Fiscal Year 1998 Monitoring Evaluation Report

for the

Routt National Forest Land and Resource Management Plan

(1997 Revision)

Introduction

The Routt National Forest Land And Resource Management Plan (Forest Plan) was approved on February 17, 1998 when Acting Regional Forester Tom L. Thompson signed the Record of Decision. The actual period covered by the Fiscal Year 1998 Monitoring Evaluation Report is from May 3, 1998 through September 30, 1998; the end of the Forest Service Fiscal Year (FY). The Fiscal Year 1998 Annual Monitoring Plan of Operations identifies the project-level information needed to answer the FY 1998 monitoring questions. The approved Annual Monitoring Plan of Operations identifies specific monitoring activities to address the Monitoring Questions listed in the Forest Plan.

Since the Forest Plan was not approved until after mid-year, most projects implemented during FY 1998 were approved under guidance provided by the 1983 Forest Plan. The Interdisciplinary Team made an effort to monitor projects conceived and implemented under the revised Forest Plan, but much of the monitoring reflects implementation of the previous plan.

The purpose of this report is to evaluate the results of FY 1998 monitoring and to make recommendations to the Forest Supervisor concerning the sufficiency of the Forest Plan to provide management direction for the Routt National Forest for the next year. Monitoring was accomplished by individual specialists and the Monitoring Interdisciplinary Team (ID Team). The ID Team analyzed the resulting data to determine its significance at the Forest Plan level and then developed and presented recommendations to the Forest Supervisor. The ID Team members are listed below:

Larry Lindner, Team Leader

Steve Nielsen, Monitoring Specialist

Tommy John, Soil Scientist

Gary Roper, Forester/Silviculturist

Kathy Rodriguez, Wildlife Biologist

Carol Tolbert, Data Coordinator RIS/GIS

Denise Germann, Public Affairs

Liz Schnackenberg, Hydrologist

Kirk Wolff, Air Resource

Jeff Tupala, Landscape Architect

Dee Hines, Ecologist

Mary Sanderson, Recreation

Ellen Frament, Analyst

Sherry Reed, Hahns Peak/Bears Ears District Ranger

Larry Ross, Parks District Ranger

Norman Wagoner ,Yampa District Ranger

The format of this report differs from the Monitoring and Evaluation Reports for the 1983 Forest Plan. Previous reports concentrated on specific, measurable targets accomplished during the fiscal year. This report summarizes observations made by the Monitoring ID Team and also reports specific measurable targets (S-2 Table, 1998 Plan). However, it concentrates on the environmental effects of implementing the Revised Plan.

Monitoring of the Routt Land and Resource Management Plan (Routt Plan) will evolve from year to year as issues change and we obtain more experience with the plan. This is the first year of monitoring under the new plan's substantially different monitoring direction. Under the new plan, monitoring focuses on identifying and analyzing the effects of plan implementation and refining plan direction, as necessary.

Overview of Monitoring, Team Conclusions and Recommendations

The Monitoring ID Team did not draw any conclusions that would require immediate changes to the Forest Plan. Since this year's monitoring program only includes the five month period from the date the Forest Plan was implemented to the end of the Fiscal Year, few projects were conceived, developed, and implemented under the revised Forest Plan. No amendments to the Forest Plan or its standards or guidelines were identified.

Monitoring did identify several implementation items that need work and several items for continued scrutiny. No new research needs were identified.

Special emphasis needs to be placed on continued monitoring of spruce bark beetle populations within the Routt Divide Blowdown. There is potential for an epidemic to significantly change the complexion of the spruce-fir vegetation type on the Forest. A change of this nature could have long term implications.

The Forest needs to develop standards for data entry. The Monitoring ID Team found several instances where current data format and entry made responding to the monitoring questions difficult or impossible. All monitoring completed during Fiscal Year 1999 should be reviewed for similar difficulties. Those monitoring questions not scheduled for evaluation until year five will continue to receive intensive review to ensure that the necessary information and data will be available and in a usable format.

The Monitoring ID Team decided to delay development of the Fiscal Year 1999 Monitoring Plan of Operation until the FY 1998 report is complete to take full advantage of its findings. Subsequent Plans of Operation will be developed as part of the Fiscal Year program planning process.

Responses to the Monitoring Questions

The Monitoring Questions identified in Chapter 4 of the Forest Plan respond to regulatory requirements and the goals and objectives in Chapter 1 of the Forest Plan. They are designed to track items considered key to ascertaining Forest Plan viability. Several of the Monitoring Questions do not require annual evaluation and reporting; a note under each monitoring question identifies the year in which evaluation and reporting will be completed. These questions involve situations where change is slow, and it will take several years for trends to become established or identifiable. In these instances, data is collected over several years, and information is analyzed over the long term.

The information presented here is summarized from specialist reports compiled as part of the FY 1998 monitoring effort. The evaluation and recommendations were prepared by the Monitoring ID Team.

Monitoring Question 1-1. Are long-term soil health and productivity being maintained?

Soil health was monitored on several projects during the past year. The watershed group inspected several timber sales and grazing allotments to determine how well Forest Plan standards and guidelines and NEPA mitigation measures were being implemented on the ground. The Red Dirt allotment (Yampa District) was reviewed before and after grazing this past season. Evaluation was done using a soil health matrix, as outlined in the R2 Rangeland analysis and management guide. While some areas of concern were identified, the overall allotment received a "healthy" soil rating.

Winter timber harvesting operations were monitored to determine if frozen soil and snow were protecting the soil resource. Five separate areas on a timber sale were examined. In all cases, the combination of 8 to 12 inches of packed snow over 1 to 5 inches of frozen soil protected the resource very well.

Baseline soil monitoring information is being collected in the North Fork area of the Routt Divide Blowdown. Soil erosion pins were placed during the fall of 1998 and will be read in the spring of 1999. More erosion pins will be placed during the summer of 1999 concurrent with the salvage harvest operations.

Additional information relevant to this monitoring question is included under monitoring questions 1-2, 1-3, and 1-9.

Conclusion - Information gathered from specific projects indicates that soil health and productivity are being maintained across the forest.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 1-2 - Are management activities maintaining or improving air quality including the Mt. Zirkel Wilderness?

The Beaver Creek Burn was selected to evaluate 1998 Forest Plan air quality effects. Air quality readings from the Mt. Zirkel monitoring station were not reviewed because the wind direction from the Beaver Creek Burn on the Yampa Ranger District did not disperse smoke into the Mt. Zirkel Wilderness. Prior to implementation, the Simple Approach Smoke Estimation Model (SASEM) was used to predict the effects of this prescribed burn on potentially affected areas (Oak Creek, CO; Steamboat Springs, CO; and the

Yampa Valley Regional Airport). The burn was conducted under good to excellent smoke dispersal conditions, and none of the potentially affected areas were impacted. The smoke dispersal from this prescribed burn met the projections in the SASEM model.

Conclusion - Based on monitoring of the Beaver Creek Burn, burning windows and air quality are being carefully considered in project planning. Using this approach, prescribed burning activities do not appear to be adversely affecting air quality on the Forest or within Mount Zirkel Wilderness.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 1-3 - How well are management activities maintaining watersheds in a healthy condition and meeting Colorado water quality standards?

A. Evaluate current watershed condition for compliance with state water quality standards and review state list of impaired streams.

None of the streams on the Routt National Forest are listed as impaired, according to requirements under the Clean Water Act, [Section 303(d)]. The Williams Fork drainage southeast of Kremmling is listed as impaired. However, this area is now administered by the Arapaho-Roosevelt National Forests; no monitoring was done by the Routt National Forest. Although no streams are listed as impaired, 23 stream segments are on the state list of streams impacted by excess sediment. Monitoring was initiated on ten of these streams during the summer of 1998 and will continue during the summer of 1999. Monitoring included evaluating physical stream characteristics through pebble counts and cross-sections, evaluating biological health through macroinvertebrate sampling, and measuring some basic water quality parameters (water temperature, pH, and dissolved oxygen). Initial evaluation of the data indicates that the water quality parameters meet state water quality standards. During 1999, some reference reaches will be sampled to determine baseline physical and biological conditions. Monitoring will also be initiated on the remaining 23 streams.

Conclusion - Monitoring completed during 1998 indicates that the following water quality parameters meet state water quality standards: water temperature, pH, and dissolved oxygen.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

B. Evaluate watershed disturbance levels by comparing current conditions to conditions in the 1997 Watershed Health Assessment.

The North Fork of the Elk River was the only watershed in which the disturbance levels changed significantly This change was attributable to the Routt Divide blowdown. Blowdown was heaviest in the North Fork of the Elk River; 13% of the watershed was affected. Combined effects from the blowdown, past timber management, and the proposed salvage logging changed the sensitivity rating for the North

Fork of the Elk River from low to high. This change in sensitivity ranking was incorporated into a Supplemental Information Report (SIR) for the Forest Plan. The SIR assessed the impact of the blowdown on the existing conditions described in the Final Environmental Impact Statement for the Forest Plan. The change in sensitivity ranking does not indicate significant watershed degradation. It does suggest a watershed condition that might limit future management activities.

Water quality in the North Fork of the Elk River is good. Monitoring in 1999 will continue to evaluate changes associated with the blowdown or salvage logging operations. Monitoring to detect blowdown-related channel morphology changes was initiated in 1998; the results will be summarized in a University of Wyoming Master's thesis.

Conclusion - Monitoring on the North Fork of the Elk River indicated an increased sensitivity rating in response to the recent Routt blowdown and past timber harvest activities. This may constrain future management activities in the watershed.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Recommendation - Continue monitoring the effects of the Routt Divide Blowdown event on the North Fork Elk River.

C. Evaluate the effectiveness of Forest Plan water and riparian standards and guidelines:

The North Fork blowdown salvage project was chosen to evaluate the effectiveness of Forest Plan standards and guidelines and to determine if mitigations identified during the NEPA process were implemented on the ground. The first step was to review the timber sale contract to ensure that all mitigation measures for the soil, water, and fisheries resources were incorporated. The second step was to monitor the effectiveness of the BMPs and mitigations and make adjustments as needed. Monitoring was done through field review and photo documentation. Overall, the BMPs and mitigation measures met Forest Plan standards and guidelines. Exceptions occurred in road reconstruction, where the initial attempt to fix existing problems did not adequately meet objectives. Problems in these areas have either been fixed or are scheduled for additional work during the summer of 1999.

Salvage activities in the Lost Dog and English Creek areas required reconstruction of the Lost Dog Road (FDR 433) and FDR 43. Overall, reconstruction was beneficial for the watershed because it improved drainage and reduced the connected disturbed area. One of the primary actions on FDR 43 was replacement of a misaligned culvert which frequently plugged during spring runoff, resulting in water running over the road and subsequent erosion and sediment delivery to the stream channel. This project was completed in 1998, and the effectiveness of this repair will be monitored in 1999.

Due to the continuous carpet of windthrown trees which crossed streams and riparian areas, the Routt Divide Blowdown Interdisciplinary Team did not feel the normal Forest Plan standards and guidelines would provide adequate protection to areal watersheds during salvage operations. Therefore, the team decided to identify and mark Streamside Management Zones (i.e., "buffer" strips) on the ground to protect streams, wetlands, and riparian areas. The Streamside Management Zones were designated as protected on the sale area maps. They included all USGS blue-line streams in the harvest units. Also included were perennial stream courses and wetlands which were not delineable on 1:24,000-scale maps but still required buffer strips for resource protection. The width of the buffer strips was determined on a site-specific basis, taking into consideration landforms, soils, slope steepness, and other topographic features. Preliminary

field reconnaissance of harvested units found that the Streamside Management Zones were effective in protecting the soil and water resources. In many cases, harvest unit boundaries were designed to accommodate the soil and water concerns and eliminate the need for designation of Streamside Management Zones.

Conclusion - Preliminary field reconnaissance of harvested units found that the Streamside Management Zones are being implemented on the ground as described in the NEPA document, and they are protecting the soil and water resources.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Recommendations - Continue to monitor the effectiveness of road repairs and maintenance. Continue to monitor effectiveness of Streamside Management Zones.

Monitoring Question 1-4 - Are insect and disease populations compatible with attainment of management area goals and objectives?

Spruce Beetle

With the occurrence of the Routt Divide Blowdown (October 1997), the spruce beetle (*Dendroctonus rufipennis*) became the agent with the greatest potential to cause wide spread tree mortality in the near future. The blowdown created 13,000 acres of optimal habitat and ideal conditions for a spruce beetle epidemic. This insect's preferred habitat is damaged or weakened spruce trees. Field observations and the aerial surveys indicated that spruce beetles were widespread in the drainages where the blowdown occurred, predisposing the blowdown to infestation. Since the blowdown occurred after the beetles had entered their winter state in 1997, the first opportunity for them to spread was the summer of 1998.

Although there is a chance that no outbreak will develop from the blowdown, the possibility of a spruce beetle outbreak occurring in the Routt Divide Blowdown area is considered to be high.

Much of the windthrown material will remain susceptible to spruce beetle infestation for two to three years, depending on the degree of shade and drying this material receives. Surveys and monitoring of spruce beetle populations were conducted from June through October of 1998. Survey techniques included pheromone trapping to determine flight periodicity and extent. From the latter part of September through October, 1998, samples of spruce beetle brood were taken to determine the predominant life stages of spruce beetles present in the Routt Divide Blowdown area. Five samples contained young adult spruce beetles in the Floyd Peak blowdown patches. These young adult beetles indicate that spruce beetles in the area can complete their life cycle in one year. This compares to the two-year cycle more commonly found in Colorado. The one-year cycle is significant because it means the population can increase more rapidly. Rapid population growth increases the rate at which available habitat will be completely utilized and facilitates the beetle's spread to standing green trees.

The data collected during 1998 will not tell us much about potential for mortality in standing trees. It shows that populations are still very small and quite variable. It does verify the following:

· Spruce beetles can be found in almost any patch of the blowdown.

· The spruce beetle population has not grown to the point where all of the downed spruce material is being utilized.

· There is wide variation in the population densities and brood sample densities.

With larger sample sizes, population density and brood information can be used to estimate future spruce beetle populations in standing trees and predict potential tree mortality[1].

Since spruce beetles are not yet occupying all of the blowdown material, there are opportunities for re-infestation from outside the blowdown area and by one-year beetles. Spruce beetles could move from blowdown to live standing trees as early as the spring of 1999. However, since there is a large amount of suitable blowdown material in the analysis area, spruce beetles would most likely remain in the blowdown until the spring of 2000 or 2001 before moving to live standing trees (based on estimates of reproduction and time to fully utilize available downed material). As discussed above, the presence of spruce beetles in the one-year life cycle accelerates the use of blowdown material. Under these conditions a spruce beetle outbreak can be expected in the next one to four years. However, as in any biological system, there is a possibility that no outbreak will occur.

Site visits to the Steamboat Springs ski area found spruce beetles in most of the spruce felled as part of the Pioneer Ridge expansion. Spruce beetles were also found in some standing, green trees. Some of the spruce beetle population will likely emerge as adults in 1999 and be capable of attacking and killing standing green spruce.

To date, there have been two separate analyses for the Routt Blowdown, the North Fork Timber Sale and the South Fork Salvage Analysis The decision for the North Fork Timber Sale Environmental Impact Statement (EIS) was to salvage spruce logs to remove spruce beetle habitat, thereby reducing population buildup in localized parts of the forest. The Proposed Action for the South Fork analysis includes a 73-acre thinning in a stand not affected by the blowdown. In this case, thinning is being used to reduce to stand susceptibility to spruce beetle attack.

Other Insects and Diseases

Annual survey records for insect and disease are retained to provide permanent activity records. Aerial surveys and subsequent ground-based service trips in 1996 and 1997 found some localized, high concentrations of insects and/or disease. However, over most areas, insects and diseases were at low levels. Much of the Routt National Forest regenerated from fires around the turn of the century. As Forest stands age, they are becoming more susceptible to certain insects and diseases, and localized infestations are becoming more common.

The aerial survey is generally performed as a late summer overflight of the entire forest when many indicators of insect and disease are identifiable. It is often followed by specifically directed ground surveys to verify the causative agent. The localized flare-up conditions included subalpine fir decline, numerous high-intensity dwarf mistletoe (*Arceuthobium americanum*) infection centers, and pockets of mountain pine beetle (*Dendroctonus ponderosae*) activity. A ground survey in the Steamboat Springs Ski Area (Middle Yampa Geographic Area) was performed after the August 1998 aerial survey detected mountain pine beetle activity. Mountain pine beetle infestations killed approximately 60 pines in 1997. Risk rating for these stands indicates more than 50% mortality from mountain pine beetle.

Another service trip was specifically scheduled to look at dwarf mistletoe in regenerated stands. The survey found several situations where scattered, dwarf mistletoe-infected lodgepole pine was left on site. In these areas, pockets of new regeneration have become infected, and the infection is spreading. The review also observed the rate of dwarf mistletoe spread around the edges of regenerated stands. It was apparent that present-day, smaller clearcuts are being infected with dwarf mistletoe from adjacent infected stands much more rapidly than the larger clearcuts of the past. Research shows that linear spread of dwarf mistletoe

averages about a foot each year. The smaller the unit, the more rapid the initial infection and subsequent reinfection. During the service trip, a 1971, 104-acre clearcut was compared to nearby partial cut, tie-hack areas. The clearcut has excellent, disease-free lodgepole pine regeneration. The older partial-cut areas are heavily infested with dwarf mistletoe in both the residual overstory and the regeneration. Large clearcuts and felling of all residual lodgepole pine should be used in areas where the level of dwarf mistletoe infection is high.

Conclusion

Spruce Beetle - The Routt Divide Blowdown has created optimal conditions for a spruce beetle epidemic on the Forest, and current beetle populations are increasing. If an epidemic should occur, the spruce timber type on the Forest could change significantly. This situation would likely be incompatible with some forest goal and objectives.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Recommendations - Continue intensive and extensive monitoring of spruce beetle populations. Continue coordination with Forest Service Research; test methodology to limit spruce beetle populations and reduce the risk of beetle epidemics in spruce stands.

Conclusion

Other insects and diseases - Smaller harvest units may be predisposing a larger percentage of regenerated stands to dwarf mistletoe infestations, from both initial infection and reinfection.

No change indicated	
Implementation change needed	X
Change to Forest Plan needed	

Recommendation - In Management Areas 5.11 and 5.13, increase the average patch size in lodgepole pine stands where dwarf mistletoe is reducing growth and has the potential to infect regeneration.

Monitoring Question 1-5 - How is harvest unit size affecting landscape patterns across the Forest?

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003. However, 1998 information is being included here to ensure its availability for future evaluation. Although no formal conclusions will be drawn until 2003, the ID Team noted some trends worth documenting for future consideration.

A copy of the Forest's vegetation data (RIS and GIS data attributes) as of January 1999 has been archived. This data will serve as a baseline for the initial comparisons to be made in the 2003 Annual Monitoring Evaluation Report.

Data on average and maximum harvest unit size for 1998 by district are presented in the following table. These will be included in the baseline data for use in the 2003 analysis.

District	Average Clearcut Size (acres)	Maximum Clearcut Size (acres)
01 (Yampa District)	10	20
03 (Hahns Peak/Bears Ears District)	8	11
04 (Parks District)	17	40 *

* One clearcut unit (Elk Mountain Timber Sale) achieved, but did not exceed, 40 acres.

Upon reviewing Forest-wide silviculture standards 1, 4, 5, and guideline 3, it became clear that the RIS database, by itself, is not an easy or adequate tool to track created openings over 40 acres. In silviculture guideline 3, seedling height is a primary factor for determining a created opening. This is a critical measurement when created openings are located adjacent to each other. It is equally important for determining if the final removal treatment in a shelterwood system has created an opening. However, seedling height is not periodically gathered or tracked in the RIS database.

We will develop better methodology for recording and tracking created openings greater than 40 acres once they have been approved through the NEPA process. When these units are harvested, they should be added to the list of units exceeding the 40-acre limit. This tracking device could be added as a component of the Project Tracking database.

Observation - Timber sale units harvested on the Routt National Forest did not exceed the 40-acre limit for created openings during 1998.

No change indicated	
Implementation change needed	X
Change to Forest Plan needed	

Recommendation - Develop and implement methodology for tracking created openings larger than 40 acres. Also, see the recommendation for Monitoring Question 1-4.

Monitoring Question 1-6 - Are habitats for threatened, endangered and Forest Service Rocky Mountain Region sensitive species on the Routt National Forest being maintained or enhanced? (Fine Filter Scale)

This "annual" monitoring item uses methodology outlined in the Annual Monitoring Plan of Operations for the Routt National Forest. To address this monitoring question, specialist reports for thirteen trailhead, timber sale, salvage sale, and special-use projects were analyzed. These reports included biological assessments (BAs) and biological evaluations (BEs).

Threatened, Endangered, Proposed, and Region 2 Sensitive Species

To determine potential impacts to threatened, endangered, proposed, and sensitive species and their habitats, the specialists consulted the following agencies/resources:

· U.S. Fish and Wildlife Service (required by law).

· The Colorado Natural Heritage Program database.

· FSM direction at 2670.

· The RMRIS database.

· Forest-wide standards and guidelines and Management Area (MA) and Geographic Area direction (in the Revised Plan).

Management areas affected by these projects primarily included MA 1.5 (National River System - Wild Rivers, Designated, and Eligible), MA 5.13 (Forest Products), and MA 5.11 (General Forest and Rangelands-Forest Vegetation Emphasis).

Based on the determinations and rationale in the BAs, BEs, and specialist reports, it is apparent that the projects are in compliance with the Forest Plan Threatened, Endangered, and Sensitive Species standards and guidelines. Mitigation measures were applied, when needed, to maintain or enhance habitat. The specialists determined that proposed projects were not likely to jeopardize the lynx. For various sensitive species or habitats, the determination ranged from "no impact" to "may adversely impact individuals, but [is] not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability rangewide" [R2 Supplement 2600-94-2, 2672.42, Section 2(b)]. For federally listed species or their critical habitat, determinations varied from "no effect" to "not likely to adversely affect listed species or critical habitat" (50 CFR 402.13).

Site-specific Project Observations

North Fork Salvage Sale - Management Indicator Species (MIS) selected for the North Fork Salvage Sale were elk, lynx, 3-toed woodpecker, boreal owl, northern goshawk, and marten. The specialists determined that the project would not significantly change the habitat for these species. Species population trends will be monitored and relationships to habitat changes determined over time.

An additional assessment of the North Fork Salvage Blowdown area is planned. This assessment will further evaluate potential recreation effects on usability of lynx habitat in the Mount Zirkel Wilderness and Seedhouse areas. Additional mitigation may result from this recreation assessment.

Sawmill Salvage Sale - MIS selected for the Sawmill Salvage sale were the common flicker, hairy woodpecker, Southern red-backed vole, pine grosbeak, warbling vireo, blue grouse, vesper sparrow, sage brush vole, Wilson's warbler, elk, mule deer, black bear, and snowshoe hare. This project is very small in scale and scope. There were no anticipated major effects to any of the management indicator species or their habitats.

Routt Divide Blowdown - Monitoring will continue, as funding permits, on the Routt Divide Blowdown and subsequent salvage logging and management activities. Fourteen sensitive bird species were affected as a result of the blowdown. A point count methodology will be used to evaluate impacts on these species. Point counts will be established in the following three areas within the blowdown on the Hahns Peak/Bears Ear District:

· Blowdown that will be salvage logged.

· Blowdown that will not be salvage logged.

· Forest areas not affected by the blowdown.

These point counts will provide data on species composition and abundance in spruce-fir forests in this area. These surveys will help identify those species using blowdown areas, edge habitats, or mature forests as nesting and foraging habitat. Information on species preferences for salvage or non-salvage logged areas and data on species utilization of woody debris could be used to develop beneficial mitigation measures for these sensitive bird species.

Encampment Trailhead - During the 1998 flowering season, the District Biologist surveyed for clustered lady's slipper and the wood frog at the site of proposed new facilities for the Encampment Trailhead. None were found.

Conclusion - As of this report, it appears that the threatened, endangered, proposed, and sensitive species' habitat is being maintained.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 1-7 - Are forest cover types and habitat structural stages (coarse filter as described in the FEIS on pages 3-107 through 3-110) being provided for across the Forest?

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003. However, 1998 information is being included here to ensure its availability for future evaluation.

A copy of the Forest's vegetation data (RIS and GIS data attributes) as of January 1999 has been archived. This data will serve as a baseline for the initial comparisons to be made in the 2003 Annual Monitoring Evaluation Report. One method for obtaining cover type and habitat structural stage information is to remeasure timber inventory plots. The forest may pursue collecting this information through cooperative agreements with other organizations. Cover type and habitat structural stage change very slowly, making remote sensing a viable, cost-effective monitoring option.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 1-8 - How are management activities affecting late successional forest structure in management Areas 5.11 and 5.13?

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003. However, 1998 information is being included here to ensure its availability for future evaluation.

A copy of the Forest's vegetation data (RIS and GIS data attributes) as of January 1999 has been archived. This data will serve as a baseline for the initial comparisons to be made in the 2003 Annual Monitoring Evaluation Report.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 1-9 - How are management activities affecting riparian habitats (including wetlands) on the Forest.

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003. However, 1998 information is being included here to ensure its availability for future evaluation. Although no formal conclusions will be drawn until 2003, the ID Team noted some trends worth documenting for future consideration.

The effect of management activities on riparian habitats was evaluated through field reconnaissance and Proper Functioning Condition [2] (PFC) surveys. The Proper Functioning Condition process assess riparian area functionality based on the area's capability and potential and uses a qualitative evaluation of hydrologic, vegetative, and soil conditions. In this assessment, there are four condition categories: proper functioning condition, functional - at risk, nonfunctional, and unknown. Field reconnaissance was conducted for all management activities including timber sales, trails, roads, and range allotments. Proper Functioning Condition surveys were conducted on range allotments currently being analyzed through the NEPA process.

Field reconnaissance found that timber management effects are primarily due to historic activities. Recent timber management activities are following current management direction and employing Best Management Practices. These harvest activities are not effecting riparian habitats. Poorly located roads and trails, particularly those which are user-built, are impacting isolated riparian areas. These areas have been identified for watershed improvement projects. Monitoring (through photo documentation and field observations) of completed projects indicates that riparian conditions are improving.

Perhaps the biggest effect to riparian habitats comes from livestock, particularly cattle, grazing. Project areas surveyed during the summer of 1998 included the Michigan and Illinois allotments in North Park and the Red Dirt analysis area on the Yampa Ranger District. All of the riparian areas in the Michigan and Illinois allotments were in proper functioning condition. In the Red Dirt analysis area, several riparian areas were functional - at risk. These reaches will be addressed through the NEPA process for the Red Dirt allotment, and alternatives will be developed to improve the riparian condition.

Follow-up monitoring was done on Snyder Creek (Parks Ranger District) during 1998. Field reconnaissance in 1994 found this riparian area to be degraded by livestock grazing, and grazing was suspended in 1995. Monitoring in 1998 indicated that riparian condition was in an upward trend and approaching proper functioning condition. Follow-up monitoring was also done on the North Hunt allotment in which grazing was suspended in 1994 due to riparian concerns. Riparian conditions in this allotment are also improving.

Grazing-related riparian problems are addressed through Environmental Assessments for different allotments. To address these concerns, changes are being made in the following areas: type of grazing system, season of use, riding plans, development of exclosures, and livestock numbers. Subsequent monitoring indicates that these changes are moving the riparian habitat condition toward proper functioning

condition. To further improve riparian condition, watershed improvement projects are being implemented in areas adversely affected by roads and trails.

Observation - Riparian habitats are not affected by recent timber management activities where current management direction is followed and Best Management Practices are employed. However, historic timber management effects are still detectable. Currently, the biggest effect to riparian habitats appears to be from livestock, particularly cattle, grazing. These effects are being addressed through Environmental Assessments, and changes are being made in the type of grazing system, season of use, riding plans, development of exclosures, and livestock numbers. Follow-up monitoring completed during 1998 indicates that these measures are improving riparian habitat condition.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Site-specific Projects

Beaver Creek Burn (Yampa Ranger District) - The Beaver Creek prescribed burn was initially attempted in the spring of 1997. A second, more successful burn occurred in the spring of 1998. The objective was to regenerate scrub oak for wildlife (primarily elk), while protecting the soil and water resources. Field reconnaissance of the analysis area in September of 1998 found that, out of approximately 140 acres burned, 20 acres fully met the objective. In the remaining 120 acres, the objective was not fully met because the burn duration was insufficient to completely kill the decadent oak. The greatest success occurred with a slow, low-intensity fire.

Burning in the spring was successful in mitigating soil and water concerns. Regeneration of the grasses and shrubs was excellent in the burned area, indicating the soil was not sterilized. Regeneration of the grasses and shrubs will prevent surface erosion during the summer thunderstorms and protect the soil from surface erosion during spring snowmelt. There was no evidence of surface erosion near Beaver Creek and therefore no increase in sedimentation to the stream system from the prescribed fire.

Observations - Monitoring of prescribed burns indicates that burning windows currently being used for spring burns in oak brush are only marginally successful in accomplishing burn objectives. Analysis of the Beaver Creek burn, resulted in the following observations:

· To meet soil and water objectives, spring burns should be implemented during the window between snowmelt and green-up, when possible.

· Slow-moving, low-intensity prescribed fires can be more successful in killing the older decadent oak-brush vegetation than a higher intensity, fast-moving burn. Low-intensity prescribed fire also avoids the risk of causing soil sterility and subsequent surface erosion resulting from bare soils.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

North Hunt Watershed Projects: (Yampa Ranger District) - Watershed improvement projects were implemented on Spronks Creek in the North Hunt allotment during the summers of 1994 and 1995. These projects included hardening a road crossing on a stream channel, protecting a streambank, fixing headcuts, and building check dams below the headcuts to capture sediment and prevent further downcutting of the stream channel. All headcut and check dam projects were done with handcrews. The North Hunt allotment has been closed to grazing since 1994. Field reconnaissance during September of 1998 found that implementation of the watershed projects and the absence of livestock grazing is improving the riparian condition in this allotment.

North Hunt Photo 4 shows the hardened stream crossing. This crossing used to be a large mudhole where vehicles frequently got stuck. Pit run and large angular rocks were used to harden and create a defined low-water crossing. The project has been successful in reducing sediment delivered to the stream system at this location.

Photo 5 shows the repair efforts at the upper end of a headcut. Rock armoring was used to prevent further upstream migration of the headcut. This project was completed in 1994 and is still functioning as planned.

Photo 6 shows the area of a check-dam which was constructed below a fixed headcut in 1995. The check-dam has been successful in capturing sediment and preventing further development of a scour pool below the headcut. Note the establishment of dense riparian vegetation. This vegetation will help stabilize the stream channel and prevent additional downcutting.

Photo 7 shows a structure built to protect a raw bank in an old beaver dam from continued erosion. The objective was to prevent Spronks Creek from eroding the raw bank and increasing sedimentation to the stream system. The structure is meeting the objective by providing a resistant area on the outside of the meander bend, thus preventing bank erosion. One of the logs used to anchor the structure into the bank has broken (center of picture), but this has not affected the integrity of the structure.

Photo 4. Spronks Creek watershed improvement project - hardened creek crossing.

Photo 5. Spronks Creek watershed improvement project - repaired headcut at upper trail location.

Photo 6. Spronks Creek watershed improvement project - repaired headcut, well revegetated.

Photo 7. Spronks Creek watershed improvement project - old beaver dam and raw bank.

Observation - Field observations found that the watershed projects in Spronks Creek have been successful in preventing further downcutting of the stream channel and are promoting recovery of the riparian areas. While the riparian conditions are improving, the vegetation composition continue to reflect the effects of past grazing. Implementation of watershed improvement projects is rehabilitating riparian areas affected by roads and trails.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 1-10 - Are stands adequately restocked within 5 years of final harvest treatment?

The forest completes the Reforestation and Timber Stand Improvement Accomplishment Report annually. This report includes a table identifying all sites that had a final harvest five years previously. During 1993, 431 acres received a final harvest. Of these, 86 acres were not certified as adequately restocked five years later. The following table displays the reasons for noncertification.

Reason for Noncertification	Acres	Remarks
On-the-ground survey certified the unit as stocked, but this information was not entered in the data base.	14	The data base will be updated.
Unit has overall average of 590 trees/acre, but 35% includes rocky ground, which was classed as nonstocked. Machine piling apparently removed too much of the seed source.	16	Scheduled for direct, fill-in seeding in 1999.
Thick elk sedge competition and inadequate seed source.	27	Scheduled for site preparation and planting in 1999.
Thick grass competition. Old, decadent overstory may not have provided adequate seed to naturally restock the site.	10	Direct seeded in 1997 and 1998. Regeneration surveys scheduled for 1999, with certification expected.
Stand is close to meeting minimum stocking standard. Natural infill seeding is occurring.	19	Scheduled for regeneration surveys in 1999, with certification expected.

The district response to the inadequately restocked acres should result in stocking certification. The 1999 Monitoring Plan of Operations includes additional regeneration monitoring in areas where sedge provides intensive competition. Summer harvest operations ordinarily scarify the site, providing numerous interstices in the elk sedge where seedlings can become established. The lack of scarification during winter logging may not create enough sites to allow full stocking through natural regeneration. The winter logging sites will be reviewed during the summer of 1999 to determine whether any additional site preparation is needed to ensure rapid establishment of tree regeneration.

During FY 1998, the Forest initiated a special study to review and update reforestation information. This study was conducted on the Brush Creek-Hayden District. After the results are compiled and documented, the forest will determine whether or not to complete similar studies on the remainder of the forest. The study was designed to systematically compare the accuracy of historic records to current regeneration establishment records. Where regeneration certification could not be verified from existing records, field surveys were conducted. Future reforestation projects and backlog work was identified. The project report which summarizes regeneration status, regeneration backlog work, and problem area conclusions is currently under development. Its results will be included in the FY 1999 Monitoring Evaluation Report which is due in April 2000.

Conclusion - The forest's records currently indicate that 86 acres harvested in 1993 are not certified in the data base as stocked. Corrective actions will be implemented in these areas (see the preceding table).

No change indicated	
Implementation change needed	X
Change to Forest Plan	

needed	

Recommendation - Evaluate application of the Brush Creek - Hayden reforestation study for use on Routt National Forest harvest units. Monitor regeneration in elk sedge, grass, and rocky sites.

Monitoring Question 1-11 - Has timber suitability classification changed on any lands?

Note: Formal evaluation for this monitoring question will not occur until the Fiscal Year 2008. However, 1998 information is being included here to ensure its availability for future evaluation.

A copy of the Forest's timber suitability database as of January 1999 has been made. This data will serve as a baseline for future comparisons in the 2008 Annual Monitoring Evaluation Report. During 1998, no significant changes in timber suitability classification were reported.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 1-12 - What is the relationship between changes in habitat and population trends of the management indicator species?

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003. However, 1998 information is being included here to ensure its availability for future evaluation.

A copy of the Forest's vegetation data (RIS and GIS data attributes) as of January 1999 has been made. This data will serve as a baseline for the initial comparisons to be made in the 2003 Annual Monitoring Evaluation Report. An MOU with the Colorado Division of Wildlife will be pursued in order to obtain available population data. This will allow population trends to be evaluated with respect to habitat changes. It must be noted however, that populations can be influenced by a myriad of factors other than habitat.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 2-1 - Do recreational opportunities respond to Forest users desires, needs, and expectations?

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003. No data is currently available to respond to this question.

No change indicated	X

Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 2-2 - Does the Forest infrastructure (travelways, roads, trails) facilitate attainment of desired recreational experiences, including access for a wide range of abilities?

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003. However, accessibility information is being included here to ensure its availability for future evaluation.

The following tables summarize the Forest's inventory of accessible facilities as of January 1999. This inventory will be used to complete the evaluation scheduled for 2003.

Accessible Facility Type	**Year 1**	**Running Total**
Developed Campsites (including access to)	11 + 5 Toilet	
Developed Picnic sites (including access to)	5 + 3 Toilets	
Granger-Thye Rentals		
Trailheads (including toilets)	2 + 2 Toilets	
Administrative Offices	3	
Special Uses Outfitter Guides (_____ Total) Resorts (_____Total) Recreation Events (_____Total) Organization Camp (_____ Total)	2 1	
Field Offices	1	
Programs	1	
Pier (Bear Lake)	1	

Note: One of the districts received comments from hunters with disabilities who are concerned they are no longer able to take an OHV into the backcountry for hunting.

No change indicated	X
Implementation change needed	
Change to Forest Plan	

needed	

Monitoring Question 2-3 - How are recreational activities affecting the physical and biological resources of the Routt National Forest?

Background

The monitoring ID Team used information gathered during the ongoing environmental analysis of the Radial Mountain Travel Management project, the Snyder Creek Timber Sale, and the Calamity Pass Enduro event to answer this question. The information gathered for these projects focused on single-track motorized travel in the Willow Creek and Owl Mountain Geographic Areas. Until recently, this area was open to off-road travel and was a popular area for casual motorcycle recreational use, as well as for the annual Calamity Pass Enduro event. There are numerous user-created, single-track trails in the area. Other trails have been abandoned or are used without authorization. Approximately 14 miles of designated motorized trails exist in the two Geographic Areas.

Other recreational uses in the area include hunting and dispersed camping. Hunting comprises the majority of recreational use in the area. Dispersed camping is concentrated along FDR 106, FDR 740, and FDR 750. Nonmotorized recreation (hiking, horse use, and mountain biking) is concentrated primarily along the Continental Divide. There has been a documented increase in nonmotorized use on nonsystem routes throughout the area.

Impacts

The primary physical and biological impacts of recreational use in this area are sedimentation and wildlife disturbance. Sedimentation is occurring primarily in riparian and wetland areas where trails cross streams and other sensitive areas. To allow permanent use of these motorized trails, the following mitigation measures have been applied: trail relocation, water bars, resurfacing, rolling grades, and hardening stream crossings. The effectiveness of these measures will not be confirmed until a sufficient number of designated trails have been formally opened to the public. This process will occur gradually over the next two to three years.

Wildlife habitat effectiveness in the area is low. While these areas have an adequate level of hiding cover for big game, the location of existing travel routes with respect to forage habitat is the primary cause of this low effectiveness. The primary adverse effect from the open travel system is that the large amount of disturbance from motorized vehicle use tends to move big game animals off National Forest System lands to adjacent private, state, and BLM lands early in the hunting season.

Two strategies have been used to reduce the effects of unrestricted use. The first strategy designates trails that run parallel and close to existing roads. This minimizes the number of distinct motorized travelways in the area. The second strategy maintains large areas of undisturbed habitat. This provides adequate hiding cover and focuses use in designated areas away from key foraging areas and migration corridors.

Conclusion - The Monitoring ID Team concluded that the physical and biological impacts from motorized recreation are not in compliance with the Forest Plan. The ID Team believes that the actions taken in recent and on-going projects will reverse this trend.

No change indicated	
Implementation change needed	X

Change to Forest Plan needed	

Recommendations - Monitor trail mitigation measures as additions to the motorized recreation trails are gradually opened to season-long, public use. During implementation of future projects, analyze roads in the area and identify additional closure needs, if any. Obtain estimates of use and timing of use by establishing electronic counters on both designated and nondesignated trails. Study the effects of undesignated winter travel on lynx habitat usability.

Monitoring Question 2-4 - How are the selected projects and programs affecting visual quality?

The Forest Landscape Architect completed a Forest Plan monitoring review of the Seedhouse Campground and Group Area to determine whether visual objectives identified in the North Fork Salvage Analysis were accomplished. This was one of the few projects authorized and completed under the new 1998 Forest Plan. This project was designed to rehabilitate a campground impacted by the Routt Divide Blowdown event. It was approved through the Record of Decision for the North Fork Salvage Analysis. The Seedhouse Campground and Group Area are located within Management Area Prescription 3.4 (National River System - Scenic Rivers, Designated, and Eligible) which carries a Visual Quality Objective (VQO) of Retention.

The site was salvage logged in October 1998, following standard Best Management Practices as well as mitigation measures specifically required for this management area and project by the Record of Decision. Stumps were cut low and all fallen trees were removed within the campground and group area. Uprooted stumps on several patches near the developed site were pushed over and stump holes filled by the contractor. Uprooted stumps were pushed into piles. Groups of undamaged young trees and mature trees were protected and retained. During Fiscal Year 1999, the Hahns Peak/Bears Ears recreation staff will remove the remaining slash and stumps, fill stump holes, and transplant young trees in the campground and group area to enhance the overall scenic quality. The Routt Divide Blowdown was a natural event, but it adversely effected areal visual quality with the chaotic aggregation of uprooted trees, stumps, and earth it caused. Unstable trees and uneven ground also created safety hazards not ordinarily permitted within developed recreation sites. The project will be reviewed when the work is completed, but achievement of the VQO is anticipated, and the overall appearance of this very popular site will be greatly improved from its post-blowdown condition.

Conclusion - The visual quality objectives of retention and partial retention will be fully met after a few years when the disturbed ground is revegetated and transplanted trees are established.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 2-5 - How are partnerships contributing to maintaining or enhancing recreation resource opportunities?

To supplement its declining budget, the Medicine Bow-Routt National Forest is increasing its use of volunteers and entering into partnership agreements. For example, the campground concessionaire program reduces Forest expenditures by turning over daily campground operations to concessionaire partners. The

campgrounds are open for similar periods as when the Forest Service crews ran the operation with its own crews.

Program	RVDs* or Participants	Dollars Collected
Recreation Special Uses		
Concessionaire	49,335	$7,623**
Organization Camp		
Recreation Residences	NA	$13,446
Isolated Cabins		
Resorts		
Recreation Events	1,583	$5,084
Outfitter and Guides	20,848	$45,289
Winter Resorts (Ski Areas)	1,102,000	$782,481
Motion Picture/Television Location		

* RVDs = Recreation Visitor Days = 1 person recreating for 12 hours or 12 people recreating for 1 hour.

** Fees collected by commercial operators for permits to conduct business on the Forest. Due to delays in billing and payment, fee payments overlap fiscal years. Some fees received in FY 1998 paid for use in FY 1997; some use occurring in FY 1998 was not paid for until FY 1999.

Program **	Participants	Dollars Collected
Partnerships - trail maintenance, etc.	3 people (266 hrs) 5 partnerships	$118,400
Volunteers		

** At this time, there is no formal mechanism for reporting RVDs, income, participants, etc. from partnerships .

Conclusion - Several shortcomings in our data collection and compilation methods have been identified during the first year of reporting these items.

No change indicated	
Implementation change needed	X
Change to Forest Plan needed	

Recommendation - Implement a mechanism to improve partnership accomplishment reporting.

Monitoring Question 2-6 - Does the Forest provide interpretive experiences that describe ecosystem functions and the Forest Service mission?

More than 20,000 forest visitors were directly contacted through personal interpretation and environmental education programs on the Routt National Forest during 1998. Many of these contacts were part of the "Partners in Interpretation" program. This partnership focuses on interpreting the natural and cultural resources of northwest Colorado and involves the following agencies and organizations:

· The Routt National Forest.

· Colorado State Parks.

· The City of Steamboat Springs.

· The Tread of Pioneers Museum.

· The Steamboat Ski Area.

· The Colorado Division of Wildlife.

Programs are presented at various campgrounds, trailheads, community special events, school classrooms, etc. The themes of the various programs include general management objectives, the forest service mission. Nine seasonal interpreters were hired and various volunteers assisted during the summer of 1998. Special emphasis was placed on the Routt Divide Blowdown, which supported two interpretation specialist. These specialists contacted people in the blowdown area, made presentations, and produced publications explaining the blowdown and resultant environmental effects.

Conclusion - The Routt National Forest is providing interpretive experiences, primarily emphasizing ecosystem functions.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Recommendations - Continue programs and partnership with other organizations. Provide more focus on interpreting the Forest Service multiple-use mission.

Monitoring Question 3-1 - Are outputs of goods and services being produced at a rate consistent with the projections in Table S-2 of the FEIS?

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003. However, 1998 information is being included here to ensure its availability for future evaluation.

Following table was taken from the 1998 Routt National Forest Land and Resource Management Plan. It has been modified and annotated to display a comparison between outputs projected by the Forest Plan and accomplishments reported for FY 1998. The Forest Plan presents projected outputs for the anticipated ten-year planning period rather than on an annual basis. The projected outputs are neither minimum nor maximum targets. The data has been converted to an annual basis below to facilitate annual comparisons of

outputs for monitoring purposes. These data will fluctuate annually as the forest budget fluctuates in response to annual constraints imposed by Congress and the Administration. The forest will review outputs at year five (2003) to evaluate actual accomplishment relative Forest Plan projections.

FY 1998 Accomplishments/Outcomes as compared to EIS Supplemental Table S-2, Routt Portion

Resource	Activity/Output	Units	Forest Plan Desired Condition Level	Forest Plan Experienced Budget Level	FY 98 Level	Running Average	Source
Recreation	Developed Capacity Available[1]	Paot-days	1,541	1,452	1,520	1,520	MAR[2]26.0
	Trails Available to Std[3]	Miles	601	538	551.6	551.6	
	Trails Available - Total	Miles	820	810	829.8	829.8	MAR 62.3
	Developed Use	M Visits[4]	616	616	529.8	529.8	
	Dispersed Use	M Visits	877	877	938.3	938.3	
Wilderness	Wilderness Use	M Visits	98	98	109.5	109.5	
Heritage Resources	Inventory Area	Acres/yr	639	653			
Fish, Wildlife, TES	Inventory	Acres	8	5	679	679	
	Stream Surveys	Miles	197	184	56	56	
	Monitoring	Projects	2	1			
	Project Coordination	Acres	17,100	13,300			
Grazing	Grazing - Sheep	Hd Mnth[5]	174,400	137,300	150,700	150,700	MAR 75.5
	Grazing - Cattle	Hd Mnth	39,600	31,200	34,700	34,700	MAR 75.6
Rangeland Vegetation	Noxious Weeds	Ac Treat	385	303	1,128	1,128	MAR 9.0
	Rangeland Vegetation Inventory	Acres/yr	37,338	34,317			
Forestland Vegetation	Harvest - Even age regeneration cut	Acres/yr	1,211	790	1,212	1,212	RMRIS query
	Harvest - Even age nonregeneration cut	Acres/yr	245	169	53	53	RMRIS query
	Harvest - Uneven age	Acres/yr	235	167	128	128	RMRIS query
	Reforestation	Acres/yr	1,211	790	1,014	1,014	MAR 19.0

	Timber Stand Improvement	Acres/yr	1,027	1,019	1,823	1,823	MAR 20.0
	Forestland Vegetation Inventory	Acres/yr	107,856	28,235	40,486	40,486	RMRIS query
	Volume Harvested Chargeable Conifer (ASQ[6])	MCF/yr[7]	3,200	2,200	1,101.7	1,101.7	Sold and Remove Worksheet
	Volume Harvested Chargeable Aspen (ASQ)	MCF/yr	1,200	600	7.0	7.0	Sold and Remove Worksheet
	Volume Harvested - Total Sale Program	MCF/yr	5,200	3,600	1,900.8	1,900.8	Sold and Remove Worksheet
Soil, Air Water	Soil and Water Resource Improvements	Acres/yr	14.3	13.3	40.0	40.0	MAR 13.0
	Watershed Condition - Class I Watersheds	Wtrshds	85	85	55		MAR 82.5
	Watershed Condition - Class II Watersheds	Wtrshds	49	49	73		MAR 82.6
	Watershed Condition - Class III Watersheds	Wtrshds	0	0	0		MAR 82.7
	Water Yield from timber harvest	Ac Ft/Yr	715	490	719		Acres harvested
Fire	Fuel Treatment	Acres	1,682	1,609	2,338	2,338	MAR 16.2 MAR 16.3
Road Maint	Roads Maintained	Miles	1,500	1,448	1,518		MAR 91.2
Road & Trail Cons.	Road Construction	Miles/yr	16.2	9.3	5.9		MAR 93.1
	Road Reconstruction	Miles/yr	9.8	5.2	11.5		MAR 93.2
	Road Obliteration	Miles/yr	18.4	18.4	0		MAR 91.3
	Trail Construction/Reconstruction	Miles/yr	6.0	1.0	13.6	13.6	MAR 21.0

1 - Recreation Developed Capacity Available has changed due to implementation of the new INFRAstructure data base which automatically calculates capacity of developed sites depending on opening and closing dates. This figure will probably fluctuate annually, depending on different conditions which affect these dates.

2 - MAR = Management Attainment Report; for tracking target accomplishments.

3 - Trails available to standard have increased more than anticipated due to changes in program emphases on the Districts, state funding availability, and an identified need.

4 - M Visits = 1,000 visits

5 - Hd Mnth = head month; calculated by multiplying the number of animals by the period of occupancy.

6 - ASQ = Allowable Sale Quotient

7 - MCF/yr = thousand cubic feet per year

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 3-2 - Are costs of implementing programs occurring as predicted in the Table S-3 of the FEIS?

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003. However, 1998 information is being included here to ensure its availability for future evaluation.

The Forest Plan displays the activity, outputs, and budget at two different budget levels. The full implementation, or desired condition, budget level is relatively unconstrained and reflects the desired level of plan implementation. The experienced budget level is constrained to reflect current budget levels. The actual constraint was based on a 3-year average of funds allocated to the Forest for fiscal years 1992, 1993, and 1994. The actual budget will fluctuate annually in response to direction from Congress and the Administration.

Comparison of FY 1998 Expenditures to Forest Plan Budget (in Thousands of 1998 Dollars)

Cost Center and Cost Center Components	Fund Codes	FY 1998 Expenditure	Forest Plan Desired Condition	Forest Plan Experienced Budget
Ecosystem Planning, Inventory & Monitoring				
Inventory and Assessment	NFIM	51.8	480	100
Planning and Monitoring	NFLP	376.1	264	337
Recreation and Wilderness				
Recreation Management	NFRM	876.4	1611	1347
	CNTR (non-CIP)*	12.9	60	40
	CNRN (non-CIP)*	0	460	222
	CNRF (non-CIP)*	0	55	32
Heritage Resource Mgt.	NFHR	20.7	209	163

Wilderness Management	NFWM	222.7	216	189
Cooperative Work	CWFS, CWKV	33.1	0	0
Wildlife and Fisheries				
Wildlife Habitat Mgt.	NFWL	127.9	319	211
Inland Fisheries Mgt.	NFIF	153.9	193	129
TE&S Species Mgt.	NFTE	24.9	120	70
Cooperative Work	CWFS, CWKV	5.2	0	0
Rangeland Management				
Grazing Management	NFRG	267.9	464	375
Rangeland Vegetation Mgt.	NFRV	172.0	109	81
Cooperative Work	CWFS, CWKV, RBRB	58.3	61	61
Timber				
Timber Sales	NFTM	221.9	122.5	847
	SSSS	1626.0	160	120
	CNTM	76.2	247	161
	PCPT	0	305	199
Reforestation & Timber Stand Improv.	NFFV	164.2	303	271
Cooperative Work	CWFS, CWKV, BDBD	120.6	62	49
Water, Soil and Air				
Soil, Water, & Air Mgt.	NFSO	147.1	345	326
Watershed Improvement	NFSI	107.2	77	62
Cooperative Work	CWFS, CWKV	0	0	0
Minerals Management				
Minerals Management	NFMG	92.1	151	101
Infrastructure Management				
Real Estate & Special Use Management	NFLA	113.3	235	138
	NFLL	94.3	80	55
	LALW	12.5	10	10
Road Management and Maintenance	NFRD	229.8	475	400

	CNGP (non-CIP)**	71.4	105	60
Facility Maintenance	NFFA	94.8	250	124
Cooperative Work	CWFS, CWKV *	23.8	0	0
Protection Of Basic Resources				
Fire Protection Mgt.	WFPR	250.2	330	193
Cooperative Law Enforcement	NFLE	32.4	11	11
Cooperative Work	CWFS, CWKV *	2.7	0	0
General Administration				
General Administration	NFGA	731.5	1323	1253
	SSSS	163.7	80	65
	CWFS, CWKV *	36.8	35	35
GRAND TOTAL		**6,816.3**	**10,430**	**7,733**

* No CIP costs are included

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 3-3 - How are Forest management activities affecting local employment and income?

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003.

We will develop methodology to address this question. As a start, the Forest Service is currently developing a standardized approach for collecting recreation use information. In the meantime, the Forest has been verifying data from previous years.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 3-4 - How well is the forest interacting and planning in cooperation with communities?

The following list is a sample of collaborative planning efforts involving local communities:

· Stewardship Council is a cross-section of people from Albany, Carbon, and Jackson counties who are invited to meet twice a year to discuss forest-related issues.

· Jackson County, CO and the Forest recently received a $96,000 grant from the National Fish and Wildlife Foundation for a collaborative proposal to control noxious weeds.

· Forest Engineers and Grand County, CO worked together on development of gravel pits on the Forest.

· Routt County, CO and the Forest have working agreements to provide parking and access for winter recreation.

· Routt County, CO facilitated community focus groups discussing issues related to the Routt Divide Blowdown.

· The Upper Elk River Community Planning Group (Routt County, CO) is working to coordinate various Land Management Plans into a comprehensive plan for North Routt County. The Hahns Peak/Bears Ears District Ranger serves as a the Forest Service representative on the committee.

· The Forest is working closely with the BLM and County Wildland Fire personnel in fire planning and wildland fire control.

Conclusion - The Forest Service is actively interacting and planning with communities surrounding the forest, based on the preceding list of collaborative activities. However, the methods used to address this question do not lend themselves to a qualitative assessment of these collaborative efforts.

No change indicated	
Implementation change needed	X
Change to Forest Plan needed	

Recommendation - Include more intensive review of selected planning efforts to provide a better basis for determining their effectiveness in building collaborative partnerships.

Monitoring Question 4-1 - Are there changes that have resulted in unforeseen issues that require Forest Plan amendment?

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003. However, 1998 information is being included here to ensure its availability for future evaluation.

Based on recommendations from Forest Service Research, the objectives in the North Fork Environmental Impact Statement include leaving residual coarse woody debris to prevent wind scour and to provide for through-the-snow movement of certain wildlife species like marten in areas of the Routt Divide Blowdown to be salvaged. The effectiveness of this treatment will need to be monitored during and after the salvage operation. Monitoring results will be used to determine whether retaining this residual coarse, woody debris should be an amendment (new standard/guideline) to the Forest Plan.

No change indicated	X

Implementation change needed	
Change to Forest Plan needed	

Monitoring Question 4-2 - Are the standards and guidelines prescribed in the plan being incorporated in NEPA documents and implemented on the ground?

The Monitoring ID Team reviewed several projects over the course of FY 1998. For those projects developed under the revised forest plan, the standards and guidelines in the plan are being appropriately incorporated. However, too few projects have been implemented under the revised plan to allow a meaningful assessment of their effectiveness and appropriateness.

No change indicated	X
Implementation change needed	

1Monitoring Question 4-3 - Is the Forest moving closer to the desired condition identified in the Forest Plan at the Geographic Area and Management Area scale?

Note: Formal evaluation for this monitoring question will not occur until Fiscal Year 2003.

No change indicated	X
Implementation change needed	
Change to Forest Plan needed	