Medicine Bow National Forest
Routt National Forest

2006 Annual Monitoring And Evaluation Report

October 1, 2005 through September 30, 2006

United States Forest Service
Rocky Mountain Region

July, 2007

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Cover photo is an aspen clone near Haggerty Creek in the Sierra Madre Mountain Range.

Certification

The Medicine Bow National Forest Land and Resource Management Plan (Medicine Bow Plan) Record of Decision (ROD) was signed on December 29, 2003. The Routt National Forest Land and Resource Management Plan (Routt Plan) Record of Decision (ROD) was signed on February 17, 1998. The Plans are dynamic documents, subject to change based on annual monitoring and evaluation as we implement them. Monitoring is intended to provide me with information necessary to determine whether the Plans are sufficient to guide management of the Medicine Bow and Routt National Forests for the subsequent year or whether modification of the Plans or if modifications of management actions are necessary.

Overall, the 2006 Monitoring and Evaluation results indicate that the management of both Forests meets goals, objectives, standards and guidelines, and management area prescriptions. I have reviewed the 2006 Annual Monitoring and Evaluation Report for the Medicine Bow and Routt National Forests that was prepared by the Forest Interdisciplinary Team (IDT). I believe that the results of monitoring and evaluation for FY06 meet the intent of Chapter 4 of the two Forest Plans. I also believe that the monitoring and evaluation requirements displayed in Chapter 4 of the Forest Plans have been met, and that the decisions made in the Forest Plans are still valid.

The Forest IDT has not identified any modifications to the Plans or adjustments to management actions, except for the Routt Management Indicator Species (MIS) amendment. This amendment was completed in February 2007, and was identified as a need through a 2001 Forest Service Region 2 review of MIS. The Medicine Bow Plan and Routt Plan are sufficient to continue to guide management of the Forests.

Please contact Frank Romero at the Medicine Bow-Routt 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/ Mary H. Peterson **7/30/07**

MARY H. PETERSON
Forest Supervisor

Date

Introduction

The Medicine Bow and Routt National Forests are managed under the administrative unit known as the Medicine Bow-Routt National Forests and Thunder Basin National Grassland extending into the states of Wyoming and Colorado. Since there are three Land and Resource Management Plans that provide guidance for the National Forest System (NFS) lands managed on this 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, the Management Team decided to combine 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 requirements of monitoring and evaluation for the implementation of the two Forest Plans.

Beginning in the 2004 monitoring report, monitoring questions are combined from both forests, where possible. Chapter 4 in each Forest Plan contains monitoring direction. Some of the monitoring direction is similar between Forest Plans and some is not. Over the next few years, we intend to combine direction wherever feasible.

The Medicine Bow National Forest contains 1,095,384 acres of National Forest System lands in southeast Wyoming. The Forest includes four units in three distinct mountain ranges; the Laramie Range, the Medicine Bow Mountains, and the Sierra Madre Mountains. The Continental Divide 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 5050 feet above sea level in the Laramie Range to 12,013 feet above sea level at Medicine Bow Peak. More than 50% 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 Routt National Forest contains 1,125,568 acres of National Forest System land within northwest Colorado. In addition to the management direction for the Routt National Forest, the 1997 Routt Revised Plan contains direction for the 85,350 acres of the Arapaho National Forest administered by the Routt National Forest; as well as the 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 13,000 feet in elevation. The Continental Divide crosses the Forest for approximately 113 miles. Though most of the Forest can be called "remote and undeveloped", it still provides a high level of multiple use values for people, including outstanding wildlife habitat, important watersheds, valuable recreational opportunities, timber, livestock, minerals, and other natural resources.

Goals and Objectives

The first chapters 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 provide and focus on achieving ecosystem health and ecological integrity.

In the 2003 Medicine Bow Revised Forest Plan, most of the objectives are due to be accomplished over the life of the plan, usually considered to be 15 years. However, some objectives have earlier due dates, or are annual objectives. For the objectives due by 2006 or earlier, in addition to the annual objectives, the progress made toward these objectives is listed in Appendix 1. The Routt Plan does not give timelines for the goal and objective accomplishments, so progress to date is reported for all of the Routt objectives (Appendix 2).

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

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

The goals and objectives in the 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 Forest Plan pre-dates the GPRA legislation, however the goals in the Routt Plan 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

The primary finding from the fiscal year (FY) 2006 report is related to the expanding bark beetle epidemic. More details can be found under the *Insect and Disease* monitoring item. The IDT developed forestwide recommendations related to this and other resource areas. Numerous additional recommendations are contained within the monitoring items in this report concerning ways to improve both monitoring and forest resource management.

Conclusions:

Insects and Disease
The Medicine Bow-Routt National Forests (NFs) are experiencing a continuing escalation of bark beetle epidemics, which started in the late 1990's. Until 2005, the majority of the bark beetle mortality was primarily in Colorado (Routt National Forest), but in the last 2 years, bark beetle populations have exploded on the Medicine Bow National Forest, particularly in the southern portions of the Medicine Bow and Sierra Madre mountain ranges. The mountain pine and spruce bark beetle epidemics will probably continue for at least another 2-3 years. When the bark beetle epidemic has completed its cycle, the potential for loss of many lodgepole and spruce stands over 8 inches diameter is substantial. The scale of the current epidemic is unprecedented within the last 150 years.

Recommendations:

Insects and Disease
The rate of spread of mountain pine and spruce bark beetle that the Forests have experienced in the last few years will probably continue for the next 2-3 years. Any vegetative management in lodgepole pine and spruce should anticipate what the condition of the stands would be in 2-3 years. In the past, forest managers have implemented silvicultural strategies to suppress beetle epidemics when recommending silvicultural treatments, 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 regeneration of the affected stands.

Forest Plan Implementation
Implementing the Forest Plan could be improved through increased training and accountability for contract and permit administration to ensure that all design criteria, contract clauses, monitoring and compliance needs are met.

Off Highway Vehicle (OHV) Use
OHV / travel management is a growing issue affecting multiple resources. There is a need for increased education, enforcement and work with partners to address this issue.

Routt Water and Aquatic Standard #8
Revise Routt Water and Aquatic Standard #8 in accordance to Washington Office Direction.

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 and one administrative correction. No amendments have been approved for the Medicine Bow Plan. The Routt Plan was approved in 1998. Since then, five errata have been issued (no administrative corrections) and three amendments have been approved. As mentioned earlier, the Plans are dynamic and ever changing. To stay current with these Plans, please refer to the following internet website: http://www.fs.fed.us/r2/mbr/projects/forestplans/index.shtml

Routt MIS Amendment
The Routt Five-Year Review and 2003 Implementation and Monitoring Report identified the need for a Management Indicator Species amendment for the Routt Forest Plan. This project was not completed in earlier years due to insufficient funding. The Decision Notice for the amendment was signed in February 2007. 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

Southern Rockies Lynx Environmental Impact Statement (EIS)
The Supplemental Draft Environmental Impact Statement for the Southern Rockies Canada Lynx Amendment was released in November 2006. This amendment would amend 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. The supplemental EIS re-issues the 2004 Draft EIS to include the White River NF. Comments were due in February, 2007. The Final EIS and Record of Decision are expected in the Fall of 2007. More information can be found at the following website : http://www.fs.fed.us/r2/projects/lynx/.

New Laws and Regulations

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

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

Planning Rule Suspended
Because of 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 has been 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 have been suspended until further notice.

Travel Management

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

The agency expects that it will take up to 4 years to complete the designation process for all 155 national forests and 20 grasslands. Each unit will also publish a motor vehicle use map. The final rule addresses the more than 80,000 comments received on last year's proposed rule. Most comments strongly supported the concept of designating routes and areas for motor vehicle use.

Once the designation process is complete, motor vehicle use off these routes and outside those areas designated for cross-country travel will be prohibited.

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

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

Roadless Area Conservation

The Roadless Area Conservation Rule, also known as the Roadless Rule, has undergone many challenges and changes over the past several years. Currently, the previous interim roadless direction was extended with slight changes on January 16, 2006. This direction continues to guide the current management of the Forests' roadless areas. Recent court cases on the Roadless Rule have led to National Forest System (NFS) direction to forests that all decisions for projects in roadless areas must comply with the 2001 Roadless Rule.

This roadless direction established the State Petitions Rule, which is a process to provide Governors an opportunity to establish or adjust management requirements for National Forest System inventoried roadless areas within their states. Colorado has submitted a petition, described below. Wyoming has not filed a petition as of January 2007.

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/

Projects and Ongoing Activities

Community Involvement

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

The Roadless Areas Review Task Force – In 2005, a bipartisan 13-member group was created under Colorado Senate Bill 05-243 to help determine the future of roadless areas in Colorado, including what uses, if any, will be allowed in the applicable forest areas. Based upon public comment, the task force made recommendations to Colorado Governor Bill Owens regarding how inventoried roadless areas should be managed. In November 2006, Governor Owens submitted a petition to the United States Forest Service on behalf of the State of Colorado with guidelines to manage the state's 4.1 million acres of roadless areas, primarily without constructing new roads. The petition requests that ski area special uses be removed from the roadless inventory. It has special provisions for certain mineral interests and selectively allows some road construction and reconstruction, in addition to some new temporary roads, primarily for public safety. Tree harvest is selectively allowed. The final petition can be found at the following website:

http://dnr.state.co.us/Home/Roadless+Areas+Review+Task+Force/

The Bark Beetle Information Task Force 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 includes 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 is to provide the public with information about bark beetles and potential tree mortality so they can make informed decisions regarding protection of their private property and provide meaningful input regarding proposed actions on public lands. In 2001, the Task Force 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.

Members of the Task Force participate in discussions with civic groups, homeowners' associations, Forest Service tours and meetings, and other gatherings of people interested in bark beetles, and provide information to the media.

The Task Force continued its education efforts in 2006, primarily through media interviews. Members were less proactive this year because the Northern Colorado Beetle Cooperative and other entities were doing extensive media work, congressional tours and educational efforts throughout the state. The Task Force will revive its local educational efforts in 2007.

Northern Colorado Bark Beetle Cooperative – the Cooperative was formed in late 2005 and major efforts were embarked on in 2006 to bring attention to beetle epidemics and form short-term and long-term strategies to deal with beetle epidemics and prepare for the future forest. The Cooperative has a Steering Committee, Communications Team and an Implementation Team.

Background: Aging forests, blowdown events and an extended drought with mild winters during the past several years have triggered and exacerbated beetle epidemics throughout much of the western United States. Northern Colorado has been hit particularly hard by all of these natural events.

In 2005, more than 425,000 acres of forest in northern Colorado were infested with mountain pine beetles and spruce beetles. Tree mortality from this infestation in the Rocky Mountain region is unprecedented in recorded history. The beetle epidemics cross jurisdictional lines, including National Forest System lands, Bureau of Land Management resource areas, State and private lands. Beetle epidemics also affect counties and municipalities.

Beetles could kill most of the mature lodgepole and spruce trees in northern Colorado. Beetle-killed trees create a build up of fuels that could result in disastrous wildland fires that threaten homes and watersheds. Likewise, beetle-killed trees may negatively impact future timber supplies, wildlife habitat, recreation sites, transmission lines and scenic views. These events could cause adverse economic impacts to communities in northern Colorado.

The Northern Colorado Bark Beetle Cooperative is a collaboration of federal and state agencies, counties, municipalities and communities working together to develop and implement strategies to reduce forest mortality in high priority areas and associated adverse effects.

Goals: To develop short-term (less than two years) and long-term (beyond two years) strategies for addressing tree mortality from bark beetle epidemics; develop action plans necessary to implement the strategies; and work collaboratively to carry out the work.

Members of the Northern Colorado Bark Beetle Cooperative include:

- Arapaho-Roosevelt, Medicine Bow-Routt and White River National Forests
- Bureau of Land Management Kremmling and Glenwood Springs Field Offices
- Eagle, Routt, Summit, Grand and Jackson Counties
- Colorado State Forest Service
- Northern Colorado Council of Governments
- Congressional Representatives
- Conservation Districts
- Municipalities

Additional members may be added as the effort progresses.

Members of the Northern Colorado Beetle Cooperative participated in numerous media interviews, made trips to the Forest Service Washington Office and to members of Congress to bring attention to the severe beetle epidemics being experienced in Northern Colorado. The group also conducted several tours for local and national elected officials and the media. The Cooperative's efforts will continue in 2007.

Projects Completed During FY06

Tables 1 and 2 below list the environmental analysis projects completed on the Medicine Bow and Routt National Forests during FY06. 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 Record of Decisions (RODs) for environmental impact statements (EIS). 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

Figure 1. Curious black bear on the Brush Creek/Hayden Ranger District.

Table 1. Medicine Bow NF projects completed in FY06

Name	Decision Type	Date Signed	Primary Purpose
Brush Creek/Hayden Ranger District (BCH)			
French Creek Analysis	DN	1/13/06	Fuels / Forest Products / Vegetation Management
White Rock Estates WUI Fuels Project	DM	1/25/06	Fuels
Buffalo Creek Outfitters	DM	3/30/06	Special Use Authorizations
Carbon Power and Light A Bar A Line	DM	10/31/05	Special Use Authorizations
Carbon Power and Light Ryan Park Line	DM	10/31/05	Special Use Authorizations
Carbon Power and Light Water Valley Ranch Line	DM	10/31/05	Special Use Authorizations
Mitch Bangert / Harrison's Guest House & Guide Service	DM	3/30/06	Special Use Authorizations
Rod Merritt Flyfishing	DM	3/30/06	Special Use Authorizations
Spur Outfitters	DM	6/14/06	Special Use Authorizations
Stoney Creek Outfitters	DM	4/17/06	Special Use Authorizations
Union Telephone Barrett Ridge Communication Site Permit Renewal	DM	8/10/06	Special Use Authorizations
Laramie Ranger District (LRD):			
Centennial Ridge / Holmes / Table Mountain AMP	DM	9/28/06	Rangelands
LRD 2006 Pre-Commercial Thinning	DM	5/22/06	Vegetation Management
Pole Mountain Range Improvements	DM	6/12/06	Rangelands
Carbon Power and Light	DM	2/9/06	Special Use Authorization
Carbon Power and Light ROW	DM	2/21/06	Special Use Authorization
Snowy Range Ski Area Decision Re-issuance	DN	9/5/06	Special Use Authorization
Douglas Ranger District (Laramie Peak Unit)			
Rock Creek Fence Construction	DM	8/2/06	Rangelands
Projects Covering More than 1 District			
Wyoming Weather Modification Pilot Project	DM	8/29/06	Special Use Authorizations

Table 2. Routt NF projects completed in FY06.

Name	Decision Type	Date Signed	Primary Purpose
Hahns Peak-Bears Ears District (HPBE):			
California Park Rangeland Management Analysis	DN	9/29/06	Rangelands
Colorado Dept. of Transportation Rabbit Ears Facility Permit Renewal	DM	2/14/06	Special Use Authorization
Pearson Communication Tower at Storm Peak	DM	11/7/05	Special Use Authorization
Sherman Youth Camp Caretaker's Cabin	DM	6/20/06	Special Use Authorization
Steamboat Ski Area Plan Site Development Phases 1-111	DN	5/12/06	Special Use Authorization
Storm Peak Hang Gliding Permit Renewal	DM	6/21/06	Special Use Authorization
Sunset Ranch Permit Renewal	DM	6/26/06	Special Use Authorization
Little Snake Environmental Analysis	DN	11/4/05	Forest Products
Parks Ranger District:			
Sierra Madre Analysis	DN	9/28/06	Fuels / Forest Products / Vegetation Management
Colorado Blizzards Snowmobile Poker Run	DM	11/25/05	Special Use Authorizations
Parks South Rangelands NEPA	DM	9/28/06	Rangelands
Yampa Ranger District:			
Egeria AMP	DM	8/30/06	Rangelands
Big Creek Land Exchange	DN	11/9/05	Lands
Rock Creek Integrated Management Project	ROD	4/16/06	Fuels / Timber / Watershed & Habitat Improvement / Roads
Saylor Domestic Water and Pipeline	DM	11/4/05	Special Use Authorizations
Temporary Outfitter Guide Permit Renewals	DM	9/22/06	Special Use Authorizations

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

This item is assessed using field observations.

Results/Evaluation

Routt Divide Blowdown/Zirkel Complex Fire/BAER Treatment

In 2002, soil monitoring efforts were undertaken on salvage logging units within the Routt Divide Blowdown that subsequently burned in the 2002 Zirkel Complex wildfires. Unit selection criteria was limited to those slated for Burned Area Emergency Response (BAER) aerial straw mulch treatments in late 2002. Four erosion bridge courses were established in three of these units. The bridge consists of a rigid bar mounted on fixed stakes. Distance to the soil surface is measured at 40 points along the bridge. These values, when plotted, provide a micro-topographic profile. Repeated measurements allow the magnitude of soil loss or aggradation to be quantified.

Courses consisted of three erosion bridge sites arrayed in a representative topographic sequence within the units. Initial data from these courses represented base soil levels in salvaged and burned areas. Follow-up monitoring was conducted in 2006 to assess the combined effects of the blowdown/salvage/wildfire and the effectiveness of the BAER treatments.

Results

Due to heavy vegetation cover within the units and lack of adequate marking, only one erosion bridge course was located and read. Data indicates low amounts of soil erosion in this BAER treatment unit and a net increase (58 mm) in soil surface base level since 2002 (see Figures 2 – 4 below). Based on this information, it appears the aerial straw mulch treatments were effective in reducing soil erosion.

Figure 2. Unit 28A upper erosion bridge measurements.

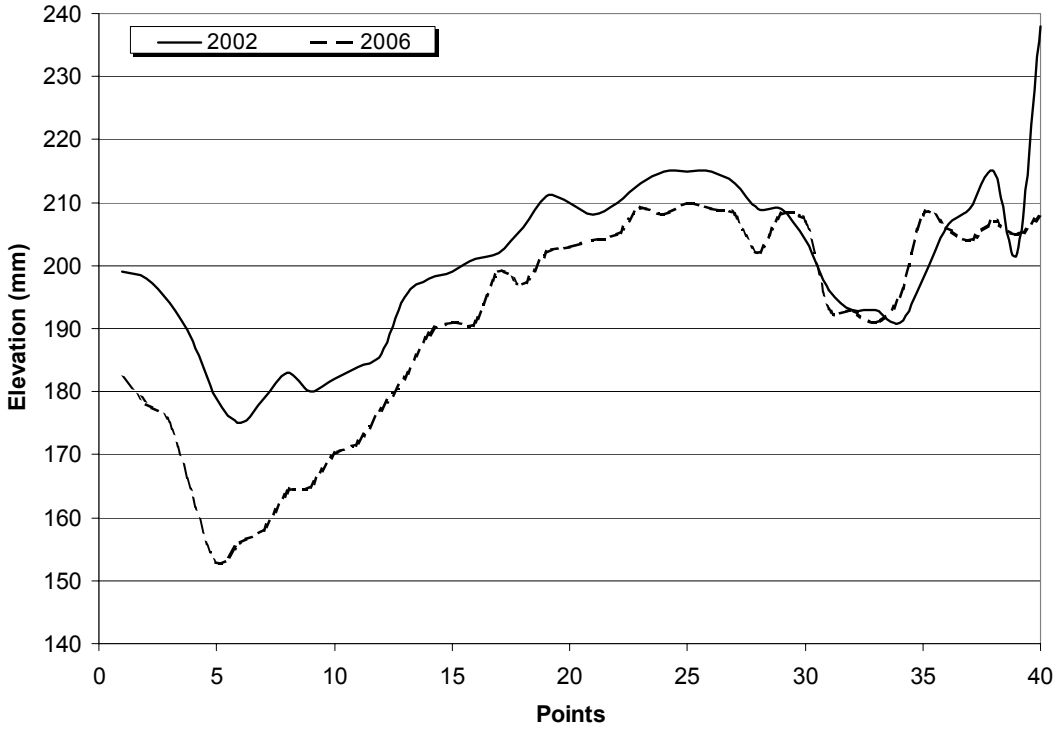


Figure 3. Unit 28A middle erosion bridge measurements.

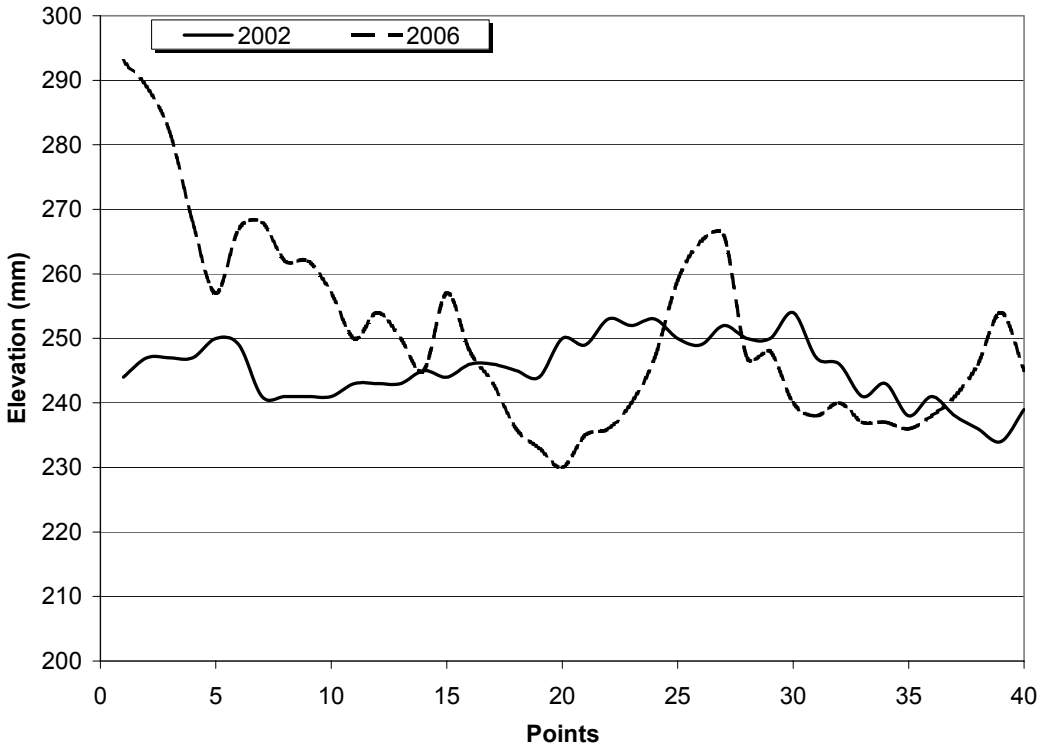


Figure 4. Unit 28A lower erosion bridge measurements.

Ground cover transect measurements in the three units where erosion bridge courses could not be located. Region 2 soil standards require the following minimum effective groundcover rates after disturbance:

Table 3. Region 2 minimum effective groundcover rates after disturbance.

Erosion Hazard Class	1st Year	2nd Year
Low	50	70
Moderate	40	60
High	30	50
Very High	30	50

Effective ground cover rates exceeded Region 2 soil quality standards in all treatment units (moderate erosion hazard class). Cover rates ranged from 70 to 73 percent, with an average of 71.

Observations within all treatment units indicated soil surface stabilization and the absence of continuing detrimental soil erosion. Most surfaces were well stabilized with vegetation and further protected by increasing amounts of litter.

Soil Quality Monitoring

In 2006, 80 soil quality field evaluations were performed. In total, these evaluations represent 800 unique observations of soil conditions on a variety of past and ongoing management activities, including timber harvest and permitted domestic livestock grazing.

Results

Monitoring during 2006 indicates that long-term health and productivity of the soils is being maintained. Site-specific monitoring data is on file with the Forest Soil Scientist.

Extensive utilization of the soil quality field evalution protocol has demonstrated usefulness as an integral tool for forest soil monitoring. These evaluations will provide a foundation for the development of a systematic approach to soil quality monitoring that is adaptable to a wide variety of management activities, soil conditions, and resource constraints.

Actions Taken on the FY05 Monitoring Report Recommendations

Pop Springs Rehabilitation: Monitoring results from 2005 indicated the need to break up the continuous, detrimental compaction layer present in unit nine of the Pop Springs Timber Sale. Subsoiling to decrease the detrimental effects of soil compaction was completed in late 2005. Two soil quality field evaluations were performed in this unit in 2006 to assess the results of rehabilitation efforts.

> Results: Transect data indicates the rehabilitation efforts were successful in reducing the level of detrimental compaction in unit nine. The near-continuous detrimental compaction layer has been reduced to an estimated 10% of the activity area.

Soil Quality Monitoring Strategy: A soil quality field evaluation protocol was developed in 2006 for use on the Medicine Bow-Routt National Forests. This protocol creates rapid field assessments of soil productivity and provides results relevant to long-term soil health and productivity. Parameters assessed include compaction, cover, displacement, erosion, and burn severity.

The goal of this protocol is to provide an efficient and accurate means for assessing the effects of land management activities. This protocol also attempts to determine whether or not land treatment effects are within the limits of Forest Plan soil standard five (Forest Service Handbook (FSH) 2509.18). These standards require detrimental soil conditions be present on no more than 15 percent of an activity area.

> Results: Soil quality monitoring efforts in 2006 were greatly improved over 2005. The development of the new soil quality field evaluation protocol resulted in an increase the number of documented soil condition observations throughout the forests. Application and testing of the protocol will continue in 2007.
>
> The soil monitoring program still suffers from the lack of a well-defined strategy. Most monitoring efforts are opportunistic in nature and lack adequate representation of the range of management activites. Further efforts to rectify this situation are presented in this report (2007 Monitoring Plan) and will continue to be improved in the following years.

Seasonal Staffing: In FY06, one biological scientist was hired under the Student Temporary Employment Program to assist with the soils program workload. This employee worked for three months during the field season (5/15/2006 to 8/18/2006).

Results: The addition of seasonal staff was one factor that contributed to the increased soil quality monitoring in 2006. The soils program will continue to utilize these opportunities, as funding and qualified applicants are available.

Conclusions

- Monitoring during 2006 indicates that long-term health and productivity of the soil resource is being maintained. Site-specific monitoring data is on file with the Forest Soil Scientist.
- The newly developed soil quality field evaluation protocol is an effective monitoring tool.
- Soil monitoring efforts on the MBR in FY06 benefited somewhat from the addition of a summer student trainee but continues to be hampered by an increasingly project analysis-specific workload and the continuation of air resource program management by the soil scientist.

Recommendations

- Add skilled seasonal staff to assist with soil monitoring efforts.
- Continue to develop a comprehensive soil quality monitoring strategy utilizing the new soil quality field evaluation protocol.
- Look for opportunities to test the new protocol against more quantitative monitoring tools such as the Hazard-Geist analysis.
- Propose a reduction in project support workload to Forest Leadership Team to, in part, increase the frequency and intensity of soil monitoring on all units.

FY07 Monitoring Plan

The following table lists the projects scheduled for monitoring during the FY07 field season:

Table 4. FY07 Soil Monitoring Schedule

Project	Monitoring Methods
Rainbow Family Gathering Rehabilitation	Cover transects Soil quality field evaluations
Two-Bull Timber Sale	Hazard-Geist Analysis BMP[1] Implementation monitoring Soil quality field evaluations
California Park	Erosion bridges Cover transects Soil quality field evaluations
Vienna Fire Salvage	Soil quality field evaluations BMP Implementation monitoring
Isabelle Wildland Fire / BAER	Soil quality field evaluations
Singer Peak Timber Sale	Soil quality field evaluations BMP Implementation monitoring

[1] Best Management Practices (BMPs) are used during project implementation to reduce effects on soils and water quality.

Air Quality

Routt Monitoring Item 1-2
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

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

The Routt National Forest (RNF) is comprised of three airsheds: Medicine Bow, Granby, and Grand Junction. The Medicine Bow Airshed encompasses the largest portion of the Forest. The goal of the air program is to conduct all management activities to comply with all applicable federal, state, and local air quality standards and regulations. The Forest Service is also responsible for protecting the Mount Zirkel Wilderness (MZW) Class I area from adverse effects caused by air pollution resulting from forest management activities.

Management Activities
During FY06 a variety of management activities with potential air quality impacts, most notably particulate matter contributions, were undertaken on the Routt National Forest (Table 5).

Table 5. Summary of FY06 management activities having potential effects to air quality on the Routt National Forest including the Mt. Zirkel Wilderness.

Project	Type	Ranger District	Acres
Big Creek Ridge	Prescribed Burn	HPBE	1,160
Camp Creek	Prescribed Burn	Parks	507
Stagecoach	Prescribed Burn	Yampa	239
Dunckley	Prescribed Burn	Yampa	165
Dry Lake	Pile Burning	HPBE	30

Smoke from prescribed burning is managed under a cooperative agreement between the Colorado Department of Health Air Pollution Control Division and the U.S. Forest Service. Compliance with the agreement ensures that prescribed burning will not violate the state standards for particulate matter. The Forest Service completed state required burn plans for each prescribed fire. Burn Plans require Simple Approach Smoke Estimation Model results to predict the effects of smoke dispersal for all burning activities upon sensitive receptors, such as highways, cities, and Class I and II Wilderness Areas under known climatic and atmospheric conditions. Burn Plans also include considerations for possible inversion conditions, nighttime down-valley air flow, and mitigation measures for smoke effects resulting from unanticipated events. All prescribed burns were conducted during good to excellent dispersal conditions; therefore the smoke from these fires did not adversely impact the air quality in the RNF and the MZW.

Monitoring completed during the fiscal year indicates that the air quality, especially in the MZW Class I Airshed, is being maintained. No change to the Forest Plan is needed for this item.

Recommendations: Continue to monitor the effects of prescribed burning. Monitor implementation of other project activities to determine any potential for effects upon air quality in the MZW Class I Airshed.

Water Quality

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

This monitoring items 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 Forest is 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.

Results/Evaluation

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. Most water quality monitoring has been conducted on streams where designated uses are known or suspected to be impaired and limited monitoring has occurred on streams likely to meet all designated uses. Table 6 below shows the water bodies on the Forest that have been determined by the States of Colorado and Wyoming to have water quality concerns.

COLORADO

Streams on the Colorado M&E list for sediment

Of 22 streams placed on the Monitoring and Evaluation list (M&E list) for sediment in 1998 (see FY05 monitoring report and figure below), the state removed 18 from the M&E list in 2006. Streams are placed on this list when there is reason to suspect water quality problems, but there is uncertainty regarding one or more factors. The State felt that additional information was needed on the remaining four stream segments: First Creek, Oliver Creek, Snyder Creek, and Bushy Creek. The Forest and the Colorado Water Quality Control Division (CWQCD) collected additional information on First Creek and Snyder Creek in 2005, and the Forest collected additional information, including pebble count data and macroinvertebrates on Oliver Creek and Bushy Creek in 2006.

Streams on the Colorado M&E or 303(d) list for E.coli

The Forest initiated monitoring of bacterial concentrations on a few selected streams in response to scoping questions on grazing allotments. Seven reaches were sampled during 2003-2004. Data from this sampling effort was sent to the CWQCD in March 2005. During the CWQCD 2006 hearing for adding or removing streams from the 303(d)[2] list and M&E list, two stream reaches (Big Rock Creek and Little Rock Creek) were placed on the 2006 M&E list, and two reaches (First Creek and Elkhead Creek) were placed on the 2006 303(d) list.

Table 6. 2006 Forest water quality assessment.

Water Body Name	Status	Year Placed on State List	Impaired Designated Use	Cause of Impairment
North Platte River Basin - Colorado				
South Fork Big Creek in Wilderness	M&E list[3]	2004	Aquatic Life; drinking water	Metals-Copper
Snyder Creek	M&E list	1998	Aquatic Life	Sediment
Colorado River Basin - Colorado				
Big Rock Creek	M&E list	2006	Recreation 1A	E.coli
Little Rock Creek	M&E list	2006	Recreation 1A	E.coli
Yampa River Basin - Colorado				
Bushy Creek	M&E list	1998	Aquatic Life	Sediment
First Creek	M&E list	1998	Aquatic Life	Sediment
First Creek	303(d) list	2006	Recreation 1A	E.coli
Elkhead Creek	303(d) list	2006	Recreation 1A	E.coli
Little Snake River Basin - Colorado				
Oliver Creek	M&E list	1998	Aquatic Life	Sediment
Little Snake River Basin - Wyoming				
West Fork Battle Creek	Impaired	2000	Coldwater fisheries; Aquatic life	Metals
Haggerty Creek	Impaired	<1988	Coldwater fisheries; Aquatic life	Metals
South Platte River Basin - Wyoming				
Middle Crow Creek	Impaired	2004	Contact Recreation	Fecal Coliform
North Branch North Fork Crow Creek	Impaired	2004	Contact Recreation	Fecal Coliform

[2] Per section 303 of the Clean Water Act, the 303(d) list identifies streams determined to not be meeting state water quality standards for designated uses.

[3] Streams 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.

The Forest will continue to work closely with the State on this issue. Bacterial concentrations are highly variable in water bodies, and it is difficult to characterize the extent and persistence of water quality exceedances.

WYOMING

Haggerty Creek and West Fork of Battle Creek

Wyoming Department of Environmental Quality (WYDEQ) determined that 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. No active reclamation efforts took place in 2006. On-going 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[4] (TMDL) for these streams, but the Environmental Protection Agency (EPA) has not fully accepted the TMDL at this time. Since the source of contamination is located on private lands, WYDEQ-Abandoned Minelands Program (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.

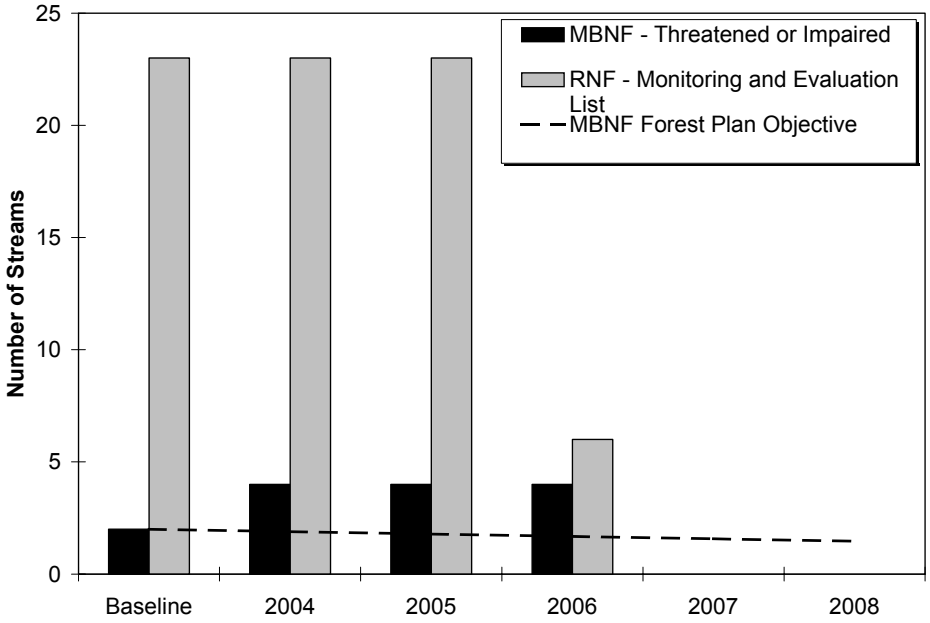


Figure 5. Water quality trends on the Medicine Bow - Routt NFs.

The Forest, in cooperation with the Wyoming Game and Fish Department (WGFD), took the initial steps to repopulate tributaries in the Haggerty Creek drainage, which are not affected by mine drainage, with native Colorado River cutthroat trout. Four hundred native fingerling cutthroat trout from the WGFD Wigwam Hatchery were

[4] Total Maximum Daily Load, defined by the Clean Water Act, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources.

transplanted into each of the following creeks: Haggerty Creek above the mine, Deep Rock Creek, Vole Creek and Bachelor Creek, in addition to tributaries to Haggerty Creek below the mine in August of this year. Each of these streams will receive like amounts of fingerling transplants for the next two consecutive years to achieve representative age classes in each of the drainages.

North Branch of the North Fork Crow Creek and Middle Crow Creek

These streams are not meeting their contact recreation uses due to elevated levels of fecal coliform. The Laramie County Conservation District worked cooperatively with the Laramie Rivers Conservation District and the Forest Service in 2006 to collect 86 water quality samples (fecal coliform and E. coli) at four monitoring stations on Middle Crow and North Branch North Fork Crow Creeks. North Branch North Fork Crow Creek met numeric criteria for water quality during most of the sample periods, but did exceed the numeric criteria during some periods in 2006. Numeric water quality criteria for fecal coliform were met during all the sample periods on Middle Crow Creek in 2006.

In 2006, WYDEQ moved North Branch North Fork Crow Creek and Middle Crow Creek from the 303(d) list of waters requiring a TMDL to the "Category 4B" list of impaired waters. Water bodies on the Category 4B list are expected to meet water quality standards in a reasonable amount of time due to the use of pollution control requirements (e.g. Best Management Practices). This change is due in large part to the actions implemented under the Medicine Bow National Forest Water Quality Action Plan in cooperation with the Crow Creek Watershed Steering Committee and other interested stakeholders.

Soldier Creek

Water overflowed the Soldier Creek Ditch in early July 2006. An estimated 8,000 cubic yards of material were eroded from the hillside below the ditch. The material created a temporary dam across Solider Creek and an alluvial fan in the valley bottom adjacent to Soldier Creek. The Forest Service evaluated past breaches of the ditch and photo documented this most recent breach. Visual observations of sediment levels and aquatic habitat conditions in Solider Creek were made, but no quantitative monitoring was initiated. The Forest Service worked with the ditch operator to initiate improvements to ditch maintenance and operations. Aquatic habitat and turbidity levels in Soldier Creek will likely be affected by this event for many years in the future.

Conclusions

The listing of two streams on the Colorado 303(d) list as impaired are the first listed since the 1997 Routt Plan was signed. The source of the E. coli that is causing an exceedance of state water quality standards is unclear, as there are numerous sources in the watershed that contribute to elevated bacterial concentrations including wildlife, livestock, and humans. At this time, there is no direct connection between the adequacy of the Forest Plan for protecting water quality and the 303(d) listings. This does, however, move the Forest away from the Routt 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*' (Routt Forest Plan p.1-2).

With the 2004 listing of two streams as impaired, the number of impaired streams on the Medicine Bow National Forest has increased from two to four since the Medicine Bow Plan was signed in 2003 (Figure 5). This has moved the Forest away from the Plan objective in the to "*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 continue to indicate an improving trend (lower fecal coliform measurements) on Middle Fork Crow Creek, but continued exceedances of numeric water quality criteria on North Branch North Fork Crow Creek, West Fork Battle Creek and Haggerty Creek. The Forest continued cooperative monitoring efforts and implementation of BMPs to address water quality issues in the Crow Creek drainage in 2006.

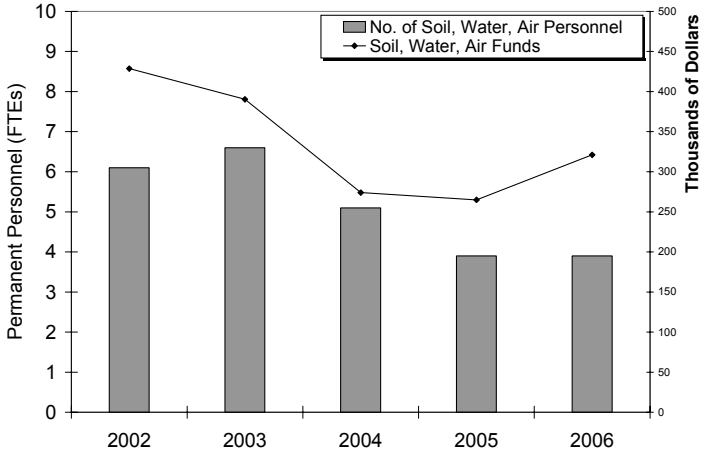
Recommendations:

- Work with the State to collect necessary data on streams still on the Colorado M&E list for sediment.
- Continue to implement watershed improvement projects that reduce sediment and connected disturbed areas in streams on the M&E list for sediment.
- Work with the CWQCD to develop a strategy for streams listed on the 303(d) list and M&E list for bacteria.
- Monitor compliance with Forest Plan Standards and Guidelines, including BMP implementation, on streams on the 303(d) list or on the M&E list for bacterial impairment.
- Continue to cooperate with Laramie County and Laramie Rivers Conservation Districts on bacteria monitoring and rangeland vegetation 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.
- Implement the strategy finalized in April 2006 for addressing bacteria water quality issues on rangeland allotment management planning projects.
- Continue to assist WYDEQ-AML with reclamation efforts on Haggerty and West Fork Battle Creeks.
- Forest staff should continue to analyze each proposed project and suggest Best Management Practices to protect water quality.
- A sample of the soil and water mitigation measures should be monitored during and after implementation to determine the effectiveness for protecting water quality.

Watershed Program Funding and Accomplishments

Staffing and budgets for the Forests Watershed, Air and Soils programs are beginning to rebound, but are still lower than previous years (see figure below). Starting in 2006, one of the hydrologists on the North Zone assumed half time responsibilities for Forest monitoring and evaluation and therefore now spends only half of the time on

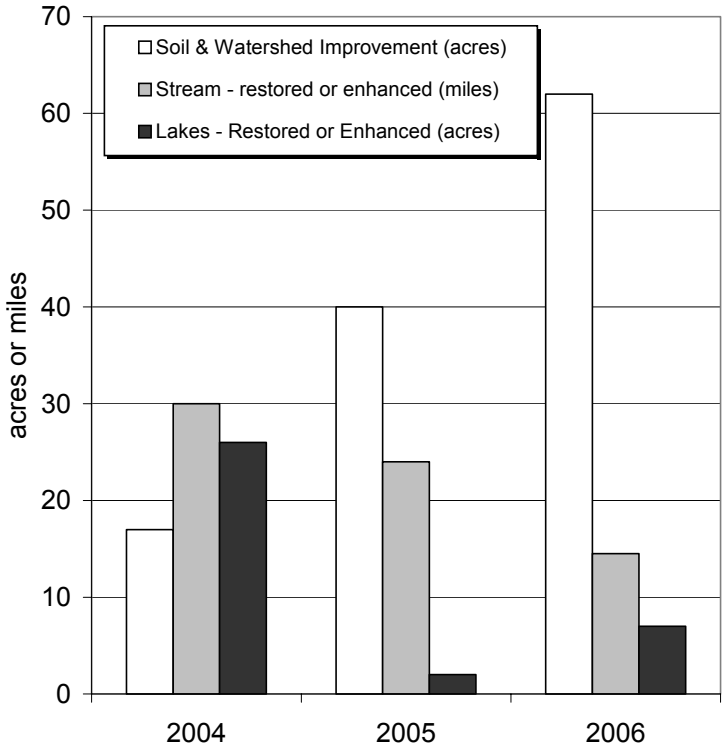
water resources. An additional full time hydrologist has been added to the program, stationed out of Steamboat Springs, with job responsibilities on both of the Forests.



Program funding increased 20% over 2004 and 2005 levels, but is still below 2002 and 2003 levels. One quarter of the 2006 program budget was derived from additional and special requests for money. This included $45,000 for Water Rights Administration and $37,000 for Soil and Watershed Improvement Projects.

Figure 6. Soil, Water and Air Program Staffing and Funds.[5]

Watershed, Soil and Fisheries improvement accomplishments:
Watershed, Soil and Fisheries Program accomplishments are shown in Figure 7, with projects listed in the table below. Acres treated through the Soil and Watershed improvement program have increased annually from 2004 to 2006, while miles of stream restored or enhanced has decreased during the same period.



Acres of lakes restored or enhanced have varied over the years. The large jump in FY06 for acres of soil and watershed improvement is attributable to the additional funding requested and received for improvement projects, such as funding for roads and trails projects (TRTR).

Figure 7. Soil, Water, Air and Fisheries Improvements.

The additional funding, that made it possible for an increase in on the ground projects, came from multiple sources that included increased program funds from a variety of different program areas, and partnerships. Several of the watershed

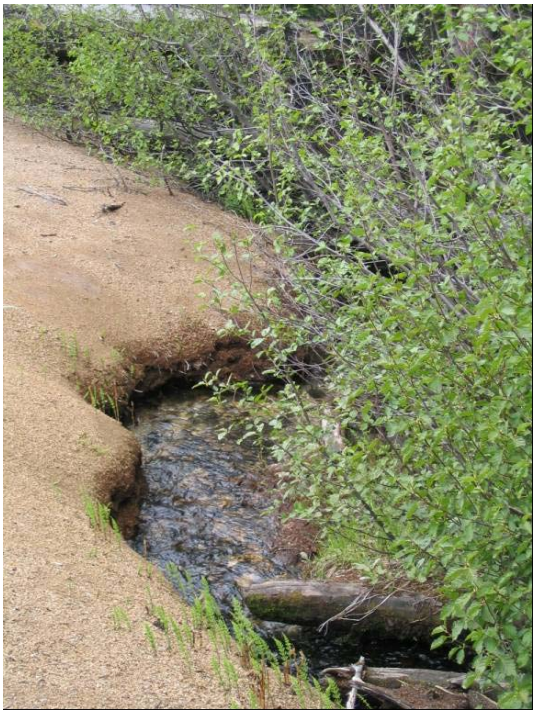
[5] FTE stands for *full-time equivalent* and is a USFS measure of personnel staff levels.

improvement projects are described below, while additional projects are described under the aquatics portion of the *Threatened, Endangered and Sensitive Species Habitat Improvement* monitoring item.

Pole Mountain Watershed Improvement Projects: Efforts were taken on the Pole Mountain unit in 2006 to rehabilitate and prevent illegal off-road vehicle use. Funding was shared between watershed, soils, and recreation programs on the Forest and increased with restitution funds (fines for illegal off-road vehicle violations) to accomplish the work. Several riparian and wetland areas which had been damaged by illegal off-road vehicle use were rehabilitated. Fences were also constructed to prevent motorized access in areas with past off-road violations.

Figure 8. Buck and pole fence built in FY06 to protect a riparian area on Pole Mountain.

McAnulty Watershed Improvement Project: This project removed failing log culvert crossings and one metal culvert on a system of old, closed logging roads in the McAnulty Creek Watershed. Roads were constructed on either side of the creek in the 1940s when the drainage was being logged. Multiple connector roads crossed the main creek, in addition to crossing several tributary streams. Log culverts were constructed at the stream crossings. Several of these old crossings had already failed, and others were at high risk of failure.



Additionally, this project removed a large pile of sawdust along McAnulty Creek and from adjacent wetlands, from an old mill located in the watershed. This 50 year old pile of sawdust had never revegetated, and so had eliminated the riparian vegetation along a portion of the stream channel and in adjacent wetlands. An excavator moved the sawdust pile to an adjacent upland area. The stream crossings were pulled, with seed and erosion cloth placed on the disturbed ground next to the creek.

The project will be evaluated for revegetation success in FY07. Additional seeding and/or willow sprigging may be needed in the sawdust pile area.

Figure 9. Sawdust along McAnulty Creek prior to watershed improvement project.

Rainbow Family Rehabilitation and Watershed Improvement Project: The 2006 gathering of the Rainbow Family of Living Light was on the Hahns Peak-Bears Ears Ranger District. Participants were present in the area for up to six weeks with approximately 15,000 participants during the height of the gathering over July 4th. The event occurred in the Silver City Creek watershed in the Middle Fork Little Snake sixth level watershed. Multiple camps were established with kitchens where they built clay ovens, fire pits, common areas, toilets, etc. The impact of this many people in one geographic area resulted in areas of high soil compaction, degraded streambanks, loss of vegetative cover, and travel management problems. In order to address these concerns, a watershed restoration plan was developed and implemented within two weeks of the last participants leaving the site. Restoration activities included:

- 7 acres of intensive ripping to address soil compaction and travel management
- 7 acres of hand seeding
- Installation of a new gate and fence for travel management
- Stabilization of two stream crossings

Table 7. 2005 Soil and Watershed Improvement Accomplishments.

Project	Acres	Stream Miles	Watershed
Zirkel Fires: National Forest System Road (NFSR) 43: Lost Dog Road Crossings	4		1405000101
California Park road slide repair	1		1405000106
Black Mtn NFSR 116 - Slide & Decommissioning	2		1405000106
Shoe and Stocking toilet removal	1		1405000122
West Sierra Madre Fords - TRTR	4	4	1405000301
Rainbow Family Gathering rehabilitation	7		1405000301
Roaring Fork Trail/Fletcher Ditch Crossing	1	1	1405000301
Pelton Creek Ford - TRTR	1	1	1018000202
McAnulty Creek Road Crossings	8	2.5	1018000202
Keystone Ditch Obliteration	1	1	1018000202
Billie Creek - Ditch Gully Rehab - Tree Planting	5		1018000205
Pop Spring - Soil restoration	20		1018000208
Lake Owen Fish Pier	1		1018001002
Barber Lake Reservoir - temporary water use	3		1018001006
Barber Lake Reservoir - bentonite	3		1018001006
Pole Mt. - NFSR 700/Middle Crow	1	1	1019000901
Pole Mt. - NFSR 705K/Middle Crow	1	1	1019000901
Pole Mt. - NFSR 705KA	1	1	1019000901
Pole Mt. - NFSR 700P - Fence	1		1019000901
Pole Mt. - NFSR 707AE - Mud Bog	1	1	1019000901
Pole Mt. - NFSR 700B/700BA - Fence	1	1	1019000901
Pole Mt. - NFSR 718 - Fence	1		1019001501
TOTAL	**69**	14.5	

Lost Dog Road Crossings: The 2002 Mount Zirkel complex fire on the Hahns Peak-Bears Ears Ranger District severely burned the headwaters of Lost Dog Creek. Increased water yields due to loss of canopy cover and hydrophobic soils resulted in excessive spring flooding that overwhelmed the culvert capacity of road-stream crossings in the watershed. Culverts were pulled in 2003 due to damage from over-topping, but the banks were not adequately reshaped to withstand high flows. Fire rehabilitation funding was received in 2006 to reshape and harden four road-stream crossings so that they would be stable during subsequent spring flows.

Shoe and Stocking Toilet Removal: An outhouse left at the site of an old campground was likely leaking E. coli and other bacteria and nutrients into Rock Creek on the Yampa Ranger District. Rock Creek is on the Colorado state monitoring and evaluation list for E. coli. Removal of the toilet was part of the recreation management plan, but is also one step in addressing different sources of E. coli in the watershed with a goal of removing Rock Creek from the state monitoring and evaluation list.

Black Mountain NFSR 116 Slide and Decommissioning: A natural slide effectively closed the last couple miles of NFSR 116 in 2005. The district assessed the slide damage and need for the road and decided that rather than attempting to reconstruct the road in an area that would likely fail again, they would instead decommission the road past the slide area. This project removed culverts in the closed section of road, and ensured adequate drainage and scarification to minimize surface erosion and promote revegetation.

California Park Road Slide Repair: Approximately 200 feet of NFSR 150 through California Park slid during spring runoff. The road is under county jurisdiction, and therefore the responsibility of the county to maintain. The Forest assisted the county with the repair and an attempt to stabilize the road through in-kind work. However, due to the soils in the area, future slides are still likely to occur. Relocation of this road segment was considered, but is not feasible due to the topography and soils in the area.

Water Rights Administration

During FY06 the Forest identified two water rights administration priorities: 1) Updating and correcting livestock water rights; and 2) Researching and verifying water rights associated with recreational residences. Principle inventory and database actions for 2006 on the Medicine Bow-Routt National Forests include:

- Field verified 41 NFS water rights for location and status.
- Entered or updated 256 water rights in the NFS Natural Resource Information System Database (NRIS) bringing the total number of water rights records on the MBR to 2,078.
- Reviewed 24 monthly resumes for potential new water rights being filed on NFS land by private entities.
- Send two letters to proponents (Rich Ditch expansion and S.A.B.L.E. Development LLC) of water rights applications on the Forest informing them of the need to meet NEPA and other environmental requirements in order to perfect their water right. Of the two letters written, one proponent (Rich Ditch expansion) subsequently dropped their project proposal.

- Facilitated Coal Creek large diversion project requirements. This resulted in proponent dropping the proposed project in FY06.
- Inventoried 16 recreation residences for water systems.
- Researched 129 water rights for re-issuance of recreation residence permits. In FY07, water rights program work will cross-walk existing USFS water rights with water systems associated with recreation residences to ensure:
    1. A water right exists for each water system, and
    2. The water right is held in the name of the USFS per Forest Service Manual (FSM) 2540.
- Secured a provisional water right to drill a well for the Sandstone Work Center water supply and the Lake Owen Campground. Water rights will be finalized when the wells are completed in FY07.
- Decommissioned and sealed six inactive wells and one spring box at NFS facilities. Newer wells are in place and we are working on transferring priority dates for water rights as feasible.
- Continued to work on securing water for Barber Lake.
- Worked on a number of NFS water rights that include domestic water supplies, pasture irrigation, and reservoirs that are in jeopardy of being abandoned and lost to future use.
- Mapped and inventoried 19 ditches and three reservoir water facilities with non-Forest Service water rights, completing the remaining ditch bill facilities on the Medicine Bow-Routt National Forests.

Inventory Stream and Riparian Area Conditions: The Forests completed approximately 40 miles of stream and riparian condition inventories during 2006 using a variety of inventory and monitoring methods. Primary survey techniques used include: Proper Functioning Condition (BLM, 1998), Stream Channel Reference Sites (Harrelson, et al, 1994), greenline and stubble height measurements from the R2 Rangeland Analysis and Management Training Guide (USDA Forest Service, 1996) and qualitative assessments for aquatic habitats are associated with fish or amphibian R2 sensitive and management indicator species population sampling (WGFD). Methods vary from quantitative to qualitative and some are repeatable while others are not. These inventories are listed in Appendix 3.

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, which is one of the Chief's four threats to the National Forests.

Monitoring Protocol/Data Collected

Acres treated with chemical, mechanical and/or manual treatments, including insect releases (biological control). Data come from the targets reported in the U.S. Forest Service budget and target tracking system (WorkPlan).

Results/Evaluation

Three acres of yellow toadflax were treated in the Flattops Wilderness Area on the Routt NF and one acre each of leafy spurge and musk thistle were treated in the Platte River Wilderness area on the Medicine Bow NF.

Table 8. Invasive weed treatment in 2006.

Forest	Forest Plan Acres Expected to be Treated per year	Acres Treated	Wilderness Acres Treated
Routt	385	1,279	3
Medicine Bow	1,200	881	2
Total	**1,585**	**2,160**	**5**

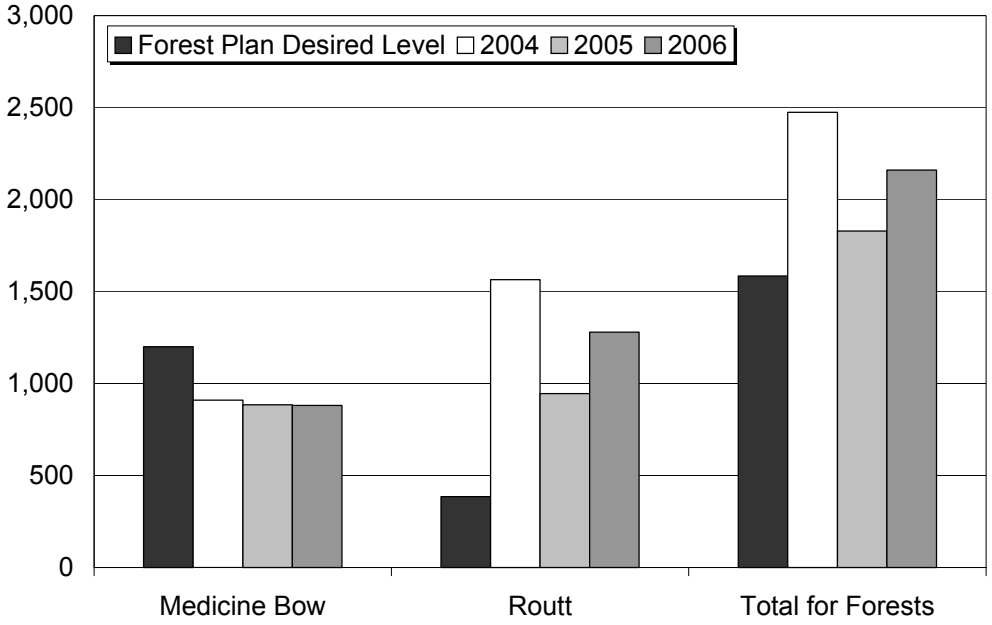


Figure 10. Acres of Invasive weed Treatment 2004-2006.

Additional earmarked funds were received in 2006 ($30,200) to control noxious weed populations in recently burned areas and to increase control efforts ($96,000) along most major roads and at key trailheads. The result is treatment on about 10-15% more acres than in most other years (except 2004).

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 items asks the question:

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

Monitoring Protocol/Data Collected

Aerial surveys were conducted over the Routt and Medicine Bow National Forests between 2003 and 2006 to provide a broad indication of tree mortality resulting from forest insects and disease. The results of these surveys are presented in the graphs below. The discussion is summarized from the 2004 annual report on insect and disease conditions in the Rocky Mountain Region (Harris, 2005). While the 2006 aerial survey data is available in time for this report, the annual summary of the data is not available until after this report is published. The analysis of the 2006 survey results will be summarized in subsequent monitoring reports. The data summary can be accessed on the following website: http://www.fs.fed.us/r2/fhm/

Results/Evaluation

Aerial surveys provide a rough estimate of acres affected and trees killed, and cannot quantify or exactly locate insect and disease impacts. The aerial surveys indicated increased losses from insect activity, especially from mountain pine beetles. The primary insects causing damage are the spruce beetle, *Dendroctonus rufipennis*, and the mountain pine beetle, *Dendroctonus ponderosae*.

Figure 11. Mountain Pine Beetle Pitch Tubes.

In fiscal year 2006, insect (bark beetle) epidemics continued to develop on both the Medicine Bow and the Routt National Forests. Aerial surveys completed in the summer of 2006 indicated that on the Routt National Forest approximately 222,800 acres had been attacked by mountain pine beetle (MPB) and 14,100 acres by the spruce beetle (SB), and on the Medicine Bow National Forest approximately 71,400 acres were attacked by MPB and 35,750 acres by SB. Total acreage figures are difficult to quantify due to the timing of aerial survey and bark beetle flights, also the aerial survey flights depend on fading crowns to detect tree mortality (infestation), which limits the survey to the previous year's mortality. The aerial surveys cannot detect the most recent insect and disease activity.

The Routt National Forest is experiencing a continually expanding mountain pine beetle epidemic which seems to expand by a factor of 2 to 3 times the previous years tree mortality and acreage impacted. The predominant species affected by mountain pine beetle is lodgepole pine. Lodgepole pine stands with the following attributes are considered to be at the highest risk: average diameter at breast height[6] (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 Routt NF could be considered moderate to high risk for MPB attack due to its age, dbh, and stand density. Weather conditions that adversely affect the vigor of trees (drought), and are beneficial to development of bark beetle populations (moderate winter temperature, and warm, dry summers) are also very significant contributors to the expansion of the epidemic. Areas of developing bark beetle epidemics are Green Ridge, Big Creek/Pearl vicinities on the Parks Ranger District, Elk Creek and Hahn's Peak vicinity north to the Wyoming state line on the Hahns Peak-Bears Ears Ranger District, and the Rock Creek area of the Yampa Ranger District.

The spruce bark beetle and sub-alpine fir decline epidemics seem to have peaked with the Routt NF seeing a decreasing rate of mortality. Spruce stands with average dbh greater than 16 inches, with 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 Routt NF 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. Areas of concern, with spruce beetle, still exist within the Forest, particularly the Steamboat Springs ski area and the area north of Elk River.

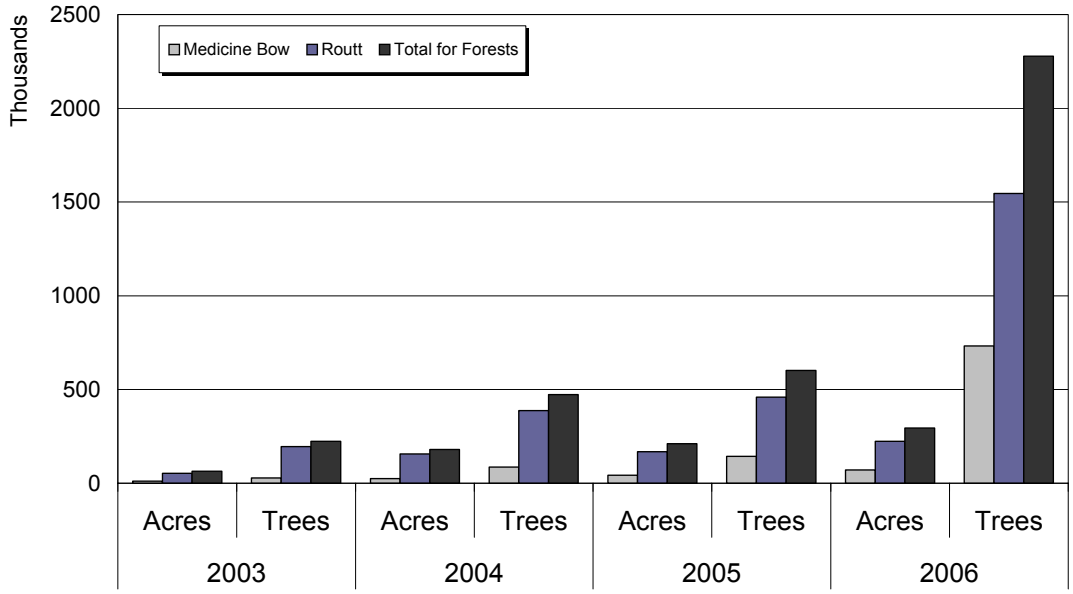


Figure 12. Annual acres and trees affected by Mountain Pine Beetle.

[6] Diameter at breast height is a traditional measurement of tree circumference.

The Medicine Bow National Forest has not experienced the degree of SB and MPB epidemics as compared with the Routt National Forest, however the Medicine Bow has experienced significant mortality due to these bark beetles. Areas of concern are the French Creek and the Bear Mountain vicinities on the Brush Creek/Hayden Ranger District, and the Devils Gate area on the Laramie Ranger District. These areas have the most extensive and concentrated attacks, but other areas of the Medicine Bow National Forest are experiencing bark beetle mortality and are probably at earlier stages of potential beetle epidemics. On the Medicine Bow NF, approximately 46% of the lodgepole pine stands can be considered at moderate to high risk of MPB attack, while approximately 70% of the spruce are at moderate to high risk of MPB attack.

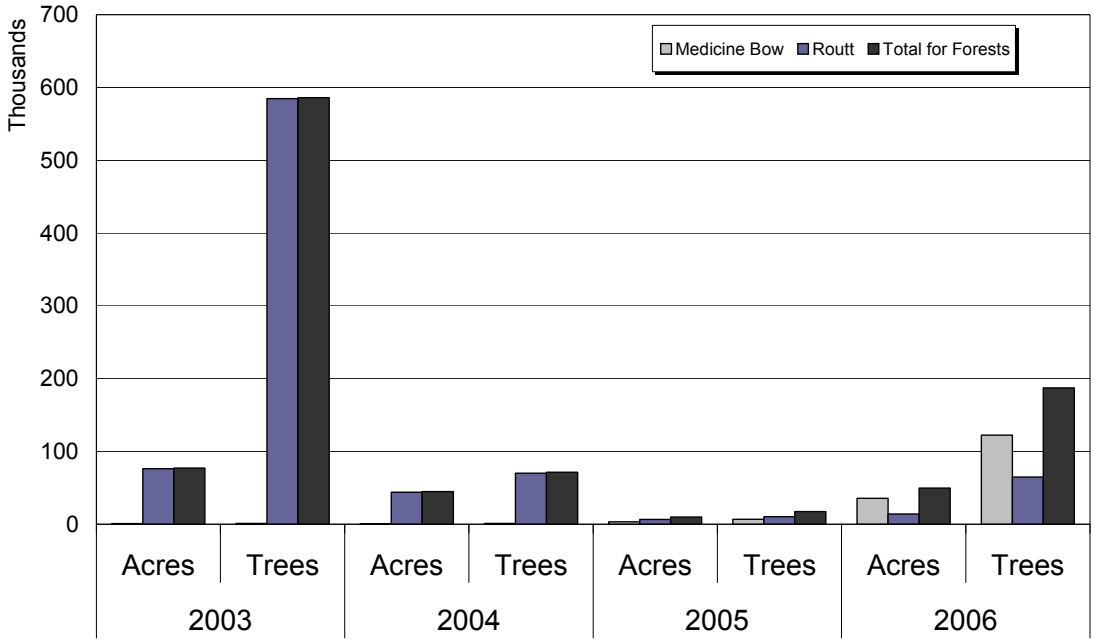


Figure 13. Annual acres and trees affected by Spruce Beetle Activity.

Actions Taken during FY06:

Routt NF

During fiscal year 2006, the Routt NF applied direct control of MPB and SB on 2,400 acres (Steamboat Ski Area, Seedhouse, Hinman and Hahns Peak Lake Campgrounds), sold four timber sales with vegetation treatments designed to suppress the beetle epidemic by removing brood trees or thinning stands to reduce susceptibility to bark beetle attacks. The Forest also completed planning and analysis (Sierra Madre and Rock Creek) for additional vegetation treatments utilizing Healthy Forests Restoration Act authority, and started analysis for the Prospector and Larson II project areas. All project areas were designed to salvage, or reduce the impacts of the building MPB and SB epidemics.

Medicine Bow NF

During fiscal year 2006, the Medicine Bow National Forest completed direct control of white pine blister rust in the Vedauwoo Campground and hazard tree assessments in all Laramie Ranger District campgrounds, and sold one timber sale with vegetation treatments designed to suppress the beetle epidemic by removing brood trees or

thinning stands to reduce susceptibility to bark beetle attacks. The Forest also completed project area analysis for bark beetle epidemics in the Devils Gate project area (Laramie RD) and started analysis in the Soldier Summit project area (Brush Creek-Hayden RD).

Conclusions

The Medicine Bow-Routt NFs are experiencing a continuing escalation of bark beetle epidemics which started in the late 1990s. Until 2005 the majority of the bark beetle mortality was primarily in Colorado (Routt National Forest), but in the last 2 years bark beetle populations have exploded on the Medicine Bow National Forest, particularly in the southern portions of the Medicine Bow and Sierra Madre mountain ranges. The mountain pine and spruce bark beetle epidemics will probably continue for at least another 2 to 3 years. When the bark beetle epidemic has completed its cycle, the potential for loss of many lodgepole and spurce stands over 8 inches diameter is substantial. The current epidemic is unprecedented within the last 150 years.

Recommendations

The rate of spread of mountain pine and spruce bark beetle that the Forests have experienced in the last few years will probably continue for the next 2-3 years. Any vegetative management in lodgepole pine and spruce should anticipate what the condition of the stands will be in 2-3 years. In the past, forest managers have implemented silvicultural strategies to suppress beetle epidemics when recommending silvicultural treatments, 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

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

This monitoring item asks the question:

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

Monitoring Protocol/Data Collected

The chartered old growth core team completed a draft map of *inventory and mapped old growth* in 2006. The draft was presented to the Forest Supervisor and District Rangers on December 6, 2006. This review generated some additional questions on implementation and the process for selection of areas included in the *inventoried and mapped old growth* map. A final edition of *inventoried and mapped old growth* is expected to be generated in FY07.

In 2005, stratified random points were generated across the Medicine Bow National Forest in order to begin ground-verification on a portion of the potential old growth

identified in the Geographic Information System (GIS) process. In 2006, the field data was used to supplement the potential old growth identified from stand exam data and a GIS model. Representatives from each district participated in selecting the old growth to be managed for retention by adhering to Biological Diversity Standard 1 and Guideline 1 in the Medicine Bow Plan.

Results/Evaluation

In 2006, field data was collected at the remainder of the field points. Mapped field data, stand exam data as modeled in GIS and other available information was then used to identify the old growth as "inventoried and mapped."

Recommendations

- Complete the documentation of the process;
- Review the *inventoried and mapped old growth* map at 1 year intervals to assess changes;
- Continue using the field form as a method to assess changes in the mapped and inventoried old growth; for instance, where insects, diseases or fire may have changed the quality or quantity of old growth characteristics.
- Continue to conduct annual ground-verification plot surveys to gradually expand our confidence in a primarily GIS-based mapping effort and to identify and rectify incorrectly identified polygons in GIS.

Threatened, Endangered and Sensitive Species 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:

> ***Are habitats for threatened, endangered and Forest Service Region 2 Sensitive species being maintained or enhanced?***
>
> ***To what extent have habitat improvement needs been identified and implemented using structural and non-structural habitat improvement treatments?***

Plants

Monitoring Protocol/Data Collected

Annually document the number of projects identified and/or implemented that improved habitat for Threatened, Endangered, and Sensitive (TES) plant species.

Results/Evaluation

Road Closures: Road closures were implemented in the McAnulty and Cottonwood Rim areas in the Sierra Madre Mountain Range. These closures included stream crossings and closing dispersed camping sites adjacent to Battle Creek. These closures

should reduce effects to sensitive species habitat and/or local concern species habitat provided by wetlands and riparian areas.

Conclusions

Road closures when implemented will improve habitat for Sensitive plant species.

Recommendations

- Continue to monitor this item yearly over the life of the plan.
- No changes to the Medicine Bow Plan were identified as part of monitoring this question for FY06.

Aquatic Species

Monitoring Protocol/Data Collected

Report on habitat improvement accomplished during the fiscal year.

Results/Evaluation

Medicine Bow NF

Big Creek Fords (2005):This project was designed to rebuild and rehabilitate fords (road crossings) located in the North Fork and Middle Fork, Big Creek. Both streams benefited considerably from the project because of the reduction in massive amounts of sediment that were entering the streams from the existing, degraded fords. Additionally, two user-created, dispersed-campsite roads and one user-created stream crossing were closed because they were causing resource damage. This project was completed in 2005 using TRTR funds and by leveraging additional funds from hydrology and fisheries; this project accomplishment was not reported in the 2005 monitoring report. Follow-up monitoring one year after rehabilitation indicated that the road closures and re-vegetation treatments were effective. As a result of this project, ford safety and stability and ford hardening were much improved.

West Sierra Madre Fords: This project was designed to reconstruct and rehabilitate four stream fords (road crossings). Project treatments included rebuilding both approaches to the crossings.

The treated fords were located across the following streams: Battle Creek at NFSR 811; Cottonwood Creek on NFSR 851; Roaring Fork, Little Snake River; and the West Branch, North Fork Little Snake River on NFSR 851. These four stream crossings were contributing sediment to their respective streams. In addition, the crossings were not meeting Forest safety standards. All four crossings were rebuilt during the 2006 field season. Treatments included: the hardening of the crossing aprons, reseeding of disturbed areas, and adding or restoring road-drainage dips.

Pelton Creek Ford: This project was designed to rebuild and rehabilitate one road/stream (ford) crossing located in the Snowy Range. This ford is located at the junction of NFSR 898C and 501 where it crosses the North Fork, Pelton Creek. The ford crossing had deteriorated to the point where it appeared to be an extreme safety hazard. In addition, the ford was contributing substantial amounts of sediment to the stream. The ford, including the aprons, were completely rebuilt and recontoured.

Disturbed areas were reseeded with native grass seed. Finally, a user-created stream crossing was closed using willow plantings.

North Fork Little Snake Channel Modification: In FY06, the Forest cooperated with the Colorado Division of Wildlife (CDOW) and the WGFD to organize and plan a project to modify bedrock and boulders in the lower North Fork. This project is designed to prevent invasive species (non-native fish) from moving upstream of a natural falls into restored Colorado River cutthroat trout habitat. Implementing this project had been discussed in the past after it was discovered that non-native rainbow trout were able to breach the falls and move into restored cutthroat habitat. Modifying the falls should help to prevent hybridization between cutthroat trout and rainbow trout in upstream habitats. Also, the modification should help prevent the introduction and spread of whirling disease upstream of the falls.

Routt NF

Elkhead Creek Brook Trout Removal: In FY06, with cooperation from the Colorado Division of Wildlife, brook trout were removed from the Elkhead Creek watershed as part of an ongoing eradication project; this project was started in 1997. The remaining brook trout population in the Elkhead Creek drainage is located in Circle Creek. Brook trout were removed from about 2 miles of stream in Circle Creek in FY06 and from one of the headwater ponds. Elkhead Creek has been identified as a MBR priority watershed for Colorado River cutthroat trout restoration.

West Prong Creek Brook Trout Removal: In FY06, with cooperation from the Colorado Division of Wildlife, brook trout were removed from 1.5 miles of West Prong Creek, a tributary to South Fork, Slater Creek. The project objective is to remove brook trout to prevent the displacement of Colorado River cutthroat trout.

Vaughan Lake: Vaughan Lake was visited six times during the winter in FY06 and all safety-mitigation measures (e.g. marking lake ice) were in place and the lake aerator (fish habitat) was functioning properly.

Conclusion

Recent MIS analysis for Colorado River cutthroat summarized that populations of cutthroat trout are stable across the Forest but we should expect populations to decline where brook trout are present. Therefore, we conclude that habitats for Colorado River cutthroat trout are being maintained across the Forest. In addition, we are enhancing cutthroat trout habitats through removing brook trout where the fish populations coexist.

Recommendations

- Continue to survey stream crossings for fish passage (aquatic organism) and sediment loading problems.
- Continue whirling disease testing on the Roaring Fork Little Snake River.
- Continue coordinating activities and programs with Wyoming Game and Fish Department and with the Colorado Division of Wildlife.

Terrestrial Wildlife

Monitoring Protocol/Data Collected

The Forest tracks the number of acres surveyed for terrestrial TES species, acres of terrestrial habitat improved, and number of wildlife structures added or enhanced (see table below).

Surveys may range from general TES project clearances, to species-specific detection methods such as songbird point counts, goshawk call-playback, monitoring of activity of known raptor nests, DNA-analysis of hair snares, baited-camera stations, or snow-track surveys. Some surveys were conducted as part of monitoring for Management Indicator Species (MIS). Please see individual species reports for specific protocols.

Results/Evaluation

Terrestrial Wildlife Habitat Enhanced: In 2006, 2,720 acres of terrestrial wildlife habitat were enhanced on the Medicine Bow-Routt National Forests. Of these, 2,200 acres were accomplished on the Medicine Bow NF and 520 acres on the Routt NF. Brush Creek/Hayden Ranger District (BCH) accomplished 2,200 acres through a road decommissioning project in the Upper North Platte area near Sixmile and the Cottonwood Rim area on the southwest side of the Sierra Madres. This project restored wildlife habitat in the roadbed and reduced motorized vehicle disturbance. The project was a cooperative effort between the BCH wildlife and engineering programs and the Rocky Mountain Elk Foundation. Wildlife habitat most benefiting in these areas includes summer habitat for sage-grouse, summer habitat for Columbian sharp-tailed grouse, nesting and summer habitat for Brewer's and sage sparrows, nesting areas for goshawks and flammulated owls, and winter range for mule deer, moose, bighorn sheep, and elk.

Table 9. Terrestrial wildlife habitat improvement accomplished in FY06.

Ranger District	Project	Acres
Medicine Bow NF		
Brush Creek/Hayden	Road Decommissioning	2200
Routt NF		
Hahns Peak-Bears Ears	Revegetation Through Drilling Native Seed	200
Parks	Road Closure Signage	320
Total		**2,720**

The Parks Ranger District accomplished 320 acres of road closure signage for winter range protection also reducing disturbance to wildlife from roads and reducing erosion due to vehicle travel on unsuitable roads in the Pinkham Mountain Geographic Area, Camp Creek drainage in the northeast area of the North Park Ranger District. The revegetation will reduce erosion while providing habitat for many of the species mentioned above.

The Hahns Peak-Bears Ears Ranger District completed a Columbian sharp-tailed grouse habitat improvement project through drilling 200 acres of native seed to establish seed test plots and revegetate disturbed areas in the California Park Area. The Colorado Division of Wildlife was a partner in this project.

Recommendations

Increase funding available for habitat improvement projects and continue to partner with interested groups in order to complete such projects. Possibly, reduce the number of projected acres of terrestrial habitat enhanced each year, as that may be an over-estimate of what can reasonably be accomplished.

Threatened, Endangered, Sensitive Species and 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 management indicator species?***
>
> ***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.

Results/Evaluation

Because there are no Threatened or Endangered plant species documented on the Medicine Bow or Routt NFs, the following information is portrayed only for Sensitive plant species.

Biological Evaluations were completed for 28 projects on the Medicine Bow and Routt National Forests in FY06 (see table below).

Table 10. Biological Evaluations for Sensitive Plant Species Completed.

Forest	Biological Evaluations	% No Effect	% Beneficial Effect	% May Adversely Impact Individuals (MAII)	% Likely to Adversely Impact Individuals (LAII)
Medicine Bow	12	25	0	75	0
Routt	16	25	0	75	0

- No Beneficial determinations were made for sensitive plant species in FY06. This is largely due to the fact that there were not any projects designed

specifically to benefit sensitive plant species. However, during rapid assessments in FY 06, opportunities were identified on the Routt NF that could benefit habitat for select sensitive plant species in the future. Opportunities to benefit sensitive plant species and their habitats across the MBRTB planning unit have also been identified in the MBRTB Botany 5 year plan (USDA Forest Service 2004).

- No Likely to Adversely Impact Individuals (LAII) determinations were made for sensitive plant species in FY06. This suggests that habitats for sensitive plant species are generally being maintained across the planning unit. This can be attributed to: 1) Botany participation upfront in project design. 2) Proactive project level surveys adequate to determine presence or absence of sensitive plant species. 3) Provision of effective project mitigation to minimize or avoid negative impacts to sensitive plant species.
- Excluding narrowleaf grapefern (*Botrychium lineare)*, May Adversely Impact Individuals (MAII) determinations were made for sensitive plant species in 39% of the BEs completed for projects in FY06. These include projects that: 1) Inventory methods were not feasible or effective for providing information on presence/absence or number and location of individuals, so we assumed the species was present, and analyzed the expected effects. 2) Did not require surveys because the proposed action posed a non existent risk to sensitive plant species. 3) Potential adverse effects to sensitive plant species were avoided or minimized through project design and/or mitigation.
- MAII determinations for narrowleaf grapefern were made for 75% of the BEs completed for projects on the Medicine Bow and Routt NFs because presence or absence can generally not be determined through project level surveys for this species.
- It is sometimes challenging to manage plant species and their habitats consistently across the CO (Routt) and WY (Medicine Bow) state lines with respect to the varying Forest and Grassland Plan standards and guidelines. This is largely due to the following factors: 1) the R2 Sensitive Species List was updated after the Routt Plan was signed and before the Medicine Bow Revised Plan was completed and 2) Species of local concern were included on the MB but were not delineated for the Routt at that time.

Conclusions

- FY06 data demonstrate that sensitive plant species for the Medicine Bow and Routt National Forests are being maintained (no LAII determinations) but are not necessarily being enhanced (no beneficial determinations).
- Consistency is still needed in how sensitive plant species and plant species of local concern are managed across the CO (Routt) and WY (MB and TB) state lines with respect to the varying Forest and Grassland Plan standards and guidelines.

Actions taken on conclusions from 2005 reports:

Although the plant lists for Sensitive and Local Concern species are different for the two Forests, and the S&Gs are not identical, sensitive plant species surveys are being conducted in the same way on both forests.

Recommendations

Continue to apply plant survey techniques and management considerations in a consistent manner across both Forests.

Aquatic Species

Monitoring Protocol/Data Collected

Methods used to monitor trout were primarily three-pass depletion estimates using standard electrofishing protocol. This protocol is used by the Wyoming Game and Fish Department (Medicine Bow) and by Colorado Division of Wildlife (Routt). Existing WGFD stations are re-sampled where possible and new stations are developed if needed to characterize populations in new areas. The survey protocol outlined in the Boreal Toad Conservation Plan and Agreement (Leoffler 2001) is intended for use to monitor all amphibians. Techniques to observe the Capshell snail are in development. All data is stored in NRIS Water and Fauna.

Results/Evaluation

Fish

Appendix 3 gives the geographic locations and stream miles monitored for sensitive and aquatic fish species in FY06.

Colorado River cutthroat trout: Populations in the North Fork, Little Snake River drainage and tributaries (below the Stage II Road) are showing some evidence of recruitment via downstream movement of headwater individuals. The population in the West Branch, North Fork Little Snake River is showing downstream movement and reproduction and appears to be recovering well after several chemical treatments in past years to eradicate non-native trout.

The Roaring Fork, Little Snake River, above 8,400 feet elevation, appears to be free of whirling disease based on fish samples collected in 2006 and analyzed by the Wyoming Game and Fish Department. The results of the analyses were negative for fish pathogens. Additional sampling and analyses are scheduled to be conducted in FY07-08.

Table 11. Region 2 sensitive aquatic species located on the Medicine Bow-Routt NFs.

Species	Scientific Name	Forest
Fishes		
Colorado River Cutthroat Trout	*Oncorhynchus clarki pleuriticus*	Medicine Bow-Routt
Mountain Sucker	*Castostomus platyrhynchus*	Medicine Bow - Routt
HornyHead Chub[7]	*Nocomis biguttatus*	Medicine Bow

[7] This species has not yet been found on Forest, however it was found in the North Laramie River on private land adjacent to the Medicine Bow NF and it is assumed to occur on the Forest.

Species	Scientific Name	Forest
Amphibians		
Boreal Toad	*Bufo boreas boreas*	Medicine Bow - Routt
Northern Leopard Frog	*Rana pipiens*	Medicine Bow - Routt
Wood Frog	*Rana sylvatica*	Medicine Bow - Routt
Insects		
Hudsonian Emerald	*Somatochlora hudsonica*	Medicine Bow - Routt
Mollusk		
Rocky Mountain Capshell Snail	*Acroloxus coloradensis*	Routt

Amphibians

Habitat and known breeding areas for sensitive amphibians were surveyed in FY06 (Table 12). The results are summarized by species below.

Table 12. FY06 Sensitive amphibian surveys.

Mountain Range	Ranger District	Acres Surveyed	Method
Laramie Peak Unit	Douglas	9	Visual, sinuous traverse
Sierra Madre	BCH	374	Visual, sinuous traverse
Snowy Range	BCH	130	Visual, sinuous traverse
Elkhead	HPBE	110	Visual
Park	Parks	127	Visual
Dunckley Flat Tops	Yampa	303	Visual
Total		**1,053 acres**	

Table 13. FY06 Boreal Toad breeding sites monitored.

Ranger District	Number of Sites	Acres
HPBE	3	70
Yampa	1	30
BCH	2	20
Total		**120**

Boreal Toads

Medicine Bow NF: Amphibian surveys conducted in FY06 yielded mixed results about boreal toads. No boreal toads were observed on the Medicine Bow during the 2006 field season. Unfortunately, surveys of known breeding ponds located near Ryan Park and Sourdough Creek indicated that both sites were devoid of boreal toads in FY06. Fortunately, tissue samples submitted for testing from Laramie Peak and the Sierra Madre to detect chytrid fungus were found negative for this pathogen.

Routt NF: Six active boreal toad breeding sites have been identified in the Routt NF, of which four were monitored in FY06 by the Forest. One site is not monitored, as it is on private land within the boundaries of the Routt National Forest. The Colorado

Division of Wildlife (CDOW) monitors the other site. Both of these sites are on the Parks Ranger District. The monitored breeding sites were observed a minimum of three times, more often depending upon the site. Two inactive yet historical breeding sites are also monitored, both of which are on the Hahns Peak-Bears Ears Ranger District (HPBE). Please refer to the table above for a summary of the sites and acres surveyed. Highlights from the south zone breeding-site surveys conducted on the Routt NF in FY06 include:

- Egg masses were observed at two of the four monitored sites. Egg masses were not observed at one breeding site because the water is very turbid and the actual breeding sites moves from year to year based on beaver activity.
- Tadpoles and toadlets were observed at three of the four sites monitored on the Routt NF.
- No breeding was observed at one site.

Chytrid fungus has been positively identified at four out of the six known boreal-toad breeding sites on the Routt National Forest. Fortunately, breeding activity continues to be observed at our positive chytrid sites; however, at one breeding site that tested positive for chytrid fungus, breeding was not observed in FY06. Breeding may not occur annually at every breeding site because the relatively low population numbers observed at this site.

Figure 14. Boreal Toad.

Seventy-four tissue samples from the Routt NF were submitted for pathogen analysis in FY06. Samples were collected from breeding sites and from other sites during amphibian surveys. Of the 74 samples submitted for testing, 20 samples were found to be positive for the fungus. No new positive sites were identified.

Boreal Toad Study: As mentioned in the FY05 Monitoring Report, a boreal toad distribution study was conducted in cooperation with the Rocky Mountain Research Station in FY04 - FY05. A manuscript titled "Distribution of Boreal Toads (*Bufo boreas boreas*) and *Batrachochytrium dendrobatidis* in South-Central Wyoming and North-Central Colorado" has been submitted to *Herpetelogical Review* for publication.

Wood frogs: Populations surveyed in the Snowy Range continue to appear abundant and well distributed within their limited range based on surveys conducted in 2006. Also, two wood frogs were observed and reported by district personnel from the Parks Ranger District. Recent surveys conducted by CDOW personnel indicate that wood frog populations are increasing in the Parks Ranger District (Ken Kehmeier, personal communication, Colorado Division of Wildlife, 4/25/05).

Northern Leopard Frog: Two new northern leopard frog breeding sites were observed on the Routt NF in 2006. These sites, on the Yampa Ranger District, were not previously known to support leopard frogs. Additionally, surveys conducted in the Laramie Peak area revealed what appeared to be abundant, well distributed populations of northern leopard frogs. Populations of northern leopard frogs on Pole Mountain were also found during previous year's survey efforts. No known populations of northern leopard frogs are known to exist on NFS lands in the Snowy Range portion of the Medicine Bow Mountains or in the Sierra Madre. However, northern leopard frogs are likely to exist at lower elevation on lands in other jurisdictions.

Conclusions

Five hundred and forty acres were surveyed on the Routt NF to monitor amphibian populations and habitats. During these surveys, all of the resident, R2-sensitive amphibian species were observed. In addition, the crew observed an abundance of boreal chorus frogs and tiger salamanders. Boreal Toads were not observed on the Medicine Bow NF in FY06. However, numerous sightings of amphibians other than boreal toads indicate that amphibian habitats, in general, are being maintained across the unit.

Insects

Hudsonian Emerald: On the Routt NF, the fish crew conducted surveys for the Hudsonian Emerald coincident with amphibian surveys. None were observed. No surveys for this insect occurred on the Medicine Bow NF in FY06.

Mollusks

Rocky Mountain Capshell Snail: On the Routt NF, no surveys were conducted for this species in FY06. However, the Forest is working cooperatively with CDOW to develop and implement monitoring techniques pertinent to this species. This species is not known to occur on the Medicine Bow NF (Ken Kehmeier, personal communication, Colorado Division of Wildlife, 5/28/04).

Recommendations

Continue to monitor all R2 sensitive aquatic species existing in the Medicine Bow-Routt National Forests.

Boreal Toads: Continue to monitor breeding sites in the Medicine Bow/Routt National Forest. Continue to conduct habitat surveys and monitor for chytrid fungus in FY07.

Colorado River cutthroat trout:

1. Finalize Routt National Forest Colorado River Cutthroat Management Plan.
2. Monitor the previous brook trout removal efforts in the Elkhead Creek watershed and continue with brook trout removal in West Prong Creek.
3. Start preparing for chemical treatment in Slater Creek watershed in cooperation with CDOW for cutthroat trout restoration.
4. Monitor effectiveness of outlet spawning channel at Vaughan Lake in cooperation with CDOW.
5. Continue to monitor Colorado River cutthroat trout populations in the North Fork, Little Snake River basin.

6. Continue to monitor Colorado River cutthroat trout populations in the West Branch, North Fork Little Snake River.

Hudsonian Emerald: Submit a project proposal for NFIM funding in FY08 to contract dragonfly surveys across the Forest.

Aquatic Threatened and Endangered Species:

Results/Evaluation:

There are no threatened or endangered aquatic or riparian-dependent species or habitats documented on the Routt National Forest. However, stream flows from the Forest ultimately contribute to conditions in the Colorado River and Platte River mainstems. Species listed in the table below are native to the Colorado River and Platte River mainstem ecosystems, where their life cycles depend on natural flow regimes that include flood flows and substantial sediment transport. Their biology is fully described in: USFWS 1999 (*Final Programmatic Biological Opinion for Bureau of Reclamation's Operations and Depletions, Other Depletions and Funding and Implementation of Recovery Program Actions in the Upper Colorado River above the Gunnison River*, December 21, 1999), USFWS 2002 (*Revised Intra-Service Section 7 Consultation for Federal Agency Actions Resulting in Minor Water Depletions to the Platte River System*, March 4, 2002) and USFWS 2005 (*Final Programmatic Biological Opinion on the Management Plan for Endangered Fishes in the Yampa River Basin*, January 10, 2005).

Table 14. Colorado River and Platte River listed aquatic species.

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

Table 15. FY06 water depletions consultations.

Ranger District	Depletion Amount (ac-ft/yr)
HPBE	37
Parks	731
Yampa	4,451
BCH	0.1
Total	**5,219**

The U.S. Fish and Wildlife Service (USFWS) has determined that Forest projects that measurably alter streamflow timing or volume due to cumulative water depletions adversely affect habitats and populations of federally-listed species in the Colorado River, Yampa River and Platte River mainstem ecosystems. In 2006, the MBR made a concerted effort to process 14 Ditch Bill Easements pertinent to 11 facilities in the Colorado and Yampa River basins. In addition, one spring water depletion, located on the Medicine Bow NF, underwent USFWS consultation. Table 15 summarizes the amount of water depleted in the Forest, by Ranger District. Ditch Bill easements, the majority of the depletion amount, are in the process of consultation in the Platte River basin.

In conclusion, there are no documented Threatened or Endangered aquatic species existing within the Medicine Bow-Routt NFs.

Recommendations:

Continue to consult with the USFWS on all water depletions if they have not yet undergone consultation.

Terrestrial Wildlife

Monitoring Protocol/Data Collected

The Terrestrial Wildlife Program continues to focus on completing inventories to establish baseline distribution information and to begin to assess relative trends. Habitat improvement has primarily involved prescribed burning, road decommissioning, and noxious weed treatments to restore ecosystem structure and composition and reduce fragmentation for both Forest and Grassland TES species.

Partnerships are an important part of achieving these accomplishments. To emphasize the importance of TES species, both Plans have goals to maintain or increase TES habitats and to protect biological diversity.

The Forest tracks the number of acres surveyed for terrestrial TES species, acres of terrestrial habitat improved, and number of wildlife structures added or enhanced. Surveys may range from general TES project clearances, to species-specific detection methods such as songbird point counts, goshawk call-playback, monitoring of activity of known raptor nests, DNA-analysis of hair snares, monitoring snowshoe hare pellet abundance, baited-camera stations, or snow-track surveys. Some surveys were conducted as part of monitoring for Management Indicator Species (MIS). Individual species reports are located in the Supervisor's Office[8] for specific protocols.

Results/Evaluation

TES Surveys: During fiscal year 2006, terrestrial wildlife biologists surveyed 86,430 acres for TES species and completed several projects to enhance TES habitat. In addition to conducting surveys of project areas for TES species (termed "project clearances"), the bald eagle and Preble's meadow jumping mouse were the focus of larger-scale surveys for specific Endangered Species Act (ESA)-listed species in 2006. One known bald eagle nest on the Brush Creek/Hayden District was active in summer 2006 with at least one juvenile. Adult bald eagles were observed flying near another possible nesting area on the District but no nest was discovered. Approximately 100 acres were surveyed between the known nest and new nest search.

Two hundred acres were surveyed for the Preble's meadow jumping mouse, with an additional 100 acres surveyed for other TES small mammals, i.e. the pygmy shrew. Work on the Preble's meadow jumping mouse is planned to continue as a short-term administrative study for about 7 years.

Some species are designated as Management Indicator Species as well as Sensitive Species. Those species are monitored at a minimum using the MIS protocols, and sometimes are also augmented with a combination of wildlife-funded inventories and project clearances. For instance, goshawk inventories totaled 19,585 acres on the MBR, of which 2,325 acres were for project clearances and 14,600 were for conducting

[8] Filed electronically at: k:/lmp/1920_planning/monitor/mis.

the National Protocol developed for bio-regional monitoring of this species. Additionally, biologist's conducted general TES clearance surveys for approximately 14,322 acres of proposed projects. The biologists assisted in project designs to maintain, avoid, or enhance TES habitat wherever possible.

DNA analysis of marten hair, collected in hair snares that were located in stratified random positions across the Medicine Bow NF were collected to continue with an ongoing effort to monitor marten numbers across the Forest.

Snowshoe hares (prey for the listed Canada lynx) were monitored on approximately 10,000 acres across the Medicine Bow-Routt National Forests.

Table 16. Acres of surveys for Threatened, Endangered, or Sensitive species on the Medicine Bow-Routt National Forests in fiscal year 2006.

Species	Project Clearances	Wildlife Surveys	MIS Surveys	National Protocol Surveys	Total
Bald Eagle (T)	0	100	0	0	**100**
Boreal Owl	125	2,500	0	0	**2,625**
Columbian Sharp-tailed grouse	0	300	0	0	**300**
Flammulated Owls	50	0	0	0	**50**
Goshawk	2,325	1,010	1,650	14,600	**19,585**
Purple Martin	0	50	0	0	**50**
Raptors	0	720	0	0	**720**
Sage Grouse	0	60	0	0	**60**
Songbirds	0	0	32,178	0	**32,178**
Wood-peckers	250	0	See songbirds	0	**250**
Bats	0	0	0	0	See Bat table
Pine Marten	0	1,500	4,390	0	**5,890**
Preble's Meadow Jumping Mouse	0	200	0	0	**200**
Pygmy Shrew	0	0	100	0	**100**
Snowshoe Hare	0	3000	7000	0	**10,000**
General TES surveys	14,322	0	0	0	**14,322**
Total	**17,072**	**9,440**	**45,318**	**14,600**	**86,430**

Several monitoring accomplishments were completed through the development of partnerships:

- TES songbirds were monitored across both the Medicine Bow and Routt NFs during our MIS songbird surveys in partnership with the Wyoming Natural Diversity Database (WYNDD) and Rocky Mountain Bird Observatory (RMBO) on 20,088 acres using point-transect methodology developed by RMBO.
- The HPBE district completed monitoring of 300 boreal owl nest boxes, on the Routt portion of the MBR, with the assistance of the Yampa Valley Birding Club.

- The Parks district completed vegetation monitoring (species response to a prescribed burn) on the Camp Creek wildlife enhancement/fuels reduction project through the Owl Mountain Partnership.

Other projects completed included the:

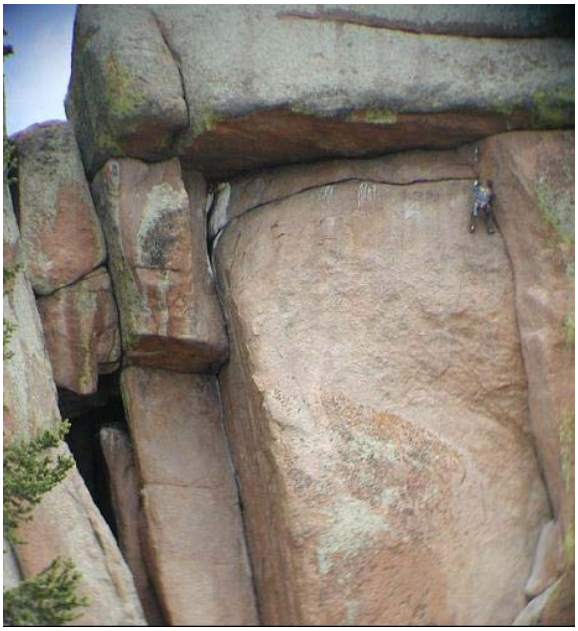
- *Raptors, Ropes and Recreation* project. This monitoring project was completed by the Laramie District in an effort to determine the degree to which nesting raptors are affected by recreational rock climbing, camping and trail use in the Vedauwoo recreation area.

Figure 15. Northern Goshawk.

Table 17. Laramie Peak 2006 Bat Survey Results

Species	No. of calls detected / No. trapped
Myotis lucifugus	36 / 5
Eptesicus fuscus	17 / 6
Myotis evotis	15 / 1
Myotis volans	7 / 0
Myotis thysanodes	2 / 0
Myotis ciliolabrum	9 / 1
Lasiurus borealis	0 / 0
Lasiurus cinereus	9 / 4
Lasioncyteris noctivagans	61 / 4
Myotis septentrionalis	2 / 0
Total	**158 / 21**

Bats: In 2006 we performed active and passive surveys for all species of bats, to detect presence or absence on the Laramie Peak Unit. We have three sensitive species of bats in Region 2, all three of which have potential to occur on the Douglas Ranger District. One sensitive bat species has been detected, *Myotis thysanodes*. Three bat species were detected for the first time in 2006, Lasiurus cinereus, Lasioncyteris noctivagans, and Myotis septentrionalis.



Recommendations

- Complete the prioritization of terrestrial Sensitive Species for landscape level inventories.
- Submit a project proposal for NFIM funding for FY08 to inventory a priority list of terrestrial Sensitive Species across the Medicine Bow and Routt National Forests.

Figure 16. Climbers to the right, nesters (white stain) to the left!

Progress on FY05 Recommendations:

Develop an above-project level approach to inventory for terrestrial Sensitive Species. Continue to monitor sensitive terrestrial species.

In 2006, the Wildlife Cadre began a process to prioritize the terrestrial Sensitive Species for the Medicine Bow-Routt National Forest. Once this is complete, NFIM proposals will be submitted for monitoring the high-priority species.

Report on MIS, Sensitive Species (SS) and Species of Local Concern (SLC) for both the Routt NF and the Medicine Bow NF.

In 2006, the MBR Wildlife Staff continued to report on MIS, SS, and SLC with regard to proposed projects, as well as Forest-wide monitoring results for MIS.

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

This item is answered with an annual update of the progress on wildland fire use plans.

Results/Evaluation

The Northwest Colorado Fire Management Plan, an interagency plan that has included the Routt portion of the Medicine Bow – Routt National Forests, was completed in 2002. Yearly updates to this plan have been completed allowing for adherence to changing national guidance and direction. The Fire Management Plan (FMP) for the Medicine Bow portion of the forests was updated in 2005. However, in the previous Medicine Bow Forest Plan Wildland Fire Use was not incorporated. The 2006 Forest Plan Revision of the Medicine Bow now provides for fire use if the application of this strategy is determined to be feasible.

New changes in the Medicine Bow-Routt Fire organization have resulted in the desire to combine the Medicine Bow and Routt Fire Management Plans. Therefore, a new FMP for the Medicine Bow-Routt National Forests and Thunder Basin National Grassland is being developed. This FMP will include fire use areas on both the Medicine Bow and Routt National Forests. There are nine (9) new areas proposed for fire use on the Medicine Bow Forest. These areas are currently being examined in order to determine their suitability for fire use. The examination consists of modeling fire spread in these areas based on fire history, fuels data, and weather history. Since some of the proposed areas are relatively small and are bordered by lands with suitable timber or other resource concerns it is possible that fire use may not be an appropriate fire management strategy in all areas. Once the proposed fire use areas are fully studied a determination will be made on whether to include or discard a respective area for a fire use strategy.

We expect to have a Fire Management Plan that includes the full spectrum of appropriate fire management strategies for the Medicine Bow-Routt National Forests and Thunder Basin National Grassland for the 2008 fire season.

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

Planning and accomplishment activities are compiled and reported in the National Fire Plan Operations and Reporting System (NFPORS) database. Annual accomplishment reports listing acres treated by Wildland Urban Interface (WUI) vs. non-WUI, and mechanical vs. prescribed fire, can be generated by this database. This database was replaced in 2006 with the new FACTS database system, which will be used for FY07 reporting.

Implementation of mechanical treatments is many times the per acre cost of prescribed burning treatments. As a result, mechanical treatments are often left on the shelf and replaced by prescribed burning, which yields the Forest many more acres for the dollars spent. This may have the potential to influence the number of WUI mechanical acres treated annually. Washington Office and Regional Office direction outlines an optimum treatment ratio of 60% WUI to 40% non-WUI. For FY-06, the ratio was approximately 45 % WUI and 55 % non-WUI on the MBR NF.

Forest and District Highlights of the FY06 Fuels Program

The Brush Creek/Hayden Ranger District accomplished the largest acreage target for the forest. The bulk of the 2,305 acres were completed in the Blackhall prescribed fire project.

BCH has for many years led the Forest in landscape scale prescribed burning projects and as such contributes heavily to the Forest target accomplishments.

Figure 17. Pennock Mountain Burn on Brush Creek/Hayden in 2004.

Results/Evaluation

The Douglas Ranger District, although not a large contributor to the fuels program, finished the final stages of the Wildcat Prescribed Burn on the Laramie Peak Unit. This project, which is largely under-burning in ponderosa pine, was not only conducted in the WUI, but also provided for restoration of this fire adapted ecosystem and additional benefits of improved condition class was realized.

The Hahns Peak-Bears Ears continued implementation of the Big Creek Ridge Prescribed Fire Partnership Project. This Project, partially within the WUI, utilized the Wyden Amendment to burn on both federal and private lands for a total of approximately 1,200 acres of burning. Aerial and hand ignition was used in mountain shrub and aspen cover types.

The Laramie Ranger District continued implementation of administrative sites in need of fuel reduction. Force account crews and primary fire personnel implemented thinning and piling projects across the district.

Table 18. Fuels treatments on the Medicine Bow–Routt NFs, 2004-2006.

Treatment Type	2004	2005	2006
Mechanical Treatments			
WUI	4,818	346	1429
Non-WUI	115	409	592
Mechanical Treatment Total	4,933	755	2021
Prescribed Fire			
WUI	1,097	3,586	1563
Non-WUI	2,310	1,780	3070
Prescribed Fire Total	3,407	5,366	4633
Treatment Total	**8,340**	**6,121**	**6654**

The Parks Ranger District was successful in awarding the Gould Stewardship contract. This fuels reduction project is directly adjacent to the community of Gould, CO. One of the longer lasting fuels projects, this award will see the Gould Fuels Reduction project through its final steps. Camp Creek prescribed fire project also experienced successful implementation in the spring burn window.

The Yampa Ranger District was able to secure funding for the implementation of high cost mechanical fuels reduction in the WUI. The shaded fuel break within the Gore Lakes project was successfully awarded and work completed in the fall of 2006. Also completed with local fuels crew was 216 acres of aspen maintenance for the Gore Lakes project.

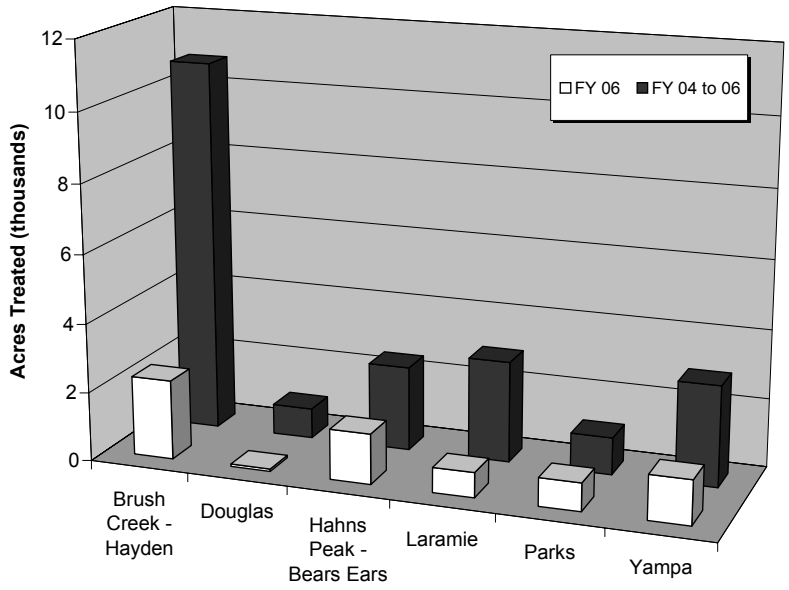


Figure 18. Acres Treated in FY06 and Cumulatively from FY04 through FY06 Across the Medicine Bow Routt NFs.

Other fuel reduction work and projects were completed across the Forest. The highlights listed above provided the backbone for success of the fuel program in FY 06.

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 data collected by the districts on trail maintenance.

Results/Evaluation

The following tables give the miles of trails meeting agency standards in FY06. Changes in trail miles from last year's report are due to updates to the database (INFRA) plus 28 miles of new trail were constructed in 2006 (see discussion below).

Table 19. Miles of summer trails meeting agency standards.

District	Trails on District (miles)	Trails meeting agency Standards (miles)	Percent (%)
Medicine Bow			
Brush Creek/Hayden	251	160	64%
Douglas (Laramie Peak)	77	70	91%
Laramie	153	130	85%
Routt			
Hahns Peak-Bears Ears	419	234	56%
Parks	271	173	64%
Yampa	218	153	70%
Total	1389	920	66%

Table 20. Miles of winter trails meeting agency standards.

District	Trails on District (miles)	Trails meeting agency Standards (miles)	Percent (%)
Medicine Bow			
Brush Creek/Hayden	293	260	89%
Douglas (Laramie Peak)	0	0	
Laramie	127	115	91%
Routt			
Hahns Peak-Bears Ears	143	132	92%
Parks	62	55	89%
Yampa	90	81	90%
Totals	715	643	90%

Medicine Bow NF

Brush Creek/Hayden Ranger District

- Overall condition of trails on the District appears to be good.
- Trail use is staying at historical levels or increasing depending on location.
- For FY06, the District had limited volunteer trail assistance, with approximately 40 hours as compared to many times this amount in other years.
- Due to various insect and disease issues, especially in the foothills or lower elevations of the District on both mountain ranges in south central Wyoming, trail clearing in the near future is going to spike to levels that could be next to impossible to complete. The potential dead fall that is expected in the next five years in just the Encampment River Wilderness Area will far exceed the District's trail maintenance funding allocation. Fall 2006 reports by the public indicate that the Encampment Trail was again impassible because of down timber. In 2005, the Brush Creek-Hayden recreation crew spent three days working on this trail. For 2006, the crew spent five days working on this trail. The beetle-killed trees will create trail clearing issues for many years to come.
- The Brush Creek/Hayden trail/recreation crew repaired damage to the Pipeline Trailhead information bulletin board from blown over beetle killed lodge pole pine. Two sets of trailhead information bulletin boards were installed on the on the Cedar ATV trail system.
- Several miles of new ATV trail were created during the road decommissioning work completed under the Cottonwood Rim decision. Several segments of very nice ATV trails were completed by this project. No parking or trailheads were created along with these trails. At this time there are several key segments of trail left to be built; the District is working with Wyoming State Trails to complete these trail segments.
- The Roaring Fork Trail crossing of the Sheep Mountain Supply Ditch was armored and the Roaring Fork Trail below this location received heavy equipment work to prohibit illegal ATV use.

Douglas Ranger District (Laramie Peak Unit)

- The Wyoming State Trails Crew finished reconstructing the last 2.5 miles of the Laramie Peak Trail this summer. This involved recontouring, rock movement, culvert cleaning and reconstruction and water diversions.
- The Pathfinder Backcountry Horsemen volunteer group spent a weekend doing general maintenance on the Friend Creek and Roaring Fork Trails (approximately 5 miles).
- To stretch trail funds, the program has multi-funded the seasonal crew with other project funds. This has proven effective as the trail crew is exceptionally efficient, and this makes them available for maintenance projects in developed recreation
- The Laramie Peak Travel Management Plan will identify projects for future NEPA and implementation.

Laramie Ranger District

- The LRD relies heavily on volunteers and partners to maintain its trails. The Medicine Bow Nordic Association grooms over 19 miles of skate/cross country ski trails at least three times weekly to a standard comparable to similar private facilities. Individual volunteers groom over 15 miles of skate/cross country ski trails twice weekly. The Medicine Bow Mountain Bike Patrol performs trail maintenance activities at least once monthly on over 25 miles of multiple use non-motorized trails. The Snowy Range Backcountry Horsemen donated over 580 hours of trail work in 2006, primarily in the Platte River Wilderness.
- Seven hundred feet of perimeter fencing at the Nautilus trailhead was replaced in 2006; ¼ mile of summer/winter trail was relocated and widened; construction of five new rail-trail trailheads was 80% completed in 2006 (improvements included lot construction and surfacing, toilet installation, well drilling, picnic site construction, perimeter fencing, and sign installation). Also, 0.8 miles of summer non-motorized trail was reconstructed at Sugarloaf, including 75 feet of boardwalk through riparian area.
- Twenty three miles of new gravel-surfaced bike trail was completed in 2006 (Rail-Trail); 1.6 miles of new ski trail was constructed (Express Trail at Pole Mtn); 1.2 miles of surfaced pedestrian trail was completed around Lake Owen.
- Beetle-killed blowdown trees impacted trails in Savage Run Wilderness considerably in 2006. All trails were cleared. Illegal motorized use of the rail-trail (both summer and winter) continues to be a problem. No other significant problems were observed.

Routt NF

Hahns Peak/Bears Ears Ranger District

- The trails program on HPBE is divided into three working groups: motorized trails, wilderness trails, and non-motorized/non-wilderness trails. HPBE receives a grant annually from the Colorado State Parks trails program through a local motorcycle club, the Timberline Trail Riders, to fund a motorized trail crew. No appropriated funds went to the motorized crew.
- This crew of three maintained 100 miles of motorized trails on the District, worked with the Timberline Trail Riders on maintenance and other trail projects, and patrolled motorized use areas to ensure that users were complying with area regulations. There were problems with user-created ATV and motorcycle trails in the Big/Little Red Park area. There were also problems with ATV use on single-track (motorcycle) trails which reduces the opportunity for off-road motorcycles to recreate on the District. Approximately 90% of the motorized trails were maintained to standard because of the availability of the motorized crew.
- Four people were hired to maintain non-motorized trails, including wilderness trails, in FY06. The Wilderness crew (two people) maintained 90 miles (out of 100) of wilderness trails to standard. Their duties also included patrolling system and non-system trails to ensure users were complying with area regulations. The non-wilderness/non-motorized trail crew (two people) maintained 100 miles of trail. While 300 miles of trails were maintained in FY06, many trails were not maintained to standard and most maintenance work

consisted of clearing down trees from the trail and hazard trees adjacent to the trail. Heavy maintenance was not accomplished on most trails. Several complaints were received regarding the condition of the trails, particularly on the lightly used west side of the District.

- Several volunteers and partners assisted with trail maintenance. The Friends of the Wilderness group contributed trail work including trail clearing and heavy maintenance. Other volunteers groups such as bike clubs and outfitter /guides assisted with trail maintenance and clearing in several areas.
- Over 50 miles of the Continental Divide National Scenic Trail (CDNST) are located on HPBE. The existing trail received general maintenance this year. Rights–of-ways will need to be acquired for completion of the trail.

Parks Ranger District

- Northern Colorado Trail Riders (motorized trails), Volunteers for Outdoor Colorado (CDNST trail), Continental Divide Trail Alliance (CDNST trail) all volunteered to help maintain or build new tread on our trail systems. In addition we had a few individuals, including previous trails and wilderness seasonals, help us maintain trails.
- Reconstruction work was accomplished with partnership dollars (State Trails) on the Snyder Creek Trail system. Trailhead improvements were done mostly to improve visitor safety by reducing hazard trees at high use trailheads.
- The Illinois Pass to Bowen Pass segment of the CDNST was added to the trail system - 5.9 miles of non-motorized trail.
- There is an increase in deadfall due to the beetle epidemic that the Forest is going through; on one loop this year we cut out over 130 trees. Trail funds are combined with recreation/wilderness funds that pay for our Wilderness crew to help maintain the wilderness trails. The vast majority of the trail maintenance and improvements are done with partnership funds.

Yampa Ranger District

- The Friends of the Wilderness volunteer group assists the District with wilderness trail maintenance.
- Trail reconstruction was performed this year with TRTR funds utilizing the Rocky Mountain Youth Corp.
- In 2007, the District may be adding the Windy Ridge Trail to the Forest trail system depending on outcome of trailhead NEPA, relocation project.
- OHV trails have been requiring a much higher maintenance commitment compared to the foot/horse trails.
- Current budgets only allow us to do maintenance on high use trails (approximately 70% of total). Any construction or reconstruction project funding must come from other monies, such as TRTR.
- Combining wilderness and trails positions and funding have been the most efficient way to for us to manage the backcountry.

Recommendations

- Continue to emphasize partnership programs. In order to serve the public we need to be able to keep our trails open and maintained.
- Provide on-forest or on-district trainings for trail crews to learn new techniques, refresh their knowledge and general education on trails maintenance, reconstruction and construction for the 07 field season.
- Emphasize enforcement. Either Law Enforcement Officers (LEOs), or dedicated Forest Protection Officers (FPOs) who have the necessary equipment (ATVs and vehicles) and training to do the job well, should provide necessary coverage.
- Increase education and enforcement efforts to reduce illegal motorized use both on non-motorized trails and off-road, Enforcement is a critical component of "Caring for the Land and Serving People".
- Work with the Region and the Continental Divide Trail Association (CDTA) to resolve trail connections across private land.
- Implement summer motorized trail system plan for the LRD Snowy Range Travel Management Decision, which includes trail construction, adoption, and decommission components.

Progress on FY05 Action Items:

The Roaring Fork Trail Crossing of the Sheep Mountain Supply Ditch was hardened during FY05 field season using NFVW (Watershed) funds.

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?

This monitoring item is best suited to a five-year reporting schedule and will be addressed in the upcoming five-year review for the Medicine Bow Plan scheduled for completion in 2009.

Figure 19. Accessible fishing platform at Lake Owen, built in 2006.

Effects of Recreational 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 question:

> ***To what extent have dispersed recreation sites been rehabilitated?***
>
> ***How are recreational activities affecting the physical and biological resources of the Forest?***

The primary effect of recreation on other resources is from unauthorized off road vehicle use, which is discussed in the next monitoring item. Another significant effect of recreation from the use of dispersed camping sites, particularly those near streams, lakes, and wetlands.

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

- Under the Cottonwood Rim analysis, the decision was made to close the dispersed sites below Battle Creek Campground. Much of this work was completed in FY 2005. During FY06 the District installed standard information signs to replace the existing temporary signs. These signs were installed along NFSR 807 to educate and inform the public of the closure.
- Dispersed camping adjacent to developed campgrounds is impacting campground operations. For example, Deep Creek and French Creek Campgrounds have dispersed camping occurring close to the campgrounds. Many of the people camping next to these and other campgrounds use the facilities of the campground, i.e. the trash containers and toilet.
- Other developed recreation sites that require this type of dispersed camping closure and review would be Lincoln Park. The dispersed camping that occurs next to this site is creating conflicts with the camping public that pay for a developed site and the camping public that does not.
- Over the course of the 2006 summer, dispersed camp sites that had been rehabilitated and closed were spot checked. The campsites in the vicinity of Jack Creek are recovering very nicely and received no illegal occupancy.
- In June of 2006, dispersed sites along the North Fork Encampment River were surveyed using the Cole Condition Survey method. The majority of the sites showed occupation in the past but very few of them scored in the poorer classes, Classes 4 or 5. Over 90% of the sites were found to be located in the riparian area, most within 200 feet of the river. The short distance and lack of

sanitation facilities creates resource concerns. This area is included within the Soldier Summit Analysis Area.

- The District has found little to no potential external partners available to assist with the rehabilitation of these sites.
- Several dispersed sites were rehabilitated by default due to the road closure/decommissioning that was associated with Cottonwood Rim.

Douglas Ranger District (Laramie Peak Unit)

- Laramie Peak Travel Management has brought to the fore those dispersed recreation sites that are causing damage to streams and wetlands, as well as erosion. There are plans to use post and pole to fence off those areas causing the greatest concern in the summer of 2007.

Laramie Ranger District

- Lake Owen Dispersed Site Improvements: plans are underway to designate some of the dispersed campsites at Lake Owen and improve the sites to mitigate ongoing resource impacts.
- Lake Owen: The District closed four sites due to overuse (soil compaction / vegetation loss) and poor location (wet crossings). Fire rings were dispersed, access routes ripped, and barriers placed at entrances (signs and/or physical barriers). Several (10-15) newly created dispersed sites on Pole Mountain were closed via signage.
- Roughly half of recent dispersed site rehab has been effective, with the other half of the sites being re-opened and re-used.

Routt NF

Hahns Peak-Bears Ears Ranger District

- Dispersed sites outside wilderness on HPBE had no rehabilitation in FY06. Rehabilitation was accomplished on illegal campsites in the Mt. Zirkel Wilderness by the Friend of the Wilderness volunteer group and two wilderness rangers.
- Dispersed site rehabilitation in the past has been associated with wildlife, timber, hydrology and fuels projects. All District project proposals and geographic area assessments include a discussion of recreation activities and dispersed recreation impacts. Dispersed campsites and user-created trails causing resource damage or impacts to wildlife are often considered for rehabilitation. Many dispersed campsites are associated with roads located close to streams, with resource damage occurring both from the road and from dispersed camping.

Parks Ranger District

- Dispersed campsite cleanup work has been done in past years. During the summer and fall seasons, patrols are done in dispersed camping areas. Visitors are contacted and attempts are made to mitigate impacts.
- Camping should not be allowed where further use will contribute to degradation of habitat, especially riparian habitat. Sites that have been developed within 100 feet of streams are being reviewed to determine if resource damage is occurring. These sites are either being hardened (i.e.

graveled) with fire rings or are being rehabilitated and closed. Use of alternative campsites is being encouraged by signing or identifying in brochures.

Yampa Ranger District

- During the Rock Creek EIS, dispersed campsite inventory data was analyzed for risks to the biophysical resource. This data will guide future dispersed site management.
- The current mountain pine beetle infestation will most likely alter the availability and setting of dispersed camping.

Recommendations

- Inventory dispersed campsites outside Wilderness. Develop dispersed camping management plans for problem areas.
- Identify roads to be decommissioned. Identify alternative dispersed camping areas for campsites lost through road decommissioning.
- Provide additional funding for dispersed site rehabilitation efforts.
- Implement a Forest Wide Special Order that would allow for enforcing the Forest Plan Standard of restricting dispersed camping within ¼ mile of a developed campground. The ¼ mile distance should begin at the boundary of the 8.21 prescription areas and not just ¼ mile from the campground fence; which would have great potential to reduce impacts on the fringe of the campgrounds.

Action taken on 2005 recommendations:

Progress with the Soldier Summit NEPA process to address management of the North Fork of the Encampment River dispersed sites.

The Soldier Summit EA is scheduled to be completed in Spring, 2007.

Develop and install permanent signage for the closed Battle Creek dispersed sites.

Permanent signage was installed during the summer of 2006.

Complete maintenance on the Jack Creek signage and dispersed site closures.

Signage in the Jack Creek area was evaluated and no repairs were necessary in FY06. Approximately 100 feet of buck and pole fence was built to keep vehicles on roadways near Jack Creek Campground.

Patrol and monitor LaBonte Canyon as the campground is checked by the campground compliance officer.

LaBonte Canyon was patrolled in 2006.

Continue to pursue a longterm solution for the north end of the Grizzly-Helena trail.

A feasible solution has not yet been developed.

Effects of Off-Road Vehicles

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

This monitoring items 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

Table 21. Off road vehicle violations FY05-FY06.

Special order area closure to vehicle travel off Forest Development Roads. (36CFR261.56)	2005		2006	
	MBNF	RNF	MBNF	RNF
Warnings	20	27	18	15
Incidents	124	98	105	213
Violation tickets	39	6	40	36
Total	183	131	163	264
MBR Total	**314**		**427**	

Medicine Bow NF

Brush Creek/Hayden Ranger District

- On Brush Creek/Hayden Ranger District, the off highway vehicle use is tracking with national trends and use. District staff has noticed an increased number of OHV/ATVs on the Forest. OHV use is being observed earlier and across the entire District with the exception of wilderness areas.
- District has sought and received funding from the State of Wyoming for additional patrol and education activities. At this time, minimal monitoring has been completed resulting in little evidence of reducing effects.
- The District has been patrolling with a FPO funded by the Wyoming State Trails, fee compliance person and incidental patrols were completed during hunting season. The District was patrolled independently by staff from the LEO program.
- The District has a broad range of resource concerns including: sedimentation, sensitive plants, soil erosion and wildlife issues to name a few. As use is occurring across the District, there is concern that overall resources value and condition could decline. Some areas have a better opportunity to recover due to vegetation type and when the activity occurred, though meadows and high elevation areas would require closure and on the ground rehabilitation.

- The District continues to complete sign maintenance on road and area closures as time and funding allows.
- The District has made efforts to address any reports from the public or cooperating agencies (i.e. Wyoming Game and Fish Department) about off road violations.
- A small section of buck and pole fence was constructed in the vicinity of the Jack Creek Campground road and NFSR 452 (Jack Creek Road) to confine ATV's to the road surface and off the meadow. Constructed engineering devices are costly, but this restrictive action stopped the use.
- As part of the Cottonwood Rim Decision the District completed repair work to the Roaring Fork Trail caused by ATV/OHV over several years. As stated above, portions of the Roaring Fork Trail was worked on with heavy equipment to restrict this illegal use.
- Some previous work has been very successful though with the increasing number of riders there is concern that illegal use will continue. Experience has shown that most riders will stay off closed trails or roads but will typically create a new parallel travel route instead.
- Another related item to OHV/ATV is the significant increase in winter snowmobile travel. Snowmobile use for the Forest, identified by the National Visitor Use Monitoring, and analyzed during Forest Plan Revision effort, found snowmobiles to be the number four primary activity for visitors to the Forest. Little resources and funding are available for the "winter season" and "winter use on the Forest". District efforts to manage snowmobile travel and use are minimal at best. Issues that have been identified that need attention would be the following winter off road violations: travel off designated trail segments, wilderness incursions, and travel into winter range closure areas.
- The District does receive cooperative funding from Wyoming State Trails program to assist in education, patrol and enforcement. The Wyoming State Trails emphases are on enforcing their sticker program, grooming and sign work on the trails.

<u>Laramie Ranger District</u>

- OHV use on Pole Mountain occurs year long, with mostly 4WD vehicles, and less ATV use. These vehicles are used for mud-bogging, cross country (off road) travel and campsite access.
- On the Snowy Range, the principle OHV use is in the Fallen Pines, Cinnabar Park, WyColo/Fox Park and Lake Owen areas. ATVs are the most popular OHV on the Snowy Range, with 4WD vehicles secondary. The use is primarily for off road travel, dispersed site access with some mud-bogging.
- Currently, one LEO and two FPOs are used for patrolling the district.
- Resource concerns include effects on sedimentation, sensitive plants, soil erosion, and wildlife.
- The Snowy Range Travel Management EA, evening patrols by FPOs, signage, and partnering with State Trail in outreach efforts are all being used to address this issue.

- Most actions from previous years have been ineffective, with some notable exceptions on Pole Mountain, where illegal roads were successfully closed and rehabilitated.
- In FY06, the recreation staff partnered with Hydrology to close and rehabilitate areas on Pole Mountain damaged by off-road use. In two weeks, the hydro and soil crews built over 1,650 feet of buck and pole fence around damaged riparian areas and rehabilitated five heavily disturbed, small (<0.1 acre) mud-bog sites by hand. Additionally, over 1.5 miles of illegal road were ripped, and seven tank traps/rock barriers were installed.
- ATV users have pushed their illegal system further and further into non-motorized territory, and off and around non-motorized trails. Eight years ago we found one 2.5 mile illegally-built motorized trail in Deer Creek, which was later turned into a non-motorized trail, at the behest of motorized users. Currently, An estimated 100+ miles of illegal motorized trails have been created on the District.

Douglas Ranger District (Laramie Peak)

- It used to be hunters, and mostly bow hunters who were our worst offenders. It is now recreational users, as well as hunters, so the season of abuse has expanded from the fall into season long - April to December or January, and in some places, year-round. Observations indicate that ATV riding is still primarily a weekend activity on Laramie Peak, except during hunting season when it is week-long.
- Patrolling has been fairly effective. The majority of ATV use violations are for not having a state OHV sticker (CFR 261.54d), and not for illegal travel off roads (CFR 261.56), because the FPO is not set up to catch off-road use.
- During hunting season, the District tries to have three pairs patrolling Laramie Peak. The patrol areas divided up so there is thorough coverage. The pairs are usually one FPO and one non-FPO. Again, most tickets are for not having a state OHV sticker, not for illegal off-road use.
- The Wyoming Game and Fish wardens have been very effective in sending information on off-roaders, as they are better able to be where the abuse is occurring.
- The District is using signage to address this issue. Additionally, the Laramie Peak Travel Management Plan will help address these issues with proposed seasonal closures and year-long closures in sensitive areas.
- Signing to reduce illegal off road use has not been effective. New trails are being created each year.

Routt NF

Hahns Peak-Bears Ears RD

- OHV use seems to be increasing on HPBE although there is no way to track actual use numbers. The NVUM survey in 2001 gave visitor use estimates Forestwide, and the Routt NF is conducting the survey again in FY07.
- Problem areas on HPBE are on the northeast section of the District in Big/Little Red Park, Whiskey Park and toward the Continental Divide and Wyoming

border. Most of the problems are associated with illegal OHV use. There are some user-created trails that impact soil and water resources because they travel through streams or wet areas.

- HPBE receives a state grant annually to hire a motorized trail crew to maintain and patrol system trails. The crew also closes user-created trails by installing signs and contacting users when they are found on an illegal trail. However, the location of many of these user-created trails is not known and they are difficult to keep closed without constant presence.
- The main action to reduce illegal OHV use is patrol and law enforcement. The motorized trail crew works weekends during the summer and fall conducting patrols and contacting OHV users at their camps. Forest past actions have been effective in reducing illegal OHV use in certain areas, but the problems are often shifted to a different area. HPBE identifies problem areas each year and focuses law enforcement and education efforts in those areas, but some users figure out where we are and go somewhere else.
- Winter OHV use is very heavy on HPBE, both in the Rabbit Ears/Buffalo Pass area and in the Hahns Peak/North Routt area. The District is open to snowmobile use except in wilderness and the designated non-motorized areas on Rabbit Ears/Buffalo Pass. FY06 was the first year of implementation of the Winter Recreation decision. Winter motorized use continued to occur in the non-motorized area and wilderness. However, increased Forest Service presence seemed to reduce the overall number of motorized incursions into non-motorized areas from previous years.

Parks Ranger District

- Principal areas of OHV use are district wide. The use is throughout the summer and especially during the fall hunting seasons. One of our biggest problems is from motorcycles still riding the old enduro routes. Other problems arise as people venture off the existing motorized routes and create new routes. Old closed logging roads are a magnet for all of the OHV enthusiasts, especially during the hunting seasons. We are still getting motorized use on some of our non-motorized trails (trails 1135, 1187, and 1197).
- The trail crews are working in some of these key areas, but it is often difficult to catch anyone in the act. The district has also done saturation patrols on the busy weekends in these same problem areas, in addition to hunter patrols in the fall to inform and educate enthusiasts. The LEO is kept informed of problem areas.
- Resource concerns would include the proliferation of illegal user created routes. All of which can lead to erosion, damage to sensitive plants and disturbance of wildlife. Every year there are comments from the DOW regarding people riding OHVs where they are not supposed to, or overall OHV use even on designated routes, that is displacing wildlife.
- The District has received outside funding (State OHV trail grants) to help with signing and travel management patrols. Trail crews have brushed in and closed illegal routes. We have fenced off closed areas, posted maps and handed out brochures showing open areas. We have some seasonal closures in effect to protect wildlife habitat.

- Some signing has survived several years. Users continue to ride around the closed off trails, and/or tear down the fencing and signs that were put up to close off the area.
- Illegal ATV/motorcycle riding was as much in evidence this year as in previous years. Problems spots included:
    - Continued use of old Enduro Routes: An Enduro route in 2003 (NFSR 765) is closed, however it has had continued illegal use. There is also continued riding of other old Enduro routes that have been closed and brushed in.
    - Motorcycle use on non-motorized trails such as Arapaho Ridge Trail (1135), Trail 1187 and Trail 1197
- There was snowmobile trespass into wilderness areas: Buffalo Pass in the Mt. Zirkel Wilderness, and the Baker Pass area in the Never Summer Wilderness
- Illegal ATV use occurs throughout the District: Riding on roads and trails closed to motorized traffic, riding off roads and trails and illegal two passenger OHV vehicle use in the northwest part of the District. There were also reports of ATVs riding through the river on Silver Creek Road (NFSR 780).
- Off trail motorcycle use is occurring in the Jack Park area, and in the Illinois River drainage on old logging roads.

Yampa Ranger District

- Observations indicate that the majority of use occurs during the big game hunting season. Incident reports are highest during this time of year. Most open NFSRs are utilized during this time. During the summer, use is generally on OHV trails.
- Travel Management has received a lot of attention on this district in recent years. Areas with illegal use are mapped, closed and monitored for compliance. During each hunting season, each area is patrolled, weather permitting.
- Resource concerns include: big game security, soil erosion and impacts on other recreationists.
- When illegal use is discovered, we use a combination of signage, T-posts and various amounts of woody debris and rock. During big game season public contacts stress responsible OHV use.
- The majority of the illegal routes that were closed in previous years remain closed.

OHV Effects on Rangeland Management

In recent years, the State of Wyoming, private citizens, and OHV advocate groups have urged the MBNF to provide more designated off-road-ATV trails to accommodate the rapidly growing body of ATV recreationists. In response, our Forest has been evaluating locations for new ATV routes as part of our travel management program. Use of designated ATV trails has increased markedly in recent years. This is partly a function of expanding ranks of ATV users, but also reflects increased restrictions placed by the states on ATV use on roads and the effective advertisement provided by the Wyoming state ATV trails maps. There has also been a change in timing of ATV use

on the Forest. Primary season of use used to be hunting season, but now we are seeing late spring through fall use.

Over the past couple of decades, livestock grazing permittees have identified a number of concerns about ATV use on their National Forest grazing allotments. These have included new user-created illegal ATV routes and trails, vegetation or soils resource damage, gates left open, fences cut, and elk being driven down prematurely onto private lands in the fall. Forest Service personnel have verified those concerns on a number of occasions, and many of these concerns were identified in the Medicine Bow Travel Management Environmental Assessment completed in 2000.

A new impact from ATV use has recently been brought to the attention of rangeland managers. The increasing summer ATV use on designated trails is making it much more difficult for some grazing permittees to manage livestock distribution on their allotments. The present day use levels (frequency of use and number of ATVs on the trails) are displacing cattle from parts of their grazing allotments, thereby undermining permittee efforts to produce the utilization levels and patterns that the Forest Service requires. ATV users may not usually chase livestock, but the frequent sight and sound of ATVs causes cattle to move away from the disturbance– very much as big game and other wildlife species do. In some instances, movement by cattle is rapid and concentrated, causing additional trampling impacts. In addition, the opening up of formerly closed roads as ATV trails provides new areas where illegal ATV routes can be pioneered, multiplying the livestock disturbance effect.

One particular range permittee has taken many steps to improve management of his allotment, including frequent riding, shortening and altering grazing season dates, and culling out bottom-dwelling cattle that were impacting riparian areas. This allotment is fairly small and contains quite a few miles of designated ATV trail for its size. With the rising impact from summer ATV users, this permittee is evaluating his options for the future. Neither this permittee nor Forest Service personnel anticipated such a heavy summer impact from ATV use on these trails when they were first designated.

Recommendations

- Inventory all non-system OHV trails. Develop a plan to obliterate or add these to the system.
- Conduct patrols in OHV problem areas year-round.
- Increase funding for OHV compliance
- Implement District plan for authorized motorized trail system
- Increase funding for physical closure of illegal routes/damaged areas.
- Ensure specialists are aware of changing patterns of ATV use on our Forest and of the marked increase in ATV use that is likely to follow Forest designation of an ATV trail and/or enrollment of a trail in a state trails program. This will help them fully evaluate the potential effects on livestock management when conducting project analysis.
- Include affected permittees and livestock producer advocate groups such as Wyoming Stockgrowers and Wyoming Woolgrowers in public scoping efforts for projects that include creation of ATV trails and/or enrollment of ATV trails in a the Wyoming trails program.

- Evaluate existing ATV trails with livestock management conflicts and consider whether seasonal restrictions would be appropriate to reduce conflict.
- Encourage use of funds from the Wyoming state trails program, where available, to increase monitoring and enforcement on ATV trails.

Actions taken on FY05 Recommendations:

Complete Snowy Range Travel Management analysis to designate an official OHV trail system for the east side of the Snowy Range of the Laramie Ranger District.

The decision for Snowy Range Travel Management is scheduled for Spring 2007.

Monitor effectiveness of a selected closure in FY06.

Work completed in 2002 on NFSR 103 was evaluated in 2006 to determine effectiveness. The work consisted of using logs and rocks to keep ATVs on the roadway and repairs to wet meadows damaged from mud bogging by 4WD vehicles. No recent signs of ATV or 4WD vehicle use off were observed in 2006, and the damaged areas in the wet meadows are revegetating.

Work with Wyoming Game and Fish department to identify new illegal routes in Laramie Peak unit.

As part of the Laramie Peak Travel Analysis, the district inventoried routes.

Add additional Forest Protection Officer patrols at the District level.

Districts are working on increasing FPO patrols.

Scenery

Routt Monitoring Item 2-4
Frequency of Measurement: Annual
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 visual resources are assessed through field evaluation of Forest Service activities. Two projects were selected for monitoring: Toponas Timber Sale and Blackhall/McAnulty Prescribed Burn.

Results/Evaluation

Toponas Timber Sale, Yampa RD, Routt NF.

The MBR monitoring ID team and Yampa District staff visited the Toponas Timber Sale area on the Yampa District on July 25, 2006. The sale unit located adjacent to Gore Pass Highway (Colorado State Highway 134) was reviewed for scenery, wildlife, soil and water resources. The project area is situated within MA 4.2 with emphasis on scenery. The adopted visual quality objective for MA 4.2 is Partial Retention. Lodgepole pine trees killed by pine beetles in the summer of 2003 were removed for

safety and aesthetics in the winter of 2004–05. A low profile temporary road was constructed to access the unit. Remaining non-beetle killed trees were not removed to maintain the scenic quality. After the completion of the project, beetles attacked several remaining trees in the summer of 2005 and these dead standing trees with orange-brown needles were noticed during the on the ground review by the ID Team. The temporary road was rehabilitated with grass seeds but no grasses were established.

The dead trees with brown needles near the end of foreground zone should become less noticeable after the needles fall off. It is recommended to reseed the rehabilitated road with new grass seeds to maintain the high quality scenery within the highway corridor. When the brown needles fall off dead standing trees and new grasses are established, the project would meet Partial Retention Visual Quality Objective (VQO). Beetles within the Gore Pass area killed at least 90 % of mature lodgepole pine trees and about 30 % of the dead trees would be removed overtime. By continuing adaptive management within the Gore Pass scenic corridor, the scenic quality and desired landscape character would be maintained for present and future visitors of the Routt National Forest.

Blackhall/McAnulty Prescribed Burn, Medicine Bow NF

The MBR monitoring IDT and BCH District staff reviewed the Blackhall/McAnulty prescribed burn project implemented in the spring of April 2006 on the Brush Creek/Hayden District on July 26, 2006. The objective of the burn project was to create a mosaic of new healthy vegetation for wildlife browsing. The project site situated on MA 3.58 with emphasis on crucial deer and elk winter range and the adopted scenic integrity objective assigned to this management area is Moderate. The vegetative mosaic pattern created by the prescribed burn blends in well with the surrounding landscape and when new healthy shrubs are established overtime, the scenic quality would be enhanced. This project met Moderate Scenic Integrity Objective (SIO).

Recommendations

Reseed the rehabilitated road on the Toponas Timber Sale with new grass seeds to maintain the high quality scenery within the highway corridor.

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

Animal Unit Months (AUMs) grazing use for the year and Head Months (HMs) grazing use for the year. Displayed for cattle and for sheep and for total livestock.

Results/Evaluation

Medicine Bow NF: Southeastern Wyoming received far less than average precipitation (both in winter snowpack and in spring/summer rains). The Snowy Range had the best overall precipitation, followed by the Sierra Madre, but Pole Mountain and Laramie Peak had very little winter snowpack and only sporadic rainstorms. Livestock numbers were about 30% less than permitted due to 2006 being the seventh consecutive year of this prolonged and severe drought. Quite a few operators across the Units went home early, a few went on late. Still about 1/3 of the producers have not replaced their depleted herd numbers, waiting for land and water resources to better recover before doing so. Lower outputs result from the non-use for resource protection. The amount of grazing use on the Medicine Bow was only about 60% of the projected Forest Plan level for sheep allotments and only about 70% for cattle allotments (see table below).

Routt NF: Year 2006 was the seventh consecutive year of this extended drought. Most of the Routt received very good snowfall – better than for many years – and better than average spring/summer precipitation. The Routt was, once again, in far better shape than much of Colorado. Most operators were able to run a majority of their permitted numbers; 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, some 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. Most allotments, both cattle and sheep, were stocked on average of 75% of capacity. Overall, it was the best year on the Routt since 2000 for precipitation and resultant vegetative/forage production.

Figure 20. Cattle grazing on the west side of the Sierra Madre Mountain Range.

Table 22. Planned and actual livestock use during 2006.

	Unit of Measure (in thousands)	Planned Level	2006 Level	Percent of Planned Level
Medicine Bow				
Active Allotments		104	104	100%
Sheep Grazing	Head-Months	42.0	24.8	59%
	AUMs	12.6	7.0	56%
Cattle Grazing	Head-Months	57.0	46.3	81%
	AUMs	74.0	50.6	68%
Total Grazing	Head-Months	99.0	71.1	72%
	AUMs	86.6	57.6	67%
Routt				
Active Allotments	Allotments	126	126	100%
Sheep Grazing	Head-Months	174.0	130.1	75%
	AUMs	52.5	38.6	74%
Cattle Grazing	Head-Months	39.6	30.6	77%
	AUMs	49.5	38.6	78%
Total Grazing	Head-Months	214.0	160.7	75%
	AUMs	102.0	72.2	77%

Costs of implementing the range program.

The table below gives the FY06 appropriated budget for rangeland management to the Forest, in addition to the planned levels in the Medicine Bow and Routt Forest Plans. The dollars below do not count overhead / administration amounts. Cost Pool (administrative overhead) amounts for FY06 for all units totaled $280,000 in NFRG and $346,000 in NFVW (the rangeland vegetation portion only).

Congress continues to fund NFVW at constant or slightly increasing levels (the rangeland vegetation portion of that Budget Line Item, which also includes soils and watershed management, air quality, reforestation, and thinning), with increases predominantly to conduct noxious weed control work and to manage non-native species. Increases in funding are dedicated to those efforts, and most of the noxious weed management work is focused in pass-through cooperative monies to the counties. About 20% 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.

Congress has increased NFRG funding by an average of approximately 8% in each of the years 2003-05, with only a slight increase in 2006, 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 and 2005 – and again in 2006. The funding is actually going down substantially at the Forest and Ranger District level, with a resulting fall-down in target completion.

Rangeland resource improvement dollars (returned from collected grazing fee receipts) were down as a result of reducing grazing levels (in number of head-months) due to drought. Total amount should be about $80,000 if full numbers were run; the amount received was $70,000.

Table 23. 2006 Rangeland management budget

Activity	Planned Budget	2006 Budget Received	Percentage of Planned Level
Rangeland Vegetation (NFVW)			
Medicine Bow	436.0	303.0	69%
Routt	370.0	365.0	99%
Grazing Permit Administration (NFRG)			
Medicine Bow	529	194.2	37%
Routt	464	173	37%
Rangeland Resource Improvement (RBRB)			
Medicine Bow		46.7	
Routt	61	23.5	39%

Table 24. Rangeland management outputs

	Planned Level of Output (acres)	2006 Level (acres)	Percentage of Planned Level
Rangeland Vegetation Inventory			
Medicine Bow	0	534,173	
Routt	373,381	194,379	
Total	373,381	728,552	195%
Rangeland Vegetation Improved			
Medicine Bow	60,000	63,052	
Routt	0	12,360	
Total		75,412	126%

NFIM funded approximately 20% of the efforts (127,760 acres) to complete inventory on a total of 728,552 acres. NFVW (rangeland vegetation portion) funded the remainder.

Acres of vegetation improved is the number of acres (pastures) on which previous NEPA decisions were implemented. Improved management was implemented on 75,412 acres in 2006.

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

CFR 219.27 requires a determination of compliance with the standard that lands are adequately restocked within five years as specified in the Forest Plan. In addition, this monitoring item asks the question:

> ***Are stands adequately restocked within five years of final harvest treatment?***

Monitoring Protocol/Data Collected

The yearly monitoring report relies on the FACTS database to list stands and acreages that had final harvest 5 years prior, and which of those 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 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 2001, which should be restocked as of 2006.

Table 25. 2006 Acres not adequately stocked.

Forest	Final Harvest (acres)	Acres not Adequately Restocked
Medicine Bow	322	0
Routt	1,024	32

Medicine Bow National Forest
322 acres harvested, all acres are adequately stocked within 5 years for a failure rate of zero, a 100% success restocking.

Routt National Forest
1,024 acres harvested with a final harvest, 32 acres are not adequately stocked within 5 years, for a failure rate of 3%, or a 97% success in restocking.

The nonstocked areas (32 acres) were site prepped in the fall of 2006 for planting in the spring of 2007. The silvicultural prescription recommended natural regeneration for those 32 acres. Competition from elk sedge (Carex spp) and poor seed distribution are the probable causes for the inadequate reforestation.

Costs

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

These monitoring items ask 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 US Forest Service tracks budget and finance, costs are tracked for all three units (the Medicine Bow and Routt NFs and Thunder Basin National Grassland) as one and cannot be allocated to individual units. Forest allocations will be displayed and discussed in detail in the upcoming 5 year (MB) and 10 year reviews (Routt), scheduled for completion in 2009. Changes to budgets in 2006 included no Timber Sale Salvage Funds as the Forest began paying back monies to this trust fund, which were borrowed during previous years. The Forest received funds from the conveyance of two facilities, one site in Kremmling and one in Steamboat Springs, which were sold in FY04. The funds from these facilities will remain on Forest to be used to reduce deferred maintenance on other Medicine Bow Routt Facilities. Funds received through partnership are tracked under the ***Partnerships*** monitoring item below.

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 items 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, livestock grazing and facilities.

Scientific and Technical Assistance

Partnerships

Medicine Bow Item Objective 3.a.2
Routt Monitoring Item 2-5
Frequency of Measurement: Annual
Reporting Period: Annual

These monitoring items ask the questions:

> ***To what extent is public assistance and participation being utilized in implementing monitoring activities?***
>
> ***How are partnerships contributing to maintaining or enhancing recreation resource opportunities?***

Monitoring Protocol/Data Collected

Compilation of partnership activities on the Forests through query of the Grants and Agreements database and review of partnerships on the Forests. These amounts include agreements both for the MBR portion of the Forest, but also the TBNG due to the three units being administered centrally.

Results/Evaluation

Partnerships have greatly enhanced the Forests' ability to accomplish work. In FY06, a total of 90 agreements resulted in over $3 million worth of work being accomplished on the Forests and Grassland. Many different types of work are being accomplished.

Working with counties has helped the MBR to accomplish invasive weed treatment, fire and law enforcement activities. Agreements with WGFD, CDF and WYNDD increase our ability to inventory and monitor terrestrial and aquatic wildlife in addition to plants.

Utilizing the skills of the Rocky Mountain Youth Corps, and of trail user groups such as Front Range Trailriders increases our ability to maintain and improve trails and recreation sites.

Agreements with the BLM, State of Wyoming and private landowners enable cooperative prescribed burning projects. Organizations such as the Owl Mountain Partnership have contributed to fencing and other rangeland management projects.

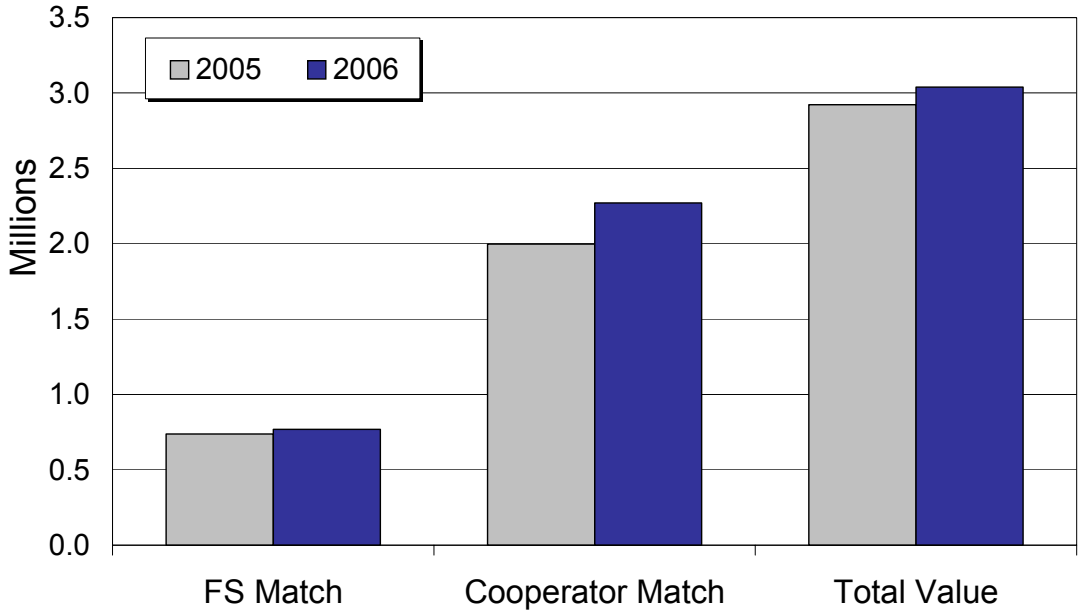


Figure 21. Value of Partnerships in FY05 and FY06.

Collaborating with researchers, such as from the UW and the RMRS have enabled forest specific research studies tailored to the needs of forest management.

Watchable Wildlife

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

This monitoring item asks the question:

To what extent have watchable wildlife activities been developed?

Monitoring Protocol/Data Collected

Annually, document the number of Watchable Wildlife sites which include plants that are identified and managed for the MBNF. Annually, document the development and interpretation activities at existing sites.

Aquatic Life

There is one fish-observation platform (Ralph Hesson memorial) located adjacent to North French Creek, along Highway 130.

Results/Evaluation

Watchable Plant Sites:

- MBNF Special Interest Areas (SIAs) with botanical emphasis: Ashenfelder, Cinnabar Park, Medicine Bow Peak, Kettle Ponds, Sunken Gardens, and Ribbon Forest.
- Snowy Range Visitor Center (BCH);
- Vedauwoo Interpretive Area and Interpretive Handout (LRD);
- Pole Mountain Rest Area Interstate 80 (LRD);
- Centennial Visitor Center (LRD);
- Libby Flats Interpretive Area (LRD);
- Brooklyn Lake Interpretive Area (LRD);

Watchable Plant Activities:

- South Zone Ecologist/Botanist lead interpretive botanical hike/moonwalk program (LRD).
- South Zone Ecologist/Botanist provided information dissemination for Celebrating Wildflowers http://www.fs.fed.us/wildflowers/regions/rockymountain/SnowyRangeByway/index.shtml.
- South Zone Ecologist/Botanist provided support and writing for Laramie Boomerang flower series.
- Forest Botanist co-led Colorado Native Plant Society Members on botanical hike to search for moonworts and peatlands (Parks RD on Routt NF).

The six botanical SIAs for the MBNF were identified in the ROD Medicine Bow Revised Plan, so FY04 was the first year that these sites were noted as available for watchable plant activities. The six other sites noted have existed for some time and generally have moderate to heavy visitor use.

Three watchable plant activities occurred on the MBNF in FY06 (up from two activities in FY05). One watchable plant activity occurred on the Routt in FY06.

Figure 22. Columbine on the Continental Divide near Bridger Peak.

Recommendations

- Continue to monitor this item yearly over the life of the plan.
- Consider including this question as an annual monitoring item for the Routt NF.

- There are no changes to the Medicine Bow Plan identified as part of monitoring this question for FY06.

Action Taken on FY05 Recommendations

- A need to complete Official documentation for 12 "Watchable Wildlife-Plant sites" was identified in FY04 and FY05. Official documentation of these sites as "Watchable Wildlife-Plant sites" remains to be completed as of FY06. Increases in MBRTB botany program seasonal personnel may allow the MBNF to move forward on this task in FY07.
- In FY05, coordination between front desk VIS, Engineer and Botany Program Personnel was identified as need in order to inform publics about where "Watchable Wildlife-Plant sites" occur on the MBNF. No actions were taken in FY06 to move forward on this recommendation.

Effective Public Service

Road System – Passenger Cars

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

This monitoring item asks the question:

> ***Does the road system meet public safety and management needs for passenger vehicles while protecting resources?***

On the Medicine Bow National Forest, 116 miles of roads suitable for passenger cars were maintained to standard (16%). Current budgets are insufficient to meet the backlog of deferred maintenance needs to bring roads up to standard.

Roads– High Clearance Vehicles

Medicine Bow Objective 4.a.2
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***Does the road system meet public safety and management needs for high clearance vehicles while protecting resources?***

On the Medicine Bow National Forest, 1,530 miles of high clearance roads were maintained to standard (76%).

Roads – Road Decommissioning

Medicine Bow Objective 4.a.3
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

To what extent have roads that have been identified as unneeded by a roads analysis been decommissioned?

On the Medicine Bow National Forest, 26.8 miles of road were decommissioned in FY06. Decommissioning was accomplished with forest road funds, forest wildlife funds and contributions from partners.

Table 26. FY06 Road related ouputs compared to outputs projected in the Forest plans.[9]

* Resource Program Activity/Outcome	Units	Forest Plan Desired Condition Level	Forest Plan Experienced Budget Level	FY06 Level
Medicine Bow NF				
Roads Maintained to National Standards	Miles	2,291	1,250	1,689
Road Construction	Miles/yr	4.1	2.0	0.8
Road Reconstruction	Miles/yr	9.2	4.0	0.8
Roads Decommissioned System and Non-System	Miles/yr	27	18	26.8
Routt NF				
Roads Maintained	Miles	1,500	1,448	986
Road Construction	Miles/yr	16.2	9.3	6.8
Road Reconstruction	Miles/yr	9.8	5.2	2.2
Road Obliteration	Miles/yr	18.4	18.4	0

Facilities – Safety and Security

Medicine Bow Objective 4.a.5
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

Do the existing facilities with the potential for reconstruction provide for safety and security of the public and employees?

[9] Forest Plan outputs are from the S-2 tables in the EIS documents for the Routt and Medicine Bow Revised LRMPs.

Major construction and reconstruction projects are funded through the Regional Capital Improvements Program (CIP). The CIP funding is limited and must cover projects throughout the Rocky Mountain Region. FY06 CIP construction included completion of the Fire Crew Bunkhouse on the Hahns Peak-Bears Ears RD (new construction awarded in FY05).

In addition, the following CIP projects were awarded in FY06 and are anticipated to be completed in FY07:

- Esterbrook Work Center Consolidated Storage, Douglas RD
- Saratoga Work Center Consolidated Storage, Brush Creek/Hayden RD

The following CIP projects are in the planning stages for award in FY07:

- Saratoga Ranger District Shop/Garage construction
- Brush Creek Work Center historic renovation

Facilities - Maintenance

Medicine Bow Objective 4.a.5
Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

To what extent are the existing buildings, bridges and other facilities maintained to standard?

Planning and accomplishment activities are compiled and reported in the INFRA database, an NFS corporate database. For buildings, annual accomplishment reports can be generated listing total deferred maintenance and the end of year facility condition index ratings. Maintained to standard requires a condition survey be accomplished no less than every 5 years and the facility condition index be good or fair. In FY06, the Forest building inventory included 376 recreational and administrative buildings, 55% of those were maintained to good or fair condition and over 90% received the required facility condition survey. Dams, water systems, and waste water systems were in a similar condition.

Declining budgets require the Forest to assess and prioritize facility needs and then focus limited funds on our highest priorities. At the end of FY06, the backlog of deferred maintenance on all facility classes was nearly $6.6 million. In order to balance the constrained budget and deferred maintenance backlog, the Forest is aggressively pursing a facility disposal program. Progress is slow but small steps are made each year.

In FY06, nine Forest facilities were disposed of by demolition. Additionally, all Forest real property records in the NFS corporate database, I-Web, were reviewed and validated this year per the Federal Real Property Profile reporting requirements. During this review, we found an additional 20 facilities contained incorrect data in the

"status" field. These facilities had been previously disposed of by conveyance, transfer, and/or demolition. The records were corrected in FY06, which reduced our number of Forest facilities in the database by 29.

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

A review of the opportunities to implement national recovery plans, and a description of any actions taken in support of a National Recovery Plan.

Plants

There are no documented occurrences of Threatened or Endangered Plant Species on the Medicine Bow or Routt National Forests at this time.

Terrestrial Wildlife

The bald eagle is the only ESA-listed species on the Medicine Bow National Forest with a recovery plan. 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 and winter-roosting sites were surveyed for activity. Even so, very few bald eagles inhabit the Medicine Bow National Forest. In 2006, as in the past, we continued 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 identified and monitored some of the bald eagle communal roosts as specified in the Recovery Plan. Otherwise, no further opportunities were identified to implement action items in the Bald Eagle Recovery Plan on the Medicine Bow NF.

Several documents do speak to conservation actions appropriate for the Canada lynx. Though the lynx has only recently been observed on the Medicine Bow National Forest, and has dispersed here from a reintroduction effort in Colorado, the Forest does adhere to the Lynx Conservation Strategy and Assessment. At least one, and possibly two, female lynx had litters on the Medicine Bow National Forest, but lost their litters. Colorado Division of Wildlife tracks radio-collared lynx and reproductive patterns of the reintroduced population.

As of yet, there is little direction for proper management, conservation, or recovery of the Preble's meadow jumping mouse. However, in 2006, the Forest completed its fourth year of monitoring this mouse through a partnership with the Wyoming Natural Diversity Database (WYNDD) in an effort to ascertain baseline presence, numbers, and to eventually increase our understanding of how management impacts this mouse.

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 Interdisciplinary Monitoring Team (IDT) visited several sites on the Medicine Bow-Routt NFs during the 2005 monitoring field trip. This trip stopped at Rabbit Ears Pass on the Hahns Peak–Bears Ears District to discuss a powerline project and winter recreation issues. On the Yampa District the IDT discussed issues relating to ditch maintenance, and fens. Also on this District the IDT visited the Toponas Timber Sale and the site of a proposed water diversion on Coal Creek.

On the Brush Creek?Hayden District, the IDT evaluated road decommissioning and a prescribed burn project in the Big Creek Watershed. Finally, the old growth mapping project being implemented to meet the Medicine Bow Forest Plan objective.

District IDTs reviewed various projects during FY06 and the following are the conclusions and recommendations from both the Forest and District project reviews.

Powerline – Rabbit Ears Pass, Hahns Peak-Bears Ears Ranger District
The discussion at this stop focused on the time and resources involved in seemingly small projects special use projects such as powerlines. The utility company needs to replace the poles along the Rabbit Ears Pass Scenic Corridor (Scenery Management Area - 4.2). The plan states that utility lines should be buried, unless it is infeasible,

(Utility Corridor Standard 4), however the utility company has voiced concerns that it is not financially feasible. There is also the need to provide access routes to the poles for maintenance. A major complication is that half of the poles are in wetlands and there is a sensitive plant, Weber's (Rabbit Ears) Gilia present in the area.

Did we do what we said we would do? District is working through nepa analysis process and obtaining the 404 permits as necessary from the Corps of Engineers.

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

Figure 23. Weber's Gilia on Rabbit Ears Pass.

- That seemingly small projects can require significant specialist time to complete.
- More work up front – such as mapping permanent access routes would both reduce analysis time and likely improve resource protection

Did we meet overall Project Objectives: The project is ongoing, and is likely to meet the objective of utility pole maintenance.

Additional Monitoring Needs: Monitoring during project implementation to assess impacts and determine if rehabilitation of access routes is needed.

Follow up Actions Needed: Map poles and access routes for utility lines. Work with the utility company to come up with an implementation plan that meets their needs while still protecting wetlands and other resources.

Winter Recreation – Rabbit Ears Pass, Hahns Peak - Bears Ears Ranger District
The winter recreation plan (http://www.fs.fed.us/r2/mbr/projects/rec/index.shtml) was signed in 2005. This decision separated motorized and non-motorized winter use areas and requires a 12 inch snowpack depth for motorized use. Last winter was the first year of implementation.

The District documents observations during winter field days, noting problems with signage, illegal motorized use, etc. This monitoring is used to compile an end of season report, which evaluates the winter recreation use and provides recommendations for future seasons. In FY06, poor weather and snow conditions delayed marking the boundary between motorized and non-motorized use areas until mid January. Increased patrols by District and LEO staff educated the users of the new regulations. It appeared that most motorized users respected the boundaries where they were clearly marked.

Recommendations include increasing education and enforcement efforts, develop new maps for the area and to mark boundaries in a timely manner.

Other issues with winter recreation include snow compaction effects on the small mammals that live under the snow (subnivian habitat) and on the soils and plants in high alpine meadows. The wildlife program is working with researchers to develop and obtain funding to study the effects of snow compaction in the Rabbit Ears Pass Area. There was discussion that snow compaction issue is across the Forest, and that the effects should be studied elsewhere on the Forest as well.

The effects of snow compaction on sensitive plants in fens was an issue during the EA analysis. The Decision requires monitoring of area fens for 5 years to determine if there are effects from winter recreation. It was not known if snowmobile use is even occurring in fens at the time of analysis so an adaptive management approach was used in the decision. First monitor to determine effects and then mitigate if needed. Volunteers completed baseline data collection during the 2006 summer for fens with documented sensitive plant species Sundew. Two more sensitive plant species were found in one of the fens as result of that effort. Monitoring of Rabbit Ears Gilia will also be completed in the concentrated winter recreation use area on Rabbit Ears Pass. Two of the three fens are not accessible by snowmobiles. Potential effects on the fen which can be reached by snowmobile, is that the peak soils may freeze deeper due to snow compaction. This monitoring will improve understanding of the effects of winter recreation on sensitive plants.

The EA also requires monitoring the wildlife/lynx underpass on the east side of Rabbit Ears Pass to determine if motorized use is affecting this wildlife travel corridor.

Another issue from motorized recreation is the water quality in Long Lake and Fish Creek Reservoirs, which are used for public drinking water supply. Snowmobile exhaust releases unburned fuel which could contaminate these reservoirs. The Forest is working with the Rocky Mountain Research Station to sample water quality in Long Lake and Fish Creek Reservoirs.

Did we do what we said we would do? The winter recreation decision is being implemented. The monitoring requirements in the decision are also being accomplished.

What did we learn? / What would we do differently in the future? The district is learning how to effectively work with the public through education and enforcement.

Did we meet overall Project Objectives: The objective to separate motorized and non-motorized use is being met in the majority of areas. Ongoing education and enforcement will help meet this objective.

Additional Monitoring Needs: The monitoring required in the decision is being implemented. Additional studies of snow compaction should be pursued, and further evaluation is needed to determine if the 12-inch snow depth is adequate resource protection.

Follow up Actions Needed: Continue to pursue funding for snow compaction research.

Sarvis Ditch – Yampa District

The Sarvis Ditch diverts water from Sarvis Creek in the Yampa to Colorado River basins. It is a 1911 water right with a 1986 adjudication date and 1993 Ditch Bill Easement. The operating and maintenance plan has a clause that the holder is responsible for prevention and control of soil erosion and gullying and that the ditch should not result in downcutting and bank failure.

The ditch crosses the road and is diverted downslope into a draw. At the point where the Ditch proceeds downslope, it has eroded a gully down to the draw, and the draw has downcut as well down to the confluence with the next larger stream channel. This does not meet Forest plan standards to protect streams (Water and Aquatic Standards 6 and 9). The gully is not stable and will continue to downcut over time due to lack of stable bedrock.

The ditch holder did install some riprap to reduce erosion where the ditch crosses the road, however no gully control work has been implemented. This situation is not unique; many ditches have sections of unstable gullying and downcutting.

The IDT and District Ranger discussion can be summarized with the following points:

- For facilities undergoing the Ditch Bill process - should identify the problems and get them into the operating and maintenance plans.
- Each ditch presents different issues and opportunities. Look for partnerships to accomplish work – Conservation Districts, NRCS and possibly downstream water users – such as municipalities if an opportunity exists.
- Identify opportune timing to pursue repairs, such as change of ownership, new ditch bill easements, etc.
- Focus on FLPMA and resource protection as the primary drivers to make changes to meet forest plan standards.

Fen off of NFSR 100 – Yampa Ranger District.

The Forest Botanist led the discussion concerning fens at this stop. Fens are characterized by a presence of peat with stable hydrologic regimes over thousands of years. Fens can be nutrient poor, rich or extremely rich based on the availability of calcium and magnesium Ions. Most fens on MBR are intermediate poor with low availability of Ca and Mg and moderate pH levels around 5.5 (R-2 2070 memo, March 2002). The quality of peat accumulation and water chemistry all define the plant assemblages present in various fens, and important for biological diversity and habitat for sensitive plants. These ecosystems, that are 1,000 to 10,000 years old, can potentially be affected by upslope activities (Prepas et. al., 2000). It would be impossible to mitigate the loss or create a new fen due to their unique character and the time it takes for them to develop.

When management activities such as timber harvest are proposed in the area surrounding or upslope from a fen, the effects could potentially alter the hydrology of the surface or subsurface flow—reducing or delaying the subsurface water supplying the fen or even potentially inundating it for a period of time. If, for example, a road were built at the toe of the fen and the peat substrate were to be contacted, the normal infiltration flow through the fen could potentially be escalated, and could

affect sensitive or local concern fen obligate plant species. In such an event, it would be impossible to mitigate the loss or create a new fen due to its unique character and the time it takes for fen development.

For sensitive plant species, the Forest Botanist has developed an Effects Matrix that identifies likely impacts of typical Forest actions on sensitive plants. This matrix identifies the actions that are likely to impact each plant species. This tool identifies red flags and/or opportunities at a glance.

There was discussion over timber salvaging after the Green Creek Fire. This salvage several years ago took trees up to the edge of a fen. There was IDT discussion over the effects to the fen.

For the Rock Creek Timber Sale, an adaptive management strategy was used. The design criteria were identified during the analysis, and then during implementation specific silvicultural treatment and layout is determined based on the current tree mortality and conditions on the ground. Layout and implementation are the real issues and can be the weakest link. Mitigation should be specific and focus on what we need to protect.

Conclusions:

- Fens are rare and critical resources for plant biological diversity, especially for rare plants.
- The botany Effects Matrix is an important tool for project analysis.
- Layout and Implementation are the most critical components of a vegetation treatment project. With adaptive management, it is critical that the specialists are involved.
- Mitigation measures need to be specific in order to be adopted on the ground.

Toponas Timber Sale – Yampa District

In the Summer of 2003, there were signs of beetle killed trees in the scenic corridor along Highway 134. The Yampa district initiated NEPA in the fall of 2003 to address the safety and visuals issues. The Decision Memo to thin five units was signed in May, 2004. The sale was logged from September 2004 to May 2005.

The silvicultural prescription was to reduce basal area, but in hindsight should have removed the larger trees (i.e. thinning from above), as they are the most at risk for beetle mortality.

The ID team discussed how the beetle epidemic is different than expected, and that we need to be flexible to adapt. The consensus was that the Routt Plan allows this flexibility. The beetles are affecting the visuals, due to the red needles on the trees that then create gray landscapes when the needles fall off.

The temporary road was dozer bladed and winter logged. The temporary road was back bladed (not ripped) and grass seeded in the spring 2005 in the meadow areas. In the timbered areas water bars were installed and slash scattered to prevent surface erosion and minimize travel management problems. Closure of the road in the timbered areas was successful, but revegetation in the open area was not.

Revegetation would likely have been better if the road was ripped to break up compaction and seeded in the fall with the appropriate species. Visually the temporary road is acceptable.

Slash had been scattered on the skid trail through the unit. This creates microsites that aid revegetation and improve the visuals. In this unit, the slash was not so heavy as to inhibit revegetation. Scattering slash in addition to water bars is the best treatment for skid trails.

Washing equipment to prevent spread of invasive weeds was discussed. The team feels this should be a standard clause but was not sure if it was in every contract.

During the winter logging, the operator unloaded equipment in the seasonally wet area between the unit and the road. The ground was not frozen and ruts over 1 foot deep were created by the equipment. The operator did not have the appropriate equipment to repair the ruts. The team discussed that the operator should have been held responsible for repairing the damage, and could do it with a hand shovel if necessary. The operator did not know the seasonally wet area was there due to snow cover.

Riparian areas outside of units are not usually marked, and equipment should be restricted from operating in these areas outside of units.

The IDT discussed snags and downed woody debris. The conclusion was that the ID team should try to develop site-specific prescriptions for each site. The Routt Plan has standards, which should be considered a minimum and the line officer has discretion to increase snags and down woody debris through project decisions.

Did we do what we said we would do? The unit was logged as planned and the skid trail was rehabilitated well. The temporary road was not ripped, contrary to standard watershed conservation practices (FSH 2509.25)

What did we learn? / What would we do differently in the future? This work went from summer to a winter operation. Analysis would have been different if we had known the project would be done in winter, not summer.

Temporary roads should be ripped and seeded in the fall for best revegetation success.

The beetle mortality that occurred in this small unit between planning and implementation taught the District that sales need to be more flexible to adapt to changing conditions. The Rock Creek project, designed after this sale, incorporates this flexibility.

Equipment unloading areas need to be designated during winter logging when the operators cannot see the road surfaces.

Did we meet overall Project Objectives?: This project started with the object of keeping the trees alive during the beetle epidemic. We now know that this was not

feasible, and would design a similar project in the future to be a thinning from above to try to preserve the most beetle resistant trees.

Additional Monitoring Needs: No additional monitoring needs for this sale were identified.

Follow up Actions Needed: Evaluate the temporary road to determine if additional action is needed to meet revegetation objectives. Determine if additional work is needed to rehabilitate the ruts in the wet area near the road.

Coal Creek

The east and west forks of Coal Creek meet and flow into Bear River just below Yamcolo Reservoir. The Bear River Watershed has three reservoirs on the upper Bear River above the confluence with Coal Creek and two ditches that divert from this watershed into the Colorado River Watershed. Coal Creek is the only major tributary that does not have a water diversion or reservoir in the Bear River watershed.

The Upper Yampa River Water Conservancy District filed for a 100 cubic feet per second (cfs) conditional water right on Coal Creek. The Forest met with the water district and explained the special use permit process, and the requirement to do NEPA, and meet the requirements of FLPMA to protect the environment. Coal Creek is a very dynamic stream, which moves a large amount of sediment; high flows are critical to maintaining channel integrity. With this proposed water diversion, the peak flows would be greatly reduced, and the stream channel would be greatly altered due to reduced bedload movement.

Discussions with the water district to meet the requirements of FLPMA included determining channel maintenance flows to maintain channel function, aquatic habitat, riparian condition, and floodplain function. The Yampa District asked the Stream Team, a USFS unit based in Fort Collins that provides technical assistance related to water issues, to determine what studies would be needed to quantify the flow necessary for channel maintenance. The Stream Team wrote a report outlining the issue and recommended studies. After reviewing this report, the Upper Yampa River Water Group withdrew their request due to cost. While the water district understood FLPMA and the need for the channel maintenance flows, having it clarified in the Forest Plan would have helped facilitate the discussions with the water district.

This same issue is emerging on other areas of the Routt Forest due to rising demand for water, particularly in the Yampa River basin. The forest would benefit from a strategy on how to address these water diversion requests.

Did we do what we said we would do? The District followed the special use permit process and considered federal laws and regulations when working through this issue.

What did we learn? / What would we do differently in the future? Asking the Stream Team for assistance was invaluable. They were able to identify the information needs necessary to complete this project. Having direction in the Forest Plan to address instream flow needs would be beneficial when working with proponents.

Follow up Actions Needed: Resolve the issue over Water and Aquatic Standard #8 through the Forest planning process.

Big Creek Area Prescribed Burns

The Holroyd Prescribed Burn, along the South and North Forks of Big Creek was burned in Spring, 2005. The objectives of the burn was to treat more than 50% of the brush to improve wildlife browse. Since the burn, bitterbrush shrubs have re-sprouted.

Also in this area, the Blackhall/McAnulty Burn was treated this spring (April 2006). The District IDT reviewed this burn early in the summer, and there is additional information below under ***District Project Monitoring***. In summary, this project met all objectives and the burn map used during the burn was key to successful implmementation.

Upper North Platte Amp - Brush Creek/Hayden Ranger District.

This project included AMP revision for three range allotments and travel management.

Six Mile Road Decommissioning

Six and one half miles of roads were closed through the Upper North Platte AMP project in the Six Mile Area. The primary issue driving the road closures was big game winter range.

It is a challenge to close roads in sagebrush so that they will note be re-opened by ATV and pickup use. A whole variety of treatments have been tried. In this project, small berms every 15 feet were used in open areas, larger berms in the trees. Ripping the road may speed up revegetation. Using berms is not as visually acceptable as ripping as then the road blends into the surrounding area.

The District would like more information signs to explain the closures, such as the wildlife winter range in this area. There was general agreement that there should be more public information effort, and that we should look for partners.

A three pronged approach with education, engineering, and enforcement was discussed as the preferred method to improve the effectiveness of our road closures.

The new Forest seeding policy was discussed. This policy directs that if there is a seed source around the disturbed site, then it may not be necessary to seed. This will reduce the amount of seed used on the Forest, which would reduce costs, and the risk of seeding invasive species, which are often present in small amounts in commercial seed. It was noted that we should always test seed to prevent spreading noxious weeds.

Monitoring road closures to determine what methods are effective is not systematic. There is little documentation of the monitoring that is done.

In the past, the Forest Protection Officers (FPOs) would have a checklist and maps of road closures and other sites with problems and so there would be some documentation of what is happening during hunting season.

Did we do what we said we would do? The road decommissioning was implemented as planned.

What did we learn? / What would we do differently in the future? We will learn over time the effectiveness of this type of road closure, and use that information for future projects.

Several roads needed to implement the prescribed burns in Big Creek were closed prior to the burn; coordination on timing of projects could avoid this conflict.

Did we meet overall Project Objectives: Yes, although this area will need to be monitored and roads re-closed as necessary.

Additional Monitoring Needs: Check effectiveness of road closures to determine when additional closure work is needed.

Follow up Actions Needed: Work with partners to increase educational efforts about off road vehicle use and the rationale for road closures.

Allotment Management Planning

The primary issue with the Big Creek allotment was the impact to approximately 400 acres of riparian and wetland areas. A large corporate ranch has this allotment and uses it to run yearlings. Pasture was rested for more than 4 years to leave residual forage to carry the prescribed burn. This also allowed a streambank restoration site along South Fork Big Creek to revegetate. During the AMP process, the permit holder changed to a rest/rotation system. The ranch decided to take a 35% cut in head months rather than provide a rider to solve overuse problems. A monitoring plan is being implemented to determine the change in grazing system is meeting objectives.

A sensitive plant was found in this area, Marsh feltwort. This plant population is difficult to detect and may fluctuate with climate (rainfall) patterns. The plant is found in an area of wetland that is being used by cattle. Monitoring will continue to determine plant population trends.

Did we do what we said we would do? The projects under the Upper North Platte EA were implemented as planned.

What did we learn? / What would we do differently in the future? The timing of road closures should be coordinated so that other projects that need the roads, such as prescribed burns, etc can be accomplished first, and then the road closed.

Did we meet overall Project Objectives?: Project objectives were met for the road closures. The range allotment will be monitored and adapted as needed to meet objectives.

Additional Monitoring Needs: Continue to monitor sensitive plant populations in this area to determine population trends. Continue to monitor upland and riparian conditions in the Big Creek Watershed.

Follow up Actions Needed: No follow up actions were identified.

Old Growth Mapping Project
The IDT visited an old growth stand along the Snowy Range Road. The old growth mapping team gave an overview of the inventory and mapping effort being used to meet the forest plan objective of having the old growth mapped in 2006.

GIS mapping includes using stand data, in addition to cover type and stand age information. The definition of old growth comes from Mel Mehl's publication (Mehl 1992). The stands are grouped into four groups:

0 – not old growth
1 – potential old growth
2 – meets Mehl's criteria for old growth
3 – exceeds Mehl's criteria.

Field collection points are chosen using a stratified random method, with criteria to place the point away from a road or the edge of a stand. WYNDD has crews helping with the data collection, which are being trained by members of the MBR old growth team. A plot can be inventoried in a few hours and there are definitions and pictures with sketches to improve the consistency of the field data collection by the field crews.

The Medicine Bow side of the Forest is being mapped first, with the plans to map the Routt later. The product will be a map of designated old growth by mountain range to meet the 15% criteria. The old growth review team will revisit this map once a year to determine if changes are needed, due to additional field verification, management, or natural events.

District Project Monitoring
The following are summaries of project monitoring completed by district IDT teams.

Brush Creek/Hayden Ranger District
Blackhall/McAnulty Prescribed Burn
The District IDT reviewed the mosaic created by the prescribed burn in the Big Creek Drainage. This area was burned in the spring, 2006, several months prior to the field trip.

This project was done under the 1985 Medicine Bow Plan and was in the Blackhall/McAnulty EA. However the standards and guidelines from that plan to manage habitats for plant diversity and to maintain structural diversity have related standards under the 2003 Medicine Bow Plan.

Standards and guidelines were incorporated into the project design through creating a 50% mosaic and following additional mitigation measures to avoid historical sites and cheatgrass. Brush was cut from around historic cabins to prevent the fire from reaching these sites.

The burn plan is the document that identifies design and mitigation. The burn plan had a map that was critical to project implementation, as it identified cheatgrass areas, previously burned areas and cultural sites for protection. With this map, it was possible to implement the burn and follow all the mitigation. Since all cultural sites were identified on the map, they were all protected, even several that were not mandated for protection in the decision document.

Figure 24. Limber Pine Snag with Blackhall McAnulty Prescribed Burn in the Backgroud.

The decision stated that the burn should be a mosaic of no more than 50% of the area. It appears that the area burned is less than 50%. During the burn implementation, care was taken to meet this objective. When an area on the west side of NFSR 498.2C burned more than anticipated, less area was burned on the east side of this road to compensate. In another area, on the east side of South Fork Big Creek, not all the draws were lit, so some areas of the heavier brush would remain in the area to provide diversity.

Summary: The prescribed fire appears to have left a good mosaic. Mapping of the newly burned areas would allow further analysis to determine the resulting mosaic of this burn with previous burns in the area.

The map used during the burn implementation was critical to avoiding cheatgrass, previous burns and cultural sites.

Monitoring is needed to determine the resulting vegetation mosaic over the next several years. Additional monitoring of cheatgrass in the area to determine if it will spread into the recent prescribed burn area.

Recommendations

- Share the burn map with other districts as an example of how to incorporate mitigation into burn plans.
- Map this prescribed burn. (This was completed during the Summer, 2006)
- Monitor vegetation to determine the resulting mosaic of vegetation structure and composition.
- Monitor cheatgrass in the area to determine if it will spread into the burn.

Lake Creek Allotment / Pennock Prescribed Burn

This project field review included assessing upland and riparian conditions after the first year of grazing on the Lake Creek Allotment under the new allotment

management plan (AMP), in addition to evaluating the Pennock Prescribed Burn 2½ years after implementation.

The primary issues for this allotment were stream channel and riparian conditions. The allotment has narrow riparian areas with steep side slopes, so the cattle tend to spend most of their time in the riparian areas. Streambank trampling and riparian area over-utilization were identified prior to the EA. The poor stream channel condition aggravated the effects of a large flood event in Cumberland Gulch (Lake Creek) in 2000, which resulted in large gullies and significant stream channel changes in this watershed.

The decision included the mitigation measures and monitoring requirements from the Snowy Range Cattle #1 EA. The mitigation to improve stream and riparian conditions included a shorter season in the fall, and using riparian utilization as a trigger to move livestock. During the analysis process, it was not known if using riparian utilization as a trigger would adequately protect streambank stability.

Monitoring requirements include utilization, riparian and upland photo points and stream channel cross-section monitoring. Another change is that dry cows are being put on instead of cow calf pairs due to the late season timing (September) for the formerly season long allotment. This increases the mobility of the cattle.

The Lake Creek Allotment was rested from 2001 to 2005 to allow for the Pennock Burn in 2003 and to give the stream channel time to recover following the large flood event. Baseline monitoring occurred during 2005, with additional monitoring completed during 2006.

With 5 years of rest, the streamchannel appears to be narrowing and the riparian vegetation has shown remarkable recovery. In past year, alder mortality, which had been high in the riparian area, is now resprouting. It is unknown what is affecting the alder in this area – it may be related to climate or other factors rather than to the effects of grazing.

It appears that cattle use will be within prescribed limits in 2006. The allotment was stocked with 750 cows instead of the 875 allowed in the AMP (the permittee's decision). Additionally, some cattle left the allotment through accidentally opened gates after 10 days due to an early snowstorm and unseasonably cold weather. Cattle use patterns also appeared to be different this year as the cattle are staying up on the slopes and out of the riparian area due to cold and rainy weather. The riparian monitoring for 2006 indicates that the riparian areas are in an upward trend towards desired conditions.

The Pennock Burn area has very good aspen regeneration. The grass in the burn appears to be doing very well and this project appears to have fully met expectations after almost 3 years. Long term photo points have been established to monitor cheatgrass within the burn perimeter. The IDT did discuss that the long term effects of prescribed fire on limber pine should be considered for a future research project.

Recommendations: If riparian stubble height is not effective in protecting streambanks, then the IDT should develop quantitative streambank alteration guidelines for the AMP.

Continue riparian monitoring as planned in future years, the weather in 2006 may have resulted in atypical cattle use patterns.

Continue to monitor cheatgrass within the Pennock Burn to determine the long term effects of prescribed fire on cheatgrass populations.

Consider including periodic rest years into the AMP for allotments with riparian areas at risk of overuse to have more tools available to improve riparian area recovery.

Douglas Ranger District (Laramie Peak Unit)

Wildcat Hazardous Fuels Reduction

This review evaluated the prescribed burn that was conducted in September 2005 on the south unit of the Wildcat Fuels Reduction project. The objective of the project was to remove 50% of the ponderosa pine regeneration.

The Decision Memo indicates that all Forest Plan Standard and Guidelines along with those from Forest Service Handbook 2509.25 would be followed. This is from the 1985 Forest Plan direction and is a 4B prescription area.

Standard and guidelines, as well as additional mitigation measures, were in the decision, and burn plan and so were implemented on the ground.

However, there are seven monitoring items listed on page 5 and 6 of the Decision Memo. Upon review of these monitoring items, no monitoring for these items had occurred.

Recommendations: It was noted that if monitoring items are to be included, then they should be completed. It is a recommendation of this review team to utilize the project list for the District and decide which projects are to be monitored and by which group of folks on a yearly basis. This monitoring project list will be developed during a winter Douglas District Leadership Team meeting from projects that occurred the previous year.

Hahns Peak-Bears Ears Ranger District

This District reviewed implementation of the Cone and Seed Collection Policy in the Seed Handbook (FSH 2409.26f) for an Englemann Spruce cone collection project. No standards and guidelines for this project are listed in the Routt Plan, however the Seed Handbook does provide direction for cone collection. The District found that the Seed Handbook direction is effective and the target of collecting 44 bushels of Englemann Spruce cones was met.

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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

AML	Abandoned mineland
AMP	Allotment managment 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
BCH	Brush Creek / Hayden Ranger District
BLM	Bureau of Land Management
BMPS	Best Management Practices
CDF	Colorado Division of Forestry
CDNST	Continental Divide National Scenic Trail
CDOW	Colorado Division of Wildlife
CDTA	Continental Divide Trail Association
CIP	Capital Improvement Program
CRCT	Colorado River Cutthroat Trout
CWQCD	Colorado Water Quality Control Division
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
FLPMA	Federal Land Management and Policy Act (1976)
FMP	Fire Management Plan
FPO	Forest Protection Officer
FWS	Fish and Wildlife 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
HPBE	Hahns Peak - Bears Ears Ranger District
IDT	Interdisciplinary Team
INFRA	Forest Service database for Infrastructure
LEO	Law Enforcement Officer
LRD	Laramie Ranger District
LRMP	Land and Resource Management Plan
MBR	Medicine Bow – Routt National Forests
MBNF	Medicine Bow National Forest
MBRTB	Medicine Bow – Routt National Forests, Thunder Basin National Grassland
M&E	Monitoring and Evaluation List Colorado)
MIS	Management Indicator Species
MPB	Mountain Pine Beetle
MZW	Mount Zirkel Wilderness
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

NRCS	National Resources Conservation Service
NFRW	National Forest Recreation Wilderness Funds
NFS	National Forest System
NFSR	National Forest System Road
NRIS	National Resource Information System
OHV	Off-Highway Vehicle
PFC	Proper Functioning Condition
R2	Region 2 (Rocky Mountain Region of USFS)
RMBO	Rocky Mountain Bird Observatory
RMEF	Rocky Mountain Elk Foundation
RMRS	Rocky Mountain Research Station (USFS)
RNF	Routt National Forest
ROD	Record of Decision
SASEM	Simple Approach Smoke Estimation Model
SB	Spruce Beetles
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
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
WGCD	Water Quality Control Division (Colorado)
WGFD	Wyoming Game and Fish Department
WUI	Wildland Urban Interface
WYDEQ	Wyoming Department of Environmental Quality
WYNDD	Wyoming Natural Diversity Database

Appendix 1 – Medicine Bow 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.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 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 Forest is on target for accomplishing this old growth objective. In 2005, the Old growth Core Team developed field methods and field forms for collecting attribute data that either verifies existing information (R2VEG) or provides additional information not available from existing databases (e.g. coarse woody debris). Stratified random points were generated across the Medicine Bow-Routt National Forests in order to begin ground-verification on a portion of the potential old growth identified in the GIS process. Field data were collected at 53 points with the remainder to be completed in 2006. In 2006, field data from both seasons will be used to correct the identified old growth produced by the GIS effort. Then a Forest-level team will map the old growth to be managed for retention. Use of Standard 1 and Guideline 1 will assure appropriate percentages of old forest on each mountain range and geographic area, and will create a well-distributed assemblage of old forest that provides large patches, riparian stringers, and connective corridors.	
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)	
Objective 1. Within 2 years, complete Forestwide Fire Management Plan including Wilderness areas.	**Year Due** 2005
The Medicine Bow FMP is currently being updated to include Fire Use Management for all Wilderness Areas and other areas on the Forest that are suitable for this type of wild land fire. The FMP will be in place and functional for fire season 2007.	
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.	
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)

Objective 3. Annually maintain or reconstruct up to 20% of National Forest trails to meet resource standards. **Year Due** Annually

In 2005, 66% of the total Forest Summer Trails and 90% of winter trails of 'trails meeting standards' was met. See the ***Outdoor Recreation*** monitoring item for more information.

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)**

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)**

Objective 1. Between the Medicine Bow and Routt National Forests, implement a consistent timber program each year. **Year Due** Annually

Since fiscal year 2004 the Medicine Bow – Routt NFs have offered or plans to offer approximately 45,000 to 50,000 CCF (100 cubic feet) per year. The level of timber sale offer is currently constrained by funding. Planned offer for 2006-2010 is based on 2004/2005 funding levels.

Fiscal Year	Volume offered (CCF)	Estimated / Planned Offer (CCF)
2004	46.894	35.000
2005	51.432	50.000
2006	71,295	50.000
2007		52,200
2008		49,100
2009		54,500
2010		46,100

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.

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.

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)

Objective 2. Annually, provide opportunities for individuals and organizations to assist the Forest Service in implementing and monitoring the Plan.	**Year Due** Annually
There are numerous ongoing projects that are making progress towards this goal, which are detailed under many of the other objectives. Examples include: Partnerships with various organizations to accomplish trail construction and maintenance Cooperative agreements with counties to inventory and treat noxious weeds. Forest Service, Laramie County and Laramie Rivers Conservation Districts have entered into an MOU to address range and water quality issues in the Crow Creek watershed on Pole Mountain.	

Appendix 2 – Routt 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. The following actions addressed this goal in 2006**:**

Quantitative monitoring of combined effects of salvage logging, wildfire, and Burned Area Emergency Response treatments in Routt Divide Blowdown.

Completion of 52 soil quality field evaluations throughout the Forest.

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 in 2006:

- Review of 24 monthly water rights resumes to determine if any new water rights have the potential to affect National Forest resources: letters were sent to two proponents regarding potential impacts to channel maintenance and stream flow issues, and need to follow proper procedures to obtain permits.
- Work with Stream Systems Technology Center (Stream Team) in Fort Collins to (1) determine potential effects of a large scale water development on channel processes, aquatic habitat, and riparian conditions and, (2) recommendations for additional studies and analyses to better quantify and assess the effects of the proposed diversion on channel, aquatic habitat, and riparian conditions and processes.
- Inventory and verification of 17 existing water rights
- Field inventory of 12 ditch bill water facilities (ditches and reservoirs) to determine operation and maintenance needs to minimize effects to soil, water, riparian, and aquatic resources

  Inventory of 16 recreation residencies to determine if appropriate water rights were in place for residencies that have water systems.

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 in 2006**:**

- 18 of 22 reaches on the Colorado state monitoring and evaluation list for sediment were removed from the list in 2006 as data provided by the Forest indicated no impairment of designated beneficial uses.

- Data collected on two reaches still on monitoring and evaluation list for sediment and sent to the State for further evaluation.
- 2 reaches were placed on the 2006 303(d) list and two on the monitoring and evaluation list for E.coli; Addition of these reaches to the 303(d) list and monitoring and evaluation list is not consistent with this Forest Plan goal.
- BMP and Forest Plan Standards and Guideline monitoring for range in California Park is part of the process to minimize impacts to water quality from nonpoint sources, particularly E.coli.
- 15 acres of watershed improvement including 7 acres of rehabilitation following the Rainbow Family gathering.

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

The goal of the air program is to conduct management activities to comply with all applicable federal, state, and local air quality standards and regulations. The Forest Service is also responsible for protecting the Mount Zirkel Wilderness (MZW) Class I airshed from adverse effects caused by air pollution resulting from forest management activites. Management activities with potential air quality impacts, specifically particulate matter contributions, will be summarized annually for compliance and impacts. NADP, MDN, and IMPROVE data from Buffalo Pass will be tabulated and summarized at 5 and 10 year intervals for trend evaluation.

Conduct project analysis at the landscape scale, where appropriate.

One Landscape scale project was completed in FY06: A Supplemental Information Report concerning Canadian Lynx for the Routt NF OIl and Gas Leasing Analysis.

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

- NFIM funding has resulted in the majority of botany program progression.
- Floristic Inventory of Routt provides baseline data result of CCS with UW and USFS with IM$.
- The Botany Zone Agreement Identified a S. Zone Botanist which will allow progression towards this goal for Routt NF.
- MBRTB Botany Process/Protocol according to R2 direction and LRMPs are currently being institutionalized on all units. Management status species lists (TE, SS, SLC) specific to units have been developed but have not been formalized other then on MBNF. SO Direction has been requested.
- Progress is being made annually on components of the Botany 5 year plan which identifies action items specific to moving toward meeting this objective.
- Effects matrices are nearly completed for all R2 SS plant species allowing us to be more effective in avoiding or reducing impacts during project planning and design.
- Two of ten Empirical Surveys (broad scale surveys) have been conducted on portions of the MBRTB. After 10 we will have Baseline and/or Updated Data for Management status plants including Predictive Modeling and inventory of habitat and Expanded Surveys for

select species.

- The forest is working to develop local sources of native plant materials specific to the MBRTB.

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 ≥75% T (timbered), ≥17% TSF (spruce/fir), and ≤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

- The south zone fisheries biologist has been making incremental progress in maintaining and expanding lotic habitat s for Colorado River cutthroat trout by removing non-native, competing species such as brook trout; some of the work has been conducted in cooperation with the Colorado Division of Wildlife.
- One structural improvement (gabion barrier) project has been implemented in the inlet to Crosho Lake to protect Colorado River cutthroat trout from becoming stranded in the inlet ditch during low-flow conditions.
- A draft management plan has been constructed to manage Colorado River cutthroat trout habitats and populations in the south zone; the plan should be finalized in FY07.

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

A total of 1,279 acres of noxious weeds were treated on the Forest in 2006 (for trend comparison, 1,565 acres were treated in 2004 and 965 acres in 2005). Widely-fluctuating funding levels from one year to the next dictate much of what can be accomplished.
Efforts are designed to control existing populations and to limit further expansions of noxious weed species.
Primary species treated were yellow toadflax, whitetop, houndstongue, musk thistle, and Canada thistle.
Jackson, Grand, and Routt counties are cooperating parties with the Forest Service in controlling noxious weed infestations. We are currently expanding efforts for a Cooperative Weed Management Area in Routt county.
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.

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	1301	189	1728	46	393
2005	1492	464	1492	101	383
2006	1155	65	1446	43	242

Sawlog Volume Offered and Sold 2004-2006

Fiscal Year	Sawlogs (CCF)
2004	31,600
2005	32,200
2006	48,960

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.

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 theYampa 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.

Bio-mass 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 it 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 2006.

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

Moffat County and Routt County Public Information Officers groups – helped develop public information officer groups so that all entities work together in talking about issues that affect local communities. Example: the Routt County PIO Group worked together extensively to ensure that the Rainbow gathering did not negatively impact local tourism.

Appendix 3 – FY06 Survey Information

Table 1. FY06 stream and riparian area condition inventories.

Stream Name	Reach length (miles)	Watershed HUC Code	Method / Rating
Colorado River Headwaters (Routt NF)			
S. Fork. Lindsey Creek	0.5	1401000114	BLM, 1998 / Proper Functioning Condition
Blue Mountain Creek	1.0	1405000112	BLM, 1998 / Functional at risk
Bushy Creek	0.2	1405000109	Harrelson, et al, 1994,
Elkhead Creek	1.2	1405000106	Harrelson, et al, 1994; USDA Forest Service 1996
First Creek	0.4	1405000106	Harrelson, et al, 1994; USDA Forest Service 1996
North Platte River (Medicine Bow NF)			
Parkview Creek: Reach 1	0.5	1018000102	BLM, 1998 / Proper Functioning Condition
Parkview Creek: Reach 2	0.5	1018000102	BLM, 1998 / Proper Functioning Condition
Parkview Creek	0.5	1018000102	Harrelson, et al, 1994/ n/a
Unnamed N Platte Trib	0.10	1018000201	Permanent Photo Point / n/a
Unnamed N Platte Trib	0.10	1018000203	Permanent Photo Point / n/a
Unnamed N Platte Trib	0.10	1018000201	Permanent Photo Point / n/a
North Fork Big Creek	0.10	1018000203	Permanent Photo Point / n/a
Middle Fork Big Creek	0.10	1018000203	Permanent Photo Point / n/a
South Fork Big Creek	0.10	1018000203	Permanent Photo Point / n/a
South Brush Creek	0.5	1018000204	Harrelson, et al, 1994 & USDA Forest Service, 1996 / n/a
Parkview Creek: Reach 1	0.5	1018000102	BLM, 1998 / Proper Functioning Condition
Troublesome Creek	0.5	1018000206	Permanent Photo Point / n/a
Hog Park Creek	1.5	1018000205	Harrelson, et al, 1994 / n/a
S Fork Hog Park Creek	0.25	1018000205	Harrelson, et al, 1994 / n/a
Beaver Creek	0.10	1018000206	Permanent Photo Point / n/a
Cumberland Gulch	0.5	1018000206	Harrelson, et al, 1994 & USDA Forest Service, 1996 / n/a
S Fork Goetze Creek	0.25	1018000206	Permanent Photo Point / n/a
Little Beaver Creek	0.50	1018000202	Permanent Photo Point / n/a
Quimby Creek	0.10	1018000203	Permanent Photo Point / n/a
North Cedar Creek	0.25	1018000206	Permanent Photo Point / n/a
Middle Cedar Creek	0.25	1018000204	Permanent Photo Point / n/a
Line Creek	0.10	1018000203	Permanent Photo Point / n/a
Damfino Creek	0.25	1018000205	Permanent Photo Point / n/a
Methodist Creek	0.10	1018000207	Permanent Photo Point / n/a

Stream Name	Reach length (miles)	Watershed HUC Code	Method / Rating
North Heather Creek	0.3	1018000207	Permanent Photo Point / n/a
Trib to Calf Creek	0.5	1018000207	Permanent Photo Point / n/a
Teddy Creek	0.2	1018000207	Permanent Photo Point / n/a
McLain Creek	1.00	1018000208	Permanent Photo Point / n/a
Jack Creek	1.00	1018000203	Permanent Photo Point / n/a
S Fork Big Creek	1.00	1018000203	USDA Forest Service, 1996 / n/a
N Fork Big Creek	0.75	1018000203	USDA Forest Service, 1996 / n/a
Line Creek	0.4	1018000203	USDA Forest Service, 1996 / n/a
Quimby Creek	0.3	1018000203	USDA Forest Service, 1996 / n/a
Middle Fork Big Creek	0.5	1018000203	USDA Forest Service, 1996 / n/a
Damfino Creek	0.3	1018000205	USDA Forest Service, 1996 / n/a
N Platte trib	0.25	1018000201	USDA Forest Service, 1996 / n/a
East Fork Encampment River	1.00	1018000205	USDA Forest Service, 1996 / n/a
Trib to Calf Creek	0.2	1018000207	USDA Forest Service, 1996 / n/a
NZ Fisheries Streams (30)	24.5	Multiple	See Table 2 below
TOTAL	**39.95 miles**		

Table 2. FY06 fisheries surveys.

Stream Name	Mountain Range	Ranger District	Length surveyed (mi) [10]	Watershed HUC Code	Species Category
Stratton Creek	Laramie Peak	Douglas	0.1	101800080901	MIS
Low Deer Creek	Laramie Peak	Douglas	0.1	101800071001	MIS
Campbell Creek	Laramie Peak	Douglas	0.1	101800071301	MIS
Box Elder Creek	Laramie Peak	Douglas	0.1	101800071101	MIS
Lit Med Bow River	Laramie Peak	Douglas	0.25	101800050102	MIS
LaPrele Creek	Laramie Peak	Douglas	0.25	101800071301	MIS
Up. Deer Creek	Laramie Peak	Douglas	0.25	101800071002	MIS
Cottonwood Creek	Laramie Peak	Douglas	0.1	101800081001	MIS
Horseshoe Creek	Laramie Peak	Douglas	0.25	101800080901	MIS
LaBonte Creek	Laramie Peak	Douglas	0.5 (2)	101800080302	MIS
Shingle Creek	Sierra Madre	BCH	0.1	101800020703	MIS
Nugget Creek	Sierra Madre	BCH	0.1	101800020701	MIS
McClain Creek	Sierra Madre	BCH	0.05	101800020801	MIS
Roaring Fork Little Snake River	Sierra Madre	BCH	0.5 (2)	140500030106	Sensitive
Cow Creek	Sierra Madre	BCH	0.5	1018000401	MIS
E. Fork S. Spring Creek	Sierra Madre	BCH	0.1	101800020703	MIS
Chippewa Creek	Sierra Madre	BCH	0.1	101800020703	MIS
S. Heather Creek	Sierra Madre	BCH	0.1	101800020703	MIS
Jack Creek	Sierra Madre	BCH	0.6 (2)	101800020801	MIS
Lost Creek	Sierra Madre	BCH	0.25	101800030108	MIS
S. Brush Creek	Sierra Madre	BCH	1.0 (2)	101800020401	MIS
West Branch N. Fork Little Snake River	Sierra Madre	BCH	0.4 (2)	140500030104	Sensitive
Rabbit Creek	Sierra Madre	BCH	0.1	140500030104	Sensitive
North Fork Little Snake River	Sierra Madre	BCH	0.2 (2)	140500030104	Sensitive
Deadman Creek	Sierra Madre	BCH	0.2 (2)	140500030104	Sensitive
Harrison Creek	Sierra Madre	BCH	0.2 (2)	140500030104	Sensitive
Nash Fork Creek	Snowy Range	Laramie	0.1	101800100603	MIS
Curitain Creek	Snowy Range	Laramie	0.1	101800100601	MIS
Fence Creek	Snowy Range	Laramie	0.25	101800100204	MIS
Lake Owen Creek	Snowy Range	Laramie	0.1	101800100204	MIS
West Prong Creek	Elkhead	HPBE	1.5	140500030302	Sensitive
Circle Creek	Elkhead	HPBE	2.0	140500010601	Sensitive
Antelope Creek	Rabbit Ears	Parks	0.2	140100011404	Sensitive
Carter Creek	Rabbit Ears	Parks	0.3	140100011404	Sensitive
Rough Creek	Beaver Flat Tops	Yampa	0.25	140500011203	Sensitive
Cyclone Creek	Beaver Flat Tops	Yampa	0.25	140500011203	Sensitive
Total			**11.75 miles**		

[10] If more than one stream reach was surveyed, the number of reaches samples is in parentheses.

Table 3. Acres of surveys for threatened, endangered, or sensitive species on the Medicine Bow- National Forest in FY06.

	THREATENED		SENSITIVE													
District	**Bald Eagle**	**Preble's Meadow Jumping Mouse**	**Boreal Owl**	**Columbian Sharp-tailed - grouse**	**Flammulated Owls**	**Goshawk**	**Purple Martin**	**Raptors**	**Sage Grouse**	**Songbirds**	**Wood-peckers**	**Pine Marten**	**Pygmy Shrew**	**Snow-shoe Hare**	**General TES surveys**	**TES Totals**
Brush Creek – Hayden Ranger District																
Project Surveys	0	0	0	0	0	850	0	0	0	0	0	0	0	0	0	850
Wildlife Surveys	100		500	0	0	60	0	0	60	0	0	0	0	0	0	720
MIS Surveys	0	0	0	0	0	300	0	0	0	930	See Songbirds	50	0	3,000	0	4,280
BCH Total:	100	0	500	0	0	1,210	0	0	60	930	0	50	0	3,000	0	5,850
Laramie Ranger District																
Project Surveys	0		125	0	0	225	0	0	0	0	250	0	0	0	1,195	1,795
Wildlife Surveys	0		0	0	0	30	0	600	0	0	0	0	0	0	0	630
MIS Surveys	0	0	0	0	0	420	0	0	0	0	0	0	0	4,000	0	4,420
Laramie Total:	0	0	125	0	0	675	0	600	0	0	250	0	0	4,000	1,195	6,845
Douglas Ranger District: Bat surveys were conducted on the Douglas Ranger District, however acreage information is not available for this survey type. The survey results are included in the *Threatened, Endangered, Sensitive Species and MIS Habitat and Populations* monitoring item in this report.																
SO Wildlife Survey	0	200	0	0	0	0	0	0	0	0	0	0	100	0	0	300
SO Forest MIS Survey	0	0	0	0	0	0	0	0	0	12,090	See songbirds	4,340	0	0	0	16,430
Medicine Bow Total	**100**	**200**	**625**	**0**	**0**	**2,095**	**0**	**600**	**60**	**13,020**	**250**	**4,390**	**100**	**7,000**	**1,195**	**29,425**

Table 4. FY06 Acres of surveys for threatened, endangered, or sensitive species on the Routt- National Forest.

	THREATENED		SENSITIVE													
District / Survey Type	**Bald Eagle**	**Preble's Meadow Jumping Mouse**	**Boreal Owl**	**Columbian Sharp-tailed grouse**	**Flammulated Owls**	**Goshawk**	**Purple Martin**	**Raptors**	**Sage Grouse**	**Songbirds**	**Wood-peckers**	**Pine Marten**	**Pygmy Shrew**	**Snow-shoe Hare**	**General TES surveys**	**TES Totals**
Hahns Peak - Bears Ears																
Project Surveys	0	0	0	0	50	400	0	0	0	0	0	0	0	0	2,560	3,010
Wildlife Surveys	0	0	0	300	0	500	50	0	0	0	0	1,500	0	0	500	2,850
MIS Surveys	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HPBE Total:	0	0	0	300	50	900	50	0	0	0	0	1,500	0	0	3,060	5,860
Parks																
Project Surveys	0	0	0	0	0	600	0	0	0	0	0	0	0	0	900	1,500
Wildlife Surveys	0	0	0	0	0	120	0	60	0	0	0	0	0	0	0	180
MIS Surveys	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:	0	0	0	0	0	720	0	60	0	0	0	0	0	0	900	1,680
Yampa																
Project Surveys	0	0	0	0	0	250	0	0	0	0	0	0	0	0	9,167	9,417
Wildlife Surveys	0	0	0	0	0	300	0	60	0	0	0	0	0	3,000	0	3,360
MIS Surveys	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:	0	0	0	0	0	550	0	60	0	0	0	0	0	3,000	9,167	12,777
Routt Forestwide Wildlife Surveys	0	0	2,000	0	0	0	0	0	0	0	0	0	0	0	0	2,000
Routt Forestwide MIS Surveys	0	0	0	0	0	720	0	0	0	19,158	See Songbirds	0	0	0	0	19,878
Routt Total	0	0	2,000	300	50	2,890	50	120	0	19,158	0	1,500	0	3,000	13,127	42,195

Table 5. Total Acres of surveys for threatened, endangered, or sensitive species on the Medicine Bow - Routt- National Forests in FY06

	THREATENED		SENSITIVE													
Survey Type	**Bald Eagle**	**Preble's Meadow Jumping Mouse**	**Boreal Owl**	**Columbian Sharp-tailed grouse**	**Flammulated Owls**	**Goshawk**	**Purple Martin**	**Raptors**	**Sage Grouse**	**Songbirds**	**Wood-peckers**	**Pine Marten**	**Pygmy Shrew**	**Snow-shoe Hare**	**General TES surveys**	**TES Totals**
MBR National Protocol Surveys	0	0	0	0	0	14,600	0	0	0	0	0	0	0	0	0	14,600
MBR Grand Total:	100	200	2,625	300	50	19,585	50	720	60	32,178	250	5,890	100	10,000	14,322	86,430