



United States
Department of
Agriculture

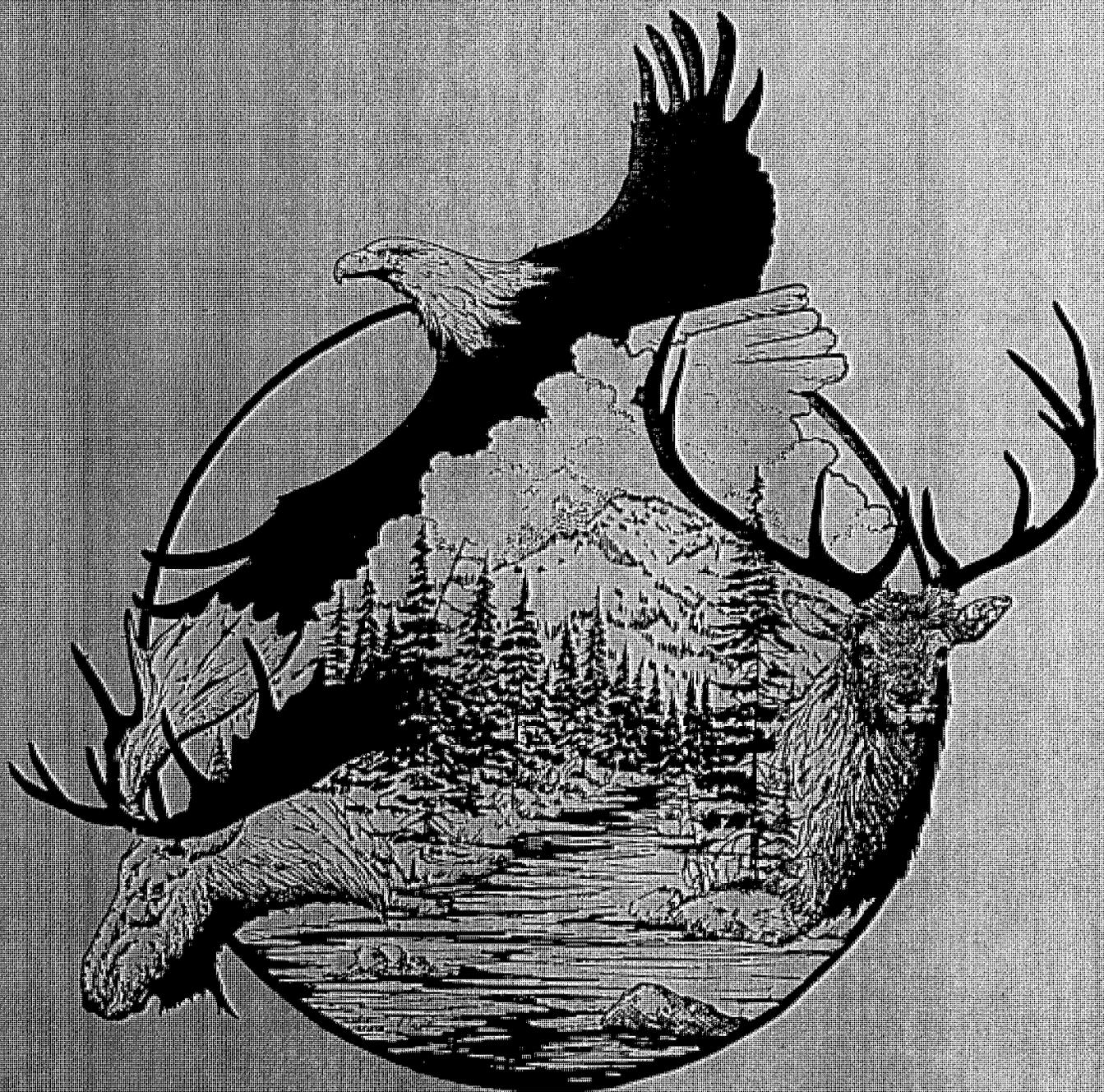
Clearwater National Forest

Monitoring & Evaluation Report



Forest Service
Northern Region

Fiscal Year 1989





United States
Department of
Agriculture

Forest
Service

Clearwater
National
Forest

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Date: June 6, 1990

Dear Forest User:

We appreciate your interest in the Clearwater National Forest Plan. This is our second Monitoring and Evaluation Report since release of the Plan in September 1987.

As with last year, we have a section on resource strategies and accomplishments as well as a section specific to the monitoring requirements. We recognize that there is duplication between the resource accomplishments and monitoring findings, and we anticipate melding those sections next year.

We use the resource strategies and accomplishments section to discuss our current thinking and recent developments in addition to just reporting on monitoring items. We feel this is valuable because change is occurring on the Forest at a more rapid pace than in the past. Much has evolved just since the end of the 1989 fiscal year, and some of this has been incorporated into our discussions.

Since last year's report, we have made some improvement in evaluating progress in implementing the Plan. We feel that both our section on strategies and the section on monitoring now have more information on how we plan to achieve Forest Plan objectives and findings on what has occurred so far. With two years of operating under the Plan we are building an information base; however, two years is still too little time to identify trends or do much in-depth evaluation of our progress. As another year unfolds, we hope to improve our evaluation of our progress in implementing the Plan and our evaluation of assumptions made in the Plan.

We welcome your comments and questions about the 1989 Monitoring and Evaluation Report. A response form is provided at the back of the report for your comments. We also invite you to call or visit any of the Forest contacts listed in Section VII.

Fred Trevey
Forest Supervisor



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Executive Summary

Introduction

The Clearwater National Forest Plan was approved by the R-1 Regional Forester on September 23, 1987. This report documents our second annual effort to monitor and evaluate this Plan.

Monitoring consists of three components:

- * Implementation - Did we do what the Plan said we would do?
- * Effectiveness - Did the management practices produce the desired effect?
- * Validation - Are the data, assumptions and coefficients used in development of the Forest Plan correct? If not, what changes should be made to meet Forest Plan goals and objectives?

Evaluation is the analysis and interpretation of monitoring results. That is, the significance of the answers to the above questions is determined. This process takes place with consideration given to the constantly changing social, political, and economic framework in which the Forest operates. As a result of this evaluation, changes to the Forest Plan may be recommended.

Accomplishments and Strategies

The Forest Plan established goals for each major resource. The accomplishments and strategies section reviews these goals and the strategies devised to achieve them. Accomplishments during 1989 with respect to the strategies are listed and compared with the 1988 accomplishments. Accomplishments for each resource area during 1989 are summarized below:

Cultural Resources

All proposed project areas on the Forest were examined to determine the existence of any significant cultural resources which they might hold. All previously inventoried sites which were monitored during 1989 were found to be in compliance with Forest Plan standards.

Fire

Rainfall returned to a more normal pattern during 1989. Consequently, the large conflagration fires which plagued the Forest during 1988 did not recur. There were 176 wildfires on the Forest during 1989. Although this number exceeds the 126 fires which occurred during 1988, the total acreage burned during 1989 was only 131 acres compared with 3,365 acres during 1988.

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Prescribed fire was used as a management tool to achieve hazard reduction, site preparation, and wildlife habitat improvement on 3,785 acres.

Fisheries

Approximately 90% of fisheries habitat improvement targets were completed during 1989. The cumulative shortfall in fisheries habitat improvement acreage during the first two years of Forest Plan implementation is now approximately 50%.

Approximately 70% of the backlog of anadromous fisheries habitat improvement projects have been completed. By contrast, only 10% of the resident fisheries habitat backlog improvement projects have been completed. Consequently, the primary emphasis on fisheries project backlog completion will be shifted to resident fisheries.

Minerals

The total number of minerals cases (primarily gold mining) on the Forest declined from 231 in 1988 to 174 during 1989. This decrease is related to two factors:

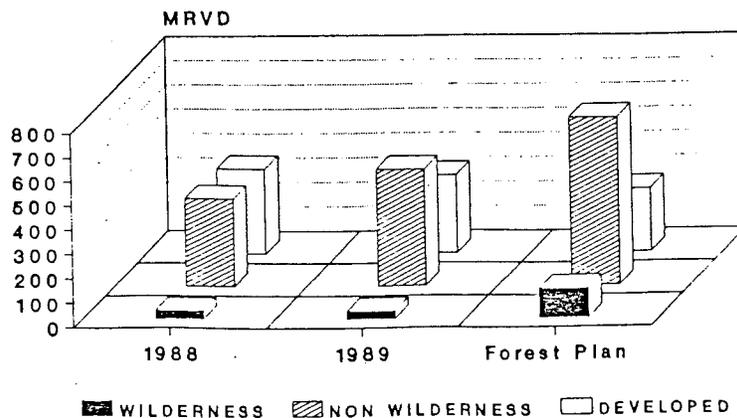
- a) A healthy local economy with low unemployment.
- b) A decline in the price of gold.

Range

Range allotments were monitored for use, condition, and determination of maintenance needs. Range conditions are "good." There were 13,000 animal unit months (AUM's) of forage used during 1989.

Recreation

In 1989 a total of about 795,000 recreational visitor days of use occurred on the Forest. This represents an 8% increase over the 1988 recreational use.



MRVD - Thousand Recreation Visitor Days
Forest Plan predicted decade average

Executive Summary

Cost share agreements were made with various governmental agencies and private organizations. The Forest Service's share in five projects funded through this method was about \$15,000, which was 31% of the total cost of the projects.

During 1989 Congress authorized the expenditure of excess timber sale receipts (totaling \$84,000) for other resource programs. Some of these funds were used for trail signs in the Selway-Bitterroot Wilderness, trail head signs outside the Wilderness, Lewis and Clark Trail interpretive signs, cross-country ski trail clearing and signing, and other recreational projects.

Research Natural Areas

There are 12 research natural areas (designated and proposed) on the Forest. Only four have been officially designated: Bull Run Creek, Lochsa River, Sneakfoot Meadows, and Steep Lakes.

During 1989 establishment reports were prepared for the following five areas: Aquarius, Bald Mountain, Chateau Falls, Dutch Creek, and Four-Bit Creek.

Designation of the final three, Fenn Mountain, Grave Peak and Rhodes Peak, is pending final field reviews and preparation of the field reports.

Riparian Areas

During 1989 the Forest developed a riparian guideline key. Its purpose is to identify riparian-dependent resources and indicate desired future condition on a site-specific basis. To achieve that condition, the Forest developed uneven-aged or multi-aged management direction for riparian areas adjacent to fish-bearing streams. The guidelines will provide for in-stream habitat diversity for fish and wildlife.

The direction for non-fish-bearing streams is to utilize uneven-aged management, multi-aged management, or an extended rotation of vegetative cover older than 180 years, to provide woody debris for channel structure, bank stability, and wildlife cover.

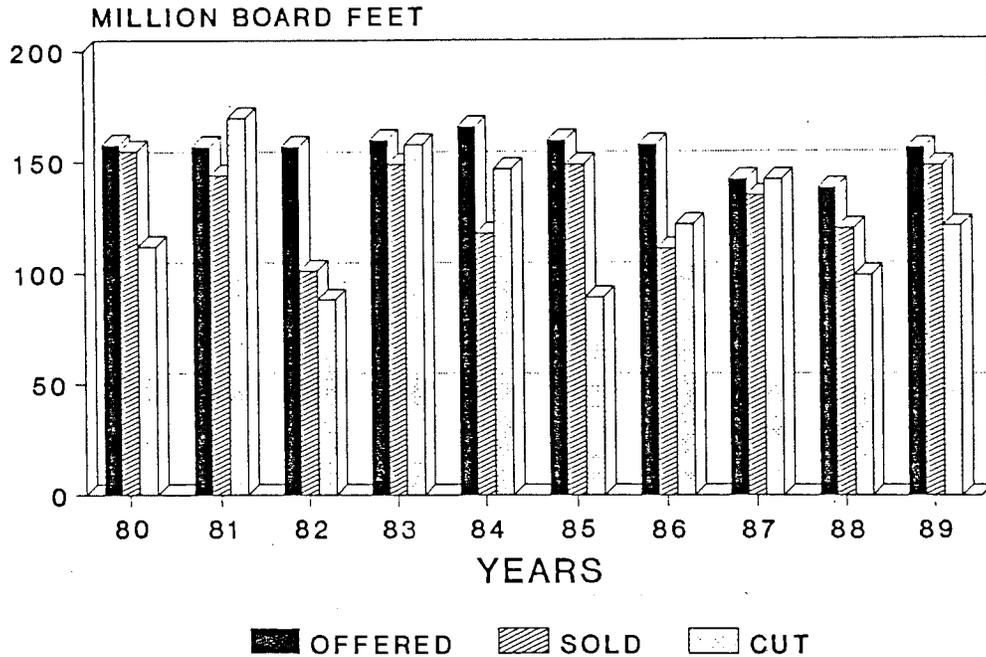
Timber

The Forest Plan calls for a harvest of up to 100 million board feet from the roaded portion of the Forest on an average annual basis over the planned decade. An additional 73 million board feet may come from the unroaded portion of the Forest. The Forest leadership team is committed to identifying methods to rehabilitate Forest resources and enhance timber productivity on the roaded portion of the Forest. There is a strong emphasis on analysis and development of unroaded portions of the Forest containing timber management areas.

In FY 89 the Forest offered a variety of products for sale which included sawlogs, pulp, cedar products, fuelwood, Christmas trees, fence posts, and bear grass leaves. The products were sold in 44 sales and 1,913 miscellaneous permits. Approximately 80% of the contracts were made for timber sales of less than five MMBF. The timber sales utilized a mix of logging systems: tractor, cable, skyline, and helicopter.

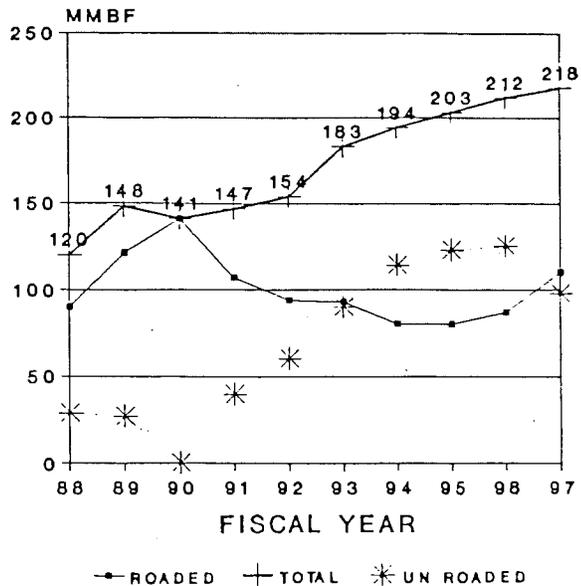
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There were increases in the volumes offered, sold and harvested compared with FY 88. The graph below displays the volumes of timber offered, sold, and harvested over the last decade.



The graph below shows the volume required from roaded and unroaded Forest lands in order to meet the allowable sale quantity (ASQ) of 1,730 million board feet over the decade covered by the Plan. This is the original strategy from the Forest Plan.

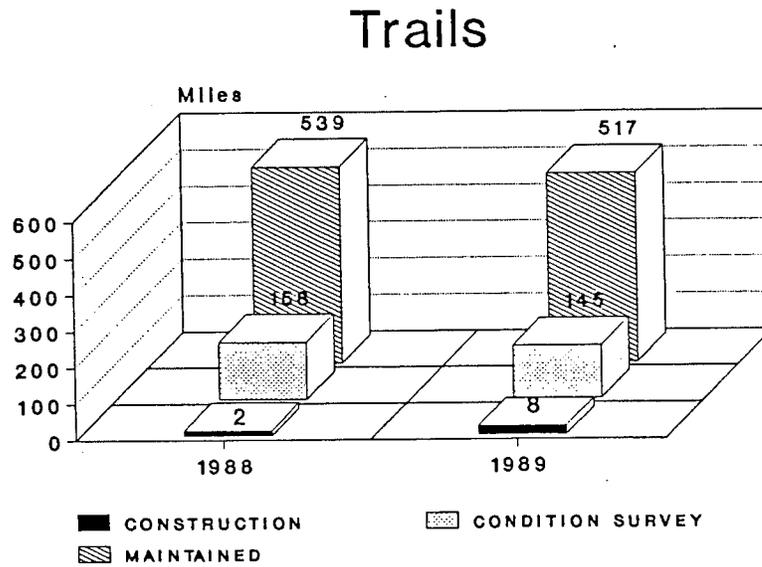
ASQ STRATEGY 1989



FY 88/89 ACTUAL SOLD

Trails

There are 1,578 miles of trail on the Clearwater National Forest. The condition of 19% of the trail mileage was assessed during the past two years. Trail accomplishments are displayed in the graph below.



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Visual Resources

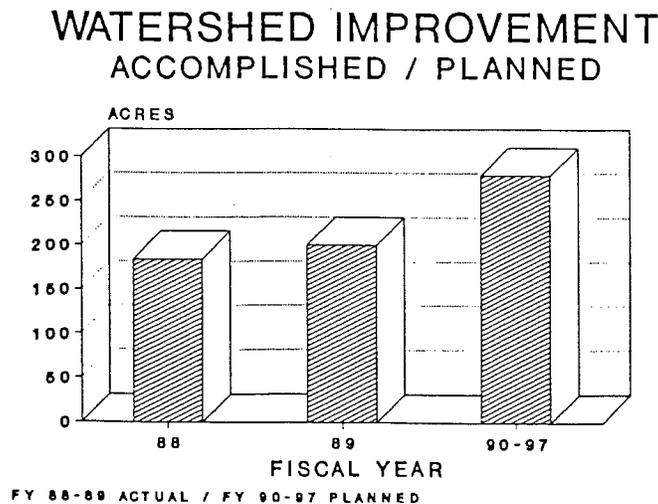
The Forest landscape architect served on interdisciplinary study teams and recommended various means of meeting visual quality objectives on 25 proposed management activities, primarily timber sales. Sixty-one timber sales were completed during 1989. All of these sales were reviewed and found to be in compliance with the appropriate visual quality objectives from the Forest Plan.

Water and Soil

Evaluation of the effects of proposed projects on the soil and water resources continued during 1989. Stations have been established to monitor water quality and quantity.

The State of Idaho Forest Practices Water Quality Management Plan requirements are being implemented. The plan requires an annual 10% random sample of Forest management activities for effectiveness of Best Management Practices (BMP's). The Forest will sample 10% of the timber sale harvest units and 100% of new road construction projects. Practices will be evaluated for application methods and effectiveness. Results of the analysis will be used to refine future practices and application.

There was an increase in the number of acres of watershed improvement over that accomplished last year. There is a planned increase in the number of future projects as the graph below illustrates.



Wild and Scenic Rivers

All project implementation was monitored to ensure compliance with measures to protect Wild and Scenic River systems. All previously acquired easements were managed to ensure compliance with Forest Plan standards. Construction of river access sites was started to provide adequate parking and sanitary facilities for whitewater users and fishermen.

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In settlement of an appeal to the Forest Plan, the Forest agreed to study Fish Creek, Hungery Creek, White Sands Creek and the Little North Fork of the Clearwater River for possible inclusion in the Wild and Scenic River system.

Wilderness

Observations indicate that recreational use of the Mallard-Larkins Pioneer Area and the Great Burn proposed Wilderness area is increasing significantly, particularly during the big-game hunting season. There was a significant decline in big-game hunting use of the Selway-Bitterroot Wilderness area due to the shortened length of the hunting season in big-game hunting unit #12.

The Selway-Bitterroot management plan, which utilizes the "limits of acceptable change" concept, is nearing completion. A draft plan should be ready for public review in June 1990.

Wildlife

Competing vegetation was slashed and burned to improve approximately 500 acres of big-game winter range during 1989. A combination of logging and prescribed fire was used to improve an additional 340 acres. Vegetative response is being monitored and evaluated on these improvement sites.

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Monitoring Report

Forest Plan management activities were monitored and evaluated as outlined in figure IV-3 of the Forest Plan. The results of monitoring and evaluation have been summarized and are discussed in Section III of the Monitoring Report. The following table lists the monitoring items and reporting periods required by the Plan. Interested readers should see Section III for specific information.

Forest Plan Monitoring Requirements - Action Plan

Item No.	Action, Effect, or Resources to be Measured	Reporting Time
1	Quantitative Estimate of Performance Outputs or Services	Annual
2	Wide Spectrum of Recreation Opportunities	5 years
3	Visual Quality Objectives	25% sample every 5 years
4	Protection and Condition of Cultural Resource Sites	25% sample annually
5	Wilderness	Semi-annual
6	Livestock Forage Available, Range in Good Condition per Established Allotments	5 years
7	Provision for Plant and Animal Diversity	5 years
8	Water Quality and Stream Condition for Fisheries and Non-fisheries Beneficial Uses	Annual summaries, 5-yr program report coord w/fish rpts
9	Best Management Practice Applications	Annual samples/ 5-year report
10	Riparian Area Condition	Annual samples/ 5-year report
11	Site Productivity	Annual samples/ 5-year report
12	Land Ownership Adjustments	Annual

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Forest Plan Monitoring Requirements - Action Plan (continued)

Item No.	Action, Effect, or Resources to be Measured	Reporting Time
13	Miles of Road Open/Closed and Road Densities	Annual samples/ 5-year report
14	Off-road Vehicle Use Impacts	Annual sample/ 5-year report
15	Minerals Prospecting and Development	5 years
16	Trail Management	5 years
17	Document Cost of Implementation Compared to Plan Cost	Annual
18	Harvested Land Restocked Within 5 Years	5-year minimum
19	Unsuitable Timberlands Examined to Determine If They Have Become Suitable	10-year minimum
20	Validate Maximum Size Limits for Harvest Areas	5 years
21	Insect and Disease Organisms Status as a Result of Activities	5 years
22	Effects of National Forest Management on Adjacent Land and Communities	Annual
23	Effects of Other Government Agency Activities on National Forest	5 years
24	Research needs	5 years
	Population Trends of Indicator Species	
25	Elk Winter/Summer Range	Annual sample/ 5-year report
26	Moose	5 years
27	White-tailed Deer	5 years
28	Belted Kingfisher	5 years

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Forest Plan Monitoring Requirements - Action Plan (continued)

Item No.	Action, Effect, or Resources to be Measured	Reporting Time
29	Pileated Woodpecker and Goshawk	5 years
30	Pine Martin	5 years
31	Anadromous Fish Indicators	5 years
32	Resident Fish Indicators	5 years
	Population Trend of T & E Species	
33	Gray Wolf	5 years
34	Bald Eagle	5 years
35	Grizzly Bear	5 years
36	Minerals Resource Availability	5 years

The All Resources Reporting System

The Clearwater National Forest is breaking new ground with its All Resources Reporting System (ARRS). ARRS is a way for the Forest to display quantifiable benefits and costs of the entire Forest management program.

Three ARRS tables have been developed to provide you with an overview of the Forest's financial, economic and socio-economic effectiveness during a fiscal year. The 1988 ARRS report was the Clearwater's contribution to the initial ARRS testing effort. A national system will be developed and tested in FY 1990. For 1989, the Forest has produced two of the three tables which were included in last year's report.

Table 1--The Financial Report--is the financial statement of the Forest. Revenues (sources of funds) and costs (applications of funds) are reported.

The Clearwater did not compile a financial report for 1989. The reporting format and accounting codes used in the financial report were substantially changed following review of the 1988 national testing effort. These changes will be reflected in the financial report for 1990 which will appear in the 1990 report.

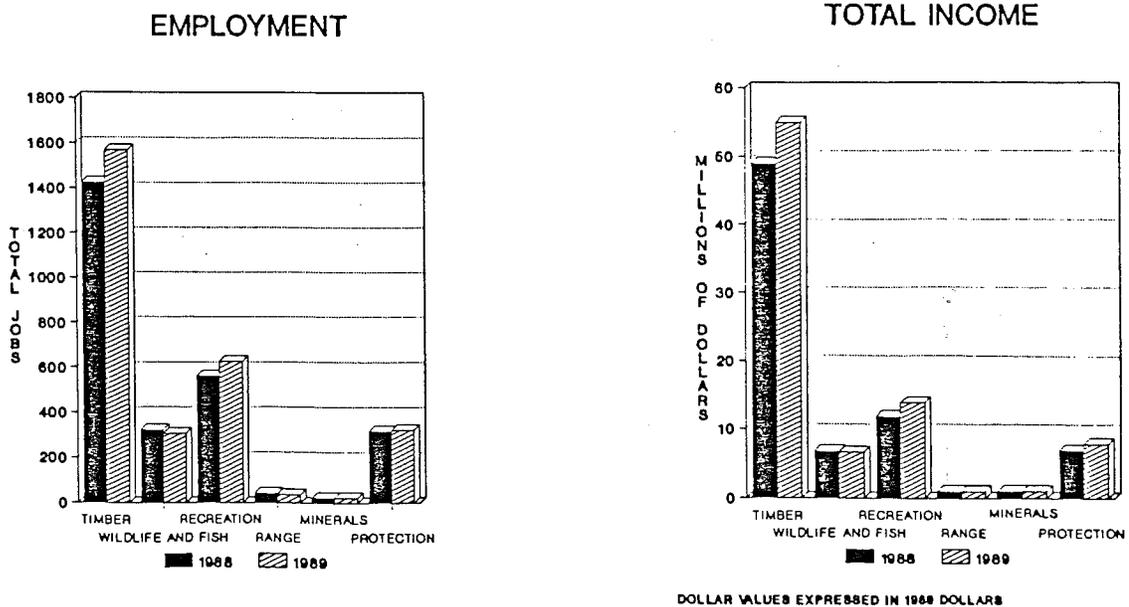
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Table 2--The Economic Report-- is an economic analysis of the benefits and costs of long-term investments made by the Forest during 1989. The discounted costs and benefits associated with each affected resource over the useful lives of the investments are shown.

The total net effects resulting from investments made in 1989 are expected to be about \$15.4 million. Total costs incurred to generate these effects will be about \$12.0 million. Thus the present net value of present and future effects accruing to long-term investments initiated during 1989 is about \$3.4 million.

Table 3--Employment, Income and Program Level Report-- provides information on employment, income and other socio-economic benefits of 1989 Forest management with respect to local communities. Nearly 2,900 jobs and approximately \$85 million of income were associated with the Clearwater's management programs in the communities located within the large six-county area influenced by the Forest.

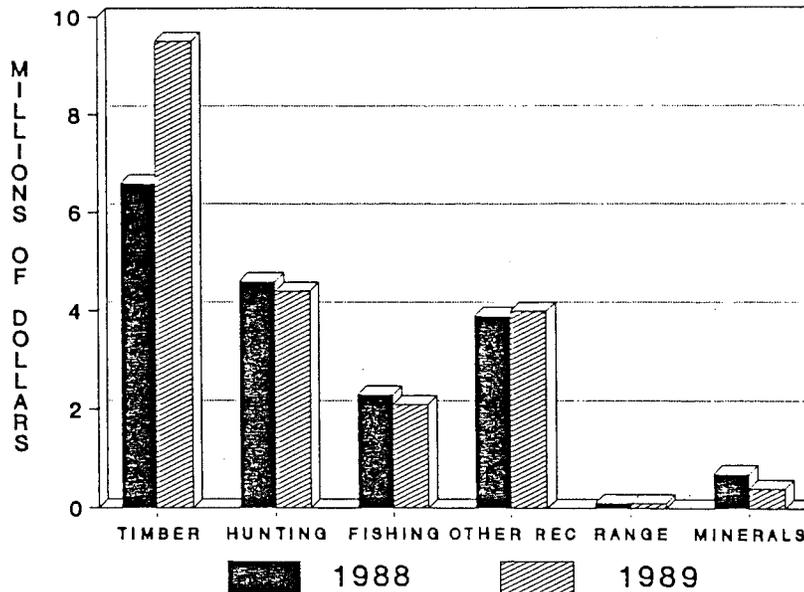
Graphical comparisons of employment and income values for 1988 and 1989, by resource program, appear below:



The value of all "products" produced on the Forest during 1989 was approximately \$21.5 million. This represents an increase of over 16% compared with 1988. Most of this healthy increase was due to a resurgence in timber harvesting during the year. The following graph illustrates the contribution of each major resource area to this total value (gross forest product).

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GROSS FOREST PRODUCT



Appeals

There were 28 appeals to the Clearwater National Forest Plan. This number was reduced to 15 through consolidation or withdrawal following meetings with all appellants. Two of these appeals were settled and one withdrawn during 1989. This leaves a total of 12 appeals unresolved at the end of 1989.

The Forest received three new appeals of individual projects during 1989. All of these were appeals of timber sale proposals. Two of these appeals were later withdrawn by the appellants. In one instance the decision was withdrawn by the Forest.

Planned Actions

Sixteen proposed changes to the Forest Plan were made in the Monitoring and Evaluation Report for 1988. It is anticipated that these proposed changes will be incorporated into amendments to the Forest Plan during fiscal years 1990 and 1991.

These proposed changes are intended to clarify goals, objectives, standards and definitions; revise standards; and report budget changes. See section VI for details.

None of the proposed changes affects the decisions made in the Forest Plan, including ASQ and timber suitability. They will not change any of the estimated management practices, outputs, or projected effects found in the Plan.

I. Introduction

Overview

The Clearwater National Forest Plan was approved by the Regional Forester on September 23, 1987. Four decisions were made in the Forest Plan: it stratified the land into management areas (including lands recommended for Wilderness classification); set standards and guidelines; established the maximum ASQ (allowable sale quantity) of timber; and determined monitoring requirements. Now that we are implementing the Plan, we are continually verifying and updating our data and assumptions. We have now been operating with the Plan for two years. This document communicates what we have found so far and, specifically, what occurred in fiscal year 1989 (October 1, 1988 through September 30, 1989).

This report is our attempt to communicate how we are doing. It documents the information collected for the purpose of conducting an informed "five-year review" of the Forest Plan in 1993 as required by NFMA (the National Forest Management Act). It also helps us begin validating the estimates made in the Forest Plan.

In addition to reporting on the monitoring items from chapter IV of the Forest Plan, we want to use this opportunity to let you know about general resource activities that have occurred in the last year and how they contribute to Forest Plan implementation. The second portion of this introduction discusses general changes in management related to Forest Plan implementation.

Section II, resource strategies and accomplishments, was developed to highlight our accomplishments as well as the strategies we are using to accomplish the goals set forth in the Forest Plan. These strategies enable the Forest leadership team to identify priority jobs under constrained budgets and to explore the trade-offs associated with implementing various strategy levels. The strategies are updated based upon actual accomplishments. This section will also highlight new developments or trends we see occurring in specific resource areas.

Section III focuses on monitoring requirements. For the most part, these will be reported at the five-year review. However, we see the need to begin collecting information early in preparation for the review. Where information has been collected, it is displayed. Where information has not yet been collected, our intentions are documented.

Section IV highlights ARRS, the All Resources Reporting System. The Clearwater National Forest is proud to be a test Forest for this project. ARRS is being developed and tested by the Forest Service to provide a method of communicating financial information related to Forest programs; estimate the long-term effects resulting from Forest management; report current year accomplishments; estimate the local employment and income effects associated with Forest management; provide early identification of problem areas; display trends in management activity and output levels. Since ARRS represents a component of Forest Plan monitoring, we have included the results of this reporting system in our report.

In **Section V**, we have listed all Forest Plan and project level appeals, the status of each, and the major issues of each appeal.

Section VI identifies conclusions drawn from this year's report and identifies recommended changes which could result in amendments to the Forest Plan. It is important to note that while we have

Introduction

made some conclusions in Section VI, much of what we learn through monitoring comes as a result of monitoring over a greater period of time. A one-year monitoring report does not indicate trends. As monitoring continues during the next few years, trends will be established which will provide invaluable information for shaping future management of the Forest.

Integrated Implementation of the Forest Plan

The last two years have been both exciting and challenging to us on the Clearwater. The signing of the Forest Plan in September 1987 provided us with a blueprint for the way we want to do business on the Forest. Unlike past resource plans, the Forest Plan integrated resource objectives. In order to aggressively implement the Forest Plan it has been desirable for us to change the way we do business internally. The Clearwater Forest and Region 1 of the Forest Service have focused on new methods to integrate management of all resource programs.

As with most Forest Plans, the Clearwater's is very ambitious, with proposed funding levels greater than existing budgets. To help us focus on priorities, the Forest utilized a new program and budget development process in 1989. The objectives of the new program were to (1) adopt a strategy for achieving the intent of the Plan over the balance of the decade; (2) concentrate on the work to be accomplished to reach Forest Plan goals, objectives and standards instead of the functional dollars allocated in the budget process; and (3) increase the Forest management team's understanding of the "whole" program to promote an integrated program.

The resource strategies mentioned above and displayed in Section II were a necessity for the program and budget development process. It became evident in both internal and external discussions that we need to be able to display how we intend to implement the Forest Plan. The strategies give us this communication tool and are dynamic in nature so that at anytime we know where we are in implementing the Plan.

This new program development process isn't refined yet. On the down side it was cumbersome and sometimes frustrating. On the positive side we were able to focus more attention on achieving Forest Plan goals with a more balanced program. We continue to struggle with refining the program development process, feeling the benefits outweigh the costs.

Also as part of the new process, one of our first steps was to evaluate FY 88 accomplishments. The Forest management team identified several areas where we need to strengthen the program to meet Forest Plan objectives. To address these areas that need additional attention, the management team set priorities for "emphasis items." The emphasis items identify goals and strategies that didn't necessarily fit into the traditional target and funding packages, but, we feel, are necessary to fully implement the Plan. Our objective was to take advantage of any flexibility in the 1989 budget to address these items.

The 1989 program included the following emphasis items:

- Make significant progress in the analysis of unroaded portions of the Forest.
- Respond to national initiatives: with the Recreation Strategy, emphasizing public service and improving facilities; with the Rise to the Future campaign, improving anadromous fish resources.
- Provide for monitoring of projects to ensure they meet laws and Forest Plan objectives.
- Increase the emphasis on wildlife habitat improvement.
- Develop a riparian management philosophy that addresses the silvicultural methods used to achieve the desired objectives for riparian areas.

Progress on the emphasis items varied. Each item is discussed in the accomplishments and strategies section.

During the summer of 1989 the Forest Service Region 1 office conducted an integrated resource review on the Forest. This is the first time the review process has been used to assess the progress of implementing Forest Plans in the Region. The review was also different from past reviews in that it evaluated the implementation of all resource programs together. Although the focus of past general management reviews has always been overall management effectiveness, the approval of Forest Plans introduced a stronger focus on the integration of resource programs.

The results? It was the first time that we were able to compare Forest management against a specific Forest-wide Plan. We learned in particular that our public participation efforts are working, but there is no room for letting down. Communication and participation to stay in tune with the national forest "customer" is an ever critical component of Forest management.

We learned that we have to continue to strengthen our compliance with the National Environmental Policy Act. This is the legislation that lays out the process of environmental analysis and disclosure of environmental effects of timber sales, wildlife habitat improvement, road construction, etc. We have made excellent progress this last year, training to improve our quality, streamlining to improve our efficiency.

The review also found that we needed to improve our process for monitoring the Plan. The report stated that the monitoring process is not understood by employees and monitoring plans are not in place for all resources. However, it was also acknowledged that the Forest is aware of this shortcoming and is defining responsibilities and strategies for the monitoring process.

We learned that our efforts to correlate the annual budget and programming process with the Forest Plan are paying dividends. It is becoming much easier to communicate the Forest's program of work in relation to the Plan. It is also much easier to set objectives and negotiate for specific programs for future years. Overall the review was helpful in evaluating our progress in implementing the Forest Plan.

Introduction

In addition to incorporating an integrated approach in our management processes, we have developed a philosophy for implementing an integrated approach on roaded areas that have been intensively managed for timber harvest in the past. We call it Integrated Intensive Management of the Roaded Country. This includes increased inventory of watershed and fisheries rehabilitation needs as well as wildlife, watershed, fisheries and tree health improvement projects and increased small sales programs. Projects underway to achieve this objective include road surfacing, constructing sediment traps, mulching and seeding road cuts, placing logs or rocks in streams for fish habitat and other small and large projects.

The 1989 Monitoring and Evaluation Report communicates what we are doing and what we have done to implement the Clearwater National Forest Plan, specifically in fiscal year 1989. The report examines trends that are becoming apparent as we gather data and revise assumptions. It tells how we are meeting the monitoring requirements defined in the Plan and discusses the All Resources Reporting System, a system designed to show benefits and costs of the Forest management program. We offer you our information and findings in the pages that follow.

II. Accomplishments and Strategies

Cultural Resources

Goal: Manage and interpret cultural resources in accordance with federal laws and Forest Service direction. Ensure that Indian tribal rights, as retained in treaties and other agreements with the tribes, are protected. Manage the Lolo Trail system to protect cultural resource values while enhancing public use and awareness. Nominate significant cultural sites to the National Register of Historic Places.



Strategy: Examine and conduct inventories on all proposed project areas, document findings and provide direction for project implementation to ensure compliance with state and federal regulations. Improve relations and communication with the Nez Perce Tribe to facilitate teamwork and cooperation. Identify and enhance values on the Lolo Trail system. Work with the public to improve values and increase awareness of cultural resources. Continue to assess cultural sites for nomination to the National Register of Historic Places.

Accomplishments: All proposed project areas were examined. Identified sites were documented and necessary feedback provided to facilitate project implementation.

Cultural Resource Surveys

Year	Project Areas	Acres Surveyed	Number of Sites Identified
1988	31	9,435	36
1989	21	11,000	34

In addition to the new sites listed in the table above, a total of 75 previously recorded sites was monitored for site condition and found to be in compliance. Archaeological excavation testing was completed at the Lenore Seed Orchard site prior to project implementation.

Accomplishments and Strategies

Meetings with the Nez Perce Tribe were conducted frequently. We contracted with the Tribe to conduct FY 89 cultural resource surveys on the Pierce and North Fork Ranger Districts and the inventory and survey of the Lenore Seed Orchard.

The public is volunteering time and materials for the restoration of old cabins, lookouts, other historic structures and the clearing and maintenance of historic trails. Many people have volunteered to work on archaeological excavations. There is an increasing demand for the interpretation of significant cultural resource sites within the Forest.

Public groups and individuals have entered into agreements with the Forest to supply labor and materials for the restoration of cabins at Cold Springs, Fish Lake, and Liz Butte. The restorations will be completed in 1990.

Sign location designations for the Lewis and Clark Trail and text for interpretations of several historic logging sites on the Palouse Ranger District were completed in 1989. The interpretive signs will be installed in 1990.

With the help of volunteers and other groups, the Take Pride in America Program was responsible for opening 5.5 miles of the Ne-Mee-Poo National Historic Trail.

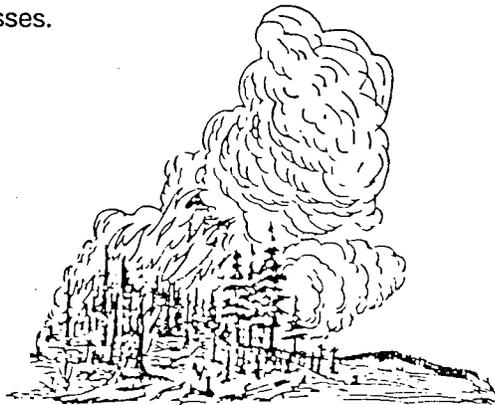
Living History Days at the Lochsa Historical Ranger Station provided the public with a weekend of demonstrations showing skills and tools in use at the turn of the century.

Constrained funding levels and management priorities have precluded any further nominations of sites to the National Register of Historic Places.

Fire

Goal: Prevent, suppress and manage fire commensurate with resource values to be protected while recognizing the role of fire in ecological processes.

Strategy: Annually prepare and implement a fire management action plan that will provide specific direction for accomplishing fire management objectives. Manage fires according to that plan. Analyze organizational needs using National Fire Management Analysis System (NFMAS) for the most cost efficient suppression methods. Staff to indicated levels if funding



Accomplishments and Strategies

allows. Develop an interagency fire management dispatch office. Evaluate fire protection boundaries to promote economic and efficient fire suppression. Continue to use prescribed fire as a tool as needed in management activities, such as fuel hazard reduction, site preparation, and habitat improvement.

Accomplishments: The fire management action plan was completed and implemented. Fires were initially attacked and suppressed in accordance with the contain, control, confine and suppression strategies identified in the action plan. The organization levels recommended by NFMAS has not been met due to reduced funding levels. The effects of that smaller organization on Forest resources will continue to be monitored. To date lower staffing levels have reduced prevention efforts, public education and initial attack levels. There has been an increased use of off-Forest and non-fire Forest Service personnel in suppression efforts. Direct effects on resources have not been identified.

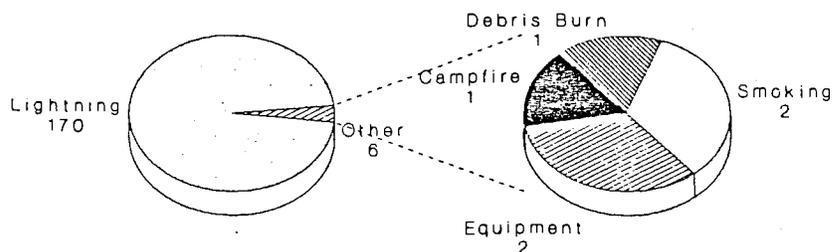
Initial Attack and Suppression

Year	Control	Contain	Confine	Wilderness Prescribed Natural Fire	Total
1980-89 Ave	105	0	6	4	116
1988	109	1	14	2	126
1989	167	0	9	0	176

The Forest worked with the Idaho Department of Lands and CPTPA (Clearwater Potlatch Timber Protective Association) fire organizations to develop radio systems for an interagency dispatch office and sponsored interagency training in the national Incident Command System (ICS) to facilitate communications among organizations.

The Forest developed and implemented the automated lightning activity detection system. That system displays lightning strike location by latitude and longitude and plots each strike on a map.

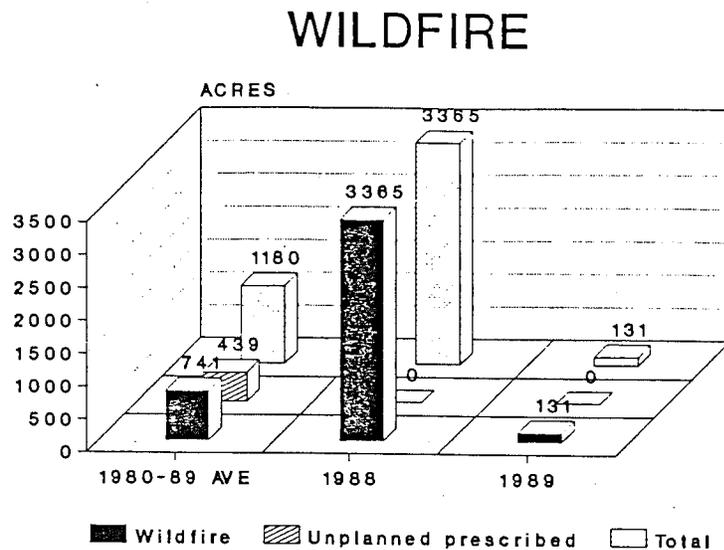
FIRE CAUSES



Accomplishments and Strategies

There were 176 fires in 1989. Although there were a greater number of fires than during the previous two drought seasons, the fire size classes were in line with historical averages. There were no large fires during 1989, unlike the previous two fire seasons.

Prescribed fire was used as a management tool in hazard reduction, site preparation and wildlife habitat improvement on a total of 3,785 acres.



Fisheries

Goal: To manage the Forest's fisheries streams to achieve optimum levels of fish production by rehabilitating and improving streams on developed areas of the Forest and maintaining the high quality existing habitat.

Strategy: Provide management direction during the planning and implementation of activities. Identify and implement rehabilitation projects on the Forest. Since 70% of the "backlog" improvement projects for anadromous fish have been completed and only 10% of the "backlog" improvement projects for non-anadromous fish have been completed, primary emphasis in fish habitat improvement will be shifted to non-anadromous projects during the period 1989-1997. The strategy will allocate 60% of the habitat improvement targets to non-anadromous projects. The remaining 40% will be allocated to anadromous fish projects.

Emphasis in habitat improvement will be directed towards the sensitive species of westslope cutthroat trout, bull trout, steelhead trout and spring Chinook salmon.



Accomplishments and Strategies

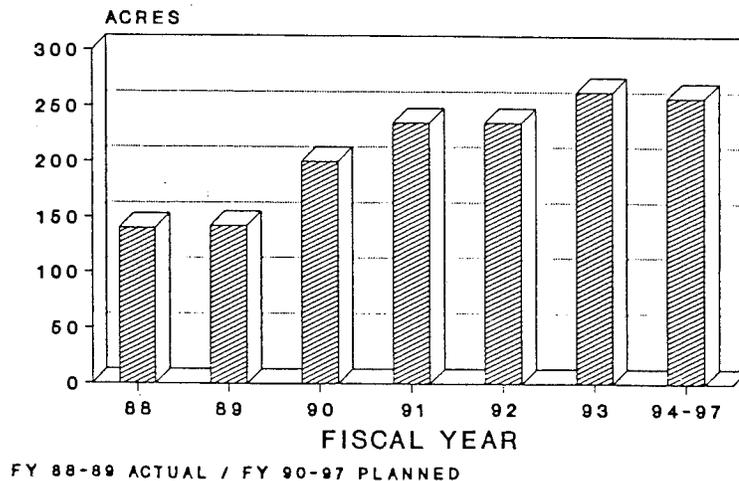
The Forest will focus the challenge cost share program toward anadromous fish habitat improvement associated with the Bonneville Power Administration and the Northwest Power Act. We will develop cost share partners and projects through 1995.

The Forest fisheries biologist will implement the Rise To The Future program by developing district fisheries expertise, emphasizing district fisheries programs and developing sound, high profile projects. Information about the projects and the results will be made available to interested user groups and the general public.

The Forest will continue fisheries/recreation cooperation by identifying, designing and implementing projects that feature cooperative funding and involvement associated with the recreation and special fisheries initiatives.

Accomplishments: Management direction was provided for all management activities. Rehabilitation projects are continually identified. In 1989, 127 acres and 151 structures of fisheries habitat improvement were accomplished. This accomplishment constituted 89% of the acreage target (142 acres), and 88% of the structure target (172 structures) in FY 89. In tracking achievement of Forest Plan targets, the cumulative shortfall after two years is 213 acres, or 49% of the fiscal year target. The Forest's ability to accomplish this work will depend primarily upon funding.

FISH HABITAT IMPROVEMENT ACCOMPLISHED / PLANNED



Major instream improvement projects were completed in Elk, Bingo, and Isabella Creeks. Habitat quantity and quality for brook trout, cutthroat trout, and kokanee salmon were increased with the addition of log weirs, large woody debris, and boulders.

Accomplishments and Strategies

For summer steelhead and Chinook salmon, fish passage to key tributaries in the Lochsa River was improved in Spruce and Fish Creeks by the removal of migration barriers. Pierce Ranger District personnel and crews from the Youth Conservation Corps improved habitat for salmon and steelhead in Lolo Creek by constructing 30 winter habitat units. A large sediment trap (log weir) was constructed in the mainstream of Pete King Creek. Maintenance of 19 habitat structures was completed in Lolo Creek. Seven sediment traps in the Pete King drainage were cleaned out.

Minerals

Goal: Facilitate the orderly exploration, development and production of mineral and energy resources and ensure that activities are conducted in an environmentally sound manner.

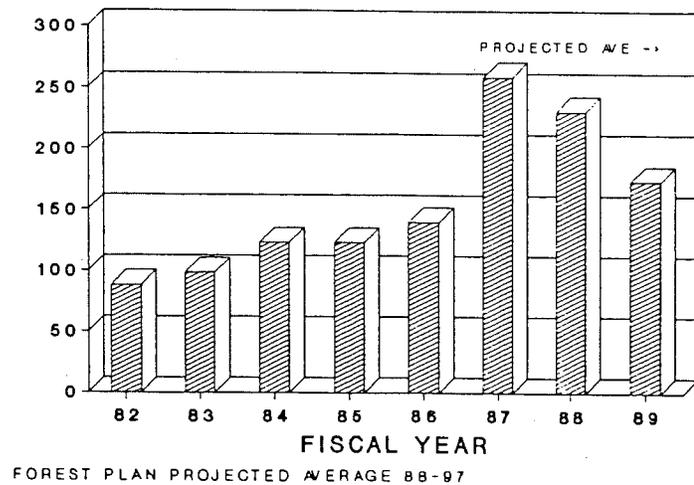
Strategy: Process all notices of intent, operating plans, exploration permits and lease applications in a timely manner. Monitor to ensure compliance with state and federal regulations. Develop adequate reclamation plans to return disturbed land to other productive uses and monitor to ensure that reclamation meets specified standards. Maintain close coordination with local mining groups as well as applicable state and federal agencies.

Accomplishments: A total of 174 mineral cases was processed during 1989. This is fewer than the 231 processed in 1988 and significantly fewer than the 265 average annual number of cases anticipated in the Forest Plan. The decrease in minerals cases on the Forest seems to be related to an increase in local employment. When unemployment is high, there is more mining activity.

The only significant locatable mineral mined from the Forest is placer gold. Miners are not required to report their take to the Forest Service. However, the Forest minerals geologist has estimated that approximately 150 troy ounces of gold were mined from the Forest during 1989. The value of this amount of gold would be approximately \$57,000 at the 1989 average price of \$380/oz.

The Forest received one application for a limestone lease. This application was denied because the lands involved are currently part of a land exchange proposal. There are five applications for oil and

MINERAL CASES



Accomplishments and Strategies

gas leases that are pending from previous years. Action was taken in 1989 to contact the applicant to either proceed or close the cases.

During 1989 the Forest provided mineral materials for road surfacing to county and state agencies, for Forest Service roads, and for use in private industry. For 1989, engineering records indicate that a total of 78,305 cubic yards of material was provided from Forest lands with the value of this resource totaling \$391,525.

During 1989 there were two mineral reports completed which reviewed areas to be withdrawn from mineral exploration. This leaves a total of four mineral withdrawal review reports to be completed prior to the target date in fiscal year 1991. There was also one report evaluating minerals potential completed for an approximate 3,000 acre land exchange.

Range

Goal: To manage livestock grazing land consistent with the protection and management of other resources.

Strategy: Complete range environmental studies analyzing present management and prepare allotment management plans for all active allotments. Monitor the condition of range allotments annually.

Accomplishments: Allotment management plans have been prepared. Range allotments were monitored for use, possible resource damage, and maintenance needs. Range conditions are good. Some minor permit modifications were necessary. There are currently 65 permittees using the available range on the Forest. There were 1,687 cattle and 2,506 horses permitted to graze on the Forest. This amounted to 13,000 Animal Unit Months (AUM's).

Recreation

Goal: Provide a range of quality outdoor recreational opportunities within a forest environment that will meet the public needs now and in the future. Provide opportunities over a broad spectrum of dispersed activities and developed facilities.

Strategy: Develop methods of measuring and recording public use patterns. Analyze the information to determine current and future needs. Monitor development and closure of road systems and determine effect on recreational opportunities. Provide easy access to complete information on



Accomplishments and Strategies

available opportunities. Use the Limits of Acceptable Change (LAC) process to analyze dispersed recreation resources. Identify and monitor public reactions and expectations by analyzing feedback and use trends.

Monitor Recreational Opportunity Spectrum (ROS) to determine changes in the range and quality of recreation opportunities.

Conduct facility condition inventories, upgrade campgrounds to meet the identified demand, and coordinate visitor information service to coincide with visitor use.

Accomplishments: Updates to the Recreation Information Management data base and new data base systems have been developed to record and analyze facility use and projected future needs. Registration at fee use areas and visual observation of use levels are methods being used to accumulate data. In 1989 there was a total of 794,900 recreational visitor days (795 MRVD's) on the Forest compared with 738 MRVD's in 1988. The Forest Plan projects a decade average of 1,068 MVRD's. Categorical breakdown of the figures is displayed below.

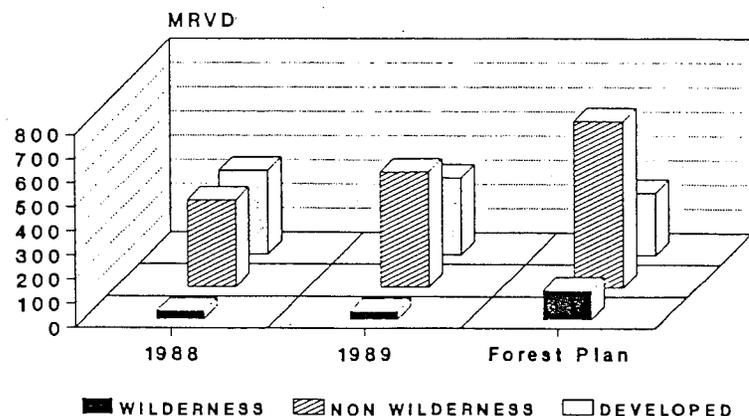
The difference between actual MRVD's and Forest Plan projections is being evaluated. Several factors are being considered. It is possible that current measurement systems are inadequate; they are being updated. The Forest may not be offering the services expected. The original projections may be inaccurate, and/or use may increase toward the end of the decade to increase figures to the projected average. All of these factors will continue to be assessed.

Two significant dispersed user groups have been identified on the Clearwater.

They are summer users (mostly fishing based) and autumn hunters. The greatest pressure is presently occurring in the autumn. Conflicts between hunters have arisen, but most observers believe that land capacity for supporting hunters has not yet been reached.

Limits of Acceptable Change planning is being conducted for the Selway-Bitterroot Wilderness as a four-Forest effort. When the Selway-Bitterroot LAC study is complete, planning will begin for other areas of the Forest, incorporating information learned in the Selway-Bitterroot Wilderness LAC process.

Recreation Use Thousand Recreation Visitor Days



MRVD = Thousand Recreation Visitor Days
Forest Plan predicted decade average

Accomplishments and Strategies

Changes in the Recreational Opportunity Spectrum (ROS) have been monitored. The well balanced range of opportunities in place at the inception of the Forest Plan has not significantly changed. Progress on the roading of the unroaded portions of the Forest is being monitored.

Recreation Construction

The Forest constructed seven river and trail access sites along the Lochsa River, predominantly for whitewater access. The Lochsa is a designated Wild and Scenic River.

Campground and stock facilities were constructed at Elk Summit. Four restrooms, three stock loading ramps and 24 hitch rails were installed in the three campground loops.

Campground and wilderness information signs, tables and fire rings were purchased for installation in FY 1990.

Survey and design work were completed for upgrading Laird Park campground and the Little Boulder Creek campground expansion.

Challenge Cost Share

Cost share agreements were made with various agencies. The Forest Service's total share in five projects was \$14,950, which was 31 percent of the total projects' cost. These projects were:

Establishment of the Orofino visitor information center in the Supervisor's Office lobby in cooperation with the Corps of Engineers and the Orofino Chamber of Commerce.

Assisting with development of the Orofino recreation information radio system in partnership with the Corps of Engineers.

Organizing Idaho host training in partnership with Lewis-Clark State College and Orofino Chamber of Commerce.

Implementing Wild and Scenic River information signing in cooperation with the Idaho Fish and Game Department and local sportsmen's groups.

Cooperating with the North Central Idaho Travel Association in the development of the 'Land of the Nez Perce' travel brochure.

Accomplishments and Strategies

Congress authorized the expenditure of excess receipts from the sale of timber (totaling \$84,000) for other resource programs. Funds were used for trail signs in the Selway-Bitterroot Wilderness, trail head signs on trails outside the wilderness, Lewis and Clark Trail interpretive signs, snow trail clearing and signing and trail information at the Moscow (Idaho) Dome Show. The Wilderness Education Program and two wilderness ranger positions were also funded.



Research Natural Areas

Goal: Identify and manage unique and/or outstanding botanical, geological, and historical areas of the Forest for public enjoyment and use.

Strategy: Establish a sufficient number of research natural areas that would include at least two or three examples of each major habitat and at least one example of a minor habitat on the Forest.

Accomplishments: There are a total of twelve Research Natural Areas identified in the Forest Plan on the Clearwater Forest. Four of them have been officially designated: Bull Run Creek, Lochsa River, Sneakfoot Meadows and Steep Lakes.

During 1989 establishment reports were prepared for the following five areas: Aquarius, Bald Mountain, Chateau Falls, Dutch Creek and Four-bit Creek.

Designation of the final three, Fenn Mountain, Grave Peak and Rhodes Peak, is pending final field reviews and preparation of the field reports.



Riparian

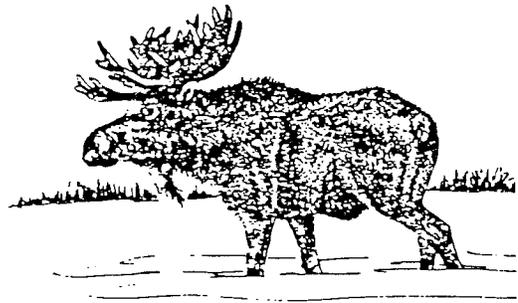
Goal: Manage riparian areas under the principles of multiple use as areas of special consideration for distinctive values. Integrate riparian management with the management of adjacent areas to ensure the protection of the water resource and other dependent resources.

Strategy: Evaluate on-site and cumulative effects of proposed actions, resolving significant conflicts in favor of riparian dependent resources. Define and identify riparian areas and their values. Develop direction and techniques to protect or enhance these values.

Accomplishments and Strategies

Accomplishments: Riparian values are being defined. In 1989, 74 streams were monitored for baseline data, and permanent cross sections were established to characterize current conditions. Results will be used to refine management direction and techniques. The areas are being identified on existing and planned projects, and direction is being implemented to protect or enhance those areas. Federal and state Best Management Practices (BMP's) are being implemented. Limits on streambank openings, sediment and temperature variations are in place.

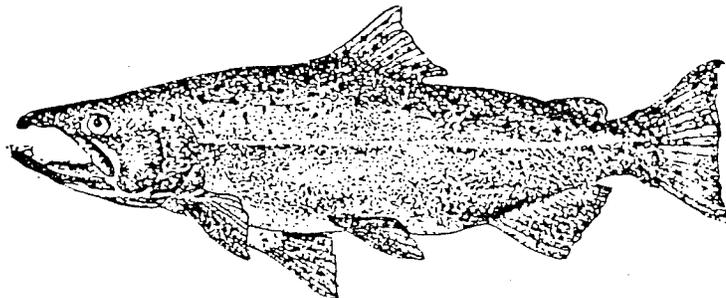
The Forest developed a riparian guideline key to identify riparian dependent resources and indicate desired future condition. To achieve that condition, the Forest developed uneven-aged management or multi-aged management direction (partial cutting) for managing riparian areas adjacent to fish bearing streams. The guidelines will provide instream diversity for fish and cover for wildlife. On non-fish bearing streams, the direction is to utilize uneven-aged management, multi-aged management, or an extended rotation of vegetative cover of 180 years plus, to provide woody debris for channel structure, bank stability, and wildlife cover.



Use of the guidelines is resulting in a range of direction: from no action (leaving everything); to harvesting trees while leaving brush; to harvesting selected trees.

Riparian areas in grazing allotments are being managed to achieve stable streambanks and overhanging vegetation.

Direction has been developed to limit road construction or reconstruction in riparian areas when it will destroy or reduce streambank capabilities of filtering sediment or constrict natural channel meandering.



Accomplishments and Strategies

Timber

Goal: Provide a sustained yield of timber and other products at a level that is cost-efficient and that will help support the economic structure of local communities as well as provide for regional and national needs. Select silvicultural systems that will contribute toward the desired future condition identified by the Forest Plan for particular management areas.

Strategy: Maintain a sale program with a range of sale sizes and a mix of various logging systems and product types. Track the volume sold, cut, and under contract to analyze market needs and conditions. Continue to evaluate non-Wilderness lands and lands not proposed for Wilderness for suitability of timber production.

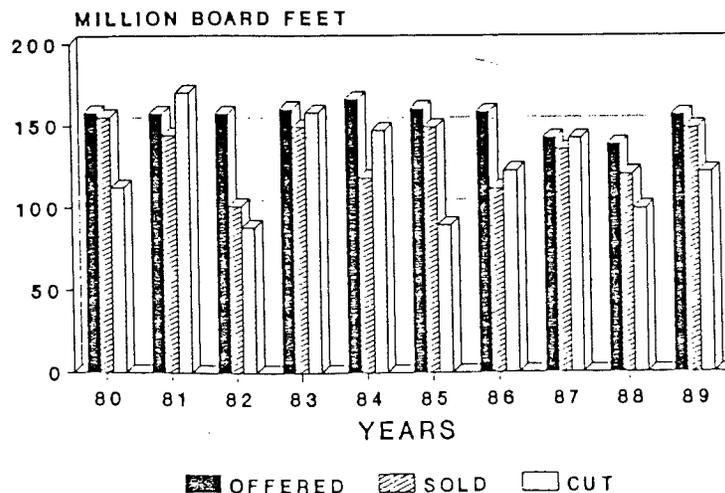
Complete site-specific analysis of the land base to design the timber sale program. Develop methods to monitor and analyze the relationship between the Forest Plan predicted outputs and the outputs resulting from site-specific analysis.

No more than 100 million board feet will be sold from the roaded portion of the Forest on an average annual basis over the decade. The Forest will emphasize analysis and development of unroaded portions of the Forest; identify methods to enhance management of the already roaded portion of the Forest in both rehabilitation and timber productivity.

The Forest will continue to look for opportunities to increase the sale offerings.

Accomplishments: In FY 89 the Forest offered a variety of products for sale which included sawlogs, pulp, cedar products, fuelwood, Christmas trees, fence posts, and bear grass leaves. The products were sold in 44 sales and 1,913 miscellaneous permits. Approximately 80 percent of the contracts were made for timber sales under five MMBF and accounted for 20 percent of the volume sold. The sales included a mix of logging systems, such as tractor, cable, skyline, and helicopter.

There were increases in the volumes offered, sold, and harvested over last year. The chart below displays the volume of timber offered for sale, actually sold, and the amount harvested by purchasers over the previous decade.



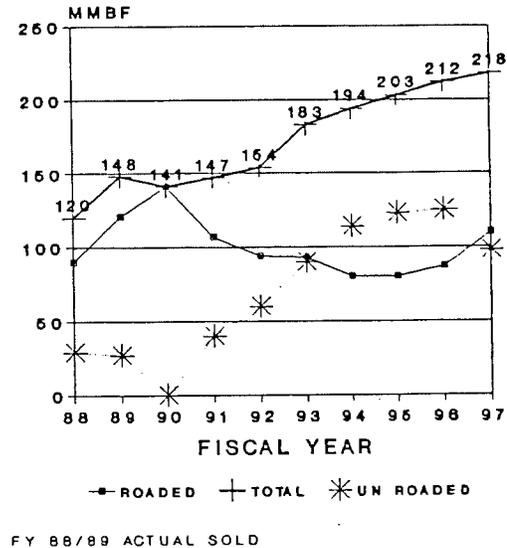
Accomplishments and Strategies

The next chart shows the volume required from roaded and unroaded lands to meet the ASQ of 1,730 million board feet for the decade. This is the original strategy from the Forest Plan.

The strategy shifted harvest to unroaded portions of the Forest as analysis of those areas was completed.

The ASQ strategy requires that analysis of unroaded areas be stepped up immediately in order to have environmental analysis and timber sales prepared for sale by 1991-92. The volumes from roadless areas would need to increase yearly through 1996 to meet that strategy. As the graph indicates, the volume is predicted to be over 120 million from the unroaded lands by 1996. In 1989 the Forest assigned a special task force to analyze roadless areas for timber sale opportunities. Progress on the analysis of the unroaded areas is not moving as fast as originally anticipated due to changing political, social, and environmental issues.

ASQ STRATEGY 1989



Note: ASQ represents a ceiling of the amount of timber that *may* be sold. It is not a target or prediction of volume output.

Site-specific analysis incorporating all resource objectives has been completed on roughly 20 percent of the suitable land base.

Analysis to implement the strategy has led us to the following conclusions:

The unroaded areas are yielding less than expected because a substantial portion of the timber stands have not culminated.

As we apply site-specific analysis, we are finding that FORPLAN didn't fully account for the spatial considerations for size of opening, wildlife habitat, diversity, etc.

These conclusions result from site-specific factors which were not evaluated in the Forest Plan programmatic analysis. Site-specific application of standards, public expectations, and budget levels have slowed the analysis of unroaded areas and affected the predicted volumes.

Accomplishments and Strategies

Project offerings for the next five years are based on a combination of knowledge of specific areas and site-specific results of what can actually be achieved in those areas. We estimate an average of about 125 MMBF per year to be offered for sale from FY's 90-94. Beyond that, the volumes will be updated as we get more definitive information. Timber stands are being inventoried to update and improve current data. The timber stand inventories are currently 60 percent complete for the Forest. We have not dropped the ASQ; however, based on site-specific analysis of areas to be harvested in 1991-94, we know that the sale volumes in 1995-97 would have to range from 240-280 MMBF annually to harvest at the ASQ level. We are basing our sale offerings on site-specific analysis results. We have only completed 20 percent of the analysis, and we will continue to adjust as we do more.



The findings so far, as the updated strategy shows, lead us to the need to continue to rely on roaded lands for volume. These areas present some of the same challenges as the unroaded areas.

In trying to complete project analysis, we find that our decision documents are outdated. Political, social, and environmental issues are changing, and as the interpretation of laws and standards evolves, we must review past decisions.

In addition, our watersheds have not recovered from previous impacts. The cumulative effects analyses are showing that projects are consistently bumping up against watershed and fishery thresholds established in the Plan.

Private land activities also limit national forest timber sale options because of our choice to mitigate for them.

Based on the updated strategy, we have identified the need to intensify the management of the roaded areas. Rehabilitation projects for watershed, soil, wildlife, fisheries, and other resources in the roaded country are being identified and implemented. An example is the Gravey Creek project on the Powell Ranger District. This project involved stabilizing slopes, replacing culverts, planting riparian vegetation, and constructing fish habitat improvements. Methods to increase long-term timber productivity on the roaded portion of the Forest are being identified and assessed. These include intensive stocking control measures such as thinning and intermediate harvest methods and advanced logging technology. The areas of backlog in reforestation have been identified and, investments are being increased somewhat to improve the success of reforestation through replanting, gopher control, fertilization, and fencing of planted areas. We need to continue to commit more funding in these areas in the future.

Accomplishments and Strategies

The need to track acres and volumes in comparison to the Forest Plan has led us to identify areas that need to be monitored in the following year, such as volume harvested by management area, total acres analyzed, and acres and volume harvested in comparison to Plan predictions.

As the Forest Plan was developed, timber sale study areas were defined and volumes estimated. It was from these estimates that the Forest allowable sale quantity (ASQ) was derived. The ASQ identified applies to the first 10 years of the Plan and averages 173 MMBF per year. As the Forest Plan is implemented and site-specific analysis proceeds, acreage and volume figures are refined.

Trails

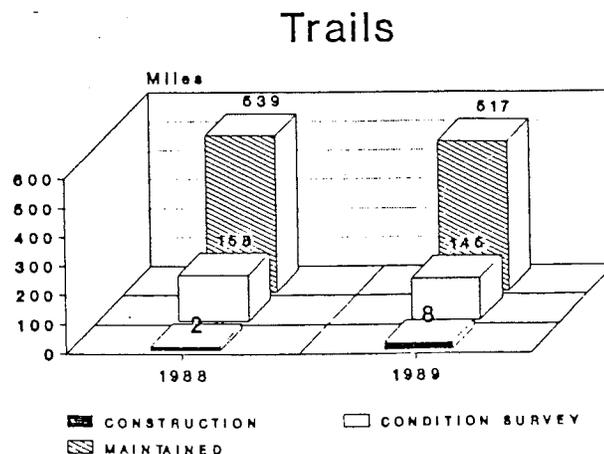
Goal: Manage trails to provide for a variety of recreation experiences. Provide for safety, minimize use conflicts, and prevent resource damage.

Strategy: Complete and maintain the Recreation Information Management system (RIM). Analyze trail data to determine current and future use, resource condition, needs and standards and costs. Identify relocation and reconstruction needs by 1990. Identify trails to be deleted from the system. Continue development of methods for recording trail use. Complete all main line trail relocation and reconstruction by 1996. Survey, maintain, relocate and reconstruct Forest trails as budget allows. Provide easy access to information on trails availability and use.



Accomplishments: The trails portion of the RIM data base is being updated and analyzed as data is obtained. The need for more condition and use information and the methods for gathering it has been identified. Additions to the data base and new systems are being developed to record and analyze this new information.

There are 1,578 miles of trail on the Clearwater National Forest. Over the last two years the condition of 19% of the Forest trails was assessed. This rate of survey will not achieve the Forest Plan goal to identify all relocation and reconstruction needs by 1990. Budget levels precluded increasing the rate. Trail accomplishments are displayed in the chart below.



Accomplishments and Strategies

The construction/reconstruction was on the Five Lakes Butte Trail, Shasta Lake Trail, the Packbox Pass I Trail and bridges on Lost Ridge Trail, Fish Creek Trail 224 and Skull Creek Trail 283.

Evaluation also indicates that additional trails are needed along the historic Lolo Trail and that a portion of the river grade trail along the Lochsa River should be reopened. Trails were dropped from the system in the Selway-Bitterroot Wilderness due to lack of use and conflict with Forest Plan management direction.

A list of these trails is available upon request. The six suspension bridges on the Forest have been inspected. Following inspection, weight restrictions were posted for the Warm Springs Bridge on Powell Ranger District. It is scheduled for reconstruction in 1990.

Trail information has been made available in the visitor information center in the Forest Supervisor's Office. A display designed jointly by the Clearwater and Nez Perce National Forests to illustrate trail information is shown at travel shows, meetings, schools and public places.

Visual Resource

Goal: In association with other resource management activities, maintain a natural appearing Forest landscape as viewed from designated visual travel corridors, recreation sites, wilderness, recreational and administrative areas.

Strategy: The Forest landscape architect will train district personnel in visual resource management and work with them to provide input to management activities to meet visual quality objectives (VQO's) identified in the Forest Plan. The activities will be monitored during implementation and at completion.

Accomplishments: The Forest landscape architect served on interdisciplinary teams and recommended ways to meet VQO's on 25 proposed management activities.

Sixty-one timber sales were completed in 1989. All were reviewed and found to be in compliance with the appropriate VQO's from the Forest Plan.

Training for district personnel has been scheduled for fiscal year 1990.

Water and Soil

Goal: Manage watersheds and soil resources to maintain high water quality standards which meet or exceed state and federal standards. Protect all beneficial uses of water: fisheries, water-based recreation, and public water supplies. Ensure that soil productivity and stability are maintained.

Accomplishments and Strategies

Strategy: Provide input and direction during management activity planning and implementation. Establish monitoring stations to determine the impacts of past and current management activities. Monitor the application of Best Management Practices (BMP's) during project planning and implementation. Maintain an inventory of areas needing soil and water restoration. Restoration will be completed as funding allows. Develop cost effective methods of evaluating sources of soil productivity damage caused by compaction, displacement and severe burning.

Accomplishments: Evaluation of proposed projects was continued, and recommended management direction was provided. Stations monitoring water quantity and quality have been established. The need was identified to increase monitoring of BMP's on the Forest. The State of Idaho Forest Practices Water Quality Management Plan requirements are being implemented. The plan requires that a random sample of Forest management activities be assessed yearly for effectiveness of BMP's. Based on that sample in the first two years, the Forest identified the need to formalize the BMP effectiveness monitoring. Therefore, the Forest will sample 10 percent of the timber sale harvest units and 100 percent of the road construction. The results of the sampling will be analyzed and reported to the appropriate state agency. Practices will be evaluated for application methods and effectiveness. Results of the analysis will be used to refine future practices and application.

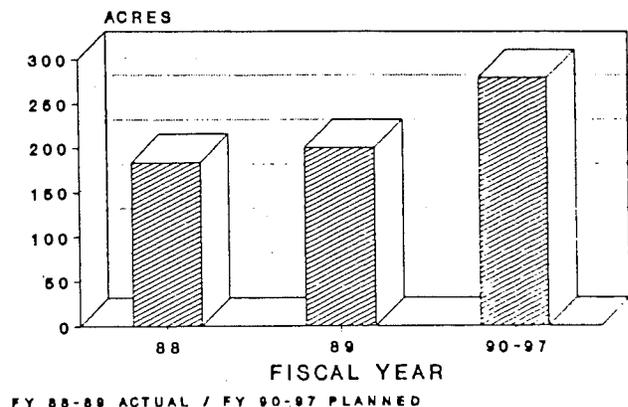
There was an increase in the number of acres of watershed improvement over the 1988 levels. Current plans are to increase the number of projects in the future as the graph below illustrates.

The 1989 projects included the fencing of riparian areas for protection from domestic animal use and the planting of trees in riparian areas. Projects also included closure of roads and stabilization of roads through installation of waterbars and cleaning of culverts to prevent overflow and erosion. Other projects included seeding landslides, road cuts and road fill slopes.

These projects were completed in Osier, Lake, Game, Quartz and Washington Creeks on the North Fork Ranger District; Elk Creek on the Palouse Ranger District; Pete King Creek on the Lochsa Ranger District; and Gravey Creek on the Powell Ranger District.

A method to analyze impacts of timber harvest activities on soil has been developed. Aerial photos of project areas will be examined for compliance with Forest Plan standards. Areas that deviate from standards will be examined on the ground.

WATERSHED IMPROVEMENT ACCOMPLISHED / PLANNED



Accomplishments and Strategies

The results will be used to prescribe mitigation measures. Dispersed feller/buncher (a type of mechanical harvester) harvesting was monitored on the French Boundary Timber Sale. The resulting soil compaction and disturbance on observed units fell well within Forest Plan standards.

The Forest Plan formalized a review process for projects being implemented on certain land forms that were prone to mass failure (land slides). The process involved site-specific evaluation by a team of specialists. Recommendations are made to proceed with the project or not and mitigation measures outlined. Recommendations are based on resource values first and economics second. Since the implementation of this process the mass failure occurrence on the Forest has been substantially reduced. The Forest will continue to monitor the process, assess results and use the information on future projects.

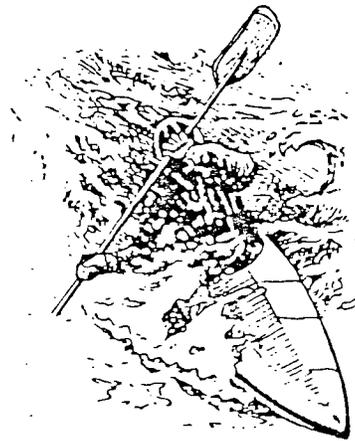
Several prescribed burn harvest units were analyzed for accomplishment effectiveness. Fewer than 10% of burned areas rated a severe burn classification. The duff levels were only burned hot enough to cause soil movement and damage on micro-sites within the units. This indicates that the prescribed fire was within guidelines established by prescription.

Prescribed burning effectiveness on two wildfire areas was monitored. The Cedar Creek fire resulted in a limited amount of slow overland soil erosion. Photo points were established and will be evaluated again in the spring of 1990. The Opus 7 fire area was also examined. Moderate to severe soil erosion and two debris avalanches have occurred. These processes are natural events on certain soil types no matter what rehabilitation measures are implemented. The information gained from this monitoring will be used to identify possible problem areas in the prescribed burn program and in the rehabilitation of future burned areas.

Wild and Scenic Rivers

Goal: Protect and enhance the inherent values of existing designated Wild and Scenic rivers and those being studied for possible future designation. Analyze and recommend suitability for classification of selected rivers to the Wild and Scenic system.

Strategy: Monitor ongoing projects for adherence to established protection measures. Continue to acquire private land easement and manage existing easements to standards defined in the Forest Plan. Improve access to rivers, facilities along their banks and availability of interpretive information.



Accomplishments and Strategies

Accomplishments: All project implementation was monitored to ensure compliance with measures to protect Wild and Scenic River systems. All previously acquired easements were managed to ensure compliance with Plan standards. Construction of river access sites was started to provide adequate parking and sanitary facilities for whitewater users and fishermen along the Lochsa River.

In settlement of an appeal to the Forest Plan, the Forest agreed to study Fish Creek, Hungry Creek, White Sands Creek and the Little North Fork of the Clearwater River for possible inclusion in the Wild and Scenic River system.

Wilderness

Goal: Maintain wilderness values in existing wilderness areas and those areas being recommended for wilderness classification. Provide for limiting and distributing visitor use in wilderness to allow natural processes to operate freely and to ensure integrity of values for which wilderness areas are created. Coordinate the management of the Wilderness with the national forests that share in the management of those lands.

Strategy: Monitor to determine if off-road vehicle (ORV) use and other activities are jeopardizing wilderness values. Utilize the Limits of Acceptable Change (LAC) process to develop a management plan for the Selway-Bitterroot Wilderness. The Opportunity Classes identified in the Forest Plan will define management directions for the wilderness. Reinstate the prescribed fire program in the Selway-Bitterroot Wilderness. Utilize the public task force and the LAC processes with three Forests (Clearwater, Nez Perce and Bitterroot) to define common approaches to management issues and methods in the Selway-Bitterroot Wilderness.

Accomplishments: Monitoring was an integral part of other activities in the wilderness. Observations indicate that recreation in both the Mallard-Larkins Pioneer Area and in the Great Burn area is increasing significantly, particularly during the big-game hunting season.

The Selway-Bitterroot management plan, using the LAC process, is nearing completion. A draft plan should be ready for public review in June 1990, with a final plan to be completed in September. Following the fire season of 1988 two national task forces looked at the prescribed natural fire programs in the national forests and national parks and recommended changes. The Clearwater National Forest, in conjunction with the Nez Perce and Bitterroot Forests, is currently updating the plan to meet those recommendations. The prescribed fire program should be reinstated in the summer of 1990. The Forest did not have a prescribed natural fire program in 1989 but will implement a revised prescribed natural fire program in accordance with national direction.



Accomplishments and Strategies

During 1989, the wilderness public task force met at least six times. The task force is composed of interested private citizens from Montana and Idaho. They represent diverse interests: Wilderness Watch, Sierra Club, Aircraft Pilots' Association, Backcountry Horsemen, commercial outfitters, and private users. The core team heading the task force is composed of resource assistants from five ranger districts on three Forests. It is led by the District Ranger from Moose Creek Ranger District, Nez Perce National Forest. There were numerous meetings among adjacent districts to resolve common issues, joint training sessions held by several districts, and LAC monitoring training.

Wildlife

Goal: Manage and provide habitat that will support viable populations of all local wildlife species. Maintain and enhance big-game winter habitat. Manage habitat to contribute to the recovery of each threatened, endangered, and sensitive species identified on the Forest.

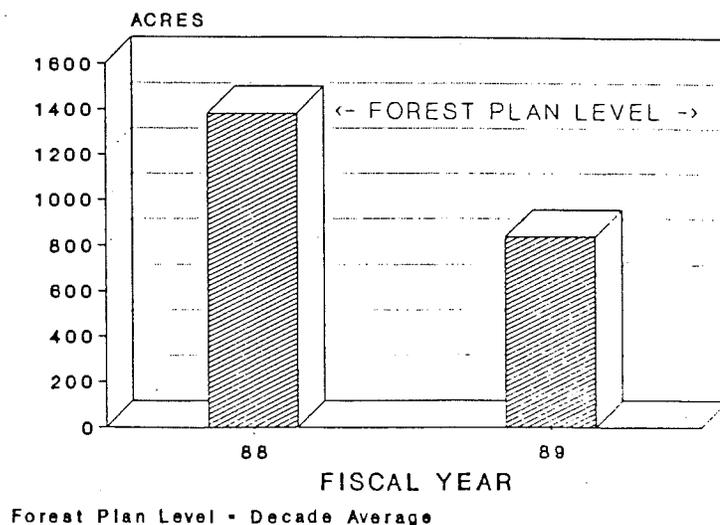
Strategy: Provide biological input to proposed management activities. Annually improve approximately 1,300 acres of big-game winter habitat using a variety of methods such as prescribed fire, fertilization, slashing, and seeding; and 1,000 acres of big-game habitat by logging. Develop and implement monitoring plans for indicator wildlife species and provide for a diversity of plant and animal communities. Review, coordinate, and consult with U.S. Fish and Wildlife Service on all projects that involve threatened, endangered, or sensitive species. Continue to inform and provide the public with current information on the status of wildlife management on the Forest.

Accomplishments: Biological evaluations were completed for project plan implementation, and recommended management direction was provided.

The Powell Ranger District slashed (cut down vegetation) and used prescribed fire on approximately 200 acres of big-game winter range in the Moose Creek area.

The Lochsa Ranger District slashed and burned approximately 300 acres of range in the Fish Creek drainage. Logging and prescribed fire were used on 340 acres of big-game range. Vegetative response will continue to be monitored and evaluated on these acres. The acreage burned this year is down from last year due to a combination of weather conditions and limits in the burning prescriptions. The prescriptions will be reviewed.

BIG GAME HABITAT IMPROVEMENT



Accomplishments and Strategies

A contract and partnership were established with the University of Idaho to develop the techniques and methods to measure and monitor the effects of Forest activities on the diversity of the plant and animal community.

Scheduled completion date is 1991. There are no preliminary results.

A contract and partnership were established with the Nez Perce Tribe, Idaho Fish and Game, and the University of Idaho to develop techniques to monitor and evaluate the effects of Forest activities on indicator species. Expected completion date is 1991. There are no preliminary results.

The Forest continued to fund and cooperate in the Bitterroot Evaluation Area study to determine if the area is suitable to recover a viable population of grizzly bears. The information is to be used in the revision of the Grizzly

Bear Recovery Plan scheduled for 1991. There are no preliminary results. Public involvement and review of that revision are scheduled.

Field surveys for boreal owls and five sensitive plant species are being conducted under the challenge cost share program. Funding was shared with the Idaho Natural Heritage Foundation.

A field investigation for the bank monkeyflower was conducted. A total of 56 populations from 29 sites has been documented. The occupied habitat of this plant was observed to be approximately 30 acres. Plans have been developed to contract with the Heritage Foundation to develop a management plan for the bank monkeyflower in FY 1990.

Forest crews surveyed over 1,000 miles of transects (compass line samples) and 125 winter killed elk and deer for evaluation of wolf and wolverine sign and use.

Presence of a wide variety of predators (cougar, bobcat, fisher and wolverine) was documented. One set of wolf tracks was documented. The Forest developed a standard field form for this type of survey and trained field personnel in observation and documentation methods.

Over 25 public programs were presented to a wide variety of groups and organizations to provide current information on the status of threatened, endangered and sensitive species on the Forest.



III. Monitoring Report

Introduction

The Clearwater National Forest Plan was approved by the Regional Forester on September 23, 1987. This Plan will guide management of the Forest for 10 to 15 years unless conditions or demands significantly change.

An important part of Forest Plan implementation is monitoring, or gathering information and observing management activities to provide a basis for periodic evaluation of Forest Plan goals and objectives. Monitoring results are evaluated to assist in the reviews of conditions on the land covered by the Plan.

This report summarizes the results of monitoring and evaluation conducted during FY 89, the second year of Forest Plan implementation for the Clearwater. This report is intended to provide a communication link with people of all levels and affiliations regarding the status of Forest Plan implementation.

The regulations in 36 CFR (code of federal regulations) 219 describe the purposes for periodic evaluation of the Forest Plan:

- 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 services 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)}.

Monitoring and Evaluation

The results of the Monitoring and Evaluation Report have been summarized and are discussed on the following pages of this section. Each monitoring item is evaluated in terms of (1) what is being monitored, (2) frequency of measurement, (3) reporting period, and (4) findings and evaluation. The following table lists the monitoring items and reporting periods.

Monitoring Report

Forest Plan Monitoring Requirements - Action Plan

Item No.	Action, Effect, or Resources to be Measured	Reporting Time
1	Quantitative Estimate of Performance Outputs or Services	Annual
2	Wide Spectrum of Recreation Opportunities	5 years
3	Visual Quality Objectives	25% sample every 5 years
4	Protection and Condition of Cultural Resource Sites	25% sample annually
5	Wilderness	Semi-annual
6	Livestock Forage Available, Range in Good Condition per Established Allotments	5 years
7	Provision for Plant and Animal Diversity	5 years
8	Water Quality and Stream Condition for Fisheries and Non-fisheries Beneficial Uses	Annual summaries, 5-yr program report coord w/fish rpts
9	Best Management Practice Applications	Annual samples/ 5-year report
10	Riparian Area Condition	Annual samples/ 5-year report
11	Site Productivity	Annual samples/ 5-year report
12	Land Ownership Adjustments	Annual
13	Miles of Road Open/Closed and Road Densities	Annual samples/ 5-year report
14	Off-road Vehicle Use Impacts	Annual sample/ 5-year report

Monitoring Report

Forest Plan Monitoring Requirements - Action Plan (continued)

Item No.	Action, Effect, or Resources to be Measured	Reporting Time
15	Minerals Prospecting and Development	5 years
16	Trail Management	5 years
17	Document Cost of Implementation Compared to Plan Cost	Annual
18	Harvested Land Restocked Within 5 Years	5-year minimum
19	Unsuitable Timberlands Examined to Determine If They Have Become Suitable	10-year minimum
20	Validate Maximum Size Limits for Harvest Areas	5 years
21	Insect and Disease Organisms Status as a Result of Activities	5 years
22	Effects of National Forest Management on Adjacent Land and Communities	Annual
23	Effects of Other Government Agency Activities on National Forest	5 years
24	Research needs	5 years
	Population Trends of Indicator Species	
25	Elk Winter/Summer Range	Annual sample/ 5-year report
26	Moose	5 years
27	White-tailed Deer	5 years
28	Belted Kingfisher	5 years
29	Pileated Woodpecker and Goshawk	5 years
30	Pine Martin	5 years
31	Anadromous Fish Indicators	5 years

Monitoring Report

Forest Plan Monitoring Requirements - Action Plan (continued)

Item No.	Action, Effect, or Resources to be Measured	Reporting Time
32	Resident Fish Indicators	5 years
	Population Trend of T & E Species	
33	Gray Wolf	5 years
34	Bald Eagle	5 years
35	Grizzly Bear	5 years
36	Minerals Resource Availability	5 years

Item No. 1	Quantitative Estimate of Performance Outputs or Services
Frequency of Measurement:	Annual
Reporting Period:	Annual

Monitoring Action:

This item presents resource outputs and activities for FY 89.

Findings:

The following table shows the outputs and activities occurring in 1989 along with the percent achieved compared with Forest Plan projections.

Monitoring Report

COMPARISON OF OUTPUTS AND ACTIVITIES WITH THOSE PROJECTED IN THE FOREST PLAN

Output or Activity	Unit of Measure	1988	1989	First Decade Avg. Annual	Percent of Predicted 1989 Achievements
Recreation					
Developed Use	M RVD's	348.2	319.1	260.0	123
Dispersed Use					
Wilderness	M RVD's	32.4	30.6	121.0	25
Non-Wilderness	M RVD's	357.5	445.2	687.3	58
Wildlife & Fish					
Wildlife Habitat Improvement	Acres	1384	513	1300	39
Fisheries Habitat Improvement	Acres	98	127	219	69
T&E Species Habitat Imprvmnt	Acres	0	0	N/A	N/A
Wildlife Habitat Improvement	Structures	0	72	N/A	N/A
Fisheries Habitat Improvement	Structures	29	151	N/A	N/A
T&E Habitat Improvement	Structures	0	0	N/A	N/A
Range					
Permitted Grazing Use	M AUM's	16.0	13	16.0	81
Actual Grazing Use	M AUM's	13.0	13	16.0	81
Range Imprvmnt (Non-struct.)	Acres	2470	2470	7000	35
Range Improvement (Structures)	Structures	0	2	N/A	N/A
Noxious Weed Control	Acres	110	295	380	78
Watershed Inventory	M Acres	.3	16.04	N/A	N/A
Soil Inventory	M Acres	35.0	20	17.0	117
Minerals					
Minerals Management	Cases	231	174	265	66

Monitoring Report

Output or Activity	Unit of Measure	1988	1989	First Decade Avg. Annual	Percent of Predicted 1989 Achievements
Timber					
Volume Offered (Primary)	MMBF	122.9	134.5	N/A	N/A
Volume Offered (NICS)	MMBF	13.7	24.0	N/A	N/A
Volume Sold (Primary)	MMBF	103.2	124.3	N/A	N/A
Volume Sold (NICS)	MMBF	13.1	23.8	N/A	N/A
Volume Under Contract	MMBF	399.9	392.7	N/A	N/A
Reforestation-App. Funds	Acres	1884	1675	N/A	N/A
Reforestation-KV Funds	Acres	1366	3254	N/A	N/A
Timber Stand Improvement (App. Funds)	Acres	355	444		
Timber Stand Improvement (KV Funds)	Acres	343	473	1928	48
Protection					
Fuels Management Activities Generated	Acres	447	340	N/A	N/A
Fuels Management Brush Disposal	Acres	2308	3955	N/A	N/A
Facilities					
Trails Construction and Reconstruction	Miles	2.0	8.0	13.8	58
Road Const./Reconst. Timber	Miles	49.9/41.6	30.5/45.5	69.6	109
Recreation	Miles	1.3/8.7	.42/2.31	N/A	N/A
Other	Miles	0/0.1	0.0/0.9	N/A	N/A

Monitoring Report

Item No. 2	Wide Spectrum of Recreation Opportunities
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

The Forest recreation staff will monitor recreation opportunities. Monitoring and reporting will:

1. Compare recreation use types occurring on the Forest with the broad range of opportunities that could occur and that are supported in the Forest Plan.
2. Identify changes in existing recreation use patterns occurring on the Forest and determine if these changes are adversely affecting recreationists. Determine if Forest management actions are creating adverse changes and, if so, what corrective action can be taken.

Findings:

A detailed report on changes in the recreation opportunity spectrum will be prepared in 1993. Presently, changes do not appear significant. Several Environmental Assessments are being developed which could affect the amount of land in the semi-primitive non-motorized class. These include Swamp Ridge, east of Moose City on the North Fork Ranger District; Mex Mountain, in the headwaters of Hungry Creek on the Lochsa Ranger District; and in the future, White Sands, on the Powell Ranger District, south of Lolo Pass.

Two user groups of dispersed opportunities have been identified. They are summer (mostly fishing) users, and fall users (mostly hunters). The greatest pressure is occurring in the fall. Conflicts between hunters have arisen, but most observers believe that user capacity has not been reached.

The Limits of Acceptable Change process (LAC) is an attempt to guide management of the Selway-Bitterroot Wilderness (SBW). The intent of LAC is to determine which Wilderness values are considered most important and then decide how much change or deviation from baseline levels is acceptable before Wilderness managers act to stop further degradation. This process is currently being implemented in the SBW but has not yet been applied to Forest Plan Management Area B2. Management Area B2 contains those areas on the Forest that are recommended for Wilderness but have not yet been so designated by Congress.

Monitoring Report

Item No. 3	Visual Quality Objectives
Frequency of Measurement:	Annual
Reporting Period:	Annual and a five-year summary

Monitoring Action:

The Forest landscape architect, assisted by the ranger districts' visual resource personnel, will randomly sample five percent of the current year's completed management activities for meeting of Visual Quality Objectives (VQO's). A minimum of one activity per ranger district will be included in the sample. The present method of monitoring management activities, mostly timber sales, has been to observe activities during travel around the Forest, rely on ranger district contacts for information about visual quality concerns, and review the completed timber sale reports to see if the timber sales have met VQO's.

Findings:

The list of timber sales completed in 1989 was reviewed by the Forest landscape architect. Visual Quality Objectives were met for all sales. There were no deviations from the adopted VQO's established in the Forest Plan.

Mapping of the VQO's continues to be refined as management activities are proposed.

The Forest landscape architect has identified the need to define a desired landscape character for each visual travel corridor on the Forest. Meeting VQO's for management activities one-by-one may not achieve the desired landscape character. After the landscape character has been defined, we need to determine how to achieve it. This is only an identified need at this time. Forest leadership has not reviewed or approved it as a management activity and there has been no time table set for its completion and implementation.

Monitoring Report

Item No. 4	Protection and Condition of Cultural Resource Sites
Frequency of Measurement:	Annual
Reporting Period:	Annual

Monitoring Action:

The Forest archaeologist will monitor cultural resources on the Forest. Monitoring will be done by randomly selecting a five percent sample of all projects which might impact known or suspected archaeological sites, sites listed on the National Register of Historic Places, sites considered eligible for such listing, and any site suspected of having cultural significance.

Findings:

During 1989 approximately 11,000 acres of proposed project study areas were surveyed for cultural resources. The surveys resulted in the recording of 34 previously undocumented sites. Most of the 11,000 acres were approved for project development with protection for the documented sites. Site condition was monitored on 75 previously recorded sites.

The Nez Perce Tribe conducted cultural resource inventory and excavation of the Lenore Seed Orchard site. The Tribe's cultural resource staff also conducted cultural resource inventory on the North Fork and Pierce Ranger Districts.

Item No. 5	Wilderness
Frequency of Measurement:	Annual
Reporting Period:	Annual

Monitoring Action:

The Forest recreation staff will determine if changes are occurring within declared and recommended Wilderness areas (Management Areas B1 and B2, respectively) which could affect the Wilderness character.

Utilize the LAC (Limits of Acceptable Change) concept to identify adverse changes and recommend management practices that could correct identified changes.

Findings:

MANAGEMENT AREA B1 - SELWAY-BITTERROOT WILDERNESS

Motorized Activities

The use of gasoline-powered rock drills was authorized by the Forest Supervisor on two trail projects. Use occurred for a one-week period in early August on a trail relocation project and in late September and early October for a trail reconstruction project.

Thirteen lightning-caused fires were discovered on the Clearwater National Forest portion of the Selway-Bitterroot Wilderness (SBW). Chainsaw use was authorized on several fires, and all were fought with low impact fire-fighting techniques.

The Forest Supervisor authorized emergency helicopter landings for two medivac operations in the SBW.

Areas of Management Concern

Day and overnight use was heavy at Stanley Creek Hot Springs.

The Maude and Lottie Creek grazing area closure continued to be a problem. No citations were issued, but grazing continues and the hitch rails built to minimize impacts have been vandalized.

Tying horses to trees remains a problem, causing damage to trees, trampled vegetation, denuding of the vegetation in the area, and erosion of soil in campsites. In-area contacts are being made, but Wilderness rangers feel an effort to make more off-site user contacts coupled with education and tougher law enforcement is needed.

Fish Lake airstrip use continues to be an unknown. Use data is incomplete, but we estimate use to be one or two landings per day. Partial data indicates use may be significantly higher than estimated. A volunteer counter will be on site during the summer of 1990 to get a more accurate measure of use. Campsites at the lower end of the airstrip near the lake are showing wear from overuse. Soil compaction and trampling are causing these areas to become denuded of vegetation.

Activities Implemented to Address Concerns

The public task force met numerous times to bring the LAC process closer to implementation. Training for LAC monitoring was conducted at Powell Ranger Station for all Forests that manage portions of the SBW. The LAC process will be completed in 1990. Some monitoring results should be available for the 1990 monitoring report.

Monitoring Report

Four Wilderness rangers were hired. These people assisted with priority inventory items for the LAC planning effort, made visitor contacts, and performed checks on outfitter camps.

The National Board of Backcountry Horsemen (BCH) of America visited the area to review horse-related use impacts and patterns. The Forest is working closely with BCH to educate their members on user ethics and ways to expand their role on user education outside their ranks.

The Forest held a Partners Astride/Afloat get-together for outfitters and outfitter-administrators at Wilderness Gateway Campground. Topics discussed at the meeting included Wilderness outfitting roles, LAC planning process, and trail construction and maintenance.

Twelve miles of trail were reconstructed or relocated. These projects were funded through trail dollars allocated from the Forest Service Regional Office, excess timber receipts, and capital investment programs. Twenty-five miles of trail received drainage and clearing maintenance. New trail signs were placed at most trail portals and major trail intersections.

The Clearwater and Nez Perce Forests co-hosted a tour for the Society of American Foresters, members of the Wilderness working group. Discussion topics included LAC planning, outfitting, trail management, fire policy, and wildlife management.

The Clearwater and Nez Perce Forests co-sponsored a Wilderness education program for local sixth graders. Two hundred children were contacted locally. More than 300 were contacted in the Moscow, Idaho and Pullman, Washington areas. Two sessions were taught to outfitter guide schools on Wilderness policy and low-impact techniques.

MANAGEMENT AREA B2 - PROPOSED WILDERNESS

Motorized Activities

The recommended Wilderness areas on the Forest do not have a general restriction on the use of mechanized equipment. The Mallard-Larkins Pioneer Area is still closed to use of motorized methods of transportation on the trail system but open to use of other mechanical equipment. Selected trails within the Great Burn area are closed to motor vehicles, but the area and trail system in general is open to motorized use.

Chain saws were routinely used to clear trails throughout B2 areas. A gasoline-powered rock drill and small track-mounted excavator were also used. Helicopters were used for initial attack on fires in the B2 areas.

Areas of Management Concern

Although no surveys of use have been conducted, our observations indicate that recreation use in both the Mallard-Larkins Pioneer Area and the Great Burn area is increasing significantly, particularly during

Monitoring Report

the big-game hunting season. Incidents of arguments over campsites and conflicts between users on trails have increased.

Many campsites continue to be occupied for longer than 14 days. Occupancy for the entire big-game hunting season is not unusual. Resources are not available to regulate use.

Impacts from livestock use are common at most campsites. These areas are overgrazed, and riparian vegetation is trampled from improperly tied stock. Trails are worn and eroding. Users need to be educated on proper etiquette and camping techniques to lessen impacts from their use.

Motor vehicle use on trails appears to be increasing. Violations of closures are known to occur. Manpower is not available to enforce or investigate reported violations. We have not observed significant environmental damage by motor vehicles, but reported incidents of conflict between motor vehicle users and hikers or equestrians have increased.

Activities Implemented to Address Concerns

Staffing for management of recommended Wilderness areas is minimal. No personnel are dedicated solely to backcountry management. Routine patrols of the back country, primarily to administer outfitter activities, are made in September and October, and a trail crew does some minor clean up of campsites during trail maintenance operations. Little or no monitoring of use is possible during the summer at present funding levels.

Several inspection trips were made to monitor a camp in the Great Burn area, where the man who had established the campsite had been instructed to clean up the site and pack out an accumulation of garbage. No citation was issued, and the site was satisfactorily cleaned up.

Volunteer groups worked on two trail projects during 1989. The Backcountry Horsemen worked on two miles of trail in the Mallard-Larkins Pioneer Area, installing waterbars and puncheon, and a group of hikers worked to clear wind-throw from another mile of trail.

Fifty miles of trail were maintained in the Mallard-Larkins Pioneer Area and 50 miles in the Great Burn area.

Monitoring Report

Item No. 6	Livestock Forage Available, Range in Good Condition per Established Allotments
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

District range personnel annually monitor each grazing allotment for use, condition of range, forage availability, and protection of other resources. The Forest biologist will coordinate these reports through the Range Management Information System.

Findings:

During 1989 there were 1,687 cattle and 2,506 horses grazed on the Forest for a total of 13,000 Animal Unit Months (AUM'S). Most of the cattle grazing occurs on the Palouse Ranger District, and all of the horse grazing is associated with hunting pack stock. There are currently 65 permittees using the available range allotments on the Forest. During 1989 there were no documented damage or maintenance problems. Overall range conditions on the Forest are very good.

Item No. 7	Provision for Plant and Animal Diversity
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

A report and plan to monitor the effects of Forest activities relative to preservation and enhancement of plant and animal community diversity will be prepared during FY 90. A quantitative method to define and measure plant and animal diversity will be developed in coordination with the University of Idaho and other agencies. Data will be acquired by ranger district personnel or by contract with non-agency sources. The Forest wildlife biologist will compile, edit, and consolidate the data.

Findings:

Currently, no plan exists to accomplish the monitoring of this item. In 1989 a contract and partnership were established with the University of Idaho to develop the plan discussed in the monitoring action.

Monitoring Report

The University will coordinate with other agencies and individuals to develop the techniques and methods that are needed to measure and monitor the effects of Forest activities relative to the preservation and enhancement of plant and animal community diversity. This process will take approximately one year to complete. Data collection and ground sampling at the ranger district level will be addressed in the 1991 budget and project work plans. Data collection will be conducted on an annual basis by ranger districts and summarized by the Forest biologist.

Item No. 8	Water Quality and Stream Condition for Fisheries and Non-Fisheries Beneficial Uses
Frequency of Measurement:	Annual
Reporting Period:	Annual

Item 8 consists of two components: water quality and stream condition for fisheries and non-fisheries uses. Each component will be presented with respective monitoring actions and findings.

Monitoring Action: Fisheries

The Forest fisheries biologist will coordinate the monitoring of critical anadromous and resident fish streams to determine habitat conditions and population trends. District field crews will measure key habitat parameters such as cobble embeddedness (the degree to which streambed gravel has been infiltrated by sediment), using transect sampling methods. Streams supporting both anadromous and resident fish were monitored during 1989.

The program will be expanded and intensified in the future to include more resident fish streams, especially in the North Fork of the Clearwater River basin and on the Palouse Ranger District.

Findings:

The following Lochsa River watersheds supporting anadromous fish were monitored for habitat conditions and population densities during 1989: Crooked Fork, Walton, Warm Springs, Squaw, Papoose, Doe, Fish, Deadman, and Pete King Creeks. Elevated levels of cobble embeddedness were documented in Walton, Deadman, and Pete King Creeks. Pete King Creek experienced five major earth slides from logging roads in the spring of 1989. However, three sediment traps managed to capture at least some of the bedload sediments. Sediment levels in the spawning habitat of Deadman and Pete King Creeks were also slightly elevated in 1989. Individual point sediment sources have not been identified. With the current level of monitoring it is impossible to identify how much of the sediment is from natural sources and how much from management activities.

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Rearing habitat conditions in Squaw, Doe, and Papoose Creeks have substantially improved. Improvement is due to habitat enhancement projects. Fish densities in the areas of the improvement projects are higher than density levels prior to the improvement work. Population densities of juvenile steelhead were slightly to moderately elevated in Lochsa River tributaries. Densities of juvenile salmon were substantially depressed in the same index streams. There was no escapement (return of adult fish) of Chinook salmon into Squaw Creek during 1989. The satellite rearing facility at Powell (Idaho Fish and Game Department) documented an adult escapement of 154 Chinook destined for tributaries of the upper Lochsa River.

Anadromous fish streams on the Pierce Ranger District were also monitored for habitat conditions and population trends. Lolo and Eldorado Creeks were monitored for both juvenile and adult salmon and steelhead densities. Juvenile Chinook densities showed a significant decline in Lolo Creek. Densities of juvenile steelhead also declined markedly in both Lolo and Eldorado Creeks. Surveys of Chinook spawning grounds were conducted on Lolo, Eldorado, and Yoosa Creeks in cooperation with the Nez Perce Tribe and Idaho Department of Fish and Game. Twenty-four redds were observed within the 11.7 miles of surveyed stream. Comparison of 1988 and 1989 counts in the 4.5 mile index area showed that the number of redds per mile decreased from 7.2 to 4.4 respectively. One redd and one adult Chinook were observed in Yoosa Creek. No redds or adult Chinook were observed in Eldorado Creek. The decline of both juvenile Chinook and number of redds is due to downstream mortality effects, primarily the dams and fishing pressure.

Stream surveys to document habitat conditions on critical anadromous fish streams were conducted on Camp, Upper Eldorado, Fan, Lunch, Trout, and Sixbit Creeks. Instream cover, potential and acting woody debris were the major habitat components that were assessed in 13.8 miles of surveyed stream. The surveys documented that woody debris levels are below the "optimum habitat" standards for a majority of the riparian and instream reaches. Many of these areas have been previously harvested. Many areas have had rehabilitation projects where log structures have been built in streams to replace lost woody debris and restore stream pool structure and rearing habitat. Additional projects are planned in the future.

Monitoring Action: Non-Fisheries

The Forest hydrologist will coordinate with ranger district personnel for the establishment of water quality monitoring stations. These stations will monitor suspended and bedload sediment and water quantity to determine trends or impacts of past and/or current road construction, timber harvesting, and mining activities. The Forest hydrologist will compile Forest-wide data for inclusion in the monitoring report.

Findings:

The primary emphasis of the Forest water quality monitoring has been to determine the effects of sediment yields associated with timber production and road construction on water quality and the fishery resource.

Monitoring Report

Baseline and project water quality monitoring of streams has been done in the following manner:

Baseline stations have been located at the mouths of large drainages, generally larger than five square miles. Water level recorders and automatic water samplers have been installed for continuous collection of information. Water level recorders track seasonal fluctuation of stream water levels. This information is calibrated to determine stream discharge. Automatic water samplers have been installed at most baseline stations to continuously collect suspended sediment samples. Grab samples (samples taken by hand, not by automatic samplers) of suspended and bedload sediment are periodically collected at many baseline stations.

Project stations have been located downstream from some management activities. Control (no activity) stations generally have been established above the activity in a different but similar watershed or at the same project station only prior to the activity. Project sampling allows the quantification of site-specific impacts, primarily sediment yield, from a given activity. Data collected at each project station are grab samples of stream flow, suspended sediment, air and water temperature, specific conductivity, and instantaneous water level.

Grab samples are collected approximately 14 times during the year at each station. Scheduling of grab sampling is arranged to concentrate collection during the peak discharge period. Water level recorders and automatic water samplers are normally in operation from April through September.

The Forest processed approximately 2,600 suspended sediment and 300 bedload samples at a cooperative laboratory facility in 1989. Bedload sediment was sieved to measure particle size and weight. The sediment data was combined with stream flow information, using watershed computer programs to calculate total sediment loading. A sample of the data results is presented in the Selected Monitoring Results table.

The first table below shows the Forest's water monitoring network by ranger district. Years of record, type of monitoring station, parameters collected, and instrumentation at each station is given.

Generally, monitoring of suspended sediment data has shown a recovery trend Forest-wide from past management activities. Suspended sediment concentrations tend to be less in the late 1980s than in the early 1980s, as shown in the Selected Monitoring Results table. Some of this may be due to drought conditions in the late 80s; however, we believe much of the recovery is the result of resting heavily impacted watersheds and applying Best Management Practices (BMP'S), including better road location and design. Although monitoring of suspended sediment data shows an improving trend for most watersheds, measurements of cobble embeddedness indicate that recovery of stream substrate from past activities is going to take longer than predicted. Increased cobble embeddedness reduces available gravel for spawning beds and the habitat of vegetation and aquatic insects that fish feed on. This reduces habitat and results in lower reproductive rates and fewer fish. Observations indicate that some low gradient streams will take decades to recover. Even higher gradient streams are taking longer than expected to recover.

Monitoring Report

Water Quality Monitoring Network

Watershed	Station Established	Years of Record	Collected Data	Station Type	Remarks
Pierce					
Eldorado Creek	1984	6	*	P	Sales on Eldorado Creek
Cedar Creek	1984	6	*	P	Active Timber Sale
Dollar Creek	1984	6	*	P	Active Timber Sale
Hemlock Creek	1981	9	Rec. *	B	Break in Record
Lolo Creek @ #6	1980	9	Rec. WS SS	B	Mining and Timber Sales
Palouse					
Blakes Fork	1981	10	*	P	
Little Sand	1981	9	*	P	Past & Active Timber Sales
No. Fork Palouse	1981	9	*	P	Proposed & Active Timber Sales
Palouse abv L Sand	1981	9	Rec. *	B	Baseline-Mixed Ownership
Elk Cr abv Elk R	1981	9	Rec. SS	B	Proposed Hydro and Timber Sales
North Fork					
Cold Spring Creek	1981	9	Rec. *	B	Reference Station
Isabella Creek	1980	10	Rec. *	B	Reference to Salmon Stations
Quartz Creek	1981	9	Rec. WS SS	B	Past and Proposed Timber Sales
So. Fork Beaver	1981	9	Rec. WS SS	B	Past and Active Sales
Salmon Cr. upper	1986	4	WS SS	P	Control Above Activities
Salmon Cr. lower	1986	4	WS SS	P	Station Below Activities
Swamp abv Osier	1980	10	Rec. WS SS	B	Timber Sales
Osier Creek	1981	9	*	P	
No. Fk Clearwater	1988	2	USGS Rec.SS	B	Baseline Study

Monitoring Report

Watershed	Station Established	Years of Record	Collected Data	Station Type	Remarks
Lochsa					
Little Smith	1980	10	*	P	Past and Active Sales
So. Fk Canyon	1979	11	*	P	
Glade Creek	1980	10	*	P	
Bullock Creek	1988	2	WS Tur	P	Domestic Water Supply
Cougar Cr (Lowell)	1986	4	WS Tur	P	Domestic Water Supply
Pete King	1976	14	Rec. WS *	B	Long-term Baseline
Deadman Cr at mouth	1980	10	Rec. WS *	B	Began Rec., WS, in 1989
W. Fork of Deadman	1978	12	Rec.	B	Relate data to Lower Deadman Station
Fish Creek @ mouth	1980	10	Rec.	B	Long-term Baseline
Powell					
Squaw abv Doe	1981	9	*	P	Began Rec. WS in 1988
White Sands at mouth	1980	10	Rec. *	B	WS data from 82-86
Crooked Fork at mouth	1980	10	Rec. WS *	B	
Crooked Fork abv Brushy	1986	4	Rec. WS	P	Mixed Ownership
Gravey Creek	1987	3	Rec. WS SS	P	Monitor Rehab. Project
Marten Creek	1987	3	WS SS	P	Proposed Timber Sale
Doe Creek @ mouth	1981	9	*	P	
Lochsa River	1988	2	USGS Rec.SS	B	Baseline Study

* - Data Collected: Stream discharge, suspended sediment, bedload sediment, air and water temperature, specific conductivity, staff gauge (water level reading).

Rec. - Water level recorder

WS - Water sampler

SS - Suspended sediment

Tur - Turbidity

USGS - U.S. Geological Survey

B - Baseline

P - Project

Monitoring Report

Selected Monitoring Results

Station Name	Water Year	Inches of Runoff	Suspended Sediment Lbs/Day	Suspended Sediment Tons/Mi ² /Yr
So. Fk Beaver Creek	84	29	1,963	43
	85	16	2,651	58
	86	16	844	18
	87	20	1,331	29
	88	13	630	14
	89	26	1,280	28
Swamp Creek	80	15	384	5
	81	30	572	7
	82	56	14,828	174
	83	34	6,066	71
	84	37	3,145	37
	85	29	1,264	15
	86	43	1,138	13
	87	17	1,359	16
	88	20	1,213	14
	89	37	1,620	19

Item No. 9	Best Management Practice (BMP) Applications
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

The Forest hydrologist will coordinate with Forest Service employees, including timber sale administrators, engineering representatives, contracting officer's representatives, the soil scientist and fire management officers, to monitor all projects for compliance with Best Management Practices (BMP's). Best Management Practices are actions taken to minimize the negative, detrimental or undesirable effects that may result from implementation of management activities. The primary objective is the maintenance of water quality. Examples of BMP's include seeding and mulching of disturbed areas, such as road cut and fill slopes, construction and maintenance of drainage structures on roads and trails, and modification of harvest prescriptions for canopy retention.

Findings:

Only one major problem with BMP application was observed on the Forest in 1989, clearcutting along a Class I stream tributary to Canyon Creek on the Lochsa Ranger District. The State of Idaho found the Forest in violation of the Forest Practices Act Rules and Regulations, Rule 3g, Stream Protection. As a result, the Forest has undertaken an internal audit to determine where proposed timber sales have clearcutting units planned along Class I streams. These units are being modified for compliance with the Forest Practices Act.

Best Management Practices monitoring in 1989 was insufficient to determine if the Forest was adequately applying BMP's and if these BMP's were effective in controlling sediment. Therefore, in addition to monitoring BMP's applications on timber sales and new road construction by the sale administrators and engineering representatives, the Forest hydrologist and soil scientist will monitor BMP's implementation and effectiveness on ten percent of all timber sale units and 100 percent of all new road construction on the Forest in 1990. A report will be generated yearly, containing a feedback section describing ways to improve our implementation and effectiveness of BMP's. Monitoring will concentrate in watersheds containing Stream Segments of Concern.

Proposed Stream Segments of Concern

District	Watershed	Stream Segment of Concern
Pierce	North Fork Clearwater	Weitas Creek
	Clearwater River	Lolo Creek
	Clearwater River	Eldorado Creek
	Clearwater River	Yoosa Creek
	Clearwater River	Camp Creek
North Fork	North Fork Clearwater	Quartz Creek
	North Fork Clearwater	Meadow Creek
	North Fork Clearwater	Skull Creek
Lochsa	Lochsa River	Fish Creek
	Lochsa River	Hungery Creek
Powell	North Fork Clearwater	Gravey Creek
	Lochsa River	Walton Creek
	Lochsa River	White Sand Creek
	Lochsa River	Crooked Fork
	Lochsa River	Spruce Creek
	Lochsa River	Brushy Fork
	Lochsa River	Boulder Creek

Monitoring Report

Item No. 10	Riparian Area Condition
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

A report detailing the monitoring results will be prepared by the Forest hydrologist at five-year intervals. Riparian monitoring stations have been established to determine baseline or current riparian conditions and also to determine the effects of logging, removal of project and woody debris, and site preparation on stream channel condition.

Findings:

Baseline or current riparian conditions, including channel characteristics, have been monitored on many of the major streams on the Forest in the past two years. In 1988, forty streams were monitored at their mouths to establish their baseline characteristics. Three permanent channel cross sections were established at each of the 40 streams. Gradient, channel substrate composition, and photo points were established. Channel type was determined for each of the streams. In 1989 an additional 74 streams were monitored. Cross sections were established in riffle, pool, and run areas to characterize the channel conditions. An additional 29 streams are scheduled to be monitored during 1990.

The Forest plans to monitor these streams on five-year intervals to determine if stream channel characteristics or stream types change. An attempt will be made to associate any changes with their causes.

Riparian and channel characteristics were monitored on one additional stream in 1989. The Forest hydrologist is attempting to determine if timber harvest, debris removal, and site preparation activities on a first order tributary to Minnesaka Creek, North Fork Ranger District, will affect channel condition or stream type. Three permanent cross sections have been installed in an attempt to measure any channel scour that occurs. Stream gradient, channel substrate composition, and photo points were also established. The stream will be reexamined after the spring snow melt in an attempt to detect changes. If significant changes occur, this information will be used to modify Forest management prescriptions and BMP's (Best Management Practices).

Forest managers have struggled with managing riparian areas for quite some time. To provide sound and consistent management advice, the Forest developed riparian management guidelines. The guidelines include an analysis flow diagram, a desired future condition analysis process, and a key to address wildlife concerns. These guides are to be used to aid the analysis process and should be tempered with sound reasoning based on experience and professional judgment. The guidelines were developed to deal with problems identified during previous analyses of management activities.

Monitoring Report

Item No. 11	Site Productivity
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

The Forest soil scientist will evaluate project sites for soil compaction, disturbance, and productivity. The monitoring system involves several steps:

1. Aerially photograph all timber sale units on which tractor yarding has occurred during the year.
2. Enlarge photos and use a dot grid to determine percentage of unit devoted to skid roads, landings, and displaced soils. The Forest Plan standard states that units cannot have greater than 15% of their area covered by landings, skid roads, or displaced soil.
3. Randomly sample 25% of the units exceeding Forest Plan standard.
4. Results of sample analysis will be used to design and implement mitigation measures or to refine the current Forest Plan standard.

Prescribed fire areas will be randomly sampled and evaluated using the burn severity guides developed by Jerry Neihoff of the Idaho Panhandle National Forests. Results will be used to recommend rehabilitation actions where necessary for sampled fires and similar burns in the future.

Findings:

The monitoring system described above was developed in 1989.

Locations of tractor yarding units completed in 1989 were obtained from ranger district sale administrators late in the logging season. Weather and scheduling conflicts prevented the photo flight. It will be completed in 1990 when conditions permit. Future monitoring flights should be scheduled for the summer following completion of harvest.

Dispersed feller-buncher harvesting was monitored on the French Boundary timber sale. Soil compaction and disturbance on observed units fell well within Forest Plan standards. This type of harvest should be encouraged when favorable site conditions exist.

Several prescribed burn harvest units were observed. Fewer than 10% of the burned acreage rated a severe burn classification.

Two wildfire areas were monitored. The Cedar Creek fire experienced a limited amount of slow overland soil erosion. Photo points were established and will be reevaluated this spring. The Opus 7 harvest unit,

Monitoring Report

where the fire started, was observed. Moderate-to-severe soil erosion and two debris avalanches have occurred. No effective rehabilitation recommendation could be made; however, the erosion was confined to a specific soil type. This naturally occurs when these soil types are bared of vegetation and is very difficult to control. Such information will be useful in avoiding this kind of event on similar soils in our controlled burning program and in predicting erosion from wildfires.

Item No. 12	Land Ownership Adjustments
Frequency of Measurement:	Annual
Reporting Period:	Annual

Monitoring Action:

The lands staff will prepare a report specifying the number of acres acquired, traded, or sold. The report will contain a narrative detailing the purpose of the land exchanges and how they contribute to satisfaction of Forest Plan objectives. The Forest lands staff will research the land transactions records to obtain information for the report.

Findings:

During FY 89 the Clearwater National Forest acquired 1,562 acres from the state of Idaho, in exchange for 2,900 acres. The exchange involved four tracts: the Gold Hill area (194 acres), Mica Mountain area (1,048 acres), Shea Meadows (280 acres), and Little Boulder (40 acres) areas. The state of Idaho acquired three tracts totaling 2,899 acres in the Swamp Creek area. All exchanges occurred on the Palouse Ranger District.

The objectives of these exchanges was land consolidation, thereby enhancing the Forest's administrative efficiency and cost-effectiveness of management. The exchanges are consistent with the management area objectives and adjustment criteria identified in the Clearwater National Forest Plan. Costs for surveying and posting boundary lines, acquiring access easements, constructing access to manage national forest system land, and acquiring/granting other use permits were reduced. Trespass was also reduced. An estimated \$54,800 was saved by reduction of surveying and posting costs through completion of the exchange. The acquired lands will be managed for fisheries and water quality, timber production, big-game management (primarily elk, to be managed through road closures), dispersed recreation, and livestock grazing.

Monitoring Report

Item No. 13	Miles of Road Open/Closed and Road Densities
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

The Forest engineer will annually review and prepare a report displaying the total miles of road on the Forest. The data will be summarized by ranger district and display miles of open roads and miles of restricted roads. The restricted roads will be broken out by yearlong and seasonal closures.

Findings:

Road restrictions are a major component of resource protection. The number of miles of restricted road changes frequently according to resource needs. Calendar year 1989 ended with 1,260 miles of road under yearlong restriction and 1,080 miles under seasonal restriction. The miles of restricted road increased by 318 miles from 1988 to 1989. The change was due to two factors: 1) an increased number of restricted miles due to new restrictions imposed during 1989; and 2) inventory adjustments resulting from on-site inspections. It should not be inferred that the 319-mile increase to the system represents an actual increase in that number of miles of roads. Much of this increase was due to the inclusion of the Forest highway system in the inventory.

MILES OF OPEN/CLOSED ROAD

RANGER DISTRICT	MILES OF ROAD				CLOSURE DEVICES			
	CLOSED		OPEN	TOTAL	GATES	RAIL	EARTH	SIGN
	TYPE OF CLOSURE							
	YEARLONG	SEASONAL						
D-1	228	199	696	1,123	140	24	50	20
D-2	238	208	731	1,177	70	27	61	11
D-3	334	291	641	1,266	64	35	165	24
D-5	193	149	127	469	60	20	52	5
D-6	267	233	413	913	42	20	137	
TOTAL	1,260	1,080	2,608	4,948	376	126	465	67

Monitoring Report

The Clearwater National Forest road system contains approximately 4,950 miles of improved road. Road types range from single-lane gravel roads to double-lane paved highways. This system provides access to the developed portion of the Forest.

Item No. 14	Off Road Vehicle Use Impacts
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

The Forest recreation specialist will prepare a report displaying the effects of ORV's (off-road vehicles) and off-highway vehicles on Clearwater National Forest resources. Recreation staff will monitor complaints and conflicts between user groups, impacts to trails from motorized use, citations for violations of closure regulations, and resource damage occurring on the Forest.

The monitoring effort will be supplemented by working with wildlife and watershed groups to identify conflicts and resource damage. Measurement techniques such as establishing sample plots or transects and using counters on trails will help provide the appropriate data.

Findings:

Most trails in areas recommended for inclusion in the Wilderness system and roadless areas (management areas B2 and C6 respectively) are currently open for motorized use. The Forest has received some complaints from users about motorized vehicles in these areas. Informal observations indicate that the integrity of these lands for Wilderness purposes has probably not been compromised. These areas include the Fish Lake area south of Hoodoo Pass, which is significantly used by ORV's, and some of the Mallard-Larkins Pioneer Area. Monitoring these areas for resource damage will continue to ensure protection of their suitability for Wilderness until a final determination of their management area classification is made. Staff will be increased if user conflicts and resource damage increase and if management commits the necessary budget to fund additional positions. The level of conflicts and resource damage that is unacceptable must be determined before these actions can be implemented. At this time it is felt that these actions are not needed.

Monitoring Report

Item No. 15	Minerals Prospecting and Development
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

The Forest geologist will prepare a report detailing the status of the minerals program. The report will be based on a review of all projects and mining activities that may have an effect on minerals management. The number of case files, status of case files, estimated quantity and value of mineral production will be evaluated.

Findings:

During 1989 there were 174 minerals cases processed on the Forest. This is 66 percent of the mineral activity predicted in the Forest Plan. The minerals budget on the Forest for 1989 was 62 percent of the budget predicted for Forest Plan implementation.

The Forest geologist has estimated that approximately 150 troy ounces of gold were mined from the Forest during 1989. To our knowledge, no other valuable minerals were extracted from the Forest.

Mineral examinations of mining claims are frequently made to determine valid existing rights and to help in resolving unauthorized occupancy. No mineral examinations were completed on the Forest this year. There are currently five mining claims with cabins that have yet to be examined to determine if occupancy is justified.

For the year 1989 engineering records indicate that 55,880 cubic yards of road surfacing material were used by the Forest Service on Forest Service roads; 21,225 cubic yards were provided for county or state use; and 1,200 cubic yards were sold to private industry. This material has a total value of \$391,525.

All Forest Service projects were reviewed for potential conflicts or impacts to or from the mining on the Forest. Two cases of water quality standard violations and non-compliance with operating plans were reviewed.

The violations were due to excess sediment discharge into a stream from a leak in a settling pond and dirt pushed into a stream. The Forest Service identified the problems and negotiated with the operators to take the necessary corrective action. Impacts to the surface resources from mining were mitigated in accordance with Forest Plan standards and guidelines and approved operating plans. No formal notices of violation were issued. No impacts on mining activities from other resource uses were identified.

Monitoring Report

Item No. 16	Trail Management
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

The Forest recreation specialist will prepare a report to determine if Forest trail mileage is changing significantly in the various Recreation Opportunity Spectrum (ROS) categories; use of the trail system is changing in significant patterns; and/or physical conditions of the Forest trail system are changing significantly. Information from the Recreation Information Management (RIM) system will be used to determine changes in trail mileage and use. An annual survey will be conducted on 25% of the trail system to determine trends in the physical condition of the trail system.

Findings:

The Forest has 1,578 miles of inventoried trails in the system. Preliminary evaluation indicates the need to add system trails along the Lolo Trail to provide additional access along this historic route. A need has been identified for a river grade trail along the Lochsa River. This trail would serve the needs of recreationists who do not wish to follow one of the steep trails that climb out of the river canyon. Consequently, the old River Trail, which was abandoned when Highway 12 was completed, will be reopened.

The Forest is presently planning to work on the most expensive cost-per-mile trails. These are being worked on first because these generally have the most use, greatest potential for significant resource damage, and greatest safety hazards. The cost of reconstruction of a badly deteriorated trail may exceed the cost of new construction. When the high cost trail projects have been completed, the cost per mile should decline significantly.

The Forest targeted completion of condition surveys on 50% of the system trails for FY 89. This target was not met. Due to constrained budget levels, resource managers chose to spend their limited funding on trail maintenance rather than condition surveys.

Monitoring Report

Item No. 17	Document Cost of Implementation Compared to Plan Cost
Frequency of Measurement:	Annual
Reporting Period:	Annual

Monitoring Action:

The Forest Service Budget and Finance office will compile the actual costs for comparison with the projected costs from the Forest Plan.

Findings:

The following table displays figures for cost comparison.

COMPARISON BETWEEN YEARLY EXPENDITURES AND FOREST PLAN PROJECTIONS (IN 1989 DOLLARS)

Activity Code	Activity Description	FY 88 Expenditures (Thousand \$)	FY 89 Expenditures (Thousand \$)	Forest Plan Projections (Thousand \$)	1989 Percent of Projection
00	General Administration	2,712	2,153	2,459	88
01	Fire Protection	628	647	994	65
02	Fire Protection (Fuel)	134	62	285	22
03	Timber Sale Prep./Admin.	2,034	1,979	2,958	67
04	Timber Resource Plans	300	123	334	37
05	Timber Silvicultural Exams	632	595	980	61
06	Range	76	55	119	46
07	Range (Noxious Weeds)	21	15	33	45
08	Minerals	86	80	192	42
09	Recreation	504	653	1,187	55
10	Wildlife and Fish	612	569	1,242	46
11	Soil and Water	230	374	447	84
12	Maintenance of Facilities	197	152	550	28
13	Special Uses	50	50	103	48

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COMPARISON BETWEEN YEARLY EXPENDITURES AND FOREST PLAN PROJECTIONS (IN 1989 DOLLARS) (continued)

Activity Code	Activity Description	FY 88 Expenditures (Thousand \$)	FY 89 Expenditures (Thousand \$)	Forest Plan Projections (Thousand \$)	1989 Percent of Projection
15	Landownership Exchange	52	45	150	30
16	Landline Location	177	298	400	75
17	Road Maintenance	626	777	931	83
18	Trail Maintenance	367	370	493	75
19	Co-op Law Enforcement	59	55	77	71
20	Reforestation-Appropriated	1,123	608	1,997	31
21	TSI-Appropriated	159	100	468	21
23	Tree Improvement	248	285	69	* 414
26	KV-Reforestation	1,059	1,698	3,086	55
27	TSI-KV	92	101	96	105
28	Other-KV	126	522	664	79
29	Other-CWFS (Trust Fund)	803	953	755	126
30	Timber Salvage Sales (Perm. Fund)	170	210	337	62
31	Brush Disposal (Perm. Fund)	979	1,007	1,840	55
32	Range Betterment	8	4	8	51
33	Construction (Recreation Facilities)	55	99	96	103
34	Facility Construction	0	556	640	87
35	Engineering Construction Support	1,398	1,349	1,894	71
36	Construction-Capital Investment	1,437	1,200	2,858	42
37	Trail Construction/Reconstruction	142	178	332	54
38	Timber Purchaser Road Const./Reconst.	1,357	1,615	5,067	32
43	Land Acquisition	40	39	72	54
	TOTAL	18,692	19,572	34,213	55

* This figure is due to development of the Lenore Seed Orchard, which was not accounted for in the Forest Plan.

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Item No. 18	Harvested Land Restocked Within Five Years
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

The Forest silviculturist will prepare a report showing the percentage of stands and acres meeting the five-year regeneration standard. Data obtained from the Timber Stand Management Records System will provide the basis for determining the percentage of successfully regenerated stands.

Findings:

The National Forest Management Act requires that when trees are cut to achieve timber production objectives, the cuttings be made in such a way as to ensure that the technology and knowledge exist to adequately restock the lands within five years after final harvest. Reforestation records pertaining to regeneration harvests which occurred in 1984 were compiled and the required percentages calculated.

During 1984 clearcut harvest occurred on 75 stands comprising 1,228 acres. The final removal harvest of the seed tree and shelterwood harvest methods was accomplished on 30 stands (1,046 acres). The seedcut harvest (initial cutting) of the seed tree and shelterwood method occurred on 64 stands (2,127 acres).

As of 1989, of the 169 stands that received regeneration harvesting in 1984, sixteen clearcut stands (9%), seven seedcut stands (4%), and two final removals (1%) have failed to attain adequate regeneration after five years. These stands are currently being treated again to achieve adequate reforestation.

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Item No. 19	Unsuitable Timberlands Examined to Determine if They Have Become Suitable
Frequency of Measurement:	Annual
Reporting Period:	Ten years (1997)

Monitoring Action:

Timberlands classified as unsuitable for harvest during development of the Forest Plan will be examined, using more exacting methods, to determine if they should be reclassified as suitable.

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Findings:

Unsuitable timberlands are currently being inventoried as part of the Forest's Compartment Inventory Program. Occasionally, unsuitable timberlands may also be examined in association with an analysis of a proposed project. Both types of examinations are directed at confirming and refining the suitability determinations made in the Forest Plan.

The Compartment Inventory Program, initiated in 1985, will result in a new comprehensive inventory and data base representing all timber stands on the Forest. This inventory program has three phases. The first phase is aerial photography interpretation and stand delineation. At the conclusion of phase one, all stands on the Forest will be mapped and identified as to suitability, management area, etc. The second phase is field stand examination of a randomly selected subset of stands. The third phase is data compilation and extrapolation to unsampled stands. At the close of 1989, phase one had been accomplished on approximately 1,386,650 acres, or about 75% of the Forest. It is anticipated that phase one will be completed during 1991 or 1992. Phase three will be completed in time to serve as guidance during preparation of the ten-year review of the Forest Plan.

Item No. 20	Validate Maximum Size Limits for Harvest Areas
Frequency of Measurement:	Annual
Reporting Period:	Annual

Monitoring Action:

The Forest silviculturist will prepare a table displaying the number of stands harvested (by harvest type) meeting the 40-acre standard compared with the number of stands exceeding this standard.

Findings:

The maximum size of harvest openings created by even-aged regeneration harvesting should normally be 40 acres. Harvest opening size may exceed 40 acres when certain exceptional conditions apply, such as insect outbreaks which threaten surrounding stands, catastrophic blow down, or for final cuttings to protect established regeneration in existing shelterwood and seed tree areas.

The number of regeneration cutting units exceeding 40 acres is compared with those which are 40 acres or smaller in the following table.

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AVERAGE UNIT SIZE OF 1989 REGENERATION HARVESTS

HARVEST TYPE	# OF STANDS 1-40 ACRES	AVERAGE SIZE OF STANDS 1-40 ACRES	# OF STANDS OVER 40 ACRES	AVERAGE SIZE OF STANDS OVER 40 ACRES
Clearcut	100	20.3	1	151.0
Seedcut	30	18.4	3	44.3
Final Removal	13	17.2	7	74.0
Total	143	19.6	11	72.9

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Item No. 21	Insect and Disease Status as a Result of Activities
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

Insect and disease status is evaluated during post-treatment stand exams. District silviculturists will use these exams in the preparation of silvicultural prescriptions to deal with identified insect and disease problems. Additionally, annual aerial detection surveys will be used to identify the limits of widespread insect and disease problems.

Findings:

The Douglas-fir bark beetle outbreak appears to be declining as the infested area (as indicated by groups of current tree mortality) has decreased from about 5,000 acres in 1988 to about 1,700 acres in 1989. Along with this decrease is a corresponding decline in the area infested with the fir engraver bark beetle. Both of these bark beetles are probably responding to improved tree vigor brought on by a generally favorable change in precipitation and soil moisture. Also, salvage/sanitation cuttings directed at bark beetle mortality areas have both directly and indirectly reduced bark beetle populations.

The balsam woolly aphid was found infesting approximately 26,000 acres of grand fir stands on the Forest in 1989. This aphid was introduced to the U.S. from Europe in 1900 and has slowly spread westward. It was first reported in Idaho in 1983, and last year the infestation spread and intensified dramatically on the Clearwater National Forest. Although it has caused extensive tree mortality in other areas, the significance of its potential to kill grand fir is not known. Monitoring of the infestation and damage will continue this year.

There have been no reports of pest infestation increases caused by silvicultural practices. Nevertheless, there is growing concern over decisions to conduct partial cuttings in overmature late successional stands. Root diseases, stem rots and certain defoliating insects tend to increase when overmature grand fir and cedar stands are partial cut.

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Item No. 22	Effects of National Forest Management on Adjacent Land and Communities
Frequency of Measurement:	Annual
Reporting Period:	Annually

Monitoring Action:

Much of the concern related to this monitoring item was expressed in appeals to the Forest Plan. A list of outstanding appeals and the status of each will be included in the monitoring and evaluation report. Additionally, district rangers will prepare a brief by coordinating with land owners, timber companies, environmental advocacy groups, Chambers of Commerce and others to determine their concerns and goals regarding Forest management.

Findings and Evaluation:

A. Forest Plan Appeal Issues - A summary of Forest Plan and project appeals, respective appellants, and the status of each outstanding appeal has been included in Section V of this document.

B. Summary of District Ranger Observations - Public interest in implementation of the Forest Plan continues to increase each year. The increased interest in management activities requires more public coordination with timber companies, state agencies, and environmental advocacy groups. The effect of this has been an increased awareness by Forest managers of the issues concerning the public. Among those with whom Forest representatives have met during 1989 are: Clearwater Resource Coalition, Sierra Club, Chambers of Commerce of local communities, county commissioners, Kooskia Snowmobile Club, and local outfitters. Some examples of how we work with or affect adjacent communities are listed here.

Pierce representatives met with Idapine Mills representative Jerry Alley to monitor the effects of a timber sale on the Lewis and Clark Trail. The original timber sale design was modified to ensure compliance with Forest Plan visual quality objectives.

Management activities on Powell Ranger District have an effect on adjacent lands administered by the Lolo National Forest. Many Forest users in the Missoula community and surrounding areas do not draw a distinction between the two Forests or between the Montana/Idaho state line. Consequently, such activities as timber hauling off the Clearwater Forest through the Lolo National Forest on roads that receive heavy winter and summer recreation use creates an administrative and political problem for the Lolo.

Powell's direction to contract the grooming of cross-country ski trails at Lolo Pass has had a big impact on the Lolo Forest, Missoula residents, and residents of the Bitterroot Valley. The majority of winter enthusiasts who recreate at Lolo Pass are from Montana, and the Pass is a unique winter area. With Lolo Pass only 55

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miles from Missoula on a paved, plowed highway, management activities on Powell Ranger District have the potential of affecting local communities in Montana.

Environmental Education Programs - Forest employees take part in various environmental education programs with local communities. Forest employees are involved in conducting classes, seminars, and workshops at the University of Idaho, Washington State University, and high schools.

The Palouse Ranger District was involved in the training and orientation of forestry officials from Pakistan, Honduras, and Iceland. District personnel also conducted a "Show Me" trip for Idaho Senator Steve Symms and his aides.

Districts held field trips with the universities, grade schools, Boy Scouts and Girl Scouts and 4-H groups; participated in career days at a number of high schools; participated in Arbor Day observances at numerous grade schools in both Idaho and Washington.

Pierce District employees and Bruce Peeples of Kelly Creek Flycasters hosted youths from the Northwest Children's Home of Lewiston during the free fishing day sponsored by the Idaho Department of Fish and Game. Lochsa also provided valuable fisheries monitoring experience for two young Nez Perce tribal fisheries employees under the auspices of the Clearwater National Forest/Nez Perce Tribe "working together" agreement.

The Forest provided employment for many local residents during 1989. Among the Forest programs which provided these jobs were:

The Youth Conservation Corps Program - This program is designed to teach the participants about the forest environment and multiple-use resource management while they are actively engaged in work activities. This popular program has been very well received in the local communities in the vicinity of the Forest. It has provided many summer jobs and an opportunity to participate in the management of a national forest. Work consists of fish habitat improvement work, brush disposal, trail work, and recreation projects. Two of the districts employed a total of 36 teenagers in 1989.

The SCSEP (Senior Community Service Employment Program) - The SCSEP program provides meaningful work for senior citizens on limited incomes. Work includes building maintenance, refurbishing signs, sharpening fire tools, office filing, washing vehicles, campsite development and maintenance. The forest employed a total of 32 senior citizens in 1989. The program not only provides these very productive members of our community with a well-earned sense of accomplishment, but it also is an inspiration to the younger members of our work force.

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Income Generated - The local and regional economy was positively reinforced in 1989 by Forest Service programs:

Salaries from 245 permanent and 180 temporary employees.

Spin-off income generated from 148.1 MMBF timber sold, 120.4 MMBF timber cut, 13,000 AUM's of cattle and horse grazing.

Income generated from outfitters and their clients (mostly from out of state).

Income generated from contracting: tree planting, thinning, stand examinations, garbage disposal (campgrounds, station, and picnic areas), toilet rental, river access improvements, vehicle maintenance, and equipment rentals.

Income from local purchases.

Income generated from recreation visitors attracted to ranger districts to enjoy a wide spectrum of activities such as camping, fishing, hunting, driving, hiking, whitewater floating, horseback riding, in settings ranging from highly developed campgrounds to Wilderness.

The increased number of visitors using campgrounds and floating both the Lochsa and the Middle Fork of the Clearwater Rivers during FY 89 would indicate the local area's economy is becoming more diverse and that there was additional spin-off income generated.

This was the first year seasonal hiring was coordinated by the State of Idaho Job Service. This resulted in the assimilation of more local people into the seasonal work force.

Volunteers - Volunteers accomplished significant work on the Forest during 1989. A cooperative effort with the Valley Cats Snowmobile Club of Kooskia is progressing with restoration of the historic Liz Butte Cabin and marking and signing 70 miles of snowmobile trails. The Boy Scouts of America and the Northwest Children's Home of Lewiston again participated in maintaining segments of the Lewis and Clark National Historic Trail.

Over 100 Take Pride in America volunteers maintained 5.5 miles of the Ne-Mee-Poo National Historic Trail during a three-day outing at Weitas Meadows. The State of Idaho Department of Parks and Recreation provided two trail rangers to clear over 17 miles of district trails for ORV (off-road vehicle) and other users.

On the Palouse Ranger District, Backcountry Horsemen contributed their time and labor to build a trail head and camping area, including parking spurs, hitching rails, and loading ramp. A Moscow motorcycle group cleared 59 miles of trails. The Latah County Wildlife Association built 1/2 mile of fence along riparian zones and planted 1,200 trees along riparian areas. In addition, the campground hosts at Laird Park contributed 200 hours of time.

Not only did the volunteers accomplish very significant work, but they also had fun and personally benefitted from the physical activity, personal satisfaction, and pride in their service activities. They also had the opportunity to increase their knowledge of management issues and activities on the Clearwater National Forest--a great way to build understanding.

Monitoring Report

Item No. 23	Effects of Other Agency Activities on the National Forest
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

District rangers will prepare brief reports on the effects of the activities of other government agencies on the national forest. District rangers and their representatives will coordinate with state officials and managers from the Bureau of Land Management (BLM), Corps of Engineers, Bonneville Power Administration (BPA), U. S. Fish and Wildlife Service, and others to determine effects and provide feedback to agency administrators.

Findings:

Idaho Department of Fish and Game (IDFG) - This department participates with the Forest regularly in the environmental analysis of projects affecting the fish and wildlife resources on the Forest. Additional coordination meetings were held regarding the Mex Mountain timber harvest proposal during 1989. Forest biologists are working with Idaho Region 2 Fish and Game personnel to develop alternative strategies for the elk mortality/road closure administrative study IDFG is proposing for Lochsa and Pierce Ranger Districts.

The Forest participated in the annual Idaho Fish and Game/Clearwater National Forest/Nez Perce National Forest coordination meeting held at Pittsburgh Landing on the Snake River. Also, a similar meeting was held at Lewiston to develop a long-term management partnership.

The Forest and the Idaho Department of Fish and Game are partners in fisheries management. Fish and Game stocks fish in Forest streams on an annual basis. Department personnel also enforce state fish and game laws on the national forest. The Forest's contribution to this partnership consists of habitat maintenance and enhancement. Idaho Department of Fish and Game and ranger district personnel conducted the annual spring Chinook salmon survey. District personnel assisted in the anadromous fish-stocking efforts in the Eldorado Creek drainage.

Idaho Department of Health and Welfare, Division of Environmental Quality/Idaho Department of Lands (IDL) - These two departments have coordinated duties in enforcing and overseeing the implementation of the Idaho Forest Practices Act (FPA). The Forest Service has the responsibility to police itself in terms of meeting FPA standards. The Department of Environmental Quality (DEQ) and Forest Service regions in Idaho have a memorandum of understanding (MOU) for implementing the water quality program on national forests in Idaho. The MOU includes agreements to monitor, conduct reviews, and modify management practices to protect water quality. Although IDL foresters do not enforce standards on national forest land, audit teams review a sample of projects on all lands. The DEQ has the authority to cite the Forest Service for violations.

Monitoring Report

A difficult placer mining operation was jointly monitored by Pierce Ranger District and representatives of the Idaho Department of Lands and Idaho Health and Welfare, Division of Environmental Quality.

The Palouse Ranger District organized a coordinated resource management plan on the Big Sand drainage to address the water quality issue. Other agencies and cooperators involved in this effort include state Idaho Department of Lands (IDL), Idaho Division of Environmental Quality, Soil Conservation Service, Potlatch Corporation, Plum Creek Corporation, and Idaho Fish and Game.

The Lochsa Ranger District worked with IDL to establish procedures for the mutual review and monitoring of proposed timber harvest projects on private lands under scenic easement in the Middle Fork of the Clearwater River Wild and Scenic River corridor.

County Coordination and Administration Committee - The Palouse District Ranger is a member (and for the past year chairman) of this committee. The committee consists of Forest Service, Soil Conservation Service, Agricultural Stabilization Service, Idaho Department of Lands, Idaho Department of Fish and Game, University of Idaho, county extension service, county sheriff's department, county commissioners, and county parks and recreation department representatives in Latah County.

Idaho Department of Transportation (IDT) - The major places where IDT has an impact on the Forest are Highway 12, the major travel corridor through the southern portion of the Forest, and Highway 6 through the White Pine Scenic Drive.

The joint review efforts for approval of brushing and debris disposal activities in the U.S. Highway 12/Wild and Scenic River corridor continued with positive results. Discussions on acquiring a right-of-way use permit for an area at the intersection of U.S. Highway 12 and Idaho State Highway 13 (Kooskia weigh station) for use as a visitor information service site were initiated. Initial scoping began on an IDT proposal for a rock source at Sherman Flat and an associated paving batch plant facility. This project would provide paving material for a pavement overlay job in FY 91 for U.S. Highway 12. Idaho Department of Transportation has been working with the Powell Ranger District to locate visually acceptable disposal sites along Highway 12. The highway department has also participated in a joint Forest Service/highway department field review of proposed road reconstruction and hazard reduction projects along Highway 12 between mileposts 121 and 151.

Numerous meetings were held, both in the field and in the office, to reach agreement on reconstruction of Highway 6 through White Pine Drive. A solution was reached and an environmental analysis and decision notice signed.

County Sheriffs' Departments - The Lochsa Ranger District worked with the Idaho County sheriff's department on a search-and-rescue operation involving lost hikers in the Selway-Bitterroot Wilderness. Sheriff Randy Baldwin assisted the Powell Ranger District in the investigation of a tree-spiking incident on the district. He also took the lead in several assault cases at Jerry Johnson Hot Springs last summer.

The Palouse Ranger District maintains an annual cooperative agreement with the Latah County sheriff's department, providing a deputy to assist the district in law enforcement for approximately five months each year.

Monitoring Report

U.S. Army Corps of Engineers - The Palouse Ranger District and the Corps prepared, sold, and administered a joint timber sale along Dworshak Reservoir to salvage fire-damaged timber.

U.S. Soil Conservation Service - The Soil Conservation Service (SCS) monitors some precipitation stations on the Forest and also provides annual funds to the Forest to complete snow surveys. The SCS oversees several coordinated management plans for grazing on the Palouse Ranger District.

Idaho State Department of Parks and Recreation - The Idaho Parks and Recreation Park N' Ski program was in place at Lolo Pass. With funds generated through this program the Powell Ranger District was able to plow the parking lot for winter recreationists, provide restroom facilities and a warming hut throughout the winter months. Funds generated in excess of the cost to plow and provide facilities were used to groom cross-country ski trails. The state and Forest Service also worked out a collection agreement which enabled the Forest to use service contracts for the grooming of cross-country trails at Lolo Pass.

The Palouse Ranger District has been negotiating with the state on a three-way land exchange of the national forest lands that lie within the Mary Minerva McCroskey State Park. The state has developed a citizens' steering committee to guide management of the park. The recommendations of the committee will affect the management of national forest land in the future.

Bonneville Power Administration (BPA) - Bonneville Power Administration provides funds for fisheries habitat improvement and monitoring projects on the Forest. This funding is provided to mitigate for anadromous fisheries habitat lost as a result of construction of Dworshak Dam at the mouth of the North Fork of the Clearwater River. The funds financed the repair/maintenance of instream structures, installation of winter habitat structures and projects to enhance fish migration in Eldorado and Lolo Creeks.

Nez Perce Tribe (NPT)/Columbia River Inter-Tribal Fish Commission (CRITFC) - The Forest consults with these agencies in the areas of wildlife, cultural resources, and employment opportunities for tribal members.

The Powell Ranger District works closely with these two agencies on analysis, implementation and monitoring of district projects.

Pierce Ranger District staff worked closely with the Nez Perce Tribe and CRITFC on many proposed activities on the district. The CRITFC and NPT personnel toured the fisheries habitat enhancement projects on the district to discuss future plans for the Nez Perce tribal hatchery. The district staff have attended several technical advisory meetings concerning the tribal hatchery and have coordinated data collection efforts in the targeted streams (Lolo and Eldorado). Nez Perce tribal fisheries department personnel assisted the district for two weeks in mapping and conducting an initial survey of a three-mile reach of Orogrande Creek.

Monitoring Report

Item No. 24	Research Needs
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

The Forest planning staff will maintain a list of research needs. The initial list of approved research needs appears in the Forest Plan (pages II-15,16). As additional research needs are identified, they will be added to this list.

Findings:

Due to smoke management and air quality requirements it will become increasingly important to identify alternate methods of slash disposal.

Item No. 25	Big-game Habitat Improvement
Frequency of Measurement:	Annual
Reporting Period:	Annual

Monitoring Action:

The Forest wildlife biologist will coordinate a report detailing quality response on winter range acreage receiving rehabilitation treatment. All acres being treated under big-game winter range rehabilitation plans will receive field inspections for quality response annually. Total acreage of treatment per year will be located and tallied on U.S. Geological Service quadrangle maps. These will be maintained at ranger district offices.

Findings:

The North Fork Ranger District was funded to evaluate and prescribe treatment for approximately 1,300 acres of habitat. This was not accomplished in FY 89. The funding and assigned target will be carried over as part of the district's FY 90 work plan.

Monitoring Report

The Powell Ranger District slashed and used prescribed fire on approximately 200 acres in the Mocus Creek area. Burning was conducted in September after the first autumn rains. The number of acres treated were fewer than expected due to marginal weather conditions and high moisture content of the slashed fuels. Poor results on these burns indicate that the time of year when these projects take place needs to be evaluated and changed. The appropriate time for burning appears to be in August. This would more closely approximate the season when natural fires burn with the intensity needed to achieve the desired results. The technique of slashing and summer burning is still being evaluated and refined.

The Lochsa Ranger District also slashed and prescribe-burned approximately 300 acres of big-game winter habitat in the Fish Creek drainage. Results of this effort were also poorer than expected and will continue to be monitored and evaluated during FY 90. Initial results are similar to those on the Powell Ranger District, and evaluation indicates the need for changing the burning period. Forest fire managers can safely control prescribed fire in the higher risk summer months. Wildlife managers feel this is what is needed to achieve the desired results. Logging and prescribed fire were also used on 340 acres. Vegetative response on these acres will be monitored and evaluated during FY 90.

Item No's. 26-35	Population Trends of Indicator, Threatened, and Endangered Species
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action - Items 26 - 32, Indicator Species Items 33 - 35, Threatened, Endangered and Sensitive Species

The Forest wildlife biologist will prepare a report focusing on population trends and effects of management on these species. Sampling methods and monitoring action plans will be developed. Much of this work will be done in cooperation with the University of Idaho. On the Clearwater Forest the following species have been selected as indicator species: elk, moose, white-tailed deer, kingfisher, pileated woodpecker, goshawk, pine marten, anadromous fish (Chinook salmon and steelhead), and resident fish (westslope cutthroat and bull trout).

Findings: Indicator Species

During FY 89 a contract and partnership were established with the Nez Perce Tribe, Idaho Fish and Game, and the University of Idaho to develop the techniques and methods to monitor and evaluate the effects of Forest activities on indicator species. This process will take approximately one year to develop. Project

Monitoring Report

implementation will be addressed during the FY 90-91 work plan and budget development process. Data collection will be conducted on all ranger districts. Data will be gathered from permanent transects on each district and annually submitted to the Forest wildlife biologist for summation.

Despite record runs of summer steelhead over Bonneville Dam in recent years, wild and natural escapement to upper tributaries in the Clearwater basin has been variable and inconsistent. Wild fish are those whose ancestry has never been affected by hatchery breeding programs. Natural fish are those whose parents were spawned in a hatchery and then planted in streams to complete their life cycle. The offspring of these fish appear the same as wild fish without any of the disfigured fins characteristic of hatchery fish; only the genes differ. Most tributaries have remained well under-seeded, and 1989 was no exception. Spring Chinook stocks remain in a precarious state, with some populations at or near the minimum viability level. Downstream mortality effects of dams and fishing are primarily responsible for the poor state of wild and natural salmon and steelhead runs.

Populations of resident fish have remained fairly stable. No major trends of increase or decrease have been documented. Angling for westslope cutthroat trout in the upper Lochsa River was reported to be excellent in 1989. Habitat conditions for resident fish were improved in Elk, Bingo, and Isabella Creeks.

Findings: Threatened, Endangered, and Sensitive Species

Forest management activities that affect Threatened, Endangered and Sensitive (TE&S) species require special coordination with the U.S. Fish and Wildlife Service under section 7 of the Endangered Species Act. There are 33 TE&S wildlife species on the Clearwater Forest. The table on the following page lists these species, their classification, and status if known.

In FY 89 the Forest continued to fund and cooperate in the study of the Bitterroot habitat evaluation area to determine if the area is suitable to sustain a viable population of grizzly bears. Information from this evaluation will be used in the FY 91 revision of the Grizzly Bear Recovery Plan and will be made available for public review and comment.

During the winter of 1988-89, an extensive survey was conducted to determine the presence of wolves and wolverines. Approximately 950 miles of key wintering habitat were surveyed, examining 120 elk and 20 deer carcasses. Presence of a wide variety of predators such as cougar, fisher, bobcat and wolverine was documented. Biologists observed two wolverines during their surveys. No wolves were sighted, but their presence was documented by positive identification of tracks found around one of the carcasses examined. Some effort was placed in an ongoing LANDSAT satellite habitat classification project that involves much of the Selway-Bitterroot Wilderness and Clearwater Forest area. Data from this effort could be used to help identify and quantify characteristics of wolf habitat.

Field surveys for boreal owls and five sensitive plant species were conducted using a challenge cost share agreement with the Idaho Natural Heritage Program. Boreal owls were found to be more widespread than previously expected. They were found in the spruce/subalpine fir forest types at higher elevations widely distributed across the Forest. Two hundred nesting boxes were randomly placed in suitable habitat across

Monitoring Report

the Forest to determine the owls' use of artificial sites. Follow-up field checks will be made in 1990 to check on the level of their use.

A field investigation for the bank monkeyflower was conducted during the FY 1989 field season. This plant is listed as a sensitive plant species for the Clearwater Forest. It was believed to occur in only a few sites and to be extremely rare. The survey revealed the presence of more populations than previously known. A total of 56 populations are now documented on the Clearwater Forest.

All populations were found in narrow corridors along valley bottoms. The habitat occupied by these populations totals less than 30 acres. Plants were found on a site where they had grown historically but had not been observed in some years. Seven sites where the plant has been recently observed now have no individual plants growing there. It is not known why the plants have died out from these sites. Speculation is that noxious weeds introduced by nearby road construction have overrun the habitat and are outcompeting the monkeyflower. Field surveys will continue, and a management plan for the species will be prepared in FY 1990.

Data from the survey of the other four sensitive species has not yet been analyzed. No findings are available at this time. Analysis will be completed in FY 1990 and results published in next year's monitoring report.

Clearwater Forest staff held over 25 public meetings with a variety of groups and organizations. The meetings provide current information on the status of these species on the Forest.

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Monitoring Report

SPECIES	CLASSIFICATION	STATUS
Animals		
Northern Rocky Mountain wolf	Endangered	Stable
Bald eagle	Endangered	Up
Grizzly bear	Threatened	Unknown
Wolverine	Sensitive	Up
Western big-eared bat	Sensitive	Unknown
Harlequin duck	Sensitive	Stable
Boreal owl	Sensitive	Same
Coeur d'Alene salamander	Sensitive	Same
Westslope cutthroat trout	Sensitive	Stable
Bull trout	Sensitive	Stable
Chinook salmon	Sensitive	Up
Steelhead	Sensitive	Up
Plants		
Oregon bentgrass	Sensitive	Unknown
Tolmie's onion	Sensitive	Unknown
Candystick	Sensitive	Unknown
Maidenhair spleenwort	Sensitive	Unknown
Deerfern	Sensitive	Unknown
Greenband mariposa lily	Sensitive	Stable
Broadfruit mariposa	Sensitive	Stable
Constance's bittercress	Sensitive	Unknown
California sedge	Sensitive	Unknown
Pacific dogwood	Sensitive	Down
Clustered lady's slipper	Sensitive	Stable
Dasynotus	Sensitive	Up
White shooting star	Sensitive	Stable
Henderson's shooting star	Sensitive	Stable
Phantom orchid	Sensitive	Unknown
Soft rush	Sensitive	Stable
Rollins' desert parsley	Sensitive	Unknown
Oregon bluebell	Sensitive	Unknown
Bank monkeyflower	Sensitive	Stable
Slender woolyheads	Sensitive	Unknown
Wool grass	Sensitive	Unknown
Leiberg's tauschia	Sensitive	Unknown
Sierra woodfern	Sensitive	Unknown
Sticky tofieldia	Sensitive	Unknown
Western starflower	Sensitive	Unknown

Monitoring Report

Item No. 36	Minerals Resource Availability
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

Monitoring Action:

The Forest geologist will prepare a report on the probable effect of renewable resource prescriptions and management direction on mineral resources and activities, including exploration and development. Denial of proposed mineral activities and changes in land status affecting mineral availability such as designation as Wilderness or recommended Wilderness; legislation such as the Threatened and Endangered Species Act; executive orders; and special resource stipulations or management direction will be documented. Changes to land status, restrictions on minerals availability or exploration and development will be documented and kept on file by the Forest geologist.

Findings and Evaluation:

The Clearwater National Forest contains a total of 1,837,116 acres. Of these, 267,376 (approximately 15 percent) have been withdrawn from mineral entry. The withdrawn areas include 259,167 of the Selway-Bitterroot Wilderness and 110 sites totalling 8,211 acres.

The sites withdrawn from mineral entry have been scheduled for review by 1991 to determine if they should remain in withdrawn status. Currently, 95 sites have been reviewed, while 71 have been removed from withdrawn status. There are five sites remaining to be reviewed by the 1991 deadline. The cultural sites and historic trails on the Forest have not yet been reviewed for mineral withdrawal recommendation.

IV. All Resources Reporting System

Introduction

The Clearwater National Forest is breaking new ground with its All Resources Reporting System (ARRS). ARRS is a way for the Forest to show quantifiable benefits and costs of the entire Forest management program. The Clearwater is one of eight national forests developing and evaluating alternate ways to gather and report resource data.

The 1988 ARRS report was the Clearwater's contribution to the initial ARRS testing effort. A national system will be developed and tested in fiscal year 1990.

Three ARRS tables have been developed to provide you with an overview of the Forest's financial, economic and socio-economic effectiveness during a fiscal year. For 1989, the Forest has produced two of the three tables which were included in last year's report.

Table 1--The Financial Report--is the financial statement of the Forest. Revenues (sources of funds) and costs (application of funds) are reported.

The Clearwater did not compile a financial report for 1989 (nor did any other national forest). The reporting format and accounting codes used in the financial report were substantially changed following review of the 1988 national testing effort. These changes will be reflected in the financial report for 1990 which will appear in next year's monitoring report.

Table 2--The Economic Report--is an economic analysis of the benefits and costs of long-term investments made by the Forest during 1989. The discounted costs and benefits associated with each affected resource over the useful lives of the investments are shown. The present net value of future effects accruing to management initiated during 1989 is about \$3.4 million.

Table 3--Employment, Income and Program Level Report--provides information on employment, income and other socio-economic benefits of 1989 Forest management with respect to local communities. Nearly 2,900 jobs and approximately \$85 million in income were associated with the Clearwater's management programs in the communities located within the large six-county area influenced by the Forest.

Table 2-The Economic Report

Overview

The purpose of Table 2 is to give you a comprehensive picture of the economic effects resulting from long-term investments made during FY 89. Each basic resource is evaluated in terms of the long-term economic effects of management initiated during 1989. Both positive and negative economic effects of management are reported for each resource. Present and future resource-related costs, including road costs, associated with producing the benefits are reported.

ARRS

Present Net Value

Present value results from computing costs and benefits over time and comparing them to an equivalent amount of money in hand, now. This concept is important for valuing the effectiveness of public land management because we do not spend money now and gain the returns now. Instead, money is spent over time and the returns gained over time (Wright and Tate 1973).

In order to measure the effectiveness of one year's management over time, it is necessary to express present and future values and costs in terms of that year's currency. Obviously, a dollar now is worth more than the promise of a dollar twenty years from now, even if we are certain that the promise will be kept. So if we are to be paid now, instead of twenty years from now, we should be willing to accept less than the future return. Similarly, if we know that a cost will occur in twenty years we should be willing to pay a lesser amount now in exchange for that future cost. Again, we recognize that present dollars are more valuable than future dollars.

Present values are calculated by reducing future values of benefits and costs by a rate which reflects the fact present dollars are more valuable than future dollars. This rate is known as the discount rate. Agency policy is to use a discount rate of 4% to evaluate the economic effectiveness of long-term forestry projects. A 4% discount rate was used in this study.

Present net value is the amount by which the present value of benefits exceeds the present value of costs. Mathematically, this is expressed:

$$\text{PRESENT NET VALUE} = \text{PRESENT VALUE OF BENEFITS} - \text{PRESENT VALUE OF COSTS.}$$

In Table 2 present net values are displayed to represent positive and negative economic effects on each basic resource during FY 1989. One composite PNV (present net value) figure will be displayed for all basic resources on the Forest. The management action(s) from 1989 which caused each resource effect and cost will be described briefly in an accompanying narrative.

Market and Non-market Values

In Tables 2 and 3, the values used in the ARRS study were intended to represent actual or estimated market prices for resource outputs. In the ARRS study, only prices received by the Forest for timber can be considered to be pure market prices. They alone were derived from an interaction between supply and demand forces in a local competitive market place.

The benefit values used to represent non-market values were estimated for recreation, range, minerals, and commercial fish. The source of these estimates is the *Final Environmental Impact Statement, 1985-2030 Resources Planning Act Program* (USDA 1986). These are resources for which fees are not usually charged or are fixed by policy rather than in the market place. Benefit values for recreation, wilderness, and noncommercial wildlife and fish were based on review and analysis of numerous studies of these values. Values for forage were derived from examination of market prices for leases on private lands, adjusted for differences in the terms between public and private land leases (USDA 1986). Therefore, non-market values should be regarded as estimates of market values, comparable to the certain market values obtained for the timber output.

TABLE 2: LONG-TERM ECONOMIC REPORT

	TIMBER	RECREATION	WILDLIFE	FISH-ERIES	RANGE	WATER	MINERALS	TOTAL
NET EFFECTS	11,973,000	1,884,000	176,000	1,403,000	30,000		0	15,466,000
COSTS								
RESOURCE-RELATED	6,799,000	166,000	12,000	36,000	17,000	0	0	7,030,000
ROADS	4,996,000							4,996,000
TOTAL COSTS								12,026,000
PRESENT NET VALUE								3,440,000

Long-term Economic Effects of Forest Management Activities

A. Timber

The discounted value of timber produced from the acreage harvested during 1989, and all future timber yields from those acres, is estimated to be **\$11,973,000**. The related costs of producing the 1989 timber for harvesting, tending future stands, offering and administering future sales is estimated to be **\$6,799,000**. The estimated cost of past and future road reconstruction to service these sales is **\$4,996,000**.

B. Recreation

The Forest made four long-term investments in recreation resources during 1989. These investments involved construction of the following facilities:

- 1) The Five-Lakes Butte Trail, 3 miles long, on the North Fork Ranger District.
- 2) The Shasta Lake Trail, 2 miles long, on the Lochsa Ranger District.
- 3) The Pack Box Trail, 3 miles long, on the Powell Ranger District.
- 4) The Lost Ridge pack bridge on the North Fork Ranger District.

The discounted present net value of the estimated recreational usage of these facilities over the next 40 years is **\$1,884,000**. The construction cost of these facilities was **\$166,000**.

C. Wildlife

The wildlife benefit accruing to Forest management during 1989 is the dollar value of the wildlife and fish user days (WFUD's) resulting from that management. The Rocky Mountain elk is the only land animal on the Clearwater National-Forest for which research has yielded reliable information on population changes in response to forest management.

Winter range carrying capacity is the factor limiting elk numbers on the Clearwater National Forest at present. Management activities designed to increase this carrying capacity are: a) timber harvest from big-game winter range, and b) broadcast burning to remove undesirable overstory vegetation. These

ARRS

activities enhance the production of grass, forbs and palatable brush which benefit wintering elk populations.

Timber was harvested from **339 acres** of big-game winter range during FY 1989. Broadcast burning accounted for an additional **500 acres** of winter range improvement. The benefit from these improvement efforts is the value of additional projected elk hunting recreation over the next 85 years, the useful lives of the improvements. The net benefits from timber harvesting and broadcast burning are **\$148,000** and **\$28,000**, respectively. The total benefit reported for FY 1989 is **\$176,000**.

D. Fisheries

Forest management can affect fisheries habitat for better or for worse, sometimes both. The fisheries effect accruing to Forest management during 1989 is the dollar value of the WFUD's gained or lost as a result of that management. The commercial value of anadromous fish (fish which spend much of their adult life in the ocean, returning to Forest streams to spawn) gained or lost is also included.

Anadromous fish on the Clearwater include steelhead trout and chinook salmon. Resident fish species include rainbow, brook, cutthroat and bull trout as well as mountain whitefish.

Investments in fisheries habitat improvement projects can yield substantial improvements in habitat quality and carrying capacity. **127 acres of direct fisheries habitat improvement** was accomplished on the Forest during 1989. Additionally, **151 fisheries habitat improvement structures** were completed. The present value of the projected benefits from these projects over the next 40 years (the useful lives of the structures) is **\$1,427,000**. The present cost of constructing and maintaining the fisheries improvement structures during the period of their useful lives is estimated to be **\$36,000**.

On the other hand, extensive and rapid roading of drainages can result in reduced habitat quality through sedimentation of spawning gravel. The negative effect which timber harvesting imposes upon fisheries habitat relates to the amount of additional sediment deposited in spawning gravel as a result of road construction and harvesting activities.

The present value of the projected negative effects imposed upon Forest streams during 1989 was **\$24,000**. The effects are expected to be short-term, about three years.

In summary, the net effect of management on the fisheries resource reported in Table 2 is:

POSITIVE EFFECTSBenefits due to investments: **\$1,427,000****NEGATIVE EFFECTS**Sedimentation effects: **\$24,000****NET EFFECTS: \$1,403,000****E. Range**

Theoretically, management could positively affect the number of animal unit months (AUM's) sold on the Forest through investments (fences, corrals, cattle guards) or through timber harvesting which creates additional transitory range. Owing to relatively low present demand for forage on the Forest, no range investments were made during 1989. There were **2,425 acres** of transitory range created by timber harvesting during 1989. The present value of the grazing benefit to be derived from this range is projected to be **\$30,000**. Projected costs associated with the administration of this range are **\$17,000**.

F. Water

The Clearwater National Forest is blessed with water. Approximately **4.7 MAF** (million acre feet) flowed out of the Forest during 1989, slightly less than the annual average of nearly five MAF. Some of the water which leaves the Forest is eventually used for downstream irrigation and electrical power generation in the Columbia River system.

Timber harvesting temporarily reduces evapotranspiration (water lost by evaporation and transpiration) on a harvested site through vegetation removal. This results in a runoff rate higher than would occur without a harvesting program. If this increased runoff rate results in economic benefit then this benefit could logically be attributed to the timber sale program. However, the increased runoff was not specifically valued in this analysis because most of the increase in water production occurs during spring runoff when no additional storage capacity exists.

Undoubtedly there are some positive benefits due to increased runoff. Some of the increased flow could find its way through power turbines. Some could be used for irrigation. Additional spring runoff aids in the migration of young salmon and steelhead during a relatively dry year. An attempt to value these benefits, however, is difficult. Therefore, we have simply made the observation that some subjective benefits to additional runoff would occur without attempting to place dollar values on those benefits.

G. Minerals

The minerals program on the Clearwater National Forest is a small one. It consists primarily of public mining for placer gold and the use of rock mined from Forest land for road surfacing.

The Forest made no long-term investments in the minerals program in 1989. No measurable positive or negative effects to other resources were observed as a result of this program.

Table 3-Employment, Income and Program Level Account

Table 3 displays employment, income and program level information related to each basic Forest resource.

The number of jobs and the amount of income associated with each basic resource are listed in Table 3, Part 1. These figures include both primary and secondary jobs and income, but not Forest Service employment.

Table 3, Part 2 consists of two tables. Table A, the Resource Output Table, displays the quantities and values to the American people of key commodity outputs. The "average annual" output value projected in the Forest Plan and "estimated economic value" associated with the current year's production of each commodity are also displayed in this table. The sum of the values in the "estimated economic value" column represents the estimated economic value of the outputs produced on the Forest during FY 1989. The total value of all Forest products is termed "Gross Forest Product."

Values displayed in the "estimated economic value" column were based upon actual market values associated with commodity production. If market values were not available, the appropriate non-market output value was determined based on the *Final Environmental Impact Statement, 1985-2030 Resources Planning Act Program* (USDA 1986).

Table B, the Resource Activity Table, displays the quantities of key resource activities.

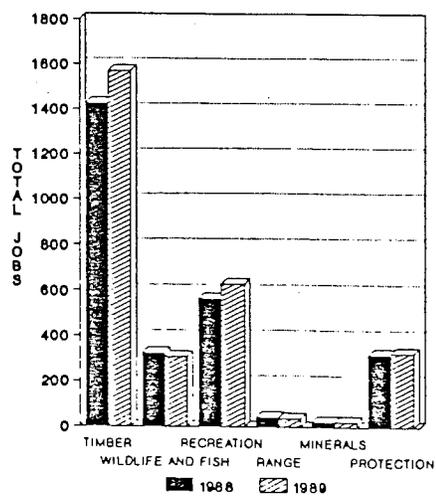
TABLE 3 - PART 1:
EMPLOYMENT, INCOME, AND PROGRAM LEVEL REPORT

RESOURCE	TOTAL JOBS	TOTAL INCOME
Timber	1,570	\$55.46 MM
Recreation	627	\$13.81 MM
Wildlife & Fish	306	\$ 6.75 MM
Range	5	\$ 0.15 MM
Minerals	3	\$ 0.10 MM
All Other	324	\$ 7.77 MM
Totals:	2,835	\$84.04 MM

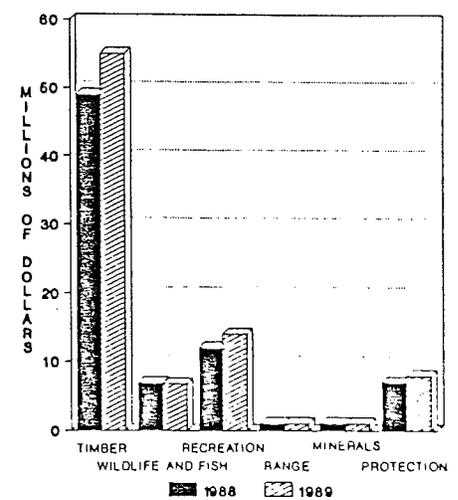
Federal Income Taxes Generated: \$12.61 MM

State of Idaho Income Taxes Generated: \$3.15 MM

EMPLOYMENT



TOTAL INCOME



DOLLAR VALUES EXPRESSED IN 1989 DOLLARS

Interpretation of Employment and Income Graphs

The graphs on the preceding page illustrate that the timber and recreation resources contributed substantial employment and income gains to the local economy during 1989 compared to 1988. The other resources showed stable employment and income levels.

Timber Harvest Up In 1989

The increased timber harvest during 1989 was due to three primary factors:

- a. Generally good weather during 1989 made for efficient timber harvesting. The fire season was not severe. The above normal snowpack was sufficient to meet timber sale contract specifications for winter harvest. This permitted harvest from some sales from which harvest had been restricted during the winter of 1988 due to insufficient snow depth. Cold winter weather kept haul roads firm throughout the winter and minimized hauling restrictions.
- b. High lumber and pulp prices encouraged the harvest of timber under contract to purchasers. The particularly strong pulp market permitted profitable logging of highly defective, economically marginal timber.
- c. Potlatch Corporation, a major timber purchaser of Clearwater National Forest timber, has resolved many of the technological problems which plagued its Lewiston, Idaho mill during 1988. Production at that facility increased substantially during 1989, much of it with Clearwater logs.

Recreational Use and Investment Continued to Increase During 1989

Increased investment in recreational resources led to greater employment and income during 1989. The Forest's recreation budget increased by more than 20% last year, much of it for increased trail construction.

TABLE 3 - PART 2: EMPLOYMENT, INCOME, AND PROGRAM LEVEL REPORT
A. RESOURCE OUTPUT TABLES

RESOURCE OUTPUTS WITH ECONOMIC VALUE:	UNIT OF MEASURE	QUANTITY	FOREST PLAN AVE. ANNUAL	ESTIMATED DOLLAR VALUE 1/
Timber Revenues From Table 1	\$	9,506,826	N/A 2/	9,506,826
Developed Recreation Use	MRVD	319.1	201.1	1,716,000
Dispersed Recreation Use	MRVD	475.8	808.3	8,344,000
Non-Wilderness Use	MRVD	445.2	687.3	* 5,964,000
Wilderness Use	MRVD	30.6	121.0	* 396,000
Hunting:				
Big-game Hunting	MWFUD	105.8	80.1	* 3,796,000
Small Game Hunting	MWFUD	23.3	N/A	* 566,000
Fishing:				
Resident Sport Fishing	MWFUD	59.1	61.5	* 756,000
Anadromous Sport Fish- ing 3/	MWFUD	45.5	N/A	1,212,000
Commercial Fishing 3/	M LBS	77.3	N/A	179,000
Mineral Production:				
Locatables	OZ./GOLD	150.0	N/A	57,000
Leaseables	\$	0	N/A	0
Common Variety (Aggre- gate)	\$	391,000	N/A	391,000
Actual Grazing Use:				
Sheep	M AUM	0	N/A	0
Cattle	M AUM	10.6	16.0	90,000
Other	M AUM	2.4		20,000
Gross Forest Product				\$21,515,826

1/ Timber revenues are actual funds received from timber purchasers. All other economic values are estimates based upon Forest outputs and unit values listed for this area in the *Final Environmental Impact Statement, 1985-2030 Resources Planning Act Program* (USDA 1986).

2/ 'N/A' indicates that there is no associated projected output in the Forest Plan.

3/ 'Anadromous sport fishing' and 'commercial fishing' occur off the Forest. The Forest provides spawning and rearing habitat for young anadromous fish before they migrate to the sea.

ARRS

* Numbers preceded by an asterisk are included in the "dispersed recreation" figure. To avoid double counting, they have not been summed in computation of Gross Forest Product.

TABLE 3 - PART 2: EMPLOYMENT, INCOME, AND PROGRAM LEVEL REPORT
A. RESOURCE OUTPUT TABLES (continued)

OTHER RESOURCE OUTPUTS:	UNIT OF MEASURE	QUANTITY	FOREST PLAN AVE. ANNUAL
Timber Harvested:			
Sawtimber	MMBF	96.4	N/A
Roundwood	MMBF	15.2	N/A
Other	MMBF	8.8	N/A
*Fuelwood	MMBF	0.4	N/A
Total Harvested	MMBF	120.6	N/A
Non-convertible Products:			
Christmas Trees Sold	Trees	2100	N/A
Other	\$	300	N/A
Big-game Populations:			
Elk	M ANIMALS	17.0	17.8
Deer	M ANIMALS	9.6	N/A
Anadromous Fish Population:			
Steelhead	M SMOLTS	117.7	250.1
Chinook	M SMOLTS	150.2	367.1
Resident Fish Population	M CATCHABLE	524.0	520.8
Population Trends:			
Endangered Species	+/-	No change from 1988.	N/A
Threatened Species	+/-		N/A
Sensitive Species	+/-		N/A
Water Production	Maf	4.7	5.0

* Not reported in "total harvested" volume.

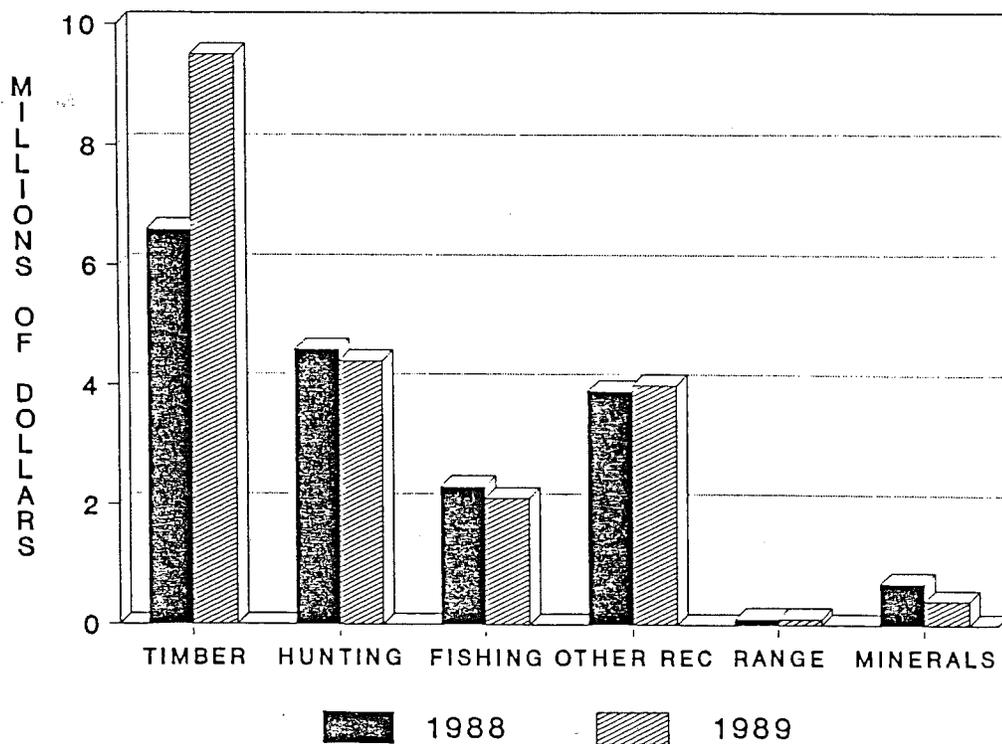
ARRS

TABLE 3 - PART 2: EMPLOYMENT, INCOME, AND PROGRAM LEVEL REPORT
B. RESOURCE ACTIVITY TABLE

RESOURCE ACTIVITY	UNIT OF MEASURE	QUANTITY	FOREST PLAN AVE. ANNUAL
Timber Offered	MMBF	158.5	173.3
Timber Sold	MMBF	148.1	N/A
Regeneration Acres Treated	Ac.	4,929	12,534
Precommercial Thin Treatments	Ac.	917	1,928
Forest Road Program - Appropriated: Construction	Mi.	0.42	21.0
Reconstruction	Mi.	6.66	N/A
Forest Road Program - Purchaser Credit: Construction	Mi.	33.6	48.0
Reconstruction	Mi.	35.8	N/A
Total Road Construction	Mi.	34.02	69.6
Trail Construction and Reconstruction	Mi.	8.0	13.8
Wildlife Direct Habitat Improvement	Ac.	513	1,300
Wildlife Structures	#	72	N/A
Fish Direct Habitat Improvement	Ac.	127	219
Fish Structures	#	151	N/A
T & E Direct Habitat Improvement	Ac.	0	N/A
T & E Structures	#	0	N/A
Recovery Plan for T&E&S	%	100%	N/A
New T&E Listings	#	0	N/A
New Sensitive Listings	#	0	N/A
Permitted Grazing Use	MAUM	13.3	16
Range Improvements	Ac.	2,470	7,000
Range Structures	#	2	N/A
Noxious Weed Control	Ac.	295	380
Watershed Inventory	Ac.	16,040	N/A
Watershed Rehabilitation	Ac.	200	216
Soil Inventory	Ac.	612	17,000
Minerals Cases	#	174	265

The graph below compares the relative values of Clearwater National Forest outputs during 1988 and 1989. The values in this figure were derived from Table 3 - Part 2A.

GROSS FOREST PRODUCT



Interpretation of Gross Forest Product

The gross forest product graph on the preceding page illustrates that the total value of Forest products was approximately \$21.5 million during 1989. This represents an increase of over 16% compared with 1988. Most of this healthy increase was due to the resurgence in timber harvesting during the year.

The minerals resource registered an output decline during 1989 due to a reduction in the price and output of gold. When the price of gold declines the effort to mine it declines as well. Additionally, the Forest engineering program mined substantially less crushed aggregate for road surfacing during 1989.

Production from the other resources was relatively stable compared to the previous year.

Literature Cited

USDA Forest Service, 1986. 1985-2030 RPA Program, Final Environmental Impact Statement, FS-403. Washington Office of the U.S. Forest Service, Washington, D.C.

Wright, C. and M. D. Tate, 1973. Economics and Systems Analysis: Introduction for Public Managers. Addison-Wesley, Reading, Mass. 250 p.

V. Appeals

This section contains a list of the appeals received by the Forest. There are two parts to this section. The first is a listing and status of appeals of the Forest Plan. The second part is a new addition to the report and details the appeals and status of individual projects on the Forest.

We received 28 appeals to the Clearwater National Forest Plan. After meeting with all appellants, this number was decreased to 15 as appeals were either consolidated or withdrawn. In 1988 two appeals were settled and one withdrawn. Since those appeals are no longer an issue, they are not discussed in this year's report. Remaining are twelve unresolved appeals. The following table summarizes the progress made and the status of the twelve appeals.

FOREST PLAN APPEAL ISSUES

Appellant	Status	Issues
#2112 John Swanson	Dismissed.	1. Violation of NFMA (the National Forest Management Act), Endangered Species Act, Wild and Scenic Rivers Act, Wilderness Act, and MUSYA (the Multiple-Use Sustained Yield Act).

Appeals

FOREST PLAN APPEAL ISSUES (continued)

Appellant	Status	Issues
<p>#2155 St. Joe Valley Association</p> <p>#2161 Associated Logging Contractors (Consolidated)</p>	<p>Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.</p>	<ol style="list-style-type: none"> 1. Public participation requirements in the development and use of minimum management requirements and other constraints. 2. NEPA (National Environmental Policy Act) and NFMA regulations on "current direction" (no action) alternative. 3. NEPA regulations requiring "plain language." 4. Community stability. 5. Inventory data and information collection, economic values, cost-efficiency, suitable lands, and timber volume calculations. 6. FORPLAN computer model. 7. Comply with Resource Policy Act in setting an ASQ. 8. Preventing potentially damaging increases in forest pest organisms. 9. Annual allowable sale quantity schedule. 10. Adequate range of alternatives. 11. Mallard-Larkins wilderness recommendations and roadless management areas reduce suitable lands for timber harvest.
<p>#2163 George Wuerthner</p>	<p>Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.</p>	<ol style="list-style-type: none"> 1. Cumulative impacts. 2. Old growth. 3. Fire suppression. 4. Rare and sensitive plants and wildlife. 5. Anadromous fish. 6. Wilderness recreation. 7. Roads. 8. Insect and disease. 9. Noxious weeds. 10. Wilderness and roadless values. 11. Wild and Scenic rivers.

FOREST PLAN APPEAL ISSUES (continued)

Appellant	Status	Issues
<p>#2172 Wilderness Society, et al.</p>	<p>Negotiations progressing.</p>	<ol style="list-style-type: none"> 1. Development and analysis of alternatives and selection of preferred alternative. 2. Increase timber harvest after the first decade of Forest Plan implementation. 3. Water quality and fisheries. 4. Evaluation and consideration of roadless areas for recommendations as potential wilderness. 5. Timberland suitability and restocking. 6. Non-declining even-flow constraint. 7. Harvest of timber stands before the stand has reached the culmination of mean annual increment of growth. 8. Protecting the endangered gray wolf. 9. Determination of ASQ.
<p>#2175 Independent Miners Association</p>	<p>Settlement agreement accepted, appeal withdrawn.</p>	<ol style="list-style-type: none"> 1. Consistency of Forest Plan's management direction with rights of persons under the United States mining laws.
<p>#2176 Nez Perce Tribe</p>	<p>Settlement agreement accepted, appeal withdrawn.</p>	<ol style="list-style-type: none"> 1. Inadequate analysis of the Plan's impact on elk habitat in the EIS (Environmental Impact Statement). 2. Inadequate monitoring of Plan's impact on elk and other species. 3. Protection for cultural sites, including archaeological sites, burial sites, religious sites, and gathering sites. 4. Provision for tribal treaty grazing rights. 5. Impacts of budget adjustments. 6. Second decade ASQ.

Appeals

FOREST PLAN APPEAL ISSUES (continued)

Appellant	Status	Issues
<p>#2185 Columbia River Intertribal Fish Commission</p>	<p>Negotiations progressing.</p>	<ol style="list-style-type: none"> 1. Protection of Indian treaty rights. 2. Cumulative impacts of roaded development on fisheries. 3. NEPA site-specificity requirements. 4. NFMA mitigation and monitoring requirements. 5. Clean Water Act requirements.
<p>#2186 Richard and Lana Schumacker</p>	<p>Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.</p>	<ol style="list-style-type: none"> 1. Violation of laws by establishing an ASQ that is not a measure of the Forest capabilities and is based on net selling volume, not growth. 2. Whether the Plan and EIS estimate and display the effects of implementation on income and employment in affected communities.
<p>#2190 International Woodworkers of America</p>	<p>Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.</p>	<ol style="list-style-type: none"> 1. Local timber supplies and mill capacities were not considered in developing the Plan's ASQ. 2. Forest Plan does not adequately address the impacts of the preferred alternative on timber-dependent economies.

FOREST PLAN APPEAL ISSUES (continued)

Appellant	Status	Issues
<p>#2191 Idaho Women in Timber</p>	<p>Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.</p>	<ol style="list-style-type: none"> 1. Adequate assessment of social, economic, and community impacts of the timber program. 2. Whether the Plan's timber harvest program meets the demand of the forest products industry. 3. Forest Service failed to recognize, assess, and protect the cultural resources found in dependent communities.
<p>#2192 Clearwater County Commissioners, City of Orofino, Kamiah School District #304, Idaho County Commissioners, Lewis County Commissioners, Cottonwood School District #242, Nez Perce County Commissioners, City of Lewiston</p>	<p>Chief upheld the Regional Forester's decision that the Forest Plan adequately addressed the issues.</p>	<ol style="list-style-type: none"> 1. Adequate analysis of timber supply and demand in determining ASQ. 2. Display of social and economic impacts of Alternative K (the selected alternative). 3. Readable documents.
<p>#2198 American Rivers, Inc.</p>	<p>Settlement agreement accepted, appeal withdrawn.</p>	<ol style="list-style-type: none"> 1. Eligibility screening of potential Wild and Scenic rivers. 2. Management standards for the protection of Wild and Scenic rivers.

Appeals

FOREST PLAN APPEAL ISSUES (continued)

Appellant	Status	Issues
<p>#2199 Intermountain Forest Industry Association</p>	<p>Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.</p>	<ol style="list-style-type: none"> 1. Sufficiency of the Record of Decision. 2. Alternatives must meet the requirements of NFMA, NEPA, MUSYA, and Organic Act. 3. Disclosure of analysis process used to develop planning documents. 4. Sufficient public participation. 5. Forest Plan direction developed using adequate analysis. 6. EIS contains all components and is readable. 7. Effective monitoring program to ensure implementation. 8. Allocation of roadless, semi-primitive recreation management areas. 9. Protection from insects and disease.
<p>#2211 Orofino Chamber of Commerce, Clearwater County Concerned Citizens, Kamiah Chamber of Commerce, North Idaho Chamber of Commerce</p>	<p>Chief upheld the Regional Forester's decision that the Forest Plan adequately addressed the issues.</p>	<ol style="list-style-type: none"> 1. Adequate analysis of timber supply and demand in determining ASQ. 2. Display of social and economic impacts of Alternative K (the selected alternative). 3. Readable documents.

FOREST PLAN APPEAL ISSUES (continued)

Appellant	Status	Issues
#2131 Bradley Chinn	Responsive Statement sent to the Washington Office. Awaiting Chief's decision on the appeal.	<ol style="list-style-type: none"> 1. Assessment of roadless areas. 2. Protection of the water resource. 3. Requirements of the Wild and Scenic Rivers Act. 4. Determination of the allowable sale quantity (ASQ). 5. Identification of potential impacts to wilderness areas from development on adjacent lands. 6. Whether the EIS meets the requirements of NEPA and NFMA in determining environmental impact significance.

One unresolved project level appeal was carried over from 1988. The Forest received three new project appeals during 1989. The carry-over appeal concerned outfitter and guide permit access. The three new appeals all concerned timber management. Two of these were consolidated because their issues were nearly identical. The following table presents the status of these appeals.

PROJECT LEVEL APPEAL ISSUES

Appellant	Status	Project Appealed / Issues
James and Maryann McMannus	Decision upheld by Regional Forester.	<p>Appeal of decision not to grant outfitter and guide permit.</p> <p>Procedure for granting outfitter and guide permits.</p> <p>Access for the handicapped and elderly.</p>
Friends of the Clearwater	Appeal Withdrawn.	<p>Len-Sou and Bugs Too Timber Sale</p> <p>Watershed sediment and fisheries analysis.</p> <p>Economics of Forest recreation considered.</p>

Appeals

PROJECT LEVEL APPEAL ISSUES (continued)

Appellant	Status	Project Appealed / Issues
Columbia River Intertribal Fish Commission and Nez Perce Tribe	Decision withdrawn by the Powell District.	Squaw Creek Compartment Ten-Year Management Activity Plan Effects of decision on fish habitat and riparian areas. Violation of Forest Plan sediment standards. Effectiveness of selected mitigation measures not discussed.
Friends of the Clearwater	Appeal Withdrawn.	French Tamarack Timber Sale No justification for clearcut in excess of 40 acres. Economics of Forest recreation considered. Violation of Forest Plan standards with respect to old growth.

VI. Planned Actions

Introduction

Several proposed changes to the Forest Plan and other management actions were made in the Monitoring and Evaluation Report for 1988. We anticipate that in fiscal year 1990 amendments to the Forest Plan will incorporate these changes. Amendments will be implemented following appropriate public notification and satisfactory completion of NEPA (National Environmental Policy Act) procedures.

Proposed Forest Plan Amendments

A. Clarification of Goals, Objectives, and Standards

The following are proposed changes to the Forest Plan. These changes will help clarify the goals, objectives, and standards.

Page II-3, Forest Goal 11, Forest Plan

Change to read as follows: *Provide for access to and exploration, development, and production of minerals and energy resources while meeting Forest Plan direction.*

Page II-7, Forest Objective 11.b., Forest Plan

Change to read as follows: *Meet demand for common variety minerals consistent with the management of the surface resources.*

Page II-24, Forest Standard 5.f., Forest Plan

Change to read as follows: *In compliance with subsection 7(a)(2) of the Endangered Species Act a biological evaluation will be prepared as directed in FSM (Forest Service Manual) 2672.42 for all proposed management activities.*

Page II-24, Forest Standard 5.i., Forest Plan

Delete last sentence which reads: *"This is required in the absence of the formal recovery plan."*

Page II-29, Forest Standard 8.h., Forest Plan

Change to read as follows: *Where Forest Plan water quality standards are demonstrably not being met, no National Forest activities shall be initiated that would likely result in further degradation in excess of the standards unless the state finds, pursuant to State laws and procedures, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.*

Page II-30, Forest Standard 9.i., Forest Plan

Change to read as follows: *Approximately 85 percent of the Clearwater National Forest is open to mineral entry under the general mining laws with no restrictions other than valid existing rights and*

Planned Actions

such resource protection measures as may be required under 36 CFR (Code of Federal Regulations) 228.

Provide for reasonable access for mineral prospecting, exploration, development, and production and uses reasonably incident thereto {16 USC (US Code) 478, 36 CFR 252}.

Page II-36, Forest Standard 17, Forest Plan

Change to read as follows: *...at least one quarter mile.*...*

Page II-39, Forest Standard 17.l., Forest Plan

Change to read as follows: *...Permit new transmission corridors only if...*

Add the following standard: Streams shall be administered to protect and enhance the values which cause them to be included (or studied for inclusion) in the system. Hydroelectric facilities will be prohibited to the extent of Forest Service authority.

Page II-39, Add Standard to Minerals and Geology 17.e, Forest Plan

In the potential wild, scenic, or recreational proposed river corridors, a no-surface occupancy stipulation will be required in energy mineral leases.

Page II-40, Forest Standard 17.g.1.b., Forest Plan

Change to read as follows: *...new road construction and significant realignment will generally not take place within the scenic river corridors. Roads may occasionally bridge the river area and short stretches of conspicuous or longer stretches of inconspicuous and well screened roads could be allowed.*

Page III-45, Management Area Standard Item 8.a., Forest Plan

Change to read as follows: *Close roads to public motorized use when conflicts with big-game use could occur.*

Page III-71, Management Area Goal Item 6, Forest Plan

Change to read as follows: *Locate production facilities outside the management area whenever reasonably possible to avoid impacts on riparian values.*

B. Revision of General Standard 1.c. on pages 01-20,21, Forest Plan

Review and revise based on the Forest Service Chief's position as detailed in the Idaho Panhandle National Forests roadless decision.

C. Revision of Appendix B, page B-12, Forest Plan

Change definition for the non-interchangeable component to read as follows: *This is consistent with the definition in the Record of Decision, page 7.*

Planned Actions

D. Appendix P

Remove publication 8, *Clearwater National Forest Best Management Practices*.

E. Monitoring Requirements

The Forest will also review monitoring requirements.

F. Appendix C

Last year in this section we presented a proposed change to the projected budget in Appendix C of the Forest Plan. As we continue to implement the Forest Plan, we find that we are continually updating costs to comply with strategies outlined in Chapter 1 of this document.

Each autumn we update the dollars needed to implement these strategies. This updated information is submitted to the Forest Service Region 1 office, and it contributes to the basis for the Forest Service's budget request to Congress.

Instead of changing the Plan we feel it is more important to inform you about the adjustments we make during this process. Each year we will report our revised request in the Monitoring and Evaluation Report, adjusted for inflation.

The following table displays the Forest Plan budget adjusted for inflation.

REVISED FOREST PLAN BUDGET
Cost Required to Implement Forest Plan by Activity
Decade 1 (thousands of dollars)

Funding Item	Budget Activity	Budget From Forest Plan in 1989 Dollars	Revised Forest Plan Budget FY 88	Revised Forest Plan Budget FY 89
00	General Administration	2,648	2,411	2,245
01	Fire Protection	1,071	730	753
02	Fire (Fuels)	307	201	60
03	Sale Preparation and Administration	3,187	3,264	3,996

Planned Actions

Funding Item	Budget Activity	Budget From Forest Plan in 1989 Dollars	Revised Forest Plan Budget FY 88	Revised Forest Plan Budget FY 89
04	Timber Planning	360	282	250
05	Silvicultural Exams	1,057	875	1,050
06	Range	128	104	118
07	Range (Noxious Weeds)	36	33	31
08	Minerals	208	156	130
09	Recreation	1,278	1,101	1,240
10	Wildlife/Fisheries	1,339	1,118	2,005
11	Soil/Water	483	576	1,025
12	Facilities Maintenance	593	410	395
13	Special Uses	111	99	106
15	Landownership Exchange	162	162	100
16	Land line Location	431	337	415
17	Road Maintenance	1,003	912	963
18	Trail Maintenance	531	617	500
19	Co-op Law Enforcement	82	63	60
20	Reforestation - Appropriated	2,152	2,365	2,427
21	TSI - Appropriated	505	391	401
23	Tree Improvement	73	153	147
26	KV - Reforestation	3,326	4,238	2,200

Planned Actions

Funding Item	Budget Activity	Budget From Forest Plan in 1989 Dollars	Revised Forest Plan Budget FY 88	Revised Forest Plan Budget FY 89
27	KV - TSI	103	154	170
28	KV - Other	716	535	544
29	Other CWFS (Trust Fund)	814	628	632
30	Timber Salvage Sales	363	332	365
31	Brush Disposal	1,982	1,535	1,245
32	Range Betterment	9	9	8
33	Construction - Recreation Facilities	103	146	410
34	Facility Construction - FA&O	689	610	615
35	Engineering Construction Support	2,040	1,762	1,971
36	Construction - Capital Investment	3,080	2,579	2,500
37	Trail Construction and Reconstruction	359	336	485
38	Timber Purchaser Road Construction/Reconstruction	5,459	2,983	2,779
43	Land Acquisition	78	569	315
	TOTAL	36,866	32,776	32,714

Planned Actions

G. Appendix M

The following table lists streams/ivers recommended for inclusion in the Wild and Scenic rivers study. These are in addition to those shown in appendix M.

River/Stream	Segment/Location	Potential Classification	Highest Value
Little North Fork	Clearwater River portion	Based on bordering IPNF Forest Plan	Recreation
Fish Creek	Mouth to Hungery Creek	Recreation	Fish
Hungery Creek	Entire length	Wild	Fish
White Sand Creek	Mouth to wilderness border	Recreation	Fish

H. Additional Action Items

One of the purposes of the monitoring process is to identify how well we are implementing the Forest Plan. In other words, are we doing what we said we were going to do. Sometimes our initial monitoring uncovers the need for more intense monitoring to verify results and puts us in a position of asking why.

During the course of preparing the FY 89 Monitoring and Evaluation Report, there were two areas that were identified as needing additional monitoring emphasis:

Best Management Practices (BMP's) monitoring: In order to more correctly evaluate the effectiveness of BMP's, we have identified the need to do a more intensive sample of the application of BMP's on the Forest. Therefore, in FY 90 the Forest will initiate monitoring BMP's on ten percent of all timber sale units and 100% of all new road construction. Monitoring will concentrate in watersheds containing stream segments of concern (identified on page -- of this report).

Timber monitoring: As we move from the programmatic Forest Plan document to the site-specific NEPA (National Environmental Policy Act) decisions, we are finding we do not currently have the information to compare the estimates made at the Forest Plan level with those realized at the site-specific level. This is particularly true in timber management. Therefore, the Forest has identified and will begin to collect information comparing Forest Plan to site-specific information for timber. This will include any management area changes and a comparison of acres harvested and volume cut to those estimated in the Forest Plan. This information will be reported in future Monitoring and Evaluation Reports.

Effect of Proposed Changes

None of the proposed changes affect the decisions made in the Forest Plan including ASQ and timber suitability. They do not change any of the estimated management practices, outputs, or effects in the Forest Plan.

Implemented Change

Riparian Management

As a result of findings from the 1988 All Resources Reporting System, the Forest put together a team to review and develop a process for riparian management. A task force met in February 1989 to develop a strategy for riparian management. By June the Forest adopted a preferred alternative from the many examined. Because riparian areas are unique, they require special management to protect and enhance their values. The primary values are water quality and quantity, fisheries, and wildlife habitat. These are described in the Forest Plan on page III-68. Protecting and enhancing these values is the main objective of riparian management, with production of timber a secondary objective.

Contacts

VIII. List of Forest Contacts

The following people contributed to the development of the Monitoring and Evaluation Report for the Clearwater National Forest for Fiscal Year 1989.

Name	Telephone	Resource Area
Ken Anderson	(208)476-4541	Forester - Planning
John Bledsoe	926-4275	District Ranger, Lochsa Ranger District
Bob Boston	476-4541	Staff Officer - Recreation/Minerals
Pam Bowen	•	Geologist
Art Bourassa	476-3775	District Ranger, North Fork Ranger District
Chris Carr	476-4541	Staff Officer - Timber
John Case	•	Forester
Teresa Chase	875-1131	Assistant Ranger, Palouse Ranger District
Juanita Cooper	476-4541	Staff Officer - Administration
Randy Curtis	•	Engineer - Road Management
Dan Davis	•	Wildlife Biologist
Dallas Emch	935-2513	Acting District Ranger, Pierce Ranger District
Al Espinosa	476-4541	Fisheries Biologist
Margaret Ewing	942-3113	District Ranger, Powell Ranger District
Jeff Fee	476-4541	Archaeologist
Mary Ann Gerrish	•	Budget and Finance Officer
Dick Hodge	875-1131	District Ranger, Palouse Ranger District
Bill Jones	476-4541	Forester - Lands
Richard Jones	•	Hydrologist
Bob Littlejohn	•	Staff Officer - Engineering/Lands
Ed Lozar	•	Report Preparer/Resource Specialist
Bruce Martinek	476-3775	Report Preparer/Forester
Gary Meyer	476-4541	Staff Officer - Fire
Irvin Michael	•	Landscape Architect
Charley Mosier	•	Staff Officer - Public Affairs
Terri Ott	•	Timber Assistant
Steve Petro	•	Timber Sale Administrator
Charles Raddon	•	Recreation and Wilderness Specialist
Tom Rhode	•	Staff Officer - Planning/Wildlife-Fish-Watershed-Range
Paul Steenberg	•	Forester - Economist/Operations Research
Kathy Thompson	•	Report Preparer/Information Assistant
Fred Trevey	•	Forest Supervisor
Dale Wilson	•	Soil Scientist
Bill Wulf	•	Silviculturist

Cover illustration by Valeria Yost.

IX. Forest Supervisor Approval

APPROVAL

I have reviewed the annual Forest Plan Monitoring and Evaluation Report for Fiscal Year 1989 for the Clearwater 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) and 36 CFR 219. I have also considered the recommendations of the interdisciplinary and leadership teams on proposed changes to the Forest Plan and will process the necessary amendments after appropriate public notification.

This report is approved:



FRED L. TREVEY
Forest Supervisor

Date

6/1/90

Notes

CLEARWATER NATIONAL FOREST
1989 MONITORING AND EVALUATION REPORT
RESPONSE FORM

1. List features or information in this report that you would like to see *retained* in future reports.

2. What do you think should be *changed* or *expanded* in this report? What do you think should be *omitted*?

3. What would you like to see *included* in future monitoring and evaluation reports?

FROM: _____

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SUPERVISOR
CLEARWATER NATIONAL FOREST
12730 HIGHWAY 12
OROFINO, IDAHO 83544

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fold line

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