL/Cattle	Marked Twigs	7/08/02 - 9/05/02	42%
Lower Tongue	Little Willow	Wildlife	Marked Twigs	7/09/02 - 8/12/02	33%
	Little Willow	WL/Cattle	Marked Twigs	8/12/02 - 9/11/02	77%
	Sheeley Creek	Wildlife	Marked Twigs	7/04/02 - 7/30/02	12%
	Sheeley Creek	WL/Cattle	Marked Twigs	7/30/02 - 8/12/02	10%
	Sheeley Creek	Wildlife	Marked Twigs	8/01/01 - 7/04/02	63%
	East Experimental T1	Wildlife	Marked Twigs	6/28/01 - 7/04/02	29%
	East Experimental T2	Wildlife	Marked Twigs	6/29/01 - 7/02/02	32%
	West Experimental T1	Wildlife	Marked Twigs	6/28/01 - 7/03/02	46%
	West Experimental T2	Wildlife	Marked Twigs	6/27/01 - 7/03/02	25%

Table 10. Upland utilization on the Tongue Ranger District.

Allotment	Pasture/Location	Monitored By	Vegetation Type	Method Used	Utilization
Copper Creek/ Upper Dry Fk.	Copper Creek	FS	Upland	Ocular	65-70% Poa
	Copper Crk.				55-60% other
	Dry Owens				60-70+%
Freezeout East	Ridge	FS	Upland	Ocular	50-60%
	River	FS	Upland	Ocular	70+%
	SE corner Rx burn areas				50-60%
	South	FS	Upland	Ocular	65-70+%
Freezeout West	Schuler Park	FS	Upland	Ocular	45-50%
	Schuler Park				60-65%
	Dry Prong				

<b>Allotment</b>	<b>Pasture/ Location</b>	<b>Monitored By</b>	<b>Vegetation Type</b>	<b>Method Used</b>	<b>Utilization</b>
	Hay Creek Burgess South Fool Cr. Basin	FS	Upland	Ocular	65-70% 65-70+%
	Dry Fork Fool Creek Dry Fk Basin	FS	Upland	Ocular	50-65% 50-60%
	Sheep Creek Middle Fk East Fk Lower Sheep	FS	Upland	Ocular	65-70% 55-65% 65%
Lake Creek	Lake Creek	FS	Upland	Ocular	55-60%
	Lick Creek Lick Creek Dayton Gulch	FS	Upland	Ocular	60-65% 30-35%
	Bear Trap	FS	Upland	Ocular	55-60%
Little Goose	Campground	FS	Upland	Ocular	65-70%
	Little Goose	FS	Upland	Ocular	65-70%
	Kenniwood	FS	Upland	Ocular	40-45%
	High Country	FS	Upland	Ocular	25%
Little Tongue	Schutts Flats	FS/Permittee	Upland	Ocular	40%
	Highway	FS	Upland	Ocular	65-70%
	Beef	FS	Upland	Ocular	65-70%
Little Tongue – South Fork	South of electric fence	FS	Upland	Ocular	50-60%
Lower Tongue - East	N. Tongue C.G.	FS	Upland	Ocular	Light- Moderate+
	N. Bear Lodge Big Willow	FS	Upland	Ocular	50%
	Sheeley Crk. W. of Hwy. E. of Hwy.	FS	Upland	Ocular	66% 35-60%
	Little Willow	FS	Upland	Ocular	55-60%
	S. Bear Lodge Big Willow	FS	Upland	Ocular	65%
Lower Tongue - Experimental	N. Special Use	FS	Upland	Clipped	61%
	PK Special Use	FS	Upland	Clipped	80%

<b>Allotment</b>	<b>Pasture/ Location</b>	<b>Monitored By</b>	<b>Vegetation Type</b>	<b>Method Used</b>	<b>Utilization</b>
	N. Experimental	FS	Upland	Clipped	77%
Lower Tongue - West	Garden of Gods Dry Gulch SE Corner	FS	Upland	Ocular	50-60% 60+%
	Big Willow	FS/Permittee	Upland	Ocular	45-50%
	Bull Creek Fish Exclosure UT Cow Camp	FS	Upland	Ocular	25-35% 60-65%
	River	FS	Upland	Ocular	Light- Moderate
	Nickle Bars Hill SW corner	FS	Upland	Ocular	50-60% 55%
Nicklemine	River North Tongue	FS	Upland	Ocular	40-50+%
	Highway Marcum Crk.	FS/Permittee	Upland	Ocular	30-40%
	South Marcum Crk.	FS	Upland	Ocular	40-50%
	East Brush	FS	Upland	Ocular	60+%
	Pass Creek	Back Country Sawmill Flats	FS	Upland	Ocular
Prospect-Cedar	Cedar Creek Dry Reservoir East Boundary	FS	Upland	Ocular	60-65% 65-70%
	Prospect Creek	FS	Upland	Ocular	60%
	N. Prospect Crk.	FS	Upland	Ocular	20-25%
Rapid Creek	Rapid Creek	FS	Upland	Ocular	45-50%
Upper Tongue	Below Tubes N. N. Tongue	FS	Upland	Ocular	60%
	South Tubes N. Tongue	FS	Upland	Ocular	60%
	Sidehill	FS	Upland	Ocular	70%
	Horse Pasture	FS/Permittee	Upland	Ocular	60-65%
	S.U. Pasture	FS/Permittee	Upland	Ocular	70%
Walker Prairie	South Prairie Buck Creek	FS	Upland	Ocular	60%

Allotment	Pasture/ Location	Monitored By	Vegetation Type	Method Used	Utilization
	North Prairie SE corner Big Mtn.	FS	Upland	Ocular	50% 55-60%
	Alden	FS	Upland	Ocular	65-70%
Wolf Creek	Star Fish Bear Crk. at camp Upper Sibley Crk. Elephant's Foot S. Fk. Little Tongue – on ridge	FS/Permittee	Upland	Clipped	35% 35% 30-35% 55% 55%

### POWDER RIVER RANGER DISTRICT

The following data summarizes the monitoring results and reports for the 2002-grazing season.

Table 11. FY 2002 riparian vegetation monitoring results for the Powder River Ranger District.

<b>I. Number of Allotments</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Total Number of Active Allotments	27	28	28
Allotments Monitored by Permittee	13	15	12
Allotments Unknown-have not received data yet			3
Allotments Monitored by Forest Service	2	12	8
Allotments in Non-use		1	0
Percent of Allotments Monitored by Permittees	48	54	44
Percent of Allotments Monitored by FS	7	43	30
Total Percent of Allotments Monitored	55	75	48
Does not mean 100% of Allotment Acreage			
Allotments Exceeding Standards to the Point of Discussing/Implementing Resource Recovery Period	1	1	1
<b>II. Number of Permittees</b>			
Total Number of <i>Active</i> Permittees	33	30	26
Number of Permittees Providing Transect Data	17	17	20
Permittees with data, but not turned in yet			N/A
Permittees not known if collected data	12	13	3
Percent of Permittees Providing Transects	52	57	76
Permittees in Non-use	0	2	5
<b>III. Number of Forage Utilization Transects</b>			
Transects Read by Permittees	64	54	44

Number that Met Standards	64	50	38
Percent that Met Standards	100	93	86
	<b>2000</b>	<b>2001</b>	<b>2002</b>
Transects Read/Spot-checked by USFS	11	50	43
Number that Met Standards	2	29	28
Percent that Met Standards	18	58	65
Transects Read by FS/Permittee Together	0	0	2
Number that Met Standards	0	0	1
Percent that Met Standards	0	0	50
Total Number of Transects Read	75	104	87
Total Number of Transects Meeting Standards	66	79	66
Total Percent of Transects Meeting Standards	88	76	76
<b>IV. Number of Willow Utilization Transects</b>			
Transects Read by Permittees	0	0	0
Number that Met Standards			0
Percent that Met Standards			0
Transects Read/Spot-checked by USFS	0	0	0
Number that Met Standards			0
Percent that Met Standards			0
Transects Read by FS/Permittee Together		0	0
Number that Met Standards			0
Total Percent of Transects Meeting Standards			0
Total Number of Transects Read	0	0	0
Total Number of Transects Meeting Standards			0
Total Percent of Transects Meeting Standards			0
<b>V. Number of Aspen Utilization Transects</b>			
Transects Read by Permittees	0	0	0
Number that Met Standards			0
Percent that Met Standards			0
Transects Read/Spot-checked by USFS	0	0	0
Number that Met Standards	0	0	0
Percent that Met Standards			0
Transects Read by FS/Permittees Together		0	0
Number that Met Standards		0	0
Percent that Met Standards		0	0

Total Number of Transects Read	0	0	0
Total Number of Transects Meeting Standards	0	0	0
Total Percent of Transects Meeting Standards	0		0
	<b>2000</b>	<b>2001</b>	<b>2002</b>
<b>VI. Number of Bank Stability Readings</b>			<b>0</b>
Reading Taken by Permittees	3	5	0
Number that Met Standards	3	5	0
Percent that Met Standards			0
Reading Taken by Forest Service	0	0	0
Number that Met Standards	0		0
Percent that Met Standards	0		0
Reading Taken by FS/Permittees Together	0	0	0
Number that Met Standards	0		0
Percent that Met Standards	0		0
Total Number of Readings Taken	3	5	0
Total Number of Readings Taken		5	0
Total Number of Readings Meeting Standards	3	5	0
Total Percent of Transects Meeting Standards	0		0
<b>VII. Photo Points</b>			
Recorded by Permittees	61	22	13
Recorded by Forest Service	0	14	
Recorded by FS/Permittees	0	0	
Total Photo Points Recorded	61	36	13

**MONITORING REQUIREMENT: RANGE CONDITION AND TREND**

A permanent livestock exclosure was constructed on Battle Park Allotment on Upper Soldier Creek. Trend of willow height and frequency and perennial riparian vegetation will be monitored using a line intercept transect.

**MONITORING REQUIREMENT—FORAGE UTILIZATION (UPLAND RANGE SITES)**

See following table.

Table 12. Utilization levels on the Powder River Ranger District.

ALLOT.	DATE	PASTURE	LOCATION	METHOD	SPECIES	STD	Results		EXAMINER	FS measure
							met std	FS meas		
Battle Park	07/12/02	So. Fk South	Near Mud Mine	Stubble Height	Carex	5"	no	4.61	none	Gall
	07/12/02	So. Fk South	below crossing	Stubble Height	Carex	5"	yes	5.07"	none	Gall
	07/12/02	So. Fk South	Above Crossing, inside private, ungrazed	Stubble Height	Carex	No Std			none	Gall
	07/12/02	So. Fk South	Above Crossing	Stubble Height	Carex	5"	no	4.36"	none	Gall
	Unknown	So. Fk South	Post to post east side above old crossing	Stubble Height	Carex	5"	yes	none	6.14"	Permittee
	Unknown	So. Fk South	Mud mine	Stubble Height	Carex	5"	yes	none	5.36"	Permittee
	08/09/02	Soldier Creek	Along Battle Park road, near Belly Ache Flats	Stubble Height	Carex	5"	yes	7.7"	none	Gall, Boden, Icanberry
	08/09/02	Soldier Creek	riparian exclosure	Ocular	All	5"	yes	none	none	Gall, Boden, Icanberry
	Unknown	Soldier Creek	Cage @ timber	Stubble Height	Unknown	5"	yes	none	7.74"	Permittee
	Unknown	Soldier Creek	at bellyache	Stubble Height	Unknown	5"	yes	none	6.68"	Permittee
	08/09/02	Soldier Creek	Spring Draw	Ocular	All	5"	yes	none	none	Gall, Boden, Icanberry
	Unknown	Bald Ridge	Middle Fork Beaver Ponds	Stubble Height	Unknown	5"	yes	none	7.78"	Permittee
	Unknown	Bald Ridge	Lily Lake Swamp	Stubble Height	Unknown	5"	yes	none	7.32"	Permittee
	Unknown	Bald Ridge	Head of Soldier Creek	Stubble Height	Unknown	5"	no	none	4.54	Permittee
	08/30/02	Bald Ridge	above and below new exclosure on Belly Ache Flats	Stubble Height	Carex	5"	no	3.11"	none	Gall, Icanberry

ALLOT.	DATE	PASTURE	LOCATION	METHOD	SPECIES	STD	Results		EXAMINER	
							met std	FS meas	Permittee meas.	FS measure
	09/18/02	Middle Fork	Middle Fork in Bowl	Stubble Height	Carex	5"	no	3.57"	none	Gall, Boden
	10/18/02	Bald Ridge	Warner Spring Area	Stubble Height	Carex	5"	no	2.81"	none	Gall, Boden
	10/18/02	Buck Creek	Above Crossing	Stubble Height	Carex	5"	yes	6.82"	none	Gall, Boden
	Unknown	Buck Creek		Stubble Height	Unknown	5"	yes	none	5.3"	Permittee
	Unknown	Buck Creek		Stubble Height	Unknown	5"	yes	none	7.08"	Permittee
Clear Cr.	07/31/02	Circle Park	Key Area	stubble height	carex	5"	yes		5.37"	N. Davis
	08/05/02	Holland	Key Area	stubble height	carex	5"	yes		4.45"	N. Davis
	08/05/02	South Lucasta	Key Area	stubble height	carex	5"	no		4.75"	N. Davis
	08/09/02	Upper Buffalo	Key Area	stubble height	carex	5"	yes		7.59"	N. Davis
	08/09/02	N. Hospital	Key Area	stubble height	carex	5"	yes		6.24"	N. Davis
	08/26/02	Hondo Creek	Key Area	stubble height	carex	5"	yes		6.76"	N. Davis
	08/26/02	Lo. Buffalo	Key Area	stubble height	carex	5"	no		4.27"	N. Davis
	08/26/02	Hunter Corral	Key Area	stubble height	carex	5"	yes		5.75"	N. Davis
	08/26/02	Circle Park	South of Campground near aspen stand	stubble height	carex	5"	yes	6.4"		Boden
	08/26/02	South Lucasta	Near exc between upper and lower stock tanks	stubble height	carex	5"	no	3.44"		Boden
	08/26/02	Holland	key area Mitten Creek	stubble height	carex	5"	no	4"		Boden
		School House Park		Ocular	All	5"	yes		ocular	riders
	08/26/02	Circle Park	N. of C.G., in large bowl	stubble height	carex	5"	yes	5.98"		Boden
	08/30/02	So. Hospital	Below riparian exclosure	Ocular	All	5"	yes	none		Boden, Herman

ALLOT.	DATE	PASTURE	LOCATION	METHOD	SPECIES	STD	Results		EXAMINER	
							met std	FS meas	Permittee meas.	FS measure
	09/04/02	Hunter corral	key area	stubble height	carex	5"	no	4.45"		Boden, Herman
	09/04/02	Upper Buffalo	Slab Park, upper end	stubble height	carex	5"	yes	7.22		"
Clear Cr. Cont.	09/17/02	Grouse Mountain	Key area near Mosier Gulch Spring	Ocular	All	5"	yes	none		Herman
	09/30/02	Lower Buffalo	key area	stubble height	carex	5"	no	4.56"		Boden, Herman
	09/30/02	Hunter Creek	near hardened crossings	Ocular	All	5"	yes	none		Boden, Herman
	10/08/02	So. Hospital	Key Area	Ocular	All	5"	yes		ocular	N. Davis
		North Lucasta	Key Area moved due to road reconstruction	Ocular	All	5"	yes		ocular	N. Davis
		Hunter Creek	Key Area	Ocular	All	5"	yes		ocular	N. Davis
		Grouse Mountain	Key Area	Ocular	All	5"	yes		ocular	N. Davis
Crazy Woman	09/12/02	Crazy Woman	Key area, North Fork of Crazy Woman Creek	Ocular	All	5"		none		Boden, Herman
Doyle Creek	08/15/02	West Doyle (Upper)	Doyle Creek along Hazelton Road	Stubble Height	Carex	5"	yes	none	7.72	D. Brown
	08/15/02	West Doyle (Upper)	Doyle Creek Upper along Hazelton Road	Stubble Height	Carex	5"	yes	none	10.90	D. Brown
	08/15/02	West Doyle (Upper)	Bull Creek	Stubble Height	Carex	5"	yes	none	16.06	D. Brown
`	09/26/02	East Doyle (Lower)	Campground	Stubble Height	Carex	5"	yes	none	10.14	D. Brown

ALLOT.	DATE	PASTURE	LOCATION	METHOD	SPECIES	STD	Results		EXAMINER	FS measure
							met std	FS meas		
	09/26/02	East Doyle (Lower)	Long Park	Stubble Height	Carex	5"	yes	none	17.21	D. Brown
Garnet										none
Grom / Sour	08/30/02	Upper Sourdough	Lynx Park	Stubble Height	Carex	5"	no	4.09"		Boden, Herman
	08/30/02	Upper Sourdough	key area, where F.S. road forks	Stubble Height	Carex	5"	no	4.67"		Boden, Herman
	09/11/02	Lower Sourdough	Key area	Ocular	All	5"	yes	none		Herman
	10/09/02	Lower Grommund	key area on Grommund Creek	Ocular	All	5"	yes	none		Boden
Muddy Creek	07/18/02	Lower Elgin	above road crossing	stubble height	carex	5"	no	4.84"	4.84"	Boden, Herman, Tass's
	08/08/02	Lower Elgin	below road crossing	stubble height	carex	5	yes	5.2"		Gall, Boden
	08/16/02	Caribou Creek	Crazy Woman Campground	stubble height	Unknown	5"	yes		6.66"	Richard & Patty Tass
	08/16/02	Caribou Creek	West of Pole Creek Road on Caribou Creek	stubble height	Unknown	5"	yes		6.36"	Richard & Patty Tass
	08/30/02	Upper Elgin	Near corrals	stubble height	carex	5"	yes	5.39"		Boden, Herman
	08/30/02	Upper Elgin	Little Sourdough Creek	Ocular	All	5"	yes	None		Boden, Herman
	09/12/02	Crazy Woman	key area	stubble height	carex	5"	no	3.63"		Boden, Herman
	09/12/02	Crazy Woman C&H	Key Area off Sheen Mtn. Road	Ocular	carex	5"	yes	None		Boden, Herman
	09/13/02	Crazy Woman C&H	Hess Creek on Sheep Mt. Road	stubble height	Unknown	5"	yes		6.9"	Richard & Patty Tass

ALLOT.	DATE	PASTURE	LOCATION	METHOD	SPECIES	STD	Results		EXAMINER	FS measure
							met std	FS meas		
	09/13/02	Upper Elgin	Little Sourdough Creek	stubble height	Unknown	5"	yes		7.66"	Richard & Patty Tass
Muddy Creek Cont.	09/13/02	Crazy Woman	Crazy Woman Creek on Pole Creek Road	stubble height	Unknown	5"	no		4.83"	Richard & Patty Tass
	09/16/02	Caribou Creek	Key area below Pole Ck Road, on Caribou Creek	Ocular	All	5"	yes	None		Boden, Herman
	09/16/02	Caribou Ck	below campground	stubble height	carex	5"	no	4.88"		Boden, Herman
	09/30/02	Pole Creek	key area	Ocular	All	5"	yes	None		Boden, Herman
	10/06/02	Holding Past		stubble height	Unknown	5"	no		4.60"	Richard & Patty Tass
	10/06/02	Pole Creek	Pole Creek Road Crossing	stubble height	Unknown	5"	yes		9.22	Richard & Patty Tass
	10/06/02	Caribou Mesa	E. of highway at cow camp by old road crossing	stubble height	Unknown	5"	yes		8.14"	Richard & Patty Tass
North Canyon	09/19/02	High Park	below cow camp on Tepee creek	Ocular	All	5"	yes	none		Herman, Icanberry
	09/19/02	V East	Sagebrush burn area	Ocular	Upland	50%	no	none		Herman, Icanberry
Poison Creek	09/30/02	Hazelton	Key Area, middle fork of crazy woman	Ocular	All	5"	yes	none		Boden, Herman
	09/30/02	Poison Creek	Key Area, Poison Creek	Ocular	All	5"	yes	none		Boden, Herman
	10/09/02	Billy Creek	Key area on Billy Creek	Ocular	All	5"	yes	none		Boden

ALLOT.	DATE	PASTURE	LOCATION	METHOD	SPECIES	STD	Results		EXAMINER	FS measure
							met std	FS meas		
	08/05/02	Billy Creek	On Billy Creek	Stubble Height	Carex	5"	yes	none	8.26"	D. Brown
	08/05/02	Billy Creek	On Poison Creek	Stubble Height	Carex	5"	yes	none	13.64"	D. Brown
	09/03/02	Poison Creek		Stubble Height	Carex	5"	yes	none	13.08"	D. Brown
	09/26/02	Hazelton		Stubble Height	Carex	5"	yes	none	8.9"	D. Brown
Powder River	07/30/02	Webb Creek	Key area	Stubble Height	Carex	5"	yes	5.7		Boden, Gall, Olsen
	09/11/02	Powder River	So. end of unit on North Fork of Powder River	Ocular	All	5"	yes	none		Herman
Rock Creek	08/21/02	Rock Creek Pasture	Sayles Creek	Stubble Height	Unknown	5"	yes	none	5.88"	permittee
	08/21/02	N. French Cr.	Pack Trail North of Cabin	Stubble Height	Unknown	5"	yes	none	8.7"	permittee
	08/21/02		Gingers Cabin	Stubble Height	Unknown	5"	yes	none	5.24"	permittee
	08/22/02	N. French Creek	North French Creek/Johnson Creek	Stubble Height	Unknown	5"	yes	none	6.12"	permittee
	08/22/02	N. French Cr	Trib. to Johnson Creek	Stubble Height	Unknown	5"	yes	none	7.72	permittee
	09/17/02	S. French Cr	Cull Watt Park	Ocular	All	5"	yes	none		Herman
	10/07/02	Johnson Creek	Johnson Cr./Keno Cr.	Stubble Height	Unknown	5"	yes	none	7.14"	permittee
	10/07/02	S. French Creek	Cull Watt Park	Stubble Height	Unknown	5"	yes	none	6.48"	permittee
	10/07/02	S. French Creek	North of Cow Camp	Stubble Height	Unknown	5"	yes	none	10.12	permittee
	10/07/02	Johnson Creek	N. of Paradise	Stubble Height	Unknown	5"	yes	none	4.9"	permittee
	10/07/02	Johnson Creek	N. Paradise Meadows	Stubble Height	Unknown	5"	yes	none	6.32	

## RARE PLANTS

A two-person crew inventoried approximately 232,000 acres of project areas, including Story Project, 2002 Precommercial Thinning Project, Tongue AMP, and Southwest Fuels Project. Inventory areas were selected by reviewing known element occurrences for habitat, soils, elevations, aspects, etc. New plant locations were confirmed by specimen collection, which was authenticated by Wyoming Natural Diversity Database (WYNDD) personnel.

New species searched for in 2002 were *Spiranthes diluvialis*, *Pedicularis contorta* var. *ctenophora*, *Pedicularis parryi* var. *mogollonica*, *Musineon vaginatum* and *Botrychium* species. *S. diluvialis* is the only threatened species in Wyoming, so it was searched for extensively. Neither potential habitat nor *Spiranthes diluvialis* plants were found in the searches conducted. The other new species surveyed for were WYNDD Species of Concern. Four new populations of *Pedicularis contorta* var. *ctenophora* were found this summer. No populations of *Pedicularis parryi* var. *mogollonica* or *Botrychium* species were found.

In addition, new populations were found for *Aster mollis* (2 new and 1 extension of an existing population), *Arnica lonchophylla* (2), *Agoseris lackshewitzii* (1), and *Penstemon caryi* (1).

2002 was the third year of *Rubus acaulis* population trend monitoring. WYNDD botanist Walt Fertig developed this protocol in 1999. The objective of this monitoring was to detect whether or not the population is increasing, decreasing or remaining stable. Considering the *Rubus* inventories done when the plant was “discovered” in 1996, and additional surveys this summer, it is very likely that this is the only occurrence of this species on the Bighorn. Overall there has not been any significant change in the population, except plot 5 has shown a slight increase since the original readings in 2000.

Earl Jensen was contracted to survey for *Botrychium* species in the Tongue and Devils Canyon AMP areas. He did not find any new populations but did find potential areas to survey in future years.

Table 13. Sensitive species on the Bighorn National Forest.

Sensitive Species	New Occurrences in FY 2002	Expanded Occurrences in 2002	Previously Known Occurrences
<i>Agoseris lackshewitzii</i>	1	0	36
<i>Aster mollis</i>	2	1	34
<i>Arnica lonchophylla</i>	2	0	21
<i>Botrychium ascendens</i>	0	0	1
<i>Festuca hallii</i>	0	0	1(?)
<i>Penstemon caryi</i>	1	0	12
<i>Rubus acaulis</i>	0	0	1
<i>Sullivantia hapemanii</i> var. <i>hapemanii</i>	0	0	14

## WILDLIFE

The wildlife program on the Bighorn National Forest consists of treatments to improve habitat for many species including Management Indicator Species (MIS) and Threatened, Endangered, and Forest Service Sensitive Species (TES), inventory and monitoring for habitats and specific MIS/TES species, support to other resource projects through inventory and environmental analysis, and conservation education presentations. Habitats currently emphasized are aspen and riparian through treatments such as exclosure construction and maintenance, prescribed burning, and mechanical regeneration treatments. The Forest coordinates with the Sheridan and Cody Regions of the Wyoming Game and Fish Department (WYGF) in managing populations of wildlife. Three District biologists accomplish the majority of the wildlife related work on the Forest. A Forest-level biologist assists in plan revision and program management.

**Lynx (TES species):** The Bighorn completed the third of three years in the lynx survey following the National Lynx Detection Protocol. Our survey grid is Number 63, out of 66 surveys currently being conducted nation-wide. This survey required three consecutive years of data collection, and was completed in FY 2002. To date, no lynx have been found on the Bighorn National Forest as a result of this survey. A total of 64,000 acres of potential lynx habitat was surveyed, requiring approximately 45 person-days to complete, including preparation time and coordination (35 days in the field). Following the 2000 field season, 6 hair samples were collected and sent to a lab in Missoula, Montana for analysis. The results were 2 coyotes, 1 mountain lion, 1 bobcat, 1 bear, and 1 sample could not be tested (the DNA wouldn't amplify). Following the 2001 field season, 16 hair samples were collected and sent to the lab in Missoula. Of those 16 samples, 8 were coyote, 2 bear, 2 were ungulates (1cow), 1 was "other," and the rest could not be tested. Following the 2002 field season, a total of 18 hair samples were sent to the lab, and results have not been received yet.

**Bats:** Six bat houses were monitored this year on the Forest. The plan was to monitor all houses at least twice each month; once during daylight hours and once after dark. Time constraints did not allow for sufficient monitoring, and most houses were only checked once during the summer and only during daylight hours. The structure at the Sheridan Work Center contained eight unknown myotis, which is the most observed to date. The bat house at Big Goose Ranger Station was checked twice, and contained two bats each time, which is the most observed at this location to date also. The bat house at Hunter Ranger Station contained one Townsend's big-eared bat (a Sensitive species) during 1998, but was not occupied during 2002. The other three bat houses were also not used this year.

**Osprey:** No surveys were conducted to attempt to locate active osprey nests. Past sightings in the vicinity of Park Reservoir raise the question of whether an active osprey nest may be in the vicinity. No Forest Service funding was available for this effort. An Osprey was observed hunting along the North Tongue River during the FY 2002 field season, and that sighting has been reported to the Wyoming Natural Diversity Database and the Wyoming Game and Fish Department.

**Boreal owls:** Surveys for boreal owls were conducted this year sporadically as this project was not formally funded. Surveys for Boreal owls were conducted on the Tongue District using taped calls during the spring nesting season. No Boreal owls were found. About 1,000 acres (8 stations) were surveyed on 04/03/2002 at Sawmill Divide. Another 1,600 acres (13 stations) done 04/04/2002 at Lick Lake Creek. Another 1,125 acres (9 stations) done 04/25/2002 at Lick/Lake Creek. The only sighting of interest was one saw-whet owl near Lick Creek on 4/25/02.

**Goshawks:** No active goshawk nests were observed on the Tongue District during the 2002 nesting season, but 1 adult and 2 juveniles were observed in the Twin Nickel Timber Sale on August 23, 2002. Several surveys conducted for the Precommercial Timber Thinning Project on the Powder River Ranger District revealed no goshawk observations. Areas were surveyed (Lost Fire, Meadowlark, Poison Creek & Hunter Mesa) using Broadcast Calling between 6/18/02 and 7/3/02. Two areas on the Medicine Wheel-Paintrock District were surveyed for Northern goshawks. A survey was conducted in the Pussyfoot timber sale area, no nest sites found and no goshawks observed. The other area surveyed was within the Cold Springs timber sale area to check the status of a goshawk nest site that was active in 1999; it was not occupied in 2002 and no alternate nests were found.

**Caves** provide habitat for sensitive bat species. Action was taken on the cave nominations for “significant” caves (4) on the Tongue District; all four caves were designated as significant, and now fall under the Cave and Karst Resources Protection Act. The nominations were submitted in FY 2000. Contacts with the Regional Office and National Cave Coordinator were made to complete the nomination process. The next actions for these caves would be to prepare cave resource management plans.

**Amphibians:** Surveys were conducted for amphibians in the Sherd Lake and Oliver Creek areas of the Powder River Ranger District. Northern leopard frogs were found at numerous sites and breeding was documented at 3 locations. Surveys were also conducted on the Medicine Wheel-Paintrock District at the following locations: Moraine Creek potholes (wood frogs), Mud lake area (wood frog adult), unnamed pond (wood frog tadpoles and adults), Buckley creek potholes (wood frog tadpoles and adults), potholes near Sheep Creek (no amphibians), and a few other wetlands and ponds throughout the Trapper, Dry Fork Medicine Lodge, and Forks Allotments. All survey information was sent to the University of Wyoming for incorporation into the Wyoming Natural Diversity Database. Surveys in 2003 will likely continue to improve distribution information.

**Toads:** Three toad domes were monitored, and three additional domes were set out in Shutts Flat. To date, no amphibians have used the domes (6 total).

Anecdotal reports of amphibian sightings are received from time to time on the Forest. This year, we surveyed the stream below Burgess Ranger Station to follow up on the report of an unknown frog; no sightings were made. Also, we had reports of Western Boreal Toads being observed on the South Tongue River near Mohawk Creek. This area has been surveyed before and only spotted frogs were found. It is possible that people are seeing spotted frogs and confusing them with toads since spotted frogs do exhibit a lot of skin glands (warts). To date, there have been no confirmed sightings of toads on the Bighorn National Forest.

**Water voles:** From 1997-August 2001, surveys for water voles were conducted by Dr. Marion Klaus of Sheridan College in conjunction with district biologists. On the Medicine Wheel-Paintrock District during the 2002 field season, two locations were sampled (Mill Creek and Trout Creek). No water voles were found at the Mill Creek location, however 2 water voles were found at the Trout Creek location (1 was found outside of the survey area). Dr. Klaus will be completing her publication on water voles in FY 2002 based on the findings from these trapping and research efforts. Surveys on the Tongue District in 2002 focused on the North Tongue watershed. All potential habitats for the North Tongue AMP EIS were mapped. Suitable habitat was also mapped as a subset of potential habitat. All sites identified in this mapping exercise were then field verified by summer crews. Adjustments were few, and it appears that modeling in this manner was reasonably accurate. Results; 68,470 meters (42.6 miles) of potential habitat identified, and 43,204 meters (26.9 miles) of suitable habitat identified (63.1% capability).

**Black swift** surveys were conducted on the Medicine Wheel-Paintrock District during the 2002 field season. Three days were spent surveying for presence of black swifts at Porcupine Falls, Bucking Mule Falls, Shell Falls, and Brindle Creek Falls. No black swifts were found during the surveys at any of these falls. It was suggested that habitat at Porcupine Falls is probably not suitable for nesting because falls is not vertical enough to propel falls water away from the cliff and there is a lot of human activity near the falls. At Bucking Mule Falls there appears to be suitable habitat for nesting due to vertical water flow past cliffs and extremely limited human activity at the falls. At Shell Falls and Brindle Creek Falls habitat has characteristics suitable for nesting.

Sightings of TES and other significant wildlife species were recorded on the Forest were reported to the Wyoming Observation System, which is maintained by Wyoming Game and Fish Department, and to the Wyoming Natural Diversity Database, which is maintained by the University of Wyoming. These sightings are considered to be sensitive information and are not available to the general public. The recordings are mentioned here only to show that the Forest is tracking and recording all verified TES sightings. These will eventually be input into the Forest Service's new database for terrestrial wildlife, known as Fauna.

**Wildlife Support** was provided for the following environmental analyses:

- ◆ Story Prescribed Burn Project.
- ◆ Cramer/Big Horn Mountain Lodge land sale.
- ◆ Swamp Timber Sale.
- ◆ Burgess Highway Camp expansion.
- ◆ Pussyfoot Timber Sale.
- ◆ Devils Canyon Grazing AMP.
- ◆ Precommercial Thinning Project (Powder River).
- ◆ Battle Park Travel Management.
- ◆ North Tongue Grazing AMP.
- ◆ Trapper, Dry Fork Medicine Lodge, Forks Grazing AMP.

In addition, a field trip was held in October of 2002 with representatives of USFWS to view ongoing projects on the ground and to familiarize them with situations on the Bighorns.

### **MANAGEMENT INDICATOR SPECIES (MIS)**

Biological Evaluations and Specialist Reports were completed for the Cramer/Big Horn Mtn Lodge sale, the Story Fuels Project, the Swamp Timber Sale, the Burgess Highway Camp expansion, Devils Canyon Allotment Management Plan revision, Precommercial Thinning, and Battle Park Travel Management. HABCAP models and analysis, and field reviews of habitat conditions took place on these projects for MIS as well, as required by the Forest Plan.

In addition to the above project level analysis, the Forest completed Plan Amendment #15 to revise the list of MIS for the Forest that are necessary for forest-wide population trend monitoring and use in project level analyses as required by regulations (36 CFR 219.19). The 1985 Plan listed 24 MIS species used in analyzing plan alternatives, and had additional language for selecting MIS at the project level for analysis. However the Plan only mentioned monitoring for big game species and the peregrine falcon (as described in Plan amendment #4 in 1989). After having completed a literature review of the 24 species in 2001, the Forest amended the plan to implement recommendations of that review, with consideration of additional species (other than the original 24) being postponed until plan revision. Plan revision is currently underway, but will not likely be completed until 2005 or later, which is why this interim amendment was conducted to refine the species being monitored as the Forest could not monitor population trends of 24 species, nor were many of the species reflective of management issues tied to specific habitats. The amendment resulted in six species being designated as MIS, including elk, red squirrel, red-breasted nuthatch, white-crowned sparrow, lark sparrow, and three-toed woodpecker. The amendment included monitoring requirements for MIS and also for certain TES species.

### **Big Game Species**

Mule deer, elk, moose, and bighorn sheep populations are managed and monitored by Wyoming Game and Fish Department. Year 2000 Herd Unit reports (WYGF) were used to acquire the following information. There is no widespread change since year 2000, and elk numbers continue to increase. Numbers were not reported for mule deer, moose, and bighorn sheep as there is little change in population from previous years, and these are no longer considered MIS.

**Elk** are common and are known to inhabit Bighorn NF during spring thru fall, and may be seen at higher elevations onto the Forest during mild winters. WYGF manages populations through three big game herd units. These are the North Bighorn, Medicine Lodge, and a minimal amount of South Bighorn herd unit (SE corner of Bighorn NF). Several hunt areas are identified within each herd unit. Population levels are largely managed by hunting, but are also limited by the amount and quality of winter range available and the severity of the winters.

The population objective for the North Bighorn Herd Unit is 4,100 elk (post season), with current post-harvest population data showing 4,835 animals for 2000. Post season trend counts for the hunt areas in this herd unit indicate that herds exceed desired levels on the east side of Bighorn NF and are just below desired levels on the west slope. Harvest strategies have been adjusted to reduce elk numbers in some areas.

The population objective for the Medicine Lodge Herd Unit is for 3,000 animals, with current post-harvest population data showing 3,400 animals for 2000. Harvest strategies are to reduce the population to objective (3,000).

South Bighorn Herd Unit (Hunt Area 34 covers SE portion of Bighorn NF) objective is for 2,900 elk. Drastically over objective, the post-season trend is 4,796 elk for 2000. The population objective for the portion of 34 that is on the Forest is for 900 elk. The post-season trend is at 1,453 elk for Hunt Area 34. Throughout much of the South Bighorn herd unit, harvest is strongly influenced by access to private lands. Harvest strategies for Hunt Area 34 will continue with increased quotas, cow/calf seasons, and longer seasons to attempt to reduce the herd to objective.

No specific habitat monitoring for elk takes place on the Forest. Habitat requirements are assessed with each project analysis. Winter range off the Forest is monitored occasionally by the Game and Fish to assess habitat conditions.

#### **MONITORING REQUIREMENT—PEREGRINE FALCON OCCUPANCY**

No peregrine nesting activity was observed on the Tongue District during the 2002 field season.

Since release efforts in 1993 on the west slope of Bighorn National Forest, active eyries (nest sites) have been documented in areas of Shell Canyon and Tensleep Canyon. The Wyoming Game and Fish Department monitors peregrine falcon nest sites statewide. However, the Bighorn National Forest is not surveyed every year. In FY 2002, a Bighorn Forest employee participated in monitoring with WYGF in Shell Canyon and Tensleep Canyon. One suspected nesting attempt occurred near the Forest boundary in Tensleep Canyon, however it likely failed. One eyrie in Shell Canyon was active in 2002.

#### **MONITORING REQUIREMENT—AVIAN MIS POPULATIONS**

The Forest began implementation of avian point counts to gather population information on the remaining MIS species (other than elk) described above. This monitoring is being conducted by the Rocky Mountain Bird Observatory in Brighton, CO, as this organization was also conducting state-wide avian monitoring, and similar monitoring in Colorado. The Forest also provided financial support to the state-wide monitoring program. In total, this monitoring cost the Forest approximately \$25,000. Forest-wide monitoring involves approximately 40 transects of 15 point counts each, stratified among four primary habitat groups including montane riparian, high elevation conifer, mid-elevation conifer, and sagebrush-grassland. These four habitats were most representative of the habitats frequently altered by the Forest. This monitoring will provide population trend monitoring for the four avian species and the red squirrel, though detections for lark sparrow and three-toed woodpecker may be less than desirable due to their limited distribution, the random process applied in selecting transects, and the limited number of transects per habitat type (10). Initial results indicated an abundance of white-crowned sparrow, red-breasted nuthatch, and red-squirrels, but fewer detections of three-toed woodpeckers and lark sparrows occurred. Trend will not be able to be established until approximately 5 years.

#### **MONITORING REQUIREMENT—WILDLIFE HABITAT DIVERSITY**

In addition to the support to projects previously mentioned, the following activities also occurred in FY 2002.

**Aspen:** Previously established transects and photo points are used to monitor and partition use of aspen between domestic livestock and wildlife. Exclosures are constructed and maintained to encourage regeneration following treatments and to provide monitoring opportunities.

Field inspections or photo points were taken at the following aspen stands during the 2002 field season on the Medicine Wheel-Paintrock District: Upper Medicine Lodge Canyon on the Forks Allotment, the aspen stand in the Lower Pasture in the Granite Allotment, and the two aspen stands in the Lower Shell Pasture of the Shell Creek Allotment.

During the 2002 field season exclosures around aspen stands on the Medicine Wheel-Paintrock District at Shell Creek, Ruble Creek, Shell Canyon, Woodchuck Bench, and Toe of Cement were inspected, vegetation condition was documented, and maintenance was performed where necessary. These exclosures encompass approximately 42 acres.

All aspen exclosures on the Tongue District were maintained during 2002. The individual exclosures are listed below.

N. Tongue	2 exclosures	4 acres
Marcum Creek	1 exclosure	5 acres
P.K.	3 exclosures	10 acres
Sheeley cabin	1 exclosure	3 acres
Hay Creek	6 exclosures	22 acres
Dry Fork	2 exclosures	4 acres
Camp Creek	1 exclosure	1 acre.
Total		49 acres

In addition to the above, the “new” exclosure in Hay Creek was monitored. If fencing alone is not sufficient to allow the aspen to restock the site, prescribed burning will be used to remove shade from competing vegetation and to promote suckering (sprouting) of aspen from the live roots remaining inside the exclosure. Monitoring indicated that burning will be needed, but was not conducted this season to allow for more fine fuels (grass) to build up before ignition so that a “hotter” fire can be achieved.

Two aspen exclosures were improved (rebuilt) in the Billy Creek area of the Powder River District. A CE, Decision Memo, and Burn Plan for the two aspen exclosures were completed. Implementation of the burn was completed in October of 2001 (FY 2002). New fences were constructed on the two treatment areas, and were designed to exclude big game animals in addition to livestock. The project covers 3.25 acres, and is designed to induce suckering of aspen in an area that was previously treated with poor results.

For the Southwest Fuels Project, aspen stands were inventoried and evaluated during field surveys in 2002. Stand data was collected for 844 acres of aspen, and entered into a GIS layer. In this effort, we entered into aspen management discussions with Wyoming Game & Fish. We hope to continue these discussions into the 2003 field season as we develop management and monitoring methods for aspen.

To document the existing condition of aspen on the Trapper, Dry Fork Medicine Lodge, and Forks allotments (for revision of AMP), aspen stands were inventoried during the 2002 field season. Approximately 480 acres of aspen were visited and site conditions were documented. Wildlife presence and use of these stands were also documented.

**Willow/Riparian:** Previously established transects and photo points are used to monitor and partition use of willow between domestic livestock and wildlife.

During the 2002 field season on the Medicine Wheel-Paintrock District, inspection and maintenance was performed as necessary on 12 willow/riparian exclosures (approximately 455 acres). Condition of willow/riparian vegetation within the 12 exclosures was also documented. During the 2002 field season the following willow/riparian areas were monitored on the Medicine Wheel Paintrock District: 1) transects at Sheep Creek #1 and #2 were set, and read during 2002 field season but not reset due to poor weather and lack of time to return to the site, 2) Buckley Creek willow transect (inside the exclosure) was set, but due to lack of time the transect was not read or reset later in the season, 3) A willow photo point and line intercept transect was monitored on Dry Fork Medicine Lodge Creek, with a slight increase in willow height was noticed, and 4) Ocular estimate of browse use on willow was conducted in Willow Swamp. It was noted that heavy browsing on willow (by wild ungulates) occurred prior to cattle entering the allotment. Ongoing intensive monitoring of willow-riparian utilization by wild ungulates and domestic livestock was conducted on various allotments on the Medicine Wheel-Paintrock District. Stubble height was also measured in conjunction with willow transects. This data can be found in the Range section of this document.

All of the riparian exclosures on the Tongue District were maintained this season. These exclosures protect 998 acres of riparian habitat and a total of six miles of fisheries streams. The affected streams are:

Lick Creek	3 exclosures	30 acres	1 mile of stream
Fool Creek	2 exclosures	30 acres	2 miles of stream
Sucker Creek	1 exclosure	20 acres	0.5 mile of stream
Ranger Creek	1 exclosure	50 acres	0.5 mile of stream
East Fork	1 exclosure	600 acres	1 mile of stream
Preacher Rock	1 exclosure	250 acres	0.7 mile of stream
Bull Creek	1 exclosure	3 acres	0.2 mile of stream
Little Willow	1 exclosure	15 acres	0.1 mile of stream

All of the riparian exclosures on the Powder River District were maintained this season. These exclosures protect 5.5 acres of riparian habitat. The treated areas are:

Hunter Creek Pasture	1 exclosure	1/4 acre.
South Hospital Hill	1 exclosure	1/4 acre.
Hunter Mesa Riparian	1 exclosure	1/4 acre.
Hunter Mesa Cow	1 exclosure	1/2 acre.
Hunter Mesa Wildlife	1 exclosure	1/2 acre.
New Hondo Creek	1 exclosure	1/4 acre.
Grommund Creek	1 exclosure	3/4 acre, 300' of stream.
Dry Poison Creek	1 exclosure	2.5 acres, 1,000' of stream.
#3 east	1 riparian exclosure	16' x 16'.
#4 Hansen's spring	1 riparian exclosure	16' x 16'.
#1 Hansen Sawmill	1 riparian exclosure	16' x 16'.

Some of the above exclosures are designed to exclude big game animals, and some exclude cattle only. Monitoring has shown that annual maintenance is more cost effective than allowing the exclosures to deteriorate and then invest more work to bring them up to standard. Also, it has been shown that even one years worth of browsing inside an exclosure can set the vegetation back far enough that it takes several years of protection to recover.

The exclosure fences on Lick Creek (east side) were modified to eliminate gaps at stream crossings in Fiscal Year 1998. One of the newly constructed sites had to be modified further in fiscal year 2000, to exclude cattle from a side gully and to reduce long-term fence maintenance due to snow damage. The modifications made to this exclosure have proven to be effective, and the reconstruction project also reduced long-term maintenance costs. Another goal this year was to transplant willows and reset cages within the exclosure. This work was not done again this year due to budget and time constraints.

Willows were not transplanted into empty cages inside the Fool Creek, Lick Creek, and Bull Creek exclosures again during FY 2002. There just never seems to be enough time in October when this work should be done.

Willows were planted in Shutts Flat (South Tongue watershed) in 1998. No monitoring was conducted in FY 2002 due to lack of time, this was not a priority.

Routine monitoring and maintenance of fish structures as typically provided by the wildlife crew was not done during FY 2002. Specifically, the instream structures in Fool Creek, Bull Creek, Lake Creek and Lick Creek (about 300 structures total) were not checked or maintained due to lack of funding at the District level.

Preliminary discussions with Wyoming Game & Fish are moving toward cooperative efforts to monitor and manage browse use of willow. Ideally these conversations will mature in FY 2003.

**Wildfire/Prescribed Burning and Monitoring:** The success of seeding and rehabilitation work was not monitored in the Stockwell Fire. In 1996, rehabilitation work was accomplished on the Stumpy Ridge road and some seeding was done near the Little Goose Peak Mine. The mine area was not checked during 2002, and the status of rehabilitation efforts is unknown at this time. Also, monitoring for success of reseeding and other rehab work was not conducted at the Marcum Creek rehab site, the Copper Creek crossing, and the Shutt's Flat road, due to higher priorities.

Monitoring of prescribed burns on the Tongue District did not take place during FY 2002 due to lack of personnel available. The specific burns to be monitored included Kerns, Tongue Canyon, and Dry Fork/Skull Ridge.

Prescribed burn projects accomplished that also benefited wildlife are listed under the Fire section. On the Tongue District, approximately 120 acres were burned near Twin Buttes on November 13, 2001. The primary objective was to create diversity of age classes in big sagebrush. This objective was fully met as a good mosaic burn pattern was achieved.

**Other Habitat Projects:** Evergreen trees were transplanted in October of 2001 (FY 2002). A total of 20 trees were planted in Prune Creek Campground. Another 20 trees were planted in Tie Flume Campground, and 10 were planted at the Burgess Ranger Station. The work was accomplished using funds (KV) that were collected primarily from the sale of forest products such as Christmas tree permits and transplant permits. A total of 50 seedlings were transplanted, and this project was planned to continue for many years until visual screening has been restored and wildlife habitat opportunity has been maximized. Monitoring of the previous three years work indicated over 99% survival rate, and this project is expected to be terminated after FY 2003 as a success story.

A target of 15 acres of aspen retention was accomplished. Areas treated for aspen retention were primarily: along the Big Goose road at Rapid Creek on the Tongue District, within the Twin Nickel Timber Sale on the Tongue District.

Areas treated for conifer encroachment into meadows on the Tongue District were primarily near Burgess Junction, and along Highway 14 at Marcum Creek.

A total of 127 bluebird houses on the Tongue District were monitored this year with the help of volunteers from the Sheridan chapter of the Audubon Society, Bob Tippie, and John Kraft. Nesting success was about average, and there are no concerns or indicators of a downward trend for this species. Also, the results from the 2001 nesting study were tabulated. Results were sent to all volunteers. Many of the boxes have been exposed to weather for up to 10 years now, and most have deteriorated to the point that repairs are not feasible. We will need to look for opportunities to have new boxes built and begin to replace boxes as needed. A few students at the Sheridan Junior High School have shown an interest in building bluebird boxes as a class project, and then donating the finished boxes to the Forest Service to be used as replacements. This strategy should enable us to maintain our present number of boxes with very little cost to the taxpayer. This year, 7 boxes required heavy repair or replacement, and this number is expected to increase in the near future.

An addition was made to the swallow condos at Burgess Ranger Station on June 21, 2002. Prior to this year, one tier was removed at the Burgess pond site and the middle tier was reset to allow more space between the remaining 3 tiers. The cliff swallows continued to use only the bottom tier, but this year we salvaged the old abandoned nests in the bottom tier, and smeared it on the structure to "bait" the upper two tiers. Cliff swallows have now begun to use all 3 tiers of the main structure. Also, a second condo was erected springing 2001. This condo supports only 1 tier, and was accepted immediately by the swallows. The condo by the Burgess washhouse has one nest now, which means that all of the swallow condos are being used. During FY 2001 and 2002, we also made a concentrated effort to make the cabins at Burgess inhospitable and to encourage swallows to use the condos instead. We installed plastic netting over the cabins in those areas where swallows have historically built nests. This has proven to be the most effective means of preventing the swallows from building nests on the sides of our historic cabins. More screening was installed June 24, 2002, and little remains to be installed.

Nest boxes for kestrels were maintained and monitored again on the Tongue District. A total of 6 boxes are currently installed. Annually, we attempt to clean the boxes out and replace a layer of fresh wood chips. This year, we did not accomplish this task until June 12, which proved to be too late in the season for occupation by kestrels. In the future, we will try to clean the boxes during the late fall season as part of our annual chores, and this should improve occupancy by kestrels since the boxes will be ready to go as early each spring as the kestrels want them.

On September 30, 2002, more brush was added to the brush piles that were placed in the Sheridan Work Center pasture. An additional hawk perch was added June 8, 2002. In this pasture, there are now 8 brush piles and 4 hawk perches. Brush piles were placed for small mammal habitat.

Inspection and maintenance of 3 upland exclosures (approximately 5 acres upland habitat) was conducted during the 2001 field season on the west side of the Forest. Vegetative condition and composition within exclosures was also documented.

Sagebrush inventories were completed for the Southwest Fuels Project near Tensleep in the Powder River Ranger District. Approximately 20,500 acres of sage were examined during the 2002 field season, and data was entered into a GIS layer. Conversations with Wyoming Game & Fish were initiated regarding sage habitat management. Ideally these conversations will continue through the 2003 field season in an effort to improve sage/grassland habitat.

#### **MONITORING REQUIREMENT—WINTER RANGE CARRYING CAPACITY**

The Wyoming Game and Fish Department conducts classification surveys and population trend counts on winter range (which includes some Bighorn NF land). Data from these surveys (2000 herd unit reports) indicates a slight population increase in mule deer in the Paintrock herd unit, with slightly decreased numbers in the North Bighorn herd unit.

Elk cow:calf ratios appear to be increasing slightly in the North Bighorn herd unit and the Medicine Lodge herd unit. The South Bighorn herd unit appears to be stable in the cow:calf ratios compared with the 5-year averages.

## **SOCIAL COMPONENTS**

### **FACILITIES**

The Forest Service infrastructure consists of those facilities required for the management of the National Forest. On the Bighorn National Forest there are approximately 1,561 miles of classified, system road and 114 buildings along with associated structures and utilities, which are utilized for resource management.

Funding for maintenance of the infrastructure has never been adequate. As such, priorities have to be set as to what work will be accomplished and what will be deferred. As budgets have declined, the amount of deferred work, or backlog, has increased dramatically. Adding to this is the fact that the majority of our roads and buildings are at or near the end of their design life, and in many cases a more substantial investment than routine maintenance will be required.

In 1998, the Forest Service determined that more information was needed to accurately identify our maintenance needs. An ambitious five-year inventory and reporting program was initiated to identify annual maintenance, deferred maintenance, and capital improvement needs for the entire infrastructure of the Forest Service. Through this initiative, every road, trail, building, campground, bridge, etc. will be reviewed for annual maintenance needs, deferred maintenance needs, and capital improvement needs over the next five years.

In 2002, the Bighorn National Forest performed condition surveys on 166 miles of maintenance level 3, 4, and 5 roads (i.e., roads open for travel by passenger vehicles, with varying degree of user comfort), in an effort to estimate the maintenance backlog on these roads, as well as estimate the current annual maintenance and capital improvement needs of these roads. In 2003, the Forest will perform condition surveys on the remaining approximately 90 miles of level 3, 4, and 5 roads.

In 2002, routine maintenance was performed on approximately 514 miles of road by force account crews and by permit holders according to the permit requirements. There was no maintenance contract for performing any work in 2002. No new roads were constructed and no roads were reconstructed. There were no roads decommissioned in 2002. The cause for performing so little work in these areas was a direct result of losing much of the Forest's budget to a region-wide effort to rehabilitate a large fire in Colorado.

Inspections were performed on 24 different administrative buildings during the 2002 fiscal year. These inspections were done in an attempt to find deferred maintenance items on these facilities, and to determine their annual maintenance costs. Routine maintenance and emergency repairs were performed on various buildings across the Forest. Approximately 12 sanitary surveys were performed in 2002 on existing water systems. Water system enhancements were made via force account 8 different water systems, including constructing new well pads and installing new hand pumps. In addition, 4 new wells were drilled, replacing 2 existing wells. Technical support was also provided in the areas of special uses, interdisciplinary teams, accessibility, safety, and resource issues as required.

In 2002, as well as 2001, a crew was hired to perform level 1 road maintenance. This proved to be very effective in monitoring these closed roads and performing some routine maintenance including minor drainage repairs, cleaning culverts by hand, and performing some spot seeding, and ensuring accessibility is adequate.

In 2002, no road bridges were inspected, as required by the Federal Highway Administration (FHWA), and by the FSM. One new bridge was constructed, replacing a structurally deficient bridge on FSR 27, West Tensleep Creek. In addition, numerous bridge decks were cleaned, in addition to upgrading existing regulatory warning signs around bridges.

### **Implementation Monitoring**

Construction, reconstruction, and maintenance projects are monitored to ensure compliance with applicable laws, regulations, plans and specifications. Coordination with specialists during project planning is accomplished to ensure health, safety, and resource protection measures are incorporated into the projects as required.

### **MONITORING REQUIREMENT—ARTERIAL, COLLECTOR, AND LOCAL ROAD CONSTRUCTION AND RECONSTRUCTION**

Road construction and reconstruction Standards and Guidelines are met by utilizing design criteria developed through an interdisciplinary process and approved by the line officer.

### **Effectiveness Monitoring**

During project implementation, qualified personnel conduct monitoring through onsite inspections. Deviations from the planned design are accomplished as necessary to account for a change in conditions or a plan oversight. Input from other specialists is sought as conditions warrant. Final acceptance of contracted projects by the appropriate authority is required.

### **Validation Monitoring**

Personnel monitor construction projects during the performance of their routine duties. Changes in future design or modification of maintenance activities are incorporated as necessary to meet management objectives.

## **HERITAGE RESOURCES**

### **EAST ZONE**

Personnel on the East Zone completed fieldwork and received concurrence from SHPO on site eligibility and affects found during inventory for the renewal of the Tongue Watershed ten-year term grazing permits. Other support work included analysis for the Forest Plan revision, including a draft review of an ethnographic study and area analysis by 5<sup>th</sup> order watersheds, Story, Wyoming fuels reduction, competition of the heritage resource inventory for travel management in the Little Goose area, and four other small projects. Total acres of inventory accomplished were over 7,000 acres.

Public education for the year included two flint knapping demonstrations to grade schools, and three days of participation at the Wyoming Game and Fish Expo. Additionally, personnel from the East Zone held several talks that took place at the Burgess Junction Visitor Center. The programs include the Sibley Battle, flint knapping demonstration, and a prehistoric technology workshop.

## **WEST ZONE**

Approximately 665 acres were surveyed for heritage resources during fiscal year 2002 on the west zone in conjunction with the re-issuance of ten-term grazing permits. The preparation on the nomination to the National Register of Historic Places for the Medicine Mountain Cultural Landscape continues.

Public education for the year included numerous informal talks and 2 formal lectures on the Medicine Wheel National Historic Landmark, as well as two school presentations. Negotiations with Northwestern College in Powell, Wyoming are on-going. The negotiations are for the development of cost-share agreement to have Northwest students conduct heritage resource inventories and collect data for the Forest. Interagency meetings and field trips with Bureau of Land Management's (BLM) Regional Archaeologist were conducted.

The west zone archaeologist led archaeological fire suppression activities concerning wild land fires in and out of region, and developed standard operating procedures. Both east and west zone archaeologists continue to support the Forest's consultation process with various American Indian groups on a variety of program work such as range and timber management, as well as the Medicine Mountain National Historic Landmark nomination.

## **Implementation Monitoring**

### **MONITORING REQUIREMENT—PROFESSIONAL FIELD EVALUATION OF TWO RANDOMLY SELECTED PROJECTS (FORESTWIDE)**

East Zone personnel examined no projects, primarily because the Forest has not implemented projects that have heritage resource components.

West Zone personnel examined several NEPA projects associated with the management of the Bighorn Medicine, National Historic Landmark.

### **MONITORING REQUIREMENT—SAMPLE FIELD EVALUATION OF IDENTIFIED CULTURAL RESOURCE PROPERTIES REQUIRING PROTECTION (ANY ELIGIBLE OR UNEVALUATED SITE)**

Ten prehistoric heritage resource properties, associated with grazing permit reissuance, were evaluated for impacts on the Tongue District. All ten sites were incurring impacts. The impacts to these sites are considered threatening to their eligible status, and include impacts from grazing, wildlife, vandalism and erosion. At present, mitigation plans are being designed to lessen the impacts. Implementation of mitigation measures is proposed to begin in 2004, and should be completed by 2008.

Additionally, seven heritage resource properties on the Medicine Wheel and Paint Rock Districts have been evaluated for impacts to the heritage resources. As above, mitigation measure should be completed by 2008.

## **Effectiveness Monitoring**

Two goals are associated with effective forest plan monitoring: identify appropriate resource management and initiate actions to reduce deficiencies.

In 2002, the Forest continued its concerted effort in meeting the objective of goal #1. This was accomplished through the grazing permit renewal process, specifically by the establishment of quantitative monitoring localities (5). Additionally, on a programmatic level, analysis of heritage resources management is occurring by watersheds for forest plan revision. The data has reflected that appropriate integrated resource management is not occurring. For example, present grazing standards, even though met, may not protect heritage resources.

The Forest continues to deal with deficiencies at a project specific level versus at the Forest level. This is not to say one level or the other is better, but the present forest plan lacks any direction in this area. Therefore, there is no incentive for the Forest to management heritage resources at the Forest level. By default, deficiencies are only identified and dealt with at the project level, which may not be the level to analyze the deficiency, nor be cost effective.

However, the Forest has recognized the need to deal with heritage resources at a Forest level. On-going efforts continue to be more efficient through the use of Programmatic Agreements (PAs). Presently, the Forest and Region 2 is working on a master PA that will incorporate all past individual PAs (i.e., range, wild fire) within one document. The agreement will include standard operating procedures for several reoccurring programs of work, and will include exceptions of actions from 106 reviews

## **Validation Monitoring**

The forest plan goals and objectives for heritage resources are lacking in most areas. The laws that they were initially based on have since been amended, and present direction in the forest plan is inadequate and/or inconsistent with the new amendments. For example, the plan provides no direction for setting resource priorities for recreational needs, nor requirements of Executive Order 13007. Also, monitoring requirements should be updated to include reporting the reduction in backlog of unevaluated sites on the Forest.

The present forest plan has no real “mileposts” to determine compliance with the variety of laws, regulations, and policies associated with heritage resource management, specifically, Sections 106 and 110 of the National Historic Preservation Act (NHPA). Key elements that should be address in the forest plan monitoring section are clearly expressed in the NHPA, and reiterated in FSM 2360. The following examples of language are found in the NHPA:

### **Section 106**

The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking.

**Section 110**

- a) (1). The heads of all Federal agencies shall assume responsibility for the preservation of historic properties which are owned or controlled by such agency.
- (2). Each Federal agency shall establish (unless exempted pursuant to Section 214) of this Act, in consultation with the Secretary, a preservation program for the identification, evaluation, and nomination to the National Register of Historic Places, and protection of historic properties [balance program]. Such program shall ensure —
- (iii) Provide for the disposition of Native American cultural items from Federal or tribal land in a manner consistent with section 3(c) of the Native American Grave Protection and Repatriation Act (25 U.S.C. 3002(c); [NAGPRA]).

**National Park Service Guidelines**

The program should try to ensure that the agency's officials, employees, contractors, and other responsible parties have sufficient budgetary and personnel resources needed to identify, evaluate, nominate, manage, and use the historic properties under agency care or affected by agency actions.

To rectify the situation mileposts have been established to track compliancy with the sections, and are noted in the following table.

Table 14. Section 110 accomplishments.

<b>Element</b>	<b>Accomplishments</b>	<b>Comments</b>
Compliance with PAs/Section 106	No/No	Have been in non-compliance with the PA for management of the Bighorn Medicine Wheel since 1995. The PA calls for the completion of the inventory report for 1988-1990.
Acres surveyed 2002/ Since 1985	0/ca. 600	See FSM 2360, Not meeting intent
Sites evaluated 2002/ Since 1985	0/3	See FSM 2360, Not meeting intent
Backlog of un-evaluated sites (300 + Sites) 2002/Since 1985	0/0	See FSM 2360, Not meeting intent
Historic Preservation Plans completed 2002/ Since 1985	0/2	See FSM 2360, Not meeting intent
Sites nominated to the National Register of Historic Places 2002/ Since 1985	0/1	See FSM 2360, Not meeting intent

<b>Element</b>	<b>Accomplishments</b>	<b>Comments</b>
NAGPRA cases 2002/ Since 1985/In Compliance	0/1/?	The 1 NAGPRA case started in 1994, and has not been completed in a timely fashion (ca. 180 days), but the Forest should complete the process in FY03.

## **Evaluation and Conclusions**

The 2002 monitoring program results reflect that the Bighorn National Forest programs impacting heritage resources include grazing activities and vandalism. Additionally, although the Forest Plan states, “followed the laws” in the Standard and Guideline section, no mileposts were established to determine legal compliance. Analysis of how effective the direction in the Forest Plan is can only be accomplished by established mileposts.

The Forest contains approximately 340 unevaluated heritage resources properties. Because of legal requirements, these properties must be managed as though they are eligible to the National Register of Historic Places. Research is needed to determine proper NRHP status; the findings could result in reduced long-term management costs, as several sites would be identified as non-eligible, and the Forest would no longer be obligated to manage them. Due to a recent agreement with the University of Montana, direction from the Forest Service Office in Washington (i.e., deferred maintenance assessments), and recent PA’s (Range), the Forest is taking steps to achieve numerous goals in the heritage resource program. However, it will be a few more years before personnel can measure the full effects of these actions.

In conclusion, the present Forest Plan is deficient for determining compliance with federal laws, and lacks minimum mileposts for program management/objectives to meet federal laws, regulations, and Forest Service policies.

## **LANDS – SPECIAL USES**

The Lands and Special Uses Program on the Forest consists of real estate and boundary management including land acquisition and adjustments, withdrawals, public access, and the administration of a wide variety of special use authorizations, including permits, leases, and easements.

We administer approximately 500 authorizations, including 150 non-recreation uses such as communication sites, municipal and agricultural reservoirs, pipelines, power lines, a fish hatchery, roads, and a variety of miscellaneous uses. In addition, the Forest permits approximately 375 recreation uses, including outfitter/guiding operations, recreation residences, three organization camps, ten resorts, two ski areas, numerous group use and recreation events, and a Forest-wide campground concession permit. With 265 summer home permits, the Bighorn has the most recreation residences in the Rocky Mountain Region.

In addition to the administration of existing permits, the Forest receives several new applications annually. Special uses staff reviewed and processed new authorizations for resorts, road easements, reservoir easements, and other uses. District staff reviewed and processed special-

use permits for outfitter-guides, recreation residences, group and recreation events, and temporary non-recreation uses.

Projects in FY 2001 and ongoing into FY 2002 have included the finalization of the Tie Hack Campground Withdrawal, meeting the Forest's landline target, resolving various trespass cases, including the resolution of one encroachment under the Small Tracts Act. The Forest has also been working to identify and resolve public access issues when possible.

The Forest continued its moratorium on the issuance of any new outfitter-guide permits. This is an area of contention with various groups and individuals, but particularly with institutional users (colleges and universities). The moratorium remains in effect due to the lack of a current capacity analysis and insufficient funding to staff for the administration of current permits.

## **Implementation Monitoring**

### **MONITORING REQUIREMENT—ENSURE COMPLIANCE WITH TERMS OF AUTHORIZATIONS AND OPERATING PLANS**

Inspection and compliance checks are performed to ensure compliance with permit requirements. Due to limited personnel and lack of funding, many permitted uses are not inspected often enough to ensure that the terms of the permit are being met. Staffing is such that only elements of health, safety, and environmental protection are administered to standard. Lack of communication site plans makes the administration of the Forest's communication sites difficult. Forest Service directives state that updated Management Plans be prepared for all sites, but limited staffing has been prohibitive.

The Powder River Ranger District conducted Outfitter/Guide inspections on 12 permittees during the summer of 2002. Nine of these inspections were to remote camps. The district also dealt with the illegal use of the Muddy Guard Station by a permitted Outfitter/Guide. Permittee was issued a violation notice for occupancy of an administrative site without authorization. Additionally the permittee was in noncompliance with the terms and conditions of the permit. The permittee will be issued a temporary use permit for the 2003 season instead of having priority permit reissued.

### **MONITORING REQUIREMENT—EFFECTS ON NON-NATIONAL FOREST LAND MANAGEMENT PRACTICES ON ADJACENT OR INTERMINGLED NATIONAL FOREST SYSTEM LANDS OR ON FOREST GOALS AND OBJECTIVES**

Activities such as grazing, timber harvest, building and road construction, and recreation uses on adjoining and intermingled lands continue to increase. Public access to the Forest continues to be an issue.

## **Effectiveness Monitoring**

The Lands and Special Uses Program complies with the limited direction found in the Forest Plan. Forest Service manuals and handbooks provide principal management policy and procedures. Limited funds resulting in understaffing make it impossible to adequately administer all permits to these established standards.

There are numerous unauthorized accesses across NFS lands to private lands such as Camp Comfort, French Creek Cow Camp area, Hazelton area, and Canyon Creek estates. Unauthorized road maintenance is occurring on these road accesses.

The trespass cabin issue on South Paintrock Creek continues unresolved due to lack of priority. The RO minerals staff have made on the ground inspections.

### **Validation Monitoring**

An emphasis should be made to utilize a self-monitoring inspection system for all special uses, where a permittee reports his/her compliance with permit standards on an annual basis. This approach has been used successfully on other Forests, and with some initial effort, could be made to work here.

## **RECREATION**

Forest visitation increased approximately 5.6% over the reported visitation in 2001. Highway traffic counts supplied by Wyoming Department of Transportation continue to be a poor indicator of Forest use. The Forest is establishing traffic counters on Forest roads to provide a better source of data in the future.

The Bighorn National Forest is in the second year of a Campground Concessionaire Permit issued in 2000 to Gallatin Canyon Campgrounds. This permit is valid for 5 years with an optional extension for an additional 5 years. The concessionaire provides an acceptable level of campground operations and maintenance. Granger/Thye projects (maintenance projects funded by campground receipts) by the concessionaire included the following:

- Host site development at Leigh Creek Campground.
- Conversion of a chemical toilet to a vault toilet at Sitting Bull Campground.
- Removal and relocation fire rings from Tie Flume Campground to Cabin Creek Trailer Park.
- Purchasing fire rings to be installed at Lakeview Campground.
- Removal of an outhouse at Boulder Park Campground.
- Repairing road and spur sub-grade and surfacing at Ranger Creek Recreation Area.

Other projects using Forest funding included:

- Reconstruction of Tie Flume Campground.
- Stabilization of High Park Lookout.
- Reconstruction of Willow Park Trail.
- New well construction at Leigh Creek Campground.
- New well replacement at Dead Swede Picnic Ground and Sibley Lake Campground.
- Six new well pads at various Forest locations.

The Forest continued its inventory of deferred maintenance (20% per year) for developed sites and trails. This data provides estimates for future funding of backlog maintenance, as well as annual preventative maintenance, and identified capital improvements. Twenty-three (23) recreation sites were surveyed, primarily on the Powder River Ranger District, and 160 miles of trail were inventoried.

During the summer season, we focused additional personnel on dispersed recreation activities—primarily “clean-up”, education, and Forest Service presence. Additionally, we started an inventory of existing dispersed recreation sites to help determine the demand for this type of activity. The inventory will also help determine which sites are negatively impacting the resources.

Volunteer groups and individuals were used throughout the Forest to help perform a variety of recreation duties including trail maintenance, campground and facility maintenance, signing, patrols, visitor contacts, interpretation at visitor centers, horseback patrols, trash pick-up, cave clean-up, and grooming cross country ski trails.

The 14-day stay limit continues to be a problem in the more popular developed campgrounds. Visitors are avoiding the stay limit by reserving a site for 13 or 14 days and then turning around and reserving it for another 13-14 days. The current Forest Supervisor’s order should be revised to address this concern. The 14-day stay limit for dispersed camping should also be reviewed.

As noted in other monitoring reports, participation in dispersed motorized recreation activities continues to grow. Many miles of user-created trails occur through meadows and streams in designated “C” areas (motorized vehicles in these areas are authorized to travel off roads and trails.)

The state of Wyoming enacted a state statute regarding the use of Off-Road Recreational Vehicles (ORVs). The state program requires the purchase and display of a state sticker in order to operate on “enrolled” roads and trails, and a portion of the proceeds are returned to the area where the sticker was purchased to improve motorized travel opportunities. The Bighorn National Forest enrolled the majority of its roads and trails into the program. The basis of determining enrollment follows existing travel management on the Bighorn National Forest and recognizes other governmental jurisdiction. The Forest continues to cooperate with the state to help make this program a success and bring more dollars back to maintaining and improving motorized routes.

## **Implementation Monitoring**

### **MONITORING REQUIREMENT—DEVELOPED RECREATION USE**

The Forest experienced a 5.6% growth in recreation visitation during 2002 in developed recreation sites such as campgrounds and day use areas.

Three interpretive sites were operated in 2002 in cooperation with the Rocky Mountain Nature Association.

**Shell Falls** remains a heavily visited site for people traveling through the Bighorn National Forest. Approximately 350,000 people stopped at Shell Falls during the 2002 season. Sales of interpretive materials at this outlet continue to lead in the region with \$105,517.88 in 2002. This represents an increase of 24% from 2001.

**Burgess Junction** visitor center had approximately 58,000 visitors in 2002. Of these approximately 5,600 attended a formal talk or program. Sales of interpretive materials were \$95,568.55, an increase of 13% from 2001.

**Medicine Wheel** visitation remained strong in 2002 with 15,336 people including 738 American Indians who conducted 393 ceremonies. This represents an increase of 129 visitors, a decrease of 183 American Indians, and an increase of 175 ceremonies from the

2001 figures. Visitor comments continue to show strong support for the current site management. Site improvements this year included replacement of the road closure gate; rehabilitation of the parking area; and the addition of benches, fencing, and signing at the Five Springs saddle.

Volunteers play a critical role in providing public service. We operated several remote “Ranger Stations” (Shell, Porcupine, and Tyrell) with volunteers and they continue to make many public contacts.

#### **MONITORING REQUIREMENT—DEVELOPED SITE FACILITY CONDITION**

Operation of most developed recreation facilities continues under the terms of a special use permit reissued to Gallatin Canyon Campgrounds, a division of Canyon Enterprises, Inc., with offices in Bozeman, Montana in 2001. Campgrounds were generally maintained in excellent condition even though rehabilitation and/or redesign to meet resource and user desires is needed. Many of the existing vault toilets do not meet Regional SST (“Sweet Smelling”) standards.

At other developed sites (e.g., trailheads, picnic areas, and interpretive facilities) maintenance and health/safety requirements (e.g., hazard trees removal) are addressed on a priority needs basis. Centralized water testing was completed by one individual in 2002 and continues to improve accountability and efficiency. Compliance patrols are done as time and funding permits. Measurement factors (Meaningful Measures) such as Setting, Safety, Security, Responsiveness and Condition of Facilities are not met on a routine basis with the present level of funding.

The reconstruction of Tie Hack Campground was the significant construction project in 2002 and will be completed in 2003. The Forest is also concentrating on improving its potable water supply with the drilling of a new well at Leigh Creek Campground and the drilling of replacement wells at Dead Swede Picnic Ground and Sibley lake Campground. Additionally, six new well pads were constructed at various locations across the Forest.

The design of Shell Falls continued in 2002 with anticipated construction in 2006. The design involves the construction of a new building, reconstruction of the existing parking area, renovation of the existing toilet facility, reconstruction of the interpretive amenities and reconstruction of the existing interpretive trail.

#### **MONITORING REQUIREMENT—DISPERSED RECREATION USE AND EXPERIENCE LEVEL**

There were three full time dispersed recreation personnel assigned to Forest patrol during the 2002 summer season. Their duties included maintenance, signing, law enforcement, visitor education and contacts. These employees were challenged by increasing numbers of recreation users and violations. Hunter patrols prior to opening day and during the early parts of the hunting season are effective and their continuation is recommended. Volunteer help is critical to providing dispersed services. Many District programs rely heavily on their use (e.g., Tongue Ranger District focused volunteers in the Woodrock, and Woodchuck Pass areas of the Tongue District). Several volunteer projects provided additional support including: high school classes completed trail maintenance and the National Outdoor Leadership class conducting a clean-up day at Tongue River cave.)

The number of horse users camping at dispersed sites across the Forest is increasing, with a larger number of out-of-state recreationists. A pair of “horse-back” volunteers worked the

Woodchuck Pass area and provided information and education on minimum impact horse use for these users.

As reported in past monitoring reports, traffic counts on some Forest roads (West Tensleep Lake, Sourdough and Crazy Woman Canyon) exceed the projected number of visitors specified in the Forest Plan. Although of short duration, this indicates a need to develop management strategies to deal with increasing visitor numbers. Additional resources would allow much needed monitoring of this and other recreational uses.

Motor vehicle traffic on native surface roads during the extended hunting seasons continues to have a significant impact on the resource due to the wet road conditions. Hunting seasons for elk now last from September 1 until mid-December (fifteen-week period or over 25% of the snow-free year.) Motorized travel on native surface roads cuts through water diversion structures and accelerates erosion. Use during the fall has the biggest impact on road drainage structures due to the presence alternating periods of the snowfall and warm weather.

Dispersed long-term trailer camping continues to be a major concern. In some instances trailers are left unattended for long periods of time and license plates are removed so ownership is difficult to determine. The number of desirable dispersed campsites is limited. Occupancy of these sites for “trailer storage” exacerbates the problem. The creation of new sites and continual use of those adjacent to sensitive riparian environments contributes to water quality problems. It’s recommended the Forest revise the 14-day camping order, implement an intensive education program, determine acceptable limits for dispersed camping, and provide alternatives to facilitate this use.

#### **MONITORING REQUIREMENT—OFF-ROAD VEHICLE DAMAGE**

Evidence of off-road and trail vehicle use is increasing. With the limited number of seasonals funded in the dispersed program, enforcement and contact with ORV users is minimal. Some ORV users refuse to follow regulations. The concept of “unrestricted motorized travel” in the “C” areas encourages new user-created roads. Illegal motorized vehicles causing resource damage is the most frequently cited offense accounting for more than 20% of the total violations issued. The Forest Plan Revision will be addressing this problem.

#### **MONITORING REQUIREMENT—DISPERSED CAMPSITE CONDITION**

Campsite numbers and use of dispersed campsites continues to increase as observed on field reports. Dispersed site inventories were completed on each District; Shell Creek drainage on the Medicine Wheel/Paintrock Ranger District, Goose Creek drainage on the Tongue Ranger District and Tensleep Creek, Powder River, Battle Park, Clear Creek and Crazy Woman Creek on the Powder River District were surveyed. This effort is a cooperative effort with recreation and aquatics. The inventory data will be used to determine future rehabilitation projects for dispersed campsites. Similar inventories are recommended each year with the goal of covering the entire Forest in order to obtain a complete inventory.

#### **MONITORING REQUIREMENT—TRAIL CONSTRUCTION AND RECONSTRUCTION**

The Forest employed a six-person trail crew in 2002. Priority work included reconstruction on trail #200 around Willow Park Reservoir. Work included hauling gravel for fill, tread reconstruction, improving structures, minor relocations, rockwork, etc. Volunteers working with Forest personnel accomplished approximately 25 miles of light trail maintenance on the Tongue Ranger District.

The benefit of involving public volunteers is responsibility and pride of ownership. Sharing trail maintenance techniques, technology and having the opportunity to work with diverse interest groups is of great value to all. However, to meet the FY 2002 and beyond Trail challenges, the Forest must maintain a core number of permanent staff to train and work with volunteer groups. Additionally, the Forest must explore the opportunities of contract work in order to offset the budget challenges of overhead costs and the personnel challenges of Competitive Sourcing.

Approximately 160 miles of Forest trails were surveyed (deferred maintenance condition surveys) this summer. Using this latest survey information, Meaningful Measures spreadsheets were updated. Prioritized segments of trail requiring corrective action were identified.

Critical maintenance needs are increasing yearly. A major problem is improper trail locations such as riparian areas, fall line, and erodible soils. When heavy use occurs in conjunction with poor located trails, rapid trail deterioration occurs. Recreational ATV use on the Bighorn National Forest is increasing rapidly and the associated trails are rapidly deteriorating. Trail erosion with resulting resource degradation is at unacceptable levels.

The Forest is in the process of developing a “Forest Trails Strategy” to prioritize trail construction and annual maintenance needs. This plan will help identify, emphasize, and focus on critical trail related issues.

Deterioration of the Forest Trail system bridges continues and is at a critical stage with several nonstandard bridges collapsing in the last eight years (discussed in the FY96 Trail and Trail Bridge Accomplishment Report). The Forest completed ten trail bridges inspections in FY 2002. The Forest continues to prioritize trail bridge inspections as funding allows in an attempt to manual direction which requires trail bridges be inspected every 4 years.

**MONITORING ADDITION—LAW ENFORCEMENT**

The following table summarizes the number of law enforcement incidents (Incident Reports, Warning Notices, Violation Notices) beginning in 1994. Detailed data on specific types of violations (e.g., timber theft, fire violations, off-road vehicles, etc.) is available at our offices in Sheridan, Wyoming. Reporting incidents is a function of a number of field personnel.

Table 15. Number of law enforcement incidents on the Bighorn National Forest from 1995 to 2002.

Number of	1995	1996	1997	1998	1999	2000	2001	2002
Reported Incidents	622	1066	1215	784	765	*	1250	1703

\* Data for 2000 is not available

Continued monitoring confirms views expressed in earlier monitoring reports. For clarity/understanding and readability the 2000 “Effectiveness Monitoring” section is repeated.

“Lack of funding and personnel are the greatest challenges to providing a quality recreation program on the Bighorn National Forest. Recreation use continues to slowly increase, placing additional demands on resources already taxed to their limits. The use of snowmobiles and ATV’s is becoming more popular. The potential for resource damage is much greater with this equipment. All of these demands call for immediate attention. With a renewed emphasis on collecting and analyzing information on operational costs, we hope that additional funding can be justified. Nevertheless, it appears that the public will be asked to help through an even greater use of volunteer programs and/or through a greater share of their resources by initiating new user fees (similar to the ATV registration law passed in 2001). As stated in previous monitoring reports, management of dispersed recreation is the most important emphasis area for the future.”

### **Validation Monitoring**

Continued monitoring confirms views expressed in earlier monitoring reports. For clarity/understanding and readability the 2000 “Validation Monitoring” section is repeated.

“As the Forest moves forward with new planning efforts, some of the initial flaws in the current plan are being addressed. Previous concerns over use of Recreation Opportunity Spectrum (ROS) guidelines for management areas have been adjusted. Specifically, the building of roads in areas set aside to maintain Semi-Primitive Non-motorized experiences will be the exception in future planning. Changes will be available for public review in the upcoming Forest Plan Revision.”

## **VISUAL RESOURCE**

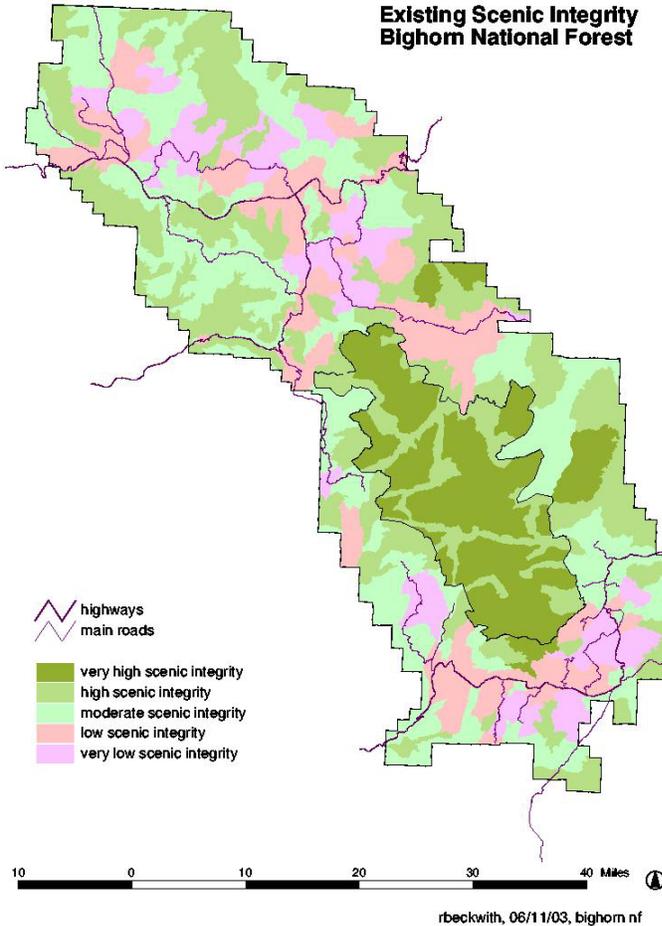
The visual resource of the Bighorn National Forest is managed as one consideration in the development, analysis and execution of projects or activities on the Forest. Management or enhancement of the visual resource has not been identified as part of the purpose and need for any Forest project during the monitoring period (i.e. fiscal year 2001).

A visual quality objective (VQO) inventory for the Forest was completed in 1979. This inventory mapped the relative importance of the visual resource in an area when compared to other forest areas. A new scenic class inventory, based on the Scenery Management System (SMS) was completed in 2002.

## Implementation Monitoring

### MONITORING REQUIREMENT—COMPLIANCE WITH VISUAL QUALITY OBJECTIVES

Monitoring of individual projects for compliance with the applicable standard for visual quality



was suspended this year to focus on a forest-wide inventory of existing scenic integrity. This broad scale map of the existing condition of the Forest's scenery is based on orthographic photo quads and aerial photography and field experience. The inventory includes modifications of scenery through calendar year 2000. Scenic integrity is mapped on a scale ranging from very high scenic integrity in areas unaltered by past management activities and use to very low scenic integrity in areas heavily altered by activities and uses.

Note that this mapping is not site-specific: It classifies large areas of the forest. Many timber management activities occur at this scale. The aggregation of smaller scale development – for example campgrounds, range improvements, and a dense road network in an area – is also considered in mapping at the forest scale.

Figure 6. Existing scenic integrity on the Bighorn National Forest.

Table 16. Scenic integrity levels on the Bighorn National Forest.

	EXISTING SCENIC INTEGRITY (CY 2000) IN ACRES						
	Very High	High	Moderate	Low	Very Low	Unacceptably Low	Total
General Forest Area	27,629	292,266	315,116	170,787	114,782	0	920,579
Wilderness	137,711	54,186					191,897
<b>Forest Wide TOTAL</b>	<b>165,340</b>	<b>346,452</b>	<b>315,116</b>	<b>170,787</b>	<b>114,782</b>	<b>0</b>	<b>1,112,476</b>

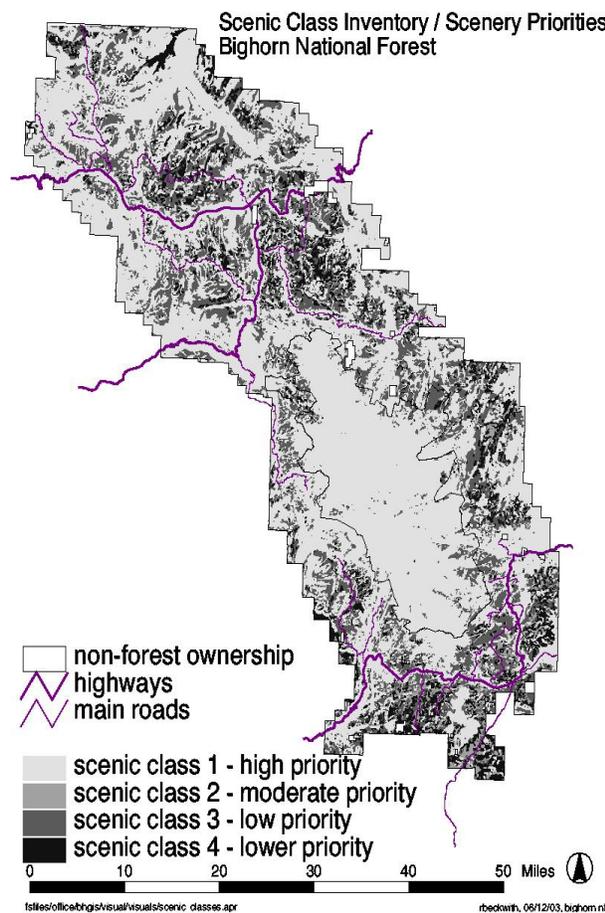
	EXISTING SCENIC INTEGRITY (CY 2000) AS A PERCENT						
	Very High	High	Moderate	Low	Very Low	Unacceptably Low	Total
General Forest Area	3%	32%	34%	19%	12%	0%	100%
Wilderness	72%	28%					100%

Forest Wide TOTAL	15%	31%	29%	15%	10%	0%	100%
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The previous table shows the distribution of forest areas into the five levels of scenic integrity. Nature dominates the scenery in the very high, high and moderate levels of scenic integrity. Seventy percent of the general forest area (i.e. multiple use lands) outside of wilderness, appears natural or only slightly altered. Thirty-one percent of the general forest area appears moderately or heavily altered by management activity, development or use.

### Validation Monitoring

The scenery management system (SMS) inventory process was adopted nationally by the Forest Service in 1995. The SMS system includes the scenic integrity inventory shown above, and the scenic class inventory shown here. They are baseline inventories for use in future planning and monitoring.



The scenic class inventory shows the relative importance of scenery in different areas of the forest. A scale from one to four is shown on the map, where one is the most important scenery and four is the least important scenery. The scenic class inventory is limited to scenery considerations and does not consider the importance of any other resource our use.

In general, areas within a half mile of roads and trails, and areas with steep slopes have a higher priority. Areas with gentle slopes away from roads and trails have lower priorities. Similarly, areas with the most diverse or attractive scenery tend to have higher priority than areas with less varied or attractive scenery. The inventory is suitable for use at the forest plan scale. The limitations of the computerized model suggest that some refinements may be needed to apply this inventory at the project scale.

Figure 7. Scenic class inventory on the Bighorn National Forest.

## WILDERNESS

### PROGRAM SUMMARY

The Bighorn National Forest again funded four seasonal Wilderness Rangers for the field season of 2002. Wilderness use this year was lower than that recorded in 2001 by about

10%. The lower visitation numbers are not attributable to the weather but may be due in part to the down turn in the national economic situation. (65,200 Recreation Visitor Days).

The Forest continues to monitor air quality by intensively sampling water quality in two wilderness lakes. An IMPROVE air monitoring station funded by Wyoming Department of Environmental Quality and operated by a private company is on Hunter Mesa, west of Buffalo, WY. IMPROVE is a nationwide air quality monitoring program to monitor for compliance with the Clean Air Act.

**MONITORING REQUIREMENT—CONDITION OF USE AREAS**

No monitoring for campsite conditions occurred in 2002.

**MONITORING REQUIREMENT—AMOUNT AND DISTRIBUTION OF WILDERNESS USE**

Recreation Visitor Days were estimated at 65,200. Estimate of RVDs is based on mandatory self-issue registration.

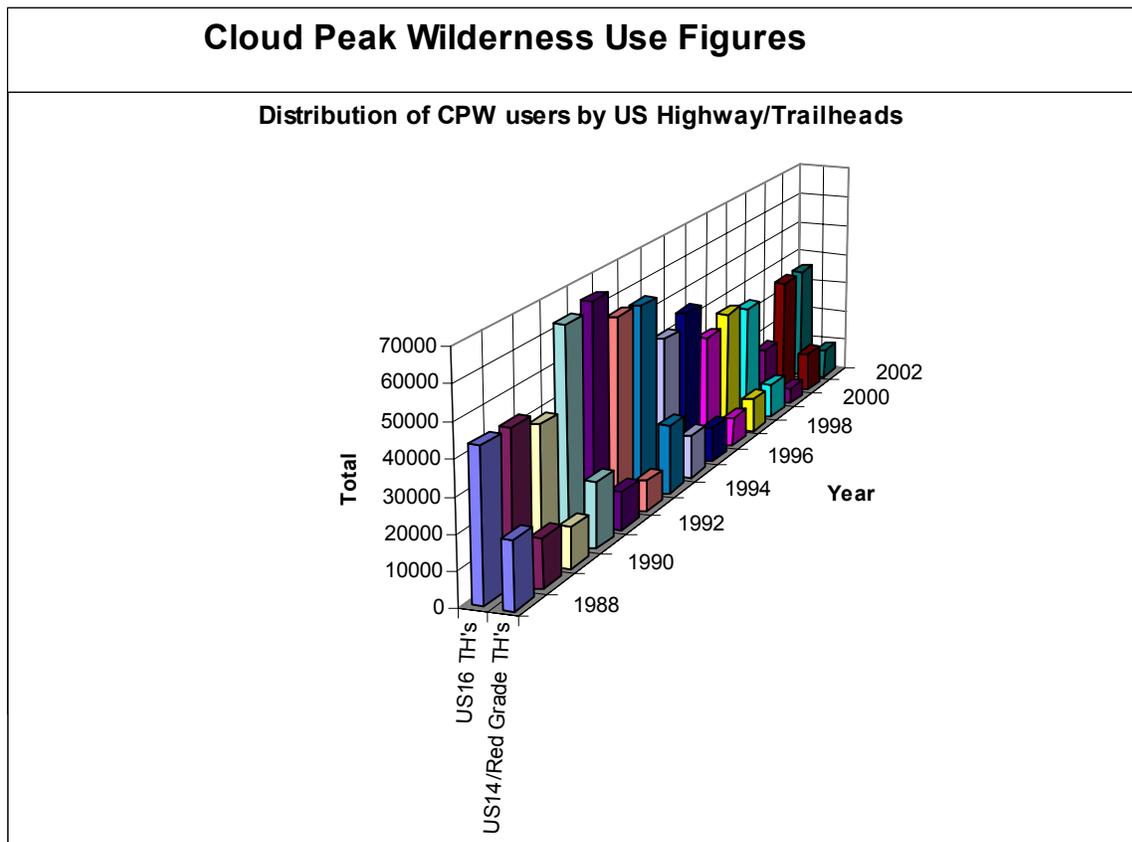


Figure 8. Distribution of Cloud Peak Wilderness users.

Due to the ease of access present from US 16, over 80% of the visitors enter the Cloud Peak Wilderness from southern access points.

## Effectiveness Monitoring

No change from 2001.

## Validation Monitoring

New standards and guidelines established by the Forest Plan Amendment (1998) have been implemented and more effectively show use and resource impact trends.

## RECOMMENDATIONS

The following recommendations have been made by individual specialists and/or the staff officer for that resource. The disposition column indicates the Forest Supervisor's planned action on whether to adopt the recommendation, defer it for some future time, or consider otherwise as described. Although every effort will be made to implement the adopted recommendations, some may not be accomplished due to changing future priorities.

Recommendation	Disposition	Track <sup>14</sup>
<b>Facilities</b>		
1. Emphasis should be placed on maintaining the portions of existing infrastructure needed for long term Forest management.	We will do this.	Yes
2. The roads and buildings that are no longer needed or those that have inadequate funding to maintain them should be identified for disposal.	We will do this, as appropriate, using the NEPA decision process, including public involvement.	
3. Maintenance responsibilities should be shifted to permittees and other users where appropriate.	We will do this.	Yes
4. A Capital Improvement Program should be developed to address the problems of worn out roads and obsolete buildings.	This is not a priority for the immediate future.	
5. Infrastructure management tools such as databases, Geographic Information Systems, and Maintenance Management Systems should be incorporated into a unified system and kept current to aid in the ongoing evaluation and management of the Forest Service infrastructure.	To the extent the Forest can affect this, we will. Many databases are managed at the regional or national level.	

<sup>14</sup> This item will continue to be tracked in the next annual monitoring report.

Recommendation	Disposition	Track <sup>14</sup>
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**Forest Vegetation**

- |   |   |            |
|---|---|------------|
| <p>1. The Forest must emphasize the process of assuring adequate regeneration on regeneration treatments, including aspen regeneration and non-traditional treatments treatments, including prescribed fire. Suitability for timber production of forested lands should be reviewed in all NEPA documents where treatment of woody vegetation is proposed.</p>  | <p>This is a requirement in the silvicultural handbook, FSH 2409.26, and it is the Forest’s policy to follow that direction.</p>                                    |            |
| <p>2. Update silviculture standards and guidelines to those previously listed in the Regional Guide for regeneration, size of created openings, size of uncut areas between created openings, when a created opening will no longer be considered an opening, guidelines that provide direction for the use of landscape level management, and guidance for applying silviculture systems to the landscape.</p> | <p>The Regional Guide has been discontinued. The silvicultural standards and guidelines will be updated in the Revised Forest Plan.</p>                             | <p>Yes</p> |
| <p>3. Emphasize the importance of requiring silvicultural prescriptions for all vegetative manipulation.</p>  | <p>This is a requirement in the silvicultural handbook, FSH 2409.26, and it is the Forest’s policy to follow that direction.</p>                                    |            |
| <p>4. Include in the program budget adequate funding for TSI thinning and release, and reforestation both from sale area receipts and appropriated funds.</p>   | <p>Budget priorities are set annually based on multiple resource needs and resource availability.</p>   |            |
| <p>5. Maintain and validate the “needs” reporting in RMRIS for reforestation, release, and thinning. This can be a valuable tool to monitor the regeneration activities on the Forest, but it must be maintained to be effective.</p>   | <p>I agree this is an important tool, and the timber/resource shops should prioritize this work, as appropriate, with other work needs and resource capability.</p> |            |
| <p>6. Review the projected mortality volume estimates from the 1985 Forest Plan. Current output is 187% of projected amount. A determination should be made to see if by</p>  | <p>This is being done currently through the effects analysis in forest plan revision.</p>   | <p>Yes</p> |

Recommendation	Disposition	Track <sup>14</sup>
<p>exceeding this output we are doing so at the detriment of other resource objectives, or if the projections were inaccurate.</p>		
<p>7. Require that all quantifiable outputs be reported through the Forest database. This would ensure tracking of our accomplishments and accountability of their completion.</p>	<p>I agree this is an important tool, to the degree these databases are functional and help us accomplish our mission of caring for the land and serving the people. The timber/resource shops should prioritize this work, as appropriate, with other work needs and resource capability.</p>	
<p>8. Standards and guidelines need to be reviewed and Forest-wide interpretation documented, so they can be applied consistently and in consort with objectives, and outputs adjusted accordingly.</p>	<p>This is being done through forest plan revision. We will not do this for the 1985 plan with is in the 18<sup>th</sup> year of implementation.</p>	<p>Yes</p>

**Heritage Resources**

<p>1. The Forest Plan needs to be amended to address changes necessary in the management of the heritage resource. More specific statements in the "General Direction" and "Standards and Guidelines" sections of the Plan relating to existing laws and procedures need to be included. The Forest Plan should reflect a 1988 Amendment to the Archaeological Resource Protection Act, Section 14(b) that requires the preparation of a schedule for surveying lands that are likely to contain the most scientifically valuable archaeological resources.</p>	<p>This is being addressed in forest plan revision. The existing and revised forest plans include, by reference, all applicable laws. We will manage the Bighorn National Forest in accordance with those laws.</p>	<p>Yes</p>
<p>2. The Forest Plan needs to ensure that aerial spraying to control pests and noxious weeds not be conducted without protective measures in areas containing petroglyphs and pictographs, or in un-inventoried areas containing rock outcrops, cliff faces, or rock overhangs. Recent advances in analytical techniques allow for the dating of petroglyphs and pictographs through sensitive chemical ratios.</p>	<p>A forestwide guideline to this effect will be added to the draft Revised Forest Plan.</p>	<p>Yes</p>

Recommendation	Disposition	Track <sup>14</sup>
3. The Forest needs to incorporate a paleontological resource management program.	The draft Revised Forest Plan goals, objectives, standards, and guidelines include direction for paleontological resources. The Bighorn National Forest will continue to manage this resource for protection for the foreseeable future, rather than engage in an active management program.	Yes
4. The Forest should enter into an agreement with the Wyoming State Historic Preservation Office that deals with the acceptance of impacts to all but the best examples of resource types (e.g., the best tie-hack cabins; the best teepee ring sites). The end result of the agreement would be a reduction in costs.	There is interagency work being done on this potential Memorandum of Understanding (MOU).	Yes
5. With the implementation of the new regulation, 36 CFR 800, the Forest needs to amend the Forest Plan or enter in agreements with Indian tribes, defining how the Forest will consult with tribes.	The Bighorn National Forest has, and will continue to, engage in active consultation with Indian tribes. The draft Revised Forest Plan included additional direction on this topic (as compared to the 1985 Plan).	Yes
6. The Forest Plan emphasizes the management of Heritage Resources in relationship to Section 106, of the National Historic Preservation Act. The Forest Plan needs to incorporate direction to cover all pertinent laws, such as Native American Graves and Repatriation Act, and Preservation of Historical and Archeological Data, as well as other federal direction that carries the weight of law, such as Executive Order 13007.	The Bighorn National Forest has, and will continue to, follow the National Historic Preservation Act. The draft Revised Forest Plan includes additional direction compared to the 1985 Forest Plan on this topic.  A forest plan will remain subordinate to applicable laws regarding National Forest management.	

Recommendation	Disposition	Track <sup>14</sup>
<b>Insects and Disease</b>		
<p>1. It is recommended that the Forest, through the Forest Health Management Service Center in Rapid City, continue to schedule a Forest flight for pest activity every third year (the next flight should be scheduled for 2004).</p>	<p>Project prioritization will be set annually through project work planning, which is based on multiple resource needs and resource availability. The flights have been occurring in the past.</p>	
<p>Further, it is recommended that the monitoring requirement currently in the Forest Plan be changed to reflect surveys every three years and spot surveys as needed, rather than the 800,000 acres each year.</p>	<p>The recommendation for monitoring requirement is included in the draft Revised Forest Plan.</p>	Yes
<p>2. The Forest should continue to monitor the mountain pine beetle, and work with effected communities and adjacent landowners. Because of limited access to infected federal lands, there may be few opportunities for preventative actions and salvage on the Bighorn National Forest.</p>	<p>This has been done in the past and will continue to be done.</p>	
<p>3. If infection levels of white pine blister rust become unacceptable to forest managers, then suppression efforts could be used to reduce the disease incidence in these areas. Thinning limber pine stands to reduce susceptibility to mountain pine beetle (<i>Dendroctonus ponderosae</i>), and regeneration of limber stands may assist in reducing white pine blister rust infection. This may also help mitigate some of the harsh conditions of limber pine sites, promote tree growth, and improve resistance to white pine blister rust disease. In addition, the Forest should begin to collect seed from phenotypic resistant limber pine for storage in the seed bank and later restocking of effected sites.</p>	<p>Monitoring will continue to occur. Project prioritization will be set annually through project work planning, which is based on multiple resource needs and resource availability.</p>	
<p>4. It is further recommended that the Forest continue to work with the Rapid City Forest Health Management Center in monitoring to determine the extent of known populations of insects and diseases of the Forest.</p>	<p>This has been done in the past and will continue to be done.</p>	

Recommendation	Disposition	Track <sup>14</sup>
<b>Recreation</b>		
1. Ensure that mitigation measures are carried out during project implementation.	This has been done in the past and will continue to be done. Monitoring this implementation item will continue.	
2. Adjust and clarify both capacity figures and ROS guidelines in the Forest Plan.	The Forest is scheduling a capacity study for FY 2004. ROS guidelines are being addressed in the draft Revised Forest Plan.	Yes
3. Initiate an intensive education and law enforcement program of off-road vehicle use and dispersed camping. Consider the elimination of off-road vehicle areas (“C” areas on our Forest maps).	Education and law enforcement have been ongoing and will continue to be done. The draft Revised Forest Plan includes direction for eliminating “C” areas. Travel planning on the Powder River Ranger District is being conducted to continue providing for motorized recreation in one of the affected “C” areas.	Yes
4. Develop strategies for collecting reliable recreation use statistics and in defining recreation resource assets.	Project prioritization will be set annually through project work planning which is based on multiple resource needs and resource availability.	Yes
5. Secure more staff time and outside Forest/Agency involvement in monitoring.	Concerning staff time, project prioritization will be set annually through project work planning, which is based on multiple resource needs and resource availability. Concerning outside agency involvement, this has been a priority for all National Forests, and opportunities to do this will be pursued as they arise.	

Recommendation	Disposition	Track <sup>14</sup>
6. Recognize that personal perceptions, needs, and values are a part of ecosystem management.	Personnel on the Bighorn National Forest have recognized this for several decades and will continue to do so.	
7. Apply land management prescriptions to larger blocks of land in future planning.	This recommendation has been adopted in the draft Revised Forest Plan.	Yes
8. Ensure adequate funding for trail maintenance and other Forest recreation programs.	Project prioritization will be set annually through project work planning, which is based on multiple resource needs and resource availability.	
9. Place more emphasis on development of partnerships and the use of volunteers to accomplish objectives.	Personnel on the Bighorn National Forest have recognized this for several decades and will continue to utilize volunteers as opportunities coincide with management objectives.	

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**Soil and Water**

1. Ensure that all aspects of project decisions are identified and funded through the annual budget process. This should include monitoring activities for the soil and water resources. Periodic project reviews should be conducted to ensure NEPA decisions are being implemented in whole.	It is the intent of Bighorn NF management that every project decision is fully implemented, including mitigations and monitoring. Periodic project reviews are being conducted annually. The 1985 Forest Plan and draft revised Forest Plan monitoring section includes this direction.	Yes
2. Continue to establish Best Management Practices during project design and then assure they are properly implemented and maintained.	This has been done in the past and will continue to be done. The 1985 Forest Plan and draft Revised Forest Plan monitoring section includes this direction.	

Recommendation	Disposition	Track <sup>14</sup>
3. Emphasize soil and water protection measures during project design and implementation. Ensure that monitoring of projection measures is conducted on a regular basis.	This has been done in the past and will continue to be done. The 1985 Forest Plan and draft Revised Forest Plan monitoring section includes this direction.	
4. Increase emphasis on monitoring of special use permits related to water conveyance systems, septic systems, and instream flows.	This has been done in the past and will continue to be done. The degree that this work is increased will depend upon annual project prioritization and work planning, which is based on multiple resource needs and resource availability.	Yes
5. Conduct landscape scale analyses in order to assess the existing conditions within large watersheds on the Forest.	This has been done in the past and will continue to be done.	

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**Wildlife**

1. For habitat improvement projects, focus priorities on achieving landscape scale improvements in big game winter range, aspen, or riparian areas.	Project prioritization will be set annually through project work planning, which is based on multiple resource needs and resource availability.	
2. Achieve greater diversity in stand structure in conifer stands, particularly pole sized lodgepole pine stands.	Project prioritization will be set annually through project work planning, which is based on multiple resource needs and resource availability.	
3. Take advantage of opportunities for prescribed burns, particularly with regards to partners such as RMEF or others. Smaller scale projects in aspen and riparian are similarly possible with partners.	Project prioritization will be set annually through project work planning, which is based on multiple resource needs and resource availability.	

Recommendation	Disposition	Track <sup>14</sup>
4. To create diversity, employ commercial timber harvest in conifer stands labeled as suitable timber.	This has been done in the past and will continue to be done. Diversity in non-suited areas can also be improved through commercial timber harvest, prescribed fire, or other means.	
5. Close roads in areas of high road density to allow improved wildlife use of an area. Both seasonal and permanent road closures should be considered.	This recommendation will be considered on a site-specific project basis and will be implemented to the degree it meets the forest plan objective for the area.	Yes
6. Conduct owl surveys and additional cave surveys (bats) to improve information on these sensitive species.	This has been done in the past and will continue to be done.	
7. Focus future inventory efforts on invertebrate and mollusk species, for which very little information is known for the Forest.	Project prioritization will be set annually through project work planning, which is based on multiple resource needs and resource availability. Species monitoring occurs every year, and these species will be recommended for prioritization by the resource specialists in future years.	
8. Inventory for old growth conifer to ascertain the current amount and/or the amount needed in the future.	This has been done in the past. This is being done in fiscal year 2003 and will be done in the future.	
9. Continue to refine existing avian monitoring for MIS species and others.	This is being done in fiscal year 2003 and will be done in the future.	

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