

FY 2012 Monitoring and Evaluation Report

Bighorn National Forest



Above Bull Creek (L. Walters-Clark)

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, DC 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

CERTIFICATION

The Revised Bighorn National Forest Land and Resource Management Plan Record of Decision (ROD) was signed September 30, 2005. The forest plan is a dynamic document, subject to change based on annual monitoring and evaluation as we implement. Through monitoring, we determine whether the plan is sufficient to guide management for the subsequent year or whether the plan or our management actions should be modified.

I have reviewed the fiscal year (FY) 2012 annual monitoring and evaluation report for the Bighorn National Forest. I believe the results of monitoring and evaluation for FY 2012 meets the intent of chapter 4 of the forest plan and of 36 CFR 219.11. I also believe the monitoring and evaluation requirements in chapter 4 have been met, and the decisions made in the forest plan are still valid.

Beginning this year, I assigned several forest specialists to a Monitoring Team. This team is responsible for review of this monitoring report and making recommendations to me regarding any changes to the forest plan. The team will also provide me with interdisciplinary review of this report and analysis of how well we are meeting expected outputs. That information will become a part of the monitoring report starting in fiscal year 2013.

/s/ William T Bass

WILLIAM T. BASS
Forest Supervisor

May 30, 2013

Date

Table of Contents

Overview of the monitoring process _____	1
Overview of goals and objectives _____	2
Attachment A – 2012 Monitoring Table _____	3
Appendix A – Narrative Description of Monitoring Items _____	25

2012 Monitoring and Evaluation Report Overview of the Monitoring Process

This report contains the annual monitoring conducted in 2012. It is important to understand there are monitoring items that are on a 3, 5 and 10 year schedule. Only those items due 2012 are included in this report. Monitoring results are reported in Attachment A – the Monitoring Table. The following discussion is an overview of the monitoring process used on the forest.

Monitoring and evaluation are important parts of implementing the forest plan. When the plan was revised in 2005, four steps for successful monitoring were established:

- 1) setting priorities for monitoring items so budgeting could focus on the highest priority,
- 2) identifying who would be responsible for the monitoring items and who potential cooperators might be,
- 3) evaluating the collected data, and
- 4) publishing the data in a report.

Monitoring is the collection of data and information; evaluation is the analysis of the collected data and information. Evaluation answers the monitoring questions, determines whether forest plan revision or amendment is warranted, and shows whether plan implementation should be modified.

Monitoring and evaluation are the backbone of adaptive land management, and there are three primary parts. The first part is making sure the forest plan is being followed during

project planning and implementation. That is *implementation monitoring*. Another part is regularly checking in with forest plan objectives to see how well they are being achieved – *effectiveness monitoring*. *Validation monitoring* is done to determine if forest plan expectations and assumptions still hold true.

The desired conditions for the forest are described in three-tiered hierarchy of goals, objectives, and strategies. The four main goals (see page 2) are the basis for the development of the objectives, and each objective has specific strategies.

The monitoring strategy for the Bighorn National Forest looks at all the forest plan objectives and strategies using the three types of monitoring. Some monitoring is done annually; other monitoring is done less frequently – every two, three, five, or ten years, for example.

Implementation Monitoring

Is forest plan direction being followed during project planning and implementation?

Effectiveness Monitoring

Are management activities effective in achieving forest plan goals, objectives, and strategies?

Validation Monitoring

Is there a better way to meet forest plan goals and objectives and achieve desired conditions? Is there a need to change or amend the forest plan?



So, how do the three types of monitoring and the goals and objectives all fit together? Implementation monitoring focuses on projects, while effectiveness and validation monitoring tie to the objectives listed above. The following sections present the three monitoring approaches and summarize what we have learned from the monitoring.

Implementation monitoring focuses on the projects the forest analyzed and/or implemented in 2012.

The *Effectiveness Monitoring* section summarizes monitoring for the eleven objectives. Specific monitoring for the objectives and all their strategies is discussed in the monitoring table (see attachment A). The section on *validation monitoring* reports any changes that have taken place since the forest plan was revised in 2005 and discusses how those changes impact our assumptions, desired conditions, and direction.

Attachment A

2012 Monitoring Table

General Discussion	4
Aquatics Discussion.....	6
Wildlife Discussion.....	7
Fire and Timber Discussion.....	9
Timber Discussion	10
Invasive Species Discussion	11
Recreation Discussion.....	12
Wilderness Discussion	13
Heritage Resources Discussion.....	15
Livestock Grazing Discussion	17
Paleontology, Minerals Discussion.....	19
Scenery Resources Discussion.....	20
Facilities/Infrastructure Discussion	21
Soil Discussion	23
List of contributors.....	24
Appendix A – Narrative description Monitoring Items.....	25

Monitoring Results

The following table takes the annual monitoring items from chapter 4 of the revised forest plan and lists them by the resource areas to which they apply.

Effectiveness, implementation, and validation monitoring items are described for each resource. In doing this, the numbering system derived for the forest plan is out of sequence.

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	General Discussion
Implementation Monitoring – Are projects being implemented according to Forest Plan direction?			
1. NFMA; Multiple Goals, Objectives, Strategies	Are projects being implemented according to Revised Plan direction? This includes both planned actions and actual implementation.	Select at least one NEPA project, and conduct a thorough review of all resource areas to see if Revised Plan strategies, management prescription desired conditions, standards, and guidelines were followed and if the treatment/project was effective to improve land management. Monitor annually	The Environmental Assessment for the relocation of West Tensleep and Deer Park CGs was completed in May of 2012. The document was reviewed for forest plan consistency.
Notes: Priority projects include prescribed fire, timber harvest, travel management and dispersed recreation, and livestock grazing (these are major revision or implementation topics).			
2. Objective 2a, Strategy 8 Objective 4c, Strategy 4	How well is the Forest interacting and planning in cooperation with communities and local governments?	Narrative summary of grants and agreements; meetings and coordination efforts with local governments and communities. Narrative summary of pre-project collaborative planning. Narrative summary of bi-annual monitoring meetings. Monitor annually	27 grants and agreements were maintained. See appendix A for a complete description of these coordination efforts. Two steering committee meetings were held: one in April and the other in August. See Appendix A for a complete description of these meetings. District Rangers met with their respective county commissioners several times throughout the year. At least once during the year they met with Congressional staffers.

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	General Discussion
2. Objective 2a, Strategy 8 Objective 4c, Strategy 4 Cont.			Communities and volunteer contributions to the recreation and trails program = 10,011 hours valued at \$188,817 on 22 different recreation or trails program projects. For specific information, see appendix A.
4. Objective 3a	Is the Bighorn National Forest assisting in building the capacity of Tribal governments, rural communities and private landowners to adapt to economic, environmental, and social change related to natural resources?	1. Summary of financial and technical assistance provided to local communities and natural resource based businesses to pursue self-sufficiency and sustainability. Monitor annually	In FY 2012, the forest contributed approximately \$532,385 toward grants and agreements. 100% went toward local communities and natural-resource-based businesses.
		2. Summary of Bighorn National Forest enhancement of communities' capacities to reduce wildfire risk. Monitor annually	The forest participated in meetings, with committees, and jointly implemented fuels reduction projects (see appendix A). The State and Private Forestry program awarded fewer grants to local counties for hazardous fuel treatments due to reduced funding. The program is administered by the Regional Office. See appendix A for a description of the projects.

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Aquatics Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
5. Objective 1a Strategy 1	Is water quality on the Forest being maintained according to state water quality standards?	1. Coordinate with Wyoming Department of Environmental Quality (WYDEQ) and other stakeholders, to develop a water quality monitoring plan for streams identified in the 305(b) Report and 303(d) List of Impaired Streams. Monitor annually	The 2012 WYDEQ 305(b) and 303(d) integrated report listed the North Tongue River, Granite Creek, and North Fork of Crazy Woman Creek (NFCW Creek) as Category 5 waters with use(s) impaired. Specifics of this report can be found in appendix A.
6. Objective 1a Strategy 2	Were watershed improvement projects completed?	Summarize number and type of watershed improvement projects. Identify what percentage of the watershed or length of stream reach has been treated. Monitor annually	Six watershed improvement projects were completed in 2012 in four 6 th level HUC watersheds. Project specifics can be found in appendix A.
8. Objective 1a Strategies 4 – 7		2. Summarize results of habitat improvement projects (acres/miles) by watershed. Monitor annually.	Over 15.5 miles of fish habitat was improved in South Paintrock Creek watershed and North Tongue River watersheds. See appendix A for a description of the projects.
Validation Monitoring- Are the desired conditions, objectives, and assumptions made in the Forest Plan correct?			
40. Objective 1a, Strategy 1	Are best management practices (BMPs) effective in meeting water quality standards?	Conduct long-term best management practice effectiveness studies according to study plans for specific BMPs coordinated across the forest. Monitor annually	Livestock grazing BMP reviews were conducted in two pastures: Bull Creek Pasture in the North Tongue Allotment (Tongue Ranger District) Poison Creek pasture in the Poison Creek Allotment (Powder River Ranger District).

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Aquatics Discussion
40. Objective 1a, Strategy 1 Cont.			Erosion and sediment control BMPs were successfully implemented by the engineering road crew on various projects. Some short term exceedances for sediment did occur in Soldier and Buckskin Ed Creek, but these had prior approval by WDEQ.

Notes: Examples include stability and effectiveness of stream buffers, road drainage structure operations and maintenance, soil disturbance and downstream aquatic habitat effects in harvested versus non-harvested areas, effectiveness of stream protection to minimize sediment delivery to fish streams. Annual status reports to be completed.

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Wildlife Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
Note: Many items depend on coordination with Wyoming Game and Fish Department and reliance on their population/harvest data for big game and fish species.			
9. NFMA Species Viability Objective 1b Strategies 1 – 5	Is the Bighorn National Forest providing the ecological conditions to sustain viable populations of native and desired non-native species and to achieve objectives for Management Indicator Species (MIS)?	1. Number of conservation strategies developed or implemented. Monitor annually 2. Acres/miles of species at risk habitat restored or improved by Forest Service management or permitted activities. (all acres are approximate) Monitor annually	No new strategies were developed or implemented in 2012. 32 miles of native Yellowstone cutthroat trout (YTC) habitat was improved. 4038 acres of species at risk habitat were improved. See appendix A for projects specifics.

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Wildlife Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
9. NFMA Species Viability Objective 1b Strategies 1 – 5		3. Acres/miles of species at risk potential habitat inventoried and / or number of populations discovered. Monitor annually	<p>PLANTS</p> <p>Wyoming Natural Diversity Database (WYNDD) submitted a report of fen habitat on the BNF: <i>Status Report on Sensitive Plant Species of Fen Habitats</i>. This report found three R2 sensitive species not previously known on the forest.</p> <p>Specific survey information can be found in appendix A.</p> <p>WILDLIFE</p> <p>21600 acres of bighorn sheep habitat was inventoried 2241 acres of Peregrine Falcon habitat was inventoried 2137 acres of Northern Goshawk habitat was inventoried 8 miles of stream was inventoried</p>
		4. Acres/miles of species at risk occupied habitat and/or populations discovered. Monitor annually	<p>21600 acres of bighorn sheep occupied habitat was inventoried</p> <p>Amphibians – two new populations of Columbia spotted frog discovered.</p>
		6. Number of species or habitat monitoring programs established or implemented, including cave management and Research Natural Area (RNA) management plans. Monitor annually	None

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Fire and Timber Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
11. Objective 1c Strategies 1 – 7		9. Acres of fuel reduction accomplished in Fire Regimes I, II, and III. Monitor annually.	1,162 acres The primary emphasis of this activity continues to be near developments (structures) to better protect them in the event of wildfire, through commercial timber sales and contracted hand removal (piling and burning) of fuels. The forest also conducts prescribed burning in sagebrush and mixed conifer stands to promote resilience to wildfire.

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Timber Discussion																			
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?																						
27. Objective 2c Stewardship Strategy 1	Is the Bighorn National; Forest utilizing stewardship contracting appropriately? Is stewardship contracting a benefit to local communities?	Narrative summary of stewardship contracts utilized compared to the opportunities and other tools used. Estimate benefits to communities. Monitor annually.	No stewardship contracts were offered in 2012.																			
29. Objective 2c Timber Strategies 1, 2, 3	Is the Bighorn National Forest providing the desired level of uses, values, products and services of wood products?	<p>Forest product outputs in CCF and approximate MMBF, including:</p> <ul style="list-style-type: none"> Sawtimber (7" +) Roundwood (5-6.9"), personal use fuelwood, other vegetation management (POL) Other Vegetation Management (OVM) <p>Allowable sale quantity</p> <ul style="list-style-type: none"> Christmas trees Special forest products <p>Monitor annually</p> <p>See appendix A for trend tables that compare actual to expected.</p>	<p>Total Volume Sold FY 12 (CCF)</p> <table border="1"> <thead> <tr> <th>Product</th> <th>CCF</th> </tr> </thead> <tbody> <tr> <td>Sawtimber</td> <td>293</td> </tr> <tr> <td>POL</td> <td>2945</td> </tr> <tr> <td>Amount of sawtimber from OVM</td> <td>293</td> </tr> <tr> <td>PUF*</td> <td>2628</td> </tr> </tbody> </table> <p>*PUF = personal use firewood</p> <p>Christmas Trees (CT) and Special Forest Products (SFP)</p> <table border="1"> <thead> <tr> <th></th> <th>#trees or # permits</th> <th>% of projection</th> </tr> </thead> <tbody> <tr> <td>CT</td> <td>1,948</td> <td>93%</td> </tr> <tr> <td>SFP</td> <td>3,020</td> <td>100%</td> </tr> </tbody> </table>	Product	CCF	Sawtimber	293	POL	2945	Amount of sawtimber from OVM	293	PUF*	2628		#trees or # permits	% of projection	CT	1,948	93%	SFP	3,020	100%
Product	CCF																					
Sawtimber	293																					
POL	2945																					
Amount of sawtimber from OVM	293																					
PUF*	2628																					
	#trees or # permits	% of projection																				
CT	1,948	93%																				
SFP	3,020	100%																				
<p>Notes: The Revised Plan projected the following outputs annually:</p> <ul style="list-style-type: none"> Sawtimber (7" +): 10,688 CCF, (3.9 MMBF) Roundwood (5-6.9"): 1,693 CCF, (0.6 MMBF) Personal Use Fuelwood: 3,000 CCF, (1.5 MMBF) Other Vegetation Management: 3,550, (1.3 MMBF) 		<ul style="list-style-type: none"> CCF = 100 cubic feet MMBF = million board feet Allowable Sale Quantity: 27,183 CCF, (9.8 MMBF) Christmas Trees (number sold): 2,100 trees Special Forest Products: 3,000 permits 																				

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Invasive Species Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
12. Objective 1.c Invasive Species Strategy 2	How many acres of priority noxious weeds have been treated this year by what means?	Acres of priority weeds and method(s) Monitor annually	33 acres were treated using mechanical and chemical methods See appendix A for list of priority weeds.
	How many total acres of noxious weeds have been treated this year?	Acres of noxious weeds Monitor annually	820 acres were treated
	What prevention activities and cooperative efforts have been implemented during the past year?	Narrative description Monitor annually	The primary weed control method of treatment is through cooperative agreements with Big Horn, Johnson, and Washakie counties. Specific information is discussed in appendix A.
			The exotic white pine blister rust (<i>Cronartium ribicola</i>) or WPBR continues to expand its range in the native limber pine (<i>Pinus flexilis</i>) stands resulting in the pines decline and death. Because 2012 was not a good seed year for limber pine no collections were made to stockpile seed for future plantings. Recent research from the Forest Health Management office in Rapid City has shown that stand density is a factor in resistance against both WPBR and mountain pine beetle (<i>Dendroctonus ponderosae</i>).

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Recreation Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
17. Objective 2a, Strategies 5, 6, 9, 10, and 12 Objective 4a, Strategy 1	Is an adequate range of travel opportunities being offered across the Forest?	2. Number of travel management plans completed. Monitor annually	No new travel management plans were initiated or completed in 2012.
Notes: Studying use and projected demand should assist in future project planning to provide multiple benefits to multiple people. Vegetation within developed facilities (e.g., campgrounds) contributes substantially to the recreation setting. Attaining desired conditions and monitoring results will protect these values over the life of the facility.			
39. Objective 2c, Tourism and Recreation Strategy 1 Objective 3b, Strategy 3	Are research, education, and interpretation activities being conducted and in conjunction with partners?	Number of educational presentations, research projects, agreements, or activities conducted with and for others. Identify by resource function. Monitor annually	57 presentations; 1 research project; over 600 wilderness public education contacts and over 113,000 visitors to visitor centers. See Appendix A for numbers and attendance of conservation and education outreach activities.

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Wilderness Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
18. Objective 2b, Wilderness Strategies 2 – 5	What level of crowding occurs on trails? Does the wilderness provide opportunities for solitude?	Report number and type of users by trailhead, law enforcement contacts, and educational presentations. Monitor annually	<p>To document the level of crowding the Wilderness rangers collect formal encounter monitoring data.</p> <p>2012 encounters per day in the Cloud Peak Wilderness (CPW) for trailed areas were 8.0 and for the trailless areas encounters were 0.0. The Forest Plan guideline for trailed areas is 10 per day and for trailless it is less than 2 per day.</p> <p>Users by travel method and trailhead – See appendix A for this monitoring item.</p> <p>Law enforcement contacts are also reported in Appendix A.</p> <p>Educational presentations: 155 participants in the Leave No Trace program; be it self-study or in person.</p> <p>In addition to personal contacts for Leave No Trace orientation, an additional 3000+ contacts were made with the required registrations for groups visiting the Cloud Peak Wilderness.</p>
	Are special exceptions affecting the wilderness resource?	Report the number and type of special exceptions to limited activities Monitor annually	<p>One motorized exception was authorized during FY 2012.</p> <p>One helicopter landing was conducted under the Memorandum of Understanding to rescue a severely injured hiker on July 20, 2012 near Mirror Lake.</p>
Notes: Monitoring may indicate if a limited permit system or other restrictions are necessary.			
19. Objective 2b Wilderness Strategy 1	Is air and water quality being improved, maintained or degraded in the	1. Coordinate collection and analysis of IMPROVE ¹ data (or subsequent protocols) on air quality.	No change from FY 2011. The state of Wyoming Department of Environmental Quality continues to operate an IMPROVE station on Hunter Mesa. This is used to

¹ Interagency Monitoring of Protected Visual Environments (IMPROVE)

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Wilderness Discussion
	Cloud Peak Wilderness, and on the Forest as a whole?	Monitor annually	monitor effects of energy development occurring in the Powder River Basin and general effects to air quality in the Cloud Peak Wilderness from upwind development activities. Data from this station can be viewed or downloaded at WDEQ's Air Quality Monitoring Website (http://www.wyvisnet.com/plot.asp).
19. Objective 2b Wilderness Strategy 1		2. Collect and analyze alpine lake water samples for information on air and water quality. Apply quality assurance protocol. Monitor annually	Three samples were taken from Emerald Lake and Florence Lake during the summer of 2012. The sample analyses had not been received at the time of report preparation. Quality assurance is conducted by the Rocky Mountain Research Station in Fort Collins, CO.
		3. Review state air quality data for incidences of impairment in relation to Forest activities. Monitor annually	No incidences of impairment were reported by WDEQ and Forest activities were such that they did not instigate data reviews in 2012.
		4. Prepare summary of annual compliance and identify needed improvements. Monitor annually.	A summary of 2012 air quality data has not been received at the time of report preparation. An overall review of air and water quality will be conducted in 2013 after receiving an analysis of the water chemistry from the Rocky Mountain Regional Office.
20.	This Monitoring Driver was a duplicate of #18. The number has been retained to avoid renumbering all subsequent monitoring drivers.		

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Heritage Resources Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
21. Objective 2b Heritage Strategy 1	Have programmatic agreements for heritage resources been negotiated and implemented for Forest programs?	3. Summarize if terms of agreements are being met. Monitor annually	Terms of the Wyoming Forests Programmatic Agreement with WY-SHPO care being met. The Forest will attend the annual P.A. monitoring meeting in April of 2013 and obtain refresher training for participation in the agreement. For the Medicine Wheel HPP agreement Monitoring meetings were held with the consulting parties in July and August at the Medicine Wheel and in December in Billings, Montana.
22. Objective 2b Heritage Strategy 2	Is the Bighorn National Forest preparing and implementing Historic Preservation Plans?	Number of plans completed and implemented. Monitor annually	Currently implementing the Medicine Wheel National Historic Landmark revised nomination including the initiation in 2012 of a mineral withdrawal request within the revised NHL boundary. .
23. Objective 2b Heritage Strategy 3	What progress has the Forest made for inventorying areas having a high probability for heritage resources?	1. Acres inventoried. Monitor annually	Total acres inventoried in FY 2012 = 678 Cumulative acres inventoried since 2005 = 15,111
		2. Number of new sites evaluated. Monitor annually	Forest total = 3
		3. Number of backlogged, unevaluated sites that have been evaluated. Monitor annually	Forest total = 5
23. Objective 2b, Heritage Strategy 3, cont.		4. Number of sites evaluated sent to the state National Register of Historic Places. Monitor annually	Forest total = 8

Notes: Related to Section 110 of the National Historic Preservation Act.

	Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Heritage Resources Discussion
24.	Objective 2b Heritage Strategy 4	Is the Forest meeting its consultation responsibilities for American Indian traditional cultural properties?	1. Number of sites identified. Monitor annually	One site, Medicine Wheel / Medicine Mountain NHL was monitored an average of twice a month for the summer season.
			2. Number of sites consulted on. Monitor annually	Forest total = 2
Notes: Includes responsibilities under Sections 110 and 106 of the National Historic Preservation Act.				
25.	Objective 2b, Heritage Strategy 5 Objective 2c, Tourism and Recreation Strategy 2	What actions has the Forest taken to increase public awareness and education of heritage resources?	1. Number of projects conducted. Monitor annually	Forest total = 11 Includes overviews of resource types and resource specific contextual studies.
			2. Number of heritage programs delivered. Monitor annually	4 programs
			3. Number of interpretive signs or brochures constructed or maintained. Monitor annually	5 interpretive signs

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Livestock Grazing Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
26. Objective 2c Livestock Grazing Strategies 1 and 2	What total AUMs were permitted through term permit this grazing season?	AUMs permitted Monitor annually	Cattle: 82,508 Sheep: 10,043 Horses: 796 Total = 93,347
	What total AUMs were authorized through term permit this grazing season?	AUMs authorized Monitor annually	Cattle: 68,030 Sheep: 7,879 ² Horses: 890 Total = 76,799
	Total number of active allotments (This includes temporary grazing in vacant allotments)	Number of allotments Monitor annually	76
	Number of active allotments monitored	Number of monitored allotments Monitor annually	48
	Percent of monitored allotment that exceeded forage utilization standards to the point of discussing / implementing actions to resolve the situation.	Percent of active allotments that were monitored Monitor annually	26
	How many suitable acres are meeting or moving toward desired conditions?	Acres meeting or moving toward desired condition Monitor annually	98,408
		Acres not meeting or moving toward desired conditions Monitor annually	27,898

² MWPR had higher number of authorized sheep FY12 due to an additional 600 AUMs that were allowed for use on Whaley Creek S&G Allotment. This was authorized early June.

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Livestock Grazing Discussion
	Suitable acres, cont.	Acres undetermined Monitor annually	120,797
26A. Objective 2c Livestock Grazing Strategies 1 and 2, cont.	How was information sharing and cooperation with livestock permittees, state and private agriculture organizations, universities, and research partners demonstrated?	Narrative discussion Monitor annually	See appendix A

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Paleontology, Minerals Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
28A. Objective 2c Geologic and Paleontological Resources Strategy 1	Have impacts to paleontological resources resulted in a need to revise/amend the plan for additional direction?	New paleontological sites identified during cultural or other inventories and associated impacts from land management activities. Monitor annually	There have been no new paleontological sites identified.
28B. Objective 2c Mineral and Energy Resources Strategy 1	Are the effects of mining activities on surface resources consistent with Revised Plan expectations, as allowed in approved Plans of Operations?	Summarize monitoring efforts, results and findings under project-specific plans of operation. Monitor annually	<p>The Pascalite mining operation continued in 2012 under their approved plan of operations near the headwaters of South Paintrock Creek on the Powder River Ranger District. The effects of the mining activities are consistent with the revised forest plan.</p> <p>The Peaches lode claim in the Poison Creek drainage operated according to the filed and approved plan of operations. The effects of the mining activities are consistent with the revised forest plan.</p> <p>The Escapee #1 mine, a placer claim in the headwaters of Porcupine Creek on the Medicine Wheel/Paintrock Ranger District, applied for a change in operations in 2012, namely using a small backhoe to increase the rate material processing. A new plan of operations was submitted and NEPA analysis is nearing completion in early 2013.</p>

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Scenery Resources Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
31. Objective 2c Scenery Strategy 2	Are resource activities and forest uses consistent with the landscape character goals and scenic integrity objectives?	1. Review a sample of management activities, and compare forest plan direction with actual outcomes. Monitor annually	The WyoLink tower at the Duncan Lake communication site has a greater than anticipated impact on scenery in views from US Hwy. 14 (Big Horn Scenic Byway), the FSR 26 (Woodrock Road) and Dead Swede Campground. Cumulative effects to scenery from timber harvest during the Woodrock stewardship project was not addressed in the WyoLink tower NEPA document. The installation did not comply with a lease provision for a non-specular – acid-washed tower. Following timber harvest the tower is visible in middleground views and begins to dominate the view when sunlight is reflected. In these ephemeral conditions the tower achieves a LOW level of scenic integrity instead of the MODERATE scenic integrity objective (SIO) established in the Forest Plan. A REHABILITATION SIO applies to the electronic site until new trees achieve heights that provide significant screening and/or weathering substantially reduces the reflectivity.

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Facilities/Infrastructure Discussion
Effectiveness Monitoring – Are desired conditions and outcomes of the Forest Plan being met?			
33. Objective 4a, Strategies 3 – 5	Are all system roads being maintained as desired on the Bighorn National Forest?	Percent of roads maintained to standard via forest road crews, contract, cooperators, or other means (See annual roads accomplishment report). Monitor annually	<p>The Forest maintains 95-100% of Level 3-5 roads to standard yearly.</p> <p>25% of Level 1-2 roads are maintained to standard annually.</p> <p>85% of road maintenance was accomplished by Forest crews and 15% was accomplished by contract/agreements.</p> <p>In 2012, 100% (253 miles) of all maintenance level 3, 4, and 5 roads received full maintenance.</p> <p>34% (105 miles) of Level 1-2 roads received full maintenance.</p> <p>Majority of Level 1-2 roads receiving maintenance were on the Medicine Wheel Paintrock Ranger District.</p>
34. Objective 4a Strategy 6	Are unclassified roads and trails being decommissioned?	Report road decommissioning accomplishments and trail decommissioning accomplishments performed via forest road crews, contract, cooperators, or other means (see annual roads accomplishment report). Monitor annually	<p>Road Program: In 2012 the Forest road crew decommissioned 2.32 miles of Forest System Road and 4.90 miles of unauthorized (unauthorized) roads. The majority of this decommissioning took place near the new Hunter Trailhead on the Powder River RD. The unauthorized road decommissioning took place on the the Medicine Wheel Paintrock.</p> <p>Trail Program: The trail crew monitored previously decommissioned trail routes. When openings in closures were found, the crew fell dead trees across them. The trail beginning point was improved and buck and rail fence segments were placed at fishing access points off the Shutts Flat trail #430 to control erosion and illegal motorized use.</p> <p>On the MWPR District, the road crew decommissioned user created trails and maintained open trails district-wide.</p>

	Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Facilities/Infrastructure Discussion
35.	Objective 4a Strategies 7, 8	Are new construction and maintenance projects being done to reduce maintenance backlogs and are they being done consistent with the current master plan, and meeting the current image guide?	Report all new facility and transportation construction, reconstruction, decommissioning, and maintenance projects and state how they are reducing maintenance backlogs, or how they are meeting the current Facility Master Plan (FMP) and the Built Environment Image Guidelines (BEIG) Monitor annually	<p>No facility/ Infrastructure was constructed, reconstructed or decommissioned in 2012.</p> <p>Maintenance of existing facility/Infrastructure:</p> <ul style="list-style-type: none"> • 2 campground toilet replacements • Visitor center exterior maintenance • 2 potable water improvement projects • Energy conservation and sustainability enhancements at a work center <p>Trail Program:</p> <ul style="list-style-type: none"> • Over 182 miles of trail were maintained • 1 puncheon was reconstructed • Forest trail strategy was updated <p>For specifics, see appendix A</p> <p>All completed projects complied with the Forest Master Plan recommendations and met Forest Built Environmental Image Guidelines.</p>
37.	Objective 4a Strategy 11	How many miles of system or non-system road were decommissioned?	Review annual engineering work accomplishment reporting Monitor annually	<p>No system road was decommissioned in 2012.</p> <p>4.90 miles of non-system roads were decommissioned in 2012.</p> <p>Most of these were unauthorized, user created routes on the Medicine Wheel Paintrock District.</p>
<p>Notes: Providing access to public lands is critical for meeting resource management and multiple-use objectives.</p>				

Monitoring Driver	Monitoring Question	Monitoring Items and Frequency	Soil Discussion
Validation Monitoring- Are the desired conditions, objectives, and assumptions made in the Forest Plan correct?			
42. Objective 1a	Are the standards and guidelines effective in meeting regional soil quality standards?	<p>1. Conduct surveys on a representative sample of areas with management activities and uses.</p> <p>Monitor annually</p>	<p>Two range BMP reviews were conducted in the following pastures:</p> <p>Bull Creek Pasture in the North Tongue Allotment (Tongue Ranger District).</p> <p>Poison Creek pasture in the Poison Creek Allotment (Powder River Ranger District).</p> <p>In each review, range management practices (developed using standards and guidelines) were maintaining or helping to improve watershed conditions, and soils were not being degraded, thereby showing that regional soil quality standards are being met.</p>
		<p>2. Measure the amount of severely impacted areas and compare with regional standards.</p> <p>Monitor annually</p>	<p>No severely impacted areas recorded in 2012, therefore none were measured.</p>

List of Contributors

The following individuals participated in the monitoring and preparation of this report:

Name	Position
Amy Nowakowski	Hydrologist
Amy Ortner	GIS specialist
Bernie Bornong	Forest resources staff officer
Beth Bischoff	Medicine Wheel/Paintrock District wildlife biologist
Bill Mathews	Archeologist (west zone)
Bob Cochran	Medicine Wheel/Paintrock District recreation staff officer
Cheri Jones	Tongue District recreation staff officer
Chris Williams	Forest hydrologist
Christopher Thomas	Forest silviculturalist, certified forester #626
Craig Cope	Powder River District recreation/wilderness/lands staff
Dave McKee	Forest lands, special uses and recreation staff officer
David Anderson	Forest data manager
David Beard	Tongue District rangeland management specialist
Gayle Laurent	Forest realty specialist
Jason Ruybal	Forest civil engineer
Jon Warder	Forest fire management officer
Kristi VonKrosigk	Grants and agreements specialist
Laurie Walters-Clark	Forest planning staff officer
Leslie Horsch	Writer-editor
Luke Decker	Tongue and Powder River District wildlife biologist
Mike Bower	Forest terrestrial biologist, fisheries biologist
R. Scott Gall	Powder River District rangeland management specialist
Rick Laurent	Archaeologist (east zone)
Ruth Beckwith	Forest landscape architect

Appendix A – Narrative Description Monitoring Items

General Discussion

Monitoring Driver	Monitoring Question
<p>2. Objective 2a, Strategy 8 Objective 4c, Strategy 4</p>	<p>How well is the forest interacting and planning in cooperation with communities and local governments?</p>
<p>The forest maintains a relationship with local governments through steering committee meetings that take place twice a year. The meetings are open to the public. Members include elected officials at the city, county and state level as well as the federal level. 2012 meetings took place in April and August. The April meeting topics included FY2010 forest plan monitoring report, Big Horn Cty RAC projects, Big 6 Appeal, recent litigations (CE's being appealable now) and 2012 appropriation bill change to appeal process – going to objection, ski area SU permitting process, district range updates. The August meeting was held in the field on the Tongue district. Topics included Burgess VC maintenance needs and complexities of money reduction; went to Big Willow Creek and discussed management of grazing along the creek; went to FSR 214 and discussed ATV safety issues between lodges; went to Sheridan Cty 4H camp and discussed WY DOT projects, Red Grade Forest highway status, unfunded projects for FY12, cabin/lookout rental opps., dispersed camping issues, food storage special orders; went to FSR 231 and discussed snow fences along scenic byway.</p>	
<p>Web pages featuring Shell Falls were developed for the 'special places' section of the forest web site. New on-site interpretive media includes a geology banner and a childrens activity booklet. Work was completed under a collection agreement funded by Wyoming Department of Transportation (WyDOT) as a scenic byway grant.</p>	
<p>Landscape architecture services were provided for WyDOT's highway reconstruction project on Hwy 16, County Line West (Cloud Peak Skyway scenic byway).</p>	
<p>3,800 shrub seedlings (raspberry, wax currant, juniper, grouse whortleberry and willow) from local seed sources were transplanted in the Steamboat Point section of Highway14. The revegetation work was completed under a collection agreement funded by Wyoming Department of Transportation (WyDOT) in a recently reconstructed highway corridor.</p>	
<p>Continued long term partnership with Wyoming State Trails program to provide education and travel management enforcement during summer off-road and winter snowmobile seasons. The State contributed over \$95,000 in funding support. During snowmobile season 4,555 contacts were made. During summer and fall off-road vehicle season 12,859 contacts were made. Compliance with the Wyoming State Trails sticker program is 99%. Education included providing directions and copies of the Forest MVUM map, aid and assistance, and presenting information on travel safety. The Forest and Wyoming State trails completed two meetings this year to monitor the partnership agreement and set project priorities.</p>	
<p>Continued cost share partnership with the Rocky Montain Nature Association to operate the Shell Falls and Burgess Visitor Centers. Through sales of RMNA inventory the Forest obtained funding (\$33,057) to staff several positions at Burgess and Shell Falls. In addition to selling inventory the staff provided key information on Forest regulations, resoucre protection, safety information, and recreation opportunities to visitors.</p>	
<p>Completed partnership with HistoriCorps of the non-profit Colorado Preservation Inc. to replace rotted logs, repair windows and stain Muddy Guard Station cabin. Used volunteer labor through the Passport In Time Program totaling 360 hours to complete the project. Utilized funds generated from rental of the Muddy Guard cabin under the Federal Lands & Recreation Enhancement Act (FLREA) to pay for materials food and some labor expenses for the project.</p>	

Monitoring Driver	Monitoring Question
<p>2. Objective 2a, Strategy 8 Objective 4c, Strategy 4</p>	<p>How well is the forest interacting and planning in cooperation with communities and local governments?</p>
<p>Under a Participating Agreement with the Student Conservation Association two student (SCA) members worked at the Medicine Wheel interpretive site. One worked twelve 40 hour weeks and the other thirteen 40 hour weeks for a total of 1000 hours at the site. Also, 1 SCA member worked five weeks for 200 hours at the Shell Falls Visitor Center.</p>	
<p>The Resource Advisory Committee for Big Horn County recommended funding for stage II of the trail improvement project on Porcupine Falls Trail #135, Adelaide Trail #057 and Mail Trail #817.</p>	
<p>The MWPR District Recreation Staff participated in an interagency coordination meeting with BLM, Wyoming Game and Fish, Shoshone N.F. The Forest's pertinent projects including recreation's were discussed.</p>	
<p>7 volunteers worked a total of 2448 hours at the Burgess Junction and Shell Falls Visitor Centers.</p>	
<p>Boyscout Troop constructed a puncheon on the Adelaide Trail. 5 scouts and 1 adult for 160 hours.</p>	
<p>1 volunteer worked approximately 300 hours performing recreation work.</p>	
<p>2 people associated with the Regional Packstring volunteered their time to help with the Mail Trail Project for a total of 129 hours. They also took the packstring to the Burgess Junction Visitor Center for public education.</p>	
<p>Powder Pass Nordic Club (PPNC) completed its seventh winter of volunteer efforts on nordic ski areas. The volunteers donated over 222 hours valued at \$2900+ to trail marking, clearing and packing projects. There were 14 individuals who donated time for the PPNC club.</p>	
<p>Cloud Peak Chapter Wilderness Watch (CPCWW) volunteered 380 hours valued at nearly \$5000 in 2012 in conducting Rapid Assessments of user created campsites in connection with one of the action items for the Wilderness Stewardship Challenge. The WW chapter had two volunteers spend 15 days each in the Cloud Peak Wilderness, continuing the three year effort of a complete census of the Cloud Peak Wilderness for user created camp sites.</p>	
<p>CORE of Casper, WY completed another week's worth of projects with 600 hours donated valued at over \$7800. The group assisted the District by reconstructing a portion of fence around the horse pastures at Tyrrell Work Center. This group has been assisting the District in project work for over nine years. The participants are teenagers at risk from the Casper, WY area.</p>	
<p>Black Mountain Nordic Ski Club completed its 12th winter of volunteer efforts on Sibley and Cutler Hill nordic ski areas. The volunteers donated 299 hours valued at \$6,515.21 to trail marking, clearing and packing projects.</p>	
<p>Wyoming State Trail Crew completed maintenance on the Middle Paintrock #066, Paralell #117, Bonanza Dead Swede #211, & Bonanza Lookout #224 trails.</p>	
<p>An Iowa based Boy/Girl Scout volunteer group completed trail maintenance on Bull Elk Park Trail #076.</p>	
<p>Twenty middle school students from Big Horn and their teacher volunteered during the National Trails Day event. They maintained two miles of the Story/Penrose Trail #033. Their efforts included the removal of trees and brush from the corridor, repair of rolling dips, rock removal and tread repair.</p>	

Monitoring Driver	Monitoring Question
2. Objective 2a, Strategy 8 Objective 4c, Strategy 4	How well is the forest interacting and planning in cooperation with communities and local governments?
The Montana Conservation Corps (MCC) constructed 67 dimensional lumber steps on the Porcupine Falls Trail #135. This was a Big Horn County RAC funded project.	
An AmeriCorp Crew spent a day maintaining Sibley Lake Nordic Trails #558.	
The Rolling Hills Youth Group from Kansas City, KS spent three days conducting trail maintenance and rebuilding puncheons on the Sibley Lake Nordic Trails #558.	
Leave No Trace (LNT) Master Educator's Course, conducted by Boy Scouts, completed a service project, which rebuilt a puncheon on Prune Creek Trail #013.	
Powder River Pass Ski club maintained trails at Pole Creek Nordic Trails #557.	
A Boy Scout Troop from Powell, WY spent two weekends working on the Shell Creek (Adelaide) Trail #057.	
The Shell Racing Team cleared trees from the Shell Bench Trail #184.	
Cloud Peak Chapter of Backcountry Horsemen completed a day of clean-up at Elgin Park TH.	
Dingmann-Mosher, Lane, & S & G Bobbit volunteered 2,188 hours for dispersed camping patrols valued at \$47,775.	
The forest and Trout Unlimited volunteers harvested willow cuttings that were raised/propagated at a greenhouse at the Wyoming Girls School in Sheridan, WY (community outreach project), and provided willow whips to the Courd' Alene nursery to be raised. These plants will be used for stream bank rehabilitation and exclosure projects in the South Tongue Watershed (priority watershed). Approximately 100 willows from the Girls School were planted by school students and BNF personnel in the fall of 2012.	

4. Objective 3a Potential Monitoring Item #1	Is the Bighorn National Forest assisting in building the capacity of Tribal governments, rural communities and private landowners to adapt to economic, environmental, and social change related to natural resources.
<p>The forest worked with the Big Horn County RAC to approve two additional projects funded through the Secure Rural Schools Act (SRS) for a total proposed additional expenditure of 34,000. Five thousand of that was for the county weed board which hires local. The forest participated in job fairs for school on the Crow and Northern Cheyenne reservations. The forest works with recreation residence permit holders, livestock grazing permit holders as well as recreation based services (ski areas, lodges, and outfitter guides) to assist them in maintaining their presence on the NFS lands while attaining ecological desired conditions on the ground.</p> <p>FS contracting officer cooperated with the state of Wyoming in developing contractors for federal projects.</p>	

<p>4. Objective 3a Potential Monitoring Item #2</p>	<p>See potential monitoring item #1 above.</p>
<p>The forest held meetings with all four counties for to coordinate fire suppression. The forest provided mutual aid assistance on fire incidents to all four counties during 2012. In addition, through a grant to the State of Wyoming, each County surrounding the Forest receives wildfire training and equipment preparedness funding. The Forest maintains agreements with both Johnson County and Big Horn County for prescribed fire assistance and training opportunities.</p> <p>The Big Horn County firewise program continued in 2012 with presentations made to cabin owners on both the Powder River and Medicine Wheel Paintrock Districts to continue to emphasize the need to create defensible space in the event of a wildfire. Fuels reduction partnerships and treatments also continued with Sheridan, Johnson, and Washakie counties to implement recommendations in their Community Wildfire Protection Plans. Through the State and Private Forestry program, administered by the USFS Rocky Mountain Regional Office, grants have been awarded to local counties for hazardous fuel treatments. Some of these projects have included the Canyon Country Estates Project, Johnson County Wildfire Mitigation Plan Implementation, Story Fuels Reduction Project, and Stumpy Ridge Fuels Reduction Project, Big Horn County Community Wildfire Protection Plan Implementation and Update.</p>	

Aquatics

<p>Monitoring Driver</p>	<p>Monitoring Question</p>
<p>5. Objective 1a Strategies 1 Potential Monitoring Item #1</p>	<p>Coordinate with WyDEQ ando ther stakeholders.</p>
<p>The listed reach of the North Tongue River is upstream of Road 171 to its confluence with Pole Creek. The 2012 report stated, "The formal stakeholder involvement coupled with federal land management and allotment planning is considered equivalent to watershed planning, and the North Tongue River has been given a low priority for TMDL development."</p>	
<p>The Granite Creek reach is from Shell Creek upstream to an undetermined location downstream of Antelope Butte Ski Area. A picnic ground with an outhouse in the Granite Creek floodplain was removed and reclaimed in 2012, and the Ski Area remains closed, therefore two main potential sources for water quality impacts are minimized. A TMDL study for the Bighorn River , which Granite Creek falls into, watershed is underway.</p>	
<p>The listed reach for NFCW Creek is above the confluence with Billy Creek to the headwaters. BMPs in the NFCW Creek have been implemented however, montioring by WDEQ has not yet determined if they have been effective. A WDEQ summary report, including a use support determination for NFCW Creek, is expected in 2013.</p>	
<p>6. Objective 1a Strategies 2</p>	<p>Were watershed improvement projects completed?</p>
<p>1) N. Tongue River watershed: Benefitted ¾ mile of the North Tongue River by planning willows in the banks. Approx. 2 acres of willow planting also occurred along the banks of Little Willow Creek.</p>	

Monitoring Driver	Monitoring Question
<p>6. Objective 1a Strategies 2 con't.</p>	<p>Were watershed improvement projects completed?</p>
<p>2) Seven Brothers Creek watershed: Restored approx. 5 acres of riparian habitat by relocating corrals in the Hunter Campground away from the riparian area on the North Fork of Clear Creek</p> <p>3) Upper Tongue watershed: Improved approx. 3.5 acres of riparian habitat through the construction of a wildlife and livesock enclosure in a large meadow reach of Sucker Creek.</p> <p>4) South Paintrock Creek watershed: over 15 miles of YCT habitat was improved through the installation of aquatic organism habitat road-stream crossings on Soldier Creek and Buckskin Ed Creek.</p>	
<p>8. NFMA Species Viability Objective 1a Strategies 4 - 7 Potential Monitoring Item #2</p>	<p>Summarize results of habitat improvement projects (acres/miles) by watershed.</p>
<p>South Paintrock Creek watershed: Two aquatic organism passage (AOP) road-stream crossings on Soldier Creek and Buckskin Ed Creek were completed in 2012. These installations removed two barriers to Yellowstone cutthroat trout movement and reconnected over 15 miles of upstream habitat with downstream habitat.</p> <p>North Tongue River watershed: Streambank revegetation continued on the North Tongue, in cooperation with Trout Unlimited and WGFD, benefitting approximately 3/4 mile of the North Tongue River, a popular trout fishery. There was also willow planting that took place in the Woodrock area.</p>	

Wildlife

Monitoring Driver	Monitoring Question
<p>9. NFMA Species Viability Objective 1b Strategies 1 – 5 Potential Monitoring Item #2</p>	<p>Acres/miles of species at risk habitat restored or improved by Forest Service management or permitted activities.</p>
<p>In cooperation with the Wyoming Game and Fish Department (WGFD), non-native fishes were removed from nine miles of Soldier Creek to enable reintroduction of Yellowstone cutthroat trout, an R2 sensitive species.</p> <p>Reconnected 22 miles of stream for Yellowstone cutthroat trout and other aquatic organisms by replacing two perched culverts with bottomless-arch designs.</p> <p>Willows were planted along 0.5 miles of Mill Creek to increase stream shade and improve habitat complexity in Mill Creek for the benefit of Yellowstone cutthroat trout.</p> <p>Habitat needs for the Shell Canyon bighorn sheep herd was improved on 1600 acres.</p> <p>Greater Sage grouse, Blue grouse, elk and mule deer habitat were improved on 820 acres.</p> <p>200 acres beaver habitat was expanded.</p> <p>1418 acres of potential at-risk species golden-crowned kinglet was improved.</p> <p>An existing livestock enclosure along Sucker Creek was modified to exclude all domestic and wild ungulates in order to improve willow growth (4 acres). A streambank revegetation project was also implemented along 0.4 miles of the North Tongue River. Anticipated riparian area recovery associated with these two projects is expected to benefit a variety of at-risk wildlife species such as water vole, olive-sided flycatcher, Columbia spotted frog, as well as a variety of sensitive riparian-associated plant species.</p> <p>Existing enclosures around two water developments on Sunlight Mesa C&H allotment were reconstructed to maintain the integrity/functionality of the water developments for use by both bighorn sheep and livestock. While these are not new developments, it is expected that they will continue to benefit habitat needs for the Shell Canyon bighorn sheep herd, as some sheep have been seen utilizing these water sources during summer months. Cottonwood Spring Development #302-06 (800 acres benefitted) Elephant Head Spring Development #302-37 (800 acres benefitted).</p> <p>Hannan's Coulee Prescribed Fire (570 acres) & Dry Tensleep Prescribed Fire (250 acres) were designed for livestock forage improvement, fuels reduction, and wildlife habitat improvement. While not identified specifically as an objective, Greater Sage-grouse summer brood rearing habitat may benefit from these 2 burns in relation to improvement of herbaceous vegetation & multiple age classes and densities of sagebrush as a secondary benefit. Blue grouse, elk, and mule deer also benefit.</p> <p>Contracted for 200 acres of forest treatment to benefit aspen recruitment. Project goal is to expand potential habitat for beaver as well as to improve the distribution of this rare habitat type for the benefit of a variety of wildlife species.</p> <p>Motorized trail 038 was closed, benefiting 1,418 acres of wildlife habitat. Of potential at risk species, the golden-crowned kinglet would see will benefit the greatest as it seeks forest interior spruce/fir habitats with little chance of being disturbed.</p>	

	Monitoring Driver	Monitoring Question
9.	Objective 1b Strategies 1 – 5 Potential Monitoring Item #3	Acres and/or miles of species at risk potential habitat inventoried and number of populations discovered.
<p>Cooperative monitoring of the Shell Canyon and Devil’s Canyon Bighorn Sheep herds occurred during 2012. A large portion of this was tied to “Big 6” design criteria and adaptive management strategies to minimize risk of contact between bighorn and domestic sheep during trailing events to and from the forest allotments (19,200 acres). An additional 2,400 acres were surveyed in Shell Canyon to monitor bighorn sheep for any signs of sickness following possible exposure to feral goats in the canyon during the winter. No new populations found and no signs of sickness observed.</p> <p>Peregrine Falcon Monitoring continued through WY G&F Department with an estimated 2,241 acres surveyed on forest in Shell Canyon in 2012. No new populations were observed, but two adults were confirmed to be present. Tensleep Canyon was not surveyed in 2012, but the aerie that was previously known on the forest is now off forest near Salt Lick Trail. A new aerie was located in 2012 off forest in Trapper Canyon. No suitable habitat on forest in this canyon is known per discussions with WYG&F.</p> <p>TES Northern Goshawk Surveys (2,137 acres) were conducted in proposed Crater Ridge Timber Sale area. One goshawk was reported flying in project area by timber crew, but no nests were found during project surveys. Five additional previous known locations and two previous nest sites were surveyed. No active nests were seen, but one bird was heard in a previous location.</p> <p>Water vole surveys were conducted on about 8 miles of stream reach. No trapping occurred. Some surveys were conducted in known occupied habitat to monitor for presence or absence of voles through observations via latrines, runs, burrows, vole sightings, etc. Other areas were surveyed for potential suitable habitat. One new unconfirmed occurrence in Buckskin Ed Creek; animal was observed in likely habitat, but was not captured to measure and positively identify.</p> <p>Monitoring for bats and white-nosed syndrome (WNS) was conducted in the Tongue River and Eaton’s Caves. Also, iButtons were placed in both caves as part of a region-wide assessment of the potential for caves to support the fungus related to WNS. No bats were located in Tongue River Cave during survey. Four species of bat were identified as hibernating in Eaton’s cave.</p> <p>The P-bar Cave on the west side of the BNF was entered by the USFWS and the Cave Research Foundation (CRF) in an effort to map the cave and survey for bats and WNS. Results are yet unknown though the survey is known to have been cut short due to a debris blockage somewhere inside.</p> <p>Amphibian surveys were completed by the WGFD this year in the Red Grade Area. Northern leopard frog, wood frog, and Columbia spotted frog egg masses were observed, confirming the presence of these species in the area. No new species or populations were discovered.</p> <p>Three stream reaches (0.1 miles total) were surveyed for the presence of mountain sucker, an R2 sensitive fish species. No mountain suckers populations were detected at these sites.</p>		

Timber and Fuels

Monitoring Driver	Monitoring Question
<p>11. Objective 1.c, Strategies 1-7</p> <p>Potential Monitoring Item #9</p>	<p>Acres of fuel reduction accomplished in Fire Regimes I, II, and III</p>
<p>Forest Plan Strategy 1.c (9) places high priority on fuel reduction activities not only in Fire Regimes I, II, and III, but also with the Wildland Urban Interface (WUI) as described in the county's Community Wildfire Protection Plans (CWPP). From 2005 through 2012 the Forest has accomplished 25,146 acres of fuels treatment. 53% were within Fire Regimes I, II, and III, and 54% were within identified WUI areas. These fuels treatments have been accomplished through a variety of means including prescribed burning, prescribed natural fire, and mechanical treatments, including the use of Stewardship Contracting. In 2012 the Forest completed 3,815 acres of fuels treatment. The Forest Plan projected annual fuels treatments of 3,650 acres plus an additional 300 acres of mechanical treatment outside of lands deemed suitable for timber production. To date the Forest has achieved 80% of this projection. The soft market for forest products has been hampered the Forests ability to treat more acres.</p>	

Timber

Monitoring Driver	Monitoring Question
<p>29. Objective 2.c, Strategies 1-3</p>	<p>Forest product outputs in CCF and approximate MMBF, including Sawtimber (7"+), Round wood (5-6.9"), Personal Use Firewood, Other Vegetation Management, Allowable sale quantity, Christmas Trees and Special Forest Products</p>
<p>In 2012 the Forest offered a large POL salvage sale that received no bids. The only volume sold was smaller sales and permit sales. The table below display outputs since the Forest Plan revision's inception and compares them to the projected amount, for both the Allowable Sale Quantity (ASQ, from lands suited for timber production) and the Total Sale Program Quantity (TSPQ, which includes Other Vegetation Management (OVM) and adjusts ASQ for anticipated budgets). Items of note include the Forest selling 70% of the TSPQ Volume to date, with 87% of the Sawtimber and 83% of the Roundwood, by cubic measure.</p> <p>The largest discrepancy between TSPQ and actual sell continues to be the Other Vegetation Management (OVM) Volume, where 132% of the projected amount was sold. This is due to the emphasis on treatments in WUI areas many of which are was not considered lands suitable for timber production (ASQ producing lands).</p> <p>The affirmation of the 2001 Roadless Area Conservation Rule (RACR) and its effects on the Forest Plan are still being evaluated. One effect will be to management of lands identified in the Plan as suitable for timber production which are now within RACR roadless areas. Unless these lands meet exemption criteria no tree cutting may take place without approval from the Regional Forester. 49% of the lands identified as suitable for timber production are within the 2001 RACR. The Forest has requested and received tree cutting authority within some WUI areas and for non-motorized trail construction. Further evaluation and quantification of the effects on the ability of the Forest to meet goals and objectives is underway with interim results planned for next year.</p>	

Monitoring Driver	Monitoring Question				
29. Objective 2.c, Strategies 1-3	Forest product outputs in CCF and approximate MMBF, including Sawtimber (7"+), Round wood (5-6.9"), Personal Use Firewood, Other Vegetation Management, Allowable sale quantity, Christmas Trees and Special Forest Products				
<p>The timber market continues to change, nationally and locally. Demand for lumber and the price of lumber has risen late in 2012 and interest in Bighorn timber sales is up. Local fuelwood sales picked up as the sawtimber market has weakened, but will become soft as the sawtimber market firms up.</p>					
<p>Timber output compared to forest plan projections – total volume equivalent and sawtimber.</p>					
<p>All units in million board-feet (MMBF). * PUF = personal use firewood</p>					
Activity	Total Volume equivalent	Sawtimber Vol. 7"+)	POL Vol. (5-6.9")	PUF*	Amount of sawtimber from OVM on non-suited lands
Annual sale quantity (ASQ) forest plan projection	9.8	8.5	1.3	NA	NA
Annual total sale program quantity (TSPQ) forest plan projection	7.3	4.3	0.2	1.5	1.3
2005	11.0	9.8	0.2	1.1	9.8
2006	8.2	6.9	0.2	1.2	0.1
2007	4.6	3.4	0.1	1.1	3.2
2008	10.7	9.3	0.6	0.8	0.7
2009	1.8	0.0	0.2	1.6	0.0
2010	11.4	6.5	3.4	1.5	4.7
2011	1.6	3.3	0.2	0.4	0.1
2012	1.6	3.2	0.1	0.3	0.1
TOTAL ACTUAL OUTPUT	51.0	42.4	5.0	8.0	18.7
Total FP Projected ASQ output	78.4	67.7	10.7	NA	NA
Total FP Projected TSPQ output	58.4	34.3	1.7	12.0	10.4
% of FP Projected ASQ output	65%	63%	47%	NA	NA
% of FP Projected TSPQ output	87%	124%	299%	67%	179%

Monitoring Driver	Monitoring Question
29. Objective 2.c, Strategies 1-3	Forest product outputs in CCF and approximate MMBF, including Sawtimber (7"+), Round wood (5-6.9"), Personal Use Firewood, Other Vegetation Management, Allowable sale quantity, Christmas Trees and Special Forest Products

Timber output in cunits (CCF)

Activity	Total Volume Sold	Sawtimber Vol. 7"+)	POL Vol. (5-6.9")	PUF*	Amount of sawtimber from OVM on non-suited lands
Annual sale quantity (ASQ) forest plan projection	12,183	23,467	3,716	NA	NA
Annual total sale program quantity (TSPQ) forest plan projection	18,931	10,688	1,693	3,000	3,550
2005	22,498	19,898	400	2,200	19,898
2006	18,073	15,200	422	2,432	99
2007	9,335	6,877	353	2,105	6,598
2008	20,629	17,789	1,500	1,340	1,354
2009	3,773	84	483	3,205	64
2010	24,508	13,942	7,496	3,070	9,060
2011	3,330	422	248	2,660	203
2012	3,238	293	317	2,628	293
TOTAL ACTUAL OUTPUT	105,384	74,505	11,239	19,640	37,569
Total FP Projected ASQ output	217,464	187,736	29,728	NA	NA
Total FP Projected TSPQ output	151,448	85,504	13,544	24,000	28,400
% of FP Projected ASQ output	48%	40%	38%	NA	NA
% of FP Projected TSPQ output	70%	87%	83%	82%	132%

* PUF = personal use firewood

Invasive Species

Monitoring Driver	Monitoring Question
12. Objective 1.c, Invasive Species Strategy 2,	What prevention activities and cooperative efforts have been implemented during the past year?
	<p>The priority noxious weeds for the Bighorn NF are leafy spurge, yellow-toadflax, ox-eye daisy, hoary cress and spotted knapweed.</p> <p>The forest continued cooperative agreements with Big Horn, Johnson, and Washakie counties to treat noxious weeds on national forest system lands. GPS points/polygons were provided for some treatment and inventory data. Inventory and treatment were also conducted on lands adjacent to the forest.</p> <p>An increased level of weed awareness on the Forest through educational programs presented to seasonal crews has led to identification of new populations of noxious weeds on the Forest and follow-up treatment has occurred or is planned.</p> <p>Noxious weed prevention and control is considered in NEPA projects on the Forest, including timber harvest, grazing activities, & dispersed and developed recreation.</p> <p>A growing concern is the dispersal of noxious weeds through ATVs and 4x4 pickups coming from other areas. Surveys have begun to pick up Russian knapweed in and along some roads, and it is suspected that the weed seed is dropping off undercarriages.</p> <p>The weed seed free feed program continues to be monitored and compliance by forest users in general is very good.</p>
	<p>The Resource Advisory Council for Big Horn County recommended funding for treatment of weeds along the Bench Trail.</p>
	<p>Treatment and monitoring in Johnson County included work by Forest Service Wilderness Rangers with help from volunteers in addressing Oxeye Daisy near the Could Peak Wilderness in the Circle Park Trailhead area.</p>
	<p>Areas known to have populations of cheatgrass are excluded from prescribed burning.</p>

Wilderness

Monitoring Driver	Monitoring Question																																								
<p>18. Objective 2b, Wilderness Strategies 2 – 5</p>	<p>What level of crowding occurs on trails? Does the wilderness provide opportunities for solitude?</p>																																								
<p>Use numbers presented below are from the required registration for entry into the Cloud Peak Wilderness(CWP), in place since 1994. Compliance with required registration remains near 95%. In 2012 over 80% of wilderness visitors enter the CPW from US 16 due to access on high standard gravel roads passable to passenger vehicles.</p> <p>Cloud Peak Wilderness recreation visitor days (RVDs) by trailhead:</p> <table border="0" data-bbox="386 617 950 1541"> <thead> <tr> <th style="text-align: left;">Trailhead Name</th> <th style="text-align: right;">RVDs</th> </tr> </thead> <tbody> <tr><td>West Tensleep/Lost Twin</td><td style="text-align: right;">26312</td></tr> <tr><td>Hunter TH/N Clear Creek</td><td style="text-align: right;">11902</td></tr> <tr><td>Circle Park</td><td style="text-align: right;">9150</td></tr> <tr><td>Battle Park/Grace Lake</td><td style="text-align: right;">5690</td></tr> <tr><td>Coffeen Park</td><td style="text-align: right;">4192</td></tr> <tr><td>Paintrock Lakes</td><td style="text-align: right;">1441</td></tr> <tr><td>Edelman/Emerald lake</td><td style="text-align: right;">1310</td></tr> <tr><td>Twin Lakes/Stull/Coney Lake</td><td style="text-align: right;">1376</td></tr> <tr><td>Ranger Creek/Adelaide</td><td style="text-align: right;">851</td></tr> <tr><td>East Fork Little Goose TH</td><td style="text-align: right;">524</td></tr> <tr><td>Cross Creek/Bighorn Res</td><td style="text-align: right;">524</td></tr> <tr><td>Shell Reservoir/Lake</td><td style="text-align: right;">327</td></tr> <tr><td>Trigger Lake</td><td style="text-align: right;">524</td></tr> <tr><td>Lily Lake/Paintrock Creek</td><td style="text-align: right;">655</td></tr> <tr><td>Kearney Lake</td><td style="text-align: right;">66</td></tr> <tr><td>Lake Angeline/Mid Clear Creek</td><td style="text-align: right;">524</td></tr> <tr><td>Bald Ridge</td><td style="text-align: right;">66</td></tr> <tr><td>Geddes/Weston/Babione</td><td style="text-align: right;">66</td></tr> <tr> <td>Total Registration</td> <td style="text-align: right;">65500</td> </tr> </tbody> </table> <p>Trail Encounter Monitoring Data: For encounter monitoring, twenty (20) days exceeded the standards and guides for trailed Management Areas set forth in the 2005 revised Forest Plan. Fourteen of the over guideline days were on Trails 063, and 065 (West Tensleep Trailhead). Three days each were on trails 046 (Circle Park Trailhead) and trail 024 (Hunter Trailhead). August 4 trail encounters out of West Tensleep Trailhead were over three times the 10 per day average outlined in the Forest Plan. Thirty-four (34) groups were encountered that day.</p>		Trailhead Name	RVDs	West Tensleep/Lost Twin	26312	Hunter TH/N Clear Creek	11902	Circle Park	9150	Battle Park/Grace Lake	5690	Coffeen Park	4192	Paintrock Lakes	1441	Edelman/Emerald lake	1310	Twin Lakes/Stull/Coney Lake	1376	Ranger Creek/Adelaide	851	East Fork Little Goose TH	524	Cross Creek/Bighorn Res	524	Shell Reservoir/Lake	327	Trigger Lake	524	Lily Lake/Paintrock Creek	655	Kearney Lake	66	Lake Angeline/Mid Clear Creek	524	Bald Ridge	66	Geddes/Weston/Babione	66	Total Registration	65500
Trailhead Name	RVDs																																								
West Tensleep/Lost Twin	26312																																								
Hunter TH/N Clear Creek	11902																																								
Circle Park	9150																																								
Battle Park/Grace Lake	5690																																								
Coffeen Park	4192																																								
Paintrock Lakes	1441																																								
Edelman/Emerald lake	1310																																								
Twin Lakes/Stull/Coney Lake	1376																																								
Ranger Creek/Adelaide	851																																								
East Fork Little Goose TH	524																																								
Cross Creek/Bighorn Res	524																																								
Shell Reservoir/Lake	327																																								
Trigger Lake	524																																								
Lily Lake/Paintrock Creek	655																																								
Kearney Lake	66																																								
Lake Angeline/Mid Clear Creek	524																																								
Bald Ridge	66																																								
Geddes/Weston/Babione	66																																								
Total Registration	65500																																								

Seven violation notices were issued during 2012 including, one for 261.58(e) Camping within 100 feet of water or closed area, three for 261.57(g) Entering or being in CWP without a self-issue registration, three for 261.58(f) – over group size of 12 people and/or 15 head of livestock.

Warning notices were issued to twenty four individuals for the following violations: twenty for 261.57(a) being in CPW without registration, two for 261.55(e) Shortcutting a switchback, and two for 261.58(e) camping within 100 feet of water.

The Wilderness Rangers documented evidence of 57 violations with Incident Reports when contact was not made with the violator(s). A majority (33) of the Incident Reports documented the violation of building a campfire above 9200 feet.

Total incidents/violation notices/warning notices = 88 (includes law enforcement and wilderness ranger contacts)

Incidents = 57

Violations = 7

Warning notices = 24

Livestock Grazing

26.	Monitoring Driver	Monitoring Question
	Objective 2c, Livestock Grazing Strategies 1 and 2	How was information sharing and cooperation with livestock permittees, state and private agriculture organizations, universities, and research partners demonstrated?
	<p>Forest Range Specialists attended Wyoming Section SRM in Casper, WY. Specialists attended the 2012 Annual SRM Meeting in Spokane, Washington.</p>	
	<p>The annual west side interagency coordination meeting was held at Worland, Wy in January 2012 with BLM, Wyoming Game & Fish, and Forest Service representatives to share information regarding accomplishments from 2011 and projected projects for 2012. Topics include fisheries, wildlife, range, prescribed fire, recreation, timber management, etc.</p>	
	<p>Powder River Ranger District</p> <p>Range specialists from PRRD met with BLM counterparts in Worland and Buffalo to discuss wildlife, sagebrush treatment, and grazing issues of mutual concern.</p> <p>Range specialists from PRRD met permittees both in the field and post-grazing season to discuss management and AMP planning on Tensleep Watershed Allotments.</p> <p>PRRD staff met with WYDOT officials to coordinate effects of the US 16 reconstruction project.</p> <p>PRRD Range staff met with NRCS to discuss new pipeline construction specifications on Tensleep Canyon Allotment.</p>	
	<p>Tongue Ranger District</p> <p>Members of the Forest Plan Steering Committee visited Willow Creek on the Tongue RD, and discussed the monitoring results showing significant stream and riparian condition improvements. Over about 10 years of reduced livestock numbers, improved distribution, and construction of improvements, the stream width has narrowed, banks have revegetated, and overall stream health has markedly improved. Discussions included stream ecology, continued livestock use, permittee economics, and how desired conditions are determined.</p>	
	<p>Medicine Wheel/Paintrock Ranger District</p> <p>MWPR Range Specialists facilitated a CRM Meeting with permittees, NRCS, BLM, and Wyoming G&F to share information about grazing rotations, range improvements, and resource matters.</p> <p>MWPR and Tongue range and wildlife staff and Wyoming Game & Fish Dept. cooperatively monitored for wandering bighorn sheep from the Devil's Canyon herd prior to trailing of domestic sheep along the 14A stock driveway in June and October 2012. In addition, the Forest Service, WYGF, and two domestic sheep permittees maintained close communication throughout the trailing process to ensure no stray domestic sheep were left behind. These efforts were tied to implementation of Big 6 design criteria to minimize potential contact of the Devil's Canyon bighorn sheep herd and domestic sheep.</p> <p>MWPR and Tongue range staff conducted an intensive pasture by pasture annual use monitoring effort involving approximately 10 different permittees and/or permittee representatives as part of a trial allotment/permittee swap agreement. Various R2 monitoring protocols were discussed and used.</p>	

26.	Monitoring Driver	Monitoring Question
	Objective 2c, Livestock Grazing Strategies 1 and 2	How was information sharing and cooperation with livestock permittees, state and private agriculture organizations, universities, and research partners demonstrated?
<p>MWPR District Ranger, Bighorn Forest Resource Staff Officer, MWPR Recreation Staff Officer, Forest Hydrologist, conducted a BMP review of a pasture on the district and associated management in relation to hydrology, soils, ground cover, etc.</p>		
<p>MWPR Range Specialists began a Wyoming Rangeland Health Assessment Program (RHAP) in cooperation with the Wyoming Department of Agriculture, Wyoming Cooperative Extension, and permittees. Field monitoring planned for 2013 season.</p>		

Facilities/Infrastructure

	Monitoring Driver	Monitoring Question
35.	Objective 4a, Strategies 7, 8	Are new construction and maintenance projects being done to reduce maintenance backlogs and are they being done consistent with the current master plan, and meeting the current image guide?
<p>Several Facility/ Infrastructure improvement projects were accomplished in 2012. These projects include 2 (qty.) toilet replacements with new structures at Sibley Lake Boat Dock and Lost Cabin CG. Also completed were improvements to Burgess Junction Visitor Center which included exterior painting and new window shutters for the facility. Potable water disinfection and distribution improvements were also completed at Burgess Junction Visitor Center and Tyrrell Work Center. Energy conservation and sustainability enhancements were completed at the Greybull Work Center. These improvements included motion controlled lighting, a new high efficiency furnace and high efficiency LED lighting. Various other FA&O sites received necessary annual maintenance.</p>		
<p>These projects reduced Forest deferred maintenance backlog by approximately \$160,000.</p>		
<p>The State Trail Crew maintained 11.44 miles on the Tongue & Powder River Districts. The Montana Conservation Corps conducted heavy maintenance on 0.2 miles of trail on the MWPR. An Iowa Boy and Girl Scout group completed over 2 miles of trail maintenance on the Tongue Ranger District. The Boy Scouts conducted a LNT Master Educator’s Course on the Forest and rebuilt a puncheon on Prune Creek Trail #013. Sibley Lake Nordic trails were maintained by Black Mountain Nordic Club, a KS City Youth Group, an AmericaCorps group and individual volunteers.</p>		
<p>A total of 169 miles of trail was maintained by the Forest trail crew, partners and volunteer groups. The trail strategy is updated and used annually to determine trail priorities and Forest Service Handbook and Manual standards were implemented.</p>		

Recreation

	Monitoring Driver	Monitoring Question
39.	Objective 2c, Tourism and Recreation Strategy 1	Number of educational presentations, research projects, agreements, or activities conducted with and for others. Identify by resource function.

The forest recorded conservation and education outreach activities as follows:

Presentation Type	#	Adult	Youth
on forest to youth	17	44	1,197
off forest to youth	18	145	1,366
on forest other groups	7	147	117
off forest other groups	3	13,092	1,451
special events	12	3,243	2,235
Total	57	16,669	6,366

Burgess Junction Visitor Center: A total of **65,671** adults and **7,296** children registered. Shell Falls Visitor Center (Indoor Registration): A total of **27,161** adults and **3,017** children registered. Total visitation at Shell is under represented due to visitor pedestrian traffic patterns and limited registration by bus tour groups. At the Medicine Wheel National Historic Landmark, **11,589** visitors were contacted and documented by interpreters. Several school groups received presentations at both Burgess Junction and the Medicine Wheel.

Cloud Peak Wilderness rangers made over 600 public contacts while on patrol in the backcountry in 2012. Each of these contacts included information and education on Leave No Trace outdoor skills and ethics. Powder River District Front country dispersed recreation staff made 1500+ contacts to provide Tread Lightly! Information to the Off Road Vehicle users and to monitor State ORV sticker compliance in 2012. Sticker compliance exceeds 98%.

Colorado College of Colorado Springs, CO conducted some geology field studies across the forest. These studies were part of the Bighorn Project of 2009-12 funded by National Science Foundation Earthscope program (<http://earthscope.org>). One of the objectives is to address a serious lack of geological map coverage of the crystalline rock that makes up the majority of the Big Horn range. There is only a single published geological quadrangle for the high country around Cloud Peak and that is from 1982.