

Medicine Bow National Forest Routt National Forest

2011 Annual Monitoring And Evaluation Report



October 1, 2010 through September 30, 2011

United States Forest Service
Rocky Mountain Region



March, 2013

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Cover photo is a view of Laramie Peak from the South.

Certification

The Record of Decision (ROD) for the Medicine Bow National Forest Land and Resource Management Plan (Medicine Bow Plan) was signed on December 29, 2003. The ROD for the Routt National Forest Land and Resource Management Plan (Routt Plan) was signed on February 17, 1998. The Plans are dynamic documents and may be changed or amended based on information provided in annual monitoring and evaluation reports. The conclusions and recommendations documented in these reports are intended to provide me with the information necessary to determine whether the Plans are sufficient to guide management of the Forests for the next year or whether the Plans need to be modified.

I have reviewed the 2011 Annual Monitoring and Evaluation Report (Report) for the Medicine Bow and Routt National Forests. The Report was prepared by the Forest's Interdisciplinary Team (IDT) and indicates that, overall, Forest management is meeting the goals, objectives, standards and guidelines, and management area prescriptions prescribed in the Forest Plans. My review validates that the monitoring and evaluation requirements outlined in Chapter 4 of the Plans have been met and that the Plans are sufficient to continue guiding management of the Forests.

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

 /s/ Phil Cruz
PHIL CRUZ
Forest Supervisor

 3-27-2013
Date

Introduction

The Medicine Bow National Forest (MBNF) and the Routt National Forest (RNF) are managed under the administrative unit known as the Medicine Bow-Routt National Forests and Thunder Basin National Grassland. The MBNF and the Thunder Basin National Grassland (TBNG) are located in Wyoming, and the Routt National Forest is located in Colorado. Each forest and grassland is guided by a unique Land and Resource Management Plan (Plan).

Since there are three separate Plans that guide management of the lands on this administrative unit, we are required to prepare three annual monitoring and evaluation reports. In an effort to streamline costs for field work and report preparation, and because the forested ecosystems are similar and provide for similar multiple uses, we have combined reporting for the Medicine Bow and Routt portions of the unit into a single annual monitoring report. This single report is intended to meet the monitoring and evaluation requirements for implementing the two Forest Plans.

Chapter 4 of each Forest Plan contains monitoring direction. Some of the monitoring direction is similar between Forest Plans and some is not. Where possible, and to reduce duplicity, we have combined monitoring questions from both Forests in this report. Over the next few years, we intend to continue to combine direction wherever feasible.

The MBNF contains 1,095,384 acres of National Forest System (NFS) lands in southeast Wyoming and encompasses three distinct mountain ranges: the Laramie Range, the Medicine Bow Mountains, and the Sierra Madre Mountains. The Continental Divide also crosses the Forest for approximately 45 miles. The major river drainages are the Green River Basin that flows west into the Colorado River system and the western Dakota sub-Basin that flows into the Platte River to the east. Elevations range from 5,050 feet above sea level in the Laramie Range to 12,013 feet above sea level at Medicine Bow Peak. More than 50 percent of Wyoming's population lives in the vicinity of the Forest. Timber harvest and domestic livestock grazing have been historic uses on the Forest since before the turn of the century. The Forest provides a wide variety of recreation activities, including hunting, snowmobiling, skiing, hiking, and camping.

The RNF contains 1,125,568 acres of NFS lands within northwest Colorado. In addition to containing management direction for the RNF, the 1997 Routt Revised Plan contains direction for 85,350 acres of the Arapaho National Forest, administered by the Routt National Forest. It also contains direction for 104,744 acres of the Williams Fork Area of the Arapaho National Forest, administered by the Arapaho Roosevelt National Forest.

The Forest is a varied mix of high plateaus, rolling foothills, and mountains. Many of the mountains exceed 12,000 feet in elevation. The Continental Divide crosses the Forest for approximately 113 miles. Although much of the RNF can be characterized as "remote and undeveloped," it still provides a high level of multiple use values including outstanding wildlife habitat, important watersheds, valuable recreational opportunities, timber, livestock, minerals, and other natural resources.

Goals and Objectives

Chapter 1 of both the Medicine Bow and Routt Plans lists goals and objectives to be accomplished through National Forest management. Goals and objectives provide broad, overall direction regarding the type and amount of goods and services the National Forests will provide; they also focus on achieving ecosystem health and ecological integrity.

Most of the objectives in the 2003 Medicine Bow Revised Forest Plan are due to be accomplished over the life of the plan, usually considered to be 15 years. However, some objectives have earlier due dates or are annual objectives. Progress made toward accomplishing annual objectives, as well as objectives due by 2007 or earlier, is listed in Appendix 1 of this report. The Routt Plan does not give timelines for goal and objective accomplishments; consequently, progress to date was reported for all of the Routt objectives (see Appendix 2).

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

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

The goals and objectives in the 2003 Medicine Bow Revised Forest Plan are tiered to the *USDA Forest Service Government Performance and Results Act Strategic Plan: 2000 Revision (GPRA)*. This strategic plan presents the goals, objectives, and activities that reflect the Forest Service's commitment to a sustainable natural resource base for the American people. The Routt Plan pre-dates the GPRA legislation; however, its goals are consistent with the strategic plan. All goals and objectives fall under the overall mission of the Forest Service, which is to sustain the health, productivity, and diversity of the land to meet the needs of present and future generations. "Caring for the Land and Serving People" expresses the spirit of this mission. Implicit in this statement is the agency's collaboration with people as partners in caring for the Nation's forests and rangelands.

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

Conclusions and Recommendations

Annual monitoring and evaluation reports for fiscal years 2009 and 2010 were combined into a single report due to an increased workload related to the bark beetle epidemic. The primary findings from that combined report are still valid for FY 2011's Monitoring and Evaluation Report. Most of the conclusions and recommendations are largely related to the ongoing bark beetle epidemic (referring to both the Mountain Pine beetle and Spruce beetle for purposes of this document). More details can be found under the *Insect and Disease* monitoring item.

The Forest's Interdisciplinary Team (IDT) developed recommendations specific to the bark beetle epidemic and other resource areas, as outlined below. Numerous additional recommendations can also be found within the specific 'Monitoring Items' sections. Future monitoring reports will document the progress made toward accomplishing the recommendations listed below, as well as those listed in the Monitoring Items sections.

Conclusions

- The Forests will contain much larger areas of young forest and much less older forest resulting in changes to watersheds and habitats for wildlife species.
- Changes in habitats will reduce habitat for some management indicator species (MIS) and sensitive species (SS), while other species will gain habitat.
- Tree mortality and hazards from falling trees will have large effects on virtually all Forest infrastructures which may result in increased safety hazards.
- Rangeland management will become much more difficult due to damage to fences and from changes in transitory range and natural barriers.
- Invasive weed species will likely increase in coverage.
- Fire risk and fuel loading has changed and will continue to change over time as trees die and fall.
- The character of Special Interest Areas (SIAs) and Research Natural Areas (RNAs) with lodgepole pine stands may change, but current Forest Plan direction is still valid.

Recommendations

- Evaluate specific forest direction (desired conditions, goals, objectives, and standards and guidelines) related to MIS/SS habitat, old growth (MBNF), and late successional forest (RNF) to determine if additional direction and/or modification is needed to make the Plans relevant to the changed conditions.
- Incorporate the language and terminology found in the new federal wildland fire policy into the Plans to avoid confusion while analyzing fire management strategies in any given area.
- Continue treating hazard trees around forest infrastructure and administrative sites.
- Modify plan direction relevant to fire suppression to reflect the full range of fire management strategies (direct, perimeter, and prescription control) for all

affected management areas and geographic areas to ensure all wildland fire management options are available under these changed conditions.

- Complete a Forest-wide assessment of the watersheds that are most at risk of adverse effects to aquatic systems, public water supplies, and other infrastructure due to large scale fire.
- Continue to emphasize travel management, use of the recently created Motor Vehicle Use Maps, and an active restoration program. These are necessary to ensure properly functioning riparian and wetland conditions on the Forest.
- Develop a comprehensive strategy to address stream flows while still recognizing the need for additional consumptive uses of water.
- Monitor a sample of soil and water mitigation measures during and after implementation to determine the effectiveness for protecting water quality.
- Review standards contained in both Forest Plans relating to snag retention in harvest units, in light of the amount of tree mortality from the Mountain Pine beetle (MPB) epidemic.
- Limit and/or reduce disturbance in remaining late successional forest and fen/wetland habitats to maintain elements of plant diversity.

Forest Plan and Policy Updates

Adjustments to the Forest Plans

The Medicine Bow Revised Forest Plan was approved in 2003. Since then, the Forest has issued six errata, one administrative correction, and one Forest Plan amendment. The amendment was approved in 2007 as part of the Travel Management: Eastern Snowy Range decision. The amendment changed roughly 422.5 acres of Forest Plan Management Area (MA) 1.33 - Backcountry Recreation, Summer Non-motorized with Winter Snowmobiling north of Albany to MA 3.31 - Backcountry Recreation, Year-round Motorized to accommodate a single-track motorcycle trail (Albany Trail). A link to this decision can be found at: <http://www.fs.fed.us/r2/mbr/projects/trans/index.shtml>

The Routt Plan was approved in 1998. Since then, three errata, three administrative corrections, and four Forest Plan amendments have been issued. The latest amendment, issued in February 2007, updated the list of Management Indicator species (MIS) for the Routt National Forest. The amendment and Decision Notice can be found on the Medicine Bow - Routt (MBR) website: http://www.fs.fed.us/r2/mbr/projects/forestplans/in_progress/index.shtml

As mentioned previously, Forest Plans are dynamic and ever changing. To stay current with Plans for the Medicine Bow and Routt National Forests, please refer to the following internet website: <http://www.fs.fed.us/r2/mbr/projects/forestplans/index.shtml>

Southern Rockies Lynx Environmental Impact Statement (EIS)

The Final Environmental Impact Statement and Record of Decision for the Southern Rockies Canada Lynx Amendment were released in October 2008. This amendment amended eight forest plans to better conserve the threatened Canada lynx on National

Forests in Colorado and southern Wyoming, including both the Routt and Medicine Bow National Forests. More information can be found at the following website:
<http://www.fs.fed.us/r2/projects/lynx/>.

New Laws and Regulations

Planning Rule

The U.S. District Court, Northern District of California (9th Circuit) final decision in *Citizens for Better Forestry v USDA; Defenders of Wildlife v Johanns* (case 3:04-cv-04512-PJH; filed 03/30/2007), with respect to the 2005 National Forest System Land Management Planning Rule, implementation and utilization of the 2005 Planning Rule was enjoined until the "USDA has fully complied with pertinent statutes." To be in compliance with this decision, all land management plan revision processes associated with the 2005 Planning Rule were suspended until further notice.

On December 17, 2009, Agriculture Secretary Tom Vilsack announced that the USDA Forest Service was beginning an open, collaborative process to create and implement a modern planning rule to address current and future needs of the National Forest System. Throughout April and May 2010, the USDA Forest Service hosted a series of public meetings to provide opportunities for public input and dialogue on the development of a new planning rule. These meetings were followed by additional conversations with Forest Service employees and the Fourth National Roundtable in July, 2010 and the Second National Tribal Teleconference Call in August, 2010. The results from these meetings, as well as the formal comments received from the public, were used to develop the proposed planning rule. The draft environmental impact statement (DEIS) for the proposed planning rule came out in early 2011 and the final rule for land management planning was published in the federal register on April 9, 2012. For more information go to the following link:

[U.S. Forest Service Planning Rule Revision](#)

Travel management

In November, 2005 the USDA Forest Service announced new travel management regulations. The new travel management policy requires each national forest and grassland to identify and designate those roads, trails, and areas that are open to motor vehicle use.

The Routt National Forest first published their Motor Vehicle Use Maps in September 2007 and has published updated maps annually since then. Maps for all units on the Medicine Bow National Forest were first published in September 2008 and updated maps have been published annually since that time. The Motor Vehicle Use Maps display routes that are designated for motorized use. More information can be found at the following website:

http://www.fs.fed.us/r2/mbr/recreation/travel_management/index.shtml

Roadless Area Conservation

Colorado Roadless Rulemaking

In 2006, the State of Colorado and the USDA Forest Service began work on a state-specific rule that would guide management of over four million acres of roadless National Forest System lands in Colorado. The rulemaking process began with Under Secretary of Agriculture Mark Rey's acceptance of Governor Bill Ritter's petition to

pursue state-specific rules. Rulemaking continued with publication of a Notice of Intent in the Federal Register on December 26, 2007 and publication of a Proposed Rule on July 25, 2008. On April 15, 2011, the Forest Service published a new Proposed Rule in the Federal Register in response to public comment on the 2008 Proposed Rule and a revised petition submitted by the State of Colorado on April 6, 2010. Finalization and release of the final Rule, EIS, and Record of Decision are still pending. More information is available on the following website: <http://roadless.fs.fed.us/colorado.shtml>

Wyoming Roadless Status

In 2001, the Forest Service enacted the Roadless Area Conservation Rule (RACR) which essentially prohibited road construction and reconstruction and timber harvesting, subject to certain limited exceptions, in Inventoried Roadless Areas (IRAs) on a uniform nationwide basis. Controversy surrounded the RACR since its inception and was appealed by the State of Wyoming in 2008. On October 21, 2011, the 10th Circuit Court of appeals released its long-awaited decision, finding in favor of the Forest Service and against the State of Wyoming. The Court held that the promulgation of the 2001 Roadless rule did not violate the Wilderness Act, NEPA, NFMA, the Organic Act, or MUSYA. The Circuit ordered the District Court to vacate its 2008 ruling that enjoined the Roadless rule and lift its injunction:

“Exercising jurisdiction pursuant to 28 U.S.C. § 1291, we REVERSE the district court’s order granting Plaintiff’s declaratory relief and issuing a permanent injunction, and REMAND the case for the district court to vacate the permanent injunction.”

Recent court cases on the RACR have led to NFS direction to forests that all decisions for projects in Roadless areas must comply with the 2001 Roadless Rule. The current interim direction and other information regarding Roadless area direction and management can be found at the following website: <http://www.roadless.fs.fed.us/>



Figure 1: Columbine in the Platte River Addition Roadless Area

Projects and Ongoing Activities

Community Involvement

This section includes descriptions of the task forces, community groups and other working groups, working with or on issues associated with the Medicine Bow-Routt NFs.

Bark Beetle Epidemic

The aftermath of a landscape-scale MPB and Spruce beetle (SB) epidemic is a major focus for community involvement, education, and information. Efforts to raise awareness and educate affected communities on the epidemic began in 1999 and continue today.

Bark Beetle Information Task Force (BBITF)

The Bark Beetle Information Task Force (BBITF) was formed in the spring of 1999 to help residents of Routt County and surrounding areas understand potential effects of bark beetles on national forests and private land. The Task Force included representatives from the State Forest Service, the Medicine Bow-Routt National Forests, Colorado State University Cooperative Extension, City of Steamboat Springs, Routt County, Steamboat Ski and Resort Corporation, Steamboat Chamber Resort Association, Inc., Community Agriculture Alliance, and Colorado State Parks. The Task Force's mission was to provide the public with information about bark beetles and potential tree mortality so they could make informed decisions regarding protection of their private property and provide meaningful input regarding proposed actions on public lands.

Over a several year period, the BBITF expanded its mission to include education about the role of fire in the ecosystem, fire prevention for homeowners, and fuel reduction projects in wildland urban interface areas. It also engaged in numerous education efforts including: spearheading publications about utilizing beetle killed wood; embarking on a campaign (Bluestain Campaign) to promote the use of blue-stain lodgepole pine; and working with Steamboat Springs High School videography students on the production of a hazard tree awareness video for use on websites and other venues, to name a few.

In March of 2011, the BBITF decided that it had fulfilled its mission for "bark beetle information" and decided to meld its members into the Yampa Valley Sustainability Council. The BBITF had a final meeting in April 2011.

Colorado Bark Beetle Cooperative

The Colorado Bark Beetle Cooperative (Cooperative) was formed in late 2005 and is a partnership of federal and state agencies, counties, municipalities, and communities working together to develop and implement strategies to reduce forest mortality and associated with bark beetle epidemics in high priority areas. In 2006, the Cooperative embarked on major efforts to bring attention to the beetle epidemic and to form short and long-term strategies to deal with beetle epidemics and to prepare for the future forest. The Cooperative has a steering committee, communications team, and an implementation team. The Cooperative's efforts to bring attention to the effects of the bark beetle epidemic continue to date.

Bark Beetle Incident Management Organization

On November 6, 2009, the Rocky Mountain Regional Forester signed a Delegation of Authority with a National Incident Management Organization (NIMO) to assume command of the bark beetle incident on the Medicine Bow-Routt, Arapaho-Roosevelt and White River National Forests for a two-year period. The Delegation of Authority outlined objectives, budget, and communication expectations associated with the bark beetle epidemic. In 2010, the organization became the Bark Beetle Incident Management Organization.

Aerial surveys from 2010 illustrate that more than four million acres of lodgepole pine in northwest Colorado and southern Wyoming have been killed by the beetle epidemic. The primary emergency presented by the bark beetle incident is the eminent danger presented by dead and dying trees that are falling at an ever increasing rate across the impacted area. Secondly, the threat of catastrophic wildfire continues to grow, putting communities and critical watersheds at risk.

Routt County Public Information Officers

This group was formed in 2006 and is comprised of information officers from the county, city, schools, airport, hospital, emergency response, Forest Service, and others. The focus is to train together and share information so that when an emergency (fire, plane crash, etc.) occurs, everyone is prepared to work together. The group was still active in 2011.

Medicine Bow-Routt Resource Advisory Committee (RAC)

The 15-member RAC represents a wide range of interests. Committee duties include reviewing proposed land management projects on or adjacent to the Medicine Bow-Routt National Forests. The projects are funded through Title II of the Secure Rural Schools Act. The committee recommends which projects to fund and is responsible for coordinating with land management agencies and county officials. In 2010, the RAC approved 10 projects in Routt, Jackson, Albany and Carbon Counties.

Medicine Bow Forest Plan Cooperators

In 2007, then Forest Supervisor, Mary H. Peterson, signed a Memorandum of Understanding (MOU) with the Southeastern Wyoming Conservation Districts to provide for a cooperative working relationship during implementation of the Medicine Bow Plan. The Southeastern Wyoming Conservation Districts, as well as other cooperators, continue to meet and provide input to the Forest Service.

- The Medicine Bow NF hosts annual spring and fall meetings with the Conservation Districts and other interested cooperators. The spring meeting is in the office to provide an opportunity to discuss past and upcoming projects. The fall meeting is a field day where we are able to visit projects that have occurred and discuss what has worked and what hasn't in the context of the revised plan.
- Two of the Conservation districts have been successful in acquiring two stewardship projects. One project is on the Brush Creek/Hayden Ranger District, and the second is on the Laramie Ranger District.
- In cooperation with the Conservation Districts we have used these stewardship projects to demonstrate to numerous interested parties how stewardship can

work, and how it is a mutual benefit to both the Conservation Districts and the Medicine Bow NF.

Projects Completed During FY11

Tables 1 and 2 below list the environmental analysis projects completed on the Medicine Bow and Routt National Forests during FY 2011. The types of decisions under the National Environmental Policy Act (NEPA) include Decision Memos (DMs) for actions that fall under categorical exclusions, Decision Notices (DN) for Environmental Analyses (EAs), and Records of Decision (RODs) for Environmental Impact Statements (EISs). The project lists were generated from the database that produces the Schedule of Proposed Actions (SOPA). The SOPA quarterly report is available at the following internet website: <http://www.fs.fed.us/sopa/forest-level.php?110206>

Table 1: Medicine Bow NF Projects Completed in FY11

Name	Decision Type	Date Signed	Primary Purpose
Brush Creek/Hayden Ranger District (BCH)			
Headquarters Park Cabin	DM	6/28/2011	Special Use Management
East Fork Encampment Weir Removal	DM	5/13/2011	Fisheries Improvement
Radio Tower Replacement Kennaday Peak	DM	4/27/2011	Facilities Management
Snow Survey Cabin Solar Power System	DM	8/25/2011	Facilities Management
Laramie Ranger District (LRD):			
Bald Mountain and South Fork Mill Creek Prescribed Burn	DM	4/7/2011	Fuels Management
Wyoming Dept. of Transportation Hwy 230 Fence Clearing	DM	1/10/2011	Hazard Tree Reduction
Dobson Private Property Access	DM	6/10/2011	Special Use Management
Medicine Bow Nordic Ski Patrol	DM	2/25/2011	Special Use Management
Union Telephone	DM	10/29/2010	Special Use Management
Colorado Mountain College	DM	1/23/2011	Special Use Management
Rockaway Ranch Road Easement	DM	1/28/2011	Special Use Authorization
Douglas Ranger District (Laramie Peak Unit)			
North Laramie Range Aspen Restoration	DN	7/15/2011	Vegetation Management
Harris and Fletcher Park Roadside Fuel Breaks	DM	6/27/2011	Fuels Management
Darrell Beckham Special Use Permit	DM	03/10/2011	Special Use Authorizations

Table 2: Routt NF Projects Completed in FY11

Name	Decision Type	Date Signed	Primary Purpose
Forest-wide Projects			
Emergency Powerline Clearing Project	DN	11/7/2010	Hazard Tree Reduction
Hahns Peak-Bears Ears District (HPBE):			
Stewardship Rangeland Management Analysis	DN	9/29/2011	Range
Steamboat Ski Area Summer Trails	DN	6/10/2011	Recreation Management
Columbine Parking Area and Snowmobile Trail Reroute	DN	3/3/2011	Recreation Management
4 Counties Ditch Rehabilitation	DN	8/22/2011	Special Use Management
Northwest Colorado Snow Club Permit Renewal	DM	11/10/2010	Special Use Management
Routt Powder Riders permit Renewal	DM	11/20/2010	Special Use Management
Steamboat Lake Snow Club Permit Renewal	DM	11/20/2010	Special Use Management
Storm Peak Lab Remodel	DM	8/7/2011	Special Use Management
Parks Ranger District			
Big Creek Thinning / Planting Proposal	DM	8/3/2011	Vegetation Management
Buffalo-Parkview Allotment Boundary Fence Extension	DM	2/28/2011	Range
Illinois-Owl Mountain Allotment—Drift Fence	DM	2/28/2011	Range
Parkview Allotment-East Branch Willow Creek Pasture Fence CE	DM	2/28/2011	Range
Rock Creek Extension Fences	DM	2/28/2011	Range
El Paso E&P Corp-North Park 2D Seismic Exploration	DM	7/21/2011	Minerals
Grizzly Analysis - Actions outside of Inventoried Roadless	DN	8/4/2011	Hazard Tree Reduction
Grizzly Analysis - Actions in Inventoried Roadless	DN	9/22/2011	Hazard Tree Reduction
Newcomb Creek Restoration	DM	6/27/2011	Watershed Improvement
Grizzly Helena Trail Crossing	DM	1/4/2011	Recreation Management
Teal Lake Restoration Project (Letter to Record)	DM	7/18/2011	Recreation Management
Farrell Camera Installations	DM	7/25/2011	Special Use Management
Red Feather Outfitters Camp Move	DM	9/1/2011	Special Use Management
Vohs Cabin Removal Project	DM	9/14/2011	Special Use Management
National Youth Using Minibikes Moose Run Dual sport Rally	DM	7/7/2011	Special Use Management

Yampa Ranger District:			
Greenridge Allotment Management Plan	DN	2/20/2011	Range
Middle Creek/Ute Allotment Management Plan	DN	7/11/2011	Range
Trout Creek Fish Barrier	DN	5/22/2011	Fisheries Improvement
NFSR 225 Analysis	DN	6/5/2011	Travel Management
Temporary Outfitter Guide Permit Renewals	DM	7/2/2011	Special Use Management
4+2T Ranch 10 Year Outfitter Guide Permit Issuance	DM	7/20/2011	Special Use Management
Coberly Creek Outfitters 10 Year Outfitter Guide Permit Issuance	DM	7/20/2011	Special Use Management
High Lonesome Outfitters 10 Year Outfitter Guide Permit Issuance	DM	7/20/2011	Special Use Management
Pack Country LLC 10 Year Outfitter Guide Permit Issuance	DM	7/20/2011	Special Use Management
W3 Outfitters 10 Year Outfitter Guide Permit Issuance	DM	7/20/2011	Special Use Management

Figure 2: Curious Black Bear on the Brush Creek/Hayden Ranger District



Monitoring items

The National Forest Management Act (NFMA) identifies specific, legally-required monitoring items for forest plan implementation as well as additional monitoring that is conducted based on the availability of funding and personnel. The discussion and results of the monitoring items are given below.

Ensure Sustainable Ecosystems

Soil Productivity

Routt Monitoring Item 1-1
Medicine Bow Item Subgoal 1.a 36CFR219.12(k)(2)
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

Are long-term soil health and productivity being maintained?

Monitoring Protocol/Data Collected

Forest Service Handbook 2509.18 Soil Management Handbook R2 Supplement No. 2509.18-92-1 Chapter 2 - Soil Quality Monitoring indicates that soil productivity is the inherent capacity of a soil to support the growth of specified plants, plant communities, or a sequence of plant communities to support multiple land uses.

Maintaining land productivity, protection, and, where appropriate, improvement of soil and water quality requires that detrimental changes in soil properties (physical, chemical, or biological) that result in the loss of the inherent ecological capacity or hydrologic function that lasts beyond the scope, scale, or duration of the project causing the change be avoided as these activities can have far-reaching implications for watershed management in the National Forest System.

A guideline of 15 percent reduction in inherent soil productivity potential is used as a basis for setting threshold values for measurable or observable soil properties or conditions. This 15 percent guideline is based on available research and current technology. No more than 15 percent of an activity area will be left in a detrimentally compacted, displaced, puddled, severely burned, and/or eroded condition. The threshold values serve as an early warning signal of reduced productive capability.

This item is assessed using field observations of soil characteristics that indicate detrimental conditions related to soil productivity and health.

Results/Evaluation

Travel management road closures, road side hazard tree removal, Encampment Weir removal project, and wildland urban interface (WUI) projects were monitored in 2011 to evaluate the effects of these activities on soil health and productivity across the Medicine Bow - Routt (MBR) National Forests.

Travel Management Road Closures:

In 2011, the Laramie Ranger District (LRD) of the MBNF closed roads to improve soil productivity and reduce impacts to watersheds. Methods of closure included bulldozing soil into small berms to limit access to motor vehicles and de-compacting areas not bulldozed with ripper teeth behind a dozer. Some seeding was also completed and some straw/hay was placed to facilitate germination of seeds and provide ground cover. Issues with the project include:

- The numerous small berms result in greater than 15 percent detrimental soil disturbance.
- Berms were created and left in a wetland disrupting the hydrology.
- Berms were created and left in Water Influence Zones. These berms were eroding into riparian areas.
- Ripping was not deep enough to de-compact the soils.
- Ground cover did not meet the amount needed to control soil erosion.

Based on these findings, the 2011 road closures may not be maintaining soil productivity and the Forest could be in violation of the Clean Water Act (CWA).

Roadside Hazard Tree Removal:

Brush Creek Hayden Ranger District (BCH)

Forest Service Road 409

- Summer logged. Tractor harvesting equipment caused detrimental soil displacement. However, this displacement was rehabilitated by spreading slash and litter over the bare soils. Ground cover was sufficient to control erosion. Detrimental soil disturbance is less than 5 percent. The project is maintaining soil productivity.

Forest Service Road 801

- Summer logged. Minor soil disturbance consisting of faint wheel tracks or slight depressions, minimal mixing of surface soil with subsoil. Ground cover is sufficient to control erosion. Detrimental soil disturbance is less than 1 percent. This project is maintaining soil productivity.

Forest Service Road 550

- Summer logged. Minor soil disturbance consisting of faint wheel tracks or slight depressions, minimal mixing of surface soil with subsoil. Purchaser filled in some ruts and spread slash for erosion control. Ground cover is sufficient to control erosion. Twenty-five percent of the brush piles are in the Water Influence Zone however this is not detrimental disturbance unless they are burned. Detrimental soil disturbance is less than 8 percent. Project is maintaining soil productivity.

Laramie Ranger District (LRD)

Forest Road 512

- Trees were chipped on this portion. Chip piles were less than three inches in depth and cover less than 40 percent of the activity area. Ground cover was approximately 90 percent sufficient to control erosion. No erosion occurring. Detrimental soil disturbance was less than 2%. Project is maintaining soil productivity.
- Winter logging occurred on this section monitored. Ground cover 100 percent. No erosion occurring. Minor disturbance, faint wheel tracks, to two drainage features. No detrimental soil disturbance. Project is maintaining soil productivity.

East Fork Encampment Weir Removal (BCH):

- Road into project was rehabilitated by ripping the soil with an excavator bucket with a tooth. Trees were placed on road to limit access by motor vehicles.
- The number trees of placed on the closed road results in a high carbon to nitrogen ratio that reduces plant available nutrients due to microbial immobilization, leading to a reduction in productivity.

Wildland Urban Interface Projects (LRD):

- Wold and Miller Lake WUI projects were winter logged. All units had less than 1% detrimental soil disturbance. Water Influence zones had little (<1%) disturbance. Ground cover was 90 percent, sufficient to control erosion. Project is maintaining soil productivity and quality.

Recommendations

- Road closure projects exceeding 15 percent ground cover disturbance should have the soil berms spread out over the roads and erosion control in place (ground cover). These actions will help return the soil to productivity, increase infiltration and water retention, and reduce erosion. Trees can be felled to limit access. The berms should be taken out of the wetland and hydrology restored. This should become a watershed improvement project.

Air Quality

Routt Monitoring Item 1-2
Reporting Period: Annual

This monitoring item asks the question:

Are management activities maintaining or improving air quality including the Mount Zirkel Wilderness?

Monitoring Protocol/ Data Collected: 2009 and 2010

There are two air-quality monitoring sites located in the Routt National Forest near the southern boundary of the Mount Zirkel Wilderness Area: Buffalo Pass, Dry Lake

(CO93) and Buffalo Pass, Summit Lake (CO97). Both sites are components of the National Atmospheric Deposition Program (NADP) and are included in the National Trend Network (NTN). Each site monitors precipitation (rain and snow) chemistry; data are collected from the sites four times per month for each month of the year. Atmospheric-chemistry metrics (mg/L) collected at both sites are: Ca, Mg, K, Na, NH₄, NO₃, Cl, SO₄, PO₄, conductivity (μSiemens/cm), and pH. Additionally, CO97 is part of the Mercury Deposition Network (MDN) and collects precipitation samples that provide data about atmospheric-mercury concentrations (ng/L) and deposition (ng/m²). The Buffalo Pass, Dry Lake site has collected precipitation-chemistry samples continuously since October 14, 1986. The Buffalo Pass, Summit Lake site has collected precipitation-chemistry samples continuously since July 2, 1984. All precipitation samples are analyzed by the Central Analytical Laboratory (CAL), Illinois State Water Survey located at the University of Illinois, Urbana-Champaign.

In 2009 a substantial-equipment upgrade was made to CO93 and CO97 to improve the quality and reliability of precipitation data collected at the sites: state-of-the-art, electronic precipitation gages were installed to replace the old chart gages. In addition, the power supply at CO97 was reconfigured and upgraded so that the Forest can better track electricity use at the site. Precipitation-sample collection continued at CO93 and CO97 and the samples were submitted to the CAL for analysis.

In FY11, precipitation-chemistry samples continue to be collected at CO93 and CO97 and submitted to the CAL for analysis.

Results/Evaluation: Learning to operate the new precipitation gages in 2009 and 2010 involved a steep learning curve, especially in addressing the reliability of the wireless downloads between the new gages and the operator PDA. For the most part, those issues have been resolved. During FY11, the new gages appear to be providing reliable precipitation measurements. Data from both sites are publicly available on the following website:

<http://nadp.sws.uiuc.edu/sites/siteinfo.asp?net=NTN&id=CO93>;

Substitute “CO97” in place of “CO3” at the end of the URL to access data from the Buffalo Pass, Summit Lake site. Overall, the data indicate that the Class 1 Airshed in the vicinity of the Mount Zirkel Wilderness has been in compliance with state and federal air-quality standards in FY11. Consequently, forestwide standards and guidelines have been met during the first three years of the third, five-year monitoring interval (2009-2013).

Recommendations

- Continue to collect atmospheric-chemistry precipitation samples from CO93 and CO97. In addition, continue to implement prescribed-fire treatments within prescription and take other management actions conducive to reducing combustion products such as smoke and soot that result from post-harvest treatments (i.e. slash-pile burning).

Water Quality

Routt Monitoring Item 1-3
 Medicine Bow Objective 1.a.2
 Frequency of Measurement: Annual
 Reporting Period: Annual

This monitoring item asks the question:

Are management activities meeting state water quality standards and to what extent has water quality been restored, maintained or improved?

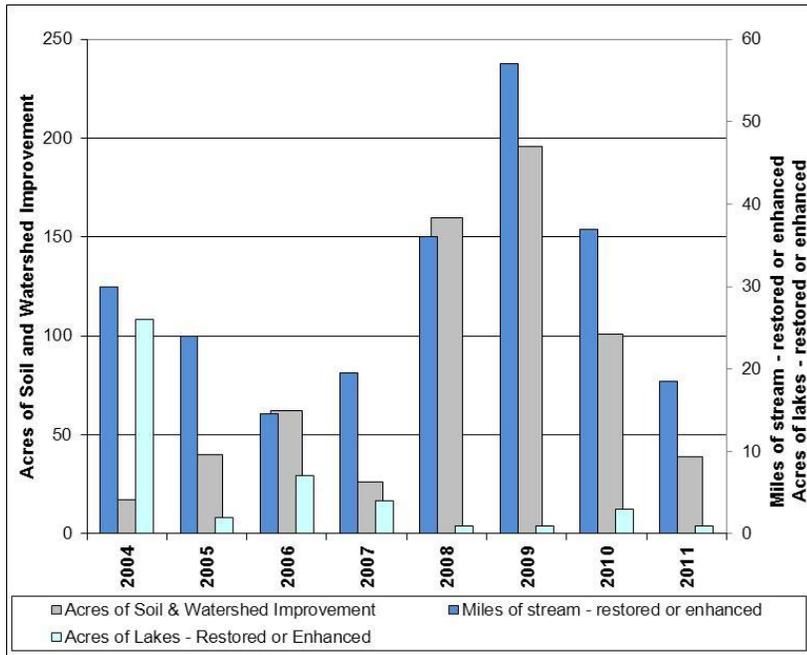
Monitoring Protocol/Data Collected

Water quality data on the MBR are collected by various federal, state and local governments as well as non-governmental entities and individuals. The states of Colorado and Wyoming produce biennial comprehensive summaries of water quality conditions in each state.

Water quality is restored, maintained, or improved largely through soil and water improvement project and stream and lake enhancement projects. Implementation of these projects focuses largely on reducing sedimentation to streams and lakes to protect the state designated beneficial use of aquatic life. Some projects also help to protect water quality by reducing input of pathogens such as E. coli or inorganic compounds such as metals. Cooperative watershed plans with conservation districts and state agencies provide a strategic approach to maintaining and improving water quality, usually with a focus on streams where specific water quality concerns have been identified.

Results/Evaluation

Water Quality Restoration and Improvement: Watershed, Soil and Fisheries



improvement project accomplishments are shown in Table 3 and summarized over time in Figure 3. The MBR accomplished 39 acres of actual Soil and Watershed Improvement accomplishments in 2011; 18.5 miles of stream habitat improvement and one acre of Lake Habitat improvement.

The target for Soil and Watershed improvement significantly increased in FY11 to 255 acres. This represents a 240% increase from the average FY08-10 target of 106 acres.

Figure 3: Soil Water and Fisheries Accomplishments

The amount of soil and watershed improvement acres accomplished varies based on the complexity and cost of a project, available funding, and staffing to implement the project. Some program funds were available to accomplish soil and watershed improvement projects in 2011. The majority of funding came from integrated funds; grants and integrated Forest Service funds have also been used to accomplish many other projects including stream and lake habitat improvement (Table 3).

Watershed improvement accomplishments were primarily due to projects at road/stream crossings to improve aquatic organism passage, road decommissioning, and wetland enhancement.

Table 3: 2011 Soil, Watershed and Fisheries Improvement Accomplishments.

Project	HUC	Ranger District	WSI Acres	Lake Acres	Stream Habitat Improved (Miles)
North Platte Headwaters (10180001)					
Ninegar Creek Wetland Enhancement	101800010101	PARKS	2	0	0
Upper North Platte (10180002)					
Eastern Snowy Range Road Decomm.	101800020106	LRD	13	0	3
Pelton Creek Culvert #1 Replacement	101800020106	LRD	0	0	2
East Fork Encampment - Weir - Fish Barrier	101800020503	BCH	0	0	4
550.2F CPL/Soldier Summit Route	101800020504	BCH	1	0	0.5
413.1A / 4211 Decomm.	101800020507	BCH	1	0	0.5
Bottle Creek - Headgate installation	101800020507	BCH	0	0	1
Sec 36 Trespass Restoration	101800021101	BCH	5	0	0
Upper Laramie (10180010)					
Maintenance - Hanging Lake, Little Brooklyn Lake, Barber Lake	101800100602	LRD	0	1	0
Colorado Headwaters (14010001)					
NFSR 212 Decommissioning	140100010902	YAMPA	11	0	0
NFSR 225 Travel Mgt. Project	140100011006	YAMPA	5	0	0
Coal Creek non-native removal	140500010102	YAMPA	0	0	0.5
Trout Cr fish barrier	140500010501	YAMPA	0	0	4
Circle Creek barrier and chemical treatment	140500010601	HPBE	0	0	3
Little Snake (14050003)					
Hwy 70 / Nellie Ditch Rehab	140500030108	BCH	1	0	0
FY2011 TOTALS:			39	1	18.5

Soil, Water, and Fisheries Improvement Highlights

NFSR 212 Decommissioning: National Forest System Road (NFSR) 212 was identified as a high value level 3 Road in the Forest Scale Roads Analysis, but was also identified as having high watershed, riparian, and aquatic risk. As part of meeting the Purpose and Need in the Rock Creek EIS of relocating and/or decommissioning segments of the road system that are likely to cause adverse impacts to the stream network, and to address concerns identified in the Forest Roads Analysis, approximately 3 miles of this road were relocated into a dry upland site. The relocation not only improved watershed health, but also improved user safety and the ability to conduct vegetation management projects. The old NFSR 212 was decommissioned in FY11 as part of the Blacktail Stewardship project.

NFSR 225 Travel Management Project: This is an integrated resource project designed to reduce watershed impacts, particularly in light of the mountain pine beetle epidemic on Gore Pass while improving wildlife habitat and maintaining a high quality recreation experience. This project included road relocation to reduce road incision and improve user safety, road decommissioning, conversion of a portion of a level 2 road to level 1 status, and road construction to facilitate dispersed recreation in an area that would have minimal watershed impacts. The majority of this project was completed in FY11. One road relocation (and subsequent decommissioning of the old road) remains to be completed following timber removal in the area.

Bottle Creek Headgate Installation: The Nieswender Ditch diverts water from Bottle Creek, a tributary of the North Fork Encampment River. Water is conveyed in the ditch across NFS lands and used for irrigation purposes on private lands outside of the Forest boundary. Historically, the Nieswender Ditch diverted all the streamflow from Bottle Creek during all times of the year, leaving Bottle Creek below the diversion dry and occasionally overflowing the ditch and causing erosion down the hillslope. A headgate was installed in the ditch during the fall of 2010, as a condition of a “Ditch Bill” easement issued for the facility in 2008. With the headgate in place, the amount of water entering the ditch could be controlled, and despite the heavy snowpack, the ditch did not overtop and erode down the hillslope in 2011. In addition, water which was not necessary for irrigation was returned to Bottle Creek for the first time in many years, thereby improving aquatic and riparian habitat.

Pelton Creek/NFSR 898 Culvert Replacements: Two undersized culverts in poor condition that were creating aquatic passage barriers were replaced with bottomless arch culverts in 2011 to facilitate aquatic organism passage for trout and other aquatic organisms. These culvert replacements not only helped to restore aquatic passage, but also to restore more natural hydrologic processes including sediment and bedload transport, and providing for better debris and flood flows at the crossings. This project complements a culvert which was replaced in 2008 and one additional culvert is planned for replacement in 2012. The entire main stem of Pelton Creek should be accessible to aquatic organisms when these projects are completed.

Status of Water Quality: A summary of the status of water quality across the Forest can be found in Table 4; streams with water quality problems that are affecting designated beneficial uses are listed in Table 5. Most surface waters on the Forests are believed to be meeting all designated water quality uses, but due to the sampling

requirements only a small subset of the waters have recent comprehensive data to support this conclusion (Table 4).

Table 4: 2011 Summary of Forest Water Quality Assessments for Colorado and Wyoming

Water Body Name	Reach	Determination	Source
North Platte River Basin - Wyoming			
Bear Creek		Fully supports cold-water game and non-game fisheries, aquatic life, fish consumption, drinking water, agriculture., wildlife and industry. Indeterminate recreation	WYDEQ, 2010
South Fork Little Laramie River	WYNP10180010-664	Fully supports all designated uses.	WYDEQ, 2004
Middle Fork Mill Creek	WYNP10180010	Fully supports all designated uses.	WYDEQ, 2004
Miller Lake	WYNP10180010	Fully supports all designated uses, except insufficient data to determine if fish consumption and contact recreation uses are supported.	WYDEQ, 2006
Hanging Lake	WYNP10180010	Fully supports all designated uses, except insufficient data to determine if fish consumption and contact recreation uses are supported.	WYDEQ, 2006
South Fork Hog Park Creek	WYNP10180002	Fully supports all designated uses.	WYDEQ, 2004
Smith North Creek	WYNP10180002-666	Fully supports all designated uses.	WYDEQ, 2004
Encampment River	WYNP10180002-086	Fully supports all designated uses, except insufficient data to determine if contact recreation uses are supported.	WYDEQ, 2008
North Platte River Basin-- Colorado			
North Platte Tributaries within wilderness areas (except South Fork Big Creek)	COUCNP01	Fully supports all designated uses	CDPHE, 2003
South Fork Big Creek	COUCNP01	Fully supports aquatic life	CDPHE, 2003
Encampment River	COUCNP02	Fully supports all designated uses	CDPHE, 2003
North Platte River—Camp Creek to Colo/Wyo border	COUCNP03	Fully supports all designated uses	CDPHE, 2003
North Platte River--Tributaries above Camp Creek	COUCNP04	Fully supports all designated uses	CDPHE, 2003
Illinois River	COUCNP04	Not fully supporting aquatic life	CDPHE, 2003
North Platte River--Tributaries Camp	COUCNP04	Fully supports all designated uses	CDPHE, 2003

Water Body Name	Reach	Determination	Source
Creek to Colo/Wyo border			
Michigan River	COUCNP05a	Fully supports all designated uses	CDPHE, 2003
Yampa River Basin-- Colorado			
Tributaries to Yampa River—Flattops Wilderness down to Elk River	COUCYA03	Fully supports all designated uses	CDPHE, 2003
East Fork Williams Fork in Flattops Wilderness	COLCLY08	Fully supports all designated uses	CDPHE, 2001
East Fork Williams Fork River	COLCLY09	Not assessed	CDPHE, 2001
Tributaries to Yampa River—in National Forest	COUCYA20	Fully supports all designated uses	CDPHE, 2003; 2006
Elk River—mainstem and tributaries	COUCYA08	Fully supports all designated uses	CDPHE, 2003
Little Snake River Basin-- Colorado			
Little Snake River Tributaries	COUCYA19	Fully supports all designated uses (except where noted in Table 3).	CDPHE, 2003

Most water quality monitoring has been conducted on streams where designated uses are known or suspected to be impaired; limited monitoring has occurred on streams likely to meet all designated uses. Table 5 and Figure 4 show the water bodies on the Forest that have been determined by the States of Colorado and Wyoming to have water quality concerns.

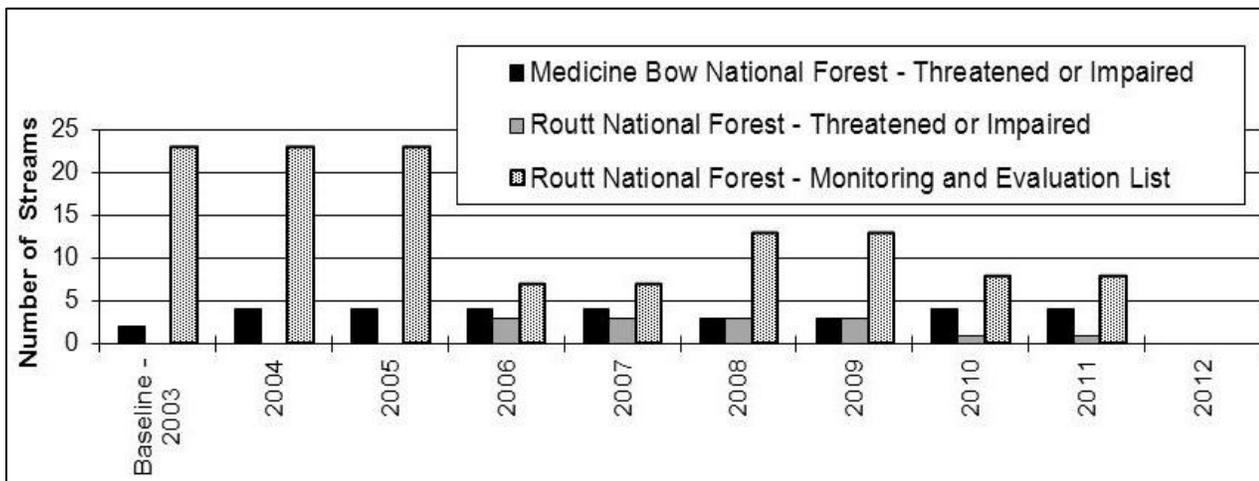


Figure 4: Streams not fully supporting designation uses and Routt NF streams on the State of Colorado Monitoring and Evaluation List

Table 5: Forest Water Quality Impairments for Colorado and Wyoming

Water Body Name	Ranger District	Threatened or Impaired	Year first identified as T or I	Impaired Designated Use	Cause of Impairment
North Platte River Basin - Colorado					
S F Big Creek in Wilderness	Parks	M&E list ¹	2004	Aquatic Life; drinking water	Metals-Cu, E. coli
Grizzly Cr	Parks	M&E list	2006	Aquatic Life	Unknown
Little Grizzly Cr	Parks	M&E list	2008	Recreation; drinking water; aquatic life	E. coli; Metals—Fe (Trec)
Lake Cr	Parks	M&E list	2008	Drinking Water; aquatic life	pH; Fe (Trec)
Yampa River Basin – Colorado					
Bushy Creek	Yampa	Yes - 303(d)	2010	Aquatic Life	Sediment
Lost Dog Creek	HPBE	M&E list	2008	Aquatic Life; Drinking water	Mercury
Little Bear Creek	HPBE	M&E list	2008	Drinking water; aquatic life	Copper; Zinc
Walton Cr	HPBE	M&E list	2010	Secondary Water Supply	Mn
Little Snake River Basin - Colorado					
Slater Creek	HPBE	M&E list	2008	Aquatic Life	Selenium
Little Snake River Basin - Wyoming					
W Fork Battle Creek	BCH	Yes – 303(d) Impaired	2000	Coldwater fisheries; Aquatic life	Metals
Haggerty Creek	BCH	Yes – 303(d) Impaired	<1988	Coldwater fisheries; Aquatic life	Metals
South Platte River Basin - Wyoming					
N. Branch N Fork Crow Creek	LRD	Yes – 303(d) Impaired	2004	Contact Recreation	E. coli
Middle Crow Creek	LRD	Yes – 303(d) Impaired	2010	Contact Recreation	E. coli

¹Streams are placed on the Colorado Monitoring and Evaluation List (M&E list) when there is reason to suspect water quality problems, but there is uncertainty regarding one or more factors.

Colorado

Streams on the Colorado 303(d) list:

Bushy Creek had been on the monitoring and evaluation list for sediment from 1998-2010. Data was collected in 1999 and submitted to The Colorado Water Quality Control Division (Division). The data indicated that sediment concerns were still present, and additional data was collected in the fall of 2006. The 2006 data also indicated sediment problems, and the Division recommended that Bushy Creek be placed on the 303(d) list during the 2010 rulemaking. This recommendation was subsequently approved by the Water Quality Control Commission in February 2010.

Bushy Creek is considered a low priority by the state for development of a Total Maximum Daily Load (TMDL). This is largely due to the fact that sediment is not considered a health and safety issue for humans; higher priority is given to streams listed for E. coli or other parameters that may affect drinking water quality as these are considered health and safety issues. Forest watershed personnel will work with the state to determine sources of sediment, potential remedies etc.

Streams on the Colorado M&E List:

The addition of Little Bear Creek, Slater Creek, South Fork Big Creek, Little Grizzly Creek, Grizzly Creek, Walton Creek, and Lost Dog Creek is based on data collected by the Division. This data suggests potential water quality concerns that warrant further investigation. The Forest cooperated with the Division in 2009 and 2010 to collect additional data on these stream segments, and to help determine if water quality concerns extend onto the Forest. Forest personnel collected the water quality samples, including macroinvertebrates to address sediment concerns, and then sent the samples to the state for analysis. These data are still being analyzed and no results were available for the 2010 Rulemaking Hearing. E. coli samples collected on the South Fork Big Creek and Little Grizzly Creek and analyzed by the Forest were all meeting State water quality standards. Forest watershed personnel will continue to cooperate with the Division to collect additional data and identify if these water quality concerns apply to the Forest.

Wyoming

Streams on the Wyoming 303(d) list:

Haggerty Creek and West Fork of Battle Creek: These streams are not fully supporting designated uses due to metals contamination from the historic Ferris-Haggerty mine, which is located on private lands within the Forest boundary. Heavy metal contamination may also be from background levels of metals in this highly mineralized area. Wyoming Department of Environmental Quality (WYDEQ) monitoring is focused on determining the extent of the impairment and the levels of natural metals in the area. WYDEQ developed a total maximum daily load (TMDL) for these streams, solicited public comment, and EPA approved the TMDL on September 28, 2011. Since the source of contamination is located in private lands WYDEQ-Abandoned Mine Land (AML) has been the primary entity with the authority for reclamation efforts. The Forest Service plays a minor role in this reclamation effort, but has cooperated with WYDEQ-AML for reclamation facilities and access across NFS lands.

North Branch of the North Fork Crow Creek and Middle Crow Creek: Since 2004, these streams have not consistently met their contact recreation uses due to elevated levels of bacteria. Middle Crow Creek had attained the contact recreational use criteria from 2004 to 2007 and it was removed from Wyoming's 2008 303(d) List of Waters Requiring Total Maximum Daily Loads. However, data collected on Middle Crow Creek in 2008-2010 indicate impairment, and the stream was added back onto Wyoming's 2010 303(d) List of Waters Requiring Total Maximum Daily Loads. The Laramie County Conservation District continued to collect water quality samples (E. coli) at one monitoring station on Middle Crow Creek and two stations on North Branch North Fork Crow Creek during 2011. Best Management Practices continue to be implemented and evaluated in these watersheds to address elevated levels of bacteria. Planning (NEPA and water right applications) has recently been completed for several off-site water developments to encourage better livestock distribution in the Middle Crow Creek watershed. No new practices were implemented during 2011 in the North Branch North Fork Crow Creek watershed.

Best Management Practices Monitoring

Evaluating implementation and effectiveness of management activity Best Management Practices (BMPs) is a critical step in ensuring that Region 2 Watershed Conservation Practices (WCP's) are properly applied (FSH 2509.25). If used properly, the WCPs will meet Federal and State laws and regulations, including the Clean Water Act of 1977. By using a national or regional BMP evaluation protocol, regional WCP's and Forest Plan Standards and Guidelines can be evaluated and the results used as a feedback mechanism to modify land management activities, adjust WCP's, or recommend changes to State water quality standards as needed.

The Forest conducted 15 BMP evaluations for various management activities including recreation, road construction, road decommissioning, minerals management, vegetation management, and water use using the Draft Washington Office BMP Sampling and Monitoring Procedures. When applied correctly, BMPs are effective at protecting water and aquatic resources. However, BMPs are not always applied, or not always properly applied. Concerns can be summarized into the following categories:

- **Spending more money up front saves money in the long-run.** Several projects tried to cut corners to save money. This included building shorter bridges with less freeboard, and not bringing all of the necessary equipment to do the job right. This resulted in the need for additional work on each of these projects.
- **Lack of consideration for connected actions.** While BMPs were developed and implemented to address the primary activity, connected actions or follow up actions were often not considered in the planning process.
- **All projects should plan for high flow (50-100 year) events.** Several of the BMPs implemented, particularly with respect to bridges were adequate for smaller flow events (10 year or less), but were not sufficiently designed to accommodate the higher flow events. The under-sizing was likely a cost cutting measure but, in the long run, has cost more money due to structure failures.

- **Using the appropriate tool results in a better outcome.** The road decommissioning project tried to reduce expenses by only using one piece of heavy equipment. This resulted in inadequate implementation, and the correction will cost more than having brought a second piece of equipment for the initial implementation.
- **BMPs may require maintenance.** Many of our existing developments, particularly roads and trails, do not have adequate drainage to prevent surface erosion and minimize connected disturbed areas. This could be the result of rolling dips or water bars filling up over time or breaking down, or it could be the result of cost cutting measures during construction. While additional drainage structures can be added, the erosion and sedimentation that has already occurred cannot be reversed. New construction should always ensure adequate and even excess erosion control structures to protect water quality and provide a buffer in case some of the drainage structures fail. Existing structures should be maintained on a regular basis.

Water Quality Conclusions:

In 2010 the RNF submitted monitoring data that led to the listing of Bushy Creek as impaired for sediment on the Colorado 303(d) list. Photos and data from 1998 and 2006 show a decline in stream health and an increase in sediment. Causes of this are uncertain, although livestock use as well as heavy elk use may be a contributor. Listing of this stream segment moves the Forest away from the Routt Forest Plan goal of “improve water quality... in areas not meeting State water quality standards... and meet the anti-degradation clause of the Clean Water Act across the Forest (RNF p.1-2).”

With the 2004 listing of two additional streams as impaired, the number of impaired streams on the MBNF increased from two to four since the Medicine Bow Forest Plan was signed in 2003 (Figure 3). This has moved the Forest away from the Forest Plan objective which states “achieve an 80% reduction in the miles of State of Wyoming designated streams not fully supporting designated uses” (Medicine Bow Forest Plan, page 1-2). Monitoring data had shown an improving trend (lower bacteria) on Middle Fork Crow Creek from 2004-07, but elevated levels were seen again in 2008-10. The North Branch North Fork Crow Creek, West Fork Battle Creek, and Haggerty Creek continue to be in exceedance of water quality criteria. The MBNF continued cooperative monitoring efforts and implementation of BMPs to address water quality issues in the Crow Creek drainage in 2011.

Recommendations: Recommendations to restore, maintain, and improve water quality across the Forest are as follows:

- Continue to implement watershed improvement projects that reduce sediment and connected disturbed areas so as to meet the anti-degradation clause of the Clean Water Act.
- Work with the Colorado Water Quality Control Division to assess all sources of sediment impacts to Bushy Creek; develop an action plan to address and ultimately delist this stream reach.

- Monitor compliance with Forest Plan Standards and Guidelines and range BMP implementation to ensure compliance with water quality standards for bacteria.
- Cooperate with the Colorado Water Quality Control Division to obtain water quality data on streams placed on the Monitoring and Evaluation list for metals, pH, E. coli and aquatic life. Cooperate with the state on additional data collection on these streams.
- Continue to cooperate with Laramie County and Laramie Rivers Conservation Districts on bacteria monitoring and range utilization monitoring in upper Crow Creek watershed.
- Continue adjusting management of grazing and recreational activities to improve water quality in Upper Crow Creek.
- Continue to participate in the Watershed Planning effort for the Upper Crow Creek Watershed.
- Work with WYDEQ, as appropriate, to implement the TMDL for Haggerty and West Fork Battle Creeks.
- Continue to analyze each proposed project and suggest BMP's to protect water quality.
- Continue to monitor BMP implementation and effectiveness on a variety of projects and identify opportunities for improvement to protect water quality.
- Monitor a sample of the soil and water mitigation measures during and after implementation to determine the effectiveness for protecting water quality.

Actions taken on FY09/10 Recommendations

- Continue to implement watershed improvement projects that reduce sediment and connected disturbed areas.
 - FY11 Action: See 'Table 3: 2011 Soil, Watershed and Fisheries Improvement Accomplishments' for acres of watershed improvement. All of the listed projects directly or indirectly reduced stream sedimentation.
- Monitor compliance with Forest Plan Standards and Guidelines and range BMP implementation on impaired streams or on the M&E list for bacterial impairment.
 - FY11 Action: Range BMPs were monitored on 28 stream reaches. For several stream reaches this included pre and post livestock grazing, as well as some monitoring during the livestock grazing season. The Forest continued to cooperate with Laramie County and Laramie Rivers Conservation Districts on bacteria monitoring and range utilization monitoring in the Upper Crow Creek watershed.
- Continue adjusting management of grazing and recreational activities to improve water quality in Upper Crow Creek.
 - FY11 Action: A Water Quality Action Plan was completed in 2011 which outlines BMPs to be implemented in affected watersheds. Planning (NEPA and water right applications) has recently been completed for several off-site

water developments to encourage better livestock distribution in the Middle Crow Creek watershed.

- Continue to participate in the Watershed Planning effort for the Upper Crow Creek Watershed.
 - FY11 Action: Forest staff are members of the Upper Crow Creek Watershed group, but no activity occurred during this period.
- Consider submitting a petition to WYDEQ to reclassify North Branch North Fork Crow Creek from primary to secondary recreation contact designated use.
 - FY11 Action: The WYDEQ reviewed the draft Use Attainability Assessment and conducted a field visit with Forest Service staff during Spring 2009. The WYDEQ provided the Forest Service with a letter stating that WYDEQs current interpretation was that North Branch North Fork Crow Creek should be managed for secondary contact recreation, but they acknowledged that EPA does not support WYDEQs current method for determining secondary contact recreation streams. The Forest Service assisted WYDEQ with the development of a draft UAA GIS model during 2009-11.
- Implement the strategy finalized in April 2006 for addressing bacteria water quality issues on Range Allotment Management Planning projects.
 - FY11 Action: A 2006 range strategy to address bacterial water quality was incorporated into range project NEPA.
- Continue to assist WYDEQ-AML with reclamation efforts on Haggerty and West Fork Battle Creeks.
 - FY11 Action: The Forest participated in public meetings sponsored by WYDEQ on the TMDL for Haggerty and West Fork Battle Creeks. Neither the Forest nor AML completed any reclamation during 2011.
- Forest staff should continue to analyze each proposed project and suggest Best Management Practices to protect water quality.
 - FY11 Action: Forest staff continued to incorporate BMPs and Design Criteria to protect water quality for all resource planning projects.
- A sample of the soil and water mitigation measures should be monitored during and after implementation to determine the effectiveness for protecting water quality.
 - FY11 Action: The Forest monitored 15 soil and water mitigation measures for BMP implementation and effectiveness using the national BMP forms. Summary results and conclusions are on file in the corporate filing system.

Water Rights

During FY11 the Forest focused on two priorities: 1) Continuing to update and correcting range stock water rights, as this is our largest group of water rights, and 2) Ensuring that new water rights filed on NFS lands follow Forest Service directives. Principle accomplishments for FY11 on the Medicine Bow-Routt National Forests include:

- Completed litigation report including Office of General Council (OGC) approval on 139 (Colorado) stock water rights; these water rights are currently waiting for the Department of Justice to file the water rights in water court.
- Reviewed and responded to monthly resumes (Colorado) and water right applications (Wyoming) for potential new water rights being filed on USFS land by private entities.
- Field inventory of 22 range water improvements.
- Completed 35 (Med Bow) water rights actions (applications, abandonment, and statement of beneficial use).
- Inspected, mapped, and/or inventoried 33 ditches with non-Forest Service water rights on the Medicine Bow-Routt National Forests.

Stream and Riparian Condition Inventory and Monitoring

While this monitoring item is only required to be reported every five years, annual reporting allows for tracking accomplishments each year, with summary conclusions being made every five years. The following questions are addressed:

To what extent are riparian and wetland areas meeting proper functioning condition?

How are management activities affecting riparian habitats (including wetlands) on the forest?

The Forests completed approximately 50 miles of stream and riparian condition assessment during FY11 using a variety of inventory and monitoring methods. Primary survey techniques used included: Proper Functioning Condition (BLM, 1998), Stream Channel Reference Sites (Harrelson, et al, 1994), and Rangeland Analysis and Management (USDA Forest Service, 1996). Methods vary from quantitative to qualitative and some are repeatable while others are not. Table 1 in Appendix 1 summarizes locations on the Forest where some inventory or monitoring of stream and/or riparian conditions was conducted in 2011.

Results from the “Proper Functioning Condition” monitoring indicate that 3.1 stream miles (56%) are in proper functioning condition, and 2.4 stream miles (44%) are rated functional at risk. Proper functioning condition surveys focused on areas with high potential for livestock or ungulate grazing impacts, and did not include heavily timbered areas.

Monitoring using the USDA Forest Service 1996 method focused on both short-term and long-term indicators. Short-term indicators of the potential effect of each year included stubble height and bank alteration. Long-term indicators used to determine how individual impacts from each year are cumulatively affecting a stream reach include streambank stability and greenline vegetation composition.

Stubble height monitoring during and at the end of the grazing season found that 70% of reaches met the Forest Plan residual riparian vegetation guideline of 6 inches while 30% of surveyed reaches did not meet this guideline. This is a lower percent of reaches that met this guideline in 2011 as compared to 2009-2010. Residual stubble height ensures adequate plant vigor to stabilize streambanks, and helps to retain sediment to rebuild unstable streambanks (USDA Forest Service, 1996).

Short-term monitoring to address streambank alteration before, during, and after the grazing season found that 4 percent was the highest pre-livestock grazing bank alteration, which would be attributed to wildlife. Results from livestock grazing, both during and after, found that approximately 58 percent had bank alteration less than 10 percent; 32 percent had bank alteration of 10-24 percent; and 10 percent had bank alteration of 25 percent or more. These percentages are lower than percent of bank alteration measured in 2009-2010.

The Forest resurveyed six reaches from 2009-2010 and 11 new reaches in 2011. The lowest percent bank alteration in an active grazing allotment was 1 percent, while the highest percent bank alteration was 32 percent. Bank alteration on two 'reference' reaches, or minimally affected by livestock grazing ranged from 2-4 percent at the end of the grazing season. Generally, streams can receive a maximum of 20-25 percent bank annual bank alteration while maintaining stream health and integrity (USDA Forest Service, 1996). Monitoring indicates that approximately 10 percent of monitored streams are receiving annual bank alteration that may not be conducive to maintaining or improving long-term stream health and ecosystem function.

Streambank stability ranged from 18-99 percent stable banks. Oftentimes the higher streambank stability ratings correlated with lower percent bank alteration. However, this trend was not always consistent. In some cases, low streambank stability did not necessarily correlate with high bank alteration, and vice-versa. The short-term monitoring indicators are used to determine annual effects; if annual effects indicate more impact (i.e. bank alteration), then it would be expected that the long-term indicators would decline. This combination of short and long term indicators helps to determine if ungulate grazing is causing stream health and riparian problems, or if other factors are also contributing.

Invasive Species

Medicine Bow Item Objective 1.c.4
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

To what extent have noxious weed populations been managed (Forest-wide and within wilderness)?

This monitoring item tracks the extent and treatment of invasive species. The results for 2009 through 2011 are reported here as the information was not available for the 2009-2010 MBR Monitoring Report.

Monitoring Protocol/Data Collected

The following information was collected to address the question outlined above: acres treated chemically, mechanically, and manually, including insect releases; and data from the targets reported in the U.S. Forest Service FACTS database.

Results/Evaluation

2009

The RNF treated four acres of yellow toadflax in the Flattops Wilderness Area. The MBNF did not treat the two acres of known leafy spurge infestation in the Platte River Wilderness Area.

2010

The RNF treated eight acres of yellow toadflax in the Flattops Wilderness Area. The MBNF also treated two acres of known leafy spurge infestation in the Platte River Wilderness Area.

2011

The RNF treated eight acres of yellow toadflax in the Flattops Wilderness Area and the MBNF treated two acres of known leafy spurge infestation in the Platte River Wilderness Area. The MBNF also treated one acre of a recently-discovered knapweed population in the Platte River Wilderness Area between 2009 and 2011.

Table 6: Acres of Invasive Weed Treatment in 2009 through 2011

		2009		2010		2011	
Forest	Forest Plan Acres Expected Annual Treatment	Acres Treated	Wilderness Acres Treated	Acres Treated	Wilderness Acres Treated	Acres Treated	Wilderness Acres Treated
Routt	385	1,145	4	1,662	8	744	8
Medicine Bow	1,200	1,124	1	892	3	809	3
Total	1,585	2,269	5	2,454	11	1,553	11

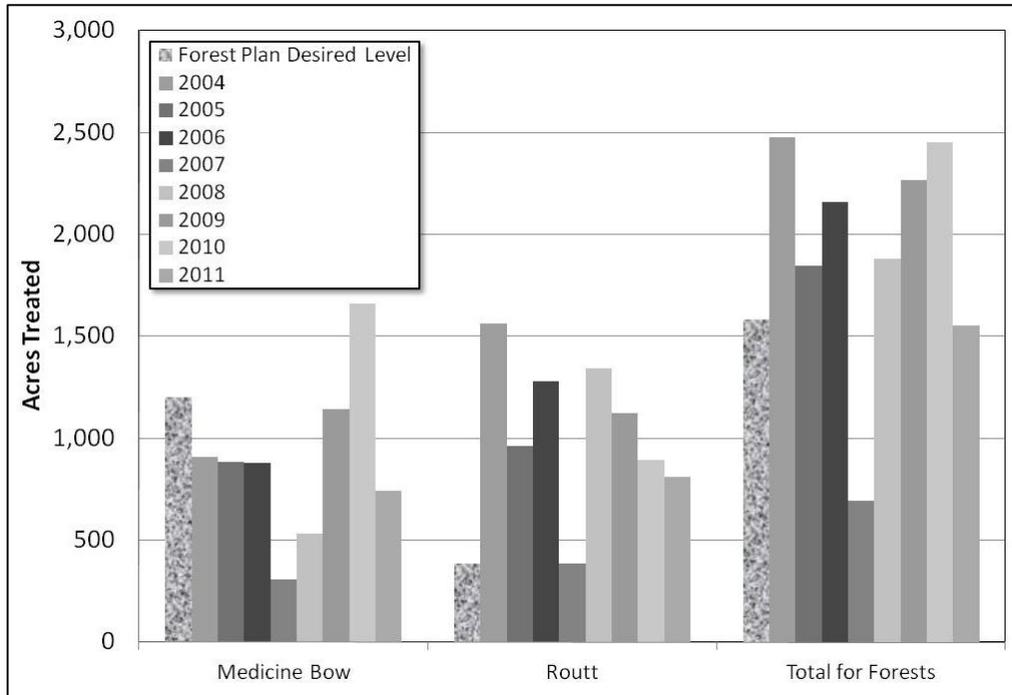


Figure 5. Invasive Weed Treatment 2004-2011

Funding available for treatment of noxious weeds has been substantially reduced for the last four fiscal years; re-mixing of appropriated funds at the Regional level to cope with the bark beetle infestation has severely depleted declining rangeland vegetation dollars. However, weed populations are increasing in roadside and timbered areas affected by those same bark beetle infestations, and some of that special funding has been available to assist in treating these new areas in addition to the declining appropriated vegetation funds.

Recommendations:

- Continue to report acres of noxious weeds treated each year, along with reasons for annual fluctuations in the amounts and species of weeds treated; data is useful to discern trend of infestations and treatments.

The Region and Forest are actively working to resolve the discrepancies in the FACTS database regarding infested acres and treated acres. The National Invasive Species Coordinator is currently refining explanations for how treated acres are recorded in the database.

Insects and Disease

Legally Required Monitoring Item
Medicine Bow Item Objective 1.c.3
Routt Monitoring Item 1-4
Frequency of Measurement: Annual
Reporting Period: Five Years

This monitoring item asks the question:

Are insect and disease populations compatible with attainment of management area desired conditions and themes?

Monitoring Protocol/Data Collected

Since 2003, the MBR has conducted aerial surveys to provide a broad indication of tree mortality resulting from forest insects and diseases. More information and products from the R2 forest health monitoring program can be found on the following website:

<http://www.fs.fed.us/r2/fhm/>

Results/Evaluation

The bark beetle epidemics continue on the MBR. Aerial surveys of the MBNF indicated that approximately 314,785 acres had been attacked by the Mountain Pine Beetle (MPB) in 2009 and an additional 300,497 acres had been attacked in 2010. Spruce beetle (SB) impacts increased from 9,682 acres in 2009 to 15,887 acres in 2010.

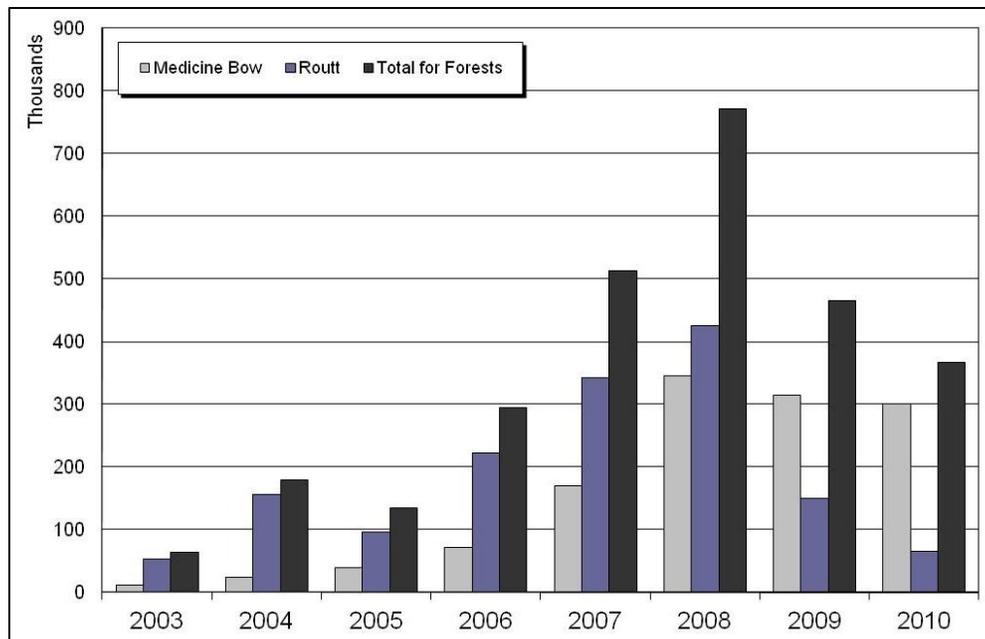


Figure 6: Annual acres affected by MPB epidemic from 2003-2010

Approximately 150,570 acres on the RNF were impacted by MPBs in 2009; area of impact significantly decreased to 65,731 acres in 2010. Areas affected by SB increased from 5,877 acres in 2009 to 6,750 acres in 2010. The survey data reflects the impacts of the prior year's beetle attacks; aerial surveys rely on the fading crowns of dead trees to locate and quantify the severity of forest pest attacks. Trees attacked and killed in 2008 will not exhibit fading crowns until the summer of 2009 and trees attacked in 2009 will not exhibit fading crowns until the summer of 2010.

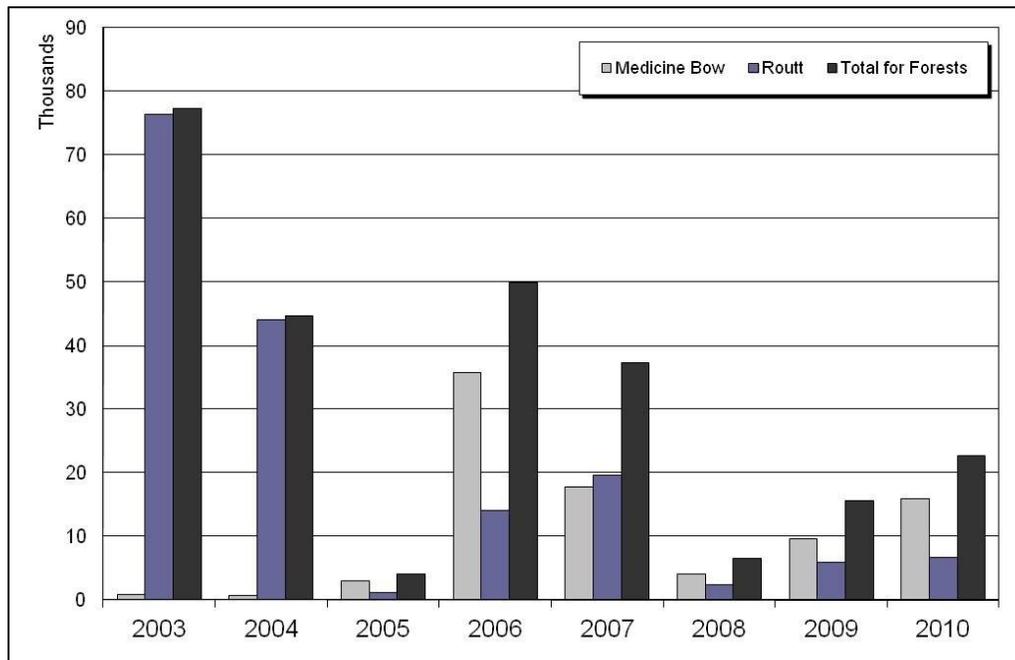


Figure 7. Annual acres affected by Spruce Bark Beetle epidemic from 2003-2010

The predominant tree species affected by the MPB on the MBR is lodgepole pine. Lodgepole pine stands with the following attributes are considered to be at the highest risk: average diameter at breast height (DBH) greater than 8 inches, average age greater than 80 years, stand basal area greater than 120 square feet per acre, and elevation less than 10,000 feet (Amman et al. 1977). Approximately 50% of the lodgepole pine on the MBR is considered moderate to high risk for MPB attack due to age, DBH, and stand density. Weather conditions such as moderate winter temperatures, and warm, dry summers also contribute to the expansion of the epidemic.

Although the MBP epidemic continues on the MBR, the number of new acres impacted is declining. There has been a slight decrease of acres impacted on the MBNF and a significant decrease on the RNF.

Spruce stands with average DBH greater than 16 inches, stand density greater than 150 square feet per acre, and stands with a high percentage of spruce (65% or greater) are generally considered at high risk for SB attack. Approximately 56% of the spruce stands on the MBR NFs can be considered to be at moderate to high risk of SB attack due to size, stand density, and high percentage of spruce in the stands. The SB is expected to continue spreading into spruce stands across both forests.

In fiscal years 2009 and 2010, the Forest Service sprayed trees infested with MPB and SB at campgrounds and administrative sites. We also sold four timber sales in 2009, three timber sales in 2010, and three sales in 2011 that will collectively treat 5,403 acres affected by bark beetles.

Subalpine fir decline (SFD), which is caused by a combination of western balsam bark beetle and various root disease pathogens, is still increasing in subalpine fir stands. On the RNF, roughly 10,160 acres were impacted by SFD in 2009 and 12,347 acres were impacted in 2010. On the MBNF, approximately 4,260 acres were diagnosed with SFD in 2009 and 4,902 acres were diagnosed in 2010. Generally SFD causes smaller amounts of mortality in stands as compared to that of the bark beetle epidemics.

White pine blister rust, a canker causing disease that is spread by a non-native fungus (*Cronartium ribicola*), is affecting limber pine stands across both Forests. The primary infections are located in the Pole Mountain and Snowy Range areas of the MBNF where 7,139 and 6,039 acres were impacted in 2009 and 2010, respectively. The RNF estimated that approximately 5,686 acres were infected in 2009 and another 218 acres were infected in 2010. Currently the MBR is working cooperatively with the Rocky Mountain Research Station, Region Two Forest Health Management, and Colorado State University to locate and develop genetically resistant strains of limber pine for future limber pine restoration.

Another significant mortality causing disease is sudden aspen decline (SAD) in quaking aspen. SAD is believed to be the result of the extended drought and the large amount of aspen in mature age classes. On the RNF, SAD affected approximately 27,423 acres in 2009 and 22,333 acres in 2010. On the MBNF, SAD affected 4,253 acres in 2009 and another 4,992 acres in 2010. SAD can be detected by declining vigor in aspen (reduced leaf coverage and pale green foliage). Currently there is nothing that can be done to prevent continued dieback and mortality of affected trees. Where clones still retain some vigor and energy, but are deteriorating, regeneration may be stimulated by burning, cutting, or other stand manipulation before root systems are too weak to respond.

Conclusion:

The MBR continues to experience bark beetle epidemics. Although new acres impacted by MPB are still occurring at a very high level, the yearly total acres are decreasing. New acres impacted by SB are still increasing. The current epidemic is unprecedented within the last 150 years.

Recommendations:

- Any vegetative management in lodgepole pine and spruce should anticipate what the condition of the stands will be in two to three years. In the past, forest managers have implemented silvicultural strategies to suppress beetle epidemics and still suffered extensive mortality in the residual stands. When recommending vegetative treatments in moderate to high risk stands for beetle infestation, the forest manager should anticipate extensive mortality and strongly consider salvage treatment and reforestation of the affected stands.

Old Growth and Late Successional Forest Structure

Medicine Bow Item Objective 1.b.4
 Routt Monitoring Item 1-8
 Frequency of Measurement: Annual
 Reporting Period: Annual/5 year

These monitoring items ask the questions:

Is old growth forest mapped and managed at least to minimum amounts and distribution stated in the plan?

How are management activities affecting late successional forest structure in Management areas 5.11 and 5.13?

Introduction

The Medicine Bow and Routt Forest Plans address old forests differently. The Medicine Bow Forest Plan has desired conditions, objectives, and standards relating to the amount and distribution of *Old Growth*. The Routt Forest Plan includes desired conditions for *Late Successional Forest*. Both units use similar vegetative measurements to address these similar habitat conditions.

Old growth forests are ecosystems distinguished by relatively complex visible structure or external morphology, horizontal variability, relatively large old trees and related structural attributes (Thomas et al. 1988, Hayward 1991). Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics which may include tree size, accumulations of large dead woody material, number of tree top layers, species composition, and ecosystem function. It can require 80-200 years for forest stands within different cover types to develop the characteristics of old growth (Mehl 1992).

Monitoring Protocol/Data Collected

Medicine Bow NF

The MBNF completed old growth mapping in 2008 using the old growth cover type descriptions provided by Mehl (1992). Old growth can be described in terms of the age of the largest trees, a minimum number of trees above a certain diameter (DBH), and canopy characteristics. Table 7 displays three of these old growth criteria by cover type.

Table 7: Old Growth Description by Cover Types in 2008

Cover Type	Age of Largest Trees	Diameter of Largest Trees	Canopy Description
Lodgepole pine	150	10 tpa* > 10 inches	≥ 1 canopy layer
Spruce-fir	200	10 tpa > 16 inches	>1 canopy layer
Ponderosa pine	200	10 tpa > 16 inches	≥ 1 canopy layer
Aspen	100	20 tpa > 14 inches	≥ 1 canopy layer >50% cover

*tpa = trees per acre. Source (Mehl 1992)

The MBNF also identified an implementation strategy that mapped more than the minimum percentage of old growth, as identified in the Medicine Bow Forest Plan, for each cover type (Table 8).

Table 8: Current (2010) Inventoried and Mapped Old Growth by Mountain Range

Mountain Unit	Cover Type	Total Cover (Acres)	Required Minimum Forest Plan Standard (Percent)	Old Growth Strategy (Percent)
Sierra Madre	Aspen	48,639	20	22
Sierra Madre	Lodgepole	136,513	15	18
Sierra Madre	Ponderosa	0	25	0
Sierra Madre	Spruce/Fir	56,024	25	30
Snowy Range	Aspen	15,843	20	21
Snowy Range	Lodgepole	289,728	15	19
Snowy Range	Ponderosa	186	25	70
Snowy Range	Spruce/Fir	115,408	25	30
Laramie Peak	Aspen	5,423	20	24
Laramie Peak	Lodgepole	40,876	15	18
Laramie Peak	Ponderosa	29,839	25	26
Laramie Peak	Spruce/Fir	4,791	25	26
Pole Mountain	Aspen	3,886	20	20
Pole Mountain	Lodgepole	4,748	15	17
Pole Mountain	Ponderosa	5,037	25	25
Pole Mountain	Spruce/Fir	0	25	0

Routt NF

The Routt Forest Plan predicted that the majority of the forest would be in late successional stands and that, over time, more of the forest would move from younger and smaller age classes into older, late successional forest. The following is from the Desired Condition section of Chapter 1 of the Routt Forest Plan:

“The Forest in Ten Years

The majority of the forest will be in late successional habitats, with a portion in early to mid-successional habitats.

The Forest in Fifty Years

The vast majority of the forested areas will be in late successional habitats”

The Routt Plan grouped habitat structural stage (HSS) 4b, 4c, and 5 together as late successional forest. Amounts of the late successional component reported in the

Routt Plan Final Environmental Impact Statement (FEIS) are given in the following table.

Table 9. Routt Habitat Structural Stage Descriptions and Percentages*

Structural Stage Name and Number	Percent of Forested Total
Grass/forb - 1	1.3
Seedling/sapling - 2	2.5
Pole (Total) - 3a 3b 3c	35.4
Mature (Total) - 4a 4b 4c 5	60.9
Late Successional Component - 4b 4c 5	49.1

*From Routt Plan FEIS table 3-25

By cover type, the RNF reported the following amounts of late successional forest in 1997², as displayed in Table 10. This is a total of 539,000 acres or 43 percent of forested cover types.

Table 10. Acreage and Percent Structural Stage by Cover Type from RNF LRMP FEIS

Cover Type	1		2		3		4		Late Successional (4a 4b 5)	
	Ac	%	Ac	%	Ac	%	Ac	%	Ac	%
Spruce-fir	4,595	1.0	6,183	1.4	123,045	27.1	320,154	70.5	254,317	56.0
Lodgepole pine	5,507	1.5	15,688	4.1	138,642	36.6	219,260	57.8	180,132	47.5
Aspen	4,378	1.7	5,077	2.0	125,439	48.2	125,470	48.2	101,616	39.0
Douglas-fir			69	1.3	1,406	26.3	3,861	72.4	2,939	55.1

The R2Veg database does not include HSS 5, which is referred to in the Routt Plan. Many of the acres of HSS 5 would now be counted as HSS 4B or C. However, HSS 5 stands with widely spaced, larger diameter trees (canopy cover < 40) would now fall into other habitat structure stages, or could be considered a non-forested stand.

Results

More than 1.5 million acres of forest in northern Colorado and southern Wyoming have been affected by the MPB epidemic. Mountain pine beetle infestations continue to kill entire hillsides of lodgepole pine. Other tree species, including ponderosa pine and limber pine, also suffer from this intrusive insect. The epidemic's core area exists in the Arapaho, White River, and MBR National Forests and adjacent private forested lands. When the MPB epidemic finally ceases, it is estimated that the beetles will have killed nearly all of the mature lodgepole trees in northern Colorado and southern Wyoming. Annual monitoring and analysis of data will continue.

The full effect of the MPB epidemic on cover type changes generally occur 3-10 years after the epidemic reaches full force. Several areas of the RNF reached epidemic proportions between 2002 and 2003, while various areas of the MBNF reached

epidemic proportions between 2005 and 2006. By 2009, the Medicine Bow areas were 3-4 years into effects and the Routt areas were 6-7 years into effects on late successional forest.

As this epidemic continues, late successional forests and areas providing old growth characteristics will change both in location and size. These changes are slow and ongoing; consequently, annual monitoring will continue.

The MBR surveyed 3,000 acres of old growth in 2009 and an additional 3,000 acres in 2010. This annual report represents only a small, incremental change in the reduction of old growth and late successional forests on the MBR National Forests. The accumulation of the annual monitoring will be used to provide a meaningful evaluation of the changes to old growth habitats. This evaluation will be displayed at 5 year intervals as a part of the Forest Plan 5 Year Monitoring Report. The short-term analyses of annual monitoring should not be relied upon too heavily, as they are only a snap shot in time and will continually be in a state of change.

Conclusions

Medicine Bow NF

Old Growth:

- **Spruce-Fir Cover Type:** We expect a decrease in the standing, large lodgepole pine component and an increase in snags and dead and down wood within spruce-fir cover types interspersed with lodgepole pine. In general, we do not expect that these stands will lose old growth characteristics. On the Snowy Range area only, however, recent SB mortality may cause a loss of some old growth character.
- **Lodgepole Pine Cover Type:** A loss of virtually all old growth is projected in lodgepole pine cover types.

Recruitment Old Growth:

- Due to the current impacts from the MPB epidemic, we may not be able to maintain old growth conditions into the future as the larger, older trees die.

Routt NF

Many of the provisions for sustainability of ecological functions of the forest were based upon the abundance of late successional forest prior to the MPB epidemic. Since the MPB epidemic altered the representation of late successional stands throughout the RNF, it is no longer possible to have confidence that the changed conditions will provide sustainability of pre-existing habitats.

Recommendations

- Evaluate specific forest direction (desired conditions, goals, objectives, standards and guidelines) related to old growth (MBNF) and late successional forest (RNF).
- Develop additional direction for existing old growth (MBNF) and late successional (RNF) forests and for potential recruitment stands to guide management of the two forests until the forest plans are revised.

- Stands that displayed old growth characteristics before the MPB epidemic should be selected to be managed in the future to re-develop these characteristics.

Threatened, Endangered, Sensitive Species and Management Indicator Species (MIS) Habitat and Populations

Medicine Bow Objective 1.b.5
 Routt Monitoring Item 1-12
 Frequency of Measurement: Annual
 Reporting Period: Five Year

These monitoring items ask the questions:

What is the relationship between changes in habitat and population trends of MIS?

To what extent are listed species, sensitive species and species of local concern and MIS species habitat availability, habitat quality and populations maintaining stable or positive trends?

PLANTS

Monitoring Protocol/Data Collected

Annually, document the number of Biological Assessments/Biological Evaluations (BA/BEs) for Threatened or Endangered (T&E) and Region 2 Sensitive plant species that were completed for projects on the Medicine Bow and Routt National Forests. Annually, compile and compare the determinations as a percent of BA/BEs prepared. Include an evaluation of results from project implementation monitoring when expressing conclusions for this monitoring item.

The MBNF conducted rare plant surveys on approximately 3,545 acres of project areas in 2011. These surveys resulted in the discovery/mapping of 133 new populations of rare and tracked plant species on the forest (Table 11). These surveys were conducted by a combination of MBR botany staff and an Enterprise TEAMS unit. In 2011 two BA/BEs were prepared and one 3rd party BA/BE was reviewed by MBNF botany staff.

The RNF conducted over 249 plant surveys during the 2011 field season covering over 5,000 acres. These surveys resulted in the discovery of seven populations of Richardson's needlegrass (*Achnatherum richardsonii*). This species had not been previously documented on the forest. Surveys also found three new populations of Rabbit Ears gilia (*Ipomopsis aggregata* var. *weberi*), a R2 Sensitive Species, and 71 populations of other species tracked on the Forest (Table 11).

Recommendations

- Add newly discovered species to the Species of Local Concern (SLC) list
- Remove selected species from the SLC list (with documentation). Continue monitoring known locations.

Table 11: Summary of forest-wide 2011 field survey findings by species

Species	Common Name	USFS R2 Status	Imperilment Ranking			Total Found	
			G	CO	WY	RNF	MBNF
<i>Athyrium filix-femina</i>	Common ladyfern	R2 Other Emphasis	5	NR	2	2	--
<i>Botrychium</i>	Moonwort	-	--	--	--	1	--
<i>Botrychium multifidum</i> var. <i>coulteri</i>	Leathery grapefern	R2 Other Emphasis	5	1	3	1	--
<i>Botrychium pallidum</i>	Pale moonwort	Other Emphasis	3	2	1	--	1
<i>Carex buxbaumii</i>	Buxbaum's sedge	Not evaluated	5	NR	2	1	--
<i>Corallorhiza trifida</i>	Yellow coralroot	Other Emphasis	5	NR	3	--	4
<i>Cypripedium fasciculatum</i>	Clustered lady's slipper	Other Emphasis	4	3	3	30	43
<i>Goodyeara oblongifolia</i>	Western rattlesnake plantain	Other Emphasis	5	4	3	--	2
<i>Ipomopsis aggregata</i> var. <i>weberi</i>	Rabbit Ear's gilia	Sensitive	5	2	1	4	--
<i>Juncus filiformis</i>	Thread rush	Insufficient Information	5	2	2	1	--
<i>Lewisia rediviva</i>	Bitterroot	Other Emphasis	5	2	3	3	2
<i>Lilium philadelphicum</i>	Wood lily	Other Emphasis	5	2	2	--	1
<i>Listera borealis</i>	Nothern twayblade	Other Emphasis	4	2	2	--	2
<i>Listera convallarioides</i>	Broad-lipped twayblade	Other Emphasis	5	2	2	--	4
<i>Listera cordata</i>	Heartleaf twayblade	Not evaluated	5	NR	2	1	62
<i>Menyanthes trifoliata</i>	Buckbean	Other Emphasis	5	NR	2	--	2
<i>Penstemon cyathophorus</i>	Sagebrush beardtongue	Other Emphasis	5	3	1	1	--
<i>Pyrola picta</i>	White-veined wintergreen	Other Emphasis	4/5	3	2	2	--
<i>Scirpus microcarpus</i>	Panicled bulrush	Other Emphasis	5	NR	3	6	--
<i>Sparganium natans</i>	Small bur-reed	Insufficient Information	5	NR	1	1	1
<i>Trillium ovatum</i>	Pacific trillium	Other Emphasis	5	3	1	16	9
<i>Viburnum edule</i>	Squashberry	Insufficient Information	5	3	1	2	--

Imperilment rankings come from state natural heritage programs (G=Global ranking) and reflect the ranking of populations within that state. 1= Critically imperiled (typically >5 populations within ranking area); 2=Imperiled (typically 6-20 populations within ranking area); 3= Rare or uncommon (typically 21-100 populations within ranking area); 4=Widespread, abundant and secure (uncommon but not rare), but with cause for long-term concern (typically >100 populations); 5=Demonstrably widespread; NR = Not ranked.

Habitat Improvement

Medicine Bow Objective 1.b.3
Routt Monitoring Item 1-6
Frequency of Measurement: Annual
Reporting Period: Annual

These monitoring items ask the questions:

To what extent have habitat improvement needs been identified and implemented using structural and non-structural habitat improvement treatments?

Are habitats for threatened, endangered and Forest Service Region 2 Sensitive species being maintained or enhanced?

PLANTS

Results/Evaluation

Results of the 2011 vegetation and rare plant habitat improvement, inventory, and implementation monitoring are listed below:

Habitat improvement

- The MBNF improved 21 acres of plant habitat as a result of road closures and road decommissioning on the Snowy Range (Laramie District) and on the Sierra Madre Mountain Range (Brush Creek - Hayden District).
- The RNF completed the first of a two-year native species restoration plantings project at the historic Grizzly Guard Station (Parks Ranger District). In 2011 the project concentrated on growing native grass species. North Park School District (NPSD) is currently growing native forb species for the 2012 planting. This project is being completed in partnership with the NPSD and RAC Funding.
- The MBR Native Species program made over 75 native seed collections targeting 25 key species for restoration projects. These collections were completed through partnerships with Wildland Restoration Volunteers and the Steamboat Springs Community Youth Corps, in addition to MBR staff. Collections came from the Hahns Peak, Laramie, Parks, and Yampa District. Because of the increased temporal flexibility afforded by MBR crews, we were able to collect substantially larger quantities and more species than in previous years.

Threatened, Endangered, and Sensitive Species Habitat

There are no populations or suitable habitat identified for federally listed threatened or endangered plant species on the MBR. In 2011 three new populations of Rabbit Ears gilia (*Ipomopsis aggregata* var. *weberi*), a USFS Region 2 sensitive species were found. One known population of *Rubus arcticus* var. *arcticus* (previously known in a project area) plus a protective buffer area was flagged for avoidance to maintain the population and habitat.

Inventory

- In 2011 a Forest Service inventory and monitoring project was initiated in collaboration with Wyoming Natural Diversity Database to catalog rare wetland plants, uncommon wetland habitats, and associated human and livestock

disturbance/damage to these resources on Pole Mountain of the Laramie District. Field implementation and data collection is scheduled for the 2012 field season and results are expected to be compiled in the winter of 2012-2013. Multiple restoration opportunities are expected to result from this effort, such as an inventory of small-scale, shovel-ready wetland enhancement projects and some larger scale wetland restoration projects, all of which will benefit rare plants, rare plant habitats and uncommon wetland types.

Implementation Monitoring

Region 2 Sensitive Species

- Three known populations of USFS Region 2 sensitive species (*Salix candida*, *Salix serissima*, and *Rubus arcticus ssp. acaulis*) were re-visited on the Laramie Ranger District to confirm persistence/health of populations.
- One known population of *Astragalus barrii* and three known populations of *Aquilegia laramiense* were re-visited on the Douglas RD to confirm population persistence/health.

Forest Species of Local Concern

- Re-visits of *Botrychium* sites along on the 740 Road (Parks RD) indicated that the populations (discovered in 2010) were healthy and robust and that the buck and rail fencing installed in 2010 protected them from the hazard tree clearcutting activities.
- Two populations of clustered lady slipper orchid (*Cypripedium fasciculatum*) were extirpated when management activities on the Yampa RD failed to adhere to design criteria. The population extirpations were documented in the Forest's Natural Resource Information System (NRIS) database. The District was also instructed to ensure that project design criteria are applied when implementing future projects.

Conclusions

There is opportunity for restoration and habitat enhancement benefitting rare plants and habitats across the MBR, but opportunities must be identified and cataloged before efforts can proceed. Some restoration activities (e.g., road closures) benefit multiple resources, including improving habitat for vegetation, rare plant species, and habitats.

Recommendations

- Continue and expand on current efforts to identify restoration and enhancement opportunities that benefit plants and habitats on the forest. Opportunities include pursuing funding sources for future implementation of wetland enhancement and restorations to be identified on Pole Mountain in 2012; continuing to seek funding for and expanding native seed programs across the forest; and collaborating with partners to expand the scale of restoration activities across land ownerships and resource concerns.

AQUATIC SPECIES

Monitoring Protocol/Data Collected

Report on habitat improvements accomplished during the fiscal year.

Results/Evaluation

The Soil, Watershed and Fisheries improvements are discussed above in the Water Quality section, as the majority of soil and watershed projects improve fisheries habitat, either by directly improving the stream channel or through reducing erosion and sedimentation in the watershed. As displayed in Table 3 (p. *), 18.5 miles of stream habitat improvement and one acre of lake improvement projects were accomplished in FY11.

Highlights of 2011 MBNF Aquatics Program

Stream Habitat Improved:

- The Pelton Creek culvert was replaced to provide aquatic organism passage for trout - 3 miles (LRD)
- The East Fork Encampment River weir was removed to provide aquatic organism passage for trout and amphibians - 5 miles (BCH)
- Partial streamflow was restored on Bottle Creek (BCH)

Aquatic Invasive Species:

- Aquatic invasive species posters were constructed/posted at seven trailhead and access recreation sites.
- Four artificial barriers designed to protect Colorado River cutthroat trout from species invasions were cleaned and inspected.

Inventory and Monitoring:

- Fish population status and trend:
 - Conducted annual monitoring with the Wyoming Game and Fish Department (WGFD) to determine the effectiveness of the North Fork Little Snake River (NFLSR) waterfall modification. Five suspected rainbow/cutthroat hybrids were observed above the falls. Genetic analysis will be conducted in partnership with WGFD to verify genetic composition.
 - Completed sampling on 14 MIS sample sites using the Forest's MIS sampling protocol. Assisted Colorado State University (CSU) student with Colorado River Cutthroat Trout (CRCT)/stream temperature study by deploying ambient and water thermographs at two locations in the NFLSR watershed.
 - Assisted CSU student with Master's project characterizing population status and habitat use of Hornyhead chubs (R2 Sensitive) in the North Laramie River.
- Amphibians: 56 surveys completed
 - Partnered with the WGFD herpetology crew to conduct boreal toad surveys.

- Participated in development and testing of an amphibian occupancy modeling protocol developed by Wyoming Natural Diversity Database (WYNDD), United States Forest Service (USFS), WGFD, and Colorado Division of Wildlife (CDOW) to predict occurrence of amphibians in Wyoming and Colorado.
- Documented new breeding locations of boreal toads, chorus frogs, northern leopard frogs, and wood frogs.
- Constructed 75 percent of Ryan Park boreal toad enclosure with assistance from Wyoming Conservation Corps (WCC) crews.

Highlights of 2011 RNF Aquatics Program

- Hired a student who installed 50 air and water temperature recorders across the range of CRCT as part of a Master's project with Utah State University.
- Monitored four boreal toad breeding sites in conjunction with our terrestrial counterparts and Colorado Parks and Wildlife. Successful breeding occurred at all sites and juvenile and adult toads were tested for chytrid fungus.
- Monitored the effectiveness of three fish barriers and conducted maintenance on two.
- Installed a year-round water temperature network within the Elkhead Creek (19 sites) and South Fork Little Snake River (13 sites) CRCT conservation populations.
- Sampled 15 aquatic MIS (brook trout, brown trout, and rainbow trout) sites (streams) to monitor population trends. Water temperature recorders were installed at each site.
- Monitored post livestock conditions at four locations on Carter Creek for effects to CRCT.
- Worked with terrestrial counterparts on the first year of an amphibian occupancy monitoring program.
- Sampled 30 sites within six CRCT populations to monitor changes in abundance and to assess presence of non-native fish. Partners included Colorado Parks and Wildlife and Trout Unlimited.

Some CRCT habitats on the RNF are stable to improving while a few others have been degraded (e.g. Lost Dog Creek) or are at risk of degradation due to multiple-use activities and water development.

Conclusion

Recent MIS analysis indicated that populations of CRCT are stable across the Forest but we should expect populations to decline where brook trout are present. Therefore, we conclude that habitats for CRCT are being maintained across the MBR. In addition, the MBR is protecting and enhancing CRCT and populations by removing brook trout and other non-native trout in cooperation with the CDOW and the WGFD. Non-native trout removals are restricted to streams that have been identified by the state agencies for cutthroat trout population-management.

Recommendations

- Continue to survey stream crossings for fish passage (aquatic organism) and sediment loading problems.
- Continue coordinating activities and programs with the WGFD and the CDOW.

Aquatic Threatened and Endangered Species

Direct monitoring/evaluation protocol implementation is not applicable to federally-listed species (see Table 12) because they do not exist in either the MBNF or in the RNF.

Results/Evaluation:

Table 12: Federally-listed Fish in the Colorado River and Platte River Basins

Species	Scientific Name	River System	Federal Status
Bonytail	<i>Gila elegans</i>	Colorado	Endangered
Colorado Pikeminnow	<i>Ptychocheilus lucius</i>	Colorado	Endangered
Humpback Chub	<i>Gila cypha</i>	Colorado	Endangered
Pallid Sturgeon	<i>Scaphirhynchus albus</i>	Platte	Endangered
Razorback Sucker	<i>Xyrauchen texanus</i>	Colorado	Endangered

The MBR continues to comply with all of the consultation requirements with the U.S. Fish and Wildlife Service (USFWS) when projects that could deplete water from the upper-Colorado River (including the Yampa River) and the Platte River basin are proposed for implementation. Proposed projects that may indirectly affect habitats for the species listed in Table 12 undergo consultation with the USFWS.

The federally-listed fish species found in Table 12 are typically found many miles downstream from the Routt and Medicine Bow Forest boundaries. However, natural-resource management projects that occur within the Forest could affect the timing and/or magnitude of streamflow for many miles downstream. Water depletions have been found to adversely affect habitats and populations of these species in the Colorado River, Platte River, and Yampa River basins. In FY11, and in past years, there has been a concerted effort by Forest personnel to process Ditch Bill Easements pertinent to water-depletion facilities in the Platte, upper Colorado, and Yampa River basins.

Recommendations:

- Continue to consult with the USFWS about the potential impacts of proposed projects that could deplete water from the Upper-Colorado, Yampa, and Platte River basins.
- Continue to improve habitats for aquatic and amphibian R2 Sensitive Species and MIS trout using a variety of well-chosen structural and non-structural improvement treatments. Monitor and assess the efficacy of the treatments.
- Continue to move toward increasing funding available for aquatic and riparian-habitat improvement projects. Strive to increase the number of projected acres of terrestrial habitat enhanced each year. Place more emphasis on habitats that contribute to maintaining well-distributed populations of TES species native to the MBR.

Fire Management Plans

Medicine Bow Item Objective 1.c.1
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

Has the Forest developed a fire management plan, which allows for implementing wildland fire use plans to work towards desired conditions?

Monitoring Protocol/Data Collected

Annual fire statistics are reported in the Fire Stat database. The fire reports are divided by individual forests, thus separate reports are generated for the MBNF and the RNF.

Results/Evaluation

All National Forests received direction to use a new Fire Management Plan (FMP) template. We updated our FMP with the new format so that it reflects the latest national fire policy. This policy directs the Forest Service to treat a wildland fire incident as follows:

All fires will receive a Wildfire Response. Wildland fire is a term describing any non-structure fire that occurs in the wild land setting. Wildland fires are categorized into two distinct types:

- Wildfires - Unplanned ignitions and planned ignitions that are declared wildfires. The wildfire term is to be applied to all unplanned ignitions, including events formally termed wild land fire use.
- Prescribed fires - Planned ignitions.

A wild land fire may be concurrently managed for one or more objectives and those objectives can change as the fire spreads across the landscape, encountering new fuels, weather, social conditions, and governmental jurisdictions.

This policy change will allow for the safest, most efficient, and cost effective fire response activities to be used across the forest regardless of area designation. This policy change will also allow fire to be managed to affect desired conditions where necessary and preferred.

The 2011 wildfire season was relatively mild with generally cool and moist conditions through the months of June, July, and August. There were minimal opportunities to manage any wildfires into long term events. We did have one lightning fire on the RNF within the Zirkel Wilderness that was managed for resource benefits. It remained less than 0.10 acre before it went out several days after ignition.

Recommendations:

- In the future, as directed by national policy and also reflected in the FMP, continue to evaluate each fire for the possibility of using strategies other than full suppression. With the current situation with MPB, with thousands of acres of red needles still intact, it becomes very challenging for fire managers and line officers to select strategies other than full suppression, especially during times of high fire danger. However, if weather conditions become hot and dry for extended periods of time, and we have multiple ignitions, the odds increase for multiple large extended attack fires and there will logically be a need to focus on point protection and let fires follow more of a natural course.

Fuels Treatments

Medicine Bow Item Objective 1.c.2
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

How many acres in high hazard/high risk and residential interface areas were treated with mechanical treatments or prescribed fire in an effort to move affected landscapes toward their desired vegetation composition and structure as described in the Geographic Area direction?

Monitoring Protocol/Data Collected

Annual accomplishment reports can be generated listing acres treated by Wildland Urban Interface (WUI) vs. non-WUI and mechanical vs. prescribed fire. These reports can be found in the FACTS database, reference Key Points 3 and 6.

Results/Evaluation

Table 13: Fuels Treatments on the Medicine Bow–Routt NFs, 2004-11

Treatment Type	2004	2005	2006	2007	2008	2009	2010	2011
Mechanical Treatments								
WUI	4,818	346	1429	1290	3036	3550	2175	2101
Non-WUI	115	409	592	452	1214	552	6065	475
Mechanical Treatment Total	4,933	755	2021	1742	4250	4102	8240	2576
Prescribed Fire								
WUI	1,097	3,586	1563	200	289	205	71	661
Non-WUI	2,310	1,780	3070	1861	1535	2000	2719	1130
Prescribed Fire Total	3,407	5,366	4633	2461	1824	2205	2750	1791
Treatment Total	8,340	6,121	6654	4303	6074	6307	10990	4367

There has been a very aggressive focus on treating WUI acres on this unit as well as the White River and Arapaho National Forests in what is now known as the Bark Beetle Theater. These acres are almost totally dependent on mechanical treatments with follow up piling and burning or chipping of activity fuels. The desired condition will be one in which in the event of large fire, a point protection strategy could be employed. The probability of success would increase due to increased defensible space and associated fuel breaks adjacent to communities at risk as well as other types of infrastructure such as roads, power lines, administrative sites and special use areas.

Multiple Benefits to People

Outdoor Recreation

Medicine Bow Objective 2.a.3
 Frequency of Measurement: Annual
 Reporting Period: Annual

This monitoring item asks the question:

How many miles of trail meet agency standards?

Monitoring Protocol/Data Collected

This item is answered using the trail maintenance data collected by the Ranger Districts.

The following table gives the miles of trail meeting agency standards in FY2011. Note that 2011 was dominated by a deep and persistent snowpack that delayed and, in some cases, prevented normal trail maintenance activities. Also note that the values in the table below were generated from the “Infra Trails” module of the USFS Natural Resource Manager application. Infra Trails is the corporate database and so has the official record of system trails. This has changed the trail numbers from past reports, but should lead to consistency in the future. While this is the official record of trail accomplishments in FY11, low numbers (particularly for the Parks District) are partially an artifact of data entry rules; the actual number of trail miles meeting agency standards was likely somewhat higher than shown here.

Table 14: Miles of Trails Meeting Agency Standards

District	Trails on District (miles)	Trails meeting agency Standards (miles)	Percent (%)
Medicine Bow			
Brush Creek/Hayden	464	90	19%
Douglas (Laramie Peak)	199	42	21%
Laramie	351	28	8%
Routt			
Hahns Peak-Bears Ears	836	142	17%
Parks	437	2	0.4%
Yampa	237	167	71%

Brush Creek/Hayden Ranger District

- District personnel groomed the Battle Highway (A trail) and the Hog Park Road (B trail); grooming was completed in cooperation with Wyoming State Parks.
- District personnel groomed two cross-country ski trail systems; one at the Bottle Creek Campground area and one at the Brush Creek Work Center area.
- Volunteers played an important role in completing maintenance on 16.5 miles of the Continental Divide National Scenic Trail (CDNST).
- The year was characterized by extreme snowfall and subsequent runoff with accompanying damage to trails. Several footbridges were washed-out and destroyed.

Douglas Ranger District (Laramie Peak Unit)

- 2011 presented challenges for trail maintenance as the budget wasn't complete to hire a full crew, and the recreation program manager was on a four month detail throughout the field season with no detailer to fill in behind to lead the program. However, some trail maintenance was accomplished, between the short crew, the Douglas Chapter of the Wyoming State Sportsmen and Fishermen volunteer group, and the Casper Chapter of the Backcountry Horsemen. Between the three groups, a number of the trails were given cursory and sometimes extensive maintenance.

Laramie Ranger District

- The State continues to groom all the snowmobile trails on the District.
- The District has an agreement with the Medicine Bow Nordic Association to groom over 19 miles of cross country ski trails at least 3 times/week.
- The District continues to groom 15 miles of cross country ski trails at least once per week.
- The District installed new trailhead signs at the Platte River and Savage Run Wilderness Areas.
- The Douglas Creek Bridge on the Keystone Single Track Loop was completed, with volunteer support, at the tail-end of the season.
- Substantial deadfall/blowdown on wilderness trails has likely made some areas impassible.

Recommendations

- Encourage all MBNF Districts to continue using volunteers and partners for maintaining summer use trails and grooming winter trails for cross-country skiing and snowmobiling.
- Hire a dedicated trail crew to be shared by Brush Creek/Hayden and Laramie Districts.
- Consider identifying which trail bridges should/should not be replaced in case of future flood/debris events.

- Ensure that data-entry rules are followed so that records accurately reflect all the work accomplished in a given year.

Recreational Opportunities

Medicine Bow Objective 2.a.2

Routt Monitoring Item 2-1

Frequency of Measurement: Annual

Reporting Period: Annual / Five Year

These monitoring items ask the questions:

Where can we plan for and improve recreation sites?

Do recreational opportunities respond to Forest users' desires, needs and expectations?

Medicine Bow NF

Brush Creek/Hayden Ranger District

Addressing the mountain pine beetle/spruce beetle epidemics has been the focus of a lot of effort for several years now. In 2011 we began to look beyond treating hazard trees and toward other aspects of deferred maintenance, vegetation management, and site design at developed recreation sites. Work this year included:

- Installation of a septic vault and re-working of pull-throughs to better accommodate larger truck-trailer combinations at Hog Park Campground (CG). This area has been closed because of hazard trees and is now essentially clear-cut. This represents implementation of last year's recommendation to take advantage of newly cleared campgrounds to "develop campsites and roads more user friendly for longer modern recreational vehicles."
- Installation of new toilets and removal of old toilets at Ryan Park CG (2), Hog Park CG (2), Lost Creek CG (1), and S. Brush Creek CG (1).
- Replacement of 1800 feet of damaged water line at the Sandstone rental cabin (damaged by a major slump on Highway 70).
- Bark beetle spraying of approximately 800 high value trees at developed sites.
- Continued hazard tree work, with support from the Idaho Panhandle Fire Crew, Veteran's Green Corps/Montana Conservation Corps, Entiat Hotshots, and Ironwood Hotshots.
- Continued work on design and planned implementation of improvements along the Snowy Range Scenic Byway at the Brush Creek Work Center.

Douglas Ranger District

- The last piece of the Sunset Ridge Trail and Trailhead Construction Project Decision was implemented in 2011. This was the closing of Esterbrook Campground to Off-highway Vehicle (OHV) use, as this was the key problem which spurred the project to build a new OHV trailhead and trail system outside of the campground. Previously, Esterbrook Campground was the place for OHV riders to camp and/or stage to access the area. This resulted in OHVs

being ridden up and down the campground road thereby disturbing other campers; OHVs being ridden off the main road and causing damage within the campground; and vehicles parked within sites off of the parking pads causing damage, and noise conflicts. The last piece of the project closed the campground to OHV use with a special order. The special order stipulates that OHVs may not be on the ground and must stay trailered inside the campground. Although there has been some confusion over the interpretation of the order, it proved effective in reducing conflicts and resource damage. Additional education and interpretation is planned for 2012.

Laramie Ranger District

Much like the BCH District, addressing the mountain pine beetle/spruce beetle epidemics has been the focus of much effort. Although there are several developed sites that still need to be treated for hazard trees, work this year included major efforts to reduce deferred maintenance backlogs and re-open popular campgrounds, remodel/repair work at popular rental facilities, planning for the new Centennial Visitor Center, and other improvements along the Snowy Range Scenic Byway:

- Hazard tree work and cleanup completed at Vedauwoo campground and picnic area.
- The Little Brooklyn Guard Station had extensive work completed on it in 2011 through an agreement with HistoriCorps. The interior floors were redone, rotting exterior logs were replaced, the exterior doors were repaired, the wood stove flume was brought up to standard, and the porch was rebuilt. Additional work on the windows and installation of a new solar lighting system is still required.
- Maintenance work at Spruce Mountain Fire Lookout Tower (rental cabin) was accomplished through a partnership with the Wyoming Chapter of the Forest Fire Lookout Association. This included interior as well as exterior work.
- The District selected a construction contractor for the Centennial Visitor Center and held an initial meeting. The District also conducted a “show-me” trip for an interpretive design contractor and planned paving projects for FY12 including the Visitor Center parking area, the first ½ mile of Sand Lake Road, the trail between Lake Marie and Mirror Lake, and the Brush Creek Work Center.

Recommendations (Brush Creek/Hayden and Laramie Districts)

- Rehabilitate developed campsites where hazardous trees were removed by enlarging spurs and planting new trees to provide future screening and shade and to improve campground aesthetics.
- Continue hazard tree mitigation and slash clean up.
- Complete critical deferred maintenance and clean-up at sites that have been closed for hazard tree work.
- Continue to work on signing and a sign inventory and plan.
- Work with winter and summer users to ensure the limited funds are being spent where they believe we will make the most difference.

Effects of Recreation Activities

Medicine Bow Objective 2.a.1
Routt Monitoring Item 2-3
Frequency of Measurement: Annual
Reporting Period: Annual / Five Year

These monitoring items ask the questions:

To what extent have dispersed recreation sites been rehabilitated?

How are recreational activities affecting the physical and biological resources of the Forest?

Monitoring Protocol/Data Collected

This monitoring item is answered using field observation, inventory data, and the actions taken to reduce the effects of recreation on forest resources.

Results/Evaluation

Medicine Bow NF

Brush Creek/Hayden Ranger District

Like last year, work on dispersed sites was very limited due to the bark beetle hazard trees mitigation implemented at developed recreational sites, roads, trails and administration sites. Dispersed recreation sites were lower on the list of priorities with all the developed areas affected by the bark beetles.

- Enforced a 'no camping' order along Wyoming State Highway 130 (HWY 130) (Snow Range Scenic Byway (no camping 500 feet from center line of HWY 130)) to slow or stop additional dispersed sites from being created along this route.
- Continued to concentrate on enforcing the Travel Management Rule (no motorized travel more than 300 feet off routes). This measure helped to reduce the spread of dispersed camping along many forest roads.
- Completed campsite inventories in Wilderness areas. This measure gives us a baseline to determine if dispersed camping is a growing recreation concern or is stable with little or no growth.
- Many of dispersed recreation sites in the Savery Analysis area have been surveyed and closure or rehabilitation of these sites is pending.

Douglas Ranger District (Laramie Peak Unit)

- A two-track road that was closed in the Laramie Peak Travel Analysis was fenced and gated off on State of Wyoming land with the use of Legacy Road and Trails funds; a parking area was also delineated. The original closure was difficult to maintain as the road crossed a large section of state land and the boundary with the Forest Service is on a steep slope. This area was both difficult to gate and there was no room for vehicles to turn around. In addition, this section of road sits just above Horseshoe Creek where erosion

from the road dumps directly into the creek. Off-highway Vehicle riders were driving around the closure, furthering the braiding and erosion on this steep, rocky and unstable slope. The State Land Board agreed to close their section of road and to provide the space for parking. Their crew built the fence and gate and placed the signs. The Forest Service bought the supplies and materials. The new closure was constructed on Memorial Day Weekend and proved highly successful in encouraging OHV riders to stay out of the closure area. During hunting season, hunters used the parking provided and walked into the area. As is typical when areas are closed to motorized vehicles, hunters experienced a rise in their success.

Laramie Ranger District

- Removal of hazard trees from developed recreation sites has limited the time available to address other concerns, such as dispersed campsite rehabilitation.
- In general, implementation of the District's 2007 Travel Management: Eastern Snowy Range decision, as well as the availability of motor vehicle use maps, has helped to reduce the number of new roads being developed.

Routt NF

Hahns Peak/Bears Ears Ranger District

- Illegal off-road and off-trail motorized use continues to affect the physical and biological resources on the District. Closing and rehabilitating these non-system routes is ongoing and relatively successful at reducing resource impacts.
- Roadside clearing of hazard trees has allowed the District to implement the Forest Plan Standard for dispersed campsites and proximity to water (page 1-18 Recreation - Dispersed Recreation, #3).

Parks Ranger District

- Proliferation of illegal off-road and off-trail motorized use continues to affect the physical and biological resources on the District. Identifying, closing, enforcing, and rehabilitating these non-system routes is an ongoing effort aided by partnerships, seasonal employees, and close work with Forest Service Law Enforcement Officers.
- Roadside clearing of hazard trees has necessitated the temporary closures of many primary access routes into and through the District. The closures, in combination with hazard tree reduction activities, is allowing the District to begin implementing the Forest Plan Standard for dispersed campsites and proximity to water (page 1-18 Recreation - Dispersed Recreation, #3). Tradeoffs between visitor safety and Forest Plan compliance is emerging as an issue (i.e., discouraging camping in meadows is weighed against avoiding overhead risks in the bark beetle environment).

Yampa Ranger District

- Roadside clearing of hazard trees has allowed the District to implement dispersed campsite closures identified in the Rock Creek EIS. Many sites in the water influence zone are being closed.
- The District re-inventoried 119 campsites in the Flat Tops Wilderness; many sites are improving.

- The District promoted “Leave No Trace” (LNT) ethics to backcountry users in order to minimize impacts of their use. An ongoing LNT program for elementary school children targets the next generation of recreation users.

Recommendations

All Districts:

- Continue to monitor dispersed campsites. Harden popular dispersed campsite pads to minimize impacts to resources. Relocate or close dispersed campsites that are causing resource damage.
- Continue to monitor off-road motorized use and close roads and trails that were illegally created.

Laramie Ranger District

- Continue to provide visitor information in locations that will be useful and friendly, such as the Summit Visitor Center and local Chambers of Commerce.
- Work with the public affairs office to write more articles of local interest in the newspaper and to coalesce with the public affairs offices at University of Wyoming, Wyoming Technical Institute, and at the F.E. Warren Air Force Base.

Effects of Off-Road Vehicles

Legally Required Monitoring Item
 Medicine Bow Item Subgoal 2.a
 Reporting Period: Annual

This monitoring item asks the question:

What are the effects of vehicle use off roads?

Monitoring Protocol/Data Collected

This item is assessed using field observations, Forest patrol responses, and official law enforcement statistics.

Results/Evaluation

Continued emphasis patrols during key periods (holiday weekends, hunting season) have proven effective in educating the OHV riding public and thereby leveling and sometimes reducing the number of off-roading incidents.

Table 15: Motor Vehicle Violations FY09 – FY11.

Based on 36 CFR 261.13, 261.54a, 261.54d, 261.54e, 261.55b, & 261.56	2009		2010		2011	
	MBNF	RNF	MBNF	RNF	MBNF	RNF
Warnings	78	64	119	26	73	9
Incidents	32	102	27	91	26	47
Violation tickets	32	13	39	7	18	54
Total	142	179	185	124	117	110
MBR Total	321		309		227	

Medicine Bow NF

Brush Creek/Hayden Ranger District

- The summer of 2011 was dominated by deep, persistent snowpack and subsequent heavy runoff that limited access to the high country and damaged many roads, trails, and bridges.
- The District continued to work cooperatively with the State of Wyoming for enforcement of OHV regulations on Forest Service roads and ATV trails using state funding.

Douglas Ranger District (Laramie Peak Unit)

- Recreational OHV riders (as opposed to hunters) continue to be a growing user group. This is especially true in the Big Bear Canyon motorized trail area where recreational riders have expanded the trail system well beyond the designated portions. This is a difficult area to get into and requires an OHV to be effective. As a result, no patrolling has occurred and there has been extensive damage in a boggy aspen stand and several other sensitive areas. There are plans to work with the Wyoming State Trail Crew to block off and reclaim these areas. There are also plans to develop a recreation management plan for LaBonte Canyon which is the access point for Big Bear Canyon.
- The District adjusted their hunting patrols to two pairs of Forest Protection Officers (FPOs) covering the unit; this has proven very effective. Education regarding the new travel management rules, as per the Motorized Vehicle Use Map (MVUM), was the main task for FPOs for the past several seasons. The latest iteration of the Laramie Peak MVUM was the clearest version yet and proved an excellent tool for information and enforcement.
- The WGFD wardens continue to be an excellent back-up for patrolling as well as a source for information to help enforce motor vehicle regulations.
- Signing for implementation of the Laramie Peak Travel Management Plan has been completed on the unit. The signage has benefited the public and employees in clarifying where one can legally ride.
- Conflicts between hunters who hike into an area and those who have illegally driven their OHV continue; however, they have not increased. Through public education, more hunters are reporting illegal OHV use with enough information to follow up with a warning notice or violation notice.

Laramie Ranger District

- Boxes containing MVUMs were placed at portals on Pole Mountain, and re-filled regularly, but there are still numerous OHV areas on the District that are developing into full-blown trail systems.
- Resource damage has been occurring in all locations with illegal use, especially when that use occurs during wet periods in spring and late summer.

Recommendations

Brush Creek/Hayden Ranger District

- Develop ATV routes that would reduce conflicts with other recreation users and prevent resource damage.
- Continue to work with the Wyoming State Trails Program on funding and education plan.

Douglas Ranger District

- Continue to reduce conflicts between hunters and ATV riders through patrols and have the WGFD wardens share information with the Douglas District recreation staff.
- Continue to work with the Wyoming State Trails Program on funding and education plans.

Laramie Ranger District

- Work with the Regional Office to develop public service announcements for the District.
- Increase emphasis on Forest Protection Officer patrols and user education.
- Purchase and install signs at portals and develop sign plans for various ‘hot spots.’
- Complete closure of illegal routes.

Scenery

Routt Monitoring Item 2-4
Reporting Period: Annual

This monitoring item asks the question:

How are projects and programs affecting visual quality?

Monitoring Protocol/Data Collected

The effects of management on scenic/visual resources are assessed through field evaluation of Forest Service activities. The Continental Divide National Scenic Trail construction near Parkview Mountain on the Parks District and the Hazardous Tree Removal project at Miller Lake Campground on the Laramie District were reviewed and evaluated for scenic/visual resources.

Results/Evaluation

Routt NF

The MBR Monitoring Interdisciplinary team and Parks District staff visited the Continental Divide National Scenic Trail (CDNST) construction near the Parkview Mountain on September 20, 2011. The segment of the CDNST built in 2010 and 2011 on the Parks District was reviewed on the ground. This trail segment routes through Management Area (MA) 5.11 which has an emphasis on General Forest and Rangelands - Forest Vegetation. The adopted visual quality objectives for MA 5.11 are Partial Retention in the foreground of arterial/collector roads and primary trails and Modification on all other areas.

The 2009 CDNST Comprehensive Plan provides the policies and direction on the development and management of the CDNST. The nature and purposes of the CDNST are to provide for high quality scenic, primitive hiking and horseback riding opportunities and to conserve natural, historic, and cultural resources along the CDNST corridor. Visual Resource Management is included in the Plan's Management Policies and Direction section. The CDNST is a Concern (Sensitivity) Level 1, and the scenic integrity objective (visual quality objective) is to be high scenic integrity (SIO) (Retention VQO) or very high SIO (Preservation VQO), depending on the trail segment.

The trail segment reviewed on the ground was constructed through the forest and alpine tundra zone. The constructed trail segment was well designed and located to provide a high quality experience in traveling through CDNST. This segment met and exceeded the Routt Forest Plan Partial Retention visual quality objective (VQO) along most of the trail segment, except for a few sites where the evidence of cut trees and slash and stumps can be viewed from the trail. It is recommended that cut trees and slash be removed from the trail corridor and that stumps be cut lower to the ground and covered with natural ground litter to achieve Retention or Preservation VQO and to provide a more primitive hiking experience, as described in the 2009 CDNST Comprehensive Plan.

Medicine Bow NF

The MBR Monitoring ID team and Laramie District staff reviewed the Hazard Tree Removal Project implemented within the Miller Lake Campground on September 20, 2011. The project is situated in MA 8.21 with an emphasis on Developed Recreation. The adopted SIO is Low within the developed campground. The removal of all beetle killed trees for public health and safety created an opening with scattered understory of small trees remaining within the campground. There was a good effort to minimize damage to the understory trees from logging activities, as understory of small trees would provide some future shade and screening. The group recommended that stumps be cut lower, and/or grind stumps, to protect campers from tripping and to achieve the SIO of Low. Slash piles should be burned before the campground is reopened to the public and new trees should be planted in the near future to improve the campground aesthetics.

Harvested Land Adequately Restocked

Legally Required Monitoring Item
Medicine Bow Subgoal 2.c
Routt Monitoring Item 1-10
Frequency of Measurement: Annual
Reporting Period: Annual

Code of Federal Regulation (CFR) 219.27 requires a determination of compliance with the Forest and Rangeland Renewable Resources Planning Act of 1974. The CFR requires that harvested lands be adequately restocked within 5 years after final harvest, as specified in the Routt and Medicine Bow National Forest Plans. In addition, this monitoring item asks the question:

Are stands adequately restocked within 5 years of final harvest treatment?

Monitoring Protocol/Data Collected

Annual monitoring reports rely on the FACTS database to list stands and acreages that had final harvest 5 years prior and to identify which stands and acres have a regeneration certification code. If a harvested stand is adequately restocked, but lacks the regeneration certification code in the database, the stand is considered not adequately stocked.

Results/Evaluation

According to CFR 219.27(c)(3) “When trees are cut to achieve timber production objectives, the cuttings shall be made in such a way as to assure that the technology and knowledge exists to adequately restock the lands within 5 years after final harvest.” Final harvest is defined as “clearcutting, final overstory removal in shelterwood cutting, seed tree removal in seed tree cutting, and selection cutting for a regeneration purpose.” “Research and experience shall be the basis for determining whether the harvest and regeneration practices planned can be expected to result in adequate restocking.”

The process for monitoring 5 year restocking success is based on scheduling and recording the results of regeneration (restocking) surveys in the FACTS database. If a regeneration survey indicates a lack of seedlings, the District can schedule planting or seeding with scheduled regeneration surveys to monitor restocking success. The table below gives the acres harvested in 2006, which should be restocked as of 2011.

Table 16: 2011 Acres not Adequately Stocked

Forest	Final Harvest (acres)	Acres not Adequately Restocked
	2006	2011
Medicine Bow	147	12
Routt	90	0

Medicine Bow National Forest

As of 2011, all but 12 of the 147 acres harvested in 2006 were adequately restocked. The water table in this site (Jack Creek area of the Brush Creek-Hayden RD) appears to have risen. The unit has riparian characteristics with riparian vegetation and sedges in at least 80 percent of the unit. The unit is about 62 percent stocked, primarily with spruce and fir, and the trees are not growing well. The recommendation is not to plant but to allow natural recovery. This is a small unit and live trees remain in the seed wall which should allow the site to fill in over time. Additional regeneration surveys should be conducted in the future and the site suitability should be reviewed and likely changed.

Routt National Forest

Of the 90 acres harvested with a final harvest in 2006, all acres were determined to be adequately stocked within 5 years.

Livestock Use

Medicine Bow Item Objective 2.c.2
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

What levels of grazing use are permitted while still meeting or moving toward desired vegetative condition?

Monitoring Protocol/Data Collected

This item is answered using Animal Unit Months (AUMs), grazing use for the year, and Head Month (HM) grazing use for the year. Information is displayed for cattle, sheep, and total livestock. The results for 2009 through 2011 are reported here as the information was not available for the 2009-2010 MBR Monitoring Report.

Results/Evaluation

2009

Routt NF: Year 2009 was the first year of “abundant” precipitation after nine consecutive years of an extended drought. During much of that time, the RNF was in far better shape than much of the rest of Colorado. In fact, most of the RNF has shown only minor effects since the start of the 2004 season. Winter snow packs have been at or above average for two of the last four years.

Amounts of spring and summer rains were better-than-average in most areas, and timing was generally conducive to good grass production. Most operators were able to run a majority of their permitted numbers; however, many have not yet fully replaced all of their herds sold off in earlier years, taking partial non-use for resource protection. Some went on a little later than normal because of the cool, late spring, and a few came off early. All of these efforts are good examples of proper rangeland vegetation management techniques - reducing livestock commensurate with the level of forage production and water availability, and allowing rangelands to recover from previous drought conditions. Cattle allotments were stocked at 74 percent of capacity, and sheep allotments were stocked at 69 percent of capacity.

Medicine Bow NF: Conditions throughout southeastern Wyoming were generally about the same as for northern Colorado. Spring rains were better in some areas; however, amounts were highly variable across the landscape and much of that rain came too late to produce good forage levels. The spring stayed unseasonably cool into early summer and, as a result, the seasons were somewhat shortened. Many areas received more frequent, but highly scattered summer showers that resulted in the vegetation remaining green a little later in the season than it has in recent years.

To date, about one-third of the producers have not fully replaced their depleted herd numbers; they are waiting for the land and water resources to better recover before doing so. The amount of grazing use on the MBNF was only about 37 percent of the projected Forest Plan level for sheep allotments and only about 63 percent for cattle allotments.

2010

Routt NF: Year 2010 was the second year of “abundant” precipitation after a severe and prolonged drought from 2000-2008. During much of that time, the RNF was in far better shape than much of the rest of Colorado; in fact, most of the Routt has shown only minor effects since the start of the 2004 season. Winter snow packs have been at or above average over last five years.

Amounts of spring and summer rains were better-than-average in most areas, and timing was generally conducive to good grass production. Most operators were able to run a majority of their permitted numbers; however, many have not yet fully replaced all of their herds sold off in earlier years, taking partial non-use for resource protection. Some went on a little later than normal because of another cool, late spring, and a few came off early, again exemplifying proper rangeland vegetation management techniques - reducing livestock commensurate with the level of site-specific forage production and water availability, and allowing rangelands to recover from previous drought conditions. Cattle allotments were stocked at 81 percent of capacity and sheep allotments were stocked an average of 77 percent of capacity.

Medicine Bow NF: Conditions throughout southeastern Wyoming similar to those described under 2009. To date, about 20 percent of the producers have not fully replaced their depleted herd numbers; they appear to be waiting for the land and water resources to better recover before doing so. The amount of grazing use on the MBNF was only about 44 percent of the projected Forest Plan level for sheep allotments and only about 82 percent for cattle allotments.

2011

Routt NF: Year 2011 was a year of about average precipitation (following two good years) after a severe and prolonged drought from 2000-2008. As mentioned previously, the RNF was in far better shape than much of the rest of Colorado during this time. Winter snow packs were well above average last winter.

Many operators went on later than normal because of another cool, late spring with late snows in many areas. Amounts of summer rains were about average in most areas, and timing was generally conducive to good grass production, although with late maturity in some areas. Many cattle and sheep operators were not able to run

their permitted numbers because of the very late spring. A few operators still have not yet fully replaced all of their herds sold off in earlier years, taking partial non-use for resource protection. Cattle and sheep allotments were stocked at only 63 percent of capacity, mostly because of the snowy and cold late spring.

Medicine Bow NF: Conditions throughout southeastern Wyoming were generally about the same as for northern Colorado. Summer rains were better in some areas; however, amounts were highly variable across the landscape. The spring stayed cold and snowy into early summer and, as a result, the seasons were at least somewhat shortened for many operators. Many areas did receive more frequent, but highly scattered, summer showers that resulted in the vegetation remaining green a little later in the season than it has in some of the recent years.

To date, a few of the producers have not fully replaced their depleted herd numbers, waiting for land and water resources to better recover before doing so. The amount of grazing use on the MBNF was only about 45 percent of the projected Forest Plan level for sheep allotments and only about 75 percent for cattle allotments, mostly because of the snowy and cold late spring.

Table 17: Planned and Actual Livestock Use 2009-2011 (in thousands)

	Planned Level	2009 Number / Percent	2010 Number / Percent	2011 Number / Percent
<i>Routt</i>				
Active Allotments	126	126/100%	126/100%	126/100%
Sheep Grazing				
Head-Months	174.0	123.2/71%	133.9/77%	111.1/64%
AUMs	52.5	36.3/69%	39.9/76%	33.3/63%
Cattle Grazing				
Head-Months	39.6	26.8/68%	31.8/81%	24.6/62%
AUMs	49.5	34.6/74%	38.9 / 79%	31.2/63%
Total Grazing				
Head-Months	214.0	150.0/70%	165.7/78%	135.7/63%
AUMs	102.0	70.9/70%	78.8/78%	64.5/63%
<i>Medicine Bow</i>				
Active Allotments	104	104/100%	104/100%	104 / 100%
Sheep Grazing				
Head-Months	42.0	15.4/37%	18.3/44%	18.7/45%
AUMs	12.6	4.6/37%	5.5/44%	5.2/41%
Cattle Grazing				
Head-Months	57.0	41.5/73%	46.3/ 82%	42.7/75%
AUMs	74.0	46.5/63%	56.2/76%	47.6/64%
Total Grazing				
Head-Months	99.0	56.9/57%	64.6/66%	61.4/62%
AUMs	86.6	51.1/59%	61.7/72%	52.8/61%

Recommendations

- Continue to report actual grazing use each year in relation to the planned level and explain the annual climatic fluctuations that account for the differences.

Costs

Legally Required Monitoring Item
Medicine Bow Subgoal 2.c
Routt Monitoring Item 3-2
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the questions:

Are costs of implementing programs occurring as predicted in the Supplemental Table S-3 of the FEIS?

Comparison of estimated and actual costs

Due to changes in how the Forest Service tracks budget and finance information, costs are tracked for all three units (the Medicine Bow and Routt NFs and Thunder Basin National Grassland) as one and are not specifically allocated to individual units. Forest allocation for the years 2008 through 2011 are displayed in the Figure below, in addition to the average funding for the years 2003 to 2007. To better respond to the Mountain Pine Beetle epidemic, the Regional Office withheld funding to redistribute back to the three bark beetle forests (the MBR, Arapahoe-Roosevelt and the White River NFs). Much of this funding came from these three forests, with additional funding from the national level. As a result, funding in some areas decreased, and in other areas increased. Funding increased significantly for hazardous fuels reduction projects, including mitigating public health and safety concerns on roads, trails, recreation sites, and administrative sites; fire protection and preparedness; and for timber management.

Other items to note are that in 2009 the MBR received: 1) \$2.7 million of American Recovery and Reinvestment Act dollars which were used to treat hazard trees along road; and 2) \$295 K for culvert replacements to allow aquatic organism passage. The majority of these funds were used to fund contractors, which also added to local employment.

New in 2009, the Forest Service received authority to charge cost recovery for processing special uses, such as the environmental analysis and oversight associated with powerline projects, mining, commercial filming, and other activities on the forest.

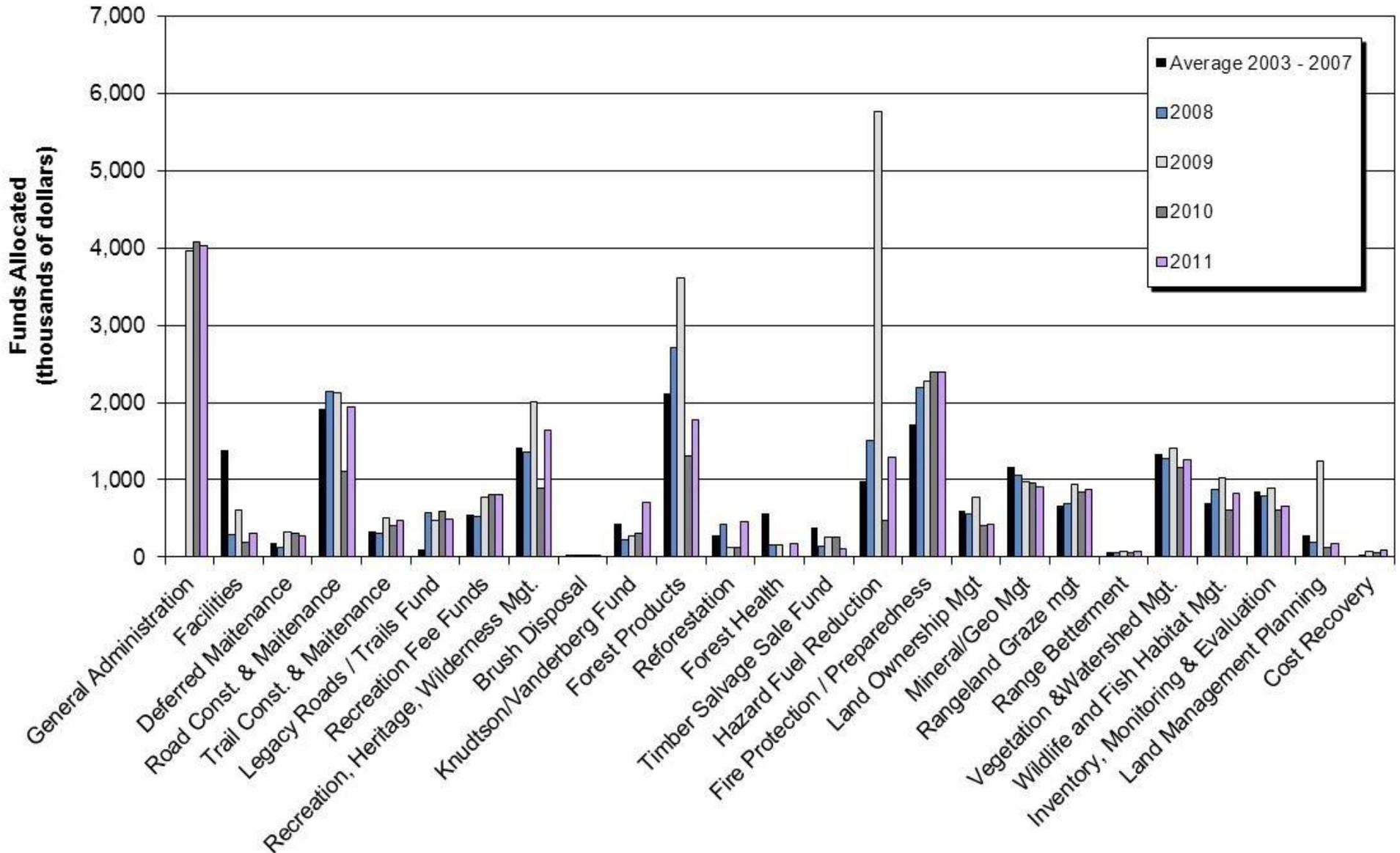


Figure 8. Allocated budget for Medicine Bow - Routt NF, Thunder Basin National Grassland for fiscal years 2007 to 2011

Rangeland Management Program Costs

Table 18 (next page) gives the 2009 through 2011 MBR appropriated budget for rangeland management as well as the planned levels outlined in the Medicine Bow and Routt Forest Plans. The dollars do not count overhead/administration amounts; consequently, the figures differ from the overall budget amounts shown under the *Costs* monitoring item (Figure 8). Cost Pool (administrative overhead) amounts for these fiscal years for all Units in the budget code for grazing permit administration (NFRG) and in the Budget Code for Rangeland Vegetation Management (NFVW) are unknown because the Washington Office now pulls these funds for all Forests prior to distributing funds to the field.

For the last four years, Congress has reversed a decade-long upward funding trend, and is now funding NFVW at rapidly decreasing levels (the rangeland vegetation portion of that budget line item, which also includes soils and watershed management, air quality, reforestation, and thinning); funds necessary to conduct noxious weed control work and to manage non-native species have been particularly hard-hit by the Regional effort to re-mix appropriated funds to cope with the bark beetle infestations. Most of the noxious weed management work is focused in pass-through cooperative monies to the Counties. About 20 percent of the identified NFVW funds (rangeland vegetation portion only) are committed to weed management. The remainder pays for allotment/NEPA inventory and analysis efforts for all functional specialists, and for monitoring of rangeland vegetation by rangeland management specialists. In the last four years, any changes in funding at the national level are resulting in significant reductions at the field level. Re-directed funds for managing trees killed by the bark beetle epidemic, including those different priorities for employees' time, has cut the rangeland vegetation funding by up to half in the last two years.

Congress has increased NFRG funding by an average of approximately 5 percent in recent years in order to accelerate allotment planning efforts to meet the required 1995 Rescissions Act schedule. While most of that funding increase made it to the Forest/Districts in 2003, incremental increases, as well as additional funding levels, were retained at higher organizational levels in 2004 - 2009. The funding is actually continuing to drop at the Forest and Ranger District level, with a resulting fall-down in target completion.

Congress has increased NFRG funding by an average of approximately 3-5 percent in recent years to accelerate allotment planning efforts to meet the required 1995 Rescissions Act schedule. While most of that funding increase made it to the Forest/Districts in 2003, incremental increases as well as additional funding levels were retained at higher organizational levels in 2004 - 2009. The funding is actually continuing to drop at the Forest and Ranger District level, and is resulting in a fall-down in target completion.

In 2009, rangeland resource improvement dollars (returned from collected grazing fee receipts) were down slightly as a result of reduced grazing levels (in number of head-months) due to drought. Total amount should be about \$75,000 - \$80,000; however, the initial amount received was just under \$62,200. Carryover from FY08 of \$15,500 was added at mid-year.

In 2010, rangeland resource improvement dollars (returned from collected grazing fee receipts) were down as a result of reduced grazing levels (in number of head-months) due to drought. Total amount should be about \$75,000 - \$80,000; however, the amount received was just under \$54,800. Carryover from FY09 of \$28,500 was added at mid-year.

In 2011, rangeland resource improvement dollars (returned from collected grazing fee receipts) continued to remain low as a result of reduced grazing levels (in number of head-months) due to drought. Although the total amount received should be about \$75,000 - \$80,000, the actual amount received was just under \$62,400. The total of all funds for management of the rangelands program on the Forest and Grassland in 2011 was 85 percent of the estimated level needed to fully implement the Forest Plans.

Table 18: 2009- 2011 Rangeland Management Budget

	Planned Budget (Thousands)	2009 Appropriated Budget / % of Planned Level	2010 Budget / % Appropriated of Planned Level	2011 Appropriated Budget / % of Planned Level
Rangeland Vegetation (NFVW)				
Routt	370.0	337.2 / 91%	279.8 / 77%	278.8 / 75%
Medicine Bow	436.0	430.3 / 99%	329.4 / 76%	328.3 / 75%
Grazing Permit Administration (NFRG)				
Routt	464	402.7 / 87%	434.4 / 94%	417.4 / 90%
Medicine Bow	529	494.1 / 93%	509.1 / 96%	501.1 / 95%
Rangeland Resource Improvement (RBRB)				
Routt	61	28.0 / 46%	34.5 / 57%	35.3 / 58%
Medicine Bow		49.7	49.0	27.1

Recommendations:

- Continue to display these costs. It is valuable to state what work is able to be accomplished even though the planned budget levels are consistently well below the stated planned levels necessary to perform all required work items.

Comparison of Estimated and Actual Outputs and Services

Legally Required Monitoring Item
 Medicine Bow Objective 2.c.1
 Routt Monitoring Item 3-1
 Measurement: Annual
 Reporting Period: Annual

This monitoring item asks the question:

Are outputs of goods and services being produced at a rate consistent with the projections in Supplemental Table S-2 of the FEIS?

The Forest Service output reporting is in transition, making it difficult to report outputs that can be compared to previous years for the two Forests. A further complication is the difficulty in comparing the categories of outputs in S-2 tables in the EISs for the two Forest Plans and in comparing these categories to the current target and outputs currently reported for NFS administrative purposes. Outputs are reported in monitoring items as appropriate and feasible, such as in the monitoring items for water quality.

Scientific and Technical Assistance

Partnerships

Legally Required Monitoring Item

Routt Monitoring Item 2-5
Reporting Period: Annual

This monitoring item asks the question:

How are partnerships contributing to maintaining or enhancing resource opportunities?

Watershed and Fisheries

Brush Creek-Hayden (BCH) Ranger District

- In 2009-2010 the BCH Ranger District worked with the Little Snake River Conservation District and the WLCI (Wyoming Landscape Conservation Initiative - Bureau of Land Management (BLM), USFWS, WGFD, etc.) on the Little Snake River improvement project. This involved a \$7,500 grant to build an enclosure fence to improve aquatic habitat. Additionally, there was an estimated \$1,000 worth of volunteer time.
- Mill Creek Culvert Replacement (2010) - The WGFD contributed \$15,000 towards replacement of a barrier culvert that is passable for Colorado River cutthroat trout. CMLG funding of \$77,000 was used for the balance of the project cost.
- Turner Lake Fishing Platform (2009) - The WGFD contributed \$9,000 towards construction and installation of an ADA-compliant fishing platform at Turner Reservoir. The USFS contributed approximately \$12,000 towards the project.
- The American Fisheries Society (AFS) Hutton Scholarship Program (2011) - AFS awarded a scholarship (\$3,000) to a diverse intern for the 2011 field season. The intern assisted with aquatics inventories on the MBNF.
- East Fork Encampment Weir Removal (2011) - The WGFD contributed \$15,000; the Wyoming Wildlife Natural Resources Trust (WWNRT) contributed \$40,000; and Trout Unlimited contributed approximately \$29,000 towards the demolition of a concrete weir and channel restoration on the East Fork Encampment River. The weir restored fish passage to approximately 5 miles of stream. The USFS contributed \$40,000 towards the project.



Figure 9. This large concrete weir on the East Fork Encampment River was removed largely through partnership funding

- Colorado State University/Rocky Mountain Research Station (RMRS)/Washington Office Stream Team - Study related stream channel effects from reservoir operations - completed in 2011.
- The BCH and Laramie Ranger Districts have a long-standing relationship with the City of Cheyenne's Board of Public Utilities which is permitted to operate three reservoirs and associated water pipelines. In addition to the city being a cooperative permit holder, they have contributed dollars to fisheries research projects on streams associated with their permit and in-kind contributions to pine beetle hazard tree mitigation, etc.

Laramie Ranger District

- Carbon Power and Light (CP&L) - The MBRTB RAC approved \$19,000 for wetland restoration and protection (e.g. buck/pole fencing) along the Carbon Power and Light (CP&L) powerline that was cleared for hazard tree mitigation - 2012 implementation.
- Since 2008 the Laramie Ranger District has partnered with several diverse entities to implement around 285 miles of road decommissioning from the Travel Management: Eastern Snowy Range Decision. The WWNRT contributed \$127,250; the EPA/WYDEQ contributed \$59,140; and the Rocky Mountain Elk Foundation contributed \$5,000 in grant funds. This has or will improve soil and water quality as well as hydrologic function and wildlife habitat across several thousand acres surrounding these road miles.

- Laramie Rivers and Laramie County Conservation Districts - Engaged in a Memorandum of Understanding for water quality monitoring, maintenance, improvement and protection in Crow Creek - ongoing.
- Pelton Creek Culvert Replacements (2011 and 2012) - The WGFD contributed \$15,000 towards replacement of 3 barrier culverts on Pelton Creek. The WWNRT contributed \$81,000 towards the project. Two culverts have been replaced and a third culvert will be replaced in 2012.

Hahns Peak-Bears Ears (HPBE) Ranger District

- The HPBE Ranger District partnered with Colorado Parks & Wildlife's 'Fishing is Fun' program, the Rocky Mountain Youth Corps, and Smartwool to complete the reconstruction and enhancement of the day-use area as part of the Hahns Peak Lake Campground improvement project. Scheduled for completion in 2012, the day-use area will include both a picnic area and accessible fishing opportunities, as well as a shoreline trail. The total partnership value is approximately \$91,800 (\$35,000 from Fishing is Fun grant; \$30,000 local matching funds; \$19,000 from the RAC; \$3,000 of in-kind from the Rocky Mountain Youth Corps; and \$4,800 estimated volunteer hours from Smartwool).

Fire/Fuels

BCH Ranger District

- The BCH Ranger District has coordinated fire and fuels projects for several years with the BLM, High Desert District. Their agreement allows for the sharing of resources (and financial reimbursement) for prescribed burning. Prescribed burn projects that have benefited wildlife habitat and reduced hazardous fuels across both jurisdictions include: Marking Pen (6,000 acres), Iron Mountain (1,200 acres), Prospect Mountain (790 acres on FS and BLM), Mill Creek (1,000 acres), Morgan Creek (1,000 acres), West Barrett Ridge (1,700 acres on FS and BLM).

Laramie Ranger District

- The WWNRT granted \$5,500 to conduct the Mill Creek/Bald Mountain prescribed burn projects on the District to improve elk winter range.

Parks Ranger District

- The Parks District has an agreement with the USFWS to cooperate in the implementation of each other's approved prescribed fire management plans as follows:
 1. The equipment and resources of both agencies, when available may be utilized to support each other's prescribed fires with no cost/charge to the other agencies.
 2. To take full advantage of training opportunities, for both agencies, to fulfill tasks in NWCG Task Books.
 3. Also benefit of on the job training for all fire fighters to gain fire experience in a variety of fuel types that may not be present on each other's properties.
- The District worked with the Kremmling BLM on several fuels related project across boundaries.

Yampa Ranger District

- The Yampa Ranger District partnered with Colorado Parks and Wildlife and Colorado BLM-Little Snake Office with the Indian Run Prescribed Burn to improve wildlife habitat and reduce hazardous fuels across FS, BLM, and State lands boundaries.

Recreation

Laramie Ranger District

- The Laramie Ranger District's Recreation Special Uses specialist led and helped teach a natural resources class in the summer of 2011 through a FS partnership with the University of Wyoming and the *Upward Bound* program. This is a national program that facilitates learning opportunities for minority and economically underprivileged students. Several Forest and District specialists, as well as personnel from the Laramie County Conservation District, taught students about most resources we manage. Additionally, students utilized beetle-killed wood that had been cleared for hazard tree mitigation to build a buck and rail fence around a sensitive spring on Pole Mountain to keep the cattle out and protect water quality. Benefitted dollar amounts are approximately \$2,000 - \$3,000 for the fence work. The interest and understanding of the natural world and FS mission generated immeasurable benefit.

Parks Ranger District

- Rocky Mountain Youth Corp (CDNST): Constructed final 1 mile of Parkview Northeast trail segment with \$24,000 of Regional CDTA partnership funds for Rocky Mountain Youth Corps trail crew
- Rocky Mountain Youth Corp also worked with Recreation and Timber programs to thin mistletoe infected trees from Big Creek Lakes Campground for about two weeks; value about \$16,000.
- Front Range Trail Riders (help maintain single track trails on the District): contributed roughly 500 hours of volunteer work over three weekends.
- Colorado Off-highway Vehicle Coalition (COHVCO): Funded inventory crews who surveyed non-system and off-system OHV use in the Kings Canyon, Grizzly-Helena, and Encampment River areas. COHVCO spent approximately three weeks on the District and contributed 320 hours of work plus travel and reporting.

Hazard Tree Clearing

Laramie Ranger District

- The Laramie RD partnered with the Wyoming Department of Transportation (WYDOT) to begin hazard tree clearing work in the WY Highway 230 corridor. The District is benefiting first and foremost from the clearing of hazard trees that could endanger our shared publics that use this highway to access several important parts of the district. Additionally, there is value added to the agency from the purchase of timber that was part of the WYDOT's settlement timber sale (approx. \$4,000).

- Similar to the partnership with the WYDOT, Carbon Power and Light (CP&L) partnered with the Laramie and BCH Ranger District's to complete hazard tree clearing along 34 miles of their permitted powerline corridors. This effort primarily eliminates the potential for dead trees to fall on their lines and spark wildfires. The timber value for their settlement sale is approximately \$1,200.

Rangeland Management

Laramie Ranger District

- Used WyoTech volunteers to construct bucks for fencing projects on Pole Mountain (value is approximately \$5,000).
- Collaborated with the University of Wyoming and the Laramie County Conservation District (LCCD) for cooperative rangeland monitoring on Pole Mountain through the Rangeland Health Assessment Program (RHAP). This program was brand new in 2011 and is funded by the Wyoming Department of Agriculture.
- Collaborated with LCCD for funding of spring development and fencing projects on Pole Mountain - grant valued at approximately \$20,000.
- Cooperated with the A Bar A ranch out of Encampment to treat invasive weed species in the Savage Run Wilderness and on their private land to help slow the spread of these weeds.
- Cooperated with the University of Wyoming on rangeland trend and utilization monitoring on Pole Mountain.
- Collaborated with Albany County Weed and Pest District for invasive weed control on Pole Mountain and the Snowy Range. Due to their greater capacity to treat more acres at a lower cost/acre, the District funded them \$12,400 to complete weed spraying on NFS lands.

Parks Ranger District

- North Park Habitat Partnership Program contributed \$5,000 for noxious weed control on FS land.
- The Owl Mountain Partnership matched \$3,600 in-kind expenses on cost share agreement for electric fence material/labor and project administration.

Yampa Ranger District

- The Yampa Ranger District worked with the Rocky Mountain Elk Foundation (RMEF) for the past 5 years in the treatment of noxious weeds, specifically yellow toadflax in the Flattop Wilderness and in the Pagoda Roadless Area (FY 11 \$10,250). The District also worked with RMEF over two different years on abandoned fence removal.

Botany

Parks Ranger District

- North Park High School - Developed native seed materials for MBR restoration projects. The FS contributed \$2,500 and the partner contributed \$2,300.

- Wildland Restoration Volunteers - Native seed collection; FS contributed \$8,500 and the partner contributed \$5,000.
- North Park High School - Native seed propagation for and planting materials at Grizzly Guard Station. The FS contributed \$9,000 and the partner contributed \$3,000.
- Steamboat Springs Community Youth Corps - Native seed collection; FS contributed \$6,000 and the partner contributed \$5,000.

Other

- North Park Schools District- Reading/Math tutor program: The Parks Ranger District employees are encouraged to spend up to two hours per week volunteering in our local K-12 school district (about 100 hours each school year). We work with the school Principal to identify areas of most need and the employees who can best fill those needs. Some of the special talents that we are able to offer to the school are multi lingual skills and advanced math skills. Some of the benefits to the school (which will ultimately benefit the Forest Service, and our society as a whole) are that the average student growth in one of the standardized tests went from below average (average is 7 points) to above average (10 points) in school year 2010-2011. Some of the benefits to the Forest Service, and especially the Parks Ranger District, include improved relations within the community (for the district as a whole and for employees as individuals); improved relations with the teachers (now teachers are beginning to come to us asking us for field trips on NFS lands); new relationships with the students (at least one student that I know of asked to work with the same person this year as they did last year); students becoming interested in natural resources, reading, writing and math; students volunteering to help out with Forest Service activities (elementary student council helping with our community Christmas open house). An additional benefit to the kids (especially those at risk kids) is to see someone care enough to come and help them out regularly.
- North Park Outdoor Education Network - Community Outreach/Education program with all of the local state and federal land management agencies.

Forest-Wide Partnerships

- For the past several years the MBR has partnered with several groups to complete hazard tree mitigation work in recreation sites across the unit, including campgrounds, picnic areas, trailheads, and trails. Crews included the Rocky Mountain Youth Corps, Wyoming Conservation Corps, Colorado Department of Corrections and the "Green Veterans." These programs provided dozens of young men and women the opportunity to work in our natural environment while learning more about our mission and building job skills. The MBR benefited from multiple tours from each of these crews across each Ranger District.
- In 2009 the MBR's monitoring coordinator partnered with the UW and the Rucklehaus Institute on the Forest and Plains Research Symposium.

- The MBR has developed a partnership with Wyoming Natural Diversity Database and Colorado Natural Heritage Program to monitor amphibians across the entire unit.
- The Yampa Ranger District established a partnership with the University of Colorado and PikaNet to monitor pika across the MBR. As part of this partnership, the District co-mentors a student as part of their Norlan Scholar program. This opportunity provides the student experience working for a government agency and the opportunity to complete undergraduate research thesis. The Yampa Ranger District pays for a seasonal to work collecting pika data (approximately \$4,500) and the University of Colorado pays the student to complete data analysis (approximately \$1,500). The data is then uploaded by Natural Resources Ecology.

Interpretation and Watchable Wildlife

Medicine Bow Objective 3.a.3
Reporting Period: Annual

This monitoring item asks the questions:

To what extent have watchable wildlife activities been developed?

Does the Forest provide interpretive experiences that describe ecosystem functions and the Forest Service Mission?

Monitoring Protocol/Data Collected

Annually, document the number of watchable wildlife and plant sites, the development and interpretation activities at existing sites, NatureWatch, and interpretive programs and experiences that provide environmental interpretation and awareness.

Plants

Results/Evaluation

Celebrating Wildflowers: One new Celebrating Wildflowers viewing site was designated at the Vedauwoo Recreation Area in 2011. With the addition of the new Vedauwoo site, there are now two designated wildflower viewing sites on the Medicine Bow - Routt National Forests.

Celebrating Wildflower Sites:

- Snowy Range Scenic Byway (Wyoming State Highway 130). Medicine Bow National Forest, Brush Creek-Hayden and Laramie Ranger Districts.
- Vedauwoo Recreation Area on Pole Mountain. Medicine Bow National Forest, Laramie Ranger District

Historic Grizzly Guard Station: The RNF completed the first of a two-year native species restoration plantings project at the historic Grizzly Guard Station (Parks RD). In 2011 the project concentrated on growing native grass species. North Park School District (NPSD) is currently growing native forb species for the 2012 planting. This project is done in partnership with the North Park School District and RAC Funding.

Wyoming State Park Summer Outdoor Slam: The Forest Service and BLM hosted an educational booth featuring wildflower/native plant education information, posters, and art projects at this Wyoming State Parks, Historic Sites, and Trails sponsored event. Approximately 100 children visited the booth. After the event, natural resource specialists led a guided hike on Forest Service trails to teach participants about local flora, fauna, and recreational opportunities on Forest Service lands.

Recommendations

- Designate additional Celebrating Wildflowers wildflower viewing sites on the RNF and engage in a larger number of Celebrating Wildflowers outreach activities forest-wide.
- Continue to promote and support conservation education and environmental awareness activities on both Forests and within local communities. Increase the Involvement of the local publics in their National Forests and its natural resources.

Knowledge Base

Medicine Bow Objective 3.b.1
Reporting Period: Annual

This monitoring item asks the question:

How can we build technical knowledge bases across all land ownerships?

Monitoring Protocol/Data Collected

Annually, document methods used to increase knowledge and share information between the Forest Service and other agencies across all land ownerships.

Plants

Results/Evaluation

As of 2011, all rare plant inventories followed accepted protocols and are fully compliant with agency-wide USFS National Resource Information System (NRIS) Threatened and Endangered Species (TES) database protocols. Rare plant surveys have been completed for NEPA purposes on projects covering between 2/3 and 3/4 of the MBNF (Roche, pers. comm. 2011). At this time a majority of the available survey data has been entered in the NRIS TES database. In 2011 this effort was continued by adding to the database all rare plant element occurrences for the Brush Creek - Hayden District collected from 1994-2011 and all 2011 botany survey data (general program maintenance).

In addition to project survey data, the MBNF cooperates with the Wyoming Natural Diversity Database (WYNDD) to record data on rare plants state-wide. The WYNDD has data, reports, and publications available on their [website](#). Most recently, WYNDD completed several publications detailing ten inventories in several grazing allotments on the Snowy Range (Heidel and Laursen 2003). In progress is a cooperative agreement

to perform similar rare plant inventories in fens and other wetlands on Pole Mountain (to be completed in 2013).

Several floristic inventories (complete list of vascular plants) have been completed for the MBNF, most recently in 2009 by University of Wyoming students and faculty (Lukas 2009). Lukas is currently updating inventory work with faculty assistance at the University of Wyoming. An updated inventory for the MBNF is on track to be available in 2014. Additional work from the University of Wyoming includes graduate student and professional research on tree line and climate change, bark beetle effects, rare plant distribution and reproduction, and noxious weeds.

The botany program on the MBNF is also collaborating with the Bureau of Land Management Seeds of Success program to build a better native seed program on the forest. This collaboration is in the early stages, but ultimately aims to create a native seed source that utilizes local genotypes of a large diversity of species that can be used for restoration, reclamation and habitat enhancement projects.

Conclusions

Agency-wide NRIS database and protocols for data collection have standardized field methods and created a source for botanical information accessible to all agency employees. This will improve botany data collection and dissemination across the forest. Additionally, cooperative efforts between the MBR and other federal agencies and academic institutions further increase the quality, quantity, and diversity of the botanical information collected on the forest and contributes to the body of knowledge used to make management decisions.

Recommendations

- The MBR should continue to encourage use of standardized protocols and databases and continue to support and fund cooperative efforts for data collection and research with outside agencies.

Range

Results/Evaluation

On average, approximately 60-65 percent of the active allotment acres are inspected annually (about a million and a half acres). In 2011, 451,670 acres on the Routt and 674,111 acres on the Medicine Bow were administered to standard, for a total of 1,125,781 acres. (An additional 250,030 acres were administered on the Grasslands, for a grand total of 1,375,811 acres). Generally, at least 600,000 acres also have site-specific short-term or long-term monitoring data collected for active allotments (including the Grasslands).

Data are collected in accordance with standard monitoring protocols detailed in the Interagency Technical Guides for *Utilization Studies And Residual Measurements* and for *Sampling Vegetation Attributes*. Several of the more commonly-used methods are found in the *R-2 Rangeland Analysis and Management Training Guide*. Monitoring results are annually recorded for individual pastures and allotments in the INFRA database for rangeland management. Results that were measured in years prior to creation of this database are located in individual allotment file folders.

Implementation Monitoring

Endangered Species Act

Medicine Bow Item Subgoal 1.b
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

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

Monitoring Protocol/Data Collected

The MBR reviewed opportunities to implement national recovery plans and described actions taken in support of a National Recovery Plan.

Plants

Results/Evaluation

To date there are no threatened or endangered plant species or suitable habitat documented on the MBNF or RNF. Three plant species occur in the vicinity or downstream of the Forests and impacts to these species are considered during the NEPA process. These species are Ute ladies' tresses (*Spiranthes diluvialis*, Threatened), Western Prairie Fringed orchid (*Platanthera praeclara*, Threatened), and Blowout penstemon (*Penstemon haydenii*, Endangered).

Ute Ladies' Tresses

In 2005 a new population of Ute ladies' tresses was discovered in Utah at 7,000 feet in elevation (Fertig *et al.* 2005). Previously thought to occur at lower elevations, this new information caused a reevaluation of suitable habitat on the MBR. Due to climatic constraints, the elevational extents of this species are thought to be approximately 5,500 ft. in Wyoming and 6,500 ft. in Colorado, but all areas at or below 7,000 feet were evaluated for suitability. Potential habitat was identified along areas of Battle Creek in the Sierra Madre (~7000 ft.) and surveys were completed in 2010 and 2011. Initially the habitat appeared suitable, but in 2011 surveys demonstrate a different species of ladies tresses orchid (hooded ladies' tresses, *Spiranthes romanzoffiana*) was discovered, an indicator that this area was too high in elevation to be suitable for Ute ladies' tresses. As of habitat evaluations and field surveys completed in 2011, no suitable habitat for Ute ladies' tresses is thought to exist on the MBR.

Western Prairie Fringed Orchid

Upstream water depletions to the Platte River watershed have been found to negatively impact the habitat of western prairie fringed orchid, found downstream in calcareous prairies and sedge meadows near the Platte River in Nebraska (2011b). In 2011 one project, the Wyoming State Highway 130 bridge reconstruction, on the Brush Creek Hayden District will have associated water depletions to the Platte River. Currently depletions are expected to be below the minimum threshold (<0.1 acre feet), which would have a biological determination of *no effect* for western prairie fringed orchid and not require any consultation with Fish and Wildlife Service. If water

depletions are determined to be > 0.1 acre feet, consultation with the U.S. Fish and Wildlife Service will be initiated.

Blowout Penstemon

Blowout penstemon occurs on the actively eroding surfaces of sand dunes and sandy blowouts below 8,000 feet in elevation (USFWS 2011a). In 2008 the Forest Service became aware that blowout penstemon populations and suitable habitat have potential to occur on the MBNF. Since that time all projects have included evaluations and/or field surveys for these species. To date no individuals, populations or suitable habitat have been discovered on the Medicine Bow National Forest, but all projects continue to include evaluations and/or field surveys for this species.

Conclusion

All actions were in compliance with the draft recovery plan for Ute ladies' tresses (USFWS 1995), the Platte River Recovery Implementation Program (USFWS 2006), and the blowout penstemon recovery plan (USFWS 1992).

Recommendations

- Continue to monitor this item annually over the life of the plan.

Terrestrial Wildlife

The bald eagle was the only Endangered Species Act-listed species on the Medicine Bow and Routt National Forests with a recovery plan. The bald eagle was delisted in August 2007. The recovery plans for the Canada lynx and the Preble's meadow jumping mouse are both under development. At this time the bald eagle is only an incidental visitor to the Laramie Peak Unit whereas, on Brush Creek/Hayden District, bald eagle nesting sites and winter-roosting sites are surveyed for activity. Very few bald eagles inhabit the Medicine Bow and Routt National Forests. The Forest continues to incorporate bald eagle considerations into project design as appropriate - including the use of a ½-mile no surface occupancy buffer prohibiting construction of new above-ground structures. In addition, we identify and monitor bald eagle communal roosts as specified in the Recovery Plan. No further opportunities were identified to implement action items in the Bald Eagle Recovery Plan on the Medicine Bow and Routt NFs.

Several documents do speak to conservation actions appropriate for the Canada lynx. Though the lynx has only recently been observed on the Medicine Bow and Routt National Forests, the Forest does adhere to the Lynx Conservation Strategy and Assessment. Since 1999, one, and possibly two, female lynx had litters on the Medicine Bow National Forest; but both lost their litters. Colorado Division of Wildlife tracks radio-collared lynx and reproductive patterns of the reintroduced population. The Hahns Peak-Bears Ears District field validated 1500 acres of Canada lynx habitat.

Recommendations

- Continue to track lynx movements onto the Medicine Bow National Forest in partnership with the Colorado Division of Wildlife. Identify potential future actions in support of recovery for lynx. Continue monitoring bald eagle nest and roost sites and Preble's meadow jumping mouse as funds allow.

- Continue to monitor this item annually over the life of the plan.

Implementation of Standards and Guidelines

Legally Required 36 CFR 219.12 (k)
 Routt Monitoring Item 2
 Frequency of Measurement: Annual
 Reporting Period: Annual

These monitoring items ask the questions:

Are the standards and guidelines prescribed in the plan being incorporated in NEPA documents and implemented on the ground?

Have site-specific decisions successfully implemented the Forest Plan's Direction?

Monitoring Protocol/Data Collected

The Forest's Monitoring Team visited several sites on the MBR during the 2011 monitoring field trips. The trips are described below:

2011 FOREST MONITORING TEAM FIELD TRIP

Routt NF

Stop 1, Parks Ranger District, Routt NF

Continental Divide National Scenic Trail (CDNST)

The current trail location on the north side of a large mountain can be problematic in this area as avalanches can destroy portions of the trail. Also, the north side of the mountain retains snow into August in most years. The initial trail route would have been on the south side of the ridge, which is on the Sulphur District of the Arapahoe-Roosevelt NF. However, that did not prove to be feasible. The current location on the north side of the ridge is in a higher maintenance location than the original route.

The Regional Office had earmarked funds for the past five years to construct this trail. An Environmental Assessment was completed, joint with the Sulphur District, to designate the CDNST corridor and to realign the trail. The design was for a non-motorized trail that is located as close to the Continental Divide as possible. As well as access to water, difficulty of construction and other aspects were considered in the location. The trail location also bypassed roads.

The project became political when the Continental Divide Trail Association lobbied Congress to get the project accomplished. A motorized user group was concerned that the nearby motorized trail would have use restricted due to noise concerns on the CDNST. This concern was likely increased due to a pending lawsuit over motorized use elsewhere in the area.

The trail construction blends in with the landscape. Dispersing the excavated materials helps to reduce the visual impact of the trail. The trail was built by the Rocky Mountain Youth Corps (RMYC), NFS crews and volunteers. The RMYC crew worked out well as they were young and working at the high elevation was not an issue. Volunteer groups are more time consuming to organize but do have the benefit

of building support from the local communities. A Department of Corrections Crew of 100 people worked for a weekend.

This portion of the CDNST has less than 20 hikers a year, so this project was an expensive project that will not have a large amount of user visits. The trail construction minimized environmental impacts. Cairns and posts were used in meadows, instead of a constructed trail, to direct hikers. This technique disperses hikers and reduces impacts in high elevation plant communities. Small rocks were used to fill in between the larger rocks in talus and rocky areas. The trail is open to mountain bikers, as there is no closure order to stop them.

Table 19: Team Evaluation Continental Divide Scenic Trail

Resource Area	Evaluation
Botany	Surveys for alpine kittentails occurred, in addition to looking for four other sensitive species. 70 years of research has yet to document regeneration of Alpine tundra so this project displays good stewardship by minimizing trail construction in meadows.
Public Affairs Officer	This is a great project for the long term and for the forest as a whole. These high elevation areas may get more use as people try to avoid the bark beetle affected areas.
Planning	Great project, great use of funding. Good to get outside funding to help with the project.
Scenery / Visuals	This is a high or very high scenery area. The trail does meet these scenery standards. The trail overlooks many dead trees, which are in a lower scenery area. When the trees are harvested, the views may not retain the scenery quality, however in the long term, the scenery quality will return. Scenery would be improved if the stumps from the trail construction were cut lower and covered with soil and if the limbs were scattered.
Timber	Good project.
Recreation	Not many projects are constructed as a long term resource as is this trail. Great Project. Difficult to get volunteers excited and working on the Forest.
Wildlife	Low impact project. The lynx impacts were insignificant. Pika were heard on the field trip.
Hydrology	The trail is well drained, and has good water management. The trail crosses wet areas with the least impact. Good to see the low impact technique in meadows. The trail should be monitored for maintenance needs.
District Ranger	Great job. If we were to do it again, would have worked through the issues with the other unit to place the trail on the south side as that is a better location for the trail.

**Medicine Bow NF
Stop 2, Laramie Ranger District**

Miller Lake Campground Hazard Tree Removal

This project was implemented as part of the 2008 Hazard Tree Removal Decision. The Hazard Tree planning effort was intended to result in implementation of many projects across a large area. As a result, many design criteria were included within the decision to cover all the situations that may arise during implementation.

The campground was cleared of trees, with trees less than four feet tall left in place. The project is mostly complete, with a few trees left around the edges that should be cut and some slash piles left that will be burned later. In addition to District staff, Hotshot crews, Wyoming Youth Conservation Corps crews, and Montana Conservation Corps crews worked on this project.

One design criterion required whole tree skidding to a location outside of the campground. This criterion was not implemented at Miller Lake CG. Instead, the trees were later piled and burned which resulted in the campground being closed longer than anticipated.

A design criterion requiring protection of the infrastructure was followed; however, some of the stumps are higher than desired. A stump grinder could be used in the future. The stumps are contributing to a lower scenic integrity. The area is currently open to firewood collection and the piles will be burned in the fall when there is snow on the ground.

If the District had to do it over, it would be best to remove all the trees over four feet tall at once, clean up the slash, and have the project done at one time.

Table 20: Team Evaluation - Miller Lake Hazard Tree Removal Project

Resource Area	Evaluation
Archeology	No concerns.
Botany	Campgrounds usually do not have rare plants. No weeds appear to be present, so a low impact project.
Planning	The project met the desired conditions and objectives for the project to reduce the hazard from the dead trees. The campground will look better once the piles are burned and cleaned up. We should learn from the projects as they are completed and keep improving our implementation.
Scenery / Visuals	Good job saving the understory trees and brush. Now may be the time to think about landscaping. Grinding stumps would be good and would reduce the hazard to campers.
Timber	The short term hazard is now dealt with. Should now consider what vegetation is wanted for the campground. The area is surrounded by mistletoe trees, which could be removed and the trees started over without mistletoe infection in the area. Periodically, the mistletoe infected trees around the campground could be removed to keep it

	out of the campground. This is a good chance to start over.
Recreation	Would be beneficial to improve information and outreach to the public about campground closures and how long the campgrounds will be closed.
Wildlife	This area may be in a lynx area. Administrative sits should not be considered potential lynx habitat. For birds, it would be best to take the trees before the nesting season. The NEPA analysis and decision did include this aspect in the analysis, so it was covered.
District Ranger	We have applied the lessons learned from elsewhere to cut more of the trees down to avoid the problem of having to repeatedly treat the same areas. We should work on educating the public and our staff to not expect large trees in the campgrounds anymore. The campers do like the piles of wood for firewood and kindling.
Deputy Forest Supervisor	The project objectives have been well met. It would be good to try to do these projects all at once. Now the campground should be cleaned up so it is a good place for the public again.

**Medicine Bow NF,
Stop 3, Laramie Ranger District**

NFSR 521 and 520 Hazard Tree Removal by Winter Logging

The hazard trees along these roads were logged in the winter with three to four feet of snow and on frozen ground. The loggers were able to remove the trees with little damage to the small trees. The sale administrator worked with the loggers to keep them from turning or spinning to reduce adverse effects. They backed in and out of the units and dragged trees up the hill. By using machine cutting, the loggers were able to attain low stump heights, even in winter. These roads are in a good location for winter logging as they are close to HWY 230, so they did not need to plow very far to reach the sites. They tried to leave more slash to keep more of the woody debris on the site. Culverts were GPS'd and protected during the logging operation.

During winter it is easier to get close to wet areas and meadows. Trees in the middle of the aspen stand were hand felled. Some of the hand work was completed by the Montana Conservation Corps.

Overall winter logging worked well in this area; however, traffic control was difficult as the public was driving in on the plowed roads. Despite closure barricades to block the roads, people would occasionally drive right past the hand crews - this was a safety issue.

Table 21: Team Evaluation - NFSR 521 and 520 Hazard Tree Removal by Winter Logging

Resource Area	Evaluation
Archeology	Looks good; the historic site was protected.
Botany	Winter logging is great for plants. It is difficult to protect known sensitive plants during summer operations.
Planning	Good for everyone to have a constructive conversation about this project.
Timber	Looks good. We try to learn from each other to keep improving implementation. All the contractors have different styles and different equipment.
Wildlife	The Fish and Wildlife Service was concerned about leaving the small trees. It is good to see all the regeneration on the site. There was a goshawk nest which was worked around.
District Ranger	Good for everyone to come out, to keep the communication going.
Deputy Forest Supervisor	Impressed by the low impact. Good to work with the contractors and to get their ideas for how to do a better job.

DISTRICT PROJECT MONITORING

Douglas Ranger District

Horseshoe Road Closure

Project objectives included closing the road to reduce resource, improving stream health, and controlling illegal off-road use.

Forest Plan Standard and Guidelines (S&Gs) and design criteria were incorporated into the Laramie Peak Travel Management decision. These were incorporated into project design and implemented on the ground.

In conjunction with this project, the State of Wyoming installed a gate on their land which will help control illegal OHV use.

Recommendations:

- Continue to monitor use in this area.
- Evaluate potential stream bank erosion.
- Additional waterbars on the road may be necessary.
- Assist the State to anchor their fence (it was blown over).
- T&E protection-- monitor near the riparian area for Preble's meadow jumping mouse.

Laramie Ranger District
South Wildland Urban Interface Project

Miller Lake (Units 86 and 87): Prescriptions include: Commercial Thin/Salvage and Commercial Thin. The prescriptions are described in the Decision Notice as follows:

Commercial Thin (CT): 40-50 percent of the overstory is typically thinned to promote a healthier stand and to produce future sawtimber...This treatment is applied to stands with average diameters less than 7" DBH. Slash is typically lopped and scattered unless fuels abatement is required around private properties or roadways.

Salvage: The majority of the merchantable dead and dying timber is removed. This treatment is applied to stands having 50+ percent beetle infestation, a dead and dying overstory, and a low to moderate dwarf mistletoe level in the understory. The objective of this treatment is to reduce fuels, remove potential hazard trees, and/or to create openings for future regeneration. Slash is typically lopped and scattered; however, mechanical treatment (including piling, chopping, or mastication) may be necessary to reduce slash concentrations and to provide scarification for seedling establishment.

Discussion:

Unit 86 is approximately 25 acres in size and was treated using a CT prescription; the



unit was winter logged when roughly 3 feet of snow was on the ground. Mortality within the stand was about 90 percent at the time of harvest which was substantially higher than when project planning occurred. A small portion of Carbon Power and Light's powerline traverses the Unit and had been treated prior to the monitoring review.

Figure 10. South WUI Unit 86 - Commercial Thin (note powerline in the background)

Although the CT prescription allowed for roughly 40 to 50 percent of the overstory to be removed, it was evident that substantially more of the overstory had either been salvaged or had blown over following treatment. Given the shallow root system associated with lodgepole pine, the amount of mortality at the time of harvest, and the powerline clearing that was planned for within the unit boundary, the group speculated that the prescription probably should have been 'Salvage' instead of 'CT.' Despite a potentially inappropriate prescription, however, the group determined that the treatment met the 'Purpose of and Need for the Project' which was to:

- Reduce the amount and continuity of existing fuels surrounding WUIs;
- Minimize the potential for catastrophic wildfires; and
- Improve ingress and egress access.

Currently, slash treatments appear to be sufficient to reduce area fuel loads; fuels will be further reduced once piles are burned and the decks are removed.

Unit 87 is approximately 27 acres in size and was harvested using a CT/Salvage prescription; it was also logged during the winter under similar snow conditions as described above. Given conditions at the time of harvest, the group again speculated that a strictly 'Salvage' instead of a 'CT/Salvage' prescription would have been more appropriate.

This unit contains some wet spots that could have been problematic had it not been winter logged. The unit also contains a goshawk nest that required timing restrictions per Decision Notice Design Criterion 26. The winter logging and wildlife Design Criteria were adhered to, and timber removal was successful. The group determined that work in this unit met the Purpose of and Need for the Project and the intent of the decision. The amount and continuity of fuels adjacent to the WUI were reduced and slash treatments were effective in meeting fuel objectives.

Foxpark Area (Units 95 and 96): Prescriptions include: Boundary Treatment and Salvage. NOTE: Per Design Criterion (DC) 5, Unit 96 was to be surveyed for wood frogs by Forest Service fisheries staff prior to project implementation.

Boundary Treatment - All dead standing trees, down trees, and ladder fuels within 200 feet of the National Forest boundary and private land are treated to create a fuelbreak. Slash from the trees will either be chipped or removed and piled at the landings. Seedling/sapling size trees (less than 7 inches DBH) could be piled where cut or piled at an alternate location identified by Laramie District fire personnel. All slash piles will either be masticated during the summer months or burned during fall and winter months after there is adequate snowfall.

Salvage: The majority of the merchantable dead and dying timber is removed. This treatment is applied to stands having 50+ percent beetle infestation, a dead and dying overstory, and a low to moderate dwarf mistletoe level in the understory. The objective of this treatment is to reduce fuels, remove potential hazard trees, and/or to create openings for future regeneration. Slash is typically lopped and scattered; however, mechanical treatment (including piling, chopping, or mastication) may be necessary to reduce slash concentrations and to provide scarification for seedling establishment.

Discussion

Unit 96 is approximately 66 acres in size and was harvested using a Salvage prescription; it was not winter logged. The treatment appears to have been implemented quite well, and the contractor did an excellent job of meeting the fuels objective through efficient slash clean-up. In addition, impacts to an active goshawk nest were avoided due to outstanding communications between the District wildlife biologist, District timber staff, and the contractor. Further, as required by DC 5, the

timber sale administrator had documentation that the area was surveyed for wood frogs prior to implementation.

The unit does contain some wet areas, and there was some debate during the monitoring trip regarding the use of equipment in such areas. Both the botanist and the hydrologist believed that Design Criterion 7, which prohibits ground-based equipment within 25 feet of identified riparian areas or wetlands/fens, should have been implemented. They also mentioned that the area is likely mapped as part of the USGS wetland/riparian inventory, thus strengthening their argument that the DC should have been implemented; however, they could not confirm that assumption at the time. The soil scientist, on the other hand, expressed that the soil sample dug on-site was not indicative of wetland/riparian soils. Despite the debate, impacts were minimal and any disturbed areas should re-vegetate during the next growing season. In general, the work done in this unit was very good and meets the intent of the decision.



Figure 11. South WUI Unit 96 – wetland/riparian area

Unit 95 is a 13 acre boundary treatment. Per the Decision Notice (DN), all dead standing trees, down trees, and ladder fuels within 200 feet of the National Forest boundary and private land were removed to create a fuelbreak. Slash from the trees was removed, piled at the landings, and will be burned during the winter season.

The boundary treatment was implemented according to the DN. Coupled with the other treatment units associated with the decision, it should be effective at minimizing the potential for a catastrophic fire adjacent to the WUI.

Are S&Gs and design criteria incorporated into the decision, project design and implemented on the ground?

The standards, guidelines and design criteria were included into the decision, project design and the contract.

Field discussions with the monitoring review team revealed that project implementation is in accordance Forest Plan Standards and Guidelines. Timing restrictions for wildlife were implemented, where necessary, to protect raptors; riparian areas/wetlands were protected; and units were surveyed, where necessary, for amphibian protection.

While all project-specific DC were implemented where necessary, DC 26 was specifically implemented in Unit 87 for goshawk protection and DC 5 was implemented in Unit 96 for amphibian protection. In addition, the District did an excellent job of providing information to the public relative to project implementation, thereby implementing DC 8. Finally, DC 23 - 25 (winter logging) were effectively implemented in several of the units.

Standards and guidelines and project design criteria appear to be effective in the two areas that were reviewed.

Recommendations

- Develop a better system for defining wetland/riparian areas, particularly in areas where there is debate among specialists.
- Allow more lead time for contract preparation.
- In the future, refrain from prescribing commercial thinning in lodgepole pine stands.

Parks RD

Grizzly Guard Station

This project fell into a Categorical Exclusion category that does not require a supporting record and decision memo. The intent of the project was to restore the plant community around the Grizzly Guard Station to a native condition.

Project implementation was in accordance with applicable Forest Plan S&Gs. As there was no decision, no DC were developed. However, the Botanist supervised site preparation and plantings to ensure the desired result was obtained. The review team made positive comments regarding overall appearance of the project area.

Recommendations

- Build a fence in the same place as old buck & pole from the NFS boundary to the first cattle guard to keep cattle and other grazing animals off of the area surrounding the guard station.
- Install a gate at the walk through entrance of the perimeter fence surrounding Grizzly Guard Station to help keep grazing animals away from the site.

- Use herbicide spraying for smooth brome *before* native plantings to help control/eradicate noxious and/or invasive plants.
- Report and record the use of herbicides.
- Install interpretive products for plants located at the guard station.



Figure 12. Grizzly Guard Station Native Garden Planting Crew, which includes North Park High School Students

Teal Lake Recreation Facility

The objectives of this project were to provide for public safety through the removal of hazardous trees, prevent resource damage, and provide for re-vegetation. The project used a combination of sanitation/salvage and commercial thin to reduce the tree density within the stand by removing Lodgepole pine and dead or declining subalpine fir and then plant within the area to reduce hazardous trees, improve forest health and obtain the desired tree species composition for this recreation area.

Resource specialists identified any pertinent S&Gs relative to the Teal Lake Recreation Facility Vegetation Management project. The following Forest-wide and Management Area Standards and Guidelines are from the Routt National Forest Land and Resource Management Plan, 1997 Revision. There are no specific S&Gs for botany in the management plan.

Are S&Gs Incorporated into the decisions and contract?

Project design criteria were listed in both The Teal Lake Recreation Facility Vegetation Management Decision Memo and the Forest-wide Hazardous Tree Removal and Fuels Reduction Project Decision Notice.

The following conditions/mitigations were part of the timber contracts:

- Residual trees and improvements were protected
- SMZ - 66' wide along lake, no equipment allowed
- Skid trails and landings designated prior to felling
- Whole tree skidding was required
- Equipment had to be cleaned before moving onto site
- No operations when ground is not dry or frozen
- No landing allowed within day use area or campground
- No operations or hauling between November 31 and April 30.
- Disturbed areas seeded with 25 lbs./acre - Big bluegrass 4%, Mtn. brome grass 40%, Blue wild rye 33%, and Slender wheatgrass 23%.

Are S&Gs and Design Criteria implemented on the ground?

Field discussions with the monitoring review team revealed that most of the



completed activities were done according to the S&Gs and design criteria. It may be necessary to perform limited amounts of additional tree and stump removal. The re-vegetation part of the project is still in progress. The campground looks better than it did but still needs time for recovery. Re-vegetation and recovery will help with landscaping to screen sites, provide shade, and meet visual requirements.

Figure 13. Teal Lake shoreline after hazard tree removal



Figure 14. Teal Lake campground after hazard-tree removal

One area where S&Gs were not implemented is with respect to the burn piles. Design criteria should have been developed that specified no burn piles within streamside management zones. There was disagreement if the understory should be protected or if unwanted trees should be removed and managed for future desired species.

Are the S&Gs and Design Criteria Effective?

The S&Gs and project design criteria appear to be effective. Overhead hazards have been removed while the majority of slash has been piled and burned. Public safety has been improved and the campground is open to the public. It may be necessary to have stumps ground down to ground level instead of less than 4 inches to prevent tripping hazards within the campsite.

Recommendations

- Use lantern-hanging poles or similar structures to create the ability to tie off tarps and other camp structures instead of using young trees.
- Some damage occurred to residual trees and picnic tables. Extra precautions should be taken to protect infrastructure.
- The remaining small slash piles should be hand worked to break up burned debris, scatter slash, and create a suitable seed bed for re-vegetation.
- Fencing is necessary to keep livestock out of the campground but maintenance responsibilities need to be made clear. Cattle guards may also be necessary.
- Invasive species are present and need to be managed.
- The removal of slash may have been too effective. Where downed wood had kept vegetation from growing it now looks like user created trails. It may be necessary to leave some larger woody debris during hazard-tree removal in other campsites.
- Incorporate language that specifies that burn piles should not be located in wetlands or riparian areas, or any streamside management zone.
- The vegetation plan should be revisited.
- User created trails need improved for use, such as for fishermen trails.

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Interdisciplinary Team

Carol Purchase	Monitoring and Evaluation Team Leader
Greg Eaglin	Fisheries Biologist
Kolleen Kralick	Archeologist
Jeff Tupala	Landscape Architect
Randy Tepler	Soil Scientist
Brian Glaspell	Recreation Program Leader
Bob Mountain	Range Program Leader
Carol Tolbert	GIS Specialist
Liz Schnackenberg	Hydrologist
Dave Gloss	Hydrologist
Rhonda Boyd	Planner
Larry Sandoval	Public Affairs
Marti Aitken	Botanist
Katherine Haynes	Botanist
Clark McCreedy	Wildlife Program Leader

District Staff from all of the districts contributed much of the content in addition to photographs for this report.

Photographs are by USFS personnel unless otherwise noted.

Acronyms

4WD	Four-Wheel Drive
AFS	American Fisheries Society
AML	Abandoned mineland
AMP	Allotment management plan
ATV	All terrain vehicle
ARNF	Arapahoe Roosevelt National Forest
AUM	Animal Unit Months
BA / BE	Biological Assessment, Biological Evaluation
BAER	Burned Area Emergency Response
BBITF	Bark Beetle Information Task Force
BCH	Brush Creek / Hayden Ranger District
BLM	Bureau of Land Management
BMPs	Best Management Practices
CAL	Central Analytical Laboratory
CDF	Colorado Division of Forestry
CDI	The Rocky Mountain Region's Center for Design and Interpretation
CDNST	Continental Divide National Scenic Trail
CDOW	Colorado Division of Wildlife
CDTA	Continental Divide Trail Alliance
CIP	Capital Improvement Program
CNHP	Colorado Natural Heritage Program
COHVCO	Colorado Off Highway Vehicle Coalition
CP&L	Carbon Power & Light
CRCT	Colorado River Cutthroat Trout
CT	Commercial Thin
CWQCD	Colorado Water Quality Control Division
DBH	diameter at breast height
DC	design criterion
DEIS	Draft Environmental Impact Statement
DM	Decision Memo
DN	Decision Notice
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FACTS	Forest Service Activities Tracting System
FEIS	Final Environmental Impact Statement
FLPMA	Federal Land Management and Policy Act (1976)
FMP	Fire Management Plan
FPO	Forest Protection Officer
FWS	Fish and Wildlife Service
FS	Forest Service
FSH	Forest Service Handbook
FSM	Forest Service Manual
FY	Fiscal Year
GA	Geographic Area
GIS	Geographic Information System
GPRA	Government Performance and Results Act
HM	Head Months
HPBE	Hahns Peak - Bears Ears Ranger District
HPP	Habitat Partnership Program
HWY	Highway
IDT	Interdisciplinary Team
IMO	Information Management Officer
INFRA	Forest Service Database for Infrastructure
IRA	Inventoried Roadless area
LCCD	Laramie County Conservation District
LE&I	Law Enforcement and Investigations

LEO	Law Enforcement Officer
LNT	Leave No Trace
LRD	Laramie Ranger District
LRMP	Land and Resource Management Plan
MA	Management Area
MAII	May Adversely Impact Individuals
MBR	Medicine Bow – Routt National Forests
MBNF	Medicine Bow National Forest
MBRTB	Medicine Bow – Routt National Forests, Thunder Basin National Grassland
MDN	Mercury Deposition Network
M&E	Monitoring and Evaluation List Colorado)
MIS	Management Indicator Species
MOU	Memorandum of Understanding
MPB	Mountain Pine Beetle
MVUM	Motor Vehicle Use Map
MZW	Mount Zirkel Wilderness
NAPD	National Atmospheric Deposition Program
NEPA	National Environmental Policy Act
NF	National Forest
NFIM	National Forest Inventory and Monitoring funds
NFMA	National Forest Management Act
NFPORS	National Fire Plan Operations and Reporting System
NIMO	National Incident Management Organization
NFRG	Budget Code for Grazing Permit Administration
NFRW	National Forest Recreation Wilderness Funds
NFS	National Forest System
NFSR	National Forest System Road
NFVW	Budget Code for Rangeland Vegetation Management
NOI	Notice of Intent
NPSD	North Park School District
NRCS	Natural Resources Conservation Service
NRIS	National Resource Information System
NTN	National Trend Network
NVUM	National Visitor Use Monitoring
OGC	Office of General Council
OHV	Off-Highway Vehicle
PAO	Public Affairs Officer
PCR	Polymerase Chain Reaction
PFC	Proper Functioning Condition
R2	Region 2 (Rocky Mountain Region of USFS)
RAC	Resource Advisory Committee
RBRB	Budget Code for Rangeland Resource Improvement
RD	Ranger District
RHAP	Rangeland Health Assessment Program
RMBO	Rocky Mountain Bird Observatory
RMEF	Rocky Mountain Elk Foundation
RMRS	Rocky Mountain Research Station (USFS)
RMYC	Rocky Mountain Youth Corps
RNF	Routt National Forest
ROD	Record of Decision
SAD	Sudden aspen decline
SASEM	Simple Approach Smoke Estimation Model
SB	Spruce Beetles
SCEP	Student Career Experience Program
SFD	Subalpine fir decline
S&G	Standards and Guidelines
SIA	Special Interest Area
SIO	Scenic Integrity Objective
SLC	Species of Local Concern
SOPA	Schedule of Proposed Actions
SS	Sensitive Species
T&E	Threatened and Endangered Species

TBNG	Thunder Basin National Grassland
TES	Threatened, Endangered and Sensitive Species
TMDL	Total Maximum Daily Load
TRTR	Roads and Trails Funding
TS	Timber Sale
TTFL	Trend Towards Federal Listing
UAA	Use Attainability Analysis
ULT	Ute ladies tresses
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United State Geologic Service
UW	University of Wyoming
VQO	Visual Quality Objectives
WCP	Watershed Conservation Practice
WGCD	Water Quality Control Division (Colorado)
WGFD	Wyoming Game and Fish Department
WO	Washington Office
WUI	Wildland Urban Interface
WWNRT	Wyoming Wildlife Natural Resources Trust
WYDEQ	Wyoming Department of Environmental Quality
WYDOT	Wyoming Department of Transportation
WYNDD	Wyoming Natural Diversity Database

Appendix 1: Stream and Riparian Area Condition Inventories

Table 1: 2011 Stream and Riparian Area Condition Inventories and Monitoring

Stream Name	Ranger District	Reach length (miles)	HUC Code	Method/Rating
Colorado River Basin				
Little Rock Cr	Yampa	0.1	140100011001	USDA Forest Service 1996
Rock Cr	Yampa	0.1	140100011001	USDA Forest Service 1996
Little Snake River Basin				
Deep Creek	BCH	0.5	140500030407	Water Quality - Temperature
W Branch NFLSR	BCH	0.5	140500030104	Water Quality - Temperature
Lost Cr	BCH	0.5	140500030109	Fish Population Inventory
W Fk Battle Cr	BCH	0.5	140500030109	Fish Population Inventory
Circle Bar Basin Cr	HPBE	0.1	140500030101	Harrelson et al, 1994; USDA Forest Service, 1996
Silver City Cr	HPBE	1.1	140500030101	Harrelson et al, 1994; USDA Forest Service, 1996
Trib to King Solomon	HPBE	0.5	140500030102	Harrelson et al, 1994; USDA Forest Service, 1996
Crawford Cr	HPBE	0.1	140500030301	Harrelson et al, 1994; USDA Forest Service, 1996
Douglas Cr	HPBE	0.1	140500030301	Harrelson et al, 1994; USDA Forest Service, 1996
Grizzly Cr	HPBE	0.1	140500030301	Harrelson et al, 1994; USDA Forest Service, 1996
Slater Cr	HPBE	0.1	140500030105	Harrelson et al, 1994; USDA Forest Service, 1996
Yampa River Basin				
Moore Park Cr	Yampa	0.2	140500010102	BLM, 1998/Proper Functioning Condition
Moody Cr	Yampa	0.2	140500010104	BLM, 1998/Proper Functioning Condition
Burgess Cr	HPBE	0.1	140500010405	Harrelson et al, 1994
Priest Cr	HPBE	0.1	140500010405	Harrelson et al, 1994
Reed Cr	HPBE	0.6	140500010208	BLM 1998/ Proper Functioning Condition
Upper Mill Cr	HPBE	0.3	140500010208	Harrelson et al, 1994/ BLM, 1998: Functional at risk
Lower Mill Cr	HPBE	0.7	140500010208	BLM 1998/ Proper Functioning Condition
Rock Cr	HPBE	1.3	140500010209	Harrelson et al, 1994/ Functional at risk
Rock Cr Trib	HPBE	0.8	140500010209	BLM 1998; Functional at risk

Stream Name	Ranger District	Reach length (miles)	HUC Code	Method/Rating
Hot Springs Cr	HPBE	0.4	140500010306	BLM 1998/ Proper Functioning Condition
First Cr	HPBE	0.1	140500010601	Harrelson et al, 1994; USDA Forest Service 1996
Elkhead Creek	HPBE	1.0	140500010601	Harrelson et al, 1994; USDA Forest Service, 1996
Elkhead Reference	HPBE	0.1	140500010601	Harrelson et al, 1994; USDA Forest Service 1996
North Platte River Basin				
Big Bear	DRD	0.5	101800080301	Fish Population Inventory
Trail Creek	DRD	0.5	101800110303	Fish Population Inventory
Douglas Creek	LRD	0.5	101800020107	Fish Population Inventory
Jack Creek	BCH	0.5	101800020801	Fish Population Inventory
E Fk Med Bow	BCH	0.5	101800040102	Fish Population Inventory
Jim Creek	LRD	0.5	101000100601	Fish Population Inventory
Lincoln Creek	BCH	0.5	100800020402	Fish Population Inventory
Muddy Creek	LRD	0.5	101800020105	Fish Population Inventory
N. Fk. Big Creek	BCH	0.5	101800020302	Fish Population Inventory
N. Fk. Encampment River	BCH	0.5	101800020507	Fish Population Inventory
N. Miner Creek	BCH	0.5	101800020506	Fish Population Inventory
Rock Creek	BCH	0.5	101800040201	Fish Population Inventory
Boswell Cr trib	LRD	0.5	101800100203	Permanent Photo Point (ESRTM)
Boswell Cr trib	LRD	0.5	101800100203	Permanent Photo Point(ESRTM)
Collins Creek	LRD	0.5	101800020105	Permanent Photo Point(ESRTM)
Devils Gate Cr	LRD	0.5	101800020107	Permanent Photo Point / Harrelson et al, 1994 (ESRTM)
Elk Creek trib.	LRD	0.5	101800020104	Permanent Photo Point / Harrelson et al, 1994 (ESRTM)
Elkhorn Cr	LRD	0.5	101800020101	Harrelson et al, 1994 (ESRTM)
Illinois Cr BW10	LRD	1.0	101800020106	Photo Point
Fox Cr trib BW1	LRD	1.0	101800100204	Photo Point
Park Run BW13	LRD	1.0	101800020106	Photo Point
Fox Cr trib FP13	LRD	1.0	101800100204	Photo Point
Rock Cr NF 2	LRD	1.0	101800040201	2 Photo Points
Rock Cr NF 3	LRD	1.0	101800040201	2 Photo Points
S Fk Big Cr	BCH	1.25	101800020301	2 Permanent Photo Points
N Platte trib	BCH	1.0	101800020201	Permanent Photo Point
M Fk Big Cr	BCH	0.5	101800020302	Permanent Photo Point
Teddy Cr trib	BCH	0.25	101800020602	2 Permanent Photo Points
NP trib 1	BCH	0.5	101800020101	Permanent Photo Point
NP trib 2	BCH	0.25	101800020101	Permanent Photo Point

Stream Name	Ranger District	Reach length (miles)	HUC Code	Method/Rating
NP trib 3	BCH	0.2	101800020101	Riparian Exclosure Photo Point
Troublesome Cr	BCH	0.5	101800020603	Permanent Photo Point
N Brush trib – Cecil Pk	BCH	0.25	101800020402	Permanent Photo Point
N Brush trib – Chimney Pk	BCH	0.25	101800020402	2 Permanent Photo Point
Fish Cr	BCH	0.25	101800020402	2 Permanent Photo Points
Harden Cr	BCH	0.25	101800020402	2 Permanent Photo Points
N Fk Encamp. R. trib	BCH	0.25	101800020507	Permanent Photo Point
N Cottonwood Cr	BCH	1.0	101800020204	Permanent Photo Point
L Beaver Cr	BCH	0.25	101800020205	Permanent Photo Point
Damfino Cr	BCH	1.0	101800020503	Permanent Photo Point
Hog Park Creek	BCH	1.5	101800020505	Harrelson et al, 1994
E Fk Encamp	BCH	0.5	101800020503	Harrelson et al, 1994
Nugget Cr	BCH	0.5	101800020701	Harrelson et al, 1994
Pelton Cr	LRD	1.0	101800020106	Harrelson et al, 1994
S Fk Corral Cr trib	BCH	0.5	101800020204	Permanent Photo Point
Upper Camp Cr	Parks	0.4	101800020102	BLM 1998/ Proper Functioning Condition
Lower Camp Cr	Parks	0.6	101800020102	Harrelson et al, 1994; BLM 1998/Proper Functioning Condition
Newcomb Cr Upper	Parks	0.1	101800010302	USDA Forest Service 1996
Newcomb Cr Lower	Parks	0.1	101800010302	USDA Forest Service 1996
Newcomb Cr Reference	Parks	0.1	101800010302	USDA Forest Service 1996
South Platte River				
M. Lodgepole B4	LRD	1.0	101900150101	Photo Point
M. Lodgepole B3	LRD	1.0	101900150101	Photo Point
Lodgepole – C2	LRD	0.5	101900150102	Photo Point
Lodgepole – C3	LRD	0.5	101900150102	Photo Point
N. Branch N Fk Crow C13	LRD	1.0	101900090104	Photo Point
Pole B9S and B9N	LRD	0.5	101900150101	Photo Point
S Fk M Crow G15	LRD	1.0	101900090101	Photo Point
M Crow G13	LRD	0.5	101900090101	2 Photo Points
Brush G4E	LRD	1.0	101900090104	Photo Point
Brush G5	LRD	1.0	101900090104	Photo Point
M Crow L8	LRD	2.0	101900090101	2 Photo Points
M Crow trib L11	LRD	1.0	101900090101	Photo Point
TOTAL:		49.5 miles		

Appendix 2 – Progress towards Forest Plan Goals and Objectives

Medicine Bow National Forest Goals and Objectives	
Goal 1: Ensure Sustainable Ecosystems: Promote ecosystem health and conservation using a collaborative approach to sustain the Nation’s forests, grasslands, and watersheds.	
Subgoal 1.a: Improve and protect watershed conditions to provide the water quality and quantity and soil productivity necessary to support ecological functions and intended beneficial water uses. (USDA Forest Service Strategic Plan 2000 Revision Objective 1.a)	
<i>Objective 1. Over the life of the plan, improve watershed condition in 20% of 5th-level Hydrologic Unit Code watersheds.</i>	Year Due 2018
Progress towards this objective is discussed under the Watershed Condition monitoring item.	
<i>Objective 2. Over the life of the plan, maintain or improve water quality by achieving an 80% reduction in the miles of State of Wyoming designated streams not fully supporting designated beneficial uses and by maintaining existing fully supporting designated beneficial uses in all streams, lakes, reservoirs and open water bodies.</i>	Year Due 2018
Progress towards this objective is discussed under the Water Quality monitoring item.	
<i>Objective 3. Over the life of the plan, maintain or improve condition of riparian or wetland habitat on the Forest. Ensure at least 80% of riparian and wetland areas will meet or move toward proper functioning condition.</i>	Year Due 2018
Progress towards this objective is discussed under the Riparian and Wetland Condition monitoring item.	
<i>Objective 4. Within 15 years, identify and then maintain, and/or improve stream flows for at least 10% of stream segments having instream flow concerns.</i>	Year Due 2018
Progress towards this objective is discussed under the Stream Flows monitoring item.	
Subgoal 1.b: Provide ecological conditions to sustain viable populations of native and desired non-native species. (USDA	

Forest Service Strategic Plan 2000 Revision Objective 1.b)	
Objective 1. Over the life of the plan, move terrestrial, aquatic, and riparian area composition, structure, patterns, and processes toward conditions typical of those created by natural processes.	Year Due 2018
Progress towards this objective is discussed under the Riparian and Wetland Condition monitoring item.	
Objective 2. Within 15 years, assess ecological conditions and current uses for at least 30% of 5th level watersheds and identify opportunities for restoration, habitat enhancement and commodity production.	Year Due 2018
Progress towards this objective is discussed under the Watershed condition, Habitat Improvement and the Restoration, Enhancement and Commodity Production monitoring items.	
Objective 3. Over the life of the plan, identify habitat improvement needs (such as fish migration barriers) in at least 30% of 5th-level watersheds. Implement improvement projects when necessary.	Year Due 2018
Progress towards this objective is discussed under the Watershed condition and Habitat Improvement monitoring items.	
Objective 4. Within 3 years, identify and map old growth forestwide to be used in project planning to ensure that desired old growth amounts and distribution are maintained as defined in Chapter 1-Standards and Guidelines.	Year Due 2006
The MBNF LRMP (USDA FS MBNF 2003) identified a strategy to map old growth. The forest began the process On 07/26/2005, the forest began the process of the inventorying and mapping of old growth in 2005. In 2008, the inventory and mapping was completed and forestwide direction concerning old growth is now in place (Peterson 2008).	
Objective 5. Within 15 years, demonstrate stable or positive trends in habitat availability, habitat quality, population distribution throughout a species range within the planning area, and other factors affecting ESA listed species, regional forester sensitive species, rare plant communities, and species of local concern and maintain or improve habitat for Management Indicator Species (MIS) across the forest in the long-term. The MIS are: northern goshawk, American marten, snowshoe hare, golden-crowned kinglet, three-toed woodpecker, common trout (brook, brown, and rainbow), Lincoln's sparrow, and Wilson's warbler.	Year Due 2018
Progress towards this objective is discussed under the Habitat and Populations monitoring item.	

Subgoal 1.c: When appropriate or where necessary to meet resource management objectives, increase the amount of forests and rangelands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects and diseases, and invasive species. (USDA Forest Service Strategic Plan 2000 Revision Objective 1.c)

<p><i>Objective 1. Within 2 years, complete Forestwide Fire Management Plan including Wilderness areas.</i></p>	<p>Year Due 2005</p>
<p>Progress towards this objective is discussed under the Fire Management Plans monitoring item.</p>	
<p><i>Objective 2. Within 15 years, implement vegetation management practices to reduce the threat of wildfire damage to communities and to reduce fuel loadings in the interface next to homes, cabins and other structures.</i></p>	<p>Year Due 2018</p>
<p>Progress towards this objective is discussed under the Fuels Treatment monitoring item.</p>	
<p><i>Objective 3. Within 10 years, implement vegetation management activities in areas most susceptible to losses from insects and disease as directed in management area and geographic area direction.</i></p>	<p>Year Due 2013</p>
<p>Specific projects planned and implemented to treat the impacts of bark beetle infestation. Include: Green Ridge, Sierra Madre, Rock Creek, Little Snake, Coulton Creek, Owl Mountain, Crane Park, Red Dirt, and Prospector on the Routt NF. Devils Gate, Spruce Gulch, Shellrock, Soldier-Summit, Blackhall-McAnulty, French Creek, and North Savory on the Medicine Bow NF.</p>	
<p><i>Objective 4. Within 10 years, minimize or reduce the spread of noxious weeds and non-native invasive species and implement measures that minimize new introductions.</i></p>	<p>Year Due 2013</p>
<p>Progress towards this objective is discussed under the Invasive Species monitoring item.</p>	
<p>Goal 2: Multiple Benefits to People: Provide a variety of uses, values, products, and services for present and future generations by managing within the capability of sustainable ecosystems.</p>	
<p>Subgoal 2.a: Improve the capability of the Nation's forests and rangelands to provide diverse, high-quality outdoor recreation opportunities. (USDA Forest Service Strategic Plan 2000 Revision Objective 2.a)</p>	
<p><i>Objective 1. Over the life of the plan, rehabilitate 20% of dispersed recreation sites to meet resource</i></p>	<p>Year Due</p>

<i>standards.</i>	2018
Progress towards this objective is discussed under the Effects of Recreational Activities monitoring item.	
Objective 2. Within 5 years, update recreation site plans, including rehabilitation and revegetation strategies.	Year Due 2008
Recreation site plans are being updated when improvements are being proposed for site areas and as funding allows.	
Objective 3. Annually maintain or reconstruct up to 20% of National Forest trails to meet resource standards.	Year Due Annually
Progress towards this objective is discussed under the Outdoor Recreation monitoring item.	
Objective 3. Over the life of the plan, rehabilitate 20% of existing and/or construct new trailheads and associated facilities to meet agency standards and user demand as permitted by plan direction.	Year Due 2018
Progress towards this objective is discussed under the Recreation Infrastructure monitoring item.	
Subgoal 2.b: Improve the capability of wilderness and protected areas to sustain a desired range of benefits and values. (USDA Forest Service Strategic Plan 2000 Revision Objective 2.b)	
Objective 1. Over the life of the plan, meet forest plan desired conditions for areas recommended for wilderness.	Year Due 2018
Progress towards this objective is discussed under the Wilderness monitoring items in the latest five year evaluation report.	
Objective 2. Over the life of the plan, develop monitoring plans for all Wilderness Areas, and identify indicators and standards for those elements critical to ecological integrity.	Year Due 2018
Progress towards this objective is discussed under the Wilderness Monitoring Plans monitoring item in the latest five year evaluation report..	
Objective 3. Within 5 years, rehabilitate and re-vegetate campsites where soils are detrimentally impacted.	Year Due 2008
Progress towards this objective is discussed under the Wilderness Rehabilitation monitoring item in the latest five year evaluation report.	
Objective 4. Within 5 years, develop and implement a heritage inventory strategy and implementation	Year Due

<i>schedule to survey and evaluate sites, in support of management actions and activities as agreed upon with the State Historic Protected Areas Preservation Offices (SHPO) to include compliance with Sec. 106 and Sec. 110 of the National Historic Preservation Act. .</i>					2008																								
Progress towards this objective is discussed under the Protected Areas monitoring item in the latest five year evaluation report.																													
<i>Objective 5. Within 10 years, assess identified sites eligible for the National Register of Historic Places (NRHP) in conjunction with SHPO, and provide interpretation for NRHP sites where appropriate and consistent with developed preservation plans.</i>					Year Due 2013																								
Progress towards this objective is discussed under the Protected Areas monitoring item in the latest five year evaluation report.																													
Subgoal 2.c: Improve the capability of the Nation's forests and rangelands to provide a desired sustainable level of uses, values, products, and services. (USDA Forest Service Strategic Plan 2000 Revision Objective 2.c)																													
<i>Objective 1. Between the Medicine Bow and Routt National Forests, implement a consistent timber program each year.</i>					Year Due Annually																								
Since fiscal year 2004 the Medicine Bow – Routt NFs have offered or plans offer approximately 45,000 to 50,000 CCF (100 cubic feet) per year. this volume include saw logs in addition to post and poles, firewood permits and other wood products. The level of timber sale offer is currently constrained funding. Planned offer for 2006-2010 is based on 2004/2005 funding levels.		<table border="1"> <thead> <tr> <th>Fiscal Year</th> <th>Volume offered (CCF)</th> <th>Estimated / Planned Offer (CCF)</th> </tr> </thead> <tbody> <tr> <td>2004</td> <td>46,894</td> <td>35,000</td> </tr> <tr> <td>2005</td> <td>51,432</td> <td>50,000</td> </tr> <tr> <td>2006</td> <td>62,253</td> <td>50,000</td> </tr> <tr> <td>2007</td> <td>103,294</td> <td>51,000</td> </tr> <tr> <td>2008</td> <td>130,731</td> <td>44,100</td> </tr> <tr> <td>2009</td> <td></td> <td>49,000</td> </tr> <tr> <td>2010</td> <td></td> <td>49,500</td> </tr> </tbody> </table>			Fiscal Year	Volume offered (CCF)	Estimated / Planned Offer (CCF)	2004	46,894	35,000	2005	51,432	50,000	2006	62,253	50,000	2007	103,294	51,000	2008	130,731	44,100	2009		49,000	2010		49,500	to by
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<i>Objective 2. By the end of the plan period, complete environmental analyses on 95 to 100% of National Forest System grazing allotments, and reauthorize grazing permits where consistent with other resource considerations.</i>					Year Due 2018																								
<i>Allotment Management Planning</i>																													
Activity	Total Number of Allotments	Allotments Completed 1995 - 2010	Percentage Completed through 2010	Allotments Completed 1995 -	Percentage Completed																								

				2011	through 2011
Routt	159	123	77%	129	81%
Medicine Bow	133	126	95%	126	95%
Thunder Basin	198	198	100%	198	100%
TOTAL	490	447	91%	453	92%

All of the remaining allotments are currently scheduled to be completed by 2013 on the Medicine Bow and by 2016 on the Routt; bark beetle impacts and resultant planning for and removal of hazard trees have been higher priority workloads and have forced these planning efforts to be delayed for at least another year longer.

Objective 3. Meet annually with Wyoming Game and Fish to coordinate population management issues including big game herd objectives.

Year Due
Annually

This coordination generally occurs at the district level, and it varies from unit to unit on degree of coordination and who attends. Efforts to improve coordination are ongoing. Coordination meetings concerning fisheries resources inventory and management are held annually.

Objective 4. Within 5 years of plan approval, standardize protocols for permits to collect forest and rangeland products such as mushrooms, floral products and medicinal plants through environmentally responsible harvest and collection methods on National Forest System lands.

Year Due
2008

Permits to collect forest and rangeland products such as mushrooms, floral products and medicinal plants from NFS lands are prepared by the Forest Ecologist. Terms and conditions are included to provide for environmentally responsible harvest and collection methods.

Objective 5. Within 10 years, develop a scenic byway plan for the Snowy Range Scenic Byway.

Year Due
2013

Progress towards this objective is discussed under the Snowy Range Scenic Byway monitoring item.

Objective 6. Within 5 years, prepare establishment reports for each Research Natural Area.

Year Due
2008

<p>The MBR has a total of 9 Research Natural Areas. Four out of the 9 RNAs have establishment reports completed. The three RNA's on the Routt (Mad Creek, Silver Creek, & Kettle Lakes) have establishment reports that were signed in 2001.</p>	
<p>Objective 7. Within 10 years, develop a land ownership adjustment plan in response to resource management and public needs.</p>	<p>Year Due 2013</p>
<p>Progress towards this objective is discussed under the Land Ownership monitoring item in the latest five year evaluation report.</p>	
<p>Objective 8. Within 5 years, develop a Rights-of-Way Acquisition Program in response to resource management programs and access needs. This plan will be coordinated, reviewed, and updated annually.</p>	<p>Year Due 2008</p>
<p>Progress towards this objective is discussed under the Rights of Way Acquisition monitoring item in the latest five year evaluation report.</p>	
<p>Goal 3 - Scientific and Technical Assistance: Develop and use the best scientific information available to deliver technical and community assistance and to support ecological, economic, and social sustainability.</p>	
<p>Subgoal 3.a: Provide better assistance in building the capacity of Tribal governments, rural communities, and private landowners to adapt to economic, environmental, and social change related to natural resources. (USDA Forest Service Strategic Plan 2000 Revision Objective 3.a)</p>	
<p>Objective 1. Within 5 years, develop formal cooperation with federal, state, and county agencies, individuals, and non-government organizations for control of noxious weeds, other invasive species, and animal damage.</p>	<p>Year Due 2008</p>
<ol style="list-style-type: none"> 1. The Forest works closely with both State Departments of Agriculture regarding noxious weed management efforts. Cooperative agreements are in existence with 3 Colorado and 6 Wyoming counties to inventory and treat noxious weeds. Two contracts for weed control work are in effect on the Routt. Numerous partners contribute funding and/or time to assist in treatment efforts, including some grazing permittees. 2. A national MOU exists between the Forest Service and APHIS for animal damage management (ADM). APHIS—ADM has prepared regional or state environmental documents for all management efforts in both states. Each year, an annual ADM plan is prepared and coordinated between the Routt Districts and the Grand Junction ADM regional office and between the Medicine Bow Districts and the Casper ADM regional office. 	

<p>Objective 2. Annually, provide opportunities for individuals and organizations to assist the Forest Service in implementing and monitoring the Plan.</p>	<p>Year Due Annually</p>
<p>Progress towards this objective is discussed under the Implementation Monitoring /Scientific and Technical Assistance monitoring item.</p> <p>A national MOU exists between the Public Lands Council (PLC) and the Forest Service (as well as the BLM) for cooperative rangeland monitoring with grazing permittees. The number of grazing permittees who are assisting in collection of allotment monitoring data is increasing each year. Cooperative Extension Service personnel from both land grant universities are actively involved in conducting training and working with producers.</p> <p>The Wyoming Stockgrower's Association and the Colorado Cattlemen's Association have been instrumental in urging their members to be involved in allotment monitoring efforts and in training and coordination efforts with Forest Service permittees; both Associations have formal monitoring arrangements with the Forest Service, and CCA's is a signed MOU.</p> <p>Another MOU exists between the Wyoming Department of Agriculture, FS, BLM, and State Lands Board for formal permittee monitoring; funds are legislatively appropriated, and funds are requested by permittees through Conservation Districts around the State; monitoring efforts are implemented in cooperation with both those parties and the agencies.</p> <p>The Forest and the Laramie County and Laramie Rivers Conservation Districts continue the efforts stated in an MOU to address range and water quality issues in the Crow Creek watershed on Pole Mountain.</p> <p>Employees of the Wyoming Department of Agriculture (and to a lesser degree, the Colorado Department of Agriculture) have been heavily involved in on-the-ground coordinated management efforts, reviews of existing and desired conditions, and in helping to strengthen allotment management coordination for common objectives.</p>	
<p>Objective 3. Within 10 years, identify, manage, develop, and interpret appropriate watchable wildlife and plant viewing sites.</p>	<p>Year Due 2008</p>
<p>Progress towards this objective is discussed under the Interpretation and Watchable Wildlife monitoring item.</p>	
<p>Subgoal 3.a: Provide better assistance in building the capacity of Tribal governments, rural communities, and private landowners to adapt to economic, environmental, and social change related to natural resources. (USDA Forest Service Strategic Plan 2000 Revision Objective 3.a)</p>	
<p>Objective 3. Over the life of the plan, implement inventory and monitoring systems to provide scientific information and evaluation across landscapes. Inventory habitat and populate databases with information needed to manage terrestrial and aquatic ecosystems.</p>	<p>Year Due 2018</p>

Progress towards this objective is discussed under the Implementation Monitoring /Scientific and Technical Assistance monitoring item.	
<i>Subgoal 3.b: Improve the knowledge base provided through research, inventory, and monitoring to enhance scientific understanding of ecosystems, including humans, to support decision-making and sustainable management of the Nation's forests and rangelands.</i>	
<i>Objective 1. Over the life of the plan, implement inventory and monitoring systems to provide scientific information and evaluation across landscapes. Inventory habitat and populate databases with information needed to manage terrestrial and aquatic ecosystems.</i>	Year Due 2018
Progress towards this objective is discussed under the Knowledge Base monitoring item.	
Goal 4 - Effective Public Service: Ensure the acquisition and use of an appropriate corporate infrastructure to enable the efficient delivery of a variety of uses.	
<i>Subgoal 4.a: Improve the safety and economy of Forest Service roads, trails, facilities, and operations, and provide greater security for the public and employees. (USDA Forest Service Strategic Plan 2000 Revision Objective 4.b)</i>	
<i>Objective 1. Within 15 years, maintain all roads classified for passenger vehicles to national standards.</i>	Year Due 2018
Progress towards this objective is discussed under the Road System monitoring item in the latest five year evaluation report.	
<i>Objective 2. Within 15 years, maintain roads classified for high-clearance vehicle use and closed roads to national standards.</i>	Year Due 2018
Progress towards this objective is discussed under the Road System monitoring item in the latest five year evaluation report.	

<p>Objective 3. Within 10 years, implement Phase II of the October 16, 2000 Forest Supervisor Forestwide Travel Management Decision which is to complete site-specific travel management analyses to decide the future status of the Forest Transportation System.</p>	<p>Year Due 2013</p>
<p>In November, 2005 the US Forest Service announced new travel management regulations. The new travel management policy requires each national forest and grassland to identify and designate those roads, trails and areas that are open to motor vehicle use.</p> <p>The Routt National Forest published the Motor Vehicle Use Maps in September 2007. These maps display routes that are designated for motorized use.</p> <p>In 2007, the Medicine Bow National Forest completed Travel Analysis and NEPA on the eastern Snowy Range Mountains and the Laramie Peak unit. Maps for all units on the Medicine Bow National Forest were published in January 2009. This completes Phase II of the 2000 Travel Management Decision for the Medicine Bow NF. Site specific Travel Management Analysis will continue in the future whenever a need for change to the existing travel management is identified.</p>	
<p>Objective 4. Within 10 years, decommission at least 150 miles of designated roads that will be determined through project level analyses and approval.</p>	<p>Year Due 2013</p>
<p>Progress towards this objective is discussed under the Road Decommissioning monitoring item in the latest five year evaluation report.</p>	
<p>Objective 5. Within 10 years of plan approval, meet minimum facility standards and complete an average of 10% of the health & safety items each year as identified in the Facility Master Plan.</p>	<p>Year Due 2013</p>
<p>Progress towards this objective is discussed under the Facilities monitoring item in the latest five year evaluation report.</p>	
<p>Objective 6. By the end of the planning period, correct critical health and safety maintenance needs on roads identified as the potential minimum road system.</p>	<p>Year Due 2018</p>
<p>Progress towards this objective is discussed under the Road System monitoring item in the latest five year evaluation report.</p>	

Routt National Forest Goals and Objectives

Goal 1 – Ecosystem management on the Routt National Forest shall provide for multiple-use outputs and the habitats and processes necessary to maintain the biological diversity found on the Forest.

Maintain Soil Productivity

Management activities are monitored annually to determine compliance with Forest Plan and R2 soil productivity standards. Soil monitoring has occurred over the past 5 years, with the results summarized in the annual monitoring reports.

Work cooperatively with National, State and local interests to protect water related values in perpetuity on National Forest System Lands.

The following actions addressed this goal:

Annually reviewed 24 monthly resumes for potential new water rights being filed on USFS lands by private entities
Filed 5 statements of opposition to water rights filed on USFS lands to protect water related values
Seven letters to proponents regarding water rights incorrectly filed on USFS lands
Field inventory and condition assessment of 136 USFS water rights
Worked with proponent to identify streamflow requirements on Coal Creek diversion project to meet FLPMA requirements

Improve water quality , channel stability, and aquatic habitat in areas not meeting State water quality standards and in watersheds of concern and meet the anti –degradation clause of the Clean Water Act across the Forest

The following actions addressed this goal:

- 303(d) listed streams: Elkhead Cr and First Cr (HPBE)
 - BMP monitoring of Elkhead and First Creeks prior to livestock grazing and at the end of livestock grazing in cooperation with range staff
 - Collected E.coli data at 4 sampling locations to address listed streams: Data submitted to State
 - Completed Use Attainability Analysis for California Park to determine the potential for primary contact recreation, presented draft to the Colorado Water Quality Control Division
- Sampled 4 sites on Colorado state Monitoring and Evaluation to determine if streams should be removed from M&E list or placed on 303(d) list
- Stream surveys completed on 40 streams to determine stream health.
- 22 PFC surveys to determine riparian and stream health condition
- 71 acres of watershed restoration accomplished through cooperative efforts with other resources.
- Monitoring of effects of winter motorized recreation on water quality in a municipal watershed

- Annual BMP implementation and effectiveness monitoring on projects including timber, range fuels, recreation, engineering, water developments, and lands projects.

Avoid activities which contribute to air quality degradation and atmospheric deposition in the Mount Zirkel wilderness.

During the past five years, the air-quality monitoring sites at Buffalo Pass/Summit Lake (CO97) and Buffalo Pass/Dry Lake (CO93) have continued to collect precipitation-chemistry data for the National Atmospheric Deposition Program (NADP); the data collected are used to inform the National Trend Network (NTN). In late FY09, the two NADP/NTN sites (CO 93 and CO97) located in the HPBE Ranger District that monitor precipitation chemistry received important instrument updates: new, state-of-the-art precipitation gauges were installed to replace the old analog gauges. The precipitation gauges provide essential, direct-precipitation measurements that also provide a quality-control function for the other site instruments. Also, there were no documented Forest-management activities that occurred during the past five years that measurably degraded air quality in the Mount Zirkel wilderness, Class I airshed. In FY10, precipitation-chemistry monitoring will continue at CO93 and CO97.

Conduct project analysis at the landscape scale, where appropriate.

One Landscape scale project was completed in FY07 on the Bear River Analysis Area on the Yampa Ranger District.:

Maintain or create habitats suitable for a stable or increasing population of federally listed threatened and endangered species and Forest Service, Region 2 sensitive species for the Routt National forest, including the Colorado River cutthroat trout.

Plants

- In 2008, the MBRT improved rare plant habitat on approximately 2,424 acres through road decommissioning projects.
- The MBRT continues to input both current and legacy data into the NRIS-TESP database.
- Three empirical surveys (broad scale surveys) were conducted in FY08. The survey area corresponds with the West Side Assessment Area on Parks RD. The survey was accomplished with a CCS (challenge cost share) agreement with Colorado Natural Heritage Project (CNHP).
- The MBRTB continued to develop local sources (by seed zone and elevation) of native plant materials.
- Botany input was provided to a wider variety of and a more inclusive number of project during planning.
- In 2008, the MBRT was asked to evaluate projects for effects to 3 threatened and endangered plant species and their habitat. This was an increase of 1 from 2007. The MBRT botanists participated in Endangered Species Act streamlining process and consultation for these 3 species.

Terrestrial Wildlife

This complex objective contains both a habitat component and a population component, and addresses numerous species. For terrestrial wildlife,

there are 2 ESA-listed species, potentially 35 regional forester sensitive species, and 23 MIS. The Forest has begun to make progress towards this objective, though limited funding necessitates focusing on a subset of species (our MIS) that, taken together, depend on the primary covertypes available on the Routt NF – namely, mature lodgepole, mature spruce/fir, riparian areas, and, to some degree, aspen.

Thus far, our habitat availability information is limited to broad assumptions that associate a given species with a combination of vegetation attributes in GIS such as dominant tree species and habitat structural stage. For example, we defined marten habitat as $\geq 75\%$ T (timbered), $\geq 17\%$ TSF (spruce/fir), and $\leq 20\%$ in habitat structural stage 1T or 2T (non-stocked or seedling/sapling). For many species, we do not know the true population trend on the Forest, though a non-exhaustive literature and data review suggests that, with the exception of Wilson's warbler, all MIS have stable populations on the Routt. Since funding limits the number of species we can survey for population trends, we assume that where the appropriate combination of vegetation characteristics exists, there is suitable habitat that is occupied by the species in question. Such suitable habitat tends to be surveyed for TES species only where projects are scheduled to occur and usually only using visual detection while walking through an area for less than a day.

We have not created a GIS layer of likely habitat for all of our species, and do not have field data to distinguish the varying quality of habitats. Despite this lack of field data, we can make some broad assumptions about habitat quality with regards to forest-wide changes. For instance, the increased number of mountain pine and spruce beetles can reasonably be expected to improve the quantity (number of snags or acres of snags) and quality of habitat (increased beetles equate to increased forage) for the three-toed woodpecker. At the same time, we can predict that beetle kill trees are creating a natural influx of coarse woody debris that may be used as lynx denning sites, whereas beetle treatment and salvage may reduce the quality of lynx habitat. In addition, wildfires in beetle-infected mature forest can change lynx denning habitat to lynx foraging habitat. Therefore, it is not a simple analysis for any of these 60-odd species to assess whether the Forest is maintaining habitat, nor can we expect to increase habitat for multiple species that have conflicting habitat requirements – creating habitat for one species could simultaneously degrade the habitat for another species.

In some cases, the Forest can rely on partners, such as the Colorado Division of Wildlife (CDOW) to monitor wildlife populations. For instance, CDOW is intensively tracking the progress of the lynx reintroduction with the use of radio-collars. CDOW then provides brief reports on lynx movements, numbers, and reproduction approximately 1 year after breeding occurs.

During the past 9 years, several habitat improvement projects were completed that create or improve habitat for at least one, and usually multiple, species. The Forest continues to make progress maintaining and creating habitat for species such as deer, elk, boreal toads, and Colombian sharp-tailed grouse. During the past 3 years, in addition to creating or improving habitat for the above species, the Terrestrial Wildlife Cadre focused on developing and executing protocols to monitor MIS. In 2007, the Wildlife Cadre is prioritizing the list of sensitive species in order to focus limited future funding on those species where concern is relatively high, knowledge is relatively low, and forest activities can be expected to either improve or degrade their habitat or population trends. It is not likely that funding will allow the Forest to maintain or create habitat or accurately demonstrated population trends for all of these species within the life of the Plan.

Aquatic Wildlife

During that past five years, the south zone fish crew has implemented several management treatments, both structural (e.g. Coal Creek fish barrier) and non-structural, to improve habitat conditions and maintain population viability for R2 sensitive fish and amphibians. Genetic analyses conducted on several Colorado River cutthroat trout (CRCT) populations to determine their genetic integrity. Data taken from scores of aquatic-

organism passage surveys have been used to model and identify culverts that may be impediments to aquatic organism passage. A rail fence has been maintained to protect boreal toad breeding sites in California Park. Brook trout and other non-native trout have been removed from several CRCT habitats to prevent their competitive exclusion and hybridization. In addition, four pipe culverts (e.g. Colorado Creek) have been replaced with bottomless-arch culverts to improve aquatic-organism passage and to restore and maintain stream-channel integrity. Finally, in FY10, the following projects pertinent to moving toward or meeting Goal One will be implemented: passage and walkway structures constructed to protect boreal toads and their habitats; five, pipe-culverts to be replaced with bottomless arches; decommission several roads and extract associated pipe culverts; and construct additional fish barriers (e.g. trout Creek) to protect CRCT from non-native trout and non-native pathogens (e.g. whirling disease).

Limit the proliferation of undesirable nonnative plant and animal species through various activities and practices.

Results/Evaluation

Noxious weed treatment accomplished is given in the Invasive Species monitoring item above.

1. Efforts are designed to control existing populations and to limit further expansions of noxious weed species. Primary species treated were yellow toadflax, leafy spurge, knapweeds, whitetop, houndstongue, musk thistle, and Canada thistle.
2. Jackson, Grand, and Routt counties are cooperating parties with the Forest Service in controlling noxious weed infestations. We are currently expanding efforts to establish a Cooperative Weed Management Area in Routt county. Participating agreements are in place with Carbon, Albany, Platte, Converse Campbell, and Weston counties in Wyoming.
2. It is quite possible that efforts to limit noxious weed expansion on the federal lands may not be successful if all land ownerships and landowners are not equally committed to the desired outcomes (infestation sources may remain on adjacent lands or on intermingled ownerships).

Goal 2 – Provide a wide variety of outdoor recreational opportunities and experiences to meet the full range of visitor expectations.

Identify appropriate programs and compatible levels of use for Forest recreation and resource programs in collaboration with user groups, communities, and other agencies.

Through their relationship with Yampatika, the Routt National Forest has an active environmental education and interpretation program. In addition, forest recreation program managers work closely with a number of user groups and other agencies to enhance the recreation program. Interpretive materials are being developed concerning hazard tree removal and native plant restoration at Teal Lake Campground. The hope is that this will be a template for native plant restoration at some of our other campgrounds that were hit hard in the hazard tree removal. Interpretive materials for the Grizzly Guard Station project are also planned to be developed.

Provide Forest visitors with a full range of interpretive experiences.

See response to the above objective.

Provide recreation opportunities to accommodate a wide range of abilities.

Accessibility is one of the main components of our Forest capital improvement program. Whenever deferred maintenance is performed on a developed site, accessibility is taken into consideration. Not all facilities are accessible, however, and continual maintenance of trail access is vital - this includes access to toilets, picnic and camping areas.

Goal 3 – Cooperate with local governments and communities to develop opportunities that contribute to economic viability.

Support development and maintenance of a sustained flow of market and nonmarket products to regional and local economies.

Non-market products are issued as personal use permits to the public through VIS or front-liners at district offices. These products are not sold competitively and are issued for personal use, rather than commercial re-sale.

Non-market Products (Routt NF)

Fiscal Year	Fuelwood (Permits)	Transplants (each)	Christmas Trees (permits)	Post & Poles (permits)	Misc. (ferns, botanicals, etc.) (permits)
2004	1,301	189	1,728	46	393
2005	1,492	464	1,492	101	383
2006	1,155	65	1,446	43	343
2007	1,265	99	1,672	60	3
2008	1,547	125	1,667	20	348

Non-market Products (Medicine Bow NF)

Fiscal Year	Fuelwood (permits)	Transplants (each)	Christmas Trees (permits)	Post & Poles (permits)	Misc. (ferns, botanicals, etc.) (permits)
2006	3,564	123	2,986	204	10
2007	3,511	75	1,995	204	10
2008	3,665	124	1,900	150	0

Market products are generally prepared as commercial products (sawlogs, post & poles, firewood) through vegetative treatments that are designed to improve forest health, achieve resource objectives, or salvage damaged trees.

Sawlog Volume Offered and Sold (ccf)

Fiscal Year	Routt NF	Medicine Bow NF
2004	32,807	15,638
2005	25,861	20,244
2006	51,103	12,010
2007	57,585	20,373
2008	80,406	19,958

Rangeland outputs in the form of livestock grazing are given in the Livestock Use monitoring item above.

Develop programs and projects that are complementary to local community objectives and plans.

Northern Colorado Beetle Cooperative – the Routt National Forest was instrumental in the formation of the Cooperative. The Cooperative organization is focused on the future – future impacts to local economies and wildfire risk to communities and watersheds. Our charge is to initiate and guide actions that address these impacts and risks - future industry capability, future organizational capacity to deal with wildfire risk to communities and watersheds, and collective prioritization of cooperative projects that erase limiting boundaries.

Bark Beetle Information Task Force - local city and county government, state and federal agencies, the local chamber, and local non-profits joined forces to provide information and education about the huge bark beetle epidemics and the resulting effects on natural resources, the landscape, and tourism. Many projects have come from leveraging funds with all these entities – exhibits, brochures, interpretive signs, PSAs, events, etc.

Yampatika Interpretive Association – the FS partners with the association to provide interpretive opportunities across the forest, on the Steamboat Ski area, and in communities. The focus is natural and cultural interpretation. Projects include interpretive brochures, educational displays, walks, talks, children’s programs, natural resource education for adults, and fund raisers that get needed work accomplished on the ground. These efforts contribute to tourism and community economic viability.

Routt County Wildland Fire Council (Education Committee) – an interagency educational group that promotes wildland fire prevention and mitigation.

North Park High School Greenhouse – continue to work in partnership with the school district to collect native seeds and raise them in the greenhouse to revegetate National Forest Lands and private lands with native plants.

Rocky Mountain Youth Corps and Steamboat Community Youth Corps – The FS works with this organization to get needed work done on the forest and to mentor youth into natural resource appreciation.

Natural Resource Interpretation – Numerous interpretive projects have been planned and implemented in partnership with

local entities including Fish Creek Brochure, Teller City signs, ski area signs, signs across the forest about blowdown, beetles, and forest health, Red Elephant trail, local history and tourism signs and brochures and kiosks in Yampa and Hayden.

Yampa Valley Info – participated in their mission to gather and display valley-wide information to promote the spirit, culture and heritage of our communities. Linked the MBR website to Yampa Valley Info, which is one-stop website shopping for information about the Yampa Valley, especially for people desiring to recreate here or to relocate to Routt County.

Assist local governments in developing specific programs that promote economic stability

North Park Natural Resources Group – a local group in Jackson County that works to market beetle-kill timber and seek economic development opportunities for the county. It is also involved in promoting stewardship opportunities on the Forest.

Biomass Generator – A partnership between Jackson County (school district), Forest Service, and county commissioners worked to bring a pilot project to provide electricity for the high school greenhouse first and then the entire high school. This project was a Department of Energy pilot project and it is anticipated that it will serve to start up other biomass industry in the area. North Park high School won the National rural Community Assistance Spirit Award for its biomass project.

Owl Mountain Partnership – A partnership with BLM, the Forest Service and local ranchers to accomplish rangeland improvements.

Rural Development Grants -There was no money to offer grants in 2007.

Fuel reduction projects – working with private/adjacent landowners on several ongoing fuel reduction projects.

Moffat County and Routt County Public Information Officers group – helped develop public information officer groups so that all entities work together in talking about issues that affect local communities. In 2007, the Routt County PIO group hosted “Meet the Media” to help spokespeople for various organizations better interact with the media. The class, taught by R2 public affairs professionals, was maxed out at 30 participants.