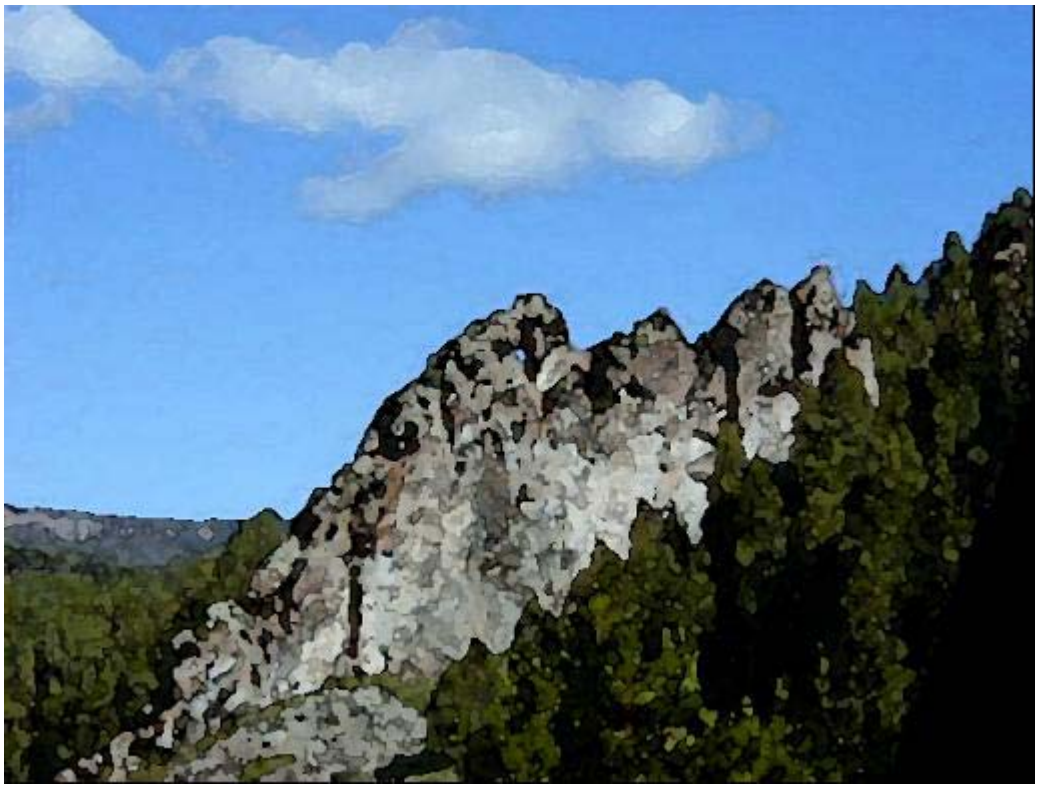
Routt National Forest

Five Year Review
1999-2003



2003 Implementation and Monitoring

Routt National Forest
Land and Resource Management Plan

Garfield, Grand, Jackson, Moffat, Rio Blanco and Routt Counties, Colorado

United States Forest Service
Rocky Mountain Region

August 2005

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Forest Certification

I have reviewed the Five Year Review and 2003 Annual Implementation and Monitoring Report for the Routt National Forest that was prepared by the Forest Interdisciplinary Team. I believe that the results of monitoring and evaluation for both FY 2003 and the five year review meet the intent of Chapter 4 of the Forest Plan and of 36 CFR 219.10(g). I also believe that the monitoring and evaluation requirements displayed in Chapter 4 of the Forest Plan have been met, and that the decisions made in the Forest Plan are still valid.

Analysis of the effects of tree mortality (from insect infestation, blowdown and wildfire) and of the effects of the uncertainty regarding the roadless rule determined that neither of these factors have significantly altered our ability to produce the goods and services specified in the Forest Plan. More details can be found in the *Conclusions* section and in the discussion under the relevant monitoring items.

The *Recommendations* section includes several areas of administrative emphasis which are being proposed to increase efficiency and improve forest plan monitoring efforts. In addition, two modifications to the Plan are being proposed: The first is to add new winter recreation standards forestwide to reduce effects of winter recreation on watershed and wildlife resources. The second is to modify the Forest Plan Water and Aquatic standards to be consistent with Direction from the Plan Appeal Discretionary Review of the Undersecretary of Agriculture. More detail can be found on these proposed modifications in the *Recommendations* Section.

The Forest ID Team has not identified any major changes in conditions or demands of the public that would change the goals, objectives, or outputs of the Forest Plan. The Land and Resource Management Plan for the Routt National Forest, with the above mentioned plan modifications and administrative emphasis is sufficient to continue to guide management of the Forest.

Therefore, I concur with the findings of the Five Year Review and 2003 Annual Implementation and Monitoring Report for the Routt National Forest. Please contact Lynn Jackson at the Medicine Bow/Routt National Forest, 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_____
MARY H. PETERSON
Forest Supervisor

8/1/05_____
Date:

Introduction

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 Roosevelt National Forest (ARNF) administered by the Routt National Forest; as well as the 104,744 acres of the Williams Forest Area of the ARNF, administered by the ARNF. 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.

The Regional Forester approved the Routt's Revised Land and Resource Management Plan Revision on February 17, 1998. This document contains the results of the five year review (1999-2003) of the Forest Plan. In addition, the Fiscal Year 2003 annual monitoring items are included in this report. Five year reviews of forest plans are required by 36 CFR 219.10(g), which states:

> *"In the monitoring and evaluation process, the interdisciplinary team may recommend revision of the Forest Plan at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of a Forest Plan. The Forest Supervisor shall review the conditions on the land covered by the plan at least every five years to determine whether conditions or demands of the public have changed significantly."*

The results of this review and the 2003 annual monitoring items, are discussed in this document, in addition to changes in laws and policies in the past five years. Proposed amendments to the plan as a result of this review are described in the *Recommendation**s*** section below. How these changes will be accomplished is provided in the *Action Plan* section towards the end of this document.

Conclusions and Recommendations

The following are the conclusions and recommendations arising from the Five Year Review. These items are discussed in more detail in this report. Additional recommendations can be found under individual monitoring items.

Conclusions

- As a result of the Routt Divide blowdown, spruce beetle infestation, mountain pine beetle infestation and wildfires there has been a significant change in the condition of the forested vegetation in the Mt. Zirkel Wilderness Area, where natural processes are expected to be the primary cause of changes to the landscape. The Routt Plan acknowledged that natural processes would occur. These same events produced an insignificant change in the condition of the forested vegetation outside of the Mt. Zirkel Wilderness.

    - Recommendation: Continue to monitor tree mortality due to insects and disease on an annual basis.

- Forest management within inventoried roadless areas located in Management Areas that permit vegetation management has been negligible since the Plan was approved in 1998. Minimal forest management in roadless areas has not reduced our ability to produce goods and services within the range specified in the Plan and Record of Decision. However, the uncertainty associated with both multiple changes in roadless area management policy and with the related legal challenges, has impeded our ability to meet all our objectives for management in these Management Areas. As a result of the recent Final Roadless Rule published in the Federal Register on May 13, 2005, the State of Colorado has established a task force to consider whether or not to petition the Secretary of Agriculture about management direction within inventoried roadless areas on National Forest System Lands in Colorado.

    - Recommendation: Continue to implement the Plan by proposing timber harvests in roadless areas located within Management Areas 5.11 and 5.13 and reevaluate management activities in roadless areas in five years. Add a five year monitoring item (see *Recommendations* section below) to monitor implementation of Management Area direction within roadless areas.

- Demand for winter recreation has not changed significantly since the 1998 Plan approval, but the absence of Plan direction for separation of motorized and non-motorized winter recreation uses in the Rabbit Ears Pass and Buffalo Pass areas is causing social issues and potential safety issues.

    - Recommendation: Delineate winter use areas in the Rabbit Ears Pass and Buffalo Pass areas and amend the Plan, if necessary (see Winter Recreation Assessment, below). In addition, through a process separate from the Rabbit Ears Pass and Buffalo Pass Project Area, modify the winter recreation management direction forest-wide.

Recommendations

Proposed Forest Plan Modifications

The following amendments are discussed in more detail under *General Monitoring Item 1 - Need for Forest Plan Amendments:*

Winter Recreation Standards: Modify the forest-wide standards and guidelines to be consistent with the Winter Recreation Management and Routt National Forest Plan amendment decision of May 27, 2005, for the Buffalo Pass and Rabbit Ears Pass area (see *Forest Plan Amendments in Progress Section*).

Modify the Instream Flow Standards and Guidelines to be consistent with the Direction from the Chief's Plan Appeal Decision Discretionary Review by the Undersecretary of Agriculture.

Proposed Additional Monitoring Item

Monitor implementation of Management Area direction within roadless areas. This monitoring item would repeat the roadless analysis completed for this Five Year Review for each five year review, until timber management within roadless areas is no longer an issue.

Proposed Combination of Monitoring Items

Incorporate *Prescriptions and Effects* and *Effects of Management Actions* five year monitoring items into the annual *Implementation of Standards and Guidelines* Monitoring Item. The important aspects of these two monitoring items would be included under the implementation monitoring item, which would reduce redundancy between these three monitoring items. Additional changes to monitoring items will be included in the FY 2004 Routt Forest Plan Monitoring Report and the changes to the monitoring items will all be considered together at that time.

Proposed Action Items

Proposed Management Emphasis Items from the Forest Supervisor:

- Emphasize use of the forestwide roads analysis (USDA Forest Service, 2003) for project level roads analysis. Subscale roads analysis should consider actions in addition to obliteration, such as changes in maintenance levels to accomplish project objectives.

- Emphasize pursuit of rights-of-way to access National Forest System lands across private land, where needed.

Proposed Administrative Actions

- Develop a Monitoring Guide with standardized, scientifically based monitoring protocols.

- Combine Routt National Forest Plan annual Monitoring and Evaluation efforts with the Medicine Bow National Forest Plan annual Monitoring and Evaluation

efforts, resulting in one combined report. Individual monitoring item changes will be recommended in the FY04 monitoring report.

- Develop a strategy to ensure adequate regeneration of timber harvested lands within five years.

- Research the effects of snowmobiles on sensitive areas and wildlife through literature search and/or administrative or research studies with Forest Service or University scientists.

- Compile and track changes to timber lands suitability regularly when information becomes available during project level analysis.

- Update the Roads Analysis road matrix as new information becomes available.

Changes Deferred until Forest Plan Revision:

The following items were considered in the Five Year Review, however it was decided that these items were not hindering forest management and so will be deferred until the Forest Plan Revision, which is required to occur 15 years after Plan development.

- Amend the Forest Plan's designation of MA 8.22 (Ski Based Resorts: Existing/Potential) for the Catamount area to Management Areas not focused on ski based resorts.

    - Management is not being impeded by the current management area designation so an amendment is not necessary at this time.

- It was recommended by the Forest Plan IDT to amend Routt Forest Plan standards to be more consistent with the Revised Medicine Bow Plan, specifically in relation of elk habitat, snags, coarse woody debris and raptor protection.

    - Line Officers (District Rangers and the Forest Supervisor) have the discretion to increase protection on a site-specific basis through project decisions, so an amendment is not necessary.

Forest Plan Appeals

Eleven administrative appeals to the Chief of the Forest Service were filed in response to the February 1998 Record of Decision for the Routt Forest Plan. Two of these appeals were the subject of a Secretary of Agriculture's Discretionary Review. The Chief affirmed nine of the eleven appeal decisions of the Regional Forester's decision.

In the case of Appeals #98-13-00-0035 & 36, the Deciding Officer was affirmed, but was directed to resolve an apparent inconsistency contained in the Revised Plan's direction for Management Area 3.4. This was accomplished through an Erratum issued July 20, 2000.

In the Decision for Appeals #98-13-00-0032 & 0037 (January 19, 2001), Sally Collins, Reviewing Officer for the Chief of the Forest Service, while affirming most of the Decision, "affirmed with instructions" items relating to monitoring and evaluation, and livestock suitability issues, and "reversed in part" portions of the Decision relating to species viability and diversity issues raised by the appellants. Within 120 days of the date of the Appeal Decision, the Forest was directed to provide appellants and the Washington Office with a work plan designed to resolve the deficiencies indicated in the Appeal Decision.

Subsequently, on March 29, 2001, the Acting Deputy Under Secretary for Natural Resources and the Environment, David Tenny, issued a Discretionary Review Decision of this Appeal Decision. The Secretary of Agriculture may elect to review an appeal decision, within 15 days of receipt, under 36 CFR 217.17(d). This review decision became the final administrative determination of the Department.

The Review affirmed all the Chief's findings, with the following exceptions:

Table 1 Summary of Secretary's Discretionary Review of Chiefs Decision

Appeal Issue	Secretary's Determination
Viability and Biological Assessment	Chief reversed in regard to viability, MIS and Biological evaluation issues and the instructions concerning these issues were vacated. The February 1998 Record of Decision was affirmed.
Instream Flows	Chief was affirmed, with instructions (calls for an erratum). Language in standards and guidelines is to be made congruent with Section 505 of FLPMA and 36 CFR 252.56.
Livestock Grazing Capability and Suitability Determination	Chief was affirmed, instructions were vacated. Instructions would have required further analysis of environmental and economic effects of livestock grazing were vacated.
Monitoring and Evaluation	Chief was affirmed in part and reversed in part, instructions were vacated. Secretary found that Plan *did* meet MIS monitoring requirements. Instructions to "further develop the substance of the Routt's monitoring plan" were vacated.

Forest Plan Amendments in Progress

The following amendments are currently underway, in response to either forest or regional issues: These amendments are discussed in more detail under: *Need for Forest Plan Amendments (General item 1)* monitoring item

- Winter Recreation Management and Routt NF Plan Amendment: This Amendment will delineate winter use areas in the Rabbit Ears Pass and Buffalo Pass areas to reduce conflicts between motorized and non-motorized winter recreation users and to increase safety and protection of natural resources. A decision was made on May 27, 2005 and is currently in the appeal period. This decision can be found on the forest website: http://www.fs.fed.us/r2/mbr/projects/forestplans/routt/pdfdoc/amendments/additional_page.pdf.
- MIS Amendment: This Amendment will amend the forest plan to be consistent with Regional Direction for MIS.
- Canada lynx Amendment – the Canada Lynx was listed under the Endangered Species Act in 2000. The 1997 Routt Revised Plan does not contain protection or recovery direction for lynx. The Forest is currently protecting lynx and lynx habitat through an agreement between the US Fish and Wildlife Service using the Lynx Conservation Assessment Strategy. The Southern Rockies Lynx amendment, which is currently in progress by the Regional Office, will address amendments to all lynx forests in Colorado and Southern Wyoming including the Routt Forest Plan.

Administrative Changes to the Forest Plan

The following are administrative actions related to the 1997 Revised Land and Resource Plan. In addition, five errata have been issued to date. These errata correct typographical errors, clarify wording in the Forest Plan, and can be viewed at: http://www.fs.fed.us/r2/mbr/projects/forestplans/routt/index.shtml

1997 Supplemental Information Report (SIR)

On October 25, 1997, a wind event impacted an area of approximately 20,000 acres of the Routt National Forest within and just to the west of the Mt. Zirkel Wilderness Area, near Steamboat Springs, Colorado. This area and event was called the "Routt Divide Blowdown". A Supplemental Information Report (SIR) to the Forest Plan FEIS was prepared to address the impact of this event that occurred just prior to the completion of the Revised Plan.

This "SIR" concluded that a Supplemental EIS was not needed to respond to this natural event as only 1% of the total Routt National Forest was affected and the effects of the blowdown were within the scope of the alternatives in the FEIS. This SIR can be viewed at: http://www.fs.fed.us/r2/mbr/projects/forestplans/routt/pdfdoc/sir/sir.pdf

Adjustment to the Williams Fork Area

Prior to 1994, the Routt National Forest had been administering the 104,744-acre Williams Fork area of the Arapaho National Forest from the Middle Park Ranger District Office in Kremmling. After the reorganization of the North Park and Middle Park Districts into the Parks District, with District Offices at Walden, administration of the Williams Fork area was returned to the Arapaho Roosevelt National Forest. This transfer of administration was formalized in a Memorandum of Understanding between the Forests, signed by the Forest Supervisors and Rangers on November 4, 1994.

Although the administration of the Williams Fork was returned to the Arapaho-Roosevelt National Forest, direction for this area remains in the Routt Revised Plan. Decisions for projects conducted within the Williams Fork area are made by the Arapaho-Roosevelt line officers, but are compliant with the Routt Revised Plan.

Non-Significant Amendments to the Forest Plan

These amendments can be viewed on the forest web page:
http://www.fs.fed.us/r2/mbr/projects/forestplans/routt/index.shtml

Amendment #1 (May 27, 1999) - Salvage Within Scenic River Corridor
The Forest Plan was inconsistent with the FEIS used to prepare the Forest Plan, so this decision amended the Forest Plan, concerning salvage within the scenic river corridor.

Amendment #2 (April 10, 2001) - Management Area Changes: Luna Lake Trail
The Environmental Assessment that was the basis for this decision analyzed the effect of relocating approximately three miles of the Luna Lake Trail, which was heavily impacted in the Routt Divide blowdown. This entailed reallocating small numbers of acres between different wilderness management prescriptions in the project area, and is discussed below in Monitoring Item 2-1.

The Establishment of Three Research Natural Areas.

The Forest Plan designated Management Area 2.2 Research Natural Areas (RNA). Three areas were identified in the Forest Plan (Kettle Lakes RNA, Silver Creek RNA and Mad Creek RNA). These areas were formally established in conjunction with the Rocky Mountain Research Station and signed by the Regional Forester and the Director of Research on May 29, 2001. As these areas were designated as RNAs in the Forest Plan, this action does not alter management of these areas.

New Laws, Regulations and Policies

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 Rule contains direction for modifying Forest Plans that were developed under previous planning rules. We initiated this review prior to publication of the new rule. If this review results in a decision to correct, amend or revise the 1997 Plan, The Forest will adhere to the 2005 rule, specifically 36 CFR 219.14 to accomplish that work.

Government Performance and Results Act of 1993 (GPRA)

The Government Performance and Results Act of 1993 (GPRA) provided for the establishment of strategic planning and performance measurement in the Federal Government. In 2000 and again in 2004, the Forest Service produced a Strategic Plan under GPRA. Forest Plans created after this time generally structure their "Goals and Objectives" directly from this Strategic Plan. Since the Routt's Revised Plan predates GPRA, this plan does not reflect this format.

Roadless Area Conservation

Roadless Area Conservation, also known as the roadless rule, has undergone many challenges and changes over the past several years. Currently, an interim roadless directive (June 16, 2004) guides the current management of the Forest's roadless areas until such time as this direction is removed or expired.

At present the Forest Service is proceeding cautiously, concerning proposed entry into roadless areas. Requests for roadless entry are tendered to Regional Offices and the Chief's Office for consideration, unless the land and resource management Plan has been revised and the forest has prepared a forest level roads analysis and incorporated any needed changes into its revised Plan.

To determine the effects of the changes in roadless area management on the Routt Forest Plan, the Forest's Leadership Team directed that a specific assessment of the roadless resource on the Routt be a part of this fifth year monitoring review. This assessment, in summary, found that changes to roadless areas on the Routt since plan revision are of a small order of magnitude; and that acres suitable for timber harvest within the Routt's roadless component represent about 20% of the total suitable acres on the Forest.

More information on the Roadless Rule can be found at the following website:
http://www.roadless.fs.fed.us/

National Fire Plan

The National Fire Plan (2001) gives the following direction:

- Firefighting: Maintain a cost effective level of preparedness in firefighting and prevention.
- Rehabilitation and Restoration: Rehabilitate fire damaged wildlands, and restore high-risk ecosystems.
- Hazardous fuels reduction: Invest in projects to reduce fire risk with focused effort in wildland urban interface areas.
- Community Assistance: Work with communities to reduce the risks of catastrophic fire.
- Accountability: Establish and maintain a high level of accountability including oversight reviews, progress tracking, and performance monitoring.

More information about the National Fire Plan can be found at the following website:
http://www.fireplan.gov/overview/whatis.html

The State of Colorado posted their list of Communities at Risk in the *Federal Register* on August 17, 2001. The Forest Service is working with the Colorado State Forester,

the counties, other federal and state agencies, and other fire agencies to jointly develop fire management plans and fuels reduction plans to address protection of these communities at risk. Additionally, the Forest Plan addresses fire suppression strategies through standards and guidelines in each of the Management areas.

Healthy Forests Initiative and Healthy Forests Restoration Act

In 2002, President Bush announced the Healthy Forests Initiative (HFI), which allowed the administration to work within the boundaries of legal authority to thin out the forests and remove the underbrush and small trees that were contributing to the spread of wildfires.

The Healthy Forests Restoration Acts of 2003 (P.L. 108-148) provides provisions to aid in implementing HFI. Included in this law are: NEPA categorical exclusions, guidance for Environmental Assessments of forest health projects, modification of Forest Service appeals rules, expedited administrative review, more efficient Endangered Species Act procedures and an enhanced ability to use stewardship contracting.

The act helps rural communities, States, Tribes, and landowners restore healthy forest and rangeland conditions on State, Tribal, and private lands. It also encourages woody biomass removal from public and private lands, provides technical, educational, and financial assistance to improve water quality and address watershed issues on non-Federal lands, authorizes large-scale silvicultural research, authorizes acquisition of Healthy Forest Reserves on private land, and directs the establishment of monitoring and early warning systems for insect or disease outbreaks. More information can be found at the following website: http://www.fireplan.gov/healthyforest/index.html

Reviews and Assessments

The Forest Supervisor directed that the following assessments be completed for this five year review: a Forest Vegetation Assessment', a 'Fifth Year Assessment: Post Revision Changes to Roadless Areas on the Routt National Forest' and 'A Winter Recreation Assessment' for the Routt National Forest. These assessments provide the information to determine whether conditions or demand of the public have changed significantly.

These assessments are briefly summarized below, with more detail located in the relevant monitoring items. The assessments can be found in their entirety in the project record for the 1999-2003 Routt Revised Plan 5-year Review.

Forest Vegetation Assessment

In 1997, the Routt National Forest experienced an extensive blow down known as the Routt Divide Blowdown. Associated timber salvage sales, insects and disease outbreaks, and finally, several large wildfires followed this event. The Forest Vegetation Assessment analyzes vegetation change due to insect outbreaks, wildfires and management activities; and compares snapshots of the conditions that existed when the Forest Plan was approved in 1997 to those in 2003.

The Forest Plan describes desired conditions for vegetation (page 1-3):

"At the end of the first decade, changes in the overall character of the landscape will be small. The forest will appear very much as it does today. Subtle changes to the landscape will have been made through timber harvest, other vegetation treatment, road building, and natural disturbance processes." (LRMP 1-3)

The intent of this analysis was to evaluate two questions from the Monitoring and Evaluation chapter of the Forest Plan.

- Are forest cover types and habitat structural stages (coarse filter scale as described in the FEIS) being provided for across the forest? (Item 1-7)

- How are management activities affecting late successional forest structure in management areas 5.11 and 5.13? (Item 1-8)

The Forest Plan and accompanying EIS make it clear that the vegetation on the Routt contains large amounts of late successional forest. After 5 years, a number of natural disturbance events have occurred that are often associated with vegetation in late successional stages, especially in times of drought and with events such as the blowdown acting as a catalyst. This analysis has shown that while the forest experienced a number of large disturbances, and while habitat structural stages have begun to change as a result, this change has not reached a stage that has adversely impacted the forest range of cover types or habitat structural stages identified in the 1997 EIS. It has also shown that management activities (timber harvest) have been conducted as specified in the plan, and have made a minor impact on the amount of late successional forest structure in management areas 5.11 and 5.13 (the only two management areas containing lands suitable for timber harvest). Given the large amounts of late successional forest and the short time frame (5 years) this outcome is expected and in compliance with the Forest Plan and EIS analysis. More detail can be found in the discussion of Monitoring Items 1-7 and 1-8 below.

Roadless Assessment

There are 32 inventoried roadless areas totaling 502,245 acres on the Routt National Forest. No inventoried roadless areas were recommended for Wilderness Area designation in the 1998 Record of Decision.

This assessment analyzed the effects of insects, blowdown, and fire and timber management within roadless areas. The primary conclusion is that changes to the Routt's roadless component (both natural and human-caused) have been of a low order of magnitude. The overall character of the roadless resource appears to be intact and is consistent with what was envisioned in the Forest Plan.

The extensive history of *proposed* roadless timber harvest that does not survive the decision-making process is reflective of the uncertainty that has plagued the roadless issue. In the case of the Green Ridge Project, roadless entry was proposed from the outset, and was subsequently dropped in the decision process due to site-specific public comment. The Forest has only selected 1,600 acres for possible harvest within the suitable roadless component in the past five years. To date only 84 of these acres

have actually been harvested (Diamond Salvage Sale), which amounts to 0.01% of the acres suitable for timber harvest within the Forest's roadless areas. Although little timber is coming from roadless areas, upcoming timber harvest projects indicate that it is likely that the Forest will meet the ASQ projections in the Forest Plan[1].

Winter Recreation Assessment

This forest scale winter recreation assessment provides the critical background information needed to support future site-specific winter recreation management decisions. The Analysis includes:

- A forest-wide inventory of trails, parking areas, and other winter recreation opportunities on the Forest, and on the perimeter, that may or may not be managed by the Forest Service.
- Determining user preferences, as they are defined by the public in the Scoping process.
- Winter recreation issues, as they are defined by the public in the Scoping process.
- A recipe for quality winter recreation opportunities, based on Public Scoping information.
- Monitoring opportunities, based on Forest Plan Standards and Guidelines, and on issues identified in the scoping process.
- An opportunity to integrate the winter recreation strategy that was developed in 2001, with other program objectives.

The assessment is intended to identify opportunities that address resource and social concerns. It is also used to develop guidelines for implementing or amending the Forest Plan.

Motorized use of winter trails is a concern, in early and late season when snow amounts are low. In addition, there are concerns over unauthorized wheeled vehicle use on snowmobile trails. To address these issues, it is recommended that the Forest Plan be amended to add the following Forest-wide Recreation – Dispersed Standard direction as follows:

- Allow snowmobile use in winter (use definition from Med Bow Plan) when unpacked snow depths equal or exceed 12". On classified roads, snowmobiling is allowed on less than 12" across non-contiguous patches of snow in the fall and spring when no visible resource damage is occurring.
- Allow heavy over-snow tracked vehicles (i.e. snowcat, groomers) to operate on snow depths that equal or exceed 18". Special use permits will be reviewed on a case-by-case basis.
- Prohibit winter motorized recreation on any open surface water.
- Prohibit wheeled use of groomed winter trails in winter.

[1] ASQ is the total volume from suitable timberlands sold over a ten-year period.

In addition, management would be enhanced with the inclusion in the Glossary to the Forest Plan, definitions of winter and summer seasons (Snow on and Snow off) from the Revised Medicine Bow Forest Plan (2003).

The Winter Recreation Management and Routt NF Plan amendment modified approximately 110,000 acres by adding definitions for winter and summer seasons and by adding standards and guidelines to protect resources. The decision on this amendment was made on May 27, 2005 and can be viewed at the following website: http://www.fs.fed.us/r2/mbr/projects/forestplans/routt/pdfdoc/amendments/additional_page.pdf

Transportation Policy

The USFS agency directs each unit of the National Forest System to complete forest-scale roads analysis. Roads analysis at the Forest scale provides a context for road management in a broader framework for managing all forest resources (FSM 7712.13b).

The Routt Roads Analysis was completed in May 2003 (USDA Forest Service, 2003). The Roads Analysis provides decision-makers with critical information to develop road systems that are safe and responsive to public needs and desires, are affordable and efficiently managed, have minimal negative ecological effects on the land, are in balance with available funding for needed management actions, and meet the objectives of the 1997 Routt Forest Plan.

The Routt Roads Analysis (RAP) identified forest-scale road issues, and issues associated with the road system[2]. The issues and opportunities identified in the RAP were reviewed for consistency with the 1997 Routt Forest Plan (Verde and Schnackenberg, 2004).

This analysis identified the following conclusions and opportunities related to transportation planning, standards and guidelines.

- Develop a forest-wide travel management plan. Many of the issues and identified opportunities could be addressed through a comprehensive travel management plan, which would also help address one of the Chief's Four Threats[3], unmanaged recreation.

- The Forest Plan does not adequately address use of the road system for year-round (winter/spring) access to private inholdings etc. Requests for year-round access are increasing, and are expected to continue to increase and thus warrant some additional standards and guidelines.

[2] The RAP addressed issues with the open road system, closed and decommissioned roads were not considered.
[3] Dale Bosworth, Chief of the US Forest Service has identified four threats to the health of the Nation's Forests and Grasslands: fire and fuels, (b) invasive species, (c) loss of open space, and (d) unmanaged recreation.

- Anything pertaining to winter motorized recreation off of established travelways was not addressed in the Routt RAP, and may warrant further investigation outside of the RAP analysis.

- Amend Infrastructure Travelways Guideline 2 in the 1997 Routt Forest Plan to include decommissioning as well as obliterating, and to elaborate on resource concerns to consider similar to Guideline 3.

- Adding a Goal/Objective to develop an education plan would help to address one of the Chief's Four Threats, unmanaged recreation.

Monitoring items

The National Forest Management Act (NFMA) requires specific legally required monitoring items for forest plan implementation as well as additional monitoring that will be conducted based on the availability of funding and personnel. The discussion and results of the monitoring items are given below. These items are listed in Table 4-1, and Table 4-2 in the Forest Plan.

Soil, Water and Air

Soil Productivity (Item 1-1)

Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring items asks the question:

Are long-term soil health and productivity being maintained?

During the four year period FY99-02, a variety of monitoring efforts were undertaken to evaluate the effects of management activities on soil resource health and productivity. No monitoring was accomplished in FY03 due to the lack of a soil scientist on the Forest. The monitoring efforts served two main purposes: 1) to test the Region 2 Draft Soil Health Assessment Protocol, and 2) to provide additional effectiveness monitoring for the Routt National Forest soils program. These monitoring efforts can be grouped into the following categories:

- Soil Erosion Monitoring
- Ground Cover Transects
- Hazard-Geist Analysis
- Soil Microbial Sampling
- Infiltration and Respiration Monitoring
- Best Management Practices (BMPs) and Mitigation Monitoring
- Soil Health Assessment Protocol

Soil Erosion Monitoring
A total of 69 Soil Erosion bridges were installed on a variety of sites within the Routt Divide Blowdown, North Fork Salvage Timber Sale, Camp Creek Prescribed Burn, Long Park Prescribed Burn, and the California Park subsoiling project. This method is a relatively new technique to the Forest and is being evaluated as a potential standard for repeatable measurements to track soil erosion effects of management activities and natural processes. To date, no measurable soil erosion has been detected from erosion bridge data.

Ground Cover Transects
R2 soil standards require the following minimum effective groundcover rates for the first and second year after disturbance:

Table 2. Minimum effective groundcover rate after disturbance

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

Ground cover transects were performed in the North Fork Salvage Timber Sale, Routt Divide Blowdown, and a variety of timber sales, grazing allotments, and prescribed burns throughout the RNF. The amount of effective cover in all units was greater than that required by Forest Plan Standards.

Hazard-Geist Analysis

This analysis is a statistically valid measure of the extent of detrimental soil conditions present within an activity area. This analysis was performed for Unit 23 in the North Fork blowdown area. Detrimental soil compaction was present on about 13.5 percent of the salvage unit. This amount is within Regional Standards (15%) and substantiates the visual estimate for the unit that was made for the BMP portion of monitoring.

Soil Microbial Sampling

Soil microbial populations are an important indicator of soil and ecosystem health. During 2001, the Camp Creek and Long Park prescribed-burn units were sampled to determine if there were any effects on soil microbial populations due to the burning. Results from both projects indicated no measurable effects from burning on the soil microbial populations. Sampling was also conducted before and after salvage activities on the Zirkel Complex Fire. Results indicated no additional decreases in post-fire microbial populations resulting from the salvage activities.

Infiltration and Respiration Monitoring

In 2001, subsoiling was performed to treat areas of historic soil compaction in California Park. Detrimental soil compaction reduces macropore space in soils, inhibiting water infiltration and gas exchange. Post-treatment infiltration and respiration rates were measured and compared to rates in untreated areas to determine subsoiling effectiveness. Treatment units had infiltration and respiration rates nearly 2.5 times greater than untreated areas. This preliminary data suggests the use of subsoiling as an effective method for mitigating detrimental soil compaction.

BMP and Mitigation Monitoring

BMPs and mitigation measures prescribed during project implementation are derived from both the Routt Forest Plan and USFS Region 2 soil standards. Forest Plan standards include both the Regional standards and the Watershed Conservation Practices Handbook (FSH 2509.25) guidelines. Regional standards address soil erosion, compaction, puddling, displacement, and burning. Effectiveness of BMPs and mitigation measures in protecting the soil resource is assessed in tandem with other monitoring efforts, where applicable. Projects evaluated included the North Fork Salvage EIS, Routt Divide Blowdown, Camp Creek Prescribed Burn, Long Park Prescribed Burn, and 28 other projects including various timber sales, grazing allotments, and other prescribed burns. Ocular evaluations combined with field descriptions and soil property analyses suggest that most of the units evaluated in the period FY99-02 are well within the limits provided by Region 2 soil standards.

Soil Health Assessment Protocol
The draft R2 soil health monitoring and assessment protocol was utilized for soil productivity monitoring in FY04. This protocol enables rapid field assessments of soil productivity and provides results relevant to long-term soil health and productivity. Parameters assessed include soil structure, compaction, infiltration, hydrophobicity, erosion, soil surface cover, pH range, coarse woody debris, litter, and soil health trend. Continued use of this protocol will aid in refinement of the methods for eventual adoption as a standard method for assessing soil health region-wide. In the period FY99-02, the draft protocol was utilized in the assessment of four timber sales.

Soil health ratings derived from the use of the protocols show all four timber sales to be properly functioning. Continued utilization of the R2 soil health monitoring protocol has effectively demonstrated it's usefulness as an integral tool for forest soil monitoring. The assessment provides a systematic approach to soil health monitoring that is adaptable to a wide variety of management activities, soil conditions, and resource constraints.

Conclusion
Monitoring completed during period FY99-02 indicated that long-term health and productivity of the soil resource is being maintained. No change to the Forest Plan is needed for this item. Site-specific monitoring data is on file with the Forest Soil Scientist.

Recommendations: Continue to monitor a variety of projects to determine the effects of management activities and the implementation and effectiveness of BMPs and soil-specific mitigation measures.

Air Quality (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 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 the five year period FY99-03 a variety of management activities with potential air quality impacts, most notably particulate matter contributions, were undertaken on the Routt National Forest. The following table lists these activities.

Table 3. Summary of FY99-FY03 management activities having potential effects to air quality on the Routt National Forest including the Mt. Zirkel Wilderness.

Fiscal Year	Project	Type	District	Acres	Piles
1999	Beaver Creek	Prescribed Burn	Yampa	70	-
1999	Lower Camp Creek	Prescribed Burn	Parks	49	-
2000	Upper Rock Creek	Pile Burning	Yampa	213	-
2001	Camp Creek	Prescribed Burn	Parks	610	-
2001	Long Creek	Prescribed Burn	Yampa	203	-
2001	Bears Ears	Pile Burning	Parks	-	n/a
2001	Gore Pass	Pile Burning		-	
2002	Beaver/Radium	Prescribed Burn	Yampa	120	-
2002	Seedhouse	Pile Burning	HPBE	-	123
2002	Bears Ears	Pile Burning	HPBE	-	53
2002	Gore Pass	Pile Burning	Yampa	-	25
2002	Snyder Creek	Pile Burning	Parks	-	18
2002	Big Creek				
2002	Village Belle				
2003	Seedhouse/Lester	Pile Burning	Parks	-	10
2003	Red Dirt	Pile Burning	Yampa	-	60

Smoke from prescribed burning is managed under a cooperative agreement between the Colorado Department of Health Air Pollution Control Division and the 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 (SASEM) 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 or the MZW.

Monitoring completed during the five year period FY99-03 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 prescribed burning. Monitor implementation of other project activities to determine the effects upon air quality.

Watershed and Water Quality (Item 1-3)

Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***How well are management activities maintaining watersheds in a healthy condition and meeting Colorado water quality standards?***

Evaluate current conditions of watersheds 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 on the 2003 State 303(d) list. Although no streams are listed as impaired, there are 23 segments on the Forest that are on the Colorado State Monitoring and Evaluation List (M&E list) due to having excess sediment. All streams on the M&E list have been surveyed at least once during 1998-2003. Monitoring included:

1. Evaluating physical stream characteristics using pebble counts, longitudinal profiles, and cross-sections.
2. Riparian condition using Proper Functioning Condition surveys, and greenline and vegetative cross-sections.
3. Soil health using soil compaction samples, percent ground cover, and infiltration rates.
4. Evaluation of biological health using macroinvertebrate sampling and shocking to determine biomass.
5. Basic water quality measurements for water temperature, pH, and dissolved oxygen.

Initial evaluation of the data indicates that the water quality parameters meet State water quality standards, however, the analysis is not complete for some other factors. Between 1999-2002, 14 reference stream reaches were surveyed to determine the conditions for the physical, riparian, soil, and biological factors, and to compare the reaches in question.

The Forest has worked closely with the Colorado Water Quality Control Division to develop a strategy to evaluate the condition of the streams in question. The Provisional Implementation Guidance for Determining Sediment Deposition Impacts to Aquatic Life in Streams and Rivers (June 1998), provides the primary direction for monitoring the M&E listed streams.

The Forest initiated monitoring bacterial concentrations on a few selected streams in response to scoping questions related to grazing allotments. Of six reaches sampled, three reaches indicated potential exceedance of State water quality standards for E.coli. The Forest is working with the State on this issue. The State has indicated that inadequate information exists to warrant listing on the 303(d) list at this time. Additional sampling may be required to determine the persistence of the problem. Bacterial concentrations are highly variable, thus it is difficult to determine the extent and persistence of water quality exceedances.

Evaluate disturbance level of watersheds by comparison of current conditions with 1997 Watershed Health Assessment:
Several factors have changed since the 1997 Watershed Health Assessment. These include: 1) changes in the delineations of the sixth-level watershed boundaries and hydrologic unit code numbers to be consistent with the NRCS national delineation protocol; 2) changes in the condition class definitions (FSM 2521.1); and 3) the effects of the 2002 fires, Routt Divide blowdown, and beetle epidemics on some watersheds.

Between late 1997 and January 2003, the sixth-level watershed boundaries were updated to comply with NRCS national standards for watershed delineation. As a result, changes have been made to sixth-level watershed boundaries and acreages since the 1997 Plan Revision. Due to these changes, the condition class rating and Watershed Health Assessment from 1997 may need to be adjusted to reflect the new watershed boundaries. It should also be noted that the watershed condition class definitions (FSM 2521.1) have changed since the 1997 Routt Forest Plan revision. The condition class ratings described in 1997 reflect the old definitions. Again, there may be a need to update the watershed condition class ratings due to: 1) changes in watershed boundaries; and 2) changes in the condition class definitions.

Review projects for compliance with the effectiveness of Forest Plan water and riparian Standards and Guidelines:
Monitoring at Little Rock Creek in the Blacktail Allotment on the Yampa Ranger District indicated that riparian Standards and Guidelines were being met. Stream surveys also indicated that Little Rock Creek near the confluence with Rock Creek in the Blacktail Allotment is on an upward trend of improving stream health. This reach of Little Rock Creek was identified as "functional at risk" in an earlier Proper Functioning Condition Survey. Sampling also indicated that this reach had the potential to exceed the limit for E. coli, which is in a State Recreation area classified as 1a. The relationship of Forest Plan Standards and Guidelines, which are derived from the Watershed Conservation Practices Handbook (FSH 2509.25), to the Clean Water Act needs to be compared with the strategy for nonpoint source control.

A 1987 letter from the EPA about how to approach nonpoint pollution sources stated, 'it is recognized that Best Management Practices (BMPs) are the primary mechanism to enable the achievement of water quality standards. BMP's designed and implemented in accordance with the State approved process will normally constitute compliance with the CWA, but does not by itself directly establish a mechanism for enforcing Water Quality Standards.

The Colorado Nonpoint Source Management Program recognizes the Watershed Conservation Practices Handbook as an important tool to provide guidance for achieving water quality goals, while implementing various management activities on Federal lands. This strategy also recognizes the importance of considering the watershed as a whole, in order to determine the true cause and effect of a nonpoint source of pollution and identify the most appropriate BMP for that situation.

The Colorado Water Quality Control office has been notified of the potential exceedances of E. coli in Little Rock Creek. The Forest is committed to working with the State to implement and monitor appropriate BMP's, in order to reduce nonpoint

source pollutants and help develop a strategy to address any other potential water quality concerns.

Several factors suggest the need to review and update the watershed condition assessment completed for the 1997 Plan Revision. These factors include: 1) changes in delineations of the sixth-level watershed boundaries and hydrologic unit code numbers to be consistent with the NRCS national delineation protocol; 2) changes in the condition class definitions; and 3) effects of the 2002 fires, Routt Divide blowdown, and beetle epidemics on the condition of some watersheds.

The fact that none of the streams on the Routt National Forest are on the 303(d) Impaired List suggests that management activities have helped to prevent significant water quality impacts. Current direction from the EPA and the State of Colorado suggests that the Forest is taking appropriate actions to address nonpoint source pollution. This includes development and incorporation of the Watershed Conservation Practices Handbook into the 1997 Routt Forest Plan. Monitoring indicates that Design Criteria from the WCP (which are equivalent to BMP's) are being properly implemented.

Recommendations: After the current insect outbreaks have stabilized to background levels, review and update the 1997 Watershed Health Assessment to incorporate the new watershed boundaries and hydrologic unit code numbers, the updated watershed condition class definitions, and changes in disturbance levels due to natural processes, as well as management induced effects.

Continue to monitor the effectiveness of the Watershed Conservation Practices Handbook and other Forest Plan Standards and Guidelines for protecting water quality and maintaining watershed health.

Riparian Habitat (Item 1-9)

Frequency of Measurement: Five Years
Reporting Period: Five Years

This monitoring item asks the question:

> ***How are management activities affecting riparian habitats (including wetlands) on the Forest?***

Riparian complexes develop and function under a combination of stable interacting features including valley bottom gradient, substrate characteristics, valley bottom width, elevation, local hydrology, and climate. Rarely do human influences change these factors. Instead, human-caused effects involve changes in specific water table features or damaging impacts to certain plant species. For these reasons monitoring focuses on changes in the water table and species composition.

Wetlands are included in the riparian monitoring since these complexes often occur in or adjacent to riparian complexes. The Watershed Conservation Practices Handbook, which provides most of the soil, water, and riparian Forest Plan Standards and Guidelines, provides specific measures to protect wetlands. In general, management activities have little effect on wetlands. Projects are planned and designed to avoid

impacts to wetlands. Any impacts to wetlands that have occurred are generally from past management practices before protection measures were in place.

The effect of management activities on riparian habitats was evaluated through visual observations, photos, Proper Functioning Condition (PFC) surveys, and greenline and vegetative cross-section surveys. The following summarizes general monitoring information across the forest; individual project monitoring results can be found in the Fiscal Year 1998-2001 monitoring reports.

Field reconnaissance found that the effects of timber management are primarily from past activities, and that current timber management activities are not affecting riparian habitats. Poorly located roads and trails, particularly those which are user built, are impacting isolated riparian areas. When working on projects across the forest, these areas are identified for watershed improvement, TRTR, fisheries, or other projects that would improve riparian condition. Visual and photo monitoring of recently completed projects indicates that riparian conditions are improving (see 1998 and 2001 monitoring reports).

Perhaps the biggest management affects to riparian habitats comes from livestock grazing, particularly cattle. The most commonly used methods to assess the effects of livestock grazing include Proper Functioning Condition surveys, and greenline and riparian cross-section surveys. PFC is a qualitative method used to evaluate the hydrologic, vegetative, and soil conditions of riparian areas to determine riparian health. Greenline and vegetative cross-sections provide follow-up methods to the PFC assessment when more quantitative information is desired. Greenline surveys focus on the first perennial lineal vegetative grouping on or near the edge of a stream. Evaluation of the greenline provides a good indication of the streambanks ability to buffer the hydrologic forces of spring runoff and other storm events. Vegetation cross-sections quantify the percent of each vegetation community type in a riparian complex. Disturbances in the riparian complex are often reflected by changes in the vegetation community type.

PFC surveys are usually conducted in conjunction with analysis of range allotments. As indicated in the Watershed Conservation Practices Handbook, PFC is a prerequisite to achieving robust stream health and desired vegetation condition. In some cases such as the Michigan and Illinois allotments (Parks RD), all of the reaches were found to be in proper functioning condition. On other allotments such as the Troublesome (Parks RD), Coberly-Maudlin/Blacktail (Yampa RD) and California Park allotments (Hahns Peak-Bears Ears RD), several reaches were found to be functional at risk. This suggests that the condition of riparian habitats varies across the forest with some areas in a degraded condition. The monitoring reports for fiscal year 1998-2000 provide specific information on different allotments.

From 2000-2003, the forest completed greenline surveys on 33 stream reaches across the forest. Surveys were conducted on reaches of concern identified through PFC surveys, as well as reference reaches. Results show that 48% of the reaches were rated as good-excellent (16 reaches), 36% of the reaches were rated as moderate to good, and 15% (5 reaches) were rated as poor-moderate. Similarly, 30 vegetative cross-sections were surveyed in riparian complexes in conjunction with greenline surveys. Results were similar with 40% (12 reaches) reaches rated good-excellent, 37%

rated moderate-good, and 23% (7 reaches) rated poor-moderate. These results suggest that overall riparian condition in at least 80% of the surveyed reaches is being maintained in at least a moderate or better condition.

The greenline responds more readily to changes in management than the vegetative cross-sections. The fact that there was a higher percent of reaches with poor-moderate vegetative cross-sections could be the result of past management impacts which altered the vegetative composition and recovery is still occurring. The greenline typically has a quicker response due to the presence of saturated or near-saturated conditions, which support healthy riparian vegetation. Alterations in the vegetative cross-section often occurs as a result of changes in the water table which can be the result of soil compaction and/or stream instability such as downcutting which can lower the water table. Restoration of the water table and hydrology necessary to support riparian vegetation in areas away from the greenline is usually a longer term process than the area adjacent to the greenline.

Riparian problems related to grazing are addressed through Environmental Assessments for different allotments, and changes are being made to the type of grazing system, season of use, exclosures, and livestock numbers to address these concerns. Follow-up monitoring indicates that these measures are effective in moving the riparian habitats toward the desired condition. Implementation of watershed improvement projects is helping to improve riparian areas being affected by roads and trails.

Monitoring of riparian habitats through PFC, greenline, and vegetative cross-sections suggest that overall, riparian conditions are being maintained in a satisfactory condition. Reaches of concern have been identified, and are being addressed by changes in the grazing strategy through the NEPA process. Monitoring will continue on these reaches to determine if riparian conditions are improving. With proper implementation, Forest Plan Standards and Guidelines should be adequate to protect riparian habitats.

Recommendations: Continue to monitor riparian condition along with stream function and soil health mentioned in Monitoring question 1-3. Where surveys indicate degraded riparian condition along with stream and soil conditions, develop management plans to restore these areas.

Vegetation and Timber Resources

Control of Destructive Insects and Disease (Item 1-4)

Legally Required Monitoring Item

Frequency of Measurement: Annual
Reporting Period: Annual

This CFR requires a determination that destructive insect and disease organisms do not increase to potentially damaging levels following management activities. In addition, Monitoring Item 1-4 asks the question:

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

Insect Activity

Most of the spruce-fir type and much of the lodgepole pine type on the Routt is at the age and in a condition suitable to stand replacement by spruce beetle, western balsam bark beetle and mountain pine beetle. Outbreaks of spruce beetle have begun and it is highly likely that most of the mature spruce type on the Routt will be impacted. Mountain pine beetle is also building to epidemic populations levels. The expected tree mortality from these beetles is not out of the natural historic range of variability and will not be a departure from prescriptions that allow for natural processes to dominate. Such areas will be impacted however and may not reflect the forest condition that was envisioned when the Forest Plan was prepared. Increasing spruce beetle and mountain pine beetle populations may adversely affect desired conditions in timber management, recreation areas, wildland/urban interface areas and areas where preservation of large diameter, mature forest type is desired.

Management efforts on the Forest have been effective in reducing bark beetle impacts in localized treated areas. Forest stand conditions and weather conditions have combined to create conditions favorable to bark beetle increases over large areas. Increasing populations are not due to management practices that have been implemented.

There have been aerial detection surveys conducted to detect insect and disease activity yearly since 1997. Spruce Beetle and Mountain Pine Beetles are creating the major insect outbreaks, and have been increasing in both tree mortality and aerial extent.

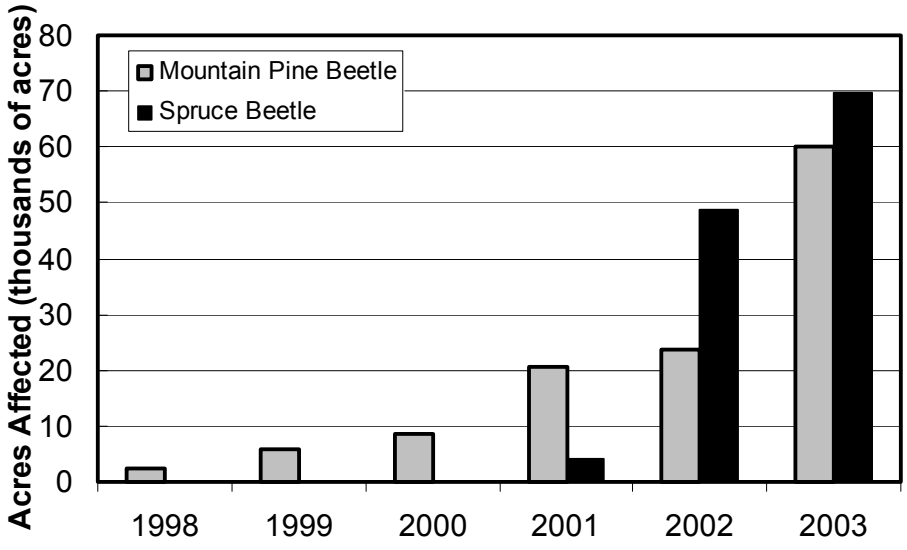


Figure 1. Acres affected by Insect Activity 1998-2003.

Three different organisms; the western balsam bark beetle, a pathogenic fungus of subalpine fir (Ceratocystis dryocoetidis), and the root decay pathogen Armillaria ostoyae are contributing to subalpine fir decline, a complex problem that has increased on the Routt National Forest during the past seven years. The results of these surveys is displayed in Figure 1.

Based on the aerial survey data, and on knowledge of the size of trees usually affected by the beetles, it is possible to infer several things:

- The number of trees and the overall spatial distribution of trees affected by Mountain Pine and Spruce Beetle is escalating rapidly.
- A large number of trees have already been affected (estimated at over one million trees).
- The affected trees, although a large number, still comprise only a very small percentage of the total trees on the forest at this time.

Dwarf Mistletoe

Dwarf mistletoe is the most serious tree disease problem on the Routt NF. Management actions can greatly impact (both positively and negatively) the incidence and severity of dwarf mistletoe. Of all diseases in the central Rockies, dwarf mistletoes are the most ideal candidates for silvicultural control because they are obligate parasites, they are host specific, they have long life cycles, they spread slowly, and they usually have visible mistletoe plants making them easy to detect. In areas infected with dwarf mistletoe, management plans need to incorporate information on mistletoe biology in order to prevent or suppress the disease.

Timber harvest over the past five years were focused on harvest types that change structural stage and subsequently change insect risk (Clearcut, Shelterwood, Seedtree, Selection, Removal Harvest) or on capturing the value from stands affected by insects and diseases (sanitation/salvage).

Dwarf mistletoes may increase to damaging levels following management actions (after many years) if the prescriptions are not designed to prevent or suppress the disease. Mistletoe levels may also increase to damaging levels if follow-up actions are not carried through (for example failing to remove heavily infected seed trees). There is no information available on how many of the recommendations of the LSC staff in Insect and Disease Evaluations were implemented and what are the results of that implementation or lack of implementation.

Disease and Pest Treatment Activities

The Routt Forest has treated stands for dwarf mistletoe, including 250 acres of lodgepole pine infected with dwarf mistletoe in 2003. Follow up monitoring surveys of infected stands are being conducted to confirm successful treatment. The Gore Pass dwarf mistletoe project is a continuing pest management effort on the Yampa District.

A variety of insect pest suppression actions have been taken over the past five years. Treatments included lethal trap trees, anti-aggregating pheromone, felling and debarking infected trees and applying protective insecticide. These treatments were applied primarily to trees in campgrounds, and around the Steamboat ski area.

A biological evaluation was completed, which described the increased losses of lodgepole pine to mountain pine beetle in the Green Ridge area. The Parks Ranger District staff prepared an Environmental Impact Statement to manage the expanding bark beetle outbreak in the area, which was completed in 2003.

The Revised LRMP does not have a Forestwide objective for insects and diseases. The Forest is required to use the integrated pest management process (26 CFR §219.27). There are not any management areas identified that are not currently attaining desired conditions due to insect and disease (Roche, 2004).

The anticipated populations of mountain pine and spruce beetles on the Routt National Forest may jeopardize the Forest's ability to attain long-term Management Area goals and objectives. Currently, all Ranger Districts on the Forest are experiencing epidemic populations of bark beetles.

The historic nature of spruce and mountain pine beetles is that usually the largest diameter spruce and lodgepole pine are attacked and killed initially, than succeeding generations attack and kill adjacent stands and smaller diameter trees. If the beetles continue spreading, drainages and landscapes may experience widespread pine and spruce tree mortality. As a result, fuel loading and the potential for large-scale wildfire is increasing significantly.

Direct and indirect impacts of large-scale bark beetle mortality can result in the loss of habitat for species dependant on late successional forest, ground cover for maintaining soil productivity and water quality, outdoor recreational opportunities and experiences, and support for local and regional economies dependant upon a sustained flow of market and non-market products.

Recommendations: Continue intensive insect and disease surveys
Protective insecticide spray should be applied to trees in campgrounds threatened with bark beetle attack.

Harvest Unit Size (Item 1-5)

Legally Required Monitoring Item

Frequency of Measurement: 5 Years
Reporting Period: 5 Years

36 CFR 219.12(k) requires the maximum size limits for harvest areas be evaluated to determine whether such size limits should be continued. In addition, monitoring item 1-5 asks the question:

> *How is harvest unit size affecting landscape patterns across the Forest? (Coarse Filter Scale)*

Regional Standards set 40 acres as the maximum allowable opining size for all forest types (R2 FSM 2471.1). The 1997 Revised Routt Forest Plan states that 40 acres is the maximum harvest unit size with the following exceptions":

- Proposals for larger openings approved by the Regional Forester after a 60 day public review.
- Where larger openings are the result of natural catastrophic conditions of fire, insect or disease attack, or windstorm.
- Where the area that is cut does not meet the definition of created openings.

The size of harvest units emulates the patterns displayed in the analysis of patch patterns from the Revised Routt LRMP. There are few large harvest units and many more small harvest units. Although this may not be creating the exact pattern that was evident historically when natural processes (fire, insects and diseases) were the major forces creating landscape patterns, smaller patches can coalesce into larger patches over time and under the operation of natural processes.

Table 4. Size of Clearcut Timber Harvest Units 1998-2003

Fiscal Year	Number of Clearcut Units	Average Clear Cut Size (acres)	Maximum Clear Cut Size (acres)
Yampa			
2003	0	0	0
2002	1	7	7
2001	14	10	22
2000	15	13	40
1999	9	14	24
1998	8	11	20
Hahns Peak Bears Ears			
2003	0	0	0
2002	3	15	24
2001	4	10	18
2000	0	-	-
1999	0	-	-
1998	2	8	11
Parks			
2003	1	5	5
2002	11	19	34
2001	1	22	22
2000	13	10	28
1999	8	11	18
1998	17	17	40

In 1998, Gore Pass units 36,37, and 42 combined to create a composite created opening of 117 acres. These units were designed to combine several small units into one large unit to emulate the natural patch size and pattern found on that landscape.

Gore Pass Timber Sale was the only vegetation treatment that created an opening greater than 40 acres. The large openings caused by the Routt Divide blowdown are not included in this analysis, but they do contribute to a diversity of patch sizes across the landscape.

The visual quality objectives for all the above treatments were attained. No cumulative effects to the visual resource resulted from these vegetative treatments, as all treatments met the adopted visual quality objective established in the 1997 Revised Routt Land and Resource Management plan.

Recommendations: Develop a tracking mechanism which correlates the larger harvest unit openings with the appropriate NEPA document to reduce time expended tracing planning and implementation documentation. Continue to monitor how the size and proximity of clearcut units impact the landscape. This will help to determine the

effects upon vegetation diversity, visual quality, and compliance with current policies and regulations (36 CFR, Part 219.27(d)(2)).

The current handbook, regional guide, and the 1997 Routt NF Land and Resource Management Plan provide adequate direction and flexibility in guiding the size of harvest unit treatments.

Forest Cover Types and Habitat Structural Stages (Item 1-7)

Frequency of Measurement: Five Years
Reporting Period: Five Years

This monitoring item asks the question:

> ***Are forest cover types and habitat structural stages being provided for across the Forest?***

Add in summary of wilderness effects for both of these sections – RO comment
The LRMP states in its forest wide Desired Condition that ***"….At the end of the first decade, changes in the overall character of the landscape will be small." (LRMP, 1-3)***

Habitat Structural Stages (HSS) were used in the LRMP to describe vegetation, and so HSS will be used to quantify the changes that have occurred over the 5-year period from 1997 to 2003 to vegetation composition/structure. The table below describes Habitat Structural Stages:

Table 5. Habitat Structural Stage Definitions

HSS Code	Description	Tree Sizes	Diameter ranges for Most Trees	Crown Cover Percent
1	Grass - Forb	Nonstocked		0 - 100
2	Shrub or Seedling Trees	Established	Less than 1 inch	11 - 100
3A	Sapling - Pole Trees	Small, Medium	Mostly 1 – 9 inches	11 - 40
3B				41 - 70
3C				71 - 100
4A	Mature Trees	Large, Very Large	Mostly 9 inches and larger	11 - 40
4B				41 - 70
4C				71 - 100
5	Old Growth	Large, Very Large	Varies	Varies

The following table compares HSS information from the 1997 plan with the results of our GIS analysis, which models HSS in 2003. The modeled 2003 information takes into account changes in vegetation due to fire, blowdown, insect and disease, and timber harvest or other timber activities. Note that an assumption was made that a fire would change all existing habitat structural stages to HSS 1 (Grass-Forb). Actual ground conditions may vary due to burn intensity. When viewed from the perspective of the entire Routt National Forest, the percentages of acres being transformed are relatively small (Table 6 and Figure 2).

While this change shows a downward trend in late successional habitat instead of an upward one, the changes are still relatively small forest wide at this time. In addition, due to the short time frame involved in the analysis, no attempt was made to estimate changes due to normal growth, which may well have caused some acres to change into the late successional habitat structural stages. This is consistent with the "Desired Condition" of the plan ***"…at the end of the first decade, changes in the overall character of the landscape will be small." (LRMP, 1-3)***, and indicates that forest cover types and habitat structural stages continue being provided for across the forest.

Table 6. Vegetation Change from 1997 to 2003

Habitat Structural Stage	1997 (Acres)	2003 (Acres)	Change (Acres)
1	13,463	50,379	36,916
2	25,689	28,124	2,436
3A	100,218	99,913	-305
3B	140,106	135,032	-5,073
3C	120,792	113,248	-7,544
4A	127,642	127,052	-591
4B	267,370	259,789	-7,582
4C	224,795	206,553	-18,242
5	4,507	4,492	-15

The majority of the changes discussed above have occurred in two geographic areas, Upper and Lower Elk River. These two geographic areas were therefore reviewed in the context of the LRMP Geographic Area Desired Condition.

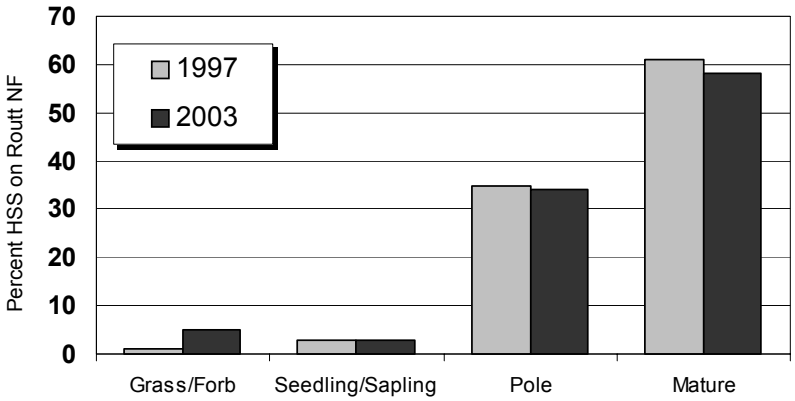


Figure 1. Vegetation Change 1997-2003

Lower Elk River Geographic Area

The Lower Elk River Geographic Area desired condition states in part: **"Forest on 97% of the area will appear older and less disturbed and will have more late successional structure."** (LRMP, 3-51), and the settings states in part: **"Within the forested area, 30% is considered late successional"**. This makes it clear that while

older, less disturbed forests are the desired condition, at the start of the planning period the majority of the area is not in late successional habitats.

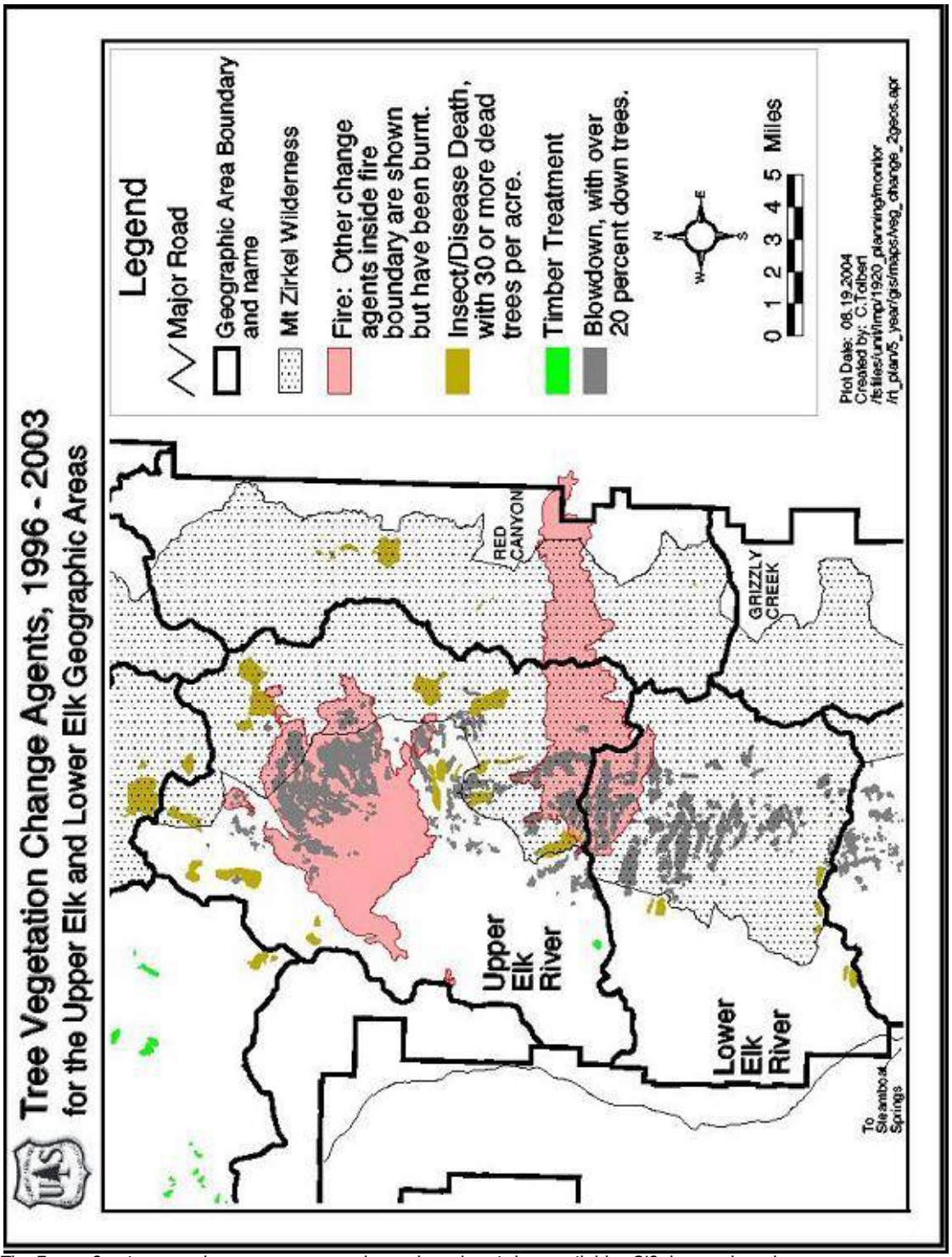
As mentioned above, habitat structural stages 4B, 4C and 5 equate to "late successional" structure. The Lower Elk River Geographic Area has experienced some changes in HSS, which are displayed in Table 4 and Figure 2 below. The map on the following page has geographic area boundaries so you can locate Upper and Lower Elk River and view the items that are causing change.

Table 7. Vegetation Change from 1997 to 2003 in the Lower Elk River Geographic Area –

Habitat Structural Stage	1997 (Acres)	2003 (Acres)	Acres Changed
1	978	5,016	4,039
2	2,030	2,217	188
3A	4,207	5,272	1,065
3B	9,729	8,814	-915
3C	12,210	9,649	-2,561
4A	2,443	2,223	-220
4B	2,383	2,245	-138
4C	11,094	9,643	-1,451
Data missing	5,057	5,051	-6

Even though there have been some significant changes to habitat structural stages in this geographic area, they have not changed the overall composition of the geographic area to the point where the setting description has been invalidated. In addition, 75% of the area still remains in larger trees (HSS 3A – 5), as compared to 84% in 1997. The desired condition indicated that 97% of the forested area would appear older and less disturbed, which is still a valid desired future condition at this time. The bulk of the change in this geographic area is due to fire and blowdown, which tend to be more static once the initial event is over.

In addition, as can be seen in the figure below, the majority (63 %) of the acres in this geographic area are in the Mt. Zirkel Wilderness Area and almost all the changes have occurred inside the wilderness. Management Area direction desired condition in Wilderness areas states that "Vegetation in the area will be mostly late successional unless regenerated by natural processes such as fire, insects or disease. Evidence of the effects of fire, insects or disease may be present". In addition, the Forest Plan Category 1 Management Area Description states that "Ecological processes such as fire, insects and disease are essentially allowed to operate relatively free from the influence of humans. Diversity resulting from natural succession and disturbances predominates: These excerpts clearly indicate that changes in the Wilderness such as those seen in this geographic area are consistent with the Plan. Escalating insect and disease mortality (discussed earlier in this report) may indicate a need to reconsider the desired future condition of this area at some later time.



The Forest Service uses the most current and complete data it has available. GIS data and product accuracy may vary. They may be: developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation, incomplete while being created or revised, have represented features not in accurate geographic locations, etc. The Forest Service makes no expressed or implied warranty, including warranty of merchantability and fitness, with respect to the character, function, or capabilities of the data or their appropriateness for any user's purposes. The Forest Service reserves the right to correct, update, modify, or replace this geospatial information based on new inventories, new or revised information, and if necessary in conjunction with other federal, state or local public agencies or the public in general as required by policy or regulation. Previous recipients of the products may not be notified unless required by policy or regulation. For more information, contact the Medicine Bow - Routt National Forests and Thunder Basin National Grassland Supervisor's Office (2468 Jackson Street, Laramie, WY 82070, 307-745-2300.

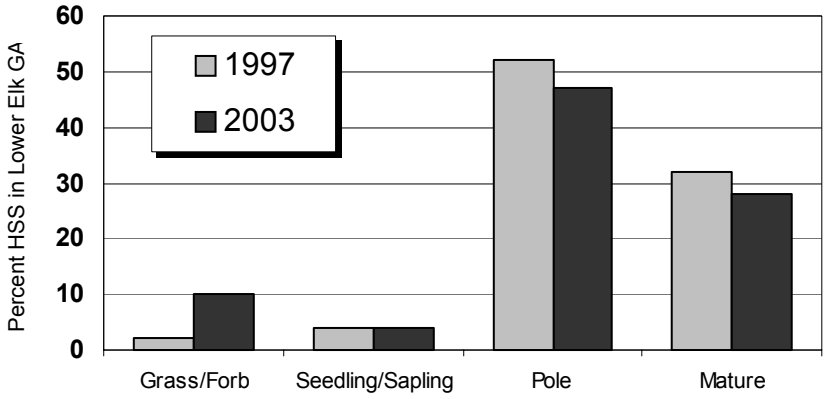


Figure 2. Vegetation Change in Lower Elk Geographic Area

Upper Elk River Geographic Area

The Upper Elk River desired condition states in part that**: "Forests on 66% of the area will appear older and less disturbed and will have more late successional structure than presently occurs."** and **"Vegetation diversity will provide habitat for a full spectrum of fauna, from elk to rodents."** (LRMP, 3-65)

Table 8. Vegetation Change from 1997 to 2003 in Upper Elk River Geographic Area.

Habitat Structural Stage	1997 (Acres)	2003 (Acres)	Acres Changed
Data Missing	8,153	8,136	-17
1	6,196	28,531	22,335
2	3,970	4,096	126
3A	9,359	6,662	-2,697
3B	7,177	5,370	-1,807
3C	6,701	4,506	-2,194
4A	7,278	5,127	-2,151
4B	13,196	10,546	-2,650
4C	25,180	14,234	-10,946
5	3	3	0

Table 8 lists HSS changes on the Upper Elk River Geographic Area. Refer to **Figure 3** for a map showing the geographic area and the items that have affected HSS. The greatest change has come from a conversion of late successional HSS (4B,4C and 5) to lower habitat structural stages. In 1997 this geographic area had around 44% late successional habitat and in 2003 it has declined to 28%. The vast majority of this change is due to fire, where the GIS model changed all burnt areas to a HSS of 1. As discussed previously, actual ground conditions may not reflect this abrupt a change due to varying burn intensity. Blowdown and insect and disease mortality have contributed to a reduction in late successional habitat also.

This geographic area has experienced some significant changes in HSS, the majority of these changes being the result of fire. Even with these significant changes this geographic area is still able to provide habitat for a full spectrum of fauna, per the desired future condition. The area has shown a significant decrease in late successional forest (current estimate of 28%), whereas the desired future condition is expected to be approximately 66%, which would have been an increase from the

starting condition. The bulk of the change in this geographic area is due to fire, which tends to be more static once the initial event is over.

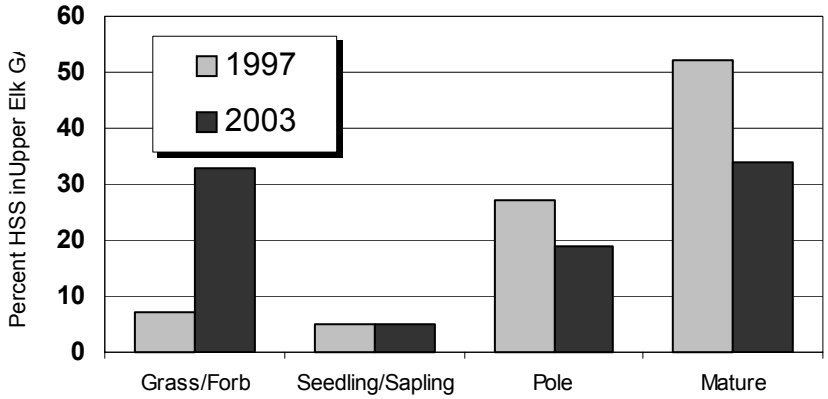


Figure 3. Vegetation Changes in Upper Elk River Geographic Area

This geographic area does show more impact from insect and disease mortality at this time than the Lower Elk River does, and the amount of this mortality will probably continue to rise. Given these factors it is probable that this geographic area is not going to regain much late successional habitat over the next 5 years. While a good deal of the vegetation change has occurred inside the wilderness, slightly more has occurred outside the wilderness. As discussed above for the Lower Elk River geographic area, the change inside the wilderness is consistent with the Forest Plan, and this should reduce concerns about the decrease in late successional forest in this geographic area.

Late Successional Forest in MA's 5.11 and 5.13 (Item 1-8)

Frequency of Measurement: Five Years
Reporting Period: Five Years

This monitoring item asks the question:

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

As mentioned above, habitat structural stages 4B, 4C and 5 are considered to equate to late successional forest *(FEIS, 3-109))*.

All the tables in this section that show changes to habitat structural stages reflect GIS modeled changes based on fire, blowdown, insect and disease, and timber harvest or other timber activities. These are considered for this analysis to be "management activities". rephrase to weed out the management activities vs disturbance events.

In management area 5.11 from 1997 to 2003 there has been a 6% reduction in late successional forest acres for all forested lands. On lands suited to timber production, there has been a 3 % reduction.

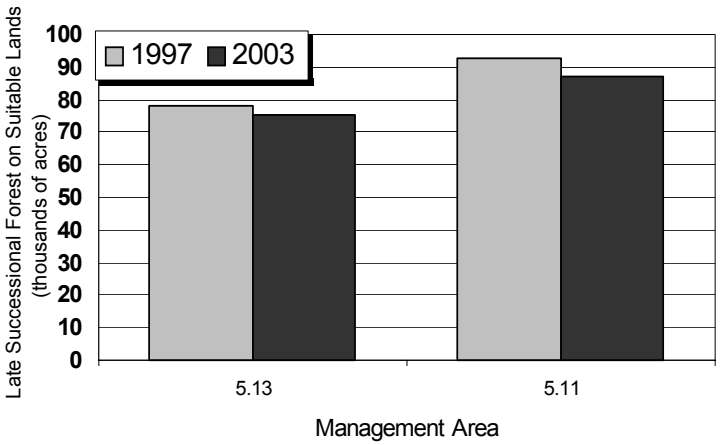


Figure 4. Late Successional Forest on Suitable Lands.

In management area 5.13 from 1997 to 2003 there has been a 3% reduction in late successional forest acres for all forested lands. On lands suited to timber production, there has been a 2% reduction.

Table 6 below shows a list of the acres and the percent changes in habitat structural stages for late successional forest on lands suitable for timber harvest. This table shows that management activities are affecting late successional forest structure in management area 5.11 and 5.13, however even with various natural disturbances included, the percentage of change is relatively small.

Table 9 . Late Successional Forest in Management Area 5.11 and 5.13

Management Area	Habitat Structural Stage	1997 (Acres)	2003 (Acres)	Change in Acres	Percent Change per HSS
5.11	**4B**	54,094	52,527	-1,567	-2.90
	4C	36,367	32,415	-3,952	-10.87
	5	2,181	2,181	0	0.00
	TOTAL	**92,642**	**87,123**	**-5,519**	**-5.96**
5.13	**4B**	46,694	45,528	-1,166	-2.50
	4C	31,163	29,239	-1,924	-6.17
	5	369	369	0	0.00
	TOTAL	**78,226**	**75,136**	**-3,090**	**-3.95**

Table 10. Percent of Suitable Lands in Late Successional Forest

Management Area	Total Suitable (acres)	1997 Late Successional Forest (acres)	1997 Percent of Total Suitable Lands	2003 Late Successional Forest (acres)	2003 Percent of Total Suitable Lands
5.11	197,208	92,642	47	87,123	44
5.13	175,089	78,226	45	75,136	43
TOTAL	**372,297**	**170,868**	**46**	**162,259**	**44**

The plan indicates that 1,126 acres/year should be treated, with a harvest of 14.8 MMBF/year. Table 11, below, shows the acres by treatment type that the Forest Plan had designated for harvest to achieve 14.8 MMBF/year.

Table 11. Planned Timber Harvest (acres)

Timber Harvest Type	Acres
Even-aged Regeneration	790
Even-aged Non-Regeneration	169
Uneven-aged	167
Total Acres	**1,126**

Table 12 below shows the acres, treatment and MBF offered for each fiscal year. Using this information along with the GIS analysis we can infer that management activities are affecting late successional forest structure but, during a 5 year time span, at a minimal level.

Table 12. Timber Harvest by Fiscal Year

Fiscal Year	Timber Harvest Type	ACRES	Million Board Feet Offered
1998	Even-aged Regeneration	1022	
	Even-aged Non-Regeneration	27	
	Uneven-aged	157	
	Total	**1206**	**30,314**
1999	Even-aged Regeneration	318	
	Even-aged Non-Regeneration	25	
	Uneven-aged	1152	
	Total	**1495**	**9,200**
2000	Even-aged Regeneration	463	
	Even-aged Non-Regeneration	10	
	Uneven-aged	49	
	Total	**522**	**6,842**
2001	Even-aged Regeneration	512	
	Even-aged Non-Regeneration	512	
	Uneven-aged	303	
	Total	**1327**	**Not available**
2002	Even-aged Regeneration	481	
	Even-aged Non-Regeneration		
	Uneven-aged	188	
	Total	**669**	**9,900**
2003	Even-aged Regeneration	71	
	Even-aged Non-Regeneration		
	Uneven-aged	242	
	Total	**313**	**4,229**

Harvested Land Adequately Restocked (Item 1-10)

Legally Required Monitoring Item

Frequency of Measurement: Annual
Reporting Period: Annual

This CFR requires a determination of compliance with the standard that lands are adequately restocked within five years as specified in the Forest Plan. In addition, monitoring item 1-10 asks the question:

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

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". "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 regeneration success is scheduling and recording regeneration surveys in the RMACT data base. For example, following the completion of a clearcut in 2000 the ranger district data base coordinator will schedule regeneration surveys in 2001, 2003, and 2005 in the database. If a regeneration survey indicates a lack of seedlings, the district can schedule planting in the data base, followed with scheduled regeneration surveys to monitor plantation success. When regeneration surveys determine that a stand is adequately stocked, then a regeneration certification code must be entered into the data base.

The yearly monitoring report relies on the RMACT data base to list stands and acres that had final harvests 5 years prior, and which of those stands and acres have a regeneration certification code. If a harvested stand is adequately regenerated, but lacks the regeneration certification code in the data base, the stand is considered not adequately stocked. The RMACT database was queried to provide data for each monitoring report from 1998-2003. The following table displays that data. Over this time period, 15.6% of acres of final harvest treatment were not adequately stocked 5 years following final harvest.

Table 13. Five Year Restocking from Annual Monitoring Reports 1998-2003

Year of Final Harvest	5th Year After Final Harvest	Acres of Final Harvest	Acres Not Adequately Stocked
1993	1998	431	86
1994	1999	827	181
1995	2000	782	65
1996	2001	633	221
1997	2002	1060	52
1998	2003	553	62
Total		**4,286**	**667**

In March 2004, the MBR again queried the RMACT data base to analyze the regeneration status of these harvested stands. As the table indicates, there are significantly fewer acres not adequately stocked, approximately 94% of the acres harvested are adequately regenerated (or 6% not adequately stocked).

Table 14. Acres not adequately restocked in 2004

Year of Final Harvest	5th Year After Final Harvest	Acres of Final Harvest	Acres Not Adequately Stocked
1993	1998	431	0
1994	1999	827	5
1995	2000	782	0
1996	2001	633	79
1997	2002	1060	0
1998	2003	553	0
Total		**4,286**	

In Table 14, in 1994 and 1996 some areas are still shown as not being restocked. The reasons for this are:

In 1994, five acres on the Parks Ranger District are shown as not restocked as a regeneration survey was never scheduled.

In 1996, 79 acres were scheduled for a regeneration survey, however the results of the survey were never entered into the database.

Reasons for lack of success in achieving 100% of acres regenerated 5 years following final harvest.

1. Mistakes in maintaining data base records by not scheduling the regeneration surveys, not inputting regeneration certification code, or inputting wrong years for scheduled regeneration surveys.

2. Lack of adequate site preparation or scarification for natural regeneration. Winter logging reduces the amount of mineral soil exposure needed for Engelmann spruce and lodgepole pine germination and seedling survival.

3. The Routt National Forest has sustained an extended drought. With a lack of soil moisture or precipitation in summer months, germinates and seedlings will desiccate. If natural regeneration was planned, the desiccation of the germinating seedlings causes the forest manager to revert to hand planting. When hand planting is required after natural regeneration has failed, the certification of a harvested site is delayed 2-3 years.

Recommendation: During 2005, inspect those sites that displayed inadequate stocking levels during the 2004 survey to ensure that they are adequately regenerated. Hand plant or seed those areas that are not adequately restocked. Continue monitoring to ensure that regeneration meets the five-year requirement and that the records are updated on a regular schedule to allow verification as part of the annual

monitoring report. As projects, site conditions, and weather permits, monitor the success of tree regeneration in areas of elk sedge and grass, and also at rocky sites.

Lands not suited for timber production (Item 1-11)

Legally Required Monitoring Item

Frequency of Measurement: Year 10
Reporting Period: Year 10

NFMA requires that forests review the suitability of timber land every 10 years. In addition, monitoring item 1-11 asks the question:

Has timber suitability classification changes on any lands?

Formal evaluation for this monitoring question will not occur until the Fiscal Year 2008, as required by 36 CFR, Part 219, Section 219.28(b). A copy of the Forest's timber suitability database was archived during January, 2001. This data will serve as a baseline for comparisons that will be made in the 2008 Annual Monitoring Evaluation Report. No changes to the amount of suitable lands occurred during the period 1998-2003.

Wildlife

Habitats for TES and Sensitive Species (Item 1-6)

Frequency of Measurement: Year 10
Reporting Period: Year 10

This monitoring items asks the question:

Are habitats for threatened and endangered and Forest Service Region 2 sensitive species for the Routt National Forest being maintained or enhanced?

Plants:

The Forest Plan for the Routt National Forest included an analysis of the following Threatened, Endangered and R2 Sensitive Plant Species. The table below displays the completed analysis for projects in which habitat for each species occurred from 1997-2003.

Table 15. Threatened, Endangered and R2 Sensitive Plant Species Analyzed in 1997-2003

Scientific Name T,E,or S	Common Name	Forest Plan Effects	Habitat Complex	Projects analyzed	Project effects
Carex livida (S)	Livid Sedge	MAII	Riparian / wetlands	None	None
Cypripedium fasciclatum (S)	Purple (Clustered) Lady's Slipper	MAII	Mature Conifer	Silver Run TS, Collins Creek TS, Blackhall-McAnulty TS, Troublesome AMP, North Park Snowtel	

Scientific Name T,E,or S	Common Name	Forest Plan Effects	Habitat Complex	Projects analyzed	Project effects
Drosera rotundifolia(S)		MAII	Riparian / wetlands		MAII
Ipomopsis aggregata spp. weberii (S)	Rabbit Ears Gilia	MAII	Grasslands / forblands	Buffalo Pass AMP, Rabbit Ears AMP, CDOT Hwy reroute.	MAII
Machaeranthera coloradoensis(S)	Colorado Tansy Aster	none	Alpine		
Penstemon harringtonii(S)	Harrington Beardtongue	MAII	Mixed deciduous / shrublands		
Platanthera praeclara(T)	Western Prairie Fringed Orchid		Downstream Platte River	Green Ridge TS	
Spiranthes diluvials(T)	Ute Ladies'-tresses		Downstream Platte River		
Sullivantia hapemanii var. purpusii (S)	Hanging Garden Sullivantia	MAII	Riparian / wetlands		

Conclusions: The cumulative effects of MAII (May Adversely Impact Individuals, but 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 range wide) for the species listed above, over several projects, are at this time not likely to result in a loss of viability on the planning area, in a trend to federal listing, or in a loss of species viability range wide.

Aquatic TES Species:

There are no threatened or endangered aquatic or riparian-dependent species or habitats documented on the Routt National Forest. (Foster, March 31, 2004) However, stream flows from the Forest ultimately contribute to conditions in the Colorado River and Platte River mainstems, where several endangered species live. These species depend on natural flow regimes that include flood flows and substantial sediment transport. Vegetation management (timber harvest) can result increased water yield, however it is likely that any increases in water would be used by water right holders prior to reaching the mainstems of these rivers, and so are not expected to reach downstream critical habitat.

Aquatic Sensitive Species:

Aquatic sensitive species include: The Colorado River cutthroat trout and four sensitive amphibian species: boreal toad, wood frog (also a Management Indicator Species), leopard frog and tiger salamander to determine distribution, status and trends for these species on the South Zone. A new Regional Forester's Sensitive Species List was revised and signed in November 2003. The new list does not include the tiger salamander. However, we will continue to document breeding and sightings of tiger salamanders.

Colorado River cutthroat trout:

The Routt National Forest has 17 fifth level watersheds that are within the historic range of the Colorado River cutthroat trout (CRCT). Of those, 3 no longer contain any CRCT populations within the 5th level watershed and 6 have only one stream in the watershed that contains CRCT. The remaining 8 fifth level watersheds have multiple streams that contain CRCT within the watershed but only 3 watersheds have streams that are connected to one or more other streams that contain cutthroat trout. Surveys indicate that CRCT populations are declining in streams where brook trout are present.

Removal efforts started in 1997 in hopes of reducing the number of brook trout in streams where Colorado River cutthroat trout are present. Armstrong and Torso Creeks were found to have no brook trout after the removal effort. Efforts are ongoing on Circle Creek and Elkhead Creek.

Since the revised plan was signed in February 1998, decisions have been made on 3 grazing, and 2 timber projects located in Colorado River cutthroat trout (CRCT) habitat. All but one of those projects was determined to not impact the cutthroat trout in the Biological Evaluation. Grazing, timber and fuels projects were chosen to evaluate based on these types of projects encompass a large land base and on their potential to affect habitat. It is recognized that other actions can also affect habitat. Monitoring of the Mt. Zirkel Fire Complex (2002), has determined that recovery is occurring. The fire burned very hot and dead fish were seen in the creek. Total consumption of the riparian vegetation occurred throughout much of the Lost Dog Creek watershed. Sampling just after the fire showed that macroinvertebrates, brook trout and Colorado River cutthroat trout were gone from upper Lost Dog Creek. Sampling in 2003 has shown recovery of the macroinvertebrate and brook trout populations in this area. The cutthroat population in Lost Dog Creek was considered a core conservation population of Colorado River cutthroat trout. Fish population surveys prior to the fire showed very low numbers of cutthroat trout. Sampling in 2003 showed one cutthroat in upper Lost Dog Creek. The South Zone Aquatics Team will work cooperatively with the Division of Wildlife to determine the appropriate course of action for this watershed in terms of restoring Colorado River cutthroat trout.

A brood source fishery is planned for Vaughan Lake is planned to be used as a brood source fishery as part of the Colorado River Native Recovery Project. The South Zone Aquatics Team and the Colorado Division of Wildlife are working together to ensure the aerator and snowmobile safety measures are in place and functioning. Cutthroat trout have been stocked in the lake in 2001-2003 and an outlet spawning channel will be constructed.

The South Zone Aquatics Team in FY2003 implemented a habitat inventory-based modeling method specific to cutthroat trout in Deadman Gulch. This method can be used to determine probability of cutthroat trout persistence in habitats potentially affected by existing and proposed land management activities. Deadman Gulch contains Colorado River cutthroat trout and is potentially affected by livestock grazing. Data analysis is continuing but it is suspected that modeling would confirm that there is potential for continued low population abundance in Deadman Gulch.

We are finding that the CRCT would not be a good indicator of Forest management activities due to its limited distribution across the Forest. However, it is a good indication that the ecosystem cannot support this native species because of the presence of the nonnative brook trout. A revised MIS list for the Routt National Forest is under analysis that would remove CRCT as the only fish species as a MIS. The revised MIS list would have common trout species which would include both CRCT and brook trout.

Boreal Toad
The Routt National Forest has four identified boreal toad breeding sites monitored cooperatively between the Routt National Forest and the Colorado Division of Wildlife. Highlights for the boreal toad breeding sites for FY2003 include:

- Egg masses were observed only at one site.
- Tadpoles were observed at two of the three sites monitored by the South Zone.
- Metamorphosis was confirmed at the same two sites tadpoles were observed.

Based on the above information, we feel that our highest elevation site was not successful because of a cold snap in early June, which probably killed two adult toads and prevented successful egg laying and development. The Sawtooth Fire was very close to one of the breeding sites and we will monitor that site in FY2004 to see if there were any effects from so many people being in the area and potentially transporting chytrid fungus on their boots. No direct or indirect effects from the fire are expected.

A boreal toad distribution study in cooperation with the Rocky Mountain Research Station began in FY2004 and is ongoing through FY2005. Methods include using instream hoop nets to capture dispersing juvenile toads and better document toad distribution in watersheds on the Medicine Bow-Routt National Forests.

We also surveyed about 300 acres of amphibian habitat around Big Creek Lakes and Rabbit Ears Pass. We had two new individual sighting of boreal toads on the Forest. One of the sightings tested positive for the chytrid fungus. These sightings are in areas that have had previous sightings. All the other sensitive amphibian species were sighted along with many sightings of chorus frogs. The numerous sightings indicate that amphibian habitats are being maintained on the Forest.

Wood Frog
The Colorado Wildlife Commission listed the wood frog as a state threatened species in 1979. It was de-listed in May 1998 and now is a Species of Special Concern in Colorado.

The wood frog is widely distributed across the Parks Ranger District therefore, most all project s on the district could potentially affect wood frog habitat. We have 4 known wood frog breeding locations on the district with many individual sightings.

Two recent projects on the district that were located within wood frog habitat are Newcomb Creek Restoration and Green Ridge Mountain Pine Beetle EIS. The purpose of the Newcomb Creek Restoration project was to put Newcomb Creek back into its original channel because a meander was cut off when NFSR 615 road was constructed. The dike used to cutoff the meander created a low water area that is used for wood

frog, leopard frog and chorus frog breeding. Mitigations stated that the dike would not be removed and construction would occur after September 1 since wood frogs would have migrated from the breeding site to hibernacula by then. The Green Ridge Mountain Pine Beetle EIS had a proposed unit with a known wood frog breeding site within the unit. A 150 foot no disturbance buffer and harvesting after September 1 were the required mitigations. Therefore, with mitigations measures habitat changes are not expected to occur and populations would not be affected.

The current wood frog population status across its range in Colorado appears to be maintaining a dynamic status quo with some populations disappearing as others develop in adjacent areas. The wood frog appears to not be a good indicator of forest management actions because even though they are widely distributed they are difficult to monitor. They are cryptic individuals and one time surveys do not confirm or deny presence or absence. A revised MIS list for the Routt National Forest is under analysis and the wood frog would not be included in the new list. It would be replaced with common trout species which would include both CRCT and brook trout.

Terrestrial:

Thus far, habitats for TES species appear to be maintained adequately by the provisions of the Forest Plan. Relatively high goshawk activity gives the impression that their population is stable. Though it is too early to develop trend information, boreal owls have been consistent in their level of use of nest boxes. Snowshoe hare pellet counts indicate that snowshoe hares are present in many different cover types and appear to be stable. The Routt National Forest is maintaining adequate habitat for the snowshoe hare and consequently the Canada lynx by maintaining various seral stages of habitat utilized by the snowshoe hare. Habitat enhancement projects for TES species continue to improve the overall capability of the Routt NF to support these species.

Population trends of Management Indicator Species (Item 1-12)

Legally Required Monitoring Item

Frequency of Measurement: Five Years
Reporting Period: Five Years

This CFR requires that population trends of the management indicator species (MIS) will be monitored and relationships to habitat changes will be determined. In addition that this monitoring will be done in cooperation with State fish and wildlife agencies and others, to the extent possible.

Monitoring item 1-12 asks the question:

> ***What is the relationship between changes in habitat and population trends of the management indicator species?***

Management Indicator Species (MIS) were selected for the Routt Forest Plan, because their population changes are believed to indicate the effects of management activities, as required by the National Forest Management Act regulations (36 CFR 219.19(a)(1)). Table 16 below presents the best available knowledge for the MIS

species on the Routt National Forest regarding changes in habitat and population levels.

Table 16. Management Indicator Species

Common Name of MIS	Habitat Associated with MIS	MIS Population Trend	Changes in Habitat
Common Flicker	Snags and downed woody debris.	Populations appear to be stable or increasing and are expected to increase as a result of increasing aspen forests and snag abundance.	Snag, down woody debris and aspen habitats have increased habitat for the common flicker over the last 5 years.
Hairy Woodpecker	Snags and downed woody debris, aspen habitats.	Populations are expected to increase as a result of increasing food resources and snag habitats associated with ongoing bark beetle epidemics.	Snag and down woody debris habitats have increased habitat for the hairy woodpecker over the last 5 years.
Red-backed Vole	Snags and downed woody debris, lodgepole pine habitats.	Preliminary monitoring results indicated that populations of Red-backed voles increased in blowdown areas compared to spruce-fir forests, likely due to increased downed woody debris. Subsequent loss of mature conifer forest due to large scale wildfires over the past 5 years has reduced quality habitats for the red-backed vole on the Forest	Although standing snags have increased across the Forest, the red-backed habitat has decreased due to recent wildfires. As forests recover and standing snags become down woody material, red-backed vole habitat is expected to recover and eventually improve in burned areas on the Forest.
Pine Grosbeak	Mature conifer habitat complexes, including subalpine fir and Engelmann spruce.	Observations of pine grosbeak were highest in the spruce-fir forest, lowest in salvage logged areas and moderate in blowdown areas (Skorkowsky 2003).	The 1997 Routt Divide Blowdown and subsequent bark beetle epidemics and wildfire events have reduced mature conifer habitat on the Forest over the last 5 years. These natural disturbance events decreased pine grosbeak habitat on the Forest.
Warbling Vireo	Aspen-habitat complex.	Populations within suitable habitat do not appear to be changing based on incidental observations	Aspen habitats have increased (and will continue to increase) habitat for the warbling vireo over the last 5 years.
Blue Grouse	Mature conifer, shrub and grass/forb habitat complexes.	Overall populations appear stable on the Routt National Forest	Overall with the forest moving out of drought conditions and increasing understory vegetation in the spruce-fir forest, blue grouse habitat is improving on the Routt National Forest,
Beaver	Riparian wetland habitat	Beaver populations appear stable on the Routt National Forest based on field observations made over	Generally, the availability and quality of riparian habitats for beaver have not changed

Common Name of MIS	Habitat Associated with MIS	MIS Population Trend	Changes in Habitat
	complexes	the last several years.	during the period from 1998 to 2003.
Ptarmigan	Alpine/talus habitat.	Routt National Forest ptarmigan populations appear stable due mostly to lack of change in the availability/suitability of ptarmigan habitat on the Routt National Forest.	Generally, the availability and suitability of ptarmigan habitat on the Routt National Forest has not changed during the period from 1998-2003.
Vesper Sparrow	Grass/forb habitat complex.	As a result of recent drought conditions during the period from 1998 to 2003, vesper sparrow populations are thought to have decreased during this monitoring period. Drought likely reduced the nesting success and young production during this period as a result of impacts to vegetation and insect populations.	Although amount of habitat did not change during the period from 1998 to 2003, the quality of the available habitat is thought to of decreased due to drought conditions during that period.
Sagebrush Vole	Mixed deciduous shrub (sagebrush) habitat complex.	As the Routt National Forest is not conducting agricultural conversion of sagebrush habitats and grazing management either is stable or improving, sagebrush vole habitats and potential populations are expected to have not changed considerably during the period from 1998 to 2003.	Drought conditions from 1998 to 2003 likely reduced the suitability of sagebrush vole habitat due to reduced grass and forb growth. Increased precipitation in 2004 likely has countered this reduction in habitat quality.
Brown Capped Rosy Finch	Alpine/talus habitat complexes.	Because the amount and quality of alpine habitats is not known to have changed during the period from 1998 to 2003, brown capped rosy finch populations are anticipated to have remained stable during this monitoring period.	Drought conditions during the monitoring period may have lowered habitat quality. However, recent precipitation in 2004 has likely countered that through improved habitat quality.
Wilson's Warbler	Riparian/wetl and habitat complexes.	Population trends are not apparent for the Routt National Forest but anticipated to be stable because of stable habitat conditions.	Generally, the availability and quality of riparian habitats for Wilson's warbler has not changed during the period from 1998 to 2003.
Rocky Mountain Elk	Mature conifer, aspen, shrub, grass/forb and lodgepole pine habitat	Over the last 5 years elk populations have appeared stable on the Routt National Forest.	Elk summer and winter habitats have not changed considerably during the period from 1998 to 2003. Prescribed burning is being used to improve winter range.

Common Name of MIS	Habitat Associated with MIS	MIS Population Trend	Changes in Habitat
	complexes.		
Mule Deer	Mature conifer, aspen, shrub and grass/forb habitat complexes.	Local populations appear to have stabilized in recent years and may be beginning to increase on the Routt National Forest.	Mule deer summer and winter habitats have not changed considerably during the period from 1998 to 2003. Prescribed burning is being used to improve winter range
Blue-gray Gnatcatcher	Mixed deciduous shrub land habitat complex.	Because of the lack of significant modification of blue-gray gnatcatcher habitat on the Routt National Forest from the period from 1998 to 2003, populations are not anticipated to have changed.	As a result of prescribed fire, gnatcatcher habitat is improving on the Routt National Forest.
Green-tailed Towhee	Mixed deciduous shrub habitat complex.	Because of the lack of significant modification of green-tailed towhee habitat on the Routt National Forest from the period from 1998 to 2003, populations are not anticipated to of changed.	As a result of prescribed fire, green-tailed towhee habitat is improving on the Routt National Forest.
Northern Goshawk	Mature coniferous habitat complex.	Generally goshawk populations appear stable but available habitat has been impacted in recent years from wildfire, reducing the potential Forest population.	Wildfires in 2002 and more recent widespread bark beetle mortality have reduced the availability and quality of goshawk habitat on the Forest in recent years
American Marten	Mature coniferous habitat complex.	Populations appear to be stable although reductions in suitable habitat from recent wildfires have occurred. This likely resulted in a slight reduction in the overall Forest potential population	The recent wildfires reduced and/or eliminated habitat. As these areas recover, marten habitat will improve.
Osprey	Mature conifer and open water habitats.	The surveys indicate a general expansion of the Osprey nesting range in Colorado during the past 10 years.	Osprey habitat has not changed in the period from 1998 to 2003. Management actions generally do not affect open water habitats and Forest Plan Standards are providing for protection of known nest sites.
Bald Eagle	Mature conifer and open water habitats.	Currently there are no known nesting pairs on the Routt National Forest. Population at the continental level appears to be increasing.	During the period from 1998 to 2003 there has been no significant change in the management of open water habitats on the Routt National Forest.
Greater	Riparian/wetl	During the period from 1998 to	The distribution and

Common Name of MIS	Habitat Associated with MIS	MIS Population Trend	Changes in Habitat
Sandhill Crane	and habitat complexes.	2003 the greater sandhill crane population has recovered to the point that the State of Colorado down listed it from endangered to a 'species of local concern'. The Forest population appears to be stable or increasing.	abundance of riparian areas has not changed, however improved grazing management has likely improved the quality of these areas.
Wood Frog (More information on this species is located under Item 1-6)	Riparian wetland habitat complexes.	This amphibian is found only on the Parks Ranger District. Many amphibian populations are strongly influenced by factors beyond the control of land managers. These factors include: ozone depletion, global warming, and chytrid fungus.	The available distribution of riparian and wetland habitats has not changed significantly during the period from 1998 to 2003
CO River cutthroat trout (More information on this species is located under Item 1-6)	Aquatic habitat	One population was severely impacted by wildfire during the 2002 Mount Zirkel fire. Non-native species control has been implemented through electro fishing in areas of other populations to help reduce competition to cutthroat populations.	Wildfire and drought conditions have impacted habitat quality on the Forest. Some habitat improvement projects have been implemented which have localized benefits for this species.
Sharp-tailed Grouse	Mountain shrub habitat complex.	Columbian sharp-tailed grouse populations declined along with other grouse species, due to drought conditions over the past few years. Populations increased in 2004 because of additional precipitation.	Habitat conditions for Columbian sharp-tailed grouse have been improving in the area associated with the known breeding population because of ongoing habitat improvement projects.

In the last several years there has been an improved understanding of the challenges and requirements of the MIS monitoring requirement as the result of better science along with clarification generated from several court cases in recent years. This spurred the Region 2 Regional Forest Service Office to issue new Forest Plan Guidance for Management Indicator Species on April 20, 2001. Later in 2001, Forests in Region 2 began amending their Forest Plan MIS lists to be consistent with this new guidance and additional Regional direction.

Recommendations: The Routt National Forest is currently in the process of amending its MIS list to be consistent with the Regional direction and guidance.

Recreation

Recreational Opportunities and Infrastructure (Items 2-1 and 2-2)

Frequency of Measurement: Five Years
Reporting Period: Five Years

These monitoring items ask the questions:

> ***Do recreational opportunities respond to Forest users desires, needs and expectations?***
>
> ***Does the Forest infrastructure (travelways, roads, trails) facilitate attainment of desired recreational experiences, including access for a wide range of abilities?***

The Forest Plan allocations are associated with one or more Recreational Opportunity Spectrum (ROS) classes that are appropriate for the activity types allowed in the management area. The desired future condition of the Forest emphasizes recreation opportunities on the primitive end of the Spectrum (Table 17). The ROS was amended in 2001 (discussed above), to facilitate the relocation of a portion of the Luna Lake Trail that was impacted by the Routt Divide Blowdown in 1997 to a more environmentally sound location. The emphasis is still on the primitive end of the Spectrum.

The shift of management area prescriptions was specific to the relocation of the trail, and reflected the shift in recreational use and evidence of human activity from the old trail corridor to the relocated trail corridor. The old trail was rehabilitated and "naturalized." The area north of the old trail location became less accessible, and shifted towards more pristine wilderness conditions.

Winter recreation opportunities were a point of appeal in the 1998 Plan. There were two appeals raising the following: user conflicts between motorized and non-motorized winter use; failure to include a non-motorized winter prescription; and failure to take a "hard look" at impact of snowmobiles on resources. Essentially, the appellants contended there is no specific guidance that establishes management direction to mitigate the conflicts in winter recreation. Although the appeal was upheld, recognizing the fact that potential conflict was discussed in the EIS, and that the issue is site-specific, it needs to be addressed during project-level planning.

There's a mutually recognized 'line of demarcation' on the Rabbit Ears Pass where skiing and snowmobile riding are separated. However, signing areas for non-motorized use only hasn't proven to be effective in keeping some snowmobile riders from riding on the ski trails. In addition, improvements in technology and in users' abilities since the Plan was signed has meant other areas need to be delineated for specific and mutual uses. The Hahns Peak Bears Ears District had been working with user groups to determine the best course of action for separating uses, and ameliorating conflicts, however the groups have come to a standstill in moving forward with recommendations for the Forest Service. The NEPA process for determining the best separation and formalizing this separation with Forest Orders has begun.

The NVUM report illustrates the shortages in the Forest's infrastructure as a measure of visitor satisfaction. Nearly all items were rated as either Good or Very Good. Items that rated out as only Average included the availability of recreation information, feeling of safety, and the condition of parking lots. The adequacy of signage and the condition of the natural environment were primarily satisfactory. In all developed sites, visitors were mostly satisfied with the value for their fee paid.

Table 17. Universal Access

Facility	Number of upgrades
Campsites	15
Picnic Sites	9
Toilets	17
Access trails	16
Trailheads	4
Administrative Offices	3
Field Offices	3
Programs	1
Fishing Piers (Bear Lake)	1
Private Providers	
Outfitter Guides	3
Resorts	1

Overnight use developed sites were less acceptable for visitors than the day use developed sites. Similar to day use sites, visitors were less pleased with the availability of information, the condition of the facilities, and parking lots. Trails and available parking were rated *Good* more often than simply *Average*. Visitors to general forest areas were less satisfied with the cleanliness of restrooms at trailheads and parking lot conditions.

Universal Access

The Forest recreation staff have been steadily updating facilities and trails for universal access, in accordance with the Accessibility Transition Plan. Total number of upgrades are listed in Table 17.

Recreation Effects on Natural Resources (Item 2-3)

Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

> ***How are recreational activities affecting the physical and biological resources on the forest?***

One of the primary impacts of recreation on the physical and biological resources of the national forest is off-road vehicle use. This issue is addressed in the legally required monitoring item "Effects of Off Road Vehicles" below.

Effects of winter recreation on soils, plants and wildlife has become a concern with the increase in snowmobile use, particularly in the alpine environment of Rabbit Ears Pass. Efforts are currently underway to study the effects of snow compaction on other resources.

Other effects of recreation include dispersed camping on soils and riparian areas, and the effects of trails on soil and water. Most Nepa analysis also consider the recreation

infrastructure and where needed propose road, trail and trailhead improvements or decommissioning to reduce effects on natural resources. An example of this are the conversion of a jeep trail to a non-motorized trail in the Upper Elk River Access Analysis.

Recreation special uses are monitored as they can also effect natural resources. If a special use is determined to be causing damage to natural resources, the special use authorization is modified to mitigate this damage. An example of this is the requirement that the Calamity Pass Enduro Event organizers to harden, stabilize and/or restore affected areas prior to holding the event.

Recommendations: Recreation use and demand can change slowly over time, or fairly rapidly, such as snowmobile use in the Rabbit Ears Pass area. The forest should continue to monitor recreation facilities and activities for the need to reduce effects to other resources.

Recreation and Partnerships (Item 2-5)

Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the questions:

> ***How are partnerships contributing to maintaining or enhancing recreational resource opportunities.***

The Forest has applied for and received $191,868 in grant money to help provide opportunities they would not have otherwise been able to provide. In addition, the recreation special uses program collects $909,623 in permit fees, $781,656 from the Steamboat Ski Area, alone. Outfitter and Guide service fees average $3.00 per service day, while recreation event fees average $4.00 per service day. The recreation program successfully uses volunteers to work on trails and facilities, in the wilderness and as campground hosts.

The accomplishments by partnerships was higher during 2003 than the previous year, and are continuing to provide adequate recreational opportunities on the Forest. However, we have not identified a stable or meaningful way to measure and report partnership accomplishment.

Recommendations: There is a need to develop and implement a reporting system that is stable and provides meaningful ways to measure and report partnership accomplishments. This will be coordinated between the Ranger Districts and the Forest Recreation Staff Specialist.

Interpretive Experiences (Item 2-6)

Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring items ask the question:

> ***Does the forest provide interpretive experiences that describe ecosystem functions and the Forest Service mission.***

More than 40,000 Forest visitors were directly contacted using personal interpretation and environmental education programs on the Routt National Forest during 2003. A large number of these contacts were by direct communication related to the beetle epidemic, fuel reduction projects, and the role of natural disturbances in a forest environment.

More than 15,000 Forest visitors were contacted using other interpretive programs, such as campfire programs, nature hikes, historical walks, and archaeology presentations. Forest Service information was also presented to visitors using various brochures, maps, trailhead signs, wayside exhibits, special events, table-top displays, Smokey Bear programs, Woodsy Owl programs, and school presentations.

Routt National Forest employees participated in county fairs, parades and other special events and celebrations. Parade entries and booths focused on fire, trees/wildflowers, wilderness ethics, recreation, and natural disturbances. The Routt National Forest is a leading member of Partners in Interpretation which focuses on interpreting the natural and cultural resources of northwest Colorado. Interpretive programs were presented in cooperation with the following agencies and organizations:

- Colorado State Parks.
- The Tread of Pioneers Museum.
- The Colorado Division of Wildlife.
- Steamboat Springs Chamber Resort.
- The Nature Conservancy.
- ·The City of Steamboat Springs.
- ·The Steamboat Ski Area.
- ·Yampatika.
- ·Bureau of Land Management.

The Routt National Forest is providing interpretive experiences and focusing on opportunities that assist in communicating ecosystem functions to the public.

Recommendations: Continue programs and partnership with other organizations. Focus on interpreting the Forest Service multiple-use mission and increase the number of programs available on the Forest by seeking additional sources of funding for education/interpretation.

Scenery (Item 2-4)

Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item asks the question:

How are selected projects and programs affecting visual quality?

To assess effects on visual resources, the Dry Lake Fuels Reduction sites near Strawberry Park Road and Buffalo Pass Road on the Hahn Peak/Bear Ears District were visited on August 13, 2003 by MBR SO staff and HPBE District staff as part of the Routt NF Five-Year Monitoring and Evaluation Review. Fuels reduction treatments were implemented within the Dry Lake area in FY 2003. The mitigation measures for visual resources as stated in the Dry Lake Fuels Reduction EA were followed. When disturbed grounds are covered with new healthy vegetation in the spring of 2004, as viewed from Strawberry Park Road and Buffalo Pass Road, these treated sites will meet the adopted visual quality objective of partial retention.

Evaluation of this project determined that it will meet the assigned visual quality objective.

Recommendations: Continue to monitor project activities for compliance with the revised Forest Plan adopted visual quality objective.

Effects

Effects of Off Road Vehicles

Legally Required Monitoring Item

Frequency of Measurement: Annual
Reporting Period: Five Years

This monitoring item is legally required by 36 CFR 219.21(g)

The Forest Plan identified areas specifically for motorized trail use (Management Area (MA) 3.31). Other MAs provide for OHV use on 4-wheel drive roads, however there are areas (generally MAs in categories 1 and 2) where all summer, motorized use is prohibited.

The road system on the Forest provides access to and through the Forest, and in Jackson County, OHVs are allowed on all public roads. The Routt Roads Analysis (USDA Forest Service, 2003) identified issues (see below) relative to all road and off-road use on the Forest, as well as use from adjacent ownerships.

Prior to revising the Forest Plan, Forest Supervisor Jerry Schmidt signed the Parks and Yampa Ranger Districts Travel Management Decision. Site-specific decisions, since the Plan was signed include the Radial Mountain and Trail 1135 Decisions. The Radial Mountain and Trail 1135 Decisions are currently under litigation. The Parks and Yampa Travel Management decision was in response to concerns over unrestricted motorized wheeled cross-country travel. The decision eliminated cross-country travel in all

previously identified motorized areas in the Forest Plan (all Area 'C' on the Visitor Map).

A decision on the Radial Mountain motorized trails was deferred in the Parks and Yampa TM decision due to the nature of the use. These trails were under special use permit by the District for an exclusive one-day Enduro event. No other use was allowed for 364 days out of the year, but the permitted group(s) were to provide trail maintenance, much of which was not accomplished as planned. The Parks and Yampa TM decision identified issues relative to this system of trails, specifically the resource damage occurring as a consequence of the lack of maintenance that was the responsibility of the clubs (the Radial Mountain decision limits the Enduro event to specific segments of the trail).

A decision to close Forest Trail 1135 to motorized use was made after the Forest Plan decision to allocate the area to non-motorized use (1.32). The area was bisected by an east-west motorized trail. The Forest Service's decisions to (1) change the previous allocation in the area, and (2) to close the trail to motorized use were affirmed.

Relevant Issues from the Routt Roads Analysis

Ineffective closures may have adverse effects on resources, and can encourage illegal use. In addition to ineffective closures, their enforcement (closed or decommissioned roads) is not adequate. The Routt National Forest Plan, Chapter 1, page 23, Infrastructure-Travelways Standard #2 provides guidance for deciding to close roads and appropriate closure methods.

Inconsistent regulations governing the use of ATVs (including OHVs) arise when roads transition from one jurisdiction to another. This creates confusion for the public users and for law enforcement personnel.

Safety is a concern when both small all-terrain vehicles (ATVs) and highway vehicles are used on the same roads and occasionally at the same time. This can be a safety problem.

New trends include increased demands for year-round access across the Forest to private inholdings, which may affect the road system and resources. In addition, private landowners adjacent to, or within, National Forest System lands are assuming exclusive access to the Forest. This may be promoting illegal OHV use from private lands.

Recommendations from the RAP

- There is a need to update information, which would clarify which roads and trails are open to ATV's depending on state, county, and USFS regulations.
- On roads open to ATVs where safety is a concern, develop a signing scheme to address safety concerns, and consider these roads as high priority for roadside clearing to improve site distance.
- Public information needs to be updated for use by visitors, if there's any expectation of compliance with travel management decisions. For example, the Forest map incorrectly shows open forest access in the vicinity of Onion Park, even though the FS doesn't have legal right-of-way.

Effects to lands and communities adjacent to or near the National Forest, and effects to the Forest from lands managed by government entities. (Item 3-3)

Legally Required Monitoring Item

Frequency of Measurement: Five Years
Reporting Period: Five Years

This monitoring item asks the following questions:

> ***What are the effects of National Forest and Grassland management be considered as it affects resources and communities adjacent to or near the Routt NF (36 CFS 219.7 (f))?.***
>
> ***How are forest management activities affecting local employment and income (Item 3-3)?***

Lumber Mill Changes in the past five years

Historic use of the Forest was one of the most important uses identified in the Forest Plan EIS. Since that time, the Louisiana Pacific timber mill in Kremmling closed in 1992, and there's currently a small working mill there, less than 20 employees; the LP mill in Walden closed in 1994, and was replaced by three small mills that employ less than 20 employees each. The Louisiana Pacific Mill in Saratoga, Wyoming closed in January 2002. There are currently two majored timber purchasers remaining in the area, Intermountain in Montrose, CO and Bighorn Lumber in Laramie, WY.

Road Access

National Forest System roads connect numerous public roads managed and operated by either the state of Colorado or county governments. However, few Forest roads serve as the primary through-routes that connect communities. Of greater importance is how the county roads and state highways give communities, tourists, and industries access to the National Forest. These roads connect to arterial, collector, and some local roads at the Forest boundary where traffic is dispersed into the Forest for a variety of uses. Some county and state highways traverse into or through the National Forest.

In some areas, the Forest Service lacks adequate legal access to the public road system. Priorities for acquiring access are identified during planning for commercial or land management projects. An issue identified in the Routt RAP is that historic access across some private land is being closed to the public as ownership and land uses change. While this is not a change in legal status, it gives the appearance of shutting off large tracts of public land. Where access is needed for forest management, additional rights-of-way may need to be pursued.

Blowdown

On October 25, 1997, a wind event impacted an area of approximately 20,000 acres of the Forest, within and just to the west of Mt. Zirkel Wilderness Area near Steamboat Springs, Colorado.

The effects to nearby communities were documented in subsequent project analyses to harvest the down or otherwise affected timber, to re-build or clear the trails and other recreation facilities, and to otherwise mitigate the effects of such a catastrophic event. Effects included increased and decreased levels of employment. Loggers (at all levels) received extra income closer to home, but outfitters had to rearrange their schedules and location of their guided trips for nearly 2 seasons. Tourism related to Wilderness use was affected (temporarily), but tourism related to curiosity increased.

Wildland Urban Interface

The fiscal year 2001 appropriations act directed the Secretaries of Agriculture and the Interior to consult with states and Tribes to develop a list of wildland urban interface communities within the vicinity of federal lands that are at high risk from wildfire. "Wildland urban interface" are areas where humans and their development meet or intermix with undeveloped wild areas that may be vulnerable to forest or rangeland fires. The information contained in the list is used by interagency groups of land managers at the state and/or Tribal level to collaboratively identify priority areas within their jurisdictions that would benefit from hazardous fuel reduction activity. This will ensure that available funding is focused on areas of local importance and where opportunities are most conducive to reducing risks on a meaningful scale.

The list does not determine whether a community receives funding. In some areas, contracts or grants may be offered to thin trees where appropriate, or implement FIREWISE concepts. In other areas, federal agencies may undertake other types of projects on nearby federal land or work with the states to reduce fuels in mixed or adjacent jurisdictions.

USDA Forest Service funding will provide for technical and financial assistance to the states to enhance firefighting capacity at the state and local levels. This funding also supports fire hazard mitigation projects in the wildland urban interface and will facilitate an expanded series of FIREWISE workshops to help communities across the country implement FIREWISE practices that reduce fire risk. It will also support an expanded national public service fire prevention program. All the Counties around the Routt National Forest are involved in this program including Jackson, Routt, Rio Blanco, Grand, Garfield and Moffat Counties.

County Receipts

Counties that contain National Forest System lands receive payments from the federal government to compensate the county for two costs: for serving visitors to the National Forests (compensated by the 25 Percent Fund); and for the loss of property tax revenues (compensated by Payment in Lieu of Taxes (PILT) payments).

The 25 Percent Fund Act required payments equal to a 25 percent share of annual revenues coming from the sale of forest products, user fees, and special use permits (such as grazing) on each national forest. These payments were made to states, and distributed to the counties, with the restriction that they could be expended only on education or roads. The remaining 75 percent was not retained by the Forest Service, but rather deposited in the U.S. Treasury.

The Secure Rural Schools and Community Self-Determination Act of 2000 provided counties with an additional payment option, which would provide a more stable flow of revenue from federal forest payments. The new law offers the counties a choice between the traditional 25% of forest income payment method that had been used for almost 100 years, and a new fixed payment based on the average of the three highest payments to the county between 1986 and 1999, which then increases by a small percentage each year. This option provides stability of payments but removes the opportunity for larger payments. The fixed amounts also have some additional requirements for their use. In 2001, Counties had to choose between the two payment options.. Jackson, Routt and Rio Blanco Counties chose the fixed payment option from the start. Grand County chose to continue the 25% payment option. Garfield and Moffat County switched from the 25% payment option to the fixed payment in 2003. All the counties which chose the fixed payment option increased their revenue (DOLA, 2003). The payments to counties is shown below in Table 18. These payments combine the payments relating to the Routt National Forest with the other National Forests that are in those counties, such as the White River and Arapahoe Roosevelt NF. More information on payments to counties can be found at http://wwwnotes.fs.fed.us:81/r4/payments_to_states.nsf/

Table 18 . Forest Payments to Counties surrounding the Routt National Forest (CO DOLA, 2003)

County	1999	2000	2001	2002	2003
Garfield	$279,733	$351,835	$331,723	$324,031	$446,204
Grand	$698,363	$643,526	$752,495	$619,597	$662,438
Jackson	$180,037	$167,384	$208,173	$209,837	$212,355
Moffat	$22,177	$21,328	$18,004	$21,038	$27,074
Rio Blanco	$193,510	$227,241	$282,716	$284,990	$288,410
Routt	$313,250	$282,437	$363,781	$366,781	$371,182

Prescriptions and Effects

Legally Required Monitoring Item

Frequency of Measurement: Five Years
Reporting Period: Five Years

This monitoring item is required by 36 CFR 219.12(k)2

Since the Revised Routt National Forest Land and Resource Management Plan was approved February 17, 1998, the Forest Service has implemented a number of vegetative treatment prescriptions. Natural events have influenced the silvicultural treatments significantly. In 1997 the Hahns Peak/Bears Ears Ranger District suffered a very large blowdown event in the Elk River Drainage. As a result of the blowdown, a spruce beetle epidemic infested thousands of acres causing mortality in larger diameter spruce. Also as a result of extended drought, mountain pine beetle populations exploded in lodgepole pine stands over much of the Forest. As a result of these events, silvicultural prescriptions implemented in the past 5 years are different than what would normally be implemented by the Revised Routt NF LRMP.

The intent of the silvicultural treatments is to meet the land management objectives for the Revised Routt NF LRMP for management area prescription 5.11 (General Forest and Rangelands – Forest Emphasis). The desired condition for MA 5.11 is for a range of vegetative composition and structure in a range of successional stages to meet wildlife and timber objectives. Openings will provide a wide range of habitat structure stages, and wood fiber. The size and shape of the created openings should blend with the size, shape, and pattern of natural openings. Forested stands will be both even-aged and uneven-aged. Many of the openings resulting from the blowdown are landscape in scale, affecting many sub-drainages of the Elk River drainage.

Due to weather related events, blowdown and drought, forest health issues have become the predominant mechanisms driving vegetative change on the Routt NF. As a result of these events, silvicultural treatments are focused primarily towards reducing bark beetle brood, and protecting various resource values associated with a forested landscape.

All of the silvicultural prescriptions have been responsive to the wide range of resource concerns, attained the management area objectives, and maintained land productivity.

Table 19. Area Treated by Silvicultural Prescriptions 1998-2003

Vegetation Treatment	Area Treated (Acres)
Even-aged Regeneration Harvest Treatments	
Clearcut	1,565
Shelterwood Seed Cut	28
Shelterwood Removal	72
Overstory Removal	1,431
Overstory Removal with Reserves	21
Intermediate Harvest Treatments:	
Shelterwood Prep Cut	535
Commercial Thinning	578
Salvage Harvest Treatments:	
Uneven-aged Harvest Treatments:	2,179
Individual Tree Selection	769
Group Selection	553
Pre-commercial Thinning	4,088
Insect & Disease Treatments	19,869
Tree Planting	597
Site Prep	1,251

Effects of Management Practices

Legally Required Monitoring Item

Frequency of Measurement: Five Years
Reporting Period: Five Years

All management and ground disturbing activities (road construction, livestock grazing, uncontrolled recreation, ditches etc) have the potential to affect the water resources (both watershed function and water quality). Most management practices and ground disturbance result in nonpoint source pollution. Soil and water conservation practices (BMPs) are recognized as the primary control mechanisms for nonpoint source pollution on National Forest System lands. Proper implementation of Forest Plan Standards and Guidelines, including Design Criteria from the Watershed Conservation Practices (WCP) Handbook (FSH 2509.25), and any additional mitigations and best management practices identified through the project planning process are critical to minimizing the adverse effects.

Where Standards and Guidelines including Design Criteria and BMPs are properly implemented, most management activities have minimal long-term effects on the water resources. Conversely, when these practices are not properly implemented, long-term detrimental effects can occur. Despite proper implementation of Design Criteria and BMPs, some management activities, such as roads, can have permanent effects on the water resources that need to be carefully considered in the planning process. Roads both alter flow patterns and produce sediment. Proper design can minimize the effects of roads on streamflow and water quality.

Plan to project implementation that ensures proper implementation of BMPs and Design Criteria is critical to protecting the water resources including watershed function and water quality. Implementation and effectiveness monitoring are identified in the WCP as key factors in helping to ensure that management practices are meeting requirements of the Clean Water Act, and state water quality standards for nonpoint sources.

Outputs and Costs

Comparison of Estimated and Actual Outputs and Services (Item 3-1)

Legally Required Monitoring Item

Frequency of Measurement: Annual
Reporting Period: Annual

This monitoring item requires a quantitative estimate of performance through comparing outputs and services with those projected by the forest plan. Monitoring item 3-1 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 projected outputs are listed in the Routt Area supplemental tables in the Forest Plan Final EIS (pages S-1 to S-15). The following table displays the outputs by specific program areas from 1999 to 2003.

Table 20: Comparison of Projected to Actual Outputs 1998-2003

Resource Program Activity/Outcome	Units	Desired Condition Level	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
RECREATION							
Developed Capacity Available	PAOT-days	1,541	1,520	1,520	1,603	1,583	1,583
Trails Available to Standard	Miles	601	555	555	555	298	523
Trails Available-Total	Miles	820	829	940	1,068	1,068	1,068
Developed Use	M Visits [4]	616				334	692
Dispersed Use	M Visits	877				484	2,170
WILDERNESS							
Wilderness Use	M Visits	98	(9)	(9)	NR(8)	40	40.1
HERITAGE RES.							
Inventory Area	Acres/yr	6,348	5,703	7,936	2,000	14,013	9,285
WILDLIFE - TES							
Inventory	Acres/yr	8	0	0	10,445	21,566	21,103
Monitoring Projects	Projects	2	2	4	5	4	9
Project Coordination	Acres	17,100	84,742	27,200	1,225	23,400	22,500
GRAZING							
Grazing - Sheep	Hd Month [5]	174,400	149,168	152,138	142,804	141,307	154,393
Grazing - Cattle	Hd Month	39,600	36,732	31,973	29,489	33,903	35,376
RANGE .							
Noxious Weeds	Ac Treat	385	1,871	1,145	992	925	1,003
Rangeland Vegetation Inventory	Acres/yr	37,338	0	0	0	0	0
FOREST VEG.							
Volume Offered Chargeable Conifer (ASQ)[6]	MCF/yr[7] MBF/yr	3,200 14,800	1,999 9,245	1,392 6,842	0 0	2,014 9,902	915 4,106
Volume Offered	MCF/yr	1,200	0	246	0	8	0

[4] M Visits = 1,000 visits
[5] Hd Month = head month; calculated by multiplying the number of animals by the period of occupancy
[6] ASQ = Allowable Sale Quantity.
[7] MCF/yr = thousand cubic feet per year.

Resource Program Activity/Outcome	Units	Desired Condition Level	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
Chargeable Aspen (ASQ)	MBF/yr	2,000	0	1,220	0	3	0
Volume Offered - Total Sale Program (All wood products)	MCF/yr MBF/yr	5,200 24,050	2,131 9,856	2,071 10,367	92.8 569.5	944 590	1,045 4,758
Harvest - Even age regeneration cut	Acres/yr	1,211	303	335	739	265	71
Harvest - Even age non-regeneration cut	Acres/yr	245	16	0	303	255	40
Harvest - Uneven age	Acres/yr	235	109	138	207	149	0
Reforestation	Acres/yr	1,211	934	1,002	826	1,205	782
Timber Stand Improvement	Acres/yr	1,027	1,086	461	111	54	1,426
Forestland Vegetation Inventory	Acres/yr	107,856	13,124	9,955	13,272	5,734	4,517
SOIL, AIR, WATER							
Soil and Water Resource Improvements	Acres/yr	143	18	28	220	5	14
Watershed Condition - Class I Watersheds	Wtrshds	85	55	55	55	53	53
Watershed Condition - Class II Watersheds	Wtrshds	49	73	73	73	71	71
Watershed Condition - Class III Watersheds	Wtrshds	0	0	0	0	4	4
Water Yield from timber harvest	Ac Ft/Year	715	719	234	490	374	313
FIRE							
Fuel Treatment	Acres	1,682	786	296	263	760	364
ROADS							
Roads Maintained	Miles	1,500	500	617	1,170	994	1,050
Road Construction	Miles/yr	16.2	0.1	2.3	1.5	8.7	2.7
Road Reconstruction	Miles/yr	9.8	0.0	1.8	2.4	17.7	0.7
Road Obliteration	Miles/yr	18.4	20.0	10.0	1.0	8.4	3.6
TRAILS							
Trail Construction/ Reconstruction	Miles/yr	6	20.8	14.6	36.2	NR	23.0

Outputs for *Recreation Developed Capacity Available* was not completely reported due to changes in the method of calculating these outputs. This is a result of the implementation of the new INFRA structure database, which automatically calculates capacity of developed sites depending upon opening and closing dates. This figure will

probably fluctuate annually, depending upon different conditions that may affect these dates.

The miles of 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.

The current program is to maintain one third, or about 500 miles of the Forest road system (which has a total of 1,500 miles of road), each year so that all roads are maintained during a three year cycle.

Recommendations: Continue to monitor outputs of goods and services. Pursue partnerships to provide additional funding as needed.

Comparison of Estimated and Actual Costs (Item 3-2)

Legally Required Monitoring Item

Frequency of Measurement: Five Years
Reporting Period: Five Years

This CFR requires documentation of costs associated with carrying out the planned management prescriptions as compared with costs estimated in the forest plan. Monitoring item 3-2 asks the question:

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

Due to changing budget processes and systems, only 2003 data is available at this time.

Table 21. 2003 Estimated and Actual Costs

Resource Components	Desired Condition (M dollars)	Actual Annual Budget 2003 (M dollars)
Recreation/Wilderness		
Revenue Based Rec. Mgt.	934	486
Heritage Resource Mgt.	216	52
Non-Revenue Based Rec. Mgt.	449	109
Recreation Special Use Mgt.	308	117
Wilderness Mgt	181	144
Wildlife and Fisheries		
Wildlife Habitat Mgt.	399	86
Inland Fisheries Mgt.	215	78
TE&S Species Mgt.	160	57
Range Management Program		
Permit Administration	488	317
Rangeland Vegetation Mgt.	261	311
Timber		
Timber Sale Mgt.	2,066	836

Forestland Vegetation Mgt.	358	73
Water, Soil and Air		
Water and Soil Mgt.	416	131
Air Resource Mgt.	44	14
Minerals Management		
Minerals Mgt.	149	177
Infrastructure Management		
Basic Land Stewardship Mgt.	139	159
Facilities Mgt.	246	839
Road System Mgt.	1,193	1,732
Protection Basic Resources		
Real Estate & Special Use Mgt.	163	117
Fire Protection Mgt.	315	447
Cooperative Law Enforcement	10	83
General Administration		
General Administration	1,323	1,138
TOTAL:	10,033	7,492

Recommendations: Develop a consistent method to track costs so as to be able to compare costs over time.

Cooperation

Cooperation with Communities (Item 3-4)

Frequency of Measurement: Annual

Reporting Period: Annual

This monitoring item asks the question:

> ***How well is the forest interacting and planning in cooperation with communities?***

The Bark Beetle Information Task Force was formed during the Spring of 1999 to provide information and education for residents of Routt County. The primary focus of the Task Force is related to potential beetle epidemics, planned fuel reduction projects, and wildfires. This community-based group is comprised of members from the Medicine Bow-Routt National Forests, Colorado State University Cooperative Extension, City of Steamboat Springs, Routt County, Steamboat Ski and Resort Corporation, the Steamboat Chamber Resort Association, and private citizens. The objective of the group is to help residents of Routt County and the surrounding area to understand the potential environmental impacts of a beetle epidemic, the importance of reducing forest fuels, and the overall role of fire in the ecosystem.

The Forest is also an active partner with the Routt County Wildland Fire Council. This group focuses on wildland fire planning and awareness. The Forest is also involved with the Routt Winter Task Force, which is a community organization working to

address increasing conflicts between various winter uses in the backcountry. The Forest continues to give presentations about a variety of forest subjects to civic groups, homeowner associations, and schools.

During Fiscal Year 2003 the Forest was actively involved with neighboring communities and organizations by providing a wide variety of information related to forest planning and project implementation.

Rural Community Assistance Grants

The Forest has worked with local communities to apply for Rural Community Assistance Grants, which are part of the US Forest Service State and Private Forestry Program. In 2003, the following Rural Community Assistance Grants were awarded :

- Yampa Ranger District -- "Community Information Center Kiosk" was selected for a $2,500 award involving a community information association: http://www.yampavalley.info/

- Parks Ranger District -- The Grand County Historical Association project entitled "Heritage Park Development" (formerly known as Log Cabin Heritage Museum Development), was selected for a $1,200 award.

- Hahns Peak/Bears Ears Ranger District –
    - Friends of Wilderness was selected for a $1,500 award for their project, Friends of Wilderness Volunteer Assistance.
    - The Orton Family Foundation will receive $1,200 for their project entitled, Community Placemaps: Connecting Young Faces to Rural Places.
    - Historic Routt County! was awarded $1,000 for an on-going project, Barns Etc. Historic Ranch Survey, Phase Two.
    - A project entitled The California Park Ethnobotanical Project, was selected for a $1,300 award to the Rocky Mountain Youth Corps.
    - The Routt County Transition Program proposed an environmental education project for special needs students ages fourteen to twenty-one that was selected for a $1,500 award.

In Nov. 2003, North Park High School won the National Rural Community Assistance Spirit Award for its outstanding accomplishments in utilizing woody debris for the creation of alternative energy using a Biomass generator to produce electricity to heat and cool a greenhouse where students propagate native plants. They also grow herbs to sell to earn money to continue their work and education at North Park high School. The Spirit award comes with a crystal trophy and $5,000. The money will be used for fuel management, which includes transporting wood from the forest to the building and to construct a bin from which the wood chips would be fed into a hopper and into the generator.

Recommendation: The Forest needs to continue involving the public, and specifically coordinating and interacting with adjacent communities and organizations.

Implementation

Implementation of Standards and Guidelines (General item 2)

Frequency of Measurement: Annual

Reporting Period: Annual

This monitoring item asks the question:

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

During 2003, the Forest Plan ID Team again reviewed several projects related to the Routt Divide Blowdown, fuels reduction activities, and ski area management. The team conducted on-site monitoring of residual snags, coarse woody debris, and field guidance for protecting northern goshawks.

The ID Team concluded that the standards and guidelines stated in the Plan are being appropriately incorporated into project planning and implementation. However, there was discussion on new information that might suggest that the Plan direction for snags, coarse woody debris and protection of northern goshawks (a R2 Sensitive species) may need to be reconsidered. No necessary changes have been identified.

Employee Feedback

The Forest Supervisor directed that employees be involved in scoping for possible changes to the Plan or changes in Plan implementation.

The employee comments ranged from items which would need Forest Plan revision to items needing further study. In some cases the comments derived from the District sensing meetings mirrored those brought forth in the Monitoring ID Team's field monitoring review. For example, the matters of enhancing raptor management standards, recognizing that some areas possessing available timber in support of the Forest's allowable sale quantity may no longer be truly available, changes in ski area development potential, and difficulties arising from "cherry stemming" of management areas.

The District's concerns also reflected more "on the ground" concerns with Forest Plan direction, especially in the application of the contemporary fire and fuels initiatives and in the application of plan direction to wildlife management. The need for consistency between the respective Forest Plan directions for the Routt and the Medicine Bow Forests was also frequently brought up in the District sensing discussions.

Proposed changes to the Forest Plan are listed in the Recommendations Section of this document; the Action Plan Section gives details on how these changes would be implemented.

Recommendations: Forest Leadership Team should consider further investigation of adjusting plan direction for snags, coarse woody debris and protection measures for goshawks in order to determine the effectiveness and any need for change.

Desired Conditions (General item 3)

Frequency of Measurement: Five Years

Reporting Period: Five Years

This monitoring item asks the question:

> ***Is the Forest moving closer to the desired condition identified in the Forest Plan at the Geographic Area and Management Area scale?***

The vegetation analysis completed for this review analyzed changes in vegetation over the past five years and evaluated these changes in light of Forest Plan direction. The Forest Plan and accompanying EIS make it clear that the vegetation on the Routt contains large amounts of late successional forest. After 5 years, a number of natural disturbance events have occurred that are often associated with vegetation in late successional stages, especially in times of drought and with events such as the blowdown acting as a catalyst. This analysis has shown that while the forest experienced a number of large disturbances, and while habitat structural stages have begun to change as a result, this change has not reached a stage that has adversely impacted the forest range of cover types or habitat structural stages identified in the 1997 EIS. It has also shown that management activities (timber harvest) have been conducted as specified in the plan, and have made a minor impact on the amount of late successional forest structure in management areas 5.11 and 5.13 (the only two management areas containing lands suitable for timber harvest). Given the large amounts of late successional forest and the short time frame (5 years) this outcome is expected and in compliance with the Forest Plan and EIS analysis.

Need for Amendments

Need for Forest Plan Amendments (General item 1)

Frequency of Measurement: Five Years

Reporting Period: Five Years

This monitoring item asks the question:

> ***Are there changes that have resulted in unforeseen issues that require Forest Plan amendment?***

The Five Year Review identified the need for two new modifications discussed in the *Recommendations* section of this report. In addition, three amendments described below are currently underway. As mentioned towards the beginning of this document, two non-significant amendments have been completed to date.

Proposed Modifications

Winter Recreation Standards

This modification would add to the forestwide standards and guidelines to be consistent with the Winter Recreation Management and Routt National Forest Plan Amendment May 27, 2005 Decision for the Buffalo Pass and Rabbit Ears Pass area (see *Ongoing Amendments* section below). The standards would provide additional

protection for wildlife, botanical, soil and water resources through designating an operating season and identifying the minimum snowpack needed for motorized winter recreation.

Instream Flow Standards and Guidelines
Modify the Instream Flow Standards and Guidelines to be consistent with the Direction from the Chief's Plan Appeal Decision and the Discretionary Review of the Undersecretary of Agriculture.

Amendments in Progress

The following three amendments are in progress in response to both regional and forest wide issues.

Winter Recreation Management and Routt National Forest Plan Amendment

The purpose of this action is to formalize boundaries between winter motorized and non-motorized use areas on Rabbit Ears Pass and Buffalo Pass and develop objectives, standards and guidelines that will assist in resolving the winter recreation use issues in the project area. The project area is approximately 110,000 acres within portions of the Middle Yampa, Grizzly Creek, and Red Dirt Geographic areas. Scoping was initiated in January 2004. The draft environmental assessment was released to the public for comment in spring 2004. A decision was made on May 27, 2005 on this amendment.

Management Indicator Species (MIS) Amendment

Region 2 of the Forest Service initiated a review of MIS because of the concern that some species selected by Forest were not functioning appropriately as MIS. Using the Region's direction, forest staff performed an intensive review of the Routt's present MIS list, and compared the characteristics of the listed species to the regional criteria. The species found to meet these criteria were then compared to major management issues and challenges on the Routt in order to gauge their ability to serve as "indicators" for those issues. The MIS species being used on nearby Forests were considered in order to identify opportunities to monitor species that need to be reviewed on a large temporal scale than a single Forest. Lastly, all these factors were integrated to produce a proposed new MIS list for the Routt National Forest.

Specialists and members of the Forest Leadership Team are presently reviewing the proposed new MIS list for the Routt. Eventually the new list will receive public review and will be proposed as an amendment to the Routt's Forest Plan. This amendment is expected to be completed in 2006.

Southern Rockies Lynx Amendment

In April of 2000 the Canada lynx was listed as "threatened" under the Endangered Species Act. The Rocky Mountain Region has issued a draft environmental impact statement on a proposal to amend forest plans on seven National Forests in Colorado and Wyoming, including the Routt and Medicine Bow National Forests. Scoping for the amendment, the "Southern Rocky Mountain Lynx Amendment," was completed during the spring of 2002. The Draft EIS was released for comment in January 2004.

When the final environmental impact statement for a non-significant amendment and decision are issued, the implementation will consist of an amendment to the Routt

Revised Plan. Until the amendment is finalized, we are managing NFS lands to conserve lynx habitat through an agreement between the USFS and the US Fish and Wildlife Service.

Action Plan

The following action plan items were previously discussed under Recommendations Section near the beginning of this report.

Management Emphasis Items from the Forest Supervisor

Use of Forestwide Roads Analysis
Emphasize use of the forestwide roads analysis (USDA Forest Service, 2003) for project level roads analysis. Subscale roads analysis should consider a variety of actions in addition to obliteration, such as changes in maintenance levels to accomplish project objectives.

Right of Way Access
Emphasize pursuit of right-of-ways access to National Forest System lands across private land, where needed.

Administrative Actions

Develop a Monitoring Guide
Develop a Monitoring Guide with standardized, scientifically based monitoring protocols. Follow the direction and examples put forward by the US Forest Service Inventory and Monitoring Institute. The Forest Plan Monitoring Team has identified the following priority items for monitoring guide development: off road vehicle use, water quality, insect and diseases, MIS, invasive species, fire and fuels, and partnerships. These items will have standardized monitoring protocols developed over the next year, with additional monitoring guide items developed in following years.

- Responsible Persons: Forest Plan Monitoring Interdisciplinary Team.

Combine Routt and Medicine Bow Forest Plan Monitoring Reports
Combine Routt National Forest Plan annual Monitoring and Evaluation efforts with the Medicine Bow National Forest Plan annual Monitoring and Evaluation efforts, resulting in one combined report. Individual monitoring item changes will be recommended in the FY04 monitoring report.

- Responsible Persons: Inventory and Monitoring Coordinator.

Harvest Unit Restocking:
Develop a strategy to ensure adequate regeneration of timber harvested lands within five years. 1) Determine what site prep and silvicultural methods will ensure adequate regeneration and 2) Ensure stocking survey scheduling and results are entered into the database correctly and on time. Monitor stocking success closely to ensure this legal requirement of adequately stocked stands is being met.

- Responsible Person: Timber Resource Team Leader

Effects of Snowmobiles
Develop a research proposal to study the effects of snowmobiles on sensitive areas and wildlife. Pursue partnership funding to accomplish this study.

- Responsible Persons: Wildlife Program Leader

Timber Suitability Tracking:
Annually update the GIS database created to track changes to suitability determined from project level analysis. At the 10 year review, analyze changes to determine if a forest plan amendment is needed.

- Responsible Persons: Inventory and Monitoring Coordinator.

Roads Analysis
Develop a tracking system to update the Forestwide Roads Analysis road matrix annually. Update the Forest Roads Analysis during the next forest plan revision.

- Responsible Persons: Transportation Planner

Patrick Harrison / Carol Purchase	ID Team Leaders
James Myers	Forester/Silviculturist
Kathy Foster	Fisheries Biologist
Carol Tolbert	Data Coordinator RIS/GIS
Liz Schnackenberg	Hydrologist
Derek Milner	Soil and Air Resources
Jeff Tupala	Landscape Architect
Mary Sanderson	Recreation
Andy Cadenhead	Forester (Insect and Disease)
Jena Hickey	Wildlife Biologist
Mary Sanderson	Recreation
Frank Romero	GIS
Kathy Roche	Ecologist
Johnny Proctor	Botanist

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