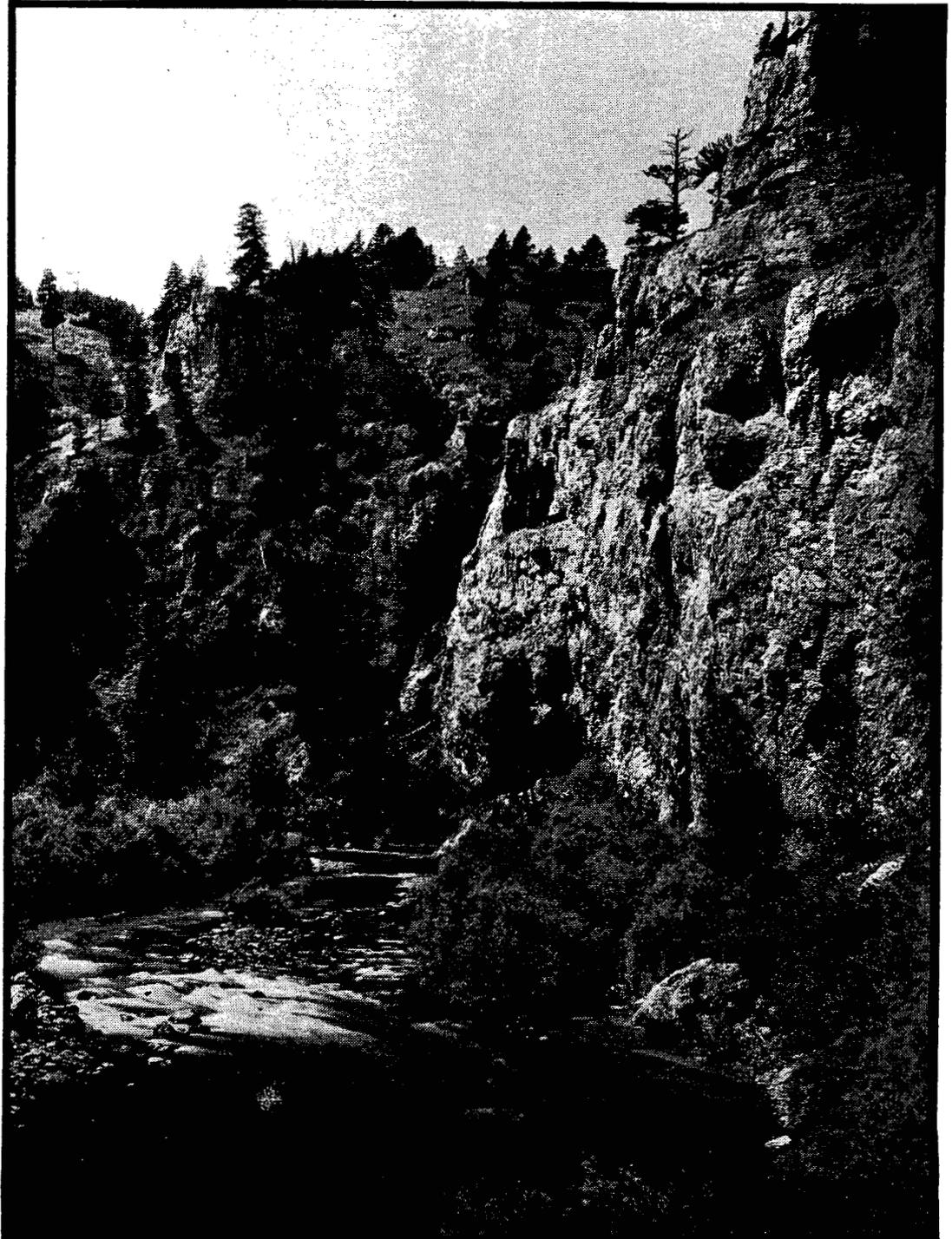




Lewis and Clark  
National Forest  
P.O. Box 871  
Great Falls, MT. 59403

# LEWIS AND CLARK NATIONAL FOREST PLAN

## Monitoring and Evaluation Report



Belt Creek Canyon below Monarch in the Little Belt Mountains.



United States  
Department of  
Agriculture

Forest  
Service

Lewis & Clark NF

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REPLY TO: 1950

Date: April 17, 1989

SUBJECT: FY 1988 Monitoring and Evaluation Report

TO: Forest Plan Participant

Enclosed for your review and use is the second "Monitoring and Evaluation Report" for the Lewis and Clark National Forest Plan.

The Forest Plan describes a new phase of integrated resource management. Integrated management of resources as defined by the Northern Region is "where all resources are considered together for the same area of land. Planned activities are designed to work toward a desired future condition of the land to achieve a common good."

This past summer, the Regional Forester, his Staff, Forest Supervisors, District Rangers, and Forest Planners met to explore a common approach for implementing Forest Plans. Implementing the Forest Plan is a process of selecting, scheduling, budgeting, monitoring, and evaluating management practices described in the Plan.

To better meet this need on the Lewis and Clark National Forest, I am reorganizing my staff. The Staff Officer for Recreation, Range and Wildlife, Jerry Reese, will head up a new section called, Forest Plan Implementation. All of the resource specialist in the Supervisor's Office will report to him. They will be responsible for all phases of implementing the Forest Plan. The Staff Officer for Planning, Dick Smith, will be responsible for Forest Plan monitoring and maintenance. This section will also provide the technical expertise in NEPA and will process any appeals. Engineering and Administration will continue as service and support functions.

Overall, I believe this organization will help bridge the gap as we move from several resource management plans into one integrated Forest-Wide Plan. It should also free up some of the time of field going personnel.

As shown in the FY 1988 report, many outputs and activities levels met or exceeded those projected in the Forest Plan. Some do not. When there is a significant difference, the report explains why.

Although the overall budget to implement the Forest Plan has been lower than envisioned, some funding elements, such as fuels management, timber sale preparation and administration, and silvicultural examinations, have been fully met. Through the outyear programming process the actual Forest budget is being moved towards those elements that are emphasized in the Forest Plan.

As we have gone through the second year of monitoring the Forest Plan we have found that most monitoring items have worked like we had envisioned. However, in some cases the Interdisciplinary Team has recommended a change to strengthen or improve the understanding of the monitoring requirements. These change are detailed in Forest Plan Amendment No. 3 which is enclosed with the Monitoring and Evaluation Report. In some cases there is a need for the Forest to improve its record keeping so that the necessary monitoring items can be tracked at the end of the fiscal year. These cases are discussed in the report.



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# FOREST PLAN MONITORING AND EVALUATION REPORT

## LEWIS AND CLARK NATIONAL FOREST

FISCAL YEAR 1988

### I. INTRODUCTION

The Land and Resource Management Plan (Forest Plan) for the Lewis and Clark National Forest was approved by the Regional Forester on June 4, 1986. Part of the process was a commitment to monitor and evaluate how well the Forest Plan was being implemented. A commitment was also made to consider modifications in the Forest Plan based on the monitoring and evaluation efforts.

This report summarizes results of Forest Plan monitoring and evaluation conducted during Fiscal Year 1988 (October 1, 1987 through September 30, 1988) the second year of implementing the Forest Plan for the Lewis and Clark National Forest.

The significance of the results of the Fiscal Year (FY) 1988 monitoring and evaluation program have been analyzed by the Forest Interdisciplinary Team and have been reviewed for action by the Forest Leadership Team.

This report summarizes the results of the Forest's monitoring effort and provides the rationale for the modifications, if necessary, that will be made in the Forest Plan in the form of amendments. Any changes in the Forest Plan will follow the process outlined in Chapter V and will include appropriate public notification and completion of National Environmental Policy Act (NEPA) procedures. This report also provides a communication link with the public and other levels of Federal, State, private industry, and other interest groups to document the status on implementing the Forest Plan.

The regulations in 36 CFR 219 describe the purpose for evaluation of the Forest Plan. These regulations are summarized below:

- To determine if conditions or demands in the area covered by the Forest Plan have changed significantly enough to require any revision to the Forest Plan (36 CFR 219.10(g));
- To determine if budgets have significantly changed the long-term relationship between levels of multiple-use goods and service enough to create a need for a "significant amendment" (36 CFR 219.10(e));
- To determine how well the stated objectives of the Forest Plan are being met (36 CFR 219.12(k));
- To determine how closely Forest Wide Management Standards in Chapter II of the Forest Plan have been followed (36 CFR 219.12(k)); and
- To determine how the Forest is satisfying the requirements for Monitoring and Evaluation (36 CFR 219.12(k)).

## II. GOALS

The goals for monitoring and evaluating the Forest Plan are to determine:

- How well the Forest is meeting its planned goals and objectives;
- If existing and emerging public issues and management concerns are being adequately addressed;
- How closely the Forest Plan management standards are being followed;
- If outputs and service are being provided as projected;
- If the effects of implementing the Forest Plan are occurring as predicted, including significant changes in the productivity of the land;
- If the cost of implementing the Forest Plan are as predicted;
- If implementing the Forest Plan is affecting the land, resources, and communities adjacent to or near the Forest;
- If activities on nearby lands managed by other Federal or other governmental agencies, or under the jurisdiction of local governments, is affecting management of the Forest;
- If research is needed to support the management of the Forest, beyond that identified in Chapter II of the Forest Plan; and
- If there is a need to amend or revise the Forest Plan.

## III. FOREST PLAN MONITORING AND EVALUATION

Forest Plan management activities were monitored and evaluated as outlined in Table 5.1 Forest Plan Monitoring Requirements and Forest Service Handbook 1909.12, to determine how well objectives were met and how closely management standards were applied. The document resulting from the use of the Decision Flow Diagram constitutes the evaluation report. As applicable, the following will be included in the evaluation report:

- A quantitative estimate of performance comparing outputs and service with those projected by the Forest Plan;
- Documentation of measured effects, including any change in productivity of the land;
- Unit costs associated with carrying out the planned activities as compared with unit costs estimated during Forest Plan development;
- Recommendations for changes;
- A list of needs for continuing evaluation of management systems and for alternative methods of management;

--A list of additional research needed to support the management of the Forest; and

--Identification of additional monitoring needs to facilitate achievement of the monitoring goals.

The results of the evaluation report have been summarized and are discussed on the following pages. Each monitoring item lists: (1) what is being measured; (2) frequency of measurement; (3) reporting period; (4) variable which would initiate further evaluation; and (5) the results of the monitoring. They are grouped by resource area and follow the monitoring requirements in the Lewis and Clark Forest Plan (Table 5.1).

## RECREATION

### **A-1 Recreation Opportunity Spectrum setting being implemented.**

**Frequency of Measurement:** 100 percent per 10 years.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Plus or minus 10 percent of projected Recreation Opportunity Spectrum (ROS) setting.

The settings to be monitored in the Forest Plan are: primitive, semi-primitive, and roaded, natural. No differentiation is made between semi-primitive non-motorized and semi-primitive motorized settings in the Forest Plan. These settings are determined by the Forest Travel Plan.

The Forest Plan provides for management of 436,000 acres in a primitive setting as wilderness. Currently the Forest has 384,000 acres in wilderness and the Forest Plan proposes an additional 52,000 acres which is managed in a primitive setting. The final decision concerning wilderness designation is dependent on Congressional action. A Wilderness bill was passed by Congress in 1988 which would have provided considerably more wilderness than recommended in the Forest Plan. However, the legislation was vetoed by the President and no change actually occurred in the wilderness acreage in 1988.

The Forest Plan also provides for 933,000 acres to be managed in a semi-primitive condition and 457,000 acres to be managed in a roaded natural setting during the first decade. No significant change occurred in these settings during FY 1988. The only activities conducted which would affect these settings were timber sales totalling approximately 1,000 acres. These were all conducted in presently roaded areas where the Forest Plan recreation setting is roaded, natural. Therefore, the recreation setting is consistent with Forest Plan direction. The monitoring plan suggests measuring this item only at ten-year intervals and requires no additional evaluation unless the setting deviates plus or minus 10 percent from the planned recreation settings. Therefore, no additional evaluation is required.

The recreation settings in the Forest Plan were refined in FY 1988 by completing a new Forest Travel Plan. This Travel Plan implemented the recreation settings in the Forest Plan and also differentiated between semi-primitive motorized and semi-primitive non-motorized settings on the Forest. This Travel Plan was completed with extensive public involvement and is a key tool for Forest Plan implementation of recreation settings. The new Travel Plan was adopted in June, 1988. New signs have been ordered and new maps have been prepared and made available to the public. Seventeen appeals were received on the Travel Plan and these were responded to in FY 1988. Three appeals are still being negotiated at the end of FY 1988. In all of the other appeals, the Forest Supervisor decision was affirmed. The new Travel Plan is currently being implemented (Also see I-2 - Forest Travel Plan Revision).

**A-2 Recreation direction meets expectation of visitor.**

**Frequency of Measurement:** 10 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988)

**Variability Which Would Initiate Further Evaluation:** Adverse comments or correspondence.

This particular item is difficult to measure in an objective way. At almost any point in time, some people's expectations would be met and the expectations of others would not be met. The measurement is through visitor contacts, inspections, and plans. In this monitoring report the assumption is made that the Forest Plan direction is satisfactory unless strong public complaints have been received and/or major issues have developed which indicate that the direction is not correct. Several identified issues were addressed in the revision of the Forest Travel Plan.

Another measure of the effectiveness of recreation direction was the recreation program review conducted in FY 1987 by the recreation staff group in the Regional Office. This review was conducted at the request of the Forest to assess the current status of the recreation program and to make recommendations for future improvements in the program. Some of the key management concerns which were surfaced in that review are listed below. These have been addressed with an action plan in FY 1988 and accomplishment of the action items to date are reported below. The major findings of this review as they relate to visitor expectations are as follows:

**A. The Forest Plan budget as originally proposed is probably inadequate to meet all of the recreation goals. This finding is based on a Regional analysis of Forest Plan budgets and related workloads.**

The Forest Plan budget was amended to correct the identified problem.

**B. The coordination between timber management activities and snowmobile/cross country ski activities in the Kings Hill area needed to be strengthened. Several comments were received from recreationists concerning timber sales (particularly small sales) which have created problems; such as, (1) plowing of roads which had been approved for snowmobile trail grooming, (2) placement of hazards such as snow berms in groomed snowmobile trails, (3) unsafe dual use of plowed areas by snowmobiles and logging equipment, (4) placement of slash in cross country ski trails, and (5) concerns for wind scour of snow trails (due to opening of the tree canopy).**

These concerns have since been addressed through timber sale contract clauses and development of a coordination procedure. This procedure involves consultation between the snowmobile clubs and Forest Service when timber sales are proposed for winter logging in areas of groomed snowmobile trails. Generally, the amount of winter logging has been reduced in new timber sales which has reduced the potential for conflict. Coordination between timber management and snowmobile/cross country ski activities was accomplished in 1988. All potential conflicts were resolved. Four timber sale contracts had winter restrictions included to accommodate snowmobile and cross country use.

**C. Several concerns about signing were surfaced during the review and are listed below.**

These concerns with signing led to a major Forest objective in FY 1988 to correct signing problems. As a result of that effort, a new Forest policy concerning signing was developed to address the problems listed below. That policy was developed in consultation with the Regional Office and with the District Rangers on the Forest. This policy is currently being incorporated into the Forest Service Manual and considerable progress was made in FY 1988 to implement the policy on the ground.

**(1) Signing is not adequate on the Forest to direct recreationists to the opportunities which exist.**

A major provision of the new sign policy is to direct people from major highways to the National Forest. This will be done with standard signs stating "National Forest Access" at intersections with main highways, followed by appropriate directional signing at intermediate intersections between the highway and the National Forest boundary. The new Forest Travel Maps also show access routes to the National Forest where a public right-of-way exists. This signing has largely been completed on the Rocky Mountain Division of the Forest. Attention will focus on the Jefferson Division in FY 1989.

**(2) In some cases signing is negative and focuses on regulations without providing useful visitor information.**

Standard specifications were developed for bulletin boards at trailheads and in campgrounds. Several suggestions were adopted in the signing policy to reduce negative messages and emphasize providing positive user information.

**(3) In many cases it is difficult to identify access routes to the Forest.**

This was addressed above.

**(4) Signing on some of the winter sports trails also needs to be improved.**

A policy was developed to provide consistent signing of snow trails on the Forest. This policy is being implemented in the Kings Hill area at the present time. The new signs have been ordered and a new snowmobile trail brochure has been prepared which ties to the signing on the ground. It will be printed and distributed as soon as the signs are installed.

**(5) The new Forest Travel Plan will need to be signed on the ground to be effectively implemented.**

A standard approach to signing the new Forest Travel Plan was developed. All signs have been ordered and many have been installed. The remainder will be installed in the spring of 1989. The intensive fire season on the Forest in 1988 prevented completion of the signing as soon as desired.

**D. A major concern highlighted in the review is the need to obtain reasonable public access to the National Forest. The Lewis and Clark National Forest is composed of six separate mountain ranges which are surrounded by private land. Because of this, a large number of rights-of-way are required to provide long term public access. The current Forest Plan direction identifies most of the rights-of-way needed to provide this access. However, progress on obtaining these access points has been slow and protracted negotiations with landowners has been the rule. A need exists to more efficiently acquire the identified rights-of-way.**

The action proposed to meet this need is to focus efforts in a given mountain range or area until the job is complete. This will allow an "area" analysis of access needs in a given mountain range/area. Personnel can also be focused efficiently to negotiate with landowners, survey, and produce right-of-way plats, and appraise the value of right-of-ways. This approach was initiated in the Highwood Mountains in FY 1988. Access needs in the Highwoods were given high priority because of their proximity to recreation users in Great Falls. Negotiations are continuing on the Highwoods access routes. Coordination with other public agencies, particularly the counties, is also being strengthened.

**E. Another concern identified in the review is the need to improve integrated planning for recreational opportunities on an "area" basis and to use this planning to identify appropriate recreation facilities. This planning must be based on the recreation setting in the Forest Plan and be coordinated with recreation users. No need (because of projected demand) is identified in the**

**Forest Plan to construct new developed campgrounds. Therefore, this planning will be focused on rehabilitating existing sites to meet today's needs and on providing facilities such as trails and trailheads which facilitate dispersed recreation opportunities.**

In FY 1988 a training session was held on the Forest to facilitate use of the Recreation Opportunity Spectrum settings as a basis for this coordinated planning. Each of the Districts on the Forest had representatives at this training. The recreation capital investment program for the Forest was developed using the priorities listed above.

Forest personnel and cooperators completed the plans for the Marias Pass Recreation Complex in FY 1988. Construction is programmed for the summer of 1989. When complete the area will include a redesigned viewing area for the Roosevelt Memorial and other statues and memorials in the Pass area. Parking will be provided for the Memorial Square and for snowmobile winter use of the area. The existing Summit Campground will be rehabilitated and the roads and parking spurs will be paved. Visitor information concerning Marias Pass, Glacier National Park, and other recreation opportunities in the area will be provided. This is a cooperative project with several agencies and individuals involved. Funding is being provided by the Forest Service, Montana Department of Highways, and Montana Department of Fish, Wildlife and Parks.

Legislation was also passed in 1988 authorizing construction of the Lewis and Clark Visitor Center in Great Falls which will be managed by the Forest Service. The legislation requires that a final plan for the Center be prepared and presented to Congress within two years for funding. Much of the recreation planning activity in FY 1989 will focus on the Visitor Center. This planning will be done in partnership with local agencies and individuals.

**F. Another concern is to develop a policy towards providing outfitter services on the Forest. An interim policy was developed on the Forest in FY 1987 and is currently being followed.**

Development of a more definitive policy was initiated in FY 1988 and will be completed in FY 1989. Outfitter policy for the Smith River on the Kings Hill Ranger District was developed in the Smith River Management Plan completed in FY 1988 and will be implemented in FY 1989. The Smith River Management Plan was developed in cooperation with the Montana Department of Fish, Wildlife and Parks and was finalized in FY 1988. The Bob Marshall Wilderness Complex outfitter policy conforms with the Bob Marshall, Great Bear and Scapegoat Wildernesses Recreation Management Direction completed in FY 1987.

**G. A strong internal and public concern is the ability of the Forest to provide adequate law enforcement to implement the changes in the new Forest Travel Plan.**

This concern was addressed in an updated Workforce Management Plan for the Forest completed in FY 1988. A Level IV Law Enforcement Officer was assigned to the Supervisor's Office in FY 1988, in addition to the Level IV Officer on the Rocky Mountain Ranger District. Additional training is being provided to a person on the Kings Hill Ranger District to qualify that person for enforcement duties in FY 1989. In addition, patrols were conducted during the hunting season to enforce Travel Plan rules and during the firewood season to enforce firewood regulations. Information from Ranger District personnel indicates that the new Forest Travel Plan was implemented with few problems. Particularly noticeable was a reduction in complaints about All Terrain Vehicles (ATVs) during the 1988 hunting season. Some localized areas will require additional signing and additional enforcement effort in FY 1989. The Tenderfoot-Deep Creek area on the Kings Hill Ranger District was specifically mentioned. Late season efforts may also need to be intensified in some areas. Overall, however, the new Forest Travel Plan was implemented with a minimum of conflict and enforcement problems were limited.

**A-3 Actual recreational use in the categories of Wilderness, dispersed, and developed recreation as compared to projected levels in the Forest Plan.**

**Frequency of Measurement:** Annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Plus or minus 25 percent variance yearly or plus or minus 10 percent over a 5-year period.

The Recreation Information Management (RIM) reports for the Forest provide the base information to measure use in the categories described. The Forest Plan projects that total recreation use will average 869,000 visitor days in the first decade. This is broken down as follows: (1) Developed recreation - 169,000 visitor days; (2) non-wilderness dispersed recreation - 614,000 visitor days; and (3) wilderness use - 86,000 visitor days.

The use reported in FY 1988 was as follows: (1) Developed recreation - 175,100 visitor days (104 percent of the Forest Plan level); (2) non-wilderness dispersed recreation - 503,100 visitor days (82 percent of the Forest Plan level); and (3) wilderness use - 42,000 visitor days (49 percent of the Forest Plan level). Developed site use was very similar to the use in FY 1987. Dispersed recreation use and wilderness use declined.

Summary of FY 1987 and FY 1988 recreation use is as follows:

RECREATION (Thousand Visitor Days)

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Developed Recreation	169	145	175								
Non-Wilderness Dispersed Recreation	614	581	503								
Wilderness	86	54	42								

A major decline was noted in wilderness use over FY 1987 use levels. However, the decline is due at least partially to the large prescribed fires which burned most of the summer. These large fires resulted in area restrictions (closed to public recreation use) and use was rerouted onto adjacent National Forests.

The decline in wilderness use may also be representative of the trend observed in recent research which noted that use in most National Park and National Forest wilderness areas peaked in the late 1970s and early 1980s. Use has since grown much more slowly than was the case in the late 1960s early 1970s. In many cases use has actually declined since the early 1980s. The Bob Marshall Wilderness was projected to have peaked in 1982, and this is borne out by use figures. The recreation use projections used in the Forest Plan were valid in the 1970s but may not be valid in the future. This changing trend may require some adjustments in the Forest Plan in the future.

The level of use in dispersed areas outside wilderness also is below the projected Forest Plan level, but by a less significant margin. The projections for dispersed use will also need to be monitored for validity. As projected now, a steady rate of increase would occur through the planning period. Increases in dispersed recreation use may well occur as a result of better marketing of recreation opportunities on the Forest and by providing additional public access and improved informational signing. Better marketing is planned as the Forest responds to the National Recreation Strategy.

#### **A-4 Condition of developed sites.**

**Frequency of Measurement:** Annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Less than acceptable standards, public safety hazards not corrected by 1990, poor conditions not corrected by 2005.

The condition of developed sites was about the same or slightly improved in FY 1988. Most Districts were able to focus at least some attention on "heavy maintenance" in FY 1988. The Forest has identified recreation rehabilitation projects by priority through the year 2000 based on the budget level programmed in the Forest Plan. All developed site water and sanitation systems have been brought up to proper standard in the past few years (the last ones were completed in 1988). Public health and safety hazards are corrected at all sites, except for routine maintenance. Poor site conditions will be corrected by 2005 as projected in the Forest Plan, provided that recreation funds are received as programmed. Attention will be necessary to provide handicapped facilities.

Even though "heavy maintenance" occurred in FY 1988, most sites were managed at the Reduced Service Level. This was reflected in the fee collection schedule and the intensity of normal maintenance. The "heavy maintenance" was accomplished primarily by giving it a high priority.

The Canyon Creek Fire damaged two trailhead facilities on the Rocky Mountain Ranger District. These have been identified for replacement in the request for fire rehabilitation funds. Also, offers have been made from local users to help with reconstruction of these facilities. It is hoped that they can be replaced in the summer of 1989.

#### **A-5 Recreation Opportunity**

**Frequency of Measurement:** Annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Failure to complete by FY 1986.

This standard is measured by the status of Recreation Opportunity Guides (ROG) on each Ranger District. Further evaluation is triggered by a failure to complete these guides on all Districts by FY 1986. Currently the guides have been completed on the Rocky Mountain Division, but are not complete for the Jefferson Division of the Forest. This resulted in a Forest Objective in FY 1988 to complete key ROG pages for specific areas in the Jefferson Division. The ROG for the Kings Hill Ranger District in the Little Belt Mountains was completed in FY 1988. ROGs were initiated in the Snowy Mountains and in the Highwood Mountains, but fire duties

precluded their completion in FY 1988. They will be completed in FY 1989 and the remainder of the ROG will be completed over the next 2-3 years.

**A-6 Off-road vehicle damage and Travel Plan effectiveness.**

**Frequency of Measurement:** Annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:**

Off-road vehicle damage - Conflicts with Forest Management Area goals.

Travel Plan effectiveness - Increase of 20 or more citations or variances yearly.

This standard is monitored by two items. The first item is the status of the Forest Travel Plan as it relates to Forest Plan goals. As stated earlier, the Forest Travel Plan was revised in FY 1988 specifically to bring it into compliance with Forest Plan standards and to implement the recreation settings in the Forest Plan. The new Forest Travel Plan also addressed several issues; such as, ATVs which surfaced.

The second monitoring item is the number of Forest Travel Plan citations issued and the number of Travel Plan variances granted. These are summarized below along with a short narrative response concerning the types of violations and problems experienced by the Districts. An increase of 20 violations/investigations indicates the need for further evaluation.

*Rocky Mountain Ranger District*

No travel plan citations were issued nor were any variances granted. This reflects to some extent a reduced level of enforcement activity and incomplete signing of the new Forest Travel Plan because District personnel were extensively involved with fire suppression and rehabilitation activities for the Canyon Creek and Gates Park Fires. However, personnel on the District feel that compliance is better than in the past. The new Travel Plan is not significantly different than the previous plan in many areas of the Rocky Mountain District and people are becoming accustomed to the closures. A new Level IV Law Enforcement Agent has been assigned to the District to continue enforcement in the future.

*Judith Ranger District*

No citations were issued and no variances were granted in FY 1988. Overall impressions were that the new Forest Travel Plan was generally supported and violations were few. Some violations were noted on unmarked roads (tracks in the snow, but no one still in the area to cite). These violations should be alleviated in FY 1989 with better signing. A need was noted for better area restriction signing in the Hoover Springs/Ant Park/Lost Fork Ridge area and this will be done in FY 1989.

*Musselshell Ranger District*

Two citations and 12 warnings were issued once the travel plan signing was installed in September 1988. A total of 70 days were spent on compliance and public education about the Forest Travel Plan. This is down from FY 1987. The most significant problems noted continue to be summer off trails motorcycle use and fall 4x4/ATV use for both off trails and roads. This is a particular concern on the Musselshell District because of the large areas of rolling, open country.

### *Kings Hill Ranger District*

A total of 5 Travel Plan violations were investigated by District personnel. No violation notices or warning notices were issued because offenders had left the area prior to arrival of Forest Officers and evidence was limited. In general, compliance was good and few incidents were noted in 26 days of patrolling during the fall. District personnel felt that additional enforcement effort was needed in the Tenderfoot-Deep Creek area and during the last two weeks of hunting season. This will be addressed in FY 1989.

### *Overall Forest Picture*

Overall, District personnel felt that more Travel Plan enforcement was needed and that attention must be given to completion of signing in FY 1989. However, the general impression of District personnel was that overall compliance with the new Forest Travel Plan was good. Particularly noticeable was the limited number of complaints about ATVs during this hunting season. Few complaints were received in the Supervisor's Office concerning the new Forest Travel Plan and it appears to have reasonable public acceptance. The extensive public involvement in development of the Forest Travel Plan may have paid dividends in that the Travel Plan was understood by many people prior to implementation.

### **A-7 Condition of visual resource meets objectives in plan.**

**Frequency of Measurement:** 25 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Deviation from approved Visual Quality Objectives determined by Interdisciplinary Team review of environmental assessments.

This item is measured by taking a 25 percent sample of environmental assessments completed in FY 1988. The visual quality objective was met in all of the project environmental assessments sampled. Therefore, the visual quality objectives in the Forest Plan were met.

### **A-8 Cultural Resource Protection.**

**Frequency of Measurement:** Selected sites - Once per 5 years.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Less than 10 percent accomplishment per year.

The cultural resource program continued to show improvement through FY 1988. For the second year, the program has successfully operated under the Region 1 objective of "Level II."

In all, forty-one projects were field inventoried in FY 1988. This resulted in cultural inventory of about 3,800 acres. While this is a decrease in acreage from FY 1987, projects were more complex and often involved use of more sophisticated archaeological techniques. Many projects required intensive inventory within a small unit of land (such as range projects involving one acre).

Almost half of the projects inventoried had cultural sites located within their boundaries. A total of 34 cultural sites were inventoried, of which 23 sites were newly recorded in FY 1988. Most of these inventoried sites were

archaeologically tested and Determinations of Eligibility were made. An eligibility determination is a helpful management tool, as it resolves the status of site, so that a "reassessment" does not need to be done in the future. If no eligibility determination is made, then project activities must avoid sites, regardless of their significance. Also, attention is diverted from sites which are truly significant.

Summary of FY 1987 and FY 1988 cultural resource accomplishment is as follows:

#### CULTURAL RESOURCE

Description	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Field Inventory Projects	66	41								
Acres Inventoried	5,700	3,800								
Cultural Sites Inventoried	40	34								
Newly Recorded Sites	30	23								

Testing was completed at the Hoover Springs prehistoric site on the Judith Ranger District. Archaeological fieldwork for the Chevron/Fina Environmental Impact Statement (EIS) on the Rocky Mountain Ranger District was completed (eight sites recorded). 36 CFR 800 process was completed for the relocation of the Roosevelt Memorial Monument on the Rocky Mountain Ranger District.

Some of the more important trends in the cultural resource program over the past few years include: (1) inventories are more thorough and intensive, (2) smaller-type projects are now more routinely surveyed, (3) a greater number of cultural sites are being recorded and tested, and (4) Determinations of Eligibility are being sought.

Significant progress has also been made in developing a procedure with the Blackfeet Tribe to recognize and protect Blackfeet religious practices on the Forest. This has helped to meet Forest Service responsibilities under the American Indian Religious Freedom Act of 1978 and to meet the standards in the Forest Plan which relate to Blackfeet Traditional use. A procedure has been agreed with the Tribe to provide appropriate consultation regarding traditional practices. In addition, many meetings have been held with traditional leaders to exchange information and share concerns.

#### WILDERNESS

##### **B-1 Maintenance of existing quality of Wilderness ecosystems.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Degradation of environment.

The monitoring for the Bob Marshall Wilderness Complex on the Rocky Mountain Ranger District is outlined in detail in the Forest Plan amendment (Bob Marshall, Great Bear and Scapegoat Wildernesses Recreation

Management Direction) approved in FY 1987. The Forest Plan amendment provided recreation management direction and a monitoring plan based on the concept of Limits of Acceptable Change. The four Forests involved in management of the Bob Marshall Wilderness Complex all adopted an identical Forest Plan amendment and monitoring plan. The monitoring which was completed in FY 1988 on the Lewis and Clark National Forest is detailed in Appendix A.

Two large wildfires were managed under prescription in the Bob Marshall and Scapegoat Wilderness areas in FY 1988 providing an opportunity for improving vegetative diversity and the quality of Wilderness ecosystems.

The Gates Park Fire, in the Bob Marshall Wilderness, started from a lightning strike near Gates Park on July 11, and spread to 50,850 acres, when it was controlled by wet weather conditions in mid-September. The fire remained in prescription within the wilderness except for one spot fire. The fire effects varied widely within the fire perimeter. Unburned islands accounted for 30 percent of the total area; low intensity ground fire - 35 percent; medium intensity fire - 22 percent; and high intensity stand replacement fire - 43 percent. The spatial distribution of these widely varying fire intensities greatly increased "edge effect", improving wildlife habitat conditions for many species, and increasing landscape variety in a complex, natural mosaic pattern.

The Canyon Creek Fire burned 20,636 acres of the Scapegoat Wilderness of the Lewis and Clark National Forest. This fire spread onto the Forest from the Lolo National Forest on August 9. Fire effects within the wilderness were similar to that described above for the Gates Park Fire. Unburned islands and low to moderate intensity fire effects were present on about 29 percent of the fire area; high intensity stand replacement fire - 43 percent; and rock outcrop/sparse vegetated areas - 28 percent.

Studies to monitor the short and long term fire effects of both the Gates Park and Canyon Creek Fires are planned in FY 1989. Preliminary studies indicate that the fires within the Bob Marshall and Scapegoat Wilderness areas in FY 1988 resulted in improvement of wilderness values and the quality of wilderness ecosystems.

#### **B-2 Bob Marshall-Great Bear-Scapegoat Management Direction.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Failure to meet the Bob Marshall, Great Bear and Scapegoat Wildernesses Recreation Management Direction (Appendix U).

As indicated above, new recreation management direction was completed for the Bob Marshall Wilderness Complex in FY 1987 and each of the four Forest Plans were amended to include this direction.

It appears that monitoring items B-1 and B-2 could be incorporated into a single Monitoring and Evaluation item now that the Bob Marshall Wilderness Complex Management Direction has been completed.

### **B-3 Change in Roadless Inventory.**

**Frequency of Reporting:** 100 percent per 10 year.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Plus or minus 10 percent projected change in roadless inventory.

This item is only measured at ten-year intervals. However, no significant change occurred in the roadless inventory in FY 1988. Timber sales sold in FY 1988 were all in existing roaded areas and no other management activities occurred which would alter the present roadless inventory.

## **WILDLIFE AND FISH**

### **C-1 Threatened and Endangered Species: Grizzly Bear-Maintain occupied habitat capacity.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Any indication of downward trend in grizzly bear population.

The grizzly bear population appears to be stable or increasing (Dood, et al. 1986). In a monitoring effort tied to the recovery plan, efforts have been made to record sows with cubs and sows with young for the last two years (1987 and 1988). The results of these surveys have revealed that all six Bear Management Units (BMUs) on the Rocky Mountain Front have either had a sow with cubs or sow with young located within them. This is not an indication of population levels, but it is the beginning of trend information that shows occupancy of each BMU by sows with young and that reproduction is taking place.

Law enforcement efforts were maintained to deter illegal grizzly bear taking on RM-1 Geographic Unit.

One biological evaluation was completed in response to a prescribed fire to improve wildlife habitat in the Ford-Fairview Plateau area, with a no effect resulting to the grizzly bear. Data bases were completed on two BMUs to provide information for the cumulative effects model to be used on two major projects - Blackleaf EIS and Chevron/Fina EIS.

Two major fires occurred during the summer - one in the Dearborn/Elk Creek BMU and one in the North Fork Sun River BMU. The Dearborn/Elk Creek BMU was burned by the Canyon Creek Fire. The total acres within the perimeter of the fire was 120,119 acres. Of this, 42,424 acres (35 percent) were burned intensely (crown destroyed), 52,714 acres (44 percent) were burned by low intensity fire or unburned, and 24,981 acres (21 percent) was rock or shallow soils that did not burn. The BMU totals 188,000 acres, therefore, about 64 percent of the BMU has been influenced by fire. The effect of the fire will be long term and the need to treat additional acres with fire in this BMU will not be needed for at least 20 years.

The Gates Park Fire was within the North Fork Sun River BMU. The total perimeter of the fire included approximately 50,800 acres, of which 36,500 acres (72 percent) were burned from a low to high intensity.

About 15,500 acres (42 percent) of the approximate 36,500 acres were burnt at a high intensity (stand destroyed). The BMU contains 164,000 acres which means about 22 percent of this BMU was influence by fire.

The benefits of both the Canyon Creek and Gates Park Fires to the grizzly bear include providing a more diverse habitat by creating openings in the timber canopy, producing more usable edge between cover and non-cover, and increasing the palatability and production of grasses, forbs, and berry producing species for all seasons of use.

The Canyon Creek Fire had an extensive rehabilitation of all firelines. All dozer constructed firelines were waterbarred and seeded. About 28,600 acres of the burnt area was seeded with a grass mixture which included orchard grass and white dutch clover which will provide additional forage for the grizzly bear.

In all the fires on the Rocky Mountain Division, the presence of grizzly bears was stressed and the need to maintain clean camps and dispose of garbage on a regular basis. There were no incidents reported that involved grizzly bear/fire fighting interactions.

The Rocky Mountain Ranger District personnel developed a Policy and Guidelines for Avoidance and Management of Problem Bear Situations. This document was designed to minimize the influence people have on the natural habits and habitats of grizzly and black bears and to provide for human safety. During FY 1988, there were 3 problem bear incidents that involved grizzlies, including one livestock depredation.

**C-2 Threatened and Endangered Species: Gray Wolf, Bald Eagle, Peregrine Falcon - Maintain suitable, unoccupied habitat.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Deterioration or continuing disturbance on more than 5 percent of suitable unoccupied habitat.

No projects were approved which would cause a deterioration or continuing disturbance to suitable unoccupied habitat for the gray wolf, bald eagle, or peregrine falcon.

Management of gray wolf habitat on the Forest is currently limited to the Rocky Mountain Division. Habitat management has included review of the Chevron/Fina EIS in combination with grizzly bear and prey species management. Project specific implementations were identified which would avoid adverse impacts to wolves and their habitat. The analysis included two key deer and elk winter ranges. Restrictions on human actions and habitat modification for grizzly bear spring range are expected to help maintain existing habitat for grizzly bear as well as potential habitat for gray wolf. Ream et al. (1987) showed that radio collared wolves utilized Glacier National Park, but did not extend their range onto the Lewis and Clark National Forest. There were no confirmed wolf observations on the Forest in FY 1988 (personal communication, R. Hazelwood, USFWS, 1/88). There is still a single wolf that is the survivor of a pack that was controlled on the Blackfeet Reservation last year. This single wolf has been tracked and sited on several occasions by the Chief Game Warden for the Blackfeet Tribe.

There are currently no known active nest sites of bald eagle or peregrine falcons on the Forest. Observations of bald eagles were recorded and added to the Forest data base. Bald eagles continued to be seen foraging over broad areas of private rangeland and on the Forest during the winter. Management practices that could potentially affect wintering bald eagles were reviewed.

Forest Service biologists cooperatively assisted United States Fish and Wildlife Service (USFWS) and Montana Department Fish, Wildlife and Parks (MDFWP) biologists in completing surveys. The Forest again participated in the National Bald Eagle survey in January 1988. A total of 18 bald eagles were observed.

Two bald eagle nests are located on private lands between the Rocky Mountain and Jefferson Divisions. In FY 1988 the "Craig" bald eagle nest was abandoned and unoccupied and the "Cascade" nest was identified and fledged two young. The "Craig" nest is thought to have failed as a result of human disturbance.

No surveys were conducted by the USFWS or Forest Service of historic peregrine falcon sites during FY 1988 (personal communication, R. Hazelwood, USFWS, 1/89). The need for future surveys of bald eagle and peregrine falcon nest habitat was identified in a Challenge-Cost Share project on the Kings Hill Ranger District.

All projects possibly affecting any known Federally listed Threatened or Endangered Species were reviewed.

**C-3 Elk: Winter range capacity (population level), sex, age ratios, and habitat effectiveness.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:**

Winter range capacity, sex, and age ratios: Decrease of 5 percent or more in 3 year running means.

Habitat effectiveness: Decrease of 10 percent or more in habitat effectiveness in any timber compartment.

*Elk Population Level and Sex Age Ratios*

In general the populations appear to be stable at this time. The reporting source for the statistical information is the MDFWP. The MDFWP is in the process of revising its reporting system, and therefore, information is not available at this time. The FY 1987 and FY 1988 data will be included in the MDFWP report in September 1989, after which date the information will be available annually.

Summary of elk population numbers 1980-1986 running means is as follows:

ELK (Numbers)

Description	1980 1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
High - Jefferson Division	2918										
Low - Jefferson Division	2522										
High - Rocky Mtn Division	2774										
Low - Rocky Mtn Division	2558										

MDFWP again provided updates on results of radio telemetry data on elk movements and relative numbers in the Jefferson Division for FY 1988. The information was used in evaluating proposed timber harvest and road construction projects.

#### *Elk Habitat Effectiveness*

On the Rocky Mountain Division guidelines were completed for elk (BLM, 1987, page 23). These guidelines were considered in the evaluation of land management activities.

The existing methods for calculating elk habitat effectiveness were changed from the past photo index vegetation codes to the new strata codes used in the Timber Stand Management Record System (TSMRS). The TSMRS data base is updated as necessary to reflect changes from timber harvest and fires.

On the Jefferson Division the emphasis continued to be placed on analyzing timber compartments in which road construction and timber harvest projects are planned and in which changes in elk habitat effectiveness values are most likely to occur. Several compartments and sub-compartments were examined as part of the environmental assessment for several proposed road construction and timber sales. Areas examined include: Judith Ranger District - Mixes Baldy, compartment 465, was updated and included a capital investment road, the Wolf Butte access road into Mixes Baldy as well as the Mixes Baldy timber sale; Musselshell Ranger District - West Fork of Cottonwood Creek, compartment 623; and Kings Hill Ranger District - Moose Creek, including all of compartment number 711 and sub-compartments numbered 712-002, 006, and 007. All selected alternatives by the Forest Supervisor met the level in the minimum effective cover level specified in the Forest Plan (pages 2-30 and 3-16).

Habitat analysis is ongoing for the East Fork of Spring Creek, Tenderfoot Experimental Forest, and Smokey-Moose areas in the Little Belt Mountains. Elk habitat in the south end of Belt Park on the Kings Hill Ranger District continued to be monitored in FY 1988 in response to a 1985 Congressional Inquiry on the effect of a change in road location on a known elk calving area. The FY 1988 evaluation showed the same relative level of continued use of the area by elk for calving and security cover as identified in FY 1987.

FY 1987 District reporting indicated that in some B Management Areas, road densities may have been exceeded prior to the Forest Plan; for example, Divide road on the Kings Hill Ranger District. An analysis was begun in the Moose Creek area on the Kings Hill Ranger District in FY 1988 to measure and evaluate road densities in these areas.

#### **C-4 Bighorn Sheep and Mountain Goat: Winter range capacity (population level), sex, and age ratios.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Decrease of 5 percent or more in 3 year running means.

In general, the bighorn sheep and mountain goat populations appear to be stable at this time. The reporting source for the statistical information is the MDFWP. The MDFWP is in the process of revising its reporting system, therefore, the 1988 information is not available at this time. The 1987 and 1988 data will be included in the MDFWP report in September 1989, after which date the information will be available annually.

In checking with local MDFWP biologists, the Sun River bighorn sheep herd has recovered to a target population range of 800-1,000 animals. In a survey for sheep in hunting district 441 which lies north of the

Sun River herd, 72 sheep were noted. This was an incomplete survey. However, this herd still maintains a high number of rams and the ram harvest has remained high.

Summary of bighorn sheep population numbers 1980-1986 running means is as follows:

BIGHORN SHEEP (Numbers)

Description	1980 1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
High - Rocky Mtn Division	1010										
Low - Rocky Mtn Division	791										

In a goat survey for hunting districts 414 and 415, 70 goats were seen. Sixteen of these were kids. According to the department, the goat population appears to be stable or a slight upward trend.

On the Rocky Mountain Division the Interagency Rocky Mountain Front wildlife monitoring and evaluation program was completed in FY 1987 and included guidelines for bighorn sheep and mountain goats (BLM, 1987, page 13). These guidelines continue to be considered in the ongoing evaluation of land management activities (Chevron/Fina EIS, and fire suppression actions).

Summary of mountain goat population numbers 1980-1986 running means is as follows:

MOUNTAIN GOAT (Numbers)

Description	1980 1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
High - Rocky Mtn Division	137										
Low - Rocky Mtn Division	104										

Mountain goats are limited to the Big Snowy and Crazy Mountain ranges within the Jefferson Division. Forest Service employees observed at least three mountain goats including at least one kid near Crystal Lake in the Big Snowy Mountains in August 1988. The MDFWP does not conduct inventories on this population.

**C-5 Other Big Game Species: Mule Deer, Whitetail Deer, Black Bear, Mountain Lion, population trend, sex, and age ratios.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Decrease of 10 percent or more in 3 year running means for mule deer.

Monitoring shall be accomplished on only mule deer. Monitoring requirements for mule deer will include harvest data and hunting success and shall be included starting with the FY 1989 Forest Monitoring Report. The Forest is managing the habitat for elk and mule deer. Habitat requirements will also benefit black bear and mountain lion.

The MDFWP recommended changes in hunting season regulations were supported by the Forest. Restrictions on vehicle use on selected roads as well as area vehicle restrictions for elk management are felt to also benefit whitetail deer, black bear, and mountain lion.

An interagency monitoring and evaluation program document for the Rocky Mountain Division was completed and approved (BLM 1987) which includes guidelines for mule deer management. These guidelines were considered in the Chevron/Fina EIS on the Rocky Mountain Ranger District.

On the Jefferson Division, the Montana Department of Fish, Wildlife and Parks limited outfitter guides to a quota of two female bears and two female or five male lions in the Snowy and Little Belt Mountains. These limitations set by the Montana Department of Fish, Wildlife and Parks were supported by the Judith Ranger District.

**C-6 Small Game (Blue Grouse): Harvest level.** No further monitoring will be accomplished on this item during the planning period of the Forest Plan. Brood observations have been discontinued by the Montana Department of Fish, Wildlife and Parks.

**C-7 Furbearer (Beaver & Bobcat) Special Interest (Lynx & Wolverine): Harvest level.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** 3-years (FY 1989).

**Variability Which Would Initiate Further Evaluation:** Decrease of 10 percent or more in average trapper take from previous reporting period.

No further monitoring will be accomplished on this item during the planning period of the Forest Plan. Data on these species is available only at a State level and is lumped for both private and public lands. The harvest level is not a reliable measurement of a population as it is heavily influenced by the fur market. Incidental FY 1988 observations of wolverine on the Jefferson Division include one or two wolverines near Sandpoint on the Judith Ranger District by hunters reported through an outfitter during the archery season in September 1987. A wolverine was reported by outfitter near King Creek at the head of the Middle Fork of the Judith River on the Judith Ranger District. A Forest Service employee observed 3 wolverines crossing US Highway 89 just south of the Many Pines campground on the Kings Hill Ranger District during the late summer of 1988.

One wolverine was trapped in the Sweetgrass Creek area of the Crazy Mountains on private land adjacent to National Forest lands during FY 1988 (personal communication, Wayne Butts, Forest Service, 1/89).

On the Rocky Mountain District, a wolverine was trapped on Waldron Creek and an otter was sighted near Bear Gulch.

**C-8 Old Growth Habitat (Goshawk): Active nesting territories.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Decrease of 10 percent or more in active nesting territories.

On the Rocky Mountain Division the Interagency Rocky Mountain Front wildlife monitoring and evaluation program was completed and included guidelines for goshawk (BLM, 1987 page 34). These guidelines were considered in the evaluation of land management activities.

On the Jefferson Division the R-1 HSI goshawk model (Hayward et al. 1983) was used as a guide. Old growth stands were field checked to validate the model. A total of 9 goshawk nest territories (active at least one year) on National Forest lands were reported in FY 1988. A new active site was discovered at Neil Creek on the Musselshell Ranger District in FY 1988. Six of seven monitored sites were active in FY 1988. The active sites were Beldon Flat on the Judith Ranger District; Whitetail, Elephant Rock, Pasture Gulch, and Neil Creek on the Musselshell Ranger District; and Lake Creek on the Kings Hill Ranger District. Mill Creek on the Musselshell Ranger District was inactive. Two previously active sites, Townsend Gulch Spring, and West Fork Comb Creek on the Musselshell Ranger District were not checked. Emphasis was placed on identifying new territories while protecting the habitat around known nest territories. Barred owls and pileated woodpeckers were observed in Pasture Gulch in association with nesting goshawks. The goshawk, barred owl, and pileated woodpecker are MDFWP species of "Special Interest and Concern."

Summary of FY 1987 and FY 1988 goshawk nesting territories is as follows:

GOSHAWK (Numbers)

Description	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Nesting Territories	8	9								

Forest Service biologists also surveyed several proposed timber sale areas and field checked various reported nest sites of forest nesting raptors.

Old growth stands were identified as part of environmental assessment for Mixes Baldy, Judith Ranger District; Mill-Lion and the West Fork of Cottonwood Creek, Musselshell Ranger District; and Moose Creek, Kings Hill Ranger District.

Personnel provided input into the Regional goshawk habitat model revision and collected prey remains from active nests for analysis. Food habits data will be used to evaluate existing and future goshawk foraging habitat.

**C-9 Special Interest Species (Golden Eagle, Prairie Falcon): Nesting territories.**

**Frequency of Measurement:** 100 percent sampled of selected nesting territories annually.

**Reporting Period:** 3-years (FY 1989).

**Variability Which Would Initiate Further Evaluation:** Reduction in occupied nesting territories of 10 percent or more from previous reporting period.

The Forest Plan requirement is to monitor this activity at least once every three years. The item was not formally monitored in FY 1988.

On the Rocky Mountain Division the Interagency Rocky Mountain Front wildlife monitoring and evaluation program was completed and included guidelines for golden eagles and prairie falcons (BLM, 1987, page 13). These guidelines were considered in the evaluation of land management activities.

Limitations on funds and manpower along with biologist assignments to fire suppression activities restricted the monitoring of nests in FY 1988. One new prairie falcon eyrie defended by two adults was detected near Lone Tree Gulch on the Judith Ranger District in FY 1988.

Summary of golden eagle nesting territories prior to 1987 is as follows:

GOLDEN EAGLE (Numbers)

Description	Pre 1987	1989	1992	1995
Nesting Territories <sup>1</sup>	21			

Summary of prairie falcon nesting territories prior to 1987 is as follows:

PRAIRIE FALCON (Numbers)

Description	Pre 1987	1989	1992	1995
Nesting Territories <sup>1</sup>	30			

1/ Data is for only the Rocky Mountain Ranger District.

**C-10 Cavity Nesting Habitat (Northern 3-Toed Woodpecker): Percent optimum habitat.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** 5-years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** Reduction in snags to below numbers needed to maintain minimum viable population level in any timber compartment.

The Forest Plan requirement is to monitor this activity at least once every five years. The item was not formally monitored in FY 1988.

Pileated woodpeckers were again observed in Pasture Gulch in the Castle Mountains. It appears pileated woodpeckers may be breeding at this location. Pasture Gulch is the only location at which pileated woodpeckers have been identified. The pileated woodpeckers is a MDFWP species of "Special Interest and Concern."

The following progress was accomplished toward the monitoring objective. A complete assessment of the non-wilderness timber stand data base shall be available in FY 1991. Stand delineation, strata designation, and stand examination are ongoing and several compartments in Management Area B are complete. Availability of this information will permit queries of the data base for existing snag densities.

The impact of commercial woodcutting on snag management was evaluated. The majority of woodcutting activity takes place on the Kings Hill Ranger District. Administrative changes in commercial woodcutting on the District have improved management options for managing snags. In FY 1987 commercial woodcutting was restricted to a specified sale area and operators were required to purchase a minimum of 40 cords. The number of commercial cutters in FY 1988 was 22.

Summary of FY 1987 and FY 1988 commercial wood cutters is as follows:

WOODCUTTERS (Numbers)

Description	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Commercial Woodcutters	28	22								

The existing practice of allowing woodcutters to cut standing dead trees is thought to have an adverse effect on snag recruitment, a reduction in snag diameter, and the removal of snags from roaded areas such as clearcut units. Implementation of the Forest Travel Plan has improved the potential post-timber sale snag retention and management. Additional management of personal use woodcutting activity will be required if

snag management objectives are to be met. Changes; such as, restricting the cutting of standing dead snags to designated areas, and restrictions on the unauthorized construction of wheel-track roads are needed before snag management can be effective over the long term.

In FY 1988, only a portion of the small timber sales within Management Area B was monitored. Initial impressions are that many of these areas have not had a proactive snag management plan implemented, and those that did continue to be impacted by woodcutting activity.

**C-11 Aquatic Habitat Condition (Cutthroat Trout, Brook Trout, Rainbow Trout): Habitat quality (Coordinate with F-7 and F-8).**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** 3-years (FY 1989).

**Variability Which Would Initiate Further Evaluation:** Predicted decrease of 5 percent or more (below planned level) in fish habitat capability based on predicted or actual changes in water quality or fish habitat parameters in any stream or lake.

Measures of effects on habitat quality have been made by sampling 4 streams in FY 1988 for intragravel sediment (also reported in item F-7) and by riparian evaluations using the COWFISH model and shrub condition on 3 streams (also reported in item F-8). Populations of cutthroat trout were also evaluated on two streams. Impacts on time as a result of last summers fires have delayed completion of data analyses; however, reports of data analyses will be available by April, 1989. At least one additional year of data is necessary to indicate relative change in condition.

**C-12 Threatened and Endangered Habitat Improvement Outputs, Wildlife & Fish Habitat Improvement Outputs.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:**

**Threatened and Endangered Habitat Improvements:** Accomplishment 10 percent below Forest Plan level over 5-year average.

**Wildlife and Fish Habitat Improvement Outputs:** Accomplished 20 percent below Forest Plan level over 5-year average.

All variations below targets are attributed to either the extreme fire season which required people to be assigned fire suppression duties during the field season or to funding below Forest Plan levels.

The following table summarizes FY 1987 and FY 1988 wildlife habitat improvement accomplishment in comparing what the Forest Plan states and what was actually completed:

## (WILDLIFE HABITAT IMPROVEMENT)

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Non-Structural (Wildlife) (Acres)	600	300	1400								
Non-Structural (Fish) (Acres)	5	2	0								
Non-Structural (T&E) (Acres)	100	0	0								
Structural (Wildlife) (Structures)	10	2	0								
Structural (Fish) (Structures)	25	16	19								

The Canyon Creek Fire burned through about 1,000 acres of mule deer winter range and 120 acres of elk winter range that is on the Forest, which is about 90 to 95 percent of the mapped winter range for these two species on National Forest land. This will improve the palatability of the grasses and shrubs as well as increasing production for a period of years. It is anticipated that these winter ranges will not need treatment for the next 15 to 20 years. The summer fall ranges that were burned will also show an increase in production and palatability of grass and forb species and an increase diversity of the habitat by the conversion of cover to non-cover by timber stand replacing fires.

The Gates Park Fire burnt in spring, summer, and fall ranges. There may be some creation of winter range during light snow fall years on the south slopes of Headquarters Creek. The fire will increase the production and palatability of the grasses and forbs on the spring, summer, and fall ranges for deer, elk, and sheep as well as improve habitat diversity. (For acres burned in the Canyon and Gates Park Fires, see item C-1).

**C-13 Oil and Gas Activity/Wildlife Monitoring Rocky Mountain Front.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Any indication of downward population trend in species/management guidelines related to oil and gas activity.

The major disturbance on the Rocky Mountain Ranger District was the Canyon Creek and Gates Park Fires. Major suppression efforts were taken once these fires began burning out of prescription. These activities occurred after August 1, 1988, thereby taking place during a time that usually allows for high amounts of human activity without significant affects to key wildlife species. The acres of habitat burned will make any impacts that would have occurred by the high intensity of human activities unmeasurable.

An underground powerline was constructed to the Mount Baldy repeater. The Rocky Mountain Front guidelines (BLM, 1987) were followed and an operating window of July 1 to October 15, 1988 was imposed. The work was accomplished in August 1988.

In summary, the guidelines were followed on all projects that required some type of permit from the Forest Service. Therefore, there was minimal impacts to wildlife populations on the Rocky Mountain Ranger District due to permitted activities. Because of the amount of acres that were burned by prescribed and wildfire on the District there will be some impacts to wildlife populations. It remains to be seen whether or not this will actually result in an increase in populations or just a better forage base for the existing populations.

RANGE

**D-1 Range Outputs.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Plus or minus 10 percent of target.

Summary of Forest Plan 10-year average Range Management targets and actual accomplishment for FY 1987 and FY 1988 is as follows:

RANGE

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Permitted Grazing Use (M AUM)	71.1	70.5	72.3								
Improvement Non-structural (Acres)	1329	1999	2433								
Improvement Structural (Structures)	40	30	18								
Range Plans (Plans)	10	5	4								
Noxious Weeds (Acres)	300	772	-	-	-	-	-	-	-	-	-
Noxious Weeds (Acres)	600	-	616								

M AUM = Thousand Animal Unit Month.

Permitted grazing use (M AUM) in FY 1988 is less than 2 percent of the Forest Plan projection and therefore requires no further evaluation. Permitted use is based on the grazing permits issued and estimates of recreation pack stock use before the grazing season begins. At the end of the grazing season the actual grazing use is gathered and reported. Actual grazing use in FY 1988 was 63.4 M AUM. The eight year average actual use (1980 through 1988) was 66.3 M AUM. The decline in actual grazing use in FY 1988 was a result of declining forage production because of drought, resulting in livestock leaving the Forest early.

Nonstructural and Structural Range Improvements and Range Resource Plans in FY 1988 are outside of the Forest Plan standard variability limit. Reasons for these deviations are as follows:

*Nonstructural Range Improvement* - The over accomplishment in prescribed fire used for range improvement partially reflects the scheduling of logical burning units. For example, much of the acreage burned in FY 1988 is to implement the Management Plan for the Highwood Allotment on the Judith Ranger District, which provides for completing a five year burning plan with rather large acreages per year during this period. Over the ten year period these high years will likely be compensated for by years of lower burning acreages, and average out to near the average projected in the Forest Plan. These overages may also reflect the need for further planning and scheduling in the use of prescribed fire in vegetation management of the Forest ecosystems.

*Structural Range Improvement* - The under accomplishment in structural range improvements reflects the lower budget in range improvement in FY 1988 than is scheduled in the Forest Plan. Continued funding at this level will result in under accomplishment in structural range improvement. Without these investments in range improvement during the first decade of Forest Plan implementation, it is unlikely that the increase in permitted grazing use that is scheduled in the second decade of the Forest Plan will be possible.

*Range Resource Plans* - The under accomplishment in allotment management plans (AMP) is a result of budget and targets for this activity that are below the Forest Plan level. The Region did not assign allotment management plan (AMP) targets to the Forest in FY 1988 at this budget level. Funding for range management must increase to the Forest Plan level in order for allotment planning to reach the priority to accomplish the Forest Plan target level of 10 allotment management plans per year. Even at this Forest Plan level the Forest will continue to have a high percentage of AMPs that are outdated. See monitoring item D-4 for further evaluation and discussion.

## **D-2 Range Conditions and Trend.**

**Frequency of Measurement:** 25 allotments per year which will allow all Forest allotments to be sampled every 10 years.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

### **Variability Which Would Initiate Further Evaluation:**

**Condition** - Acres of range in fair or less condition that have not shown any improvement in condition score during the monitoring interval (10 years).

**Trend** - Any acres now in downward trend which were previously (at the last reading) stable or in an upward trend.

**Trend** - Any acres in downward trend which still show a downward trend after another monitoring interval (10 years).

There are 276 condition and trend studies on 243 range allotments on the Forest. Most of these are on the 173 type A priority livestock grazing allotments. There were 28 condition and trend studies monitored on 12 allotments of the Forest in FY 1988. Data from these studies show 10 (36 percent) of the sites to be in

satisfactory range condition and trend. The remaining 18 (64 percent) of the sites are within the unsatisfactory categories that follow:

- Range previously in fair or less condition that has not shown any improvement in condition score - 8 monitoring sites.
- Range in downward trend, which was previously stable or in an upward trend - 7 monitoring sites.
- Range previously in downward trend, which still shows downward trend - 3 sites.

Summary of FY 1987 and FY 1988 range condition and trend studies is as follows:

RANGE CONDITION AND TREND (Each)

Description	Existing	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Condition & Trend Studies	276	0	28								
Allotments Monitored	243	0	12								

About two thirds (64 percent) of the range monitoring studies in FY 1988 indicate unsatisfactory range condition and trend, outside of the Forest Plan standards. However, this does not represent typical or average conditions of ranges on the Forest. Because of limited funding for range monitoring, key areas in unsatisfactory condition were emphasized in selection of ranges for condition and trend monitoring. Unsatisfactory ranges were selected for monitoring because they provide an opportunity for improvement and therefore the highest priority areas for monitoring changes in range condition over time.

The level of range condition and trend monitoring in FY 1988 is a marked improvement in this activity over the FY 1987 level. At the FY 1988 rate of monitoring 12 allotments per year, it would take about 20 years to monitor all of the allotments. This is double the Forest Plan standard of 10 years. However, the 173 priority type A allotments could be monitored at this level within 14 years, which is approaching the Forest Plan standard of 10 years.

**D-3 Supply.**

**Frequency of Measurement:** Annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** More than 1 percent reduction in suitable range acres from previous year. Cumulatively, any reduction of 3 percent or more in suitable range acres over a 5-year period.

Suitable range for FY 1988 is 249,200 acres. No change in suitable range acres was reported during FY 1988.

Summary of FY 1987 and FY 1988 suitable range acres is as follows:

SUITABLE RANGE (Thousand Acres)

Description	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Suitable Range	249.2	249.2								

**D-4 Allotment Management Plan status.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** 5-years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** If more than 10 percent of the allotment plans are outdated. Plans approved more than 15 years ago (before 1974) are considered to be outdated.

Only priority type A allotments are considered. These are cattle, sheep, and horse allotments; excluding all administrative pastures, special use pastures, and commercial packer grazing areas.

A summary of the number of allotments and allotment management plans follows:

Category	Number of Allotments	Percent of Allotments
Total allotments (priority type A)	173	100
Total allotment management plans	145	84
Allotments without plans	28	16
Outdated plans approved before 1974	71	41
Plans that will become outdated this decade (approved 1974-1981)	42	24
Total allotments outdated by the end of the decade	141	81

There are 28 allotments without an allotment management plan (AMP) and another 71 allotments that have outdated AMPs, approved before 1974. Within the balance of the first decade of the Forest Plan (through 1996) another 42 allotments (approved 1974-1981) will become outdated. A total of 141 allotments (81 percent) would have outdated plans by the end of the decade, if no further allotment planning were done.

This data shows a major departure from the Forest Plan standard of "less than 10 percent of AMPs outdated." To correct this situation within the first decade of Forest Plan implementation (through 1996) will require 18 AMPs per year. Four new AMPs and fourteen revisions must be completed per year to stay within the Forest Plan standard by the end of the first decade.

The projected outputs for AMPs in the Forest Plan are only 10 AMPs per year. At this level of allotment planning the Forest will remain behind. 80 allotments would receive allotment planning by the end of the decade, but 61 allotments (35 percent) would remain unplanned or have outdated AMPs.

In FY 1988, the Forest accomplished 4 AMPs. These were all revisions of existing plans. At the rate of 4 AMPs per year, 32 AMPs would be accomplished to the end of the decade, leaving 109 allotments (61 percent) unplanned or with outdated AMPs.

It is apparent from this evaluation that to meet the Forest Plan monitoring standard (no more than 10 percent of AMPs outdated) will require a higher output of allotment planning than is now targeted in the Forest Plan, or currently being programmed. Funding for range management on the Forest must be increased above the current level in order to meet this objective. Allotments must be carefully selected by priority, when programming allotment planning, to insure that the backlog is reduced. Only priority type A allotments that are unplanned, or currently have plans approved before 1982, will contribute to reducing the backlog of outdated AMPs.

Summary of FY 1987 and FY 1988 range allotment management plan accomplishment is as follows:

ALLOTMENT MANAGEMENT PLANS (Each)

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
New Plans	10 <sup>1</sup>	2	0								
Revision of Existing Plans		3	4								

1/ Includes both new and revision of existing Allotment Management Plans.

TIMBER

**E-1 Assure silvicultural management prescriptions are best suited to management area goals with all resources considered.**

**Frequency of Measurement:** One sale annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** A departure from management prescription.

An interdisciplinary sale review was conducted on the Posey Springs Timber Sale on the Musselshell Ranger District. The basic silvicultural prescription was found to be consistent with the management area goals and considered all resources.

**E-2 Assure prescription not primarily chosen on basis of greatest dollar return or greatest timber output.**

**Frequency of Measurement:** One sale annually.

**Reporting period:** 5-years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** Test management area outputs against those predicted.

Objectives for the Posey Springs Timber Sale included providing recreational access to the area, breaking up vegetation patterns for fire management purposes, increasing forage production for elk, and opening up stands to provide favorable conditions for wild turkeys. Investments in timber marking and care required in logging to protect reserved trees increased costs to the Forest Service and reduced timber yields and incomes.

Evaluation for the entire Forest will be done during the FY 1991 review.

**E-3 Assure openings comply with size limits and are periodically evaluated for appropriateness.**

**Frequency of Measurement:** One sale annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Unacceptable results of an Interdisciplinary Team review.

Some harvest units on the Posey Springs Timber Sale have openings that are larger than 40 acres in size. This sale was sold March 3, 1980 and cruising and marking of the timber was accomplished to pre Forest standards during the mid 1970s. The size and arrangement of openings occurred because timber markers were attempting to react to the changes in timber conditions that they encountered. Their general goal was to create a mosaic of different aged trees over the area.

A review of timber sales offered during FY 1988 shows that none of the cutting units were larger than 40 acres in size, the current Forest Plan maximum standard.

**E-4 Assure timber offered does not differ from allowable sale quantity (ASQ) for 10-year period.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** More than plus or minus 20 percent annually or more than plus or minus 10 percent over a 5-year period.

The following discusses the total timber program and the allowable sale quantity for the Forest:

During FY 1988, the Forest sold 57 percent of the Forest Plan total timber program volume. The Decisions Notices for three other sales containing 7.2 MMBF were appealed and the volume was not offered. Of the 1.3 MMBF of timber that was offered but not sold in FY 1987, 0.7 MMBF was sold in FY 1988. In addition, 1.2 million board feet (defaulted timber sale) was advertised and sold in FY 1988.

	FOREST PLAN(MMBF) <sup>1</sup>	1988 TARGET (MMBF)	1988 ACTUAL (MMBF)
Volume Sold:			
Regular Program			
Live Timber			
A. Chargeable	11.0	12.8	6.9
B. Nonchargeable	1.0		0.3
Mortality Timber			
A. Chargeable	1.0	2.0	1.5
B. Nonchargeable	1.0		0.1
TOTAL VOLUME	14.0		8.8
Total Volume		14.8	8.8
Percent of Total Volume Sold			59%
Volume Not Sold:			
Regular Program (Chargeable)			
Volume Offered But Not Sold			0.0
Sold in Subsequent Years			1.9
Volume Appealed			7.2
Sold in Subsequent Years			0.0
TOTAL NOT SOLD			7.2
Total Subsequently Sold			1.9
<b>TOTAL VOLUME FY 1988</b>	<b>14.0</b>	<b>14.8</b>	

1/ (MMBF) million board feet

Summary of FY 1987 and FY 1988 timber sold or offered is as follows:

**TIMBER SOLD OR OFFERED (MM Board Feet)**

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Volume Sold	14.0	7.9	8.8								
Volume Offered but not sold	-	1.3*	-								
Volume Appealed	-	2.5	7.2								
Volume Sold From Previous Fiscal Years	-	-	(1.9)								
Total	-	11.7	16.0								

\* Reduced by 620 MBF from FY 1987 Monitoring and Evaluation report per 2430 memorandum, dated 11/12/87 from Zone Timber, Helena National Forest.

Summary of FY 1987 and FY 1988 annual timber sell program is as follows:

TIMBER PROGRAM (MM Board Feet)

Description	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Annual Forest Sell Program	11.6	14.8								

Timber Sale Appeals has kept the Forest from making its Timber Sale Targets. The Forest's goal is to have NEPA documents approved two years in advance of a project. To accomplish this, the Forest has reorganized its workforce to place more emphasis on Forest Plan implementation.

Summary of FY 1987 and FY 1988 allowable sale quantity is as follows:

ASQ (MM Board Feet)

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Allowable Sale Quantity (ASQ)	12.1	7.1	9.1								

**E-5 Assure restocking is in progress within 5 years.**

**Frequency of Measurement:** 1, 3, and 5 years (FY 1987, FY 1989, and FY 1991).

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Unacceptable results of an Interdisciplinary Team review.

Stocking surveys indicate that all stands planted within the past five years and 94 percent of stands where natural regeneration has been initiated within the past five years are either certified as being adequately stocked or are on a trajectory to meet adequate stocking within the desired time frame. Stocking surveys taken during the first year, and occasionally during the second year after site preparation, often do not have adequate numbers of seedlings to indicate whether or not the stand is proceeding toward the desired level of stocking. If the stand is still below desired levels at the time of the third year examination, then it will be evaluated to determine if treatment is needed to bring it to that level.

**E-6 Assure timber acres harvested are as projected.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** 5-years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** More than plus or minus 10 percent deviation over a 5-year period.

The Forest Plan projected that annual harvest would average about 1,800 acres. About 890 acres were harvested in FY 1988. This is about 50 percent of the anticipated acreage. The average harvest is down due to the backlog of timber sales not being offered because of appeals. FY 1988 volume under contract is about 22.0 MMBF. Harvested timber volume in FY 1988 was approximately 13.5 MMBF

Summary of FY 1987 and FY 1988 timber volume under contract, acres, and volume harvested is as follows:

**TIMBER UNDER CONTRACT AND VOLUME & ACRES HARVESTED**

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Volume Under Contract (MMBF)	-	25.2	22.0								
Acres Harvested	1,800	2,000	890								
Volume Harvested (MMBF)	-	16.9	13.5								

**E-7 Assure accomplishment of thinning and other silvicultural treatments as projected in plan.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** 5-Years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** More than plus or minus 10 percent deviation over a 5-year period.

The following chart indicates accomplishment of timber stand improvement (TSI) and other silvicultural treatments:

TIMBER STAND IMPROVEMENT

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Silvicultural Exams (M acres)	15.5	30.6	33.9	-	-	-	-	-	-	-	-
Silvicultural Exams (M acres)	28.0	-	-								
Reforestation (Appropriation \$) Acres	54	0	225								
Reforestation (K-V) Acres	270	1064	490								
Thinning (TSI) (Appropriation \$) Acres	200	483	441								
Thinning (TSI) (K-V) Acres	0	125	12								
Release Acres	-	205	127								

The Forest, in conjunction with Regional objectives, has accelerated the stand examination program to complete the timber data base for use in the next round of Forest planning. Forest Plan acres to be accomplished each year has been increased from 15,500 acres to 28,000 acres.

Most reforestation on the Forest is accomplished by natural regeneration. During FY 1988, 225 acres in a burned area in the Little Snowy Mountains on the Musselshell Ranger District was planted to help meet resource objectives. Reforestation accomplished with Knutson-Vanderberg (K-V) funds has been site prepared for natural regeneration. In the future, most site preparation for natural regeneration will be accomplished by the Timber Sale purchaser. Thus, K-V treatments are expected to be at the average level over the five year period.

Thinning accomplishment have exceeded Forest Plan targets. The Cross Creek burn (1970) and many of the young stands created by harvest in the late 1960s and early 1970s are showing evidence of reduced growth and thus are being thinned. The variation of plus 10 percent for the decade will very likely be exceeded.

Fuel treatments with brush disposal funds are tied closely to the acreage harvested in the past two years. Although there will be large fluctuations in individual years, average acreages should be achieved over the five year period (Refer to P-5.Fuel Treatment Outputs).

This item will be completely evaluated in FY 1991.

**E-8 Insure harvest by even-age management is compatible with resource values.**

**Frequency of Measurement:** One sale annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Unacceptable results of an Interdisciplinary Team review.

The review of the Posey Springs timber sale indicated that the even-aged treatments were compatible with resource goals for the area except that some of the openings exceeded current opening standards (See description for E-3). Steps have been taken to assure that units are kept to a size which is compatible with resource goals.

**E-9 Firewood removal.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Use increase exceeds 10 percent per year.

In FY 1988, 2.3 million board feet of personal use firewood was removed from the Forest.

Summary of FY 1987 and FY 1988 personal use firewood removal is as follows:

FIREWOOD (MM Board Feet)

Description	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Firewood Removal	3.5	2.3								

There has been a downward trend in the demand for firewood from the Forest. It is expected that the use will probably level off at near the current amount.

**E-10 Evaluate availability of lands classified as suitable/unsuitable.**

**Frequency of Measurement:** 5-years (FY 1991).

**Reporting Period:** 5-years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** More than plus or minus 5 percent change in acreage.

The evaluation of land suitability is ongoing through area and project analyses. Data is being entered into the Timber Stand Management Record System data base to provide information for the planned evaluation to be accomplished in FY 1991 and for future Forest Plan revisions.

**E-11 Projected yields. (Growth Plots)**

**Frequency of Measurements:** 5-years (FY 1991).

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Standard error of 10 percent at 1 standard deviation.

The installation of two new permanent growth plots and the remeasurement of four growth plots was programmed for this fiscal year. Due to the 1988 fire season, only one new growth plot was established and no growth plot remeasurement was accomplished.

Summary of growth plot establishment and remeasurement is as follows:

**GROWTH PLOTS (Number)**

Description	1979 1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Growth Plots Established	27	2	0	1								
Growth Plots Remeasured	7	2	2	0								

Efforts during the planning period (10-15 years) will be to continue the remeasurement so that at least each Growth Plot is remeasured on a 5-year interval in order to establish a base data file. The Forest is still on schedule to accomplish the remeasurement program.

At this time there is insufficient data available to run any type of comparison between the Growth Plot data and the projected yields of the Forest Plan.

When these Growth Plots were established, they were to be installed in stands that were scheduled for a timber activity within the next five years, other than a regeneration harvest; example, precommercial or commercial thinning. Therefore, Growth Plots that have had their planned timber activity accomplished and remeasurement completed have data only from one remeasurement.

Evaluation will be done in FY 1991.

## SOIL, WATER, AND AIR

### **F-1 Adequacy and Cumulative Effects of Project Best Management Practices.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Projected deterioration of soil productivity or water useability.

Each proposed project with a potential for impact on soil or water quality is reviewed to determine the adequacy of the project's Best Management Practices (BMPs) before it is approved to ensure soil productivity and water useability. Four projects were evaluated in FY 1988 to provide detailed BMPs required to protect soil and water quality. In addition, cumulative effects on water yield and sediment were evaluated on all 4 projects.

All of these projects provided adequate BMPs to meet water quality goals and State water quality standards. These standards require that all reasonable land, soil, and water conservation practices are used. The cumulative effects analyses indicated, in each case, that reasonable use of conservation practices would protect the beneficial uses and goals for the water resource and prevent deterioration of the soil or water. Cumulative effects of water yield and sediment yield increases for three projects involving timber harvest were evaluated using guidelines of 10 to 20 percent above natural levels; these increases are acceptable according to available guidelines and are within the general increases resulting from previous activity, before recovery. Of those three projects, one was delayed because of expected harvest on private land, one met the guidelines but a decision was delayed for other reasons, and one was referred for further planning to accommodate these guidelines. The fourth project involved new road construction across a watershed and would have less than 2 percent increase in sediment. This amount is too small for measurement by ordinary means, and therefore, shows no cumulative impact on the water resource.

### **F-2 Revegetation of temporarily disturbed areas and roads within 5 years.**

**Frequency of Measurement:** 75 percent sample 2 years after termination.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Unacceptable results of an Interdisciplinary Team review.

Projects completed under the Forest Plan with temporarily disturbed areas and roads are required to be revegetated within 5 years. A review 2 years after completion indicates the effectiveness of seeding required by the project and the need for any follow-up revegetation. All projects in the last 5 years have been informally reviewed. Projects completed during the first year under the Forest Plan will be closed for 2 years for a formal review beginning in FY 1989; however, monitoring was accomplished on four previous projects. Three of these projects showed adequate revegetation; one area, a gravel pit, had only 20 percent successfully reclaimed; as a result that project is planned and financed for FY 1989 completion. There have been no unacceptable Interdisciplinary Team reviews indicating unacceptable revegetation of temporarily disturbed areas.

Rehabilitation needs on the Canyon Creek Fire were evaluated by an Interdisciplinary Team including representatives from the Montana Department of State Lands, Soil Conservation Service, Bureau of Land Management, and the Forest Service in September 1988. Based on their recommendations, a total of 28,600 acres of severely burned forested nonwilderness land were seeded by helicopter to replace understory vegetation that was consumed by the fire.

Seeding on the other major fires and waterbarring of firelines was also completed. The seeding will also help to restore wildlife habitat. Wildfire activity delayed some planned early monitoring that will be completed in FY 1989. Monitoring in 1989 will include all of the 1988 fires with significant areas needing revegetation, including all fires over 1,000 acres, and the seeding of firelines and burnt areas on the Canyon Creek Fire.

No grass seeding was done on the Gates Park Fire area.

### **F-3 Water quality effects of activities in municipal watersheds.**

**Frequency of Measurement:** All projects.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Adverse water quality effects or violates water quality standards.

No activities were proposed or conducted that would disturb the soil or water resource in either of the two municipal watersheds on the Forest in FY 1988. Any projects to be conducted in municipal watersheds, as required by law, are first reviewed by the State Water Quality Bureau.

### **F-4 Activities in riparian areas, flood plains, and wetlands.**

**Frequency of Measurement:** 50 percent of all projects.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Unacceptable results of an Interdisciplinary Team review.

Riparian areas include flood plains and wetlands, and activities conducted in them pose an added risk to water-related resources and to water quality. The two projects planned for FY 1988 were delayed because of the extreme wildfire situation; therefore, no projects were reviewed that impacted riparian areas.

### **F-5 Effects of other activities on watershed conditions.**

**Frequency of Measurement:** 20 percent of all projects.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Unacceptable management practices or land productivity.

Activities not in municipal watersheds nor in riparian areas may also have impacts on soil or water quality. There were no such activities in FY 1988. For that reason, there have been no Interdisciplinary Team reviews of activities that might indicate unacceptable management practices on soil, land productivity, or water quality.

The North Fork Sun River has a presently abandoned United States Geological Service (USGS) stream gauging station just below the Gates Park Fire and just above Gibson Reservoir. This station has 20 years of records available that are correlated with four snow courses in the North Fork Sun River drainage. The Bureau of Reclamation and the Greenfields Irrigation District are cooperating with the Forest Service to have the USGS reestablish this station and to measure stream sediment there and compare it to baseline information. In addition, photopoints (some in FY 1988), channel condition surveys, grab samples and erosion transects are being established for the fires, and a sediment survey is being done for Gibson Reservoir.

**F-6 Elimination of soil and water restoration backlog.**

**Frequency of Measurement:** Annually.

**Reporting Period:** 5-years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** Less than 50 percent by 1990; less than 100 percent by 1995.

Direction is that the backlog of soil and water restoration needs be eliminated by the year 1995. The Forest Plan identified a backlog of 373 acres of these restoration needs. Only 10 acres of this backlog were restored in FY 1988 for a total of 57 acres over the last 4 years. An average of 45 acres per year is now necessary in order to meet this objective.

Summary of soil and water restoration backlog accomplishment is as follows:

SOIL AND WATER RESTORATION (Acres Accomplished)

Description	Total Back-log	Pre 1987	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Soil/Water Restoration	373	21	26	10								

The Forest Plan target for Soil Inventory is 2,000 acres. In FY 1988, no acres were inventoried.

Summary of FY 1987 and FY 1988 soil inventory accomplishment is as follows:

SOIL INVENTORY (Acres Accomplished)

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Soil Inventory	2,000	0	0								

**F-7 Water and Stream Quality as affecting fish habitat and other uses: validation of estimations of sediment.**

**Frequency of Measurement:** Seasonal-continuous and annual.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Not meeting State or Federal water quality standards or significant (90 percent confidence) deterioration, by best available indexes.

Water quality monitoring did not identify any significant deterioration which would require immediate action. State or Federal water quality standards are met when all reasonable land, soil, and water management or conservation practices (BMPs) have been applied. The adequacy of these BMPs is determined through monitoring item numbered F-1, and the application and effectiveness of these BMPs monitored in items numbered F-3, F-4, and F-5.

Data is necessary to validate estimates of sediment and to determine if water quality or fish habitat might deteriorate where estimates of effects are incorrect. Methods and intensity of validation and evaluation of sediment are still in a state of development. Considering this, sampling of representative streams by available techniques has been conducted over the last three years. The sampling in FY 1988 included four stations with regular (automated) sampling of suspended sediment along with a continuous record of streamflow and four streams sampled for intragravel sediment. Full analysis of results will require at least one more year of data, as annual variability in streamflow requires at least 3 seasons of data. Impacts on time as a result of the 1988 fire season have delayed completion of data analyses; however, reports of data analyses will be available by April, 1989. At least one additional year of data is necessary to indicate relative change in condition.

**F-8 Riparian areas and streams: stream cover and pools.**

**Frequency of Measurement:** High-impact annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Significant (90 percent confidence) decline in condition.

Inventory of the condition of riparian areas and streams is presently conducted using the COWFISH model and shrub condition. Three streams were evaluated in FY 1988 by these methods. Additional analysis and additional years of data are necessary to indicate relative change in condition. Indication of further riparian condition requires classification. This is being done in cooperation with the Montana Riparian Association to

provide a basis of ecodata plots for emphasis in development of range allotment management plans. Riparian areas and stream monitoring did not identify any significant decline which would require immediate action.

#### **F-9 Public Health.**

**Frequency of Measurement:** Monthly when in use.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Violates State or Federal drinking water standards per year.

All water systems maintained by the Forest Service were sampled monthly while in use. During FY 1988, 39 Forest systems and 7 special use systems were opened for use. All were tested and operated in accordance with State and Federal Safe Drinking Water Acts except for 3 of the special use systems on the Rocky Mountain Ranger District which did not get tested for Nitrates.

#### **MINERALS**

##### **G-1 Effect of Mining Activities.**

**Frequency of Measurement:** 100 percent annually of active operations on a monthly basis.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Adverse effect of Forest Service project on mineral activities or revision or departure from approved operation plans.

Review of Forest Service activities showed that no mining activities were effected by these projects.

All proponents of mining type prospecting and development proposals are required to submit a Notice of Intent, and in some cases, an operating plan prior to any surface disturbance. Seven operating plans were reviewed during FY 1988. An environmental analysis is prepared and the proposal is approved, modified or denied, and subject to mitigation and application of the surface operating standards in the Forest Plan. Only three of the operating plans resulted in activity on the ground.

During the summer of 1988 the most complex operating plan involved drilling two shallow holes by a mining company in the vicinity of Black Butte-Iron Butte area on the Kings Hill Ranger District. An analysis was conducted on the applications and specific mitigation included:

--Activity was limited to the actual drill sites, no access roads were constructed, the drilling took place along existing roads;

--A plan for prevention of noxious weed introduction was established;

--A reclamation plan was agreed to in advance and a performance bond was established; and

--A Cultural Resource Inventory was completed.

Other on the ground activity included operation of a small decorative building stone quarry south of Stanford, Montana, and continued exploration and development work for sapphires along Yogo Creek.

#### **G-2 Effect of Geophysical Seismic Prospecting.**

**Frequency of Measurement:** 100 percent of active operations on a biweekly basis.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Adverse effect upon surface resources or departure from conditions of the approved permit.

There were no requests for geophysical seismic prospecting in FY 1988.

#### **G-3 Effect of Drilling.**

**Frequency of Measurement:** 100 percent of active operations on a weekly basis.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Adverse effect upon surface resources or departure from conditions of the approved permit.

An EIS is being prepared on two pending Applications for Permit to Drill by Chevron Corporation and Fina Oil and Chemical Company, in the North End (RM-1) Geographic Unit, on the Rocky Mountain Ranger District. In addition, the Forest is working with the BLM on preparation of a field development EIS for the Blackleaf Canyon area. Temporary approval was granted by the Forest, BLM, Montana Department of Fish, Wildlife and Parks, and the Teton County Commissioners for connecting a surface pipeline to a shut in gas well in Blackleaf Canyon on the Rocky Mountain Ranger District. The well was drilled in 1957 and re-completed in 1981. The temporary approval was granted pending completion of the Blackleaf EIS. An Environmental Assessment was completed for the entire length of the pipeline. Approximately 1,300 feet of the pipeline is on National Forest land. The pipeline will be continuously monitored during production.

#### **G-4 Rehabilitation of disturbed areas.**

**Frequency of Measurement:** 100 percent of activity on a weekly basis during rehabilitation. A final inspection will be made within 5-years after rehabilitation has been completed.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Rehabilitate less than 90 percent of disturbed areas.

Three mineral related proposals were reviewed and prior to permit issuance reclamation standards were established. Forest Plan Standard G-5 was applied to all proposals. Reclamation bonds were collected to cover the cost of each project, and retained until final reclamation standards are met. In addition, the Forest continued to assess past disturbed areas and develop a long term rehabilitation strategy.

**G-5 Minerals Availability.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Denial of more than 10 percent of proposed projects.

There have been no changes from the situation as shown in the Forest Plan.

The Forest Plan target for Mineral Management in FY 1987 and FY 1988 was 90 cases. In FY 1988, 134 cases were reviewed and approved. The Forest Plan target has been increased to 160 cases per year for the remainder of this planning period.

Summary of FY 1987 and FY 1988 mineral cases reviewed and approval is as follows:

MINERAL CASES (Each)

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Cases Reviewed	90	160	134	-	-	-	-	-	-	-	-
Cases Reviewed	160	-	-								
Cases Approved	-	160	134								

## LANDS

### **J-1 Compliance with use permits.**

**Frequency of Measurement:** As needed.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Unacceptable results or deviation from permits.

The special use permits on the Forest are generally up to date and are in conformance with current policy. The recreation residence policy was finalized in FY 1988 and new permits have been offered to all recreation residence permittees to implement this policy. This has resulted in additional permit workload and uncertainty by the public. Even so, the permits have generally remained up to date and questions from the public have been answered. The automation of the permit preparation and billing system has been in large part responsible for meeting these challenges.

The recreation residence policy also provides for a review of definite tenure permits two years prior to permit expiration. This review is to determine whether the original decision to terminate the permits is still valid today. Seven such reviews were completed in FY 1988 and appropriate action taken on the permits.

The administration of special use permits on the ground has been focused on health and safety problems and on permits which are under definite tenure. The continuing low level of funding for administration of non-recreation special uses reduces the number of special use inspections which would be desirable. However, the condition of special use facilities on the ground is generally acceptable.

### **J-2 Right-of-way Easements Accomplishment.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Less than 75 percent accomplishment of 5-year program.

The Forest Plan does not specify a level of accomplishment for the acquisition of rights-of-way easements. However, the Monitoring Section does refer to the Forest's 5-year program. The program for FY 1988-1992 was transmitted to the Forest Leadership Team on January 8, 1988 by the Forest Supervisor in a 5460/1900 memo contains seven road easements and one trail easement for FY 1988.

One road easement (Castle-Checkerboard) and no trail easements were acquired in FY 1988 for an 14 percent accomplishment. This is not within the acceptable limits of variability, therefore, further evaluation is warranted. The following is an explanation of the status of each project in the FY 1988 program.

**Dupuyer Creek Road.**

This project involves one easement. Intensive negotiation, even with facilitation by the Governor's Office, failed to result in the acquisition of an easement. Currently, the case is involved in litigation between the Public Land Access Association, the landowner, and the State of Montana.

**Falls Creek Trail.**

An Environmental Assessment and associated Decision Notice was completed in 1980. A review of this analysis and decision is now needed to validate or change the earlier work. Until this is done the acquisition process can not proceed.

**Dry Fork Belt Creek Road.**

This project involves acquiring one easement on an existing Forest Development Road presently open to public traffic. The landowner has agreed to grant after completion of a grazing management plan involving his permit. The grazing Allotment Management Plan is not scheduled to be completed in FY 1989.

**Dry Wolf Creek Road.**

This project involves the acquisition of three easements on an existing Forest Development Road which remains open to public use. Delays in acquiring geometronic services in turn delayed the platting process. Plats are now complete and the easements are expected to be acquired early in 1989.

**Wolf Butte Road.**

This project involves one raw land easement across State of Montana land. Although an analysis has been underway and discussion has taken place with the State, the environmental analysis process has not been completed. Without these documents the acquisition process can not begin.

Summary of FY 1987 and FY 1988 road and trail right-of-way easement program and acquisition is as follows:

EASEMENT ACQUIRED (Each)

Description	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Road R-O-W Program	4	7								
Road R-O-W Acquisition	3	1								
Trail R-O-W Program	1	1								
Trail R-O-W Acquisition	1	0								

**J-3 Land Ownership Adjustment Accomplishment.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Less than 75 percent accomplishment of 5-year program.

The Forest Plan does not specify a rate of accomplishment for this item except in the Monitoring Section where a reference is made to the Forest's 5-year Program. However, the Forest does not have an established Land Exchange Program but rather relies on opportunities that are forwarded by proponents. Other opportunities to acquire tracts which are desirable for National Forest System ownership are pursued as they develop.

The Forest Plan specifically says that "----it is not the intent of the Forest Service to pursue this direction (land exchange) except on a willing grantor basis." For this reason, it would be very difficult to "lock-in" on targets for accomplishments.

As a part of the Forest Plan Amendment Number 3, the Forest's annual target with the Region for land exchange has been established as 60 acres. In FY 1987 and FY 1988, no lands were exchanged. The Forest is continuing to work on exchanging approximately 200 acres of Federal land. The Decision Notice and real estate appraisal has been completed at this time. In addition, an exchange involving approximately 2,000 acres of land is being negotiated for possible FY 1989 accomplishment.

Summary of FY 1987 and FY 1988 land exchange program accomplishment is as follows:

LAND EXCHANGE ACCOMPLISHMENT (Acres)

Description	Annual Target	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Land Exchange	60	-	-								

In FY 1988, the Forest did not complete any cases as a part of the Small Tract Act.

**FACILITIES**

**L-1 Road and Trail Construction and Reconstruction; Trails; Arterial and Collector Roads; Local Roads.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Plus or minus 20 percent of programmed construction and reconstruction accomplishment.

**ROADS** - The Forest Plan Road Program, as amended, provides for 9.0 miles of road construction, and 24.0 miles of reconstruction yearly. In FY 1988, the Forest constructed 0.6 miles and reconstructed 16.1 miles for a total of 16.7 miles under the Capital Investment Program. Under the Timber Program 2.3 miles were constructed and 4.2 miles were reconstructed for a total of 2.9 miles of construction and 20.3 miles of reconstruction under all programs.

When considering the total miles constructed and reconstructed in both programs, the output was 30 percent under that projected by the amended Forest Plan. This is not within the variability tolerance. Therefore, additional evaluation is required. Three reasons account for accomplishment shortfall.

- Three timber sales and one capital investment project were appealed which prevented a FY 1988 award;
- Lack of rights-of-way acquisition prevented one capital investment project from being awarded; and
- One capital investment project was not given funding priority by the Region.

Summary of FY 1987 and FY 1988 road construction and reconstruction as part of the Capital Investment and Timber Program is as follows:

**ROADS (Miles)**

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Capital Investment Road Construction	5.0	3.7	0.6								
Capital Investment Road Reconstruction	15.0	29.7	16.1								
Timber Purchaser Road Construction	4.0	0.0	2.3								
Timber Purchaser Road Reconstruction	9.0	0.0	4.2								

**LANDLINE** - The Forest Plan target for landline location is 26.0 miles per year. In FY 1988, 21.0 miles of landline location was accomplished on the Forest.

Summary of FY 1987 and FY 1988 landline location accomplishment is as follows:

LANDLINE LOCATION (Miles)

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Landline Location	26	14	21								

*TRAILS* - The Forest Plan, as amended, programs an average of 14.0 miles of trail construction and reconstruction annually. In FY 1988, a total of 13.3 miles of trail was reconstructed on the Forest. Therefore, the accomplishment was 95 percent of the Forest Plan target. Trail funding has increased in the past 2-3 years and good progress is being made in reconstructing unsatisfactory trails.

Trail construction and reconstruction was aided by volunteer efforts in FY 1988, similar to other years. The Great Falls motorcycle club provided manpower to solve some resource problems on trails in the Tenderfoot-Deep Creek area on the Kings Hill Ranger District and the Backcountry Horsemen groups provided volunteer assistance on the Rocky Mountain Ranger District. One trail project in the Scapegoat Wilderness on the Rocky Mountain Ranger District which was to have been done by volunteers had to be cancelled because of the Canyon Creek Fire.

The large fires on the Forest, particularly the Canyon Creek and Gates Park Fires in the Bob Marshall and Scapegoat Wildernesses on the Rocky Mountain Ranger District, had a large impact on the trail system. The fires caused concentrations of snags to fall across the trails and burned most of the signs and wood structures in the trails. These include corduroy, small bridges, water bars, and log cribbing structures. The initial downfall was removed as part of the fire rehabilitation effort this fall. However, increased downfall is expected for several years and the structures will need to be rebuilt. These needs were identified in supplemental budget requests for fire recovery. In all, a total of 117 miles of trails were severely impacted. Reconstruction and rehabilitation costs are estimated at \$199,500.

The accomplishment in FY 1988 was within the limits of variability for this monitoring requirement (plus or minus 20 percent of the goal). Therefore, no additional evaluation is required at this time. The budget trends indicate that the Forest Plan goals for trail construction and reconstruction will be met.

Summary of FY 1987 and FY 1988 trail construction and reconstruction is as follows:

TRAILS (Miles)

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Trail Construction and Reconstruction	10.0	8.5	-	-	-	-	-	-	-	-	-
Trail Construction and Reconstruction	14.0	-	13.3								

**L-2 Miles of roads open to public use.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Plus or minus 20 percent of target miles to be left open to public.

The Forest Travel Plan resulted in the following summation of road restrictions and closures. On the Jefferson Division, approximately 230 miles of roads are restricted either yearlong or seasonally to some forms of motorized public use. On the Rocky Mountain Division, approximately 23 miles of roads are restricted either yearlong or seasonally to some forms of motorized public use.

It is estimated that there are approximately 1,480 miles of roads left open to the public. The Forest Plan does not established any target miles to be left open to the public.

In FY 1988, no significant changes were made in the Forest Travel Plan, therefore, no monitoring was accomplished.

## PROTECTION

**P-1 Assure harvest emphasizes the removal of high risk stands for mountain pine beetle attack and that timber sales are located to break-up continuous natural fuel accumulations.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** 5-years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** Unacceptable results of an Interdisciplinary Team review, or if less that 70 percent of timber volume is programmed from high risk mountain pine beetle stands.

In FY 1988, 80 percent of the sawtimber sold on the Lewis and Clark National Forest was high risk lodgepole pine. Reviews of timber sale locations showed the Forest is continuing to breakup large concentrations of natural fuels. Future planning is also emphasizing removal of high risk lodgepole pine.

Summary of FY 1987 and FY 1988 removal of high risk lodgepole pine stands is as follows:

REMOVAL OF HIGH RISK LODGEPOLE PINE (Percent)

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Removal of High Risk Lodgepole	70	90+	80								

**P-2 Acres and volume of insect and disease infestations.**

**Frequency of Measurement:** Once annually.

**Reporting Period:** 5-years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** Introduction of new insect or disease or spread of an existing insect or disease.

Insect and disease surveys conducted during the summer of 1988 showed no significant change in insect and disease infestation on the Forest. However, mountain pine beetle activity has increased on the adjacent Helena National Forest.

**P-3 Management practices to ensure activities do not promote an increase in insect and disease organisms.**

**Frequency of Measurement:** Continuous.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Significant increase in insect and disease organisms.

No significant increase in insect and disease organisms has been observed. Post sale reviews showed that the Forest still may be leaving a larger amount of untreated slash than was necessary to provide shade for new seedlings and nutrient recycling. This could increase insect and disease organisms. Fire Management Officers have been instructed to insure timber slash treatments meet regional standards.

**P-4 Assure prescribe fire meets air quality standards.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Plus or minus 10 percent beyond standard guidelines.

The quality of the air was a concern with many local residents along the east slopes of the Rocky Mountains this past summer in light of the prescribed fires burning in the Bob Marshall Wilderness Complex. Smoky conditions were experienced in the towns of Choteau, Augusta, Fairfield, and even Great Falls periodically throughout the fire season. On August 10, in response to concerns raised by several residents west of Choteau, an air quality monitor was installed in Choteau. It was operated under a cooperative effort with the State Air Quality Bureau in Helena. Although the monitor measured the total suspended particulate levels (all particulate), a PM-10 level (respirable particulate) was extrapolated from this information.

Great Falls has been operating a PM-10 monitor for several years. The readings are taken on a 6-day rotation schedule. This past summer, the Forest contacted the Great Falls City-County Health Department and requested that sampling be done any time noticeable smoke or particulate was experienced. The Department accommodated the request and made several additional reading throughout the summer.

The samples recorded do not show that the Great Falls area exceeded EPA air quality standards of 150 micrograms/cubic meter. The highest sample was recorded on September 6, 1988 at 86 micrograms/cubic meter. That same day (9/6/88) Choteau exceeded the EPA air quality standards with an extrapolated reading of 298 micrograms/cubic meter. This reading represents the only day throughout the summer that Choteau exceeded the air quality standard.

**P-5 Fuel treatment outputs.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Plus or minus 25 percent of programmed targets.

In FY 1988, the Forest treated 1,201 acres of activity fuels and 863 acres of natural fuels. The Forest Plan shows a target of 1,470 acres of activity fuels and 700 acres of natural fuels per year. The annual accomplishment is within the limit of variability, therefore no further evaluation is required.

Summary of FY 1987 and FY 1988 natural and activity fuels reduction is as follows:

ACTIVITY AND NATURAL FUELS (Acres)

Description	Forest Plan	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Activity Fuels	1,470	1,813	1,201								
Natural Fuels	700	665	863								

**P-6 Wildfire acres burned.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** October 1, 1987 - September 30, 1988 (FY 1988).

**Variability Which Would Initiate Further Evaluation:** Plus or minus 25 percent above projected average annual wildfire burned acres.

The 1988 fire season was one of the driest on record. Fire behavior exceeded all known predictions. Rain that usually comes in late August, did not arrive until mid-September. In FY 1988, wildfires burned 174,162 acres which is well above the 497 acre projected average annual acreage. The Forest took action on 51 fires; 45 lightning and 6 person caused. The Forest allowed two unplanned ignitions to burn under fire management prescriptions in the Bob Marshall Wilderness Complex on the Rocky Mountain Ranger District; the Gates Park and Canyon Creek Fires. These fires covered 72,476 acres of wilderness lands, which is included in the above total, before being declared wildfires.

All major fires on the Forest have been reviewed. Forest level fire reviews recognized the need to: (1) improve Forest radio communication, (2) strengthen the training of rural, cooperative, and volunteer firefighting forces in wildland fire suppression, (3) provide for on-the-job training and additional fire training for Forest Service personnel, (4) strengthen Forest fire operation procedures, and (5) improve process of injury paperwork. Recommendations from Regional and National fire reviews will be released soon.

Summary of FY 1987 and FY 1988 wildfire acres burned is as follows:

**WILDFIRE AREA BURNED (Acres)**

Description	10-year average	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Acres Burned	497	37	174,162								

**P-7 Cost of Suppression and Protection Organization.**

**Frequency of Measurement:** Once annually.

**Reporting Period:** 5-years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** Plus 5 percent increase in total costs.

The total cost of fire suppression and protection in FY 1988 was \$6,361,000. This is well above the 10-year average of \$590,000. This is the result of one of the driest fire seasons on record.

Summary of FY 1987 and FY 1988 suppression and protection costs is as follows:

**FIRE SUPPRESSION AND PROTECTION COSTS (Thousand Dollars)**

Description	10-year average	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Fire Costs	590	379	6,361								

## GENERAL

### **I-1 Validation of cost and values used in the Forest Plan.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** 5-years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** In general, plus or minus 25 percent; however very large cost items such as stump-truck costs would have a smaller degree of acceptable variability.

The Forest is reviewing and updating all costs and values in the Forest Plan. This project should be completed by September 30, 1989.

### **I-2 Effect of emerging issues or changing social values.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** Continuous.

**Variability Which Would Initiate Further Evaluation:** If issue cannot be dealt with under the Forest Information and Involvement Plan.

Public interest in the management of the Lewis and Clark National Forest continues to play a major role in the implementation of the Forest Plan. Three ongoing projects carried into FY 1988 in addition to several new projects and issues. While each Ranger District was involved with several smaller scale projects requiring public involvement, the key projects necessitating more extensive efforts because of the sensitivity of the issues involved were: Chevron/Fina Environmental Impact Statement (EIS) on Exploratory Oil and Gas Wells, Galt Land Exchange Environmental Assessment (EA), Revision of the Forest Travel Plan, Eligibility Determination for Wild and Scenic Rivers, Marias Pass EA, Prescribed Fire Program in the Bob Marshall Wilderness Complex and Timber Sale Program (Timber sale EA appeals and Timber Sale Program Information Report System - TSPIRS).

### **CHEVRON/FINA EIS:**

A decision was made to combine the analysis for the exploratory oil and gas drilling proposals from both the Fina (Hall Creek) and the Chevron (Badger Creek) in order to provide a more thorough examination of the cumulative and interrelated effects of both projects in the RM-1 Geographic Unit on the Rocky Mountain Ranger District. Because scoping efforts had been conducted for each of the projects individually (Fina in 1983-84 and Chevron in 1986), it was decided that public scoping meetings were not necessary for the combined EIS effort. Instead, the Study Team sent summary packages to the individuals and organizations on their mailing list. The summary packages included the scoping comments and the issues identified the initial scoping periods for both projects. It also included a summary of the issues identified in the appeals on the original Hall Creek decision. Those receiving the packages (approximately 350) were asked to review the issues that had been identified and submit any additional issues to the Study Team. The Forest received seven written letter and one telephone comment during this third round of scoping.

In April 1988, a second letter was sent to the mailing list (350) identifying the alternatives to be analyzed and a colored map of the alternative locations.

A social assessment was prepared during 1987 as part of the background materials for the EIS. The information in this report provided insight into the social values, perceptions, and attitudes of those residents most likely to be influenced by oil and gas exploration and/or development. The need for a social/economic issue was identified by the Study Team and included in the analysis. The social conditions and analysis were based on the comments received during the scoping process, comments on the Forest Plan (1985), newspaper articles, and the results from the unstructured interviews conducted in the preparation of the Social Assessment background document. During FY 1988, the Study Team continued work on the preparation of the draft EIS using all of this information.

Feelings and perceptions about the social implications of exploratory drilling in the RM-1 Geographic Unit vary. Some feel oil and gas development would bolster the economic condition on the reservation and the local communities. They believe the National Forest should be managed for multiple use purposes, oil and gas being an acceptable use. Others support protection of the area. The amount of protection ranges from those who support a recreation-based management concept to those who advocate Wilderness classification. Blackfeet traditionalists feel that the area deserves protection for the continued practice of the traditional Blackfeet religion.

A draft EIS will be released for public comment this spring.

#### **GALT LAND EXCHANGE:**

An ongoing process to evaluate and finalize a land exchange proposal in the Crazy Mountains has been the focus of concern for publics having an interest in both the Lewis and Clark and the Gallatin National Forests. Many people were involved in public scoping meetings during 1986 to assist the Forest in identifying issues. Access to the National Forest lands was identified as the key issue during the scoping process. Also expressed was the concern that the National Forest lands involved in the exchange may be more valuable for wildlife than those lands to be acquired.

In response to the access issue, the proponent has agreed to include five trail easements and one road easement in the exchange package. Perfection of these easements would ensure public access to the National Forest. The total acreage of the original exchange proposal was reduced. Letters were sent in late January 1988 to those who had been involved in the scoping process explaining the modifications to the original proposal.

The Forest has continued to negotiate with the landowners on this exchange. A decision on this analysis is expected to be available in the spring of 1989.

#### **FOREST TRAVEL PLAN REVISION:**

In December 1987, a final decision was made on the revision of the Forest Travel Plan (Jefferson and Rocky Mountain Divisions). The Forest received 17 appeals on the revision decisions. Of this total, two were withdrawn by the appellants after negotiations with the Forest and one was dismissed for untimeliness of notification. Three appeals are still being negotiated with at the end of FY 1988. In all other appeals the Forest Supervisors decision was affirmed. Because no "Stays" to the decision were granted to the appellants, the travel plan has been implemented on the Forest.

#### **WILD AND SCENIC RIVERS EA:**

To fulfill the requirements specified in the 1968 Wild and Scenic Rivers Act (WSR Act), an analysis was initiated on the Forest to determine the eligibility of every river on or crossing the National Forest and

to assign a potential classification (wild, scenic, or recreational) to those river segments determined eligible.

On March 21, 1988 scoping was started. Over 380 letters were sent describing the process that the Forest was using to determine the eligibility and potential classification of the rivers on the Lewis and Clark National Forest. Those receiving the letters were asked to review; (1) the proposed eligibility qualifications, and (2) a list of potential candidate rivers. Twenty-two comment letters were received with several recommendations for additional river candidates. As a result of the public comments received, four rivers were added to the eligibility list. On December 12, 1988 a letter was sent to those who commented during the scoping period (22 letters) to update them on the status of the Study Team.

A Decision Notice and Environmental Assessment, and Forest Plan Amendment was approved on March 13, 1989. These documents identify nine rivers on the Forest as having free-flowing and "outstanding remarkable" values that may be suitable for inclusion in the National Wild and Scenic River System. These rivers are: North Badger Creek, North Fork Birch Creek, North and South Forks Sun River, Green Fork of Straight Creek, and the Dearborn River on the Rocky Mountain Division; and Smith River, Tenderfoot Creek and the Middle Fork Judith River on the Jefferson Division. These documents also provide interim direction on how these rivers will be managed until the river suitability study is completed in the future. The documentation package was sent to those names on the Forest Plan and Wild and Scenic Rivers mailing lists.

#### **MARIAS PASS EA:**

On April 25, 1988 a decision was made on the Marias Pass Master Site Plan. The main issues addressed by the Study Team were: public safety, effects to a National Register eligible historical site, interpretation of historical features, protection of resource values, and attractions to the area. Copies of the decision were mailed to approximately 70 individuals and groups. The project is proceeding on schedule.

#### **FIRE SEASON 1988:**

Because of the severity of the fire season, a special effort was made to keep local residents in the communities along the Rocky Mountain Front apprised of the situation. The "Up Front News" was periodically published to inform residents on the status of the prescribed fires and wildfires occurring in their vicinity. The publication was printed on July 27, August 2, August 17, daily from September 9-13, and again on November 10. These printings were hand-delivered to government offices and business establishments in most of the local communities along the Front. Most of the people contacted during the deliveries were appreciative of the information. As a result of the Canyon Creek and Gates Park Fires, the Forest Service prescribed fire policy will continue to remain an issue on the Forest.

#### **TIMBER SALE PROGRAM (TIMBER SALE EA APPEALS AND TSPIRS):**

Several timber sale decisions on the Jefferson Division of the Forest have been affected by recent appeal decisions.

The Mill-Lion Timber Sale on the Musselshell Ranger District was appealed by the Montana Wildlife Federation. The Regional Forester remanded the environmental assessment back to the Forest for additional disclosure of how clearcutting was determined to be the optimum harvest method to meet the area objectives. A site-specific diagnosis of alternative treatment needs for each stand considered in the design of the Mill-Lion Timber Sale will be prepared and a new decision will be rendered by the Forest Supervisor.

The American Wilderness Alliance appealed the District Ranger's decision on the Lone Tree road improvement and Mixes Baldy Timber Sale on the Judith Ranger District. The Forest Supervisor has affirmed the District Ranger's decision.

The American Wilderness Alliance has also appealed a decision on the Sheep Mountain Timber Sale on the Judith Ranger District. Because of the Chief's decision on the roadless issue (8/15/88) and the Regional Forester's decision on the Mill-Lion Timber Sale, this decision has been withdrawn. The Forest is currently working on the required evaluation.

Three appeals have been received on the South Fork Complex Timber Sales on the Judith Ranger District. The appeals were received from Dick Bucsis, Ben Steel, and the American Wilderness Alliance. Because of the Regional Forester's decision on the Mill-Lion Timber Sale, this decision has also been withdrawn. A site specific diagnosis of alternative treatment for each stand considered in the design of the South Fork Complex Timber Sales will be prepared and a new decision will be rendered by the Forest Supervisor.

#### **OTHER ISSUES:**

The Johnson Park/FLEX Northwest land exchange in the Little Belt Mountains has been appealed by three individuals: Jim Norgaard, Ronald D. Isackson, and Dennis Seyfert. These appeals are currently under consideration by the Regional Forester.

Management of the Badger-Two Medicine area remains sensitive with the Blackfeet people and Wilderness advocates. Protection of the lands continues to be a key issue with traditional Blackfeet practitioners.

Reissuance of oil and gas leases on the Forest is an upcoming issue for managers. Many of the previously issued leases expire beginning in 1991. Currently, no requests for reissuance of expired leases have been received by the Forest. Requests are anticipated within the next several years. A decision on the future status of leasing will be made after further NEPA analysis.

#### **I-3 Evaluate lands identified as not meeting physical or biological characteristics used in Initial allocation.**

**Frequency of Measurement:** 100 percent sample annually.

**Reporting Period:** Continuous.

**Variability Which Would Initiate Further Evaluation:** All changes will be evaluated annually.

The Forest is updating its timber stand inventory data base. As of the end of FY 1988, 350,208 acres of the Forest total of 1,843,397, or 19 percent has been updated.

Following is a summary by Ranger Districts:

Ranger District	Total National Forest	Inventoried
Rocky Mountain	776,259 acres	38,329 acres
Judith	362,841	135,529
Musselshell	267,415	58,771
Kings Hill	436,882	117,579
Total	1,843,397 acres	350,208 acres

This inventory program is scheduled for completion by the end of FY 1991. Project level environmental analysis completed in FY 1988 found no variation in allocation from the Forest Plan.

**I-4 Validation of employment and Income projections.**

**Frequency of Measurement:** 5-years (FY 1991).

**Reporting Period:** 5-years (FY 1991).

**Variability Which Would Initiate Further Evaluation:** More than plus or minus 20 percent of projected changes.

This is a 5-year frequency measurement and will be validated in FY 1991.

**The following tables compare the outputs, activities, and budgets with those projected in the Forest Plan.**

TABLE I  
COMPARISON OF OUTPUTS AND ACTIVITIES WITH THOSE PROJECTED IN THE FOREST PLAN FOR THE  
PLANNING PERIOD (1987-1996)

Projected Outputs and Activities by Time Period (Average Annual Units)

Output or Activity	Unit of Measure	First Decade	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Developed Use	M RVD	169	145	175								
Dispersed Use	M RVD	86	54	42								
Wilderness	M RVD	614	518	503								
Non-wilderness	M RVD											
Wildlife Habitat Imp	Acres	600	300	1400								
Fish Habitat Imp	Acres	5	2	0								
T&E Habitat Imp	Acres	100	0	0								
Wildlife Habitat Structures	Structures	10	2	0								
Fish Habitat Structures	Structures	25	16	19								
Permitted Graze Use	M AUM	71.1	71.0	72.3								
Range Improvement Nonstructural	Acres	1329	1999	2433								
Range Improvement Structural	Structures	40	20	18								
Range Resource Plans (Allotment Mgt Plans)	Plans	10	5	4								
Noxious Weed Control	Acres	300	772	-	-	-	-	-	-	-	-	-
Noxious Weed Control	Acres	600	-	616								
Soil Inventory	Acres	2000	0	0								
Minerals Mgmt	Cases	90	160	134	-	-	-	-	-	-	-	-
Mineral Mgmt	Cases	160	-	-								
Total Volume Offered	MM BF	14	11.8	16.0								
Silvicultural Exams	M Acres	15.5	30.6	33.9	-	-	-	-	-	-	-	-
Silvicultural Exams	M Acres	28.0	-	-								
Reforest-Approp	Acres	54	0	225								
Reforest-KV	Acres	270	1064	490								
Timber Stand Imp-Appropriation	Acres	200	563	568								
Timber Stand Imp-KV	Acres	0	125	12								
Landline Location	Miles	26	14	21								
Fuels Mgmt-BD	Acres	1470	1813	1201								
Fuels Mgmt-FFP	Acres	700	665	863								
Road Construction	Miles	9.0	3.7	2.9								
Road Reconstruct	Miles	24.0	29.7	20.3								
Total	Miles	33.0	33.4	23.2								
Trail Construction/Reconstruction	Miles	14.0	8.5	13.3								

TABLE II

**COMPARISON OF THE ACTUAL BUDGET RECEIVED IN FY 1988 WITH THE FOREST PLAN  
PROJECTED ANNUAL BUDGET:**

Funding Item	Budget Activity	Forest Plan Projected Budget FY88 Dollars Thousand \$	1988 Actual Budget FY88 Dollars Thousand \$
00	General Administration	\$1034	\$954
01	Fire	\$322	\$308
02	Fuels	\$32	\$36
03	Sales Prep/Admin	\$263	\$312
04	Timber Planning	\$158	\$131
05	Silvicultural Exams	\$207	\$245
06,07	Range	\$432	\$350
08	Minerals	\$475	\$223
09	Recreation	\$549	\$332
10	Wildlife and Fish	\$497	\$225
11	Soil, Air, Water	\$171	\$85
12	Facility Maintenance	\$120	\$36
13	Special Uses	\$54	\$29
14	Geometronics	\$12	\$0
15	Land Exchange	\$51	\$15
16	Landline Location	\$97	\$81
17	Road Maintenance	\$410	\$257
18	Trail Maintenance	\$300	\$184
19	Co-op Law Enforcement	\$44	\$38
20	Reforestation - Appropriated	\$61	\$87
21	TSI - Appropriated	\$30	\$90
23	Tree Improvement	\$8	\$8
26,28	KV (Trust Fund)	\$108	\$144
29	CWFS - Other (Trust Fund)	\$25	\$15
30	Timber Salv. Sales (Perm.Fund)	\$34	\$22
31	Brush Disposal (Perm. Fund)	\$25	\$57
32	Range Improvement	\$53	\$32
33	Recreation Construction	\$49	\$4
34	Facility Construction - FA&O	\$0	\$2
35	Engineering Construction Support	\$483	\$348
36	Const. - Capital Investment Roads	\$556	\$532
37	Trail Construction/Reconstruction	\$141	\$116
42	Land Status	\$41	\$0
43	Land Acquisition	\$166	\$5
	<b>Total Budget</b>	<b>\$7,008</b>	<b>\$5,303</b>
24,38	Timber Purchaser Credits	\$229	\$179
	<b>Total Cost</b>	<b>\$7,237</b>	<b>\$5,482</b>

#### IV. PLANNED ACTIONS

These planned action items have been identified in this report. They are in addition to the routine actions listed in Chapter V Implementation section of the Forest Plan.

##### Planned Action

- A. There is a need to increase awareness and commitment to monitoring range condition and trend (D-2).
- B. There is a need to place greater emphasis on range management planning (Allotment Management Plans) (D-4).
- C. There is a need to establish a process for obtaining an accurate timber harvest acre figure by fiscal year (E-6).
- D. There is a need to place greater emphasis on elimination of soil and water restoration backlog (F-6).
- E. There is a need to continue to validate costs and values used in the Forest Plan (I-1).

## V. RESEARCH NEEDS

The following additional research needs have been identified:

No additional research needs have been identified.

## VI. AMENDMENTS

The following amendments have been made to the Lewis and Clark National Forest Plan:

- A. Bob Marshall, Great Bear and Scapegoat Wildernesses Recreation Management Direction (Replaces Appendix U, Wilderness Recreation Opportunity Class Descriptions and Guidelines, April 1987) (Amendment Number 1).
- B. Wild and Scenic Rivers Study, March 13, 1989. (Amendment Number 2).
- C. Amendment Number 3.

VII. APPENDICES

APPENDIX A - Lewis and Clark National Forest Wilderness Monitoring Report (B-1)

VIII. LIST OF PREPARERS

The following individuals contributed to the development of the Monitoring and Evaluation Report for the Lewis and Clark National Forest for Fiscal Year 1988.

Name	Functional Resource Area
William Duryee	Staff Officer Engineer/Lands
James Eakland	Forester - Planning
Chuck Frey	Staff Officer Soil/Water/Air/Minerals
Sam Gilbert	Zone Timber (Silviculturist)
Donald Godtel	Wildlife Biologist
Cynthia Hamlett	Archaeologist
Valdon Hancock	Hydrologist
Ronald Meyers	Civil Engineer
Wayne Phillips	Ecologist
Jerry Reese	Staff Officer Range/Wildlife/Recreation
Donald Sasse	Wildlife Biologist
Dick Smith	Staff Officer Land Management Planning/Fire
Len Walch	Zone Fisheries Biologist
Jane Weber	Public Information Officer

In addition, the report was reviewed by the following individuals:

John Gorman	Forest Supervisor
Dwight Chambers	Acting Zone Staff Officer (Timber)
Paul Threlkeld	Staff Officer Administration
Robert Casey	District Ranger, Rocky Mountain Ranger District
Jerry Dombrowske	District Ranger, Judith Ranger District
Carl Fager	District Ranger, Musselshell Ranger District
Victor Standa	District Ranger, Kings Hill Ranger District

IX. APPROVAL

I have reviewed the annual Forest Plan Monitoring and Evaluation Report for Fiscal Year 1988 for the Lewis and Clark National Forest that was prepared by the Forest Interdisciplinary Team. I am satisfied that the Monitoring and Evaluation effort meets the intent of the Forest Plan (Chapter V), Forest Service Handbook 1909.12, and 36 CFR 219. I have also considered the recommendations of the Interdisciplinary and Management Teams on proposed changes to the Forest Plan and will process the necessary Amendment after appropriate public notification.

This report is approved:

  
JOHN D GORMAN  
Forest Supervisor

Date: April 17, 1989

APPENDIX A

LEWIS & CLARK NATIONAL FOREST  
WILDERNESS MONITORING REPORT (B-1)

Not a great deal of Monitoring was accomplished on the Rocky Mountain Ranger District in 1988, because of the Gates Park and Canyon Creek Fires: the employees ordinarily assigned to monitoring were either reassigned to fire duty or to patrolling area and trail closures in mid-July. After the fires were finally contained the employees were opening trails and replacing facilities damaged by the fires.

Fire closures and extreme areas of dense smoke may have changed use patterns to some extent during summer season - most of the outfitters, for instance, took their trips to the Flathead National Forest. Despite fire and other problems the areas that exceeded standards in 1987 did so again in 1988. The fires caused a very distinct change in the use patterns during the 1988 hunting season. The hunters refused to camp in or hunt within the burned area. No private hunting camps were found in the Scapegoat Wilderness. In the Sun River Area, the hunting camps were concentrated from Grouse Creek southward to the Elk Hill camp closure and on Windfall Creek.

A summary of the monitoring that was accomplished is as follows:

Intensive campsite inventories were completed on 20 sites. This is estimated to be 5 percent of total inventory of campsites.

**OPPORTUNITY CLASS IV, Trail Encounters Standard:** 80 percent probability of 5 or less encounters per day.

South Fork Sun River: 12 days monitored of which 0 days exceeded standard, or 100 percent time within standard.

West Fork Sun River: 10 days monitored of which 4 days exceeded standard, or 60 percent time within standard.

North Fork Sun River: 8 days monitored of which 2 days exceeded standard, or 75 percent time within standard.

Total for Opportunity Class IV: 20 times monitored, exceeded standard 6 times, or 70 percent of time within standard.

**CAMPSITE DENSITY Standard:** 80 percent probability of 3 other camps within sight or sound:

South Fork Sun: 12 days monitored, 4 days exceeded, 67 percent of time within standard.

West Fork Sun 10 days monitored, 2 days exceeded, 80 percent of time within standard.

North Fork Sun 8 days monitored, 1 day exceeded, 88 percent of time within standard.

Total for Opportunity Class IV: 20 days monitored, 6 days exceeded standard, or 70 percent of time within standard.

**IMPACTED SITES Per 640 Acres Standard:** no more than 3 moderately and one highly impacted per 640 acres.

Several areas reached standard: Bear Creek, Wind Fall Creek, Glenn Creek, and Reef Creek areas, but no area exceeded it.

**GRAZING Standard:** no more than 40 percent forage (key species) utilized. Standard was approached at the south end of Pretty Prairie, Reef Creek, Lower Indian Creek, and from Whiskey Creek to Glenn Creek on the North Fork Sun River.

**OPPORTUNITY CLASS III, Trail Encounters:** 80 percent probability of 3 encounters per day. Times monitored 4 standard; was not exceeded except on Chinese Wall which was monitored 6 days of which 4 days exceeded standard, or 33 percent of time within standard.

**CAMPSITE DENSITY Standard:** 80 percent probability of one or less camps within sight or sound; 6 times monitored; two times the Chinese Wall Area exceeded the standard, or 67 percent of time within standard.

**IMPACTED SITES** Per 640 acre area. Standard: 3 per 640 acres. Monitored 6 times. No area exceeded standard, but Upper Moose Creek and Upper West Fork of Sun approached the standard.

**GRAZING Standard:** No more than 40 percent forage utilized; monitored for grazing twice during season. All areas were within standard, but Upper Moose Creek and West Fork Sun River.

**OPPORTUNITY CLASS II** Areas were not monitored during summer.

**OPPORTUNITY CLASS I** Areas were not monitored. Funding and fire activity did not allow us to monitor the Birch Creek/Teton addition to the Bob Marshall.

**FALL 1988 INTENSIVE MONITORING** Much of the Rocky Mountain Ranger District Opportunity Class IV is within the Sun River Game Preserve and therefore receives little use.

#### **OPPORTUNITY CLASS IV**

**TRAIL ENCOUNTERS** North Fork Sun Trail #201, 12 days monitored of which 4 days exceeded standard, or 67 percent of the time area was within standard.

**CAMPSITE DENSITY** For five days campsite density of standard of 3 occupied campsites within sight or sound was exceeded at Cabin Creek, Grouse Creek, and Circle Creek. However, fire activity limited large areas for camping so these areas were used all season long.

**IMPACTED CAMPSITES** Per 640 acres.

**GRAZING** Grazing area on Circle Creek exceeded standard of 40 percent utilization on key species (fescue) being 44 percent utilized when season ended November 26, 1988. Windfall area also exceeded 40 percent utilization (on fescue) by the end of the hunting season.

#### **FALL**

**OPPORTUNITY CLASS III** Primarily in Scapegoat Wilderness and Upper North Fork Sun River. Monitored 2 days during fall. No standards were exceeded in any areas. It should be noted that most of the Class III areas were burned over and received little or no use.

**OPPORTUNITY CLASS II** Because of hunter concentration in Opportunity Class IV area and lack of funding Opportunity Class I and II area were not monitored.

**WILDERNESS MANAGEMENT ACCOMPLISHED BY ROCKY MOUNTAIN RANGER DISTRICT** Two-acre grass enclosure on Elk Hill. Fence was dismantled by Back Country Horsemen Association. Part of the material packed to K-L Ranch by Forest Service and boated out by outfitter.