United States
Department of
Agriculture

Forest Service
Northern Region

Clearwater National Forest

Monitoring & Evaluation Report

Fiscal Year 1990

United States Department of Agriculture | Forest Service | Clearwater National Forest | 12730 Highway 12 Orofino, ID 83544 (208) 476-4541

Date: May 31, 1991

Dear Forest User:

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

We invite you to review and comment on the 1990 Monitoring and Evaluation Report. We also invite you to call, visit or write us anytime.

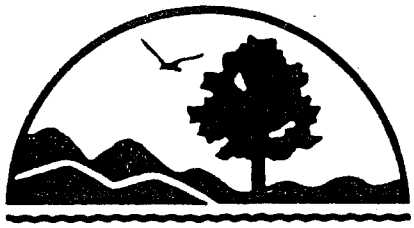
Sincerely,

Win Green

WIN GREEN
Forest Supervisor

Table of Contents

I. Introduction



Overview

The last three years have been both exciting and challenging to us on the Clearwater. As we implement the Forest Plan, we are continually verifying our data and assumptions through monitoring. We then evaluate the monitoring results to determine whether the Forest Plan should be revised or amended.

This report summarizes the results of Forest Plan monitoring and evaluation conducted from October 1, 1989 through September 30, 1990. It meets the requirements of 36 CFR 219 which sets forth the direction for the evaluation of Forest Plans. The direction to prepare an annual monitoring and evaluation report for the Clearwater National Forest is contained in Chapter IV of the Forest Plan.

The report is organized into six main sections following the Introduction. Section II focuses on monitoring requirements by resource. Section III highlights ARRS, the All Resources Reporting System. Section IV lists all Forest Plan and project level appeals, the status of each and the major issues of each appeal. Section V identifies conclusions drawn from this year's report and identifies recommended changes which could result in amendments to the Forest Plan. It also identifies any amendments made to the Forest Plan in fiscal year 1990. Section VI lists those people who contributed to the preparation of the report. Section VII is the Forest Supervisor's Approval.

Evaluation

Monitoring results for fiscal year 1990 have identified a need for additional information in several areas. A section called Effects in Section II identifies a need for additional information based on "changed conditions". These changed conditions can be defined as changes in the assumptions made in the Forest Plan that have occurred since it was signed. These changes could be a result of actions taken by the Forest and/or by other agencies and corporations, or changes that were not anticipated during the forest planning process.

A ground truthing exercise has been proposed as a means of obtaining some of this needed information. This exercise will begin by comparing the Forest Plan data to site specific information. The focus of the first step will be to determine the existing condition of the Forest, visually display that condition, and track the decisions made since the Forest Plan was signed. The second step will be an evaluation of that information. The first step was completed as of April 1, 1991. The second step is tentatively scheduled to be completed May 1, 1992.

Introduction

Monitoring results for 1990 also indicate that the conditions of watersheds on the Forest are of major concern. Forest Plan standards with regard to water quality and fisheries direct us to improve the condition of these watersheds. We will emphasize watershed restoration in the year 1991.

We observed a number of inefficiencies in the course of assessing our progress and success in implementing the Forest Plan and conducting site specific analyses for projects. These inefficiencies led us to design an integrated resource analysis process for the Forest. The IRA process was designed to provide a stronger link between the desired future condition (DFC) identified in the Forest Plan and the decisions of site-specific projects needed to implement the Forest Plan. The process will enable us to identify and discover activities and practices that are reasonable and probable in the context of the Forest Plan.

A team of Forest level resource specialists will use this process. Their task will be to work with the district ranger and develop the "proposed actions" for large and/or complex project proposals. These proposals will then become the starting point for NEPA (National Environmental Protection Act).

This process should enable us to start the NEPA process on a much more solid and reasonable foundation because the proper focus and scope are established from the beginning.

Monitoring has also shown that the five foot Stream Protection Zone (SPZ) on Class II streams is insufficient in preventing sediment from entering streams and insufficient in stabilizing stream channels. The Forest has taken steps to correct these problems by increasing the SPZ on Class II streams from 5 to 25 feet.

One amendment was made to the Forest Plan in 1990 (Chapter V). This amendment was a result of negotiations with the Independent Miners Association, an appellant of the Clearwater National Forest Plan. The amendment modifies the standards in Chapter II (Forestwide Management Direction) and Chapter III (Management Area Direction) of the Forest Plan.

II. Monitoring Report

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 develop working partnerships with the Nez Perce Tribe to facilitate communication, consultation 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.

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

Monitoring Action

The Forest and district archaeologists will monitor cultural resources on the Forest. A minimum of 25% of all projects affecting the following sites will be monitored:

a) Known or suspected archaeological sites.
b) Sites listed in the National Register of Historic Places.
c) Sites considered eligible for listing in the national Register of Historic Places.
d) Sites suspected of having cultural significance.

Cultural Resources

Accomplishments/Findings

The table below shows the number of projects, acres surveyed and sites identified during the course of project preparation.

Cultural Resource Surveys

Year	Project Areas	Acres Surveyed (Cleared)	Number of Sites Identified
1988	31	9,435	36
*1989	17	4,246	26
1990	30	2,707	21

*The numbers used in the fiscal year 1989 monitoring report were incorrect. The numbers listed above are correct.

The decline in the number of acres surveyed during 1989 and 1990 reflects a concern of the Forest archaeologist that prior to 1989 some low suitability areas had been cleared by the cultural resource inventory method known as "low speed motorized survey". This practice involved looking for cultural resources while driving a vehicle at low speeds. Due to it's lack of reliability, this practice has been discontinued. The Forest is in the process of re-inventorying the low speed motorized survey routes.

A three day horseback trip (Q'USEYN'EISSKIT 1990) involving Nez Perce tribal members and Forest Service managers, was hosted by the Clearwater National Forest. The purpose of this ride was to foster improved Forest/Tribal relations while exposing Forest officials to cultural values of the Nez Perce Tribe. The Lolo Trail system within the Clearwater National Forest is a historic Native American travel route that also includes portions of the Ne-Mee-Poo National Historic Trail (Northern Nez Perce Trail) over which the Nez Perce fled during the war of 1877. As a result of this trail ride experience, and in part due to an increasing recreational use of the trail, the Nez Perce values will be important factors in the management of the Lolo Trail System and associated cultural resource sites. The Lolo Trail also includes the most well preserved segment of the Lewis and Clark National Historic Trail.

The Lolo trail system continues to receive great interest from the public. During a Take Pride in America (TPIA) weekend, 8 miles of trail were cleared, 3 trail bridges were constructed, the log enclosure at Indian Grave historic site was restained and the Castle Butte lookout exterior was painted.

The 1990 national meeting of the Lewis and Clark Trail Heritage Foundation was held in Lewiston, Idaho. The Forest hosted more than 350 attendees to Lewis and Clark sites in the area. One major event was the dedication of a new Lewis and Clark Trail sign on the Weippe Prairie where Lewis and Clark first met members of the Nez Perce Tribe. The sign was a challenge cost share project involving the Clearwater National Forest, Weippe Idaho Centennial Committee, the Nez Perce National Historic Park and the Weippe Highway District. Mr. and Mrs. John Opresik of Weippe donated the land for the site.

Cultural Resources

A draft report titled "Evaluation of Region 1 Forest Service-Owned Buildings for Eligibility to the National Register of Historic Places" was completed June 1990. This was part of a two phase project to inventory and evaluate national forest properties and submit a property list to the National Register of Historic Places. Phase I of the project, which contained the results of inventory and evaluation of region-wide properties, was included in the report. Of the 23 historic Clearwater Forest properties inventoried, 17 were found to be eligible for listing. Phase II will consist of preparation and submittal of a multiple property listing to the National Register. The Clearwater Forest is recommending that two lookout sites be added to the list of eligible properties during Phase II. These are Grave Peak and McConnel Mountain.

A total of 13 projects were monitored in 1990. Two sites were not adequately monitored during the process of developing Forest facilities. The effected sites were Maggies Bend (10-IH-1009) and the Powell Administrative site (10-IH-572). They are both historic/prehistoric sites and are eligible for listing in the National Register of Historic Places. The management problem of cultural resource recommendations not being incorporated into project design and implementation has been addressed by the Forest Leadership Team. Additionally, the Forest is strengthening its public information system whereby all interested parties, both inside and outside the Forest Service, will be informed of any ground disturbing projects before they are initiated. We also need to increase our monitoring of sites considered significant by the Nez Perce Tribe. This task will be added to our FY91 program of work.

Economics

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 90.

Accomplishments/Findings

The following table shows the outputs and activities occurring in 1990 along with the percent achieved compared with Forest Plan projections.

Comparison Of Outputs And Activities With Those Projected In The Forest Plan

Output or Activity	Unit of Measure	1988	1989	1990	First Decade Avg. Annual From Plan	Percent of Predicted 1990 Achievements
Recreation						
Developed Use	M RVD's	348.2	319.1	280.6	260.0	123
Dispersed Use						
Wilderness *	M RVD's	32.4	30.6	29.1	121.0	25
Non-Wilderness	M RVD's	357.5	445.2	446.4	687.3	58
Wildlife & Fish						
Wildlife Habitat Improvement	Acres	1384	513	930	1300	72
Fisheries Habitat Improvement	Acres	98	127	211	219	96
T&E Species Habitat Improvement**	Acres	0	0	0	N/A	N/A
Wildlife Habitat Improvement	Structures	0	72	0	N/A	N/A
Fisheries Habitat Improvement	Structures	29	151	186	N/A	N/A
T&E Habitat Improvement**	Structures	0	0	0	N/A	N/A

* The Forest Plan use figures for wilderness were based on the expectation that an Idaho Wilderness bill would classify additional wilderness on the Forest. This has not happened yet.

** A portion of the wildlife habitat improvements also benefit threatened and endangered species, particularly the grizzly bear and grey wolf.

Output or Activity	Unit of Measure	1988	1989	1990	First Decade Avg. Annual From Plan	Percent of Predicted 1990 Achievements
Range						
Permitted Grazing Use	M AUM's	16.0	16.0	16.0	16.0	100
Actual Grazing Use	M AUM's	13.0	13.0	15.0	16.0	94
Range Imprvmnt (Non-struct.)*	Acres	2470	2470	3268	7000	47
Range Imprvmnt (Structures)	Structures	0	2	1	N/A	N/A
Noxious Weed Control	Acres	110	295	150	380	40
Soil and Water						
Watershed Inventory	M Acres	.3	16.04	91.7	N/A	N/A
Soil Inventory	M Acres	35.0	20	24	17.0	141
Minerals						
Minerals Management	Cases	231	174	158	265	60
Timber						
Volume Offered (Primary)	MMBF	122.9	134.5	**146.4	N/A	N/A
Volume Offered (NICS)	MMBF	13.7	24.0		N/A	N/A
Volume Sold (Primary)	MMBF	103.2	124.3	102.6	N/A	N/A
Volume Sold (NICS)	MMBF	13.1	23.8	17.5	N/A	N/A
Volume Under Contract	MMBF	399.9	392.7	371.9	N/A	N/A
Reforestation-App. Funds	Acres	1884	1675	1695	N/A	N/A
Reforestation-KV Funds	Acres	1366	3254	2896	N/A	N/A
Timber Stand Improvement (App. Funds)	Acres	355	444	583	1928	62
Timber Stand Improvement (KV Funds)	Acres	343	473	618		
Protection						
Fuels Management Natural Fuels Treatment	Acres	447	340	309	N/A	N/A
Fuels Management Brush Disposal	Acres	2308	3955	2733	N/A	N/A
Facilities						
Trails Construction and Reconstruction	Miles	2.0	8.0	14.6	13.8	106
Road Const./Reconst.						
Timber (Const)	Miles	49.9	30.5	31.2	69.6	45
Timber (Recon)	Miles	41.6	45.5	39.1	N/A	N/A
Recreation	Miles	1.3/8.7	.42/2.31	.25/.25	N/A	N/A
Other	Miles	0/0.1	0.0/0.9	0.0/0.0	N/A	N/A

* This figure represents the acres harvested by clearcut methods. These acres provide a temporary forage base for the range resource.

** Includes Primary and NICS (Noninterchangable Component)

N/A means that the Forest Plan did not project an average annual output for any output or activity.

Economics

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

Monitoring Action

The Forest's Budget and Finance section will compile the actual costs for comparison with the projected costs from the Forest Plan.

Accomplishments/Findings

The following table displays figures for cost comparison.

Comparison Between Yearly Expenditures And Forest Plan Projections (In 1990 Dollars)

Act. Code	Activity Description	FY 88 Expenditures (Thousand $)	FY 89 Expenditures (Thousand $)	FY 90 Expenditures (Thousand $)	Forest Plan Projections (Thousand $)	1990 Percent of Projection
00	General Administration	2,821	*2,239	**1,527	2,558	60
01	Fire Protection	653	673	621	1,054	59
02	Fire Protection (Fuel)	139	64	105	63	167
03	Timber Sale Prep./Admin.	2,116	2,058	2,369	3,077	77
04	Timber Resource Plans	312	128	324	347	93
05	Timber Silvicultural Exams	657	619	759	1,019	74
06	Range	79	57	56	124	45
07	Range (Noxious Weeds)	22	16	15	34	44
08	Minerals	89	83	94	200	47
09	Recreation	524	679	798	1,235	65

* Reprogrammed $261,000 of FY89 funds and $147,900 of FY88 carryover to NFGA in FY89.

** Nearly $400,000 of activities previously financed from NFGA now financed from other resources. No reprogramming to NFGA in FY90.

Act. Code	Activity Description	FY 88 Expenditures (Thousand $)	FY 89 Expenditures (Thousand $)	FY 90 Expenditures (Thousand $)	Forest Plan Projections (Thousand $)	1990 Percent of Projection
10	Wildlife and Fish	637	592	1,083	1,292	84
11	Soil and Water	239	389	633	465	136
12	Maintenance of Facilities	205	158	223	572	39
13	Special Uses	52	52	36	107	34
14	Geometronics	0	0	0	0	0
15	Landownership Exchange	54	47	40	156	26
16	Landline Location	184	310	201	416	48
17	Road Maintenance	651	**777	**689	968	71
18	Trail Maintenance	382	385	569	513	111
19	Co-op Law Enforcement	61	57	81	80	101
20	Reforestation-Appropriated	1,168	632	1,149	2,077	55
21	TSI-Appropriated	165	104	156	487	32
23	Tree Improvement	258	296	169	* 72	235
26	KV-Reforestation	1,101	1,766	1,648	3,210	51
27	TSI-KV	96	105	301	100	301
28	Other-KV	131	543	501	691	73
29	Other-CWFS (Trust Fund)	835	991	363	785	46
30	Timber Salvage Sales (Perm. Fund)	177	218	452	351	129
31	Brush Disposal (Perm. Fund)	1,018	1,047	1,275	1,914	67
32	Range Betterment	8	4	2	8	24
33	Construction (Recreation Facilities)	57	103	118	100	118
34	Facility Construction	0	578	206	666	31

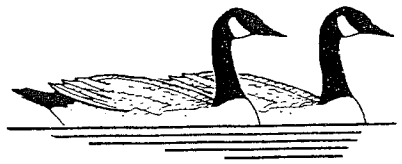
* This figure is due to development of the Lenore Seed Orchard, which was not accounted for in the Forest Plan.

* $59,000 for contract preparation.

Economics

Act. Code	Activity Description	FY 88 Expenditures (Thousand $)	FY 89 Expenditures (Thousand $)	FY 90 Expenditures (Thousand $)	Forest Plan Projections (Thousand $)	1990 Percent of Projection
35	Engineering Constr. Support	1,454	1,403	1,327	1,970	67
36	Construction-Capital Investment	1,495	1,248	301	2,973	10
37	Trail Construction/ Reconstruction	148	185	250	345	72
38	Timber Purchaser Road Const./Reconst.	1,411	1,680	145	5,270	3
43	Land Acquisition	42	41	41	75	55
	TOTAL	19,443	20,361	18,627	35,585	

Effects



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

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

Accomplishments/Findings

As we reviewed the monitoring reports for 1988 and 1989, we recognized that the information being collected for monitoring items 22 and 23 was not adequately addressing the monitoring needs of the Forest. This being the case, we recommend that the monitoring action for these two items be revised as follows.

The information we would like to document here are changes in the assumptions made in the Forest Plan that have occurred since it was signed in September of 1987. The identification of these changes would be more meaningful than the information collected to date.

These changes in assumptions could be the result of actions taken by the Forest and/or by other agencies and corporations, or changes that were not anticipated during the forest planning process. The tracking of such information should enable us to determine the effects that these changes may have on our ability to implement the Forest Plan.

Effects

Changed conditions

Past and projected private land activities (checkerboard and intermingled ownership) are limiting National Forest opportunities because of our choice to mitigate for them. The cumulative effects analyses are showing that the affected watersheds are generally approaching or have already exceeded Forest Plan water quality standards. The rates of harvest on these lands are also occurring at a faster rate than assumed in the Forest Plan.

The linear relationship of FORPLAN and the spatial needs of the resources are further apart than was anticipated in the Forest Planning process. Spatial considerations are much more limiting than expected.

Preliminary inventories of old growth indicate that some areas of the Forest may be deficient in old growth.

Monitoring has shown that the five foot Stream Protection Zone (SPZ) on Class II streams is insufficient in preventing sediment from entering streams and insufficient in stabilizing stream channels. The Forest has taken steps to correct these problems by increasing the SPZ on Class II streams from 5 to 25 feet.

Nearly all development of roadless lands is being challenged. The Forest Plan assumed these areas would be entered at a faster rate.

The Forest Plan assumed fewer riparian acreage than is being found during site specific analysis.

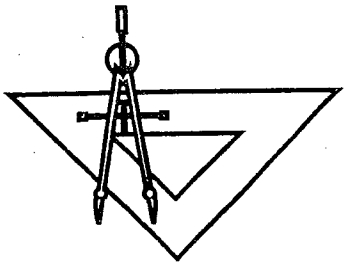
Recovery of watersheds are slower than anticipated.

Decisions are being influenced by some undefined and/or evolving issues for which the Forest Plan did not fully account. For example, the Regional Guides and Forest Plans have dealt with the issue of timber age class/structural diversity; now the more inclusive bio-diversity issue will begin playing a part in our decisions.

The identification of these changed conditions indicates a need for additional information. We will begin collecting information comparing Forest Plan to site-specific information in a ground truthing exercise. The focus of the first step will be to determine the existing condition of the Forest, visually display that condition, and track the decisions made since the Forest Plan was signed. This step is scheduled to be completed April 1, 1991. The second step will be an evaluation of that information. This step is tentatively scheduled to be completed May 1, 1992.

We will also emphasize watershed restoration in the year 1991. This will include working with the Nez Perce Tribe, timber industry, wildlife and fisheries interests, conservationists, local communities and others. Through this combined effort, watershed improvement needs can be identified, watershed restoration plans can be made, improvements completed, and results monitored.

Engineering



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.

Accomplishments/Findings

During FY 90 the Clearwater National Forest acquired 2,000 acres while exchanging out of 608 acres through a land exchange with Potlatch Corporation. The Forest acquired one tract from Potlatch Corporation in the Orogrande area on the Pierce Ranger District. In exchange, Potlatch Corporation acquired 3 separate parcels in the Bartlett Point area on the Pierce Ranger District.

An additional 1.5 acres were acquired from Mr. Lea Robbins in exchange for 4.9 acres. The exchange with Mr. Robbins involved 1 tract of National Forest System land in exchange for 1 parcel of non-federal land. Both parcels are located adjacent to the Lenore Seed Orchard on the North Fork Ranger District.

The objective of these exchanges was to consolidate federal ownership for more efficient and cost-effective land management. Both exchanges are consistent with the management area objectives and land adjustment criteria identified in the Clearwater National Forest Plan.

Costs will be reduced for surveying and posting boundary lines, acquiring access easements, constructing access to national forest land, and acquiring or granting "other use" permits. An estimated $85,000 was saved through reduction of surveying and posting costs. Also, the Forest gained consolidated management control of 15.8 acres of floodplain and 1,216 acres of big game winter range habitat.

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

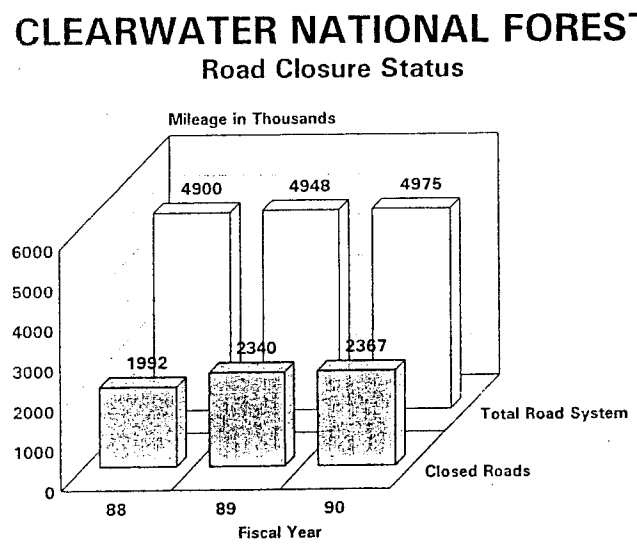
Monitoring Action

The Forest Engineer annually will review and display the total number of miles of road on the Forest. Road mileage will be summarized by ranger district, "open" or "restricted" status, restriction period, and type of closure devices.

Accomplishments/Findings

Miles of Open/Closed Roads

	Restriction Use		Miles		Closure Devices			
District	Year-long	Seasonal	Open	Total	Gates	Guardrail	Earth	Sign
D-1	228	199	696	1123	140	36	50	20
D-2	238	220	731	1177	70	33	61	11
D-3	334	306	641	1266	64	35	165	24
D-5	193	149	127	469	60	20	52	5
D-6	267	233	413	913	42	20	137	7
Forest Total	1260	1107	2608	4975	376	144	465	67



Fire

Goal

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

Strategy

Annually prepare and implement a Fire Management Action Plan (FMAP) that will provide specific direction for accomplishing the fire management objectives outlined in the Forest Plan. Manage all fires: management ignited, prescribed natural and wildfires, according to that plan.

Analyze organizational needs using the National Fire Management Analysis System (NFMAS) to determine the most cost efficient fire suppression organization and methods. Staff to indicated levels if funding allows. Develop a Fire Management Organization Spreadsheet, 5100-2, to show the level of fire protection being provided as per current year budget level.

Continue to stress SAFETY as the primary focus in all fire management activities with special emphasis on the aviation program.

Continue to work toward developing 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 when its use is determined to accomplish management objectives for fuel hazard reduction, site preparation and wildlife habitat improvement.

Provide a continuous cadre of specialists with the knowledge and experience to accomplish prescribed fire programs and participate as members of the wildland fire Incident Command System.

Ensure sufficient brush disposal funds will be collected from timber sales to treat activity fuels created by each project, where deemed necessary to treat those fuels.

Accomplishments/Findings

The Forest Fire Management Action Plan was revised from the previous year and implemented.

The Forest has a total Forest Fire Protection (FFP) budget of $697,000 for fiscal year 1990. This included $18,000 in special funding from the Washington Office to fund a new developmental position on the Palouse Ranger District in fire management. This gave the Forest approximately $679,000 to fund the Forest fire fighting forces and treat 300 acres of natural fuels. Through the use of the National Fire Management Analysis System, it was determined that the Clearwater Forest's most cost efficient level of operation in fire management was $1,054,100. This analysis used the past 10 years of Clearwater Forest fire history, which includes actual fire weather, past organizational levels, previous fire sizes and occurrence, to establish the most cost efficient level. This means the Forest was funded a about 64% of the most cost efficient level. Therefore, the Forest could only fund 64% of the fire fighting forces needed to protect the Forest to the Forest Plan level.

The Forest was successful in accomplishing the fire protection standards outlined in the Forest Plan due to the availability of special contingency funds provided by the Washington Office during the latter part of the fire season. This funding enabled us to bring on a helicopter and support people to assist with the fire suppression effort on the Forest. The Forest also experienced a less severe fire season than the ten year historical average. Weather and fire behavior data from the past ten years indicates an average period of 27 days with conditions at a "3 plus" or higher manning class (High+ fire danger). During 1990, that manning class was exceeded during only seven days.

The Forest aviation program was free of incidents and accidents during the period. This included a fixed-wing program totaling 226 flight hours; 209 hours for fire management and 17 hours of administrative use. The helicopter program totaled 162 flight hours; 128 hours in fire management and 34 hours of administrative use. There were 388 hours of accident-free flying under Forest contracts.

The Forest coordinated efforts with the Bitterroot and Nez Perce National Forests in the revision of the Selway-Bitterroot Wilderness Prescribed Natural Fire program. The revision addressed several new criteria developed by a national task force as a result of the 1988 fire season. This revised prescribed natural fire program was successfully implemented during this past fire season.

Wildfires were attacked and suppressed in accordance with the FMAP using the control, contain and confine suppression strategies. The Forest met the intent of the Forest Plan standards and guidelines by implementing these different suppression strategies. Each fire was assessed as to its fire potential and location within each land allocation. A suppression strategy was assigned to best fit each fire situation.

Fire

Control Suppression Stategies: To complete a control line around a fire, any spot fires and any interior unburned islands to be saved; to burn out any unburned area adjacent to the fire side of the control line; and cool down all hot spots that are an immediate threat to the control line until the line can reasonably be expected to hold under foreseeable conditions.

This strategy was selected for 99 fires. The resulting direct suppression expenditures were approximately $200,000. Fifty-five acres were burned.

Contain Suppression Strategy: To surround a fire and any spot fires with a control line, as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions.

This strategy was determined appropriate for two fires. Direct suppression costs were approximately $100. Less than one-half acre was burned.

Confine Suppression Strategies: To limit fire spread within a predetermined area principally by use of natural or preconstructed barriers or environmental conditions. Suppression action may be minimal and limited to surveillance under appropriate conditions.

This strategy was chosen for 19 fires. Direct suppression costs were approximately $1,800. Approximately 100 acres were burned.

Prescribed Natural Fire Status: Fire ignited by lightning within an approved fire management area and allowed to burn under preplanned, specific conditions to accomplish specific planned objectives.

This strategy was selected for eight fires within the Selway-Bitterroot Wilderness with 170 acres burned and expenditures of $1,800.00.

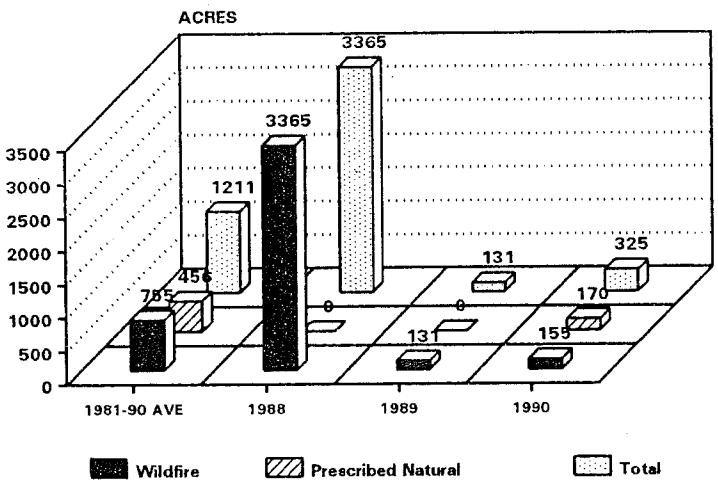
The Forest has realized considerable savings in Forest Firefighting Funds (FFF) expenditures as a result of applying the different suppression strategies and the use of the prescribed natural fire program. The following table shows that the Forest saved approximately $100,000 in FFF expenditures during the 1990 fire season utilizing all of the suppression options and the prescribed natural fire program. Projected FFF dollars are for full control action.

	Actual Expenditures ($)	Projected FFF ($)	Savings ($)
Containment Strategy	100	750	650
Confinement Strategy	1,800	65,400	63,600
Prescribed Natural	1,800	34,600	32,800
Total	3,700	100,750	97,050

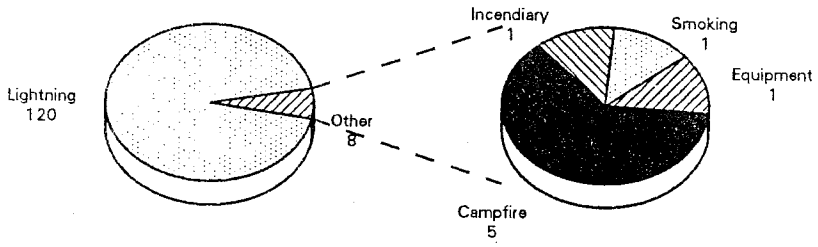
The Forest experienced 128 fires during the 1990 fire season, a figure slightly higher than the 10 year annual average of 124. Three hundred twenty-five acres were burned during the 1990 fire season as compared to a 10 year average of 1,211 acres. The following table shows the number of fires by ranger district on the Clearwater NF.

District	1990 # of Fires	10 Year Annual Average
Pierce RD	16	25
Palouse RD	8	11
North Fork RD	38	37
Lochsa RD	25	16
Powell RD	40	35
Total	128	124

WILDFIRE



FIRE CAUSES



Off-unit wildfire support involved assignments both within the Idaho zone and other parts of the Region and nation. Assignments coordinated within the Idaho zone consisted of 11 overhead, 9 crews and 5 engine dispatches. Assignments through the Regional Coordination Center involved 81 overhead, 1 crew and 6 engines.

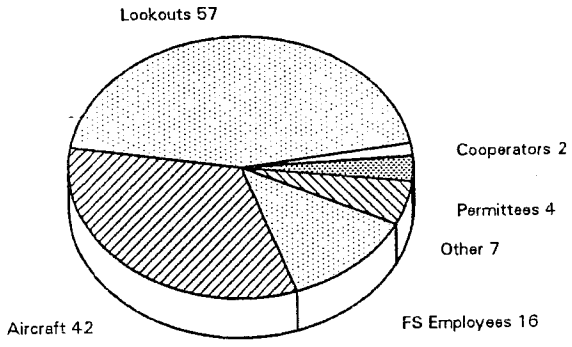
Total dispatches for the season involved 92 overhead, 10 crews and 11 engines for 1,777 person days on fire assignment.

The Forest collected $6,984 in purchaser liability as a result of one timber sale operations fire during 1990.

The Forest continued to use the automated lightning activity detection system that was developed last year. The system displays lightning strike locations by latitude and longitude and plots each strike on a map. This information was used by the Forest aerial detection observer in concentrating detection efforts in areas of known lightning activity, which added much improved efficiency to the detection program.

The following figure displays the number of fires detected and who reported these fires.

NUMBER OF FIRES DETECTED



Fire

Prescribed fire (management ignited) was used as a management tool in fuels hazard reduction, site preparation and wildlife habitat improvement on 3,042 acres. The Forest target for all uses of prescribed fire to meet fire management objectives was 3,897 acres. Weather conditions played a large factor in the Forest's shortfall. September is normally one of the busiest prescribed burning months. September of 1990 turned out to be much drier than normal so the prescribed burning operations had to be curtailed during most of the month. Burning restrictions were put into effect during the latter part of the month by the Regional Office. The restrictions did not allow any new prescribed burn ignitions until all existing burns were mopped up. The Forest had insufficient people, equipment and funding available to accomplish this. Consequently, no burning was allowed until a significant weather change occurred. This did not occur until after September 30th.

The following table displays the prescribed burning accomplishments by district.

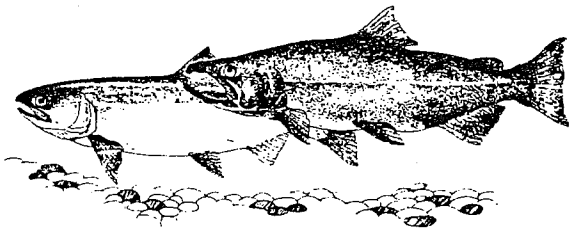
Prescribed Burning Accomplishments - 1990

	Natural Fuels		Brush Disposal	
District	Target	Accomplished	Target	Accomplished
Pierce RD	35 ac.	37 ac.	740 ac.	577 ac.
Palouse RD	40 ac.	32 ac.	1,100 ac.	614 ac.
North Fork RD	35 ac.	40 ac.	650 ac.	744 ac.
Lochsa RD	170 ac.	173 ac.	425 ac.	228 ac.
Poweli RD	20 ac.	27 ac.	682 ac.	570 ac.
Total	300 ac.	309 ac.	3,597 ac.	2,733 ac.

Most of the prescribed burning to reduce fuel loading in timber sale logging units occurred during the spring and early summer months.

A total of 586 acres of prescribed burning was contracted.

Fisheries



Goal

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 by 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 but 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 toward the sensitive species of westslope cutthroat trout, bull trout, steelhead trout and spring chinook salmon.

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.

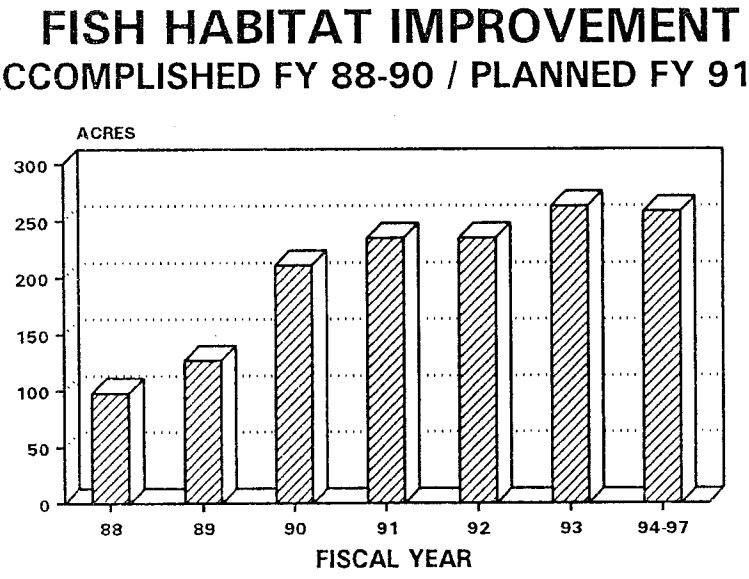
The Forest will continue fisheries/recreation cooperation by identifying, designing and implementing projects that feature cooperative funding and involvement associated with the recreation and special fisheries initiatives.

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

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 direct measure and transect sampling methods. Streams supporting both anadromous and resident fish were monitored during 1990.

The program has been expanded and intensified to include more resident fish streams on the North Fork and Palouse Ranger Districts.



Accomplishments/Findings

Management direction was provided for all management activities. Rehabilitation projects are continually identified. In 1990, 211 acres and 186 structures of fisheries habitat improvement were accomplished. This accomplishment constituted 106% of the acreage target (200 acres) and 108% of the structural target (172 structures) in FY 90. Of this total, 52% of the acreage and 32% of the structural work was completed in anadromous fish streams. In tracking achievement of Forest Plan targets, the cumulative shortfall after three years is 221 acres, or 34% of the three-year total (657 acres). The Forest's ability to accomplish this work will depend primarily upon funding.

Major instream improvement projects were completed in Lolo, Eldorado, Dollar, Six Bit, Elk, Hem, Sylvan, East Fork-Potlatch, Quartz, Washington, Walde, Pete King, Walton and Gravey Creeks. Habitat quantity and quality for chinook salmon, steelhead trout, cutthroat trout, brook trout and kokanee salmon were increased with the addition of side channels, log weirs, large woody debris, boulders and sediment traps.

Several challenge cost share projects were completed during the fiscal year. Our eight-year cooperative program with Bonneville Power Administration to improve habitat in the Clearwater River Basin has concluded with a final report detailing all program activities and accomplishments (Espinosa and Lee, 1991). During the tenure of this program, we modified 28 major barriers to upstream passage and accessed a total of 188.2 km of mainstem and tributary habitats for salmon and steelhead. In terms of enhancement, 527,000 m^2 of rearing, 6,500 m^2 of spawning, and 34.4 ha of riparian habitats were improved in Lolo Creek and tributaries of the Lochsa River.

Two cooperative projects were completed at Walton Creek (Powell Ranger District) and East Fork of Potlatch Creek (Palouse Ranger District). At Walton Creek, seven log and boulder weirs were constructed to facilitate fish passage for chinook salmon into the satellite rearing facility of the Clearwater Hatchery. The Idaho Department of Fish and Game operates the facility and partially funded the project.

On the East Fork of Potlatch Creek, the Palouse Ranger District and the Latah County Wildlife Club worked cooperatively to rehabilitate riparian and in-channel habitats by fencing off sensitive areas from livestock impacts. Additionally, bank revetments were constructed to stabilize eroding channel banks. Coniferous and deciduous trees were planted in the riparian zones to provide a future source of shade and woody debris. Early evaluation of this project indicates that the system is recovering swiftly. Additional work is planned for FY 91.

In the Lolo Creek system, the Pierce District improved summer and winter rearing habitats for salmon and steelhead by installing a total of 39 structures. Several side channels (366 m^2) were constructed in Lolo Creek. Two sediment traps were constructed in the Eldorado Creek system. These traps will be monitored and maintained on an annual basis. The District also improved 30 acres of riparian habitat along Lolo Creek.

Fisheries

In the North Fork, Clearwater River sub-basin, two habitat improvement projects were completed in Quartz and Washington Creeks for non-anadromous species. A total of 43 structures were installed in Quartz and 30 in Washington Creek. The projects were designed to improve spawning and rearing habitats for kokanee salmon, cutthroat, bull and brook trout.

Anadromous Fisheries

Lolo, Eldorado and Yoosa Creeks are designated Stream Segments of Concern. They contain critical anadromous and resident fish habitat that are monitored as part of the Forest Plan Monitoring and Evaluation Process. A district monitoring plan that evaluates the habitat conditions and population trends on an annual basis is currently being implemented on these three streams.

In 1990, population assessments were conducted via snorkel diving to document trends on Lolo Creek. Fifteen transects (ten log weir pools and five control sites) established in 1988 were sampled. Results show a significant decline in the spring chinook densities from 1989. Densities of spring chinook age 0+ juveniles averaged only 35 percent of the 1989 levels in the enhanced reaches and 15 percent of the 1989 levels in the unenhanced control transects. Steelhead densities in the enhanced reaches showed a greater than 50 percent decrease in age 1+ and 2+ juveniles, but a 29 percent increase in age 0+ juveniles compared with the 1989 sample population. Due to inclement weather and time constraints, only five of the 15 transects scheduled for Eldorado Creek were monitored. During 1990, representative transects were located for each critical watershed reach in Eldorado and Yoosa Creeks. These transects are scheduled for monitoring in FY 1991.

Steelhead spawning surveys were conducted by Forest and District personnel to assess steelhead spawning success in the mainstem Lolo and Eldorado Creeks. Four steelhead redds were observed in the 1.8 miles of Lolo Creek that were surveyed on June 20 and 22. On June 22, a 2.5 mile segment of Eldorado Creek from Road #519 to Road #5119 was surveyed and no redds or fish were observed. Due to incomplete data from previous years and high probability of inaccurate estimates of spawning success from high and turbid streamflows, annual assessments of the steelhead spawning success in Lolo and Eldorado Creeks are currently being used to support the population trend data from juvenile density estimates. Assuming pre-1988 hatchery supplementation of steelhead in Lolo and Eldorado Creeks had limited effects on current population trends, steelhead spawning surveys and/or juvenile population assessments in 1991 may finally show evidence of the hatchery supplementation efforts. In 1988, more than 400,000 steelhead smolts were released in Lolo and Eldorado Creeks. Adult returns from these smolts would be returning in 1990-1992 with the most returns as two-ocean fish in the spring of 1991. The final returns are primarily dependent upon the overall smolt-to-adult survival rate. This is a function of many variables, such as juvenile survival through the lower Snake and Columbia River subbasins and adult harvest.

Spring chinook spawning ground surveys were conducted on Lolo, Eldorado and Yoosa Creeks in cooperation with the Nez Perce Tribe and Idaho Department of Fish and Game (IDFG). On September 4, personnel from the Nez Perce Tribe's Fisheries Department and District staff surveyed the main spawning reach in Lolo Creek. This stream reach was established as an index area by the IDFG in 1987 to monitor the spring chinook spawning trends in the Lolo Creek drainage. The index area begins at

the first log weir (1.2 kilometers downstream of the confluence of Lolo and Yoosa Creeks) and ends at the first county road bridge (junction of Roads #103 and 5050). The survey found 23 redds in the 7.2 kilometer (km) index area.

Other areas surveyed by the District and Tribe during the September 4 and 5 survey period were: the lower Yoosa Creek reach (2.8 km), Lolo Creek from the index area downstream to Utah Creek (3.0 km), Lolo Creek from the confluence of Yoosa Creek to the index area (1.2 km) and Eldorado Creek from Linda Creek to mouth (4.7 km). No redds were observed in these surveyed reaches.

On September 13, Forest and District personnel resurveyed the index area and walked other segments of Lolo Creek. In the index area the survey found two new redds for a total of 25 redds. No redds were observed outside the index area.

A total of 25 spring chinook redds were observed in the Lolo Creek drainage in 1990. Comparison with spawning surveys in the Lolo Creek index area from 1987-1990 indicates a slight increase from 1989 (20 redds), but still below the 31 redds observed in 1987 and 1988. Overall, the spawning success was similar to 1989 when the total number of redds for the Lolo Creek drainage was 24. The low numbers of spring chinook spawning in the Lolo drainage in 1990 is consistent with other Clearwater subbasin streams.

Spring chinook spawning surveys and/or juvenile population assessments in 1991 may finally show evidence of the hatchery supplementation efforts, especially in the Eldorado Creek drainage. In 1989, approximately 210,000 spring chinook smolts and 182,678 fingerlings were released in Eldorado Creek at the Dollar Creek bridge. Lolo Creek received about 94,000 fingerlings in 1989. Another 257,000 smolts were released in 1990 at the Dollar Creek bridge and the mouth of Eldorado Creek. Adult returns from the smolts would be returning in 1990-1994. The final returns are primarily dependent upon the overall smolt-to-adult survival rates.

As part of the Forest Plan's validation monitoring efforts, intensive habitat and population surveys are programmed for Lolo, Eldorado and Yoosa Creeks every three years. Besides the population trend surveys conducted in 1990, no intensive habitat or population surveys were completed in FY 1990. Stream and population surveys on Lolo Creek are being completed in 1991. In 1988, intensive habitat surveys were started on Eldorado Creek, but were not completed due to funding limitations. Additional work will be done in FY91. Intensive habitat and population surveys for Eldorado and Yoosa Creeks are currently being scheduled for FY 1992.

In the Lochsa River sub-basin, tributaries of the lower river, Pete King and Deadman Creeks, are still showing elevated levels of instream sediment. Fine sediment (<6.4 mm) increased by 9% and 31% in the spawning habitats of Pete King and Deadman Creeks, respectively, over FY 89 levels. Levels of cobble embeddedness in the rearing habitats of Pete King and Deadman Creeks were measured at 40% and 52%, respectively. This constitutes a slight improvement in Pete King and a status quo situation in Deadman. The improvement in Pete King may reflect the removal of 335 cubic yards of sediment from four sediment traps in Pete King.

Monitoring of the thermal regimes in these tributaries indicated that summer temperatures exceeded the 80% objective for steelhead (16°C) 22% of the time in Pete King and 7% of the time in Deadman Creek.

Monitoring of steelhead population trends in Pete King, Deadman, Fish and Hungry Creeks was conducted in critical reaches of these streams (7,660 m^2 in 89 transects). Populations of yearling (1+) steelhead were reduced in the Fish Creek system (84% of the 9-year mean), slightly elevated (2%) in Pete King, and much higher (57% above the nine-year mean) in Deadman Creek. Based on the summer parr densities observed in 1990, the wild steelhead escapement for the Clearwater Basin in 1988 was estimated at 4,900 fish. In 1987, the escapement was estimated at 4,057 fish.

A total of 17.8 miles of anadromous fish streams were surveyed by the Lochsa District in 1990. Selected tributaries of the Upper Lochsa River were monitored for cobble embeddedness and population trends. Of the five streams sampled, two are considered controls (Weir and Post Office Creeks). In 1990, all of monitored streams displayed declines in levels of cobble embeddedness. The control streams declined an average of 8% for all habitat types. The managed streams (Squaw, Papoose and Brushy Fork) decreased an average of 9.4% over all habitat types. Of the managed streams, Brushy Fork Creek decreased the least, by 3.7%. This improvement in sediment conditions of the rearing habitat could be linked to the more favorable flows during spring runoff. After a period of below normal flows, stored sediment is finally being transported out of some systems.

Populations of anadromous salmonids were sampled in the same five index streams. The data was highly variable. The control streams displayed substantial declines in densities of steelhead yearling + parr from 1988 to 1990. In the managed systems, steelhead parr (yearling +) declined only in Squaw Creek and increased by a sizable margin in Papoose and Brushy Fork Creeks. This lack of a pattern is attributed to differential escapement. A pattern common to all these streams is that they remain under-escaped and under-seeded for steelhead trout by a margin of 50-75%. Densities of chinook (0+) parr declined to a large degree in the managed streams. Presently, chinook salmon are not escaping into the control streams and offer no basis for comparison. The decline in densities of juvenile chinook is probably associated with the overall decrease in escapement of adult chinook to the Clearwater Basin in 1989. Chinook salmon streams in the Upper Lochsa remain critically under-seeded. In 1990, densities of juvenile chinook did not exceed 25 fish/100 m^2 in pool habitat types.

Inland Fisheries

Two major rehabilitation projects that affect inland fisheries are being monitored on a long term basis. They are Gravey Creek on the Powell District and Elk Creek on the Palouse District.

Gravey Creek - Following extensive watershed and fish habitat restoration in 1988, cobble embeddedness and population trends have been monitored. Levels of cobble embeddedness sampled in the rearing habitats indicate a status quo situation when compared to 1988 baseline observations. There were slight increases (2-7%) in the pool and riffle habitat types and a sizable decrease (16%) in the few run habitats that were sampled.

Densities of cutthroat trout (8-30 cm) were substantially lower in 1990 compared to 1988, especially in the pool habitat types (0.5 vs. 9.9 fish/100 m^2). Evaluation of salmonid response to habitat enhancement has shown much higher densities of cutthroat trout in improved habitat (13.3/100 m^2) versus controls (0.7/100 m^2). Moreover, cutthroat densities in enhanced habitat were much higher in 1990 (mean=13.3/100 m^2) than 1988 (mean=2.4/100 m^2). It could be that the improved habitat has attracted fish from marginal habitat, thus lowering densities in our other population transects.

Elk Creek - During the field season of 1990, a long term habitat restoration project was initiated in Elk Creek (North Fork basin). Excessive deposits of instream sediment are being removed from selected habitat types with portable suction dredges. The sediment is removed from the channel to areas where it can be readily stabilized and vegetated. Selected channel, habitat and population parameters are being monitored prior to, during and after removal.

In 1990, a channel reach of 280 meters was dredged with an estimated removal of 77 cubic meters of sediment. This has resulted in an average increase in channel depth of 0.12 meter. In our monitored reach, we have decreased the mean channel width by 0.29 meter and increased pool habitat by 20%.

North Fork - In the North Fork of the Clearwater River sub-basin, 29 streams covering 106 miles were surveyed to provide baseline habitat data for analyses of cumulative effects and desired future conditions. Most of these streams (83%) were in developed watersheds and 58% of them displayed elevated levels of instream sediment (cobble embeddedness) in their rearing habitat. Other habitat deficiencies associated with these systems resulted from harvesting in and roading of riparian zones. Some of these streams, such as the Beaver Creek system, have been programmed for rehabilitation in 1991.

Problem Areas - Problem areas associated with impacts to fish habitat and fisheries observed in 1990 involved reconstruction of the #100 Road along Lolo Creek, #253 Road along Quartz Creek, and the #720 Road (Fly Hill) near the Upper North Fork. Sediment generated by these projects was delivered to the stream systems. Some of the sediment was partially mitigated. Significant sediment deliveries continue in some mixed ownership watersheds. Mass erosion emanating from other ownerships has impacted the Big Sand (Palouse Ranger District) and Parachute Creek (Powell Ranger District) drainages.

Placer mining in the Osier Creek watershed (North Fork District) also generated significant impacts to water quality and fish habitat. Impacts were observed as far as the Moose Creek drainage.

Literature Cited

Espinosa, F.A. Jr. and Kristine M. Lee, 1991. Natural Propagation and Habitat Improvement, Idaho: Lolo Creek and Upper Lochsa. Clearwater National Forest and Bonneville Power Administration, Project # 84-6. 103 p.

Minerals

Goal

Encourage and facilitate the orderly exploration, development and production of the energy and mineral resources on the Clearwater National Forest. To ensure that this exploration, development, and production is 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 is done to the specified standards. Maintain close coordination with local mining groups as well as applicable state and federal agencies.

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

Monitoring Action

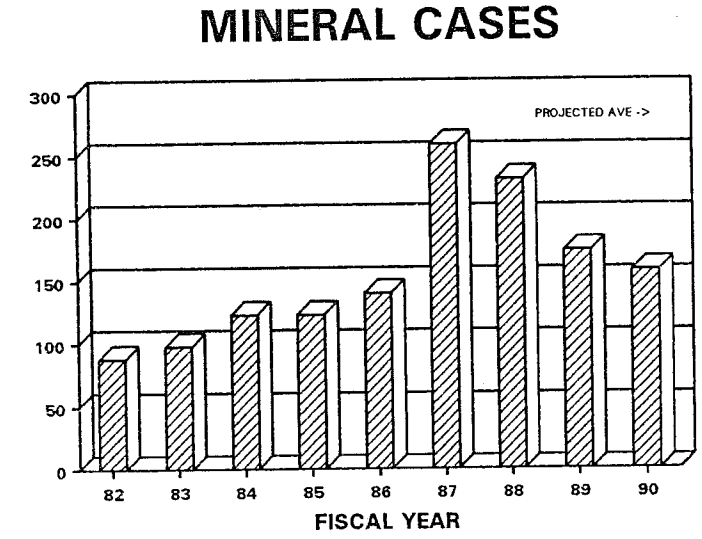
The Forest geologist will prepare a report detailing the status of the minerals program. The report will be based on a review of all projects and mining activities that may have an effect on minerals management. The number of case files, status of case files, estimated quantity and value of mineral production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

Accomplishments/Findings

Program Funding - The Regional FY 90 allocation for the Forest minerals program was $71M or 54% of our Forest Plan level. We were able to add $23M of FY 89 carry-over funds to the Regional allocation to bring our total funding level to $94M, or 72% of the Forest Plan level. While the augmented total appears to be consistent with the number of cases we processed, it was still only 85% of the of $110M necessary to fund a professional minerals geologist along with the support and district costs for case

administration. Fortunately, the caseload was reduced and there were very few significant earth-disturbing operations in progress during 1990. If future funding continues at low levels, we may have a difficult time meeting Forest Plan compliance standards and maintaining a professional minerals geologist on our staff.

Caseload - A total of 158 minerals cases were processed on the Forest during 1990 (see figure below). This was 60 percent of the minerals activity projected in the Forest Plan. It was also lower than the 174 cases (66 percent of the Forest Plan level) processed in 1989. The lower level of minerals activity on the Forest was probably related to higher levels of local employment during the period. The cases reported for both years are significantly lower than the 265 average annual number of cases anticipated in the Forest Plan. Since mineral activities are affected most by factors unrelated to Forest management (metal prices, employment rates, materials demand, etc.), the program tends to be re-active rather than pro-active. The 265 average annual cases anticipated in the Forest Plan appears to be an over-estimate and should be reviewed closely in the next Forest Plan revision.



FOREST PLAN PROJECTED AVERAGE 86-97

Monitoring - All active earth-disturbing mining claim activities were monitored for compliance with operating plans and Forest Plan standards. One water quality standard violation was discovered. The violation was due to excess sediment delivery into a stream from a mining operation. The Forest Service identified the problem and negotiated with the operators to achieve corrective action. Impacts to the surface resources from mining were mitigated in accordance with the Forest Plan standards and guidelines. No formal violations were issued. No impacts on mining activities from other resources were identified.

Locatable Minerals - 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 ounces of gold were mined from the Forest during 1990. The value of this amount of gold would be approximately $56,250 at the 1990 average price of $375/oz. To our knowledge, no other valuable minerals were extracted from the Forest.

Oil and Gas Leases- When the Forest plan was released in September 1987, the Forest had five applications for oil and gas leases pending. These applications covered approximately 48,271 acres located in roadless areas in the Mallard-Larkins Pioneer Area and upper North Fork drainage of the Clearwater. The lease application for 10,047 acres in the Mallard-Larkin was rejected by the Forest Service in October 1987. Action on the other applications was delayed by various court actions throughout the United States. In December 1990, the applicant withdrew his interest in the remaining applications (38,224 acres) and all of the pending cases on the Forest were closed.

Other Leasables - One application to prospect for limestone on 80 acres of the Pierce Ranger District was received during the year. Further processing of this application has been deferred because the area is part of a current land exchange proposal.

Mining Claim Occupancy - In 1990 the Forest completed action on all remaining unauthorized occupancy of mining cabins on unpatented claims. Unauthorized cabins have either been removed by claimants or quitclaimed to the government for disposal. Five remaining cabins on the Forest has been approved for the time being due to apparent mineral values on the claims. We will continue to monitor the use of these cabins to ensure that they are only used for mining purposes.

Common Variety Minerals - Mineral materials are mined from the Forest for road surfacing. This material is used by county and state agencies, the Forest Service and private industry. In 1990 engineering records indicate that a total of 96,000 tons of material was provided from Forest lands. The value of this resource was approximately $56,000.

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 will be documented. Examples include designation as Wilderness or recommended Wilderness, legislation such as the Threatened and Endangered Species Act, executive orders, and special resource stipulations or management direction. Changes in land status or restrictions on minerals availability, exploration and development will be documented and kept on file by the Forest geologist.

Accomplishments/Findings

Mineral Withdrawal Review - The mineral withdrawal review program was completed for the Forest as scheduled in 1990. The Federal Land Policy and Management Act requires that all lands withdrawn from mineral entry be reviewed every 20 years to ensure that the withdrawals are still valid. This review consists of a mineral potential report for each withdrawn area and a comparison with the resource/public values that require protection from mineral entry on those sites.

The Clearwater National Forest covers 1,812,700 acres. Of this acreages, 259,167 (approximately 15 percent) are located in the Clearwater portion of the Selway Bitterroot Wilderness. These lands are withdrawn from mineral entry under the 1964 Wilderness Act. All claims within the Clearwater portion of the wilderness have been reviewed and no valid claims exist in the area.

In addition to the wilderness withdrawal, there were originally 105 sites, covering 8,900 acres, withdrawn from mineral entry. Of the 105 sites reviewed, 53 were removed from withdrawn status; the other 52 were retained. Many of the cultural sites and historical trails on the Forest have not been studied for mineral withdrawal recommendations.

Land Exchange Reviews - Mineral potential reports were completed for two land exchange proposals on the Forest.

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.

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.

Accomplishments/Findings

No new allotment management plans were prepared or updated in FY 90. Range allotments were monitored for use, possible resource damage, and maintenance needs. Range conditions overall are good. Some minor permit modifications were necessary during 1990 to protect range resources. There are currently 65 permittees using the available range on the Forest. There were 2,406 cattle and 2,182 horses permitted to graze on the Forest. This amounted to 15,000 Animal Unit Months (AUM's).

The Palouse Ranger District accomplished 150 acres of noxious weed control with its eradication project targeting creeping mat grass.

Recreation

Goal

Provide a range of quality outdoor recreation 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

The Clearwater Forest has developed several strategies to meet the Forest Plan goals in recreation. Those strategies can be summarized as follows.

Identify recreation opportunity areas to provide a balance of opportunities. Seven recreation opportunities and a mission statement have been identified in consultation with user groups. One aspect of Forest Plan monitoring is to determine if the current opportunities meet the original objectives and if the program balance across the Forest still exists.

Reconstruct existing facilities to meet standards appropriate for the opportunity class. For example, the Highway 12 corridor is heavily used by RV recreationists and represents the highest level of campground development on the Forest. Facilities within the corridor would be reconstructed to a higher level of public services, while more rustic facilities would be expected in the North Fork Clearwater River corridor.

Construct new facilities to complement existing facilities. Examples would include interpretive trails near picnic areas. The scale of development should match the opportunity class of the area in which the base facility is located. For example, a paved interpretive trail with high tech signs next to sites on a gravel road in the backcountry would be inappropriate.

Continue to request funding to operate, maintain and reconstruct sites to full service standards.

Recreation

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 evaluation will:

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.

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.

Accomplishments/Findings

Recreation Funding - Funding continues to be significantly below the level anticipated in the Forest Plan. In FY 90, the Regional allocation of recreation management funds to the Clearwater was $527,000 (after subtracting challenge cost-share special projects and Wilderness management funds spent), approximately 48% of the Forest Plan level. After costs for a base recreation organization, associated expenses, and timber support were subtracted from this allocation, there was a significant lack of funding left for on-the-ground operation, maintenance of recreation facilities and administration of recreation use.

We estimate that funding for developed site operation was about the 25% of minimum needs. Campgrounds were kept open to the public through a variety of reduced service level strategies. Older American programs supplied much of the labor to do the daily maintenance work required. Even so, we were unable to keep up with routine maintenance needs. Our backlog of this work continued to increase.

We estimate that we may be losing a significant amount of user fees (up to $30,000/year) due to our inability to provide adequate compliance checks and/or visitors services at our sites. Increasingly, the public is unwilling to accept or pay for the deteriorated facilities and poor public service which we are able to offer at these funding levels.

Another area seriously affected by these funding levels is our ability to accomplish outyear planning for recreation programs and facilities. Without proper planning it is extremely difficult to have projects ready to implement when funds are available.

Recreation

Recreation Use - Use in 1990 was estimated to be 756,000 visitor days, down from 794,900 in 1989. It should be recognized that recreation use is not measured but is a sumation of several use estimates by different people. Therefore, it is likely that the changes are due more to variations in estimating than in changes in actual use. Nevertheless, some trends have been observed. Campground fee collections were $36,256, approximately a $4,000 increase from FY 89. This increase is thought to be a reflection of increased traffic on Highway 12 generated by the Idaho Centennial year activities. Other areas of the Forest recorded a significant decrease. The decrease in visitor days in the Selway-Bitterroot Wilderness was a result of the shortening of the early elk hunting season in that area. Use at Elk Summit in the new campgrounds was observed. The increase is believed to have been stimulated by easier access from road reconstruction in 1988. Also, the construction of new campground facilities suitable for stock users was probably a factor. Increased numbers of larger (six and eight) horse trailers have been observed in the area. There has been an increased use of the campgrounds by horse users who visit the Wilderness on day rides.

Recreation Planning - Planning continues for reconstruction of existing campgrounds along the Highway 12 corridor. The Forest Plan has directed that campgrounds be upgraded to meet requirements of modern RV's and that deteriorating facilities be repaired before new campgrounds are built. The 5 year Capital Investment Plan calls for road work in all campgrounds within the Highway 12 corridor, reconstruction or replacement of all toilets to remove odor problems, improved access for disabled persons, improved informational and interpretive signing, and replacement of many camping facilities such as fire rings and tables.

Several stages of planning are occurring at Lolo Pass. The overall interpretive theme for the Pass recognizes its significance as the gateway between the plains of Montana and the Columbia basin. New interpretive displays were installed in the visitor center building in the spring of 1990. These and other existing displays at the site highlight Native American prehistoric uses of the area, the passage of Lewis and Clark, the flight of the Nez Perce during the 1877 war, the coming of the highway and modern recreation opportunities.

Special Projects/Events - A "Run, Ride, Bike and Float" event was an official Idaho Centennial event, traveled over the Lewis and Clark Trail route. The Clearwater Forest provided coordination for this event. Parts of the trail were also visited by more than 300 guests from all over the United States as part of the Lewis and Clark Trail Heritage Foundation's annual convention held in Lewiston, Idaho. A Free Camping Day was offered in conjunction with the Idaho Department of Fish and Game's Free Fishing Day. Together they comprised Idaho Outdoors Day.

Challenge Cost Share Projects - Several CCS projects were underway during the year. Design and installation of a Lewis and Clark trail sign at the meeting place of the Nez Perce Indian with Lewis and Clark, near Weippe, Idaho, was completed. The site was officially dedicated as part of the national Lewis and Clark Trail Heritage Foundation meeting in August. Cooperators included Mr. and Mrs. John Opresik (land donors), the Weippe Centennial Committee and the Nez Perce National Historic Park. We also cooperated with the Corps of Engineers (Dworshak Resource Area) in the installation of a recreation information radio system in the Orofino area. Major revisions of the Lewis and Clark Trail brochure and a new Lochsa River Whitewater Guide were started. Both are expected to be completed in 1991.

Recreation

Recreation Construction- Construction of two trailheads, seven river access sites (suitable for launching kayaks and rafts), and two dispersed camping areas were developed along the Lochsa River/ Highway 12 corridor. Facilities provided at these sites include toilets, parking, stock facilities, picnic tables, raft launching aids and dispersed camping sites. Several toilets were retrofitted to provide better odor elimination as part of the "sweet smelling toilet" initiative.

Road reconstruction work was contracted and partially completed at Little Boulder and Laird Park campgrounds on the Palouse District. In addition to upgrading existing roads and camp units to improve access for modern recreational vehicles, twelve new camp units and twenty parking spaces will be constructed. Recreation facilities and new toilets are scheduled for installation with FY 91 funds.

Campground Use Limits - Some Campgrounds in the Highway 12 corridor are exceeding the limits of use designated by the Forest Plan. Apgar and Wild Goose campgrounds at the west end of the Highway 12 corridor and Wendover,Whitehouse and Powell Campgrounds on the east end often exceed optimum use levels. No additional land is readily available to expand the capacity of these campgrounds. On the west end below Split Creek Pack Bridge, there is not any national forest land available to construct new facilities.

Alternatives to meet the identified public need include the following: a) divert some use up the lower reaches of the Selway, and b) encourage construction and operation of privately owned and operated campgrounds along the Middle Fork of the Clearwater River between Kooskia and Lowell. A combination of both of these practices will probably be needed. At this time, planning is just beginning.

Another area where campground space is limiting is the Palouse District. This will be partially rectified when the Little Boulder campground expansion is completed in 1991. Because recreation on the Palouse is mostly on weekends, it fits patterns found near metropolitan areas. Future monitoring should study the use periods to determine needed campground capacity from a model used for urban areas rather than the model used for the rest of the Forest where extended stays are typical.

Lolo Pass - In the summer, Lolo Pass serves as a visitor center. It is the gateway to Montana for east bound travelers and the gateway to the Lochsa River and Idaho for westbound travelers. It is about a half day drive from major destinations and thus is a natural stop for most travelers. Travelers are seeking regional information (Yellowstone, Glacier National Park, Cascade mountains, Oregon & the Coast) that we need to make more readily available. Many use the area for a picnic stop and then seek short walks, interpretation of local resources, and information about recreation sites. Existing facilities and services at the Pass are inadequate to meet these public needs.

Lolo Pass is recognized for its premier cross country skiing opportunities during winter. Skiing has been accommodated by the sale of Idaho State Park and Ski passes which have partially paid for snow plowing of the parking lot and trail grooming. The receipts have never fully funded the cost of the program and the public has seldom been satisfied with the quality of the grooming. The Forest has been searching for alternative means of providing this public need for several years.

The problems at the Pass are compounded by two factors. One, the Forest Plan designated the immediate site around the buildings for recreation and did not give clear direction as to what kind and amount of public services should be offered. Two, the checkerboard ownership pattern, in which every other section of land is privately owned, severely limits the opportunities and alternatives the Forest Service can provide at Lolo Pass. A complete revisit of the management direction for the site is needed and land exchanges need to be further explored.

Elk River - This area of the Palouse district provides a variety of recreational uses. Some of this is day use from from the Lewiston/Clarkston, Moscow/Pullman and Spokane areas. However, much of the use is from persons who stay overnight in the campgrounds around the lake maintained by the Elk River Recreation District. Many others stay in the motel facilities in town, or use dispersed camping sites in the upper Elk Creek basin.

At present the only full service national forest facility is the picnic area and national recreation trail to Elk Creek Falls. The trails are becoming worn, badly eroded, and in need of reconstruction to safely handle present use.

Two other sites in the upper Elk Creek basin are in various stages of construction. These include: a parking lot, a toilet and trail to the Idaho state champion western redcedar; and a parking lot, toilet, and interpretive trail to the Morris Creek Giant Cedar Grove. When these day use facilities are completed there will likely be increased demand for camping opportunities in the area.

The National Forest land near the outskirts of the City of Elk River would make a suitable campground. Alternatives for this site include issuance of a special use permit for construction and operation of a campground, construction of a campground with National Forest construction funds with operation by a concessionaire, construction and operation of a campground by cooperative efforts of the community, or construction and operation by the Forest Service. Further planning is necessary.

Jerry Johnson Hot Springs - The Springs were closed to overnight camping in 1990. The closure was necessary due to recurring unlawful and unacceptable incidents occurring at the site predominately by overnight users. With the closure and frequent enforcement by Forest Service and cooperative law enforcement agencies, the number of incidents has dropped significantly. Consequently, the closure will remain in place indefinitely.

A problem with human waste at the Hot Springs and at the trailhead continues. The need for construction of facilities to handle this problem is being studied by the Powell District.

Wier Creek and Stanley Hot Springs are being monitored to ensure that the problems solved at Jerry Johnson are not being transferred to these sites. If the problem transfer does occur, similar action could take place at these sites. To date, no significant increase of incidents at those sites has been observed.

Interpretive signs - Signs along the Highway 12 and North Fork corridors have deteriorated and need replacement. Corridor interpretive plans need to be developed to coordinate themes and location of interpretive facilities.

Recreation

Elk Summit - Increased use brought about by the road and recreation facilities improvements in this area have the potential to increase human effects on a portion of the adjacent Selway-Bitterroot Wilderness (see accomplishments section above and reporting item no. 5, Wilderness). The effects could increase if further planned road improvements occur.

The moose study in the area draws moose and moose watchers. Some observers are concerned about public safety related to moose-human encounters. Multiple resource guidelines for the area need to be developed.

North Fork of the Clearwater River - The Forest Plan management direction for this area needs to be supplemented by additional management planning. Increased public awareness of this area and its many attributes and opportunities is leading to increased use. At the same time campground facilities are inadequate and deteriorating. These sites are in the Forest capital investment plans for improvement but current funding levels are not adequate to begin work until the mid-1990's at the earliest. The experience level in this area may change over time requiring more modern facilities to meet user needs. Large RV use is increasing in the area and some RV dump stations will be required.

Visual Resource

Goal

In association with other resource management activities, maintain a natural appearing forest landscape as viewed from designated visual travel corridors, recreational sites, wilderness and high use recreational areas and administrative areas.

Strategy

The Forest landscape architect and the districts' visual resource paraprofessionals will provide recommendations for management activities which will meet visual quality objectives (VQO's) adopted in the Forest Plan. The management activities will be monitored during implementation and at completion.

The Forest landscape architect and the districts' visual resource paraprofessionals will:

Become aware of proposed management activities through contacts with personnel on the districts and the Forest supervisor's office.

Serve on interdisciplinary teams (IDT's) or provide input when proposed management activities are located in the viewing areas of designated visual travel corridors, recreational sites, wilderness and high use recreational areas and administrative areas.

Provide recommendations for practices which will meet Forest Plan VQO's of proposed management activities.

Be available for public meetings and other agency contacts to explain and display information on how the Forest is meeting Forest Plan VQO's of proposed management activities on the Forest.

Monitor management activities during implementation for meeting Forest Plan VQO's.

Evaluate management activities for meeting Forest Plan VQO's upon completion of the activities.

Recreation

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 districts' visual resource paraprofessionals, will randomly sample five percent of the current year's completed management activities to determine if they meet Forest Plan 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, have been to observe activities while traveling about the Forest, through personal contacts with the district personnel regarding visual quality concerns and review of timber sale reports to determine if the completed timber sales have met Forest Plan VQO's.

Accomplishments/Findings

The Forest landscape architect and visual resource paraprofessionals provided input by serving on interdisciplinary teams (IDT) and providing recommendations of practices for meeting VQO's on twenty-six proposed management activities. A total of fifty-three timber sales were completed (closed) in fiscal year 1990. All of the fifty-three timber sales were found to meet Forest Plan VQO's. However, some cutting units, previous to the 1990 monitoring year, need to receive rehabilitation to meet Forest Plan VQO's. One cutting unit of the Elmer Timber Sale and three units of Swan Creek Timber Sale need shape alterations.

Refinement of visual quality objective mapping continues as management activities are proposed.

Forest Road 250 from Highway 11, near Pierce, to Bungalow should be considered for inclusion as a visual travel corridor in the Forest Plan. There is a high volume of recreation traffic over this section of road between population centers and the North Fork of the Clearwater River. Forest Road 100, should also be considered for inclusion as a visual travel corridor because of heavy recreational traffic.

There is a need to define the desired landscape character we want to achieve along each visual travel corridor of the Forest. The landscape character would then be incorporated into a viewshed plan for each visual travel corridor. This plan would provide a more consistent approach to meeting Forest visual resource objectives than the project-by-project approach currently being used on the Forest.

Slash, logging debris and burn piles need to be cleaned up along some visual travel corridors.

As the result of the emphasis on New Perspectives in Forestry, there is more focus on the total landscape. Aerial views from aerial travel routes may become more of a visual quality concern in the future.

Clearcuts are appearing in the seen areas of some visual travel corridors that don't have the characteristic of form, line, color and texture of the natural appearing landscape. This could be the result of harvest prescriptions changing, for various reasons, before or during harvest. This situation indicates that we need to intensify our monitoring efforts in this area and do some follow-up training of district personnel charged with project implementation.

Recreation

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.

Accomplishments/Findings

Most of the trails in the Great Burn area recommended for inclusion in the wilderness system, and other roadless areas, (Management Areas B2 and C6, respectively) are open for motorized use. The Forest has received a few complaints with regard to conflicts between users in these areas. The number of complaints is not large, however, they do indicate a source of increasing friction. The number of conflicts will probably continue to increase as increasingly diverse recreationists place heavier demands on the Forest's recreation resources

The presence of light motorized use in the Great Burn area is unlikely to cause resource damage serious enough to affect the wilderness character. If, however, motorized use becomes established in an area that later becomes wilderness it will be significantly more difficult to stop that non-conforming use. Consequently, it might be prudent to close some areas receiving light use before heavier use becomes established. The North Fork and Powell Districts are monitoring this situation closely.

During the past year, all road, trail and area closures on the Forest were reviewed. It was found that over the past decade or more, many closures had been implemented as part of a Forest project. For example, many roads were closed as a requirement connected with a timber sale. The review also found that adjacent roads had different policies regarding timing and purpose of road closures. The Forest revised closure dates, updated the Forest map and issued a travel plan supplement to clarify road and trail restrictions for the public.

Trails

Goal

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

Strategy

Inventory trail conditions and maintain a record system. The Forest goal is to conduct a log and prescription survey over 25% of the 1,500 mile trail system each year. The survey provides information about trail conditions. Heavy maintenance or light reconstruction contracts can be prepared from these surveys. Information about each trail will be maintained in a trail data base.

Trail drainage structures are key to maintaining the basic trail structure and preventing resource damage. Existing drainage must be maintained and new structures built where they have been lost or were never built.

Maintain safe bridges by frequent inspections and replace native wooden (log) bridge stringers with longer lasting materials to significantly increase structure life. The policy is to build trail bridges only when a ford is impassable or unsafe during half or more of the heavy use season.

Reconstruct trails to a standard that can be easily maintained. Generally this means that most grades should be at 10% or less. It is impossible to maintain drainage structures and prevent erosion on most grades steeper than 10%.

Select high value recreation trails for reconstruction. Place high priority and high design standards on trails that will provide loop opportunities, high visual experiences and other recreational attributes.

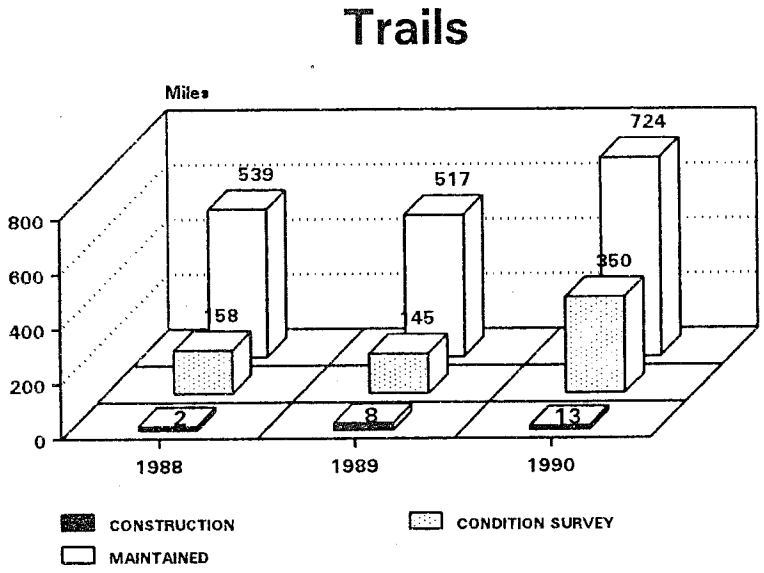
Item No. 16	Trail Management
Frequency of Measurement:	Annual
Reporting Period:	Five years (1993)

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, if use of the trail system use patterns are changing significantly, or if physical conditions of the Forest trail system are changing significantly. Information from the Recreation Information Management (RIM) system will be used to monitor 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.

Recreation

Accomplishments/Findings



Trail Reconstruction/Maintenance Backlog

During 1989 the Government Accounting Office (GAO) conducted a nationwide review of the backlog of maintenance and construction needs on National Forest System Trails (GAO Report B-209917 dated 9/22/89). The Clearwater National Forest was found to have the second highest ($13 million) backlog of work in the country. This backlog has been caused by inadequate funding, lack of trail drainage structures, the Forest's erosive soils coupled with the high incidence of horse use and old trails with overly-steepened grades improperly located on the land. During Forest Plan preparation, the magnitude of maintenance and reconstruction needs were underestimated. We are in the process of collecting more accurate information on our system needs through updating our log and prescription surveys.

Trail Maintenance

Funding - Funding for trail maintenance increased dramatically in FY 90. Allocated maintenance funds were $508,000 compared to $323,000 in FY89, a 157 percent increase. Although this level was 92 percent of the amount anticipated in the Forest Plan, we are finding that our original estimates of annual needs in the Plan were low and need to be revised.

Work Completed - We were able to maintain 615 miles of trail with Forest Service crews and contracts. An additional 109 miles were maintained through volunteer programs with individuals, organizations and the State of Idaho Trail Ranger program (see figure above). Approximately 48 percent of our trail mileage is receiving some direct maintenance work. Maintenance costs per mile remain high ($874/mile) due to

the large amount of heavy maintenance work needed following several years of low funding and maintenance. Reduction of this backlog will require significant increases in our construction budgets to bring high maintenance costs down over time.

Additionally, we were able to complete 350 miles of surveys (see figure above). The Forest goal is 25 percent. In 1990 we achieved 23 percent. Although we have some outyear construction projects in the planning stages, we are still lagging in getting the necessary cultural resource and NEPA work done to get these projects ready for contracting in early FY 91.

Trail Construction

Funding - Allocated funds were $207,000 (challenge cost-share subtracted), the same level as in FY 89. Funding at this level is about 56 percent of our Forest Plan level of $371,000. We are aware that the Forest Plan estimate is low and should be revised to adequately communicate our needs and strategy to get the job done.

Work Completed - Two trail reconstruction projects (Bear Butte #167 and Packbox Pass #50) totaling 12.6 miles were contracted. One mile of the Eagle Mountain #206 (Old Man Divide) trail and one mile of the Lochsa River Historical Trail were reconstructed by district crews (see figure on previous page). The average cost for these projects was $10,000/mile. In addition, the anchors (under Highway 12) for the Warm Springs trail suspension bridge had to be replaced at a cost of $55,000. Bridge site surveys were completed on 8 bridge sites. Survey and design were in progress on 11 bridges during the year.

Special Projects

TPIA - The Forest's 4th annual Take Pride in America project on the Lolo Trail was, again, a great success. Two camps were operated (at Weitas Meadows and No See'em Meadows). Approximately 200 people were on hand to work for the weekend. Approximately four miles of the Lewis and Clark/Nee Mee Poo Trails were reopened. A bridge near Indian Grave and a boardwalk across Weitas Meadows were constructed.

Earth Day/Idaho Centennial Trial - A major Challenge Cost Share project on the Idaho Centennial Trail (Lochsa River Trail#2) involved over 225 people representing 26 organized groups and companies. It was led by the Clearwater Resource Coalition. The project's accomplishments were considerable: the construction of a 90 foot trail bridge across Fish Creek, maintenance, reconstruction and opening over 2 miles of the trail, and planting over 4000 trees in the Wilderness Gateway Campground area.

Many of the materials and most of the labor was donated by partners. The Forest Service provided the web-steel bridge stringers, bridge sills, and construction supervision. Many Forest Service employees donated their time for the weekend. Total value of the work accomplished was over $72,000. The Forest Service funding was just under $20,000. An additional $10,000 of Challenge Cost Share funds were matched by volunteer labor and materials from the Backcountry Horsemen working on other segments of the trail.

Recreation

Trail Monitoring

Inadequate drainage continues to be a significant problem on the Clearwater National Forest trails. The lack of water bars and dips is compounded by the antiquated design of the existing trails. The trails were designed a half century or more ago to provide rapid access to the back country for fire control. Trails were usually located on ridges to provide good views of lightning fires and to allow crews to travel rapidly down hill to a fire. Many of these ridgeline trails were laid out to serve two or three pack strings per year in the summer season. These ridgeline trails tend to trap water on the trails. This runoff then runs down the length of the trails causing significant erosion.

In addition, many of these trails have grades in excess of 20% with occasional sections of 30% or greater. The only way to maintain these trails, especially in the face of heavy stock traffic during the fall, is to relocate the trail. Consequently, we are finding that for most trails more than one-half of the total trail length must be relocated and subsequently replaced with new construction. Costs are high, running about $10,000 to $15,000 per mile. In locations with heavy rock work, costs can approach $60,000 per mile.

Bridges continue to be an expensive trail item. Many old log stringer bridges are reaching the end of their 20 to 30 year life expectancy. Our engineering staff made safety inspections on 24 bridges, and several bridges received maintenance work. This inspection has identified a number of trail bridges needing replacement in the next five years. The Forest will need to spend about $100,000 per year on bridges. Replacement steel stringer bridges have a minimum life expectancy of 50 years. With proper maintenance they should last longer than that. Consequently, as the log stringer bridges are replaced the annual cost of bridge replacement should diminish.

The trail maintenance and construction expertise continues to be a problem. Skilled trail workers have retired or been lost because of low budgets over the past several years. During the same period, the trail system on the Forest was reduced from about 2,500 miles to the present 1,500. More and more work is being contracted to deal with the lack of qualified trail and bridge workers. Consequently, one qualified person per district should be able to handle the work load. The Forest is actively training trail designers and construction inspectors.

The trail numbering system is confusing and signs are lacking on many parts of the system. For example, the Palouse District was originally a portion of the St. Joe National Forest. The trails were numbered at that time. Some of the trail numbers on the "old" Clearwater have the same numbers as the Palouse trail numbers. This leads to confusion in inventory management and in answering the public's questions about individual trails. Trails were numbered starting at one end of the Forest and going to the other. District boundaries were not considered. Generally, groups of numbers in the same area can be found together, but there are always exceptions. Since then, district boundaries have changed, trails have been dropped, and new ones added so that little rationale exists to assist a person trying to find a trail known only by a number. The Forest will review the trail numbering system and develop a plan to resolve this problem in the near future.

New trails are needed to provide additional recreation opportunities at campgrounds, picnic areas and other sites. The existing trail system, built largely for fire control purposes, often does not meet the needs of today's recreationists. This is especially true along the Highway 12 corridor where the original mainline river trail was largely replaced by the highway. The remaining trails provide access to the wilderness and other high elevation sites. To reach those sites, the trails climb steeply out of the canyon. This steep climb is not a satisfactory recreation experience for most people.

Additional trails, some with interpretive facilities, should be built from the campgrounds, picnic areas, and rest stops. This need has been identified in several research efforts and is in conformance with the Forest Plan for providing customer service.

The Lolo Trail system continues to draw considerable interest from the public. During the summer of 1991, the Ne Mee Poo National Historic Trail will be dedicated. It will join the Lewis and Clark route as the second National Historic Trail to utilize the ancient route over the mountains developed originally by the ancestors of today's Nez Perce Indians.

The Lolo Trail Guidelines call for a recreation trail across the Forest which will follow various parts of the old "Q'useyn'eisskit", or Buffalo trail, utilized by these two historic events. Several factors are coalescing to increase activity and interest on this trail system. These factors include increased interest in the history of our country; increased recognition of the route as an alternative recreational route for mountain bicycle riding, horse travel, backcountry traveling; and fall hunting use. The increased public interest in completion of a cross-Forest hiking and riding trail along this route may result in accelerated construction of the missing segments of the proposed system.

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/Findings

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

During 1990, establishment reports were prepared for the following three areas: Aquarius, Dutch Creek, and Grave Peak.

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

Research Needs

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

Long term monitoring. Are the fisheries habitat structures and sediment removal measures achieving desired objectives?

Riparian Areas

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 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.

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 to ten-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.

Accomplishments/Findings

Baseline or current riparian conditions, including channel characteristics, have been monitored on many of the major streams on the Forest in the past three years. From 1988 to 1990, permanent channel cross sections were established at the mouths of 146 streams. Gradient, channel substrate composition, and photo points were established. Channel type was determined for each of the streams.

The Forest plans to monitor these streams on five to ten-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 and 1990. The Forest hydrologist is attempting to determine if debris removal and fire line construction in a second order tributary of Minnesaka Creek, North Fork Ranger District, will destabilize the stream channel, or deliver sediment downstream. (Stream order is a designation of the relative position of stream segments in a drainage basin network. The smallest, unbranched tributaries, terminating at an outer point, are designated order one; the junction of two first-order steams produces a stream segment of order two; the junction of two second-order streams produces a stream segment of order 3, etc.) Three permanent cross sections were established in an attempt to measure channel scour. Stream gradient, channel substrate composition, and photo points were also established.

Where the gradient was very steep, over 20 percent at T1 and T2, the channel has scoured below bankfull from two to four inches (See Figures 1 and 2). Where the gradient is less steep, under twenty percent at T3, sediment has accumulated in what used to be the thalwag (See Figure 3). This accumulation of sediment could cause erosion of the adjacent stream banks. To eliminate destabilization of stream banks in the future, the Forest has increased the Stream Protection Zone on these Class II streams from 5 to 25 feet. The Forest has also eliminated the practice of constructing firelines in stream channel bottoms. Monitoring of this tributary to Minnesaka Creek will continue in 1991 to determine if additional scour or bank erosion is occurring.

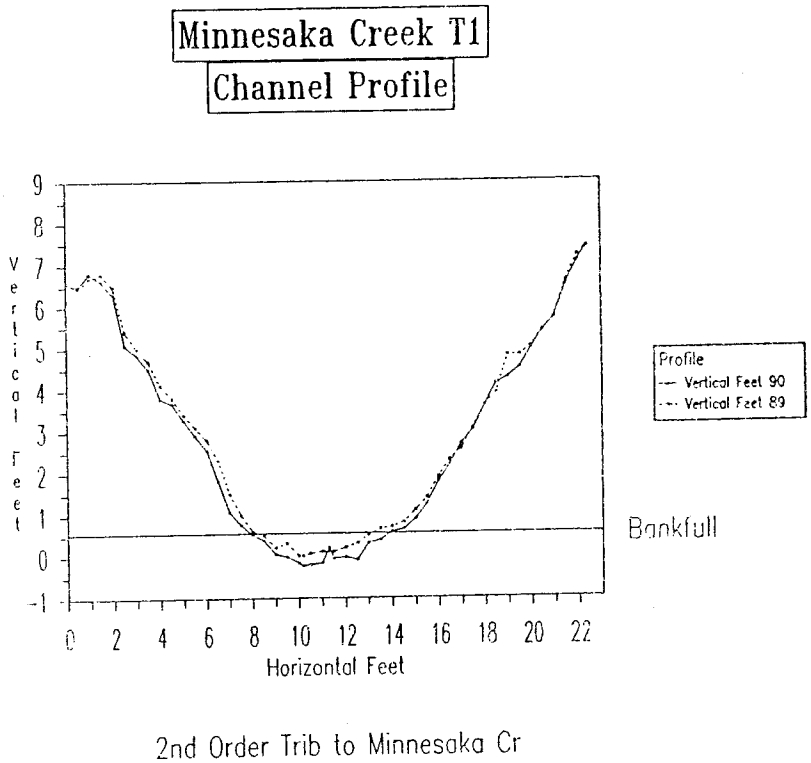


Figure 1

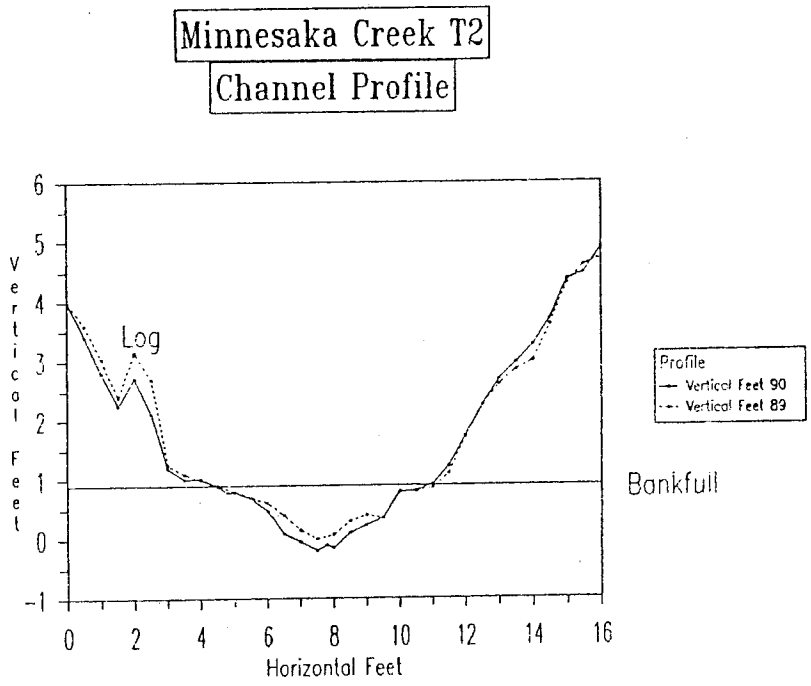


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Figure 2

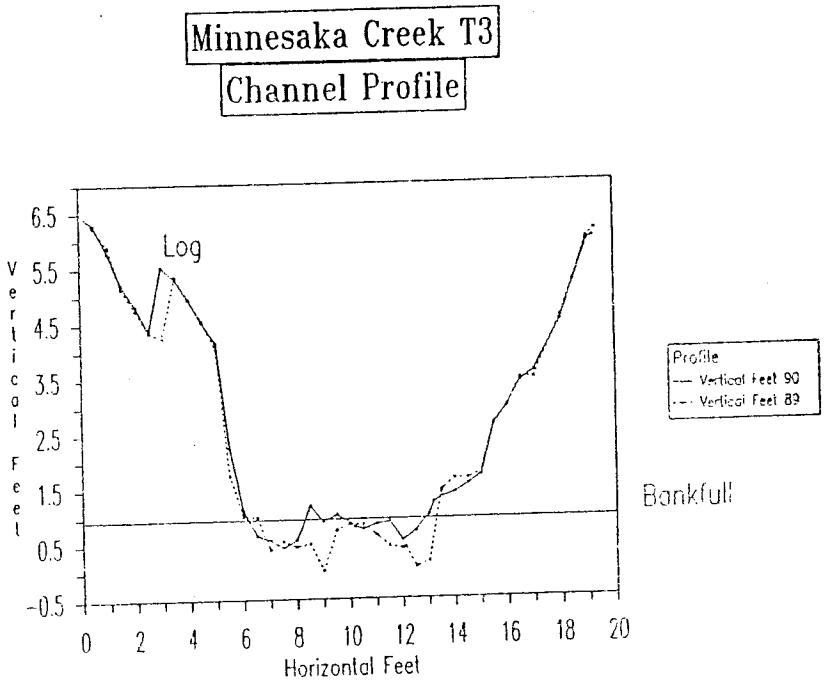

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Figure 3

Riparian Areas

To provide management guidance, the Forest has developed riparian management direction to apply Forest Plan standards on fish-bearing streams. This direction includes an analyses flow diagram, a desired future condition analysis process, and a key to address wildlife concerns. It will be used to aid the analysis process and should be tempered with sound reasoning based on experience and professional judgment. The direction was developed to deal with problems identified during previous analyses of management activities. Similar direction is being developed for non-fish-bearing streams.

Soil and Water

Goal

Manage watersheds and soil resources to maintain Forest Plan 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.

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 and effectiveness of Best Management Practices (BMP's) during and after project 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.

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

Monitoring Action: Non-Fisheries

The Forest hydrologist will coordinate with district personnel to establish 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.

Accomplishments/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 fisheries resource.

Baseline monitoring and project water quality monitoring of streams has been performed 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) of suspended and bedload sediment are periodically collected at many baseline stations.

Project stations have been located downstream from 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 are collected at each project station with automatic water samplers or grab samples. Parameters measured are 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. Grab samples are scheduled to concentrate collection during the peak discharge period. Water level recorders and automatic water samplers are normally in operation from March through September.

The following table (Table 1 - Water Quality Monitoring Network 1990) shows the Forest's water monitoring network by District. Years of record, type of monitoring station, parameters collected, and instrumentation at each station are presented.

Table 1 - Water Quality Monitoring Network 1990

Watershed	Station Established	Years of Record	Collected Data	Station Type	Remarks
Pierce RD					
Camp Creek	1990	1	*	P	Restart of Station
Cedar Creek	1984	7	*	P	Active Timber Sale
Dollar Creek	1984	7	*	P	Active Timber Sale
Eldorado Creek	1984	7	*Rec. WS SS	B	Sales on Eldorado Creek
Lolo Cr. @ Sec. #6	1980	10	Rec. WS SS	B	Mining and Timber Sales
Musselshell Creek	1991		*	P	Coop monitoring with State of Idaho DEQ
Yoosa Creek	1990	1	*	P	Project Study with N.P Tribe
Palouse RD					
Blakes Fork	1981	11	*	P	Past and Active Timber Sales
Elk Cr abv Elk R	1981	10	Rec. SS	B	Proposed Hydro and Timber Sales
Little Sand	1981	10	*	P	Past & Active Timber Sales
No. Fork Palouse	1981	10	*	P	Proposed & Active Timber Sales
Palouse abv L Sand	1981	10	*Rec.	B	Baseline-Mixed Ownership
North Fork RD					
Cold Spring Creek	1981	10	*Rec.	B	Reference Station
Fern Creek	1990	1	*WS	P	Proposed Timber Sale
Isabella Creek	1980	11	*Rec.	B	Reference to Salmon Stations
Osier Creek	1981	10	*	P	
Quartz Creek	1981	10	Rec. WS SS	B	Past and Proposed Timber Sales
N. Fk. Clearwater	1988	3	USGS Rec.SS	B	Baseline Study
Salmon Cr. upper	1986	5	WS SS	P	Control Above Activities
Salmon Cr. lower	1986	5	WS SS	P	Station Below Activities
So. Fork Beaver	1981	10	Rec. WS SS	B	Past and Active Sales
Swamp abv Osier	1980	11	Rec. WS SS	B	Timber Sales
Wolf Creek	1990	1	*	P	Proposed Timber Sale

Watershed	Station Established	Years of Record	Collected Data	Station Type	Remarks
Lochsa RD					
Bullock Creek	1988	3	WS Tur	P	Domestic Water Supply
Cougar Cr (Lowell)	1986	5	WS Tur	P	Domestic Water Supply
Deadman Cr at mouth	1980	11	*Rec. WS	B	Began Rec., WS, in 1989
Fish Creek @ mouth	1980	11	Rec.	B	Long-term Baseline
Glade Creek	1980	11	*	P	
Little Smith	1980	11	*	P	Past and Active Sales
Pete King	1976	15	*Rec. WS	B	Long-term Baseline
So. Fk Canyon	1979	12	*	P	
Powell RD					
Crooked Fork at mouth	1980	11	*Rec. WS	B	
Crooked Fork abv Brushy	1986	5	Rec. WS	P	Mixed Ownership
Doe Creek @ mouth	1981	10	*	P	
Lochsa River	1988	3	USGS Rec.SS	B	Baseline Study
Parachute Creek	1991	-	Rec. WS SS	P	Landslide Study Two WS's
Squaw abv Doe	1981	10	*	P	Began Rec. WS in 1988
White Sands at mouth	1980	11	*Rec. WS SS	B	WS data from 82-86

* - 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

The Forest processed approximately 2,600 suspended sediment and 300 bedload samples in 1990. 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 results is presented in Figure 1, Crooked Fork @ Mouth vs. White Sand @ Mouth.

Monitoring results from Crooked Fork and White Sand Creeks on the Powell Ranger District have shown increased suspended sediment from Crooked Fork, a mixed ownership, heavily roaded watershed. These results contrast starkly with those from White Sand Creek, a relatively undisturbed watershed (see Figure 1). Monitoring of both Crooked Fork and White Sand Creek will continue in 1991.

Crooked Fork (developed) @ Mouth vs.
White Sand (undeveloped) @ Mouth

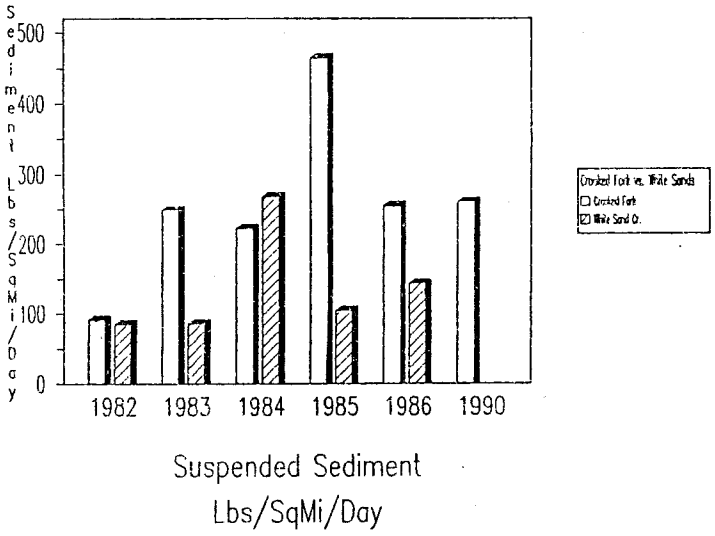

Figure 1

*Data not available. Monitoring of both watersheds will resume in 1991.

Generally, monitoring of suspended sediment has shown a recovery trend Forest-wide from past management activities. Suspended sediment concentrations tend to be less in the late 1980's than in the early 1980's. Some of this may be due to the drought conditions in the late 1980's. However, we believe that 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. An exception to this finding is presented on the following page in Table 2, Bullock Creek at Syringa.

Table 2. Bullock Creek at Syringa (1988-1990). Continuous turbidity measurements examining timber harvest (late 1989) and site preparation activities on domestic water quality.

Water Year	Turbidity NTUs*
1988	6.1
1989	7.0
1990	20.4

*Nephlometric turbidity units - measure of relative water clarity (the higher the number the higher the turbidity).

Monitoring results from Bullock Creek at Syringa on the Lochsa Ranger District indicate that turbidity has increased below a clearcut unit (Table 2). We believe the sediment was generated from fireline construction within the Stream Protection Zone (SPZ) upstream from the site and adjacent to Bullock Creek. Some stream bank erosion and active headcut migration of the channel was observed. The study indicates that this erosion of the stream channel is generating turbid water to domestic users downstream.

Recommendations to prevent this problem in the future include leaving a buffer of trees, avoiding fireline construction near stream channels and avoiding site preparation activites within the SPZ, including broadcast burning.

Although the 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, reduces primary production (vegetation) and lowers aquatic insect numbers and species diversity. This reduces fisheries habitat quality and results in lower reproductive rates and fewer fish. Observations indicate that some low gradient streams will require decades to recover. Even higher gradient streams are taking longer than expected to recover.

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 which 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.

In addition, the Forest hydrologist will monitor ten percent of all timber sale units for BMP effectiveness. The Forest soil scientist will monitor 100 percent of all new road construction for BMP implementation and effectiveness. The sale administrator and road contracting officers are responsible for BMP implementation.

Accomplishments/Findings

The 1989 Monitoring Report listed one major BMP problem, the clearcutting of a Class 1 stream tributary to Canyon Creek on the Lochsa Ranger District. Temperature monitoring of this stream in 1990 indicated that stream temperatures exceeded Forest Plan standards (See Figure 2). In the summer of 1990, riparian vegetation was planted along this stream to recover water temperatures. Water temperature monitoring will continue in 1991.

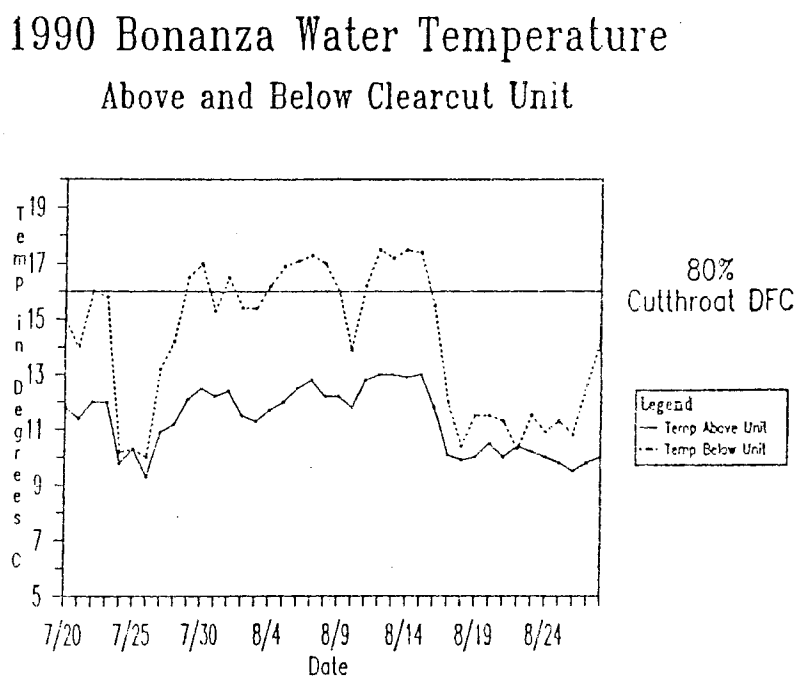

Figure 2

A total of 493 BMP's were audited from 16 timber sale units on the Clearwater National Forest in 1990. These units were randomly selected from each of the five ranger districts. Four hundred seventy-three, or 95.8 percent were found to be in compliance with the Idaho Forest Practices Act. Problems with compliance generally occurred with landings being excessive in size and poorly located, insufficient shading and filtering of Class II streams, and abandoned roads that remained open after the sale.

The BMP audit indicated that the five-foot streamside protection zone (SPZ) required on Class II streams was insufficient to prevent sediment from washing from landing to stream. The problem occurred when these landings were located within 25 feet of the stream. The audit also indicated that the five-foot SPZ was insufficient to prevent minor destabilization of instream woody debris during broadcast burning. As a result, the Forest Supervisor has increased the SPZ for Class II streams on the Clearwater National Forest to 25 feet. We believe that in most cases, this will provide sufficient sediment filtration and prevent the destabilization of instream woody debris. The Forest Supervisor has also issued direction to the district rangers to "put to bed" all temporary roads at the termination of each sale. The definition of "put to bed" is to remove risk of failure, revegetate and render nondrivable.

BMP monitoring in 1991 will be concentrated in watersheds containing stream segments of concern for which site-specific BMP's have been developed. We will also concentrated our monitoring of units which are adjacent to Class I or II streams. The following table lists the stream segments of concern by district identified in FY90.

Stream Segments of Concern

District	Watershed	Stream Segments 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

The application and effectiveness of erosion control measures were evaluated on approximately 80 miles of new road constructed in 1988 and 1989.

Road construction and quality standards have been steadily improving over the past several years. Roads were built as designed with respect to erosion to control measures.

A generally applied watershed objective is to reduce the amount of sediment generated by new road construction as predicted by the WATBAL sediment projection model. The goal is to reduce the initial increased sediment by 80% two years after construction. This goal was achieved on 70% of the new road construction mileage during 1990. In 1991, the Forest will explore means of reducing the initial increased sediment even further. This effort will be discussed in the 1991 monitoring report.

Soil erosion problems and improvements and recommendations are noted in field notes available from the Forest soil scientist. A slide presentation was developed to present monitoring results to the supervisor's staff, district staffs and the research scientist at the Moscow Forest Sciences Lab. The results are being incorporated into the WATSED cumulative effects model and an accompanying mitigation model.

Improvements Needed

Road designs need to reflect soil characteristics and limitations. Examples include matching cutbank angles to soil strengths and use straw mulch and tacifier on certain soils.

Uniform control of grass seeding and fertilizing of temporary roads. Highly variable success was observed on seeding projects of similar roads over same soil types.

Improved coordination between timber sale administration and the engineering section. An example includes water bar construction. A few instances of improperly sloped waterbars were observed during monitoring.

Watershed risks need to be better identified and addressed in the NEPA analysis and documentation stage of project planning. For example, very stringent erosion control measures were applied to a low risk situation in one project while the "usual" (more moderate) mitigation measures were applied to a high risk situation in another project. A computerized mitigation model is being developed that will aid in assigning appropriate mitigation measures. Accelerate the watershed restoration program.

Means of retaining effective erosion control measures need to be developed. Loss of erosion control measures, such as slash filter windrows and areas seeded with grass on newly constructed roads is a continuing problem. This is occasionally caused by broadcast burning below roads, yarding logs through freshly seeded areas and burning of slash piles.

More timely road closures to prevent damage during wet periods.

Only two mass failures (rotational fill slumps) were observed. Reduction of mass failures has been a major forest accomplishment. Fifteen years ago we could have expected dozens of major failures occurring on this amount of road construction. This needs to be reflected in the new WATSED cumulative effects model. To accomplish this, fill failures and major cutbank failures need to be separated from fill sloughing in landtype interpretation coefficients. Forest Science Lab personnel at Moscow have expressed a willingness to assist in the development of these interpretations. This project will be incorporated into the 1991 watershed monitoring.

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

In FY 90 photo flights were made to photograph tractor units with a hand-held 35 mm camera. The Palouse District, which had approximately 50% of the Forest's tractor skidded units during the year, was photographed in late September. Dot grid estimates of soil disturbance and skid trail density of 19 harvest units were calculated. The average density of skid trails likely to have significant soil disturbance or compaction was 17.1%. Estimates ranged from 11% to 22.4%. This meets the Forest Plan standard of 15%, considering the sampling methods and measurement methods used.

The Palouse District obtained a second cultivator on the forest during 1990. This implement is used for rehabilitating skid trails, and it should reduce soil displacement and compaction to well within the Forest Plan standards. It is reasonable to assume that a 5-10% reduction in soil disturbance and compaction on tractor-skidded units can be achieved.

Flights of the Lochsa and North Fork Ranger Districts did not provide an adequate sample of photographs to permit estimating soil disturbance and skid trails. However, the photographs do indicate that skid trail density on these districts is considerably higher than those on the Palouse District. Skid trail densities could not be determined as a result of steeper, more dissected terrain or planning and layout. Another flight will be made to photograph these units when snow melt conditions permit.

A 25% sample of units that exceed the 15% disturbance level will be field evaluated during the coming field season. Two units were field evaluated for soil bulk density during the FY 90 field season. Random transects revealed that fewer than 5% of the units had bulk densities greater than 0.9 gram/cubic centimeter in the ash cap. This falls well within the Forest Plan standard requiring that at least 85% of the area with severely disturbed surface soils remain at or below a bulk density of 0.9 gram/cubic centimeter.

Walk thru exams to evaluate the severity of prescribed burns were completed on 15 units. Fewer than 10% of any burn unit met Neihoff's severe burn classification. No severe surface erosion was observed. Some minor surface erosion was observed in small localized areas. No sediment production resulting from the surface erosion was observed.

A walk thru was completed on the Canyon Creek "let burn" wildfire. Only limited local erosion contributing little, if any, sediment was observed.

Timber

Goal

Provide a sustained yield of timber and other forest products at a level which will help support the economic structure of local communities, provide for regional and national needs, and be cost effective. Progress toward achieving the desired future condition identified in the Forest Plan.

Strategy

We are looking for opportunities to apply new forestry concepts where they will enable us to meet the goals and objectives of the Forest Plan. The New Perspectives philosophy will be used to develop a timber management program which will provide for the long term health, diversity, and productivity of the Forest.

We will strive to better understand and expand our resource management options. Complete site-specific analysis of the land base will be used to design the timber sale management program. Silvicultural systems will be selected to enhance biological diversity and ecological processes. The timber sale program will provide for a wide range of sale sizes and product types. An appropriate mix of logging systems will be specified.

We will work to better understand the relationships between people and the Forest. The timber management program will address social and economic issues such as rural development and diversification, customer satisfaction, diverse user values, and the influence of urban culture on resource management. The Forest will continue to pursue and develop new timber sale opportunities.

Forest Product Sales and ASQ

In fiscal year 1990, the Forest offered a variety of products which included sawlogs, pulp, cedar products, fuelwood, Christmas trees, fence posts, and bear grass. These products were sold through 53 timber sales and 1,479 miscellaneous collection permits. A total volume of 120.7 MMBF was sold. Approximately 42 MMBF (35%) of this volume was in sales of less than 5 MMBF. The annual volumes offered, sold, harvested, and under contract over the past ten years are shown in Figure 1 on the following page.

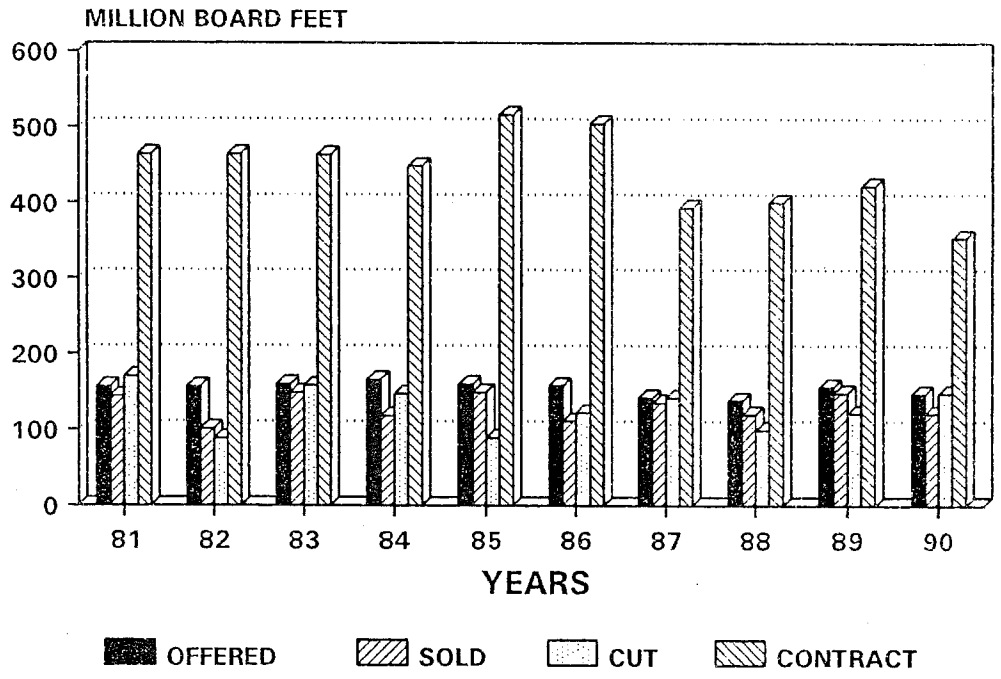

Figure 1

There are four elements in Figure 1: the timber volume that was offered for sale (OFFERED), the volume that was sold (SOLD), the volume that was cut (CUT), and the volume under contract (CONTRACT). We want to draw attention to two trends seen in this chart. The first is that annual volume offered has consistently been greater than volume sold. The second is that the volume under contract has been decreasing since 1985. These two trends suggest that the timber volume offered by the Forest has been sufficient to meet historical demand. As both the volume under contract and the volume offered for sale decrease, the demand may soon become greater than the supply.

The Clearwater Forest Record of Decision states that the average annual allowable sale quantity (ASQ) that can be sold will be 173 MMBF. Up to 100 MMBF of the total ASQ is to come from the roaded component of the Forest. This 100 MMBF included 10 MMBF of non-interchangeable species and size classes, mostly pulpwood, that are subject to fluctuating markets. The remaining 73 MMBF was to be harvested from the unroaded component.

Timber

Table 1 below displays total volume sold on the roaded and unroaded portions of the Forest since 1988, the first year of Forest Plan implementation. It also displays current and projected future sales through 1997.

Table 1 - Timber Sales on the Roaded and Unroaded Components of the Forest, 1988 through 1997

Year	Roaded MMBF	Unroaded MMBF	Total MMBF
1988	103	13	116
1989	121	23	144
1990	99	4	103
*1991	136	20	156
*1992	58	18	76
*1993	67	22	89
*1994	47	54	101
*1995	44	52	96
*1996	41	62	103
*1997	70	73	143
TOTAL	786	341	1,127

*Projections - (subject to site specific analysis.)

If current projections are accurate several important points can be inferred from Table 1: the Forest could fall well short of producing the ASQ planned for first decade, most of the short fall will be in the unroaded component, and there will also be some short fall in the roaded component.

The reasons for these projected shortfalls differ for the roaded and unroaded components of the Forest. The unroaded component has become critically important to some of the people we serve. These individuals and groups have requested that the unroaded areas receive special consideration and analysis before management activities are performed.

In addition, much of the unroaded component contains watersheds that have burned during this century. The burning resulted in extensive tracts of understocked young trees. Two factors, special analysis and the need to design and construct new roads, have resulted in a significant increase in the amount of time and effort needed to plan sales in the unroaded component.

The roaded component presents its own challenges. Project opportunities are based on site-specific analysis of what can actually be achieved on a given piece of land. Spatial concerns such as canopy opening size and species diversity have had an important effect on project opportunities. This is of special concern in areas where private holdings lie adjacent to Forest lands.

We have responded to Forest Plan standards and guidelines about water quality by using great care in road building and other activities that might adversely affect water quality. Projects have been altered or eliminated in response to water quality concerns. Our ability to meet watershed standards with timber harvest is the most limiting factor in both the roaded and unroaded portions of the Forest. As our knowledge of erosional processes on the different soils found on the Forest increases, management opportunities may also increase.

The 1989 Monitoring and Evaluation Report identified the need to compare the number of acres and timber volumes sold annually by management area, with the acres and volume estimates used to derive the ASQ. Those comparisons are provided in Table 2 below.

Table 2 - Comparison of Forest Plan Projections With Timber Sales, 1988-1990

	Forest Plan Projections		Timber Sales, 1988-1990	
Management Area Emphasis	Acres	Volume MMBF	Average Acres	Volume MMBF
Timber production (E1)	3559	61.2	5397	87.4
Road/trail corridors (A4/A6)	128	.8	32	.1
Big game summer range (C8S)	3099	62.5	124	3.7
Big game winter range (C4)	1007	23.6	845	20.3
Riparian areas (M2)	3516	5.2	291	5.0

This table shows that the major deviation between projected ASQ volume and the average annual volume sold over the first three years of the Plan is in the big game summer range management area. Almost all big game summer range is located in the unroaded portion of the Forest.

Timber Stand Improvement and Reforestation of Nonstocked Lands

Over the first three years of the Forest Plan, timber stand improvement projects were completed on an annual average of 939 acres. This is approximately 50 per cent of acreage projected in the Plan. During the same period, a total of 12,770 acres have been reforested. The Forest Plan projected, in addition to regeneration after harvest, an average annual reforestation of 3,223 acres of non-stocked lands. These are lands that were left nonstocked as the result of fire or early forest management practices. Only a small part of this has been accomplished.

Forest Tree Improvement

The Lenore Tree Improvement Area, a 75-acre seed orchard, is located two miles east of Lenore, Idaho, on the north side of the Clearwater River. The site is part of the Northern Region's tree improvement

program. It will provide for short term genetic testing as well as long term seed production of this orchard.

The objective of this orchard is to produce high quality ponderosa pine seed to meet future artificial reforestation needs in north Idaho and western Montana. Trees with improved growth characteristics will be identified through genetic testing. The seed orchard will be established by grafting superior genetic material onto rootstock. The orchard is expected to become fully productive early in the next century. It will continue to produce seed for 100 years or more.

The Lenore site was purchased in 1989. Site development in that year included improvement of the access road, construction of an equipment shed, installation of a fence around the orchard, and some initial site preparation. In 1990, design work for the irrigation system began and some grafting of potted rootstock was completed at the Coeur d'Alene Nursery. These trees will be transplanted into the orchard as soon as preparations have been made to receive them.

Item No. 18	**Harvested Land Restocked Within Five Years**
Frequency of Measurement:	Annual
Reporting Period:	Five year intervals (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.

Accomplishments/Findings

The National Forest Management Act of 1976 requires that when trees are harvested to achieve timber production objectives, the cuttings shall 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 1985 were compiled and the required percentages calculated. The data presented in the table on the following page is based on the status of regeneration at the end of 1990. Hence, the time elapsed since harvest is five years.

During 1985, clearcut harvest was conducted on 51 stands composed of 1,151 acres. The final removal harvest, using the seed tree and shelterwood harvest methods, was accomplished on 22 stands and 615 acres. The seed step harvest (initial cutting) of the seed tree and shelterwood method occurred on 34 stands and 944 acres.

Of the 107 stands that received regeneration harvesting in 1985, the following numbers of stands have failed to attain adequate regeneration after five years: four clearcuts, eight seedcuts, and one final removal. These stands are currently being retreated for reforestation. During the first three years under the Forest Plan, adequate regeneration after five years has been achieved on 90% of the clearcut, 86% of the seed step, and 96% of the final removal stands.

Regeneration success measured five years following the 1985 harvests is displayed below in Figure 2.

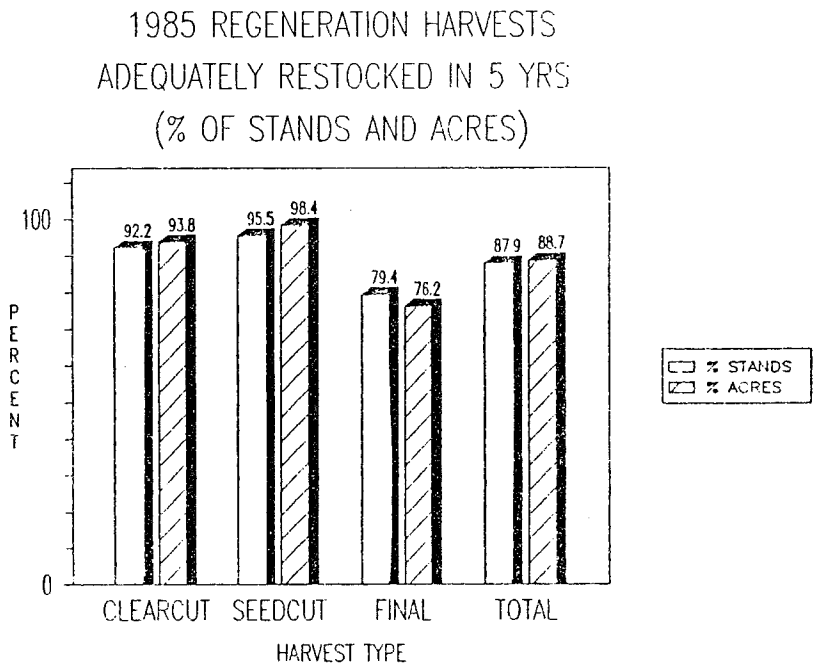

Figure 2

Item No. 19	Unsuited Timberlands Examined to Determine if They Have Become Suitable
Frequency of Measurement:	Annual
Reporting Period:	Ten year intervals

Monitoring Action

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

Accomplishments/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 produce 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 and management area. 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 1990, phase one had been accomplished on approximately 1,558,700 acres, or about 85% of the Forest. Phase one has not been completed in wilderness areas. It is anticipated that phase one will be completed during 1991 or 1992. In phase two, approximately 60% of the Forest compartments have field stand examinations. 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:	Annually

Monitoring Action

The Forest silviculturist will prepare a table displaying the number of stands harvested, by harvest type, meeting the 40 acre maximum harvest size standard compared to the number of stands exceeding this standard.

Accomplishments/Findings

The maximum size of harvest openings created by evenaged 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 blowdown, or for final removal cuttings in order to protect established regeneration in existing shelterwood and seed tree areas.

The average size of regeneration harvest units cut in 1990 are displayed in Figure 3 below. The number of regeneration cutting units exceeding 40 acres is compared to those which are 40 acres or smaller in Figure 3 on the following page.

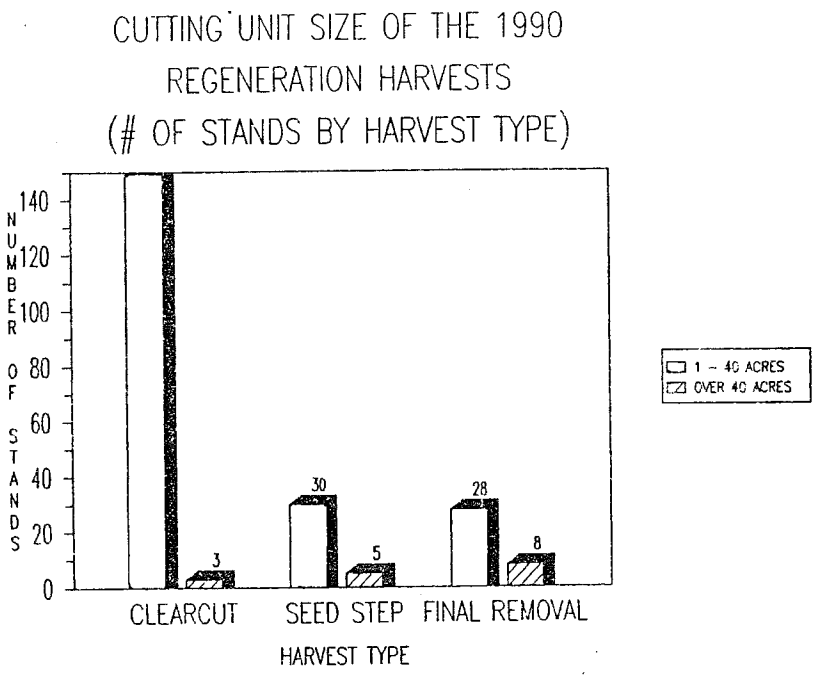

Figure 3

Item No. 21	**Insect and Disease Status as a Result of Activities**
Frequency of Measurement:	Annual
Reporting Period:	Five year intervals (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 continuing its decline. Aerial surveys of the infested area indicate that tree mortality has decreased from about 1,700 acres last year to about 900 acres in 1990. There 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 in bark beetle mortality areas have both directly and indirectly reduced bark beetle populations.

The balsam woolly aphid was found infesting approximately 2,000 acres of grand fir stands on the Forest in 1990. This is a significant decrease from the 26,000 acre estimate made last year. The 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.

There have been no reports of pest infestation increases caused by silvicultural practices. There is, however, a growing concern over decisions to conduct partial cuttings in overmature late successional stands. Research indicates that partial cutting tends to improve habitat conditions for root diseases and certain defoliating insects.

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/Findings

During 1990, eight recreation site improvement projects were completed within the Wild & Scenic River corridor. Work began on restoring the 16 mile segment of the historic Lochsa River trail from Sherman Creek to Split Creek. Approximately 10 miles were restored by the end of the year. The most noteworthy project in this effort was the Earth Day Fish Creek trail bridge recreation challenge cost-share project in partnership with the Clearwater Resource Coalition. During the weekend-long event over 200 volunteers completed a 90 foot span, steel stringer trail bridge over Fish Creek, restored approximately 2 miles of the trail, and planted over 4000 trees in the Wilderness Gateway campground area.

For the first time, a river ranger was hired to make visitor contacts with floaters on the Lochsa River, work with river rafting outfitters, and monitor safety practices of rafters. Contacts with river users identified the following management concerns. Some rafters are unconcerned with the safety aspects of floating (careless behavior, inadequate/substandard rafts, and overloading of rafts). They also seem to be unaware of the environmental benefits associated with the use of fire pans versus the traditional fire ring for camp and cooking fires.

An annual meeting was held with floating outfitters to discuss river management issues. River use continues to increase annually, with kyaking and specialty boating increasing more rapidly than rafting use. An individual with a hovercraft, following the streams along the route of the Lewis & Clark expedition, "flew" the river in record time during the summer of 1990. The first special use permit for commercial photography of whitewater floaters was issued.

Managers of the three national forests (Clearwater, Bitterroot, and Nez Perce) that administer the Middle Fork of the Clearwater Wild & Scenic river system began the process of developing coordinated system

implementation guides and amending Forest Plans to achieve consistent and coordinated management direction. This effort is anticipated to be completed in 1992 provided funding is received.

Coordination with the Idaho Department of Transportation on the management of U.S Highway 12 included completion of a waste disposal site plan for the Powell Ranger District and annual coordination of vegetation management along the highway right-of-way on both the Lochsa and Powell Ranger Districts. An analysis of potential borrow sources were started including proposed sites at Sherman Flats and Canyon Creek. The Powell Ranger District also started work on an Environmental Assessment for U.S Highway 12 improvement work between Eagle Mountain Trail and Lolo Pass.

The Lochsa District continued its administration of scenic easements on 135 tracts of private land along the Middle Fork of the Clearwater River. Four new administrative plans were completed and 25 landowner proposals including structure construction, road construction, commercial timber harvest, satellite TV dish installation, power line location, and tram installation were reviewed and monitored. The District also continued to work with local realtors on prospective purchases of properties encumbered by scenic easements. An annual Wild & Scenic River landowner newsletter was published.

Funding for scenic easement administration continues to be inadequate to accomplish a "proactive" management program with regularly scheduled monitoring of affected tracts. One land exchange in the Wild & Scenic river corridor was initiated because of an innocent trespass resulting from a revised cadastral survey. The Lochsa District also completed an assessment of scenic easement acquisition needs.

Kelly Creek, Cayuse Creek, Hungary Creek, Lower Fish Creek, White Sands Creek, Weitas Creek, and a portion of the North Fork of the Clearwater river have been identified as potential candidates on the Forest for inclusion into the Wild & Scenic River system. Studies have not been completed for these potential river segments due to lack of funding. Completion of the required studies is anticipated in Fiscal Year 1992 if funding is provided.

Wilderness

Goal

Maintain wilderness values both in existing wilderness areas and in those areas being recommended for wilderness classification. Provide for limiting and distributing visitor use in wilderness areas 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 other national forests that share in the management of those lands.

The Forest Plan set goals for the Selway-Bitterroot wilderness areas and for proposed Wilderness areas which include the Great Burn, Mallard-Larkins and additions to the Selway-Bitterroot. The Selway-Bitterroot Wilderness and the proposed areas will be considered separately below.

Strategy

Selway-Bitterroot Wilderness

Utilize the Limits of Acceptable Change (LAC) process to develop a management plan for the Selway-Bitterroot Wilderness. The opportunity classes identified in the LAC process will define management direction. 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.

Reinstate the prescribed natural fire program in the Selway-Bitterroot Wilderness.

Work within a multi-forest coordinating system to ensure commonality of management approach across Forest and District boundaries.

Forest Plan proposed Wilderness areas.

Monitor to determine if off-road vehicle (ORV) use or other activities are jeopardizing the wilderness character.

Coordinate with the Lolo and Idaho Panhandle National Forests to provide a common management approach until Congress officially classifies the areas and deliniates area boundaries.

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.

Accomplishments/Findings

Selway-Bitterroot Wilderness

Program Funding - Specific funding for wilderness management was not identified in the regional allocation of recreation management funds. Although the total funding level was significantly below the Forest Plan level (48%), the Forest allocated more funds to wilderness management than in previous years. Expenditures for management of the Selway-Bitterroot were $65,000, an increase of 48% over the $44,000 spent in FY 89. This enabled us to hire additional seasonal wilderness rangers and increase data gathering for Limits of Acceptable Change monitoring. A "State of the Wilderness Report" was completed by the wilderness coordinator which documents the findings of LAC monitoring and of other information. A copy of this report is available upon request.

Leadership Structure - The three national forests (Clearwater, Nez Perce and Bitteroot) created a Leadership Policy Council composed of the forest supervisors from each Forest. The Lolo Forest turned management of its small portion over to the Bitterroot. This council is charged with providing overall policy guidance and coordination throughout the Wilderness. A steering group composed of district rangers has the responsibility of implementing the policies through coordinated guidelines and direction to the Implementation Team. The Implementation Team, composed of the district resource assistants, has the responsibility to coordinate their management actions and monitor compliance and staffing needs. The Forests have also selected a Wilderness coordinator who monitors actions and policies applicable to the Wilderness and advises all groups of the successes and weak points that need futher coordination or improvement.

Limits Of Acceptable Change - The LAC process for the Selway-Bitterroot was essentially completed in August of 1990. Draft copies were distributed to the public and informational meetings were held in all supervisor's offices to answer questions about the decision process. This completed nearly three

years of work by the LAC task force, representing all user groups, in formulating the future management guidelines for the Wilderness.

The Powell District reported six areas and Lochsa District reported eight areas where LAC limits are being exceeded. Management proposals are being prepared for some of these areas and will be discussed with the Public Task Force in 1991. The districts partially naturalized 140 sites and fully naturalized 30 sites.

Non-System Trails - The Powell District identified six trails and Lochsa District identified 13 trails that exceed LAC non-system trail standards. These trails are maintained by a variety of persons ranging from outfitters to private groups and individuals. Contacts with the appropriate individuals are being made to work on reducing use on these trails or to naturalize them. In one case the system trail that serves an area is in such poor condition that users are diverting to a non-system trail. Reconstruction of the system trail or adoption of the non-system trail will be studied to determine the best management approach to solving this problem.

Natural Fire Program - This program was revised and reinstated to meet new standards developed as a result of the 1988 season. In 1990, eight fires were selected for Prescribed Natural Fires status and burned 170 acres at an administrative cost of $1,800. Cost savings as a result of utilizing Prescribed Natural Fire status was estimated at $32,800.

A **"State of the Selway-Bitterroot Wilderness"** report was completed by the Wilderness coordinator. A summary of topics on the Clearwater National Forest portion follows. The full report is available on request.

Incidents - A total of ten violations of wilderness regulations were noted and reports completed. None of these resulted in any formal action due to unknown violators or insufficient evidence to cite specific suspected violators.

Administrative Use of Mechanized Equipment - The Lochsa District used a power rock drill in the Old Man Lake area to reconstruct portions of Trail 206 and Boulder Creek Trail 211. The use was justified because it reduced the impact to the wilderness by shortening the time needed for the crew to be in the area. It was also substantially more cost effective than the use of hand tools would have been.

Wilderness Education - Programs were presented to 6th Graders in Pierce, Weippe, Kooskia, and Kamiah and in the Pullman/ Moscow schools. Presentations were made to a number of different stock and user groups on low impact camping techniques.

Emerging Issues affecting the Selway-Bitterroot Wilderness - Increased use in Elk Summit area is a result of day hikes and rides into the wilderness from the Elk Summit recreation area. This is putting increasing resource impacts and user encounters on areas within 15 miles of the trailhead/ campground. Litter and lack of wilderness skills are evident with these users and we need to strengthen our wilderness education contacts in this area. One reason for the increased use is the reconstruction of portions of the road in 1988.

Rumors continue of snowmobiles visiting Elk Summit in the winter and venturing into the wilderness. These rumors have not been verified.

Hunting use is now concentrated in a 3 week big-game season during late September/early October. A large increase in hunting pressure has been noted in game unit 19 due to the elk bugling season closure adjacent to game unit 12.

Road and trailhead improvements in the Big Fog area may affect use patterns of Opportunity Class I areas in the Selway Crags.

Increased summer stock use at popular lake basin destinations was a trend in 1990. Impacts are heavy from large parties spending several days at the same site. More monitoring and public contacts are planned in these areas.

Forest Plan Proposed Wilderness Areas

Insufficient funding has prohibited formal monitoring in these areas. However, visits to the areas for other purposes and reports from employees and the public suggests the following information.

Motorized use in the areas where it is not prohibited is slowly increasing. Reports of conflicts are all third hand or older but are being heard. We are unaware of any significant resource impacts or user conflicts that warrant action at this time. We do expect that as trails are reconstructed in these areas, some will be closed to motorized use for resource and investment protection.

Increased funding for trail reconstruction and maintenance and for outfitter administration has increased awareness of management issues in these areas. Informal discussions with groups and individuals who have expressed concern about management direction have taken place and will continue. Coordination meetings with the Lolo National Forest (Great Burn area) and with the Idaho Panhandle National Forest (Mallard-Larkins area) have occurred and will continue. Development of formal management or LAC plans prior to congressional wilderness classification would be inappropriate. However coordination and interim direction seems sufficient to avoid actions which might foreclose future management options in these areas.

Wildlife

Goal

Manage and provide habitat that will support viable populations of all local wildlife species. Maintain and enhance big game winter and summer habitat to support a huntable population of elk, deer and moose. Manage habitat to contribute to the recovery of each threatened, endangered, and sensitive species identified on the Forest.

Maintain or enhance biological diversity to the extent practicable and consistent with overall objectives of multiple use so that it is at least as great as that of a natural (unmanaged) forest.

Strategy

Monitor the effects of the Forest activities relative to the preservation and enhancement of biological diversity and develop quantitative measures for diversity. Provide biological input to proposed management activities. Annually improve approximately 1,300 acres of winter big-game habitat using a variety of methods such as prescribed fire, fertilization, slashing and seeding; and 1,000 acres of big-game habitat by logging. Implement a variety of management prescriptions that include using road closures and modifying timber sale design, layout and scheduling to maintain or enhance elk summer habitat objectives. Review, coordinate and consult with the U.S. Fish and Wildlife Service on all projects that involve threatened or endangered species. Conduct biological evaluations for all projects where threatened, endangered and sensitive species may occur and recommend practices that would mitigate or ensure viable populations of sensitive species. Continue to inform and provide the public with current information on the programs and status of wildlife habitat management on the Forest. A report focusing on the population trends and effects of management will be prepared annually.

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.

Accomplishments/Findings

A contract to develop a quantitative method to measure ecosystem biodiversity was awarded to the University of Idaho in FY 90. Due to the dynamic and evolving status surrounding the issues of biological diversity and New Perspectives management, we have delayed implementing that portion of the contract and focused on developing the monitoring methods and techniques for old growth habitats.

The greatest impediment to maintaining biological diversity on the Forest at this time is the removal of old growth habitat. Definitive objectives need to be established Forest-wide for biological diversity. Until then, we will continue to intensively inventory, monitor, and evaluate old growth habitats. We anticipate continuing the development of quantitative measures for biological diversity in FY 91.

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 annual field inspections for quality response. Treatment acreage will be recorded on U.S. Geological Service quadrangle maps. These will be maintained at ranger district offices.

Accomplishments/Findings

Winter Range

Approximately 400 acres were fertilized on the North Fork Ranger District and prescribed fire was used on 530 acres on the Lochsa and Powell Ranger Districts. Permanent monitoring plots were established and will be surveyed annually for five years. Methodology for monitoring was developed by the University of Idaho. A detailed report of field findings is available upon request. Approximately 350 acres of winter habitat were enhanced by timber harvesting. Coordination and evaluation was conducted on approximately 50,000 acres of big game winter habitat for future timber sales.

Wildlife

Results and observations reveal that it will be very difficult to meet the Forest Plan goals and objectives for winter big-game habitat. Recent prescribed fire and smoke management policies are beginning to hinder our ability to accomplish habitat improvement objectives. Current research on elk in the Lochsa drainage indicates that the Forest Plan model assumptions and outputs for winter habitat need to be updated and revised. The elk population on the Forest is at a high level. The winter habitat is presently in excellent condition. Winter mortality has been below normal during the past five years.

Summer Range

During FY 90, methodologies and techniques were developed to test the assumptions and results of various summer range management prescriptions through a partnership involving the Nez Perce Tribe, University of Idaho, Idaho Department of Fish & Game, and Clearwater National Forest. The elk summer range monitoring plan was technically reviewed by a wide spectrum of professional biologists throughout the northwest. A combination of techniques using elk sightability models and permanent pellet transects will be used to monitor long term elk population responses to land management practices prescribed in the Forest Plan. Implementation of the specific sampling methods and collection of data will begin during the summer of 1991. A copy of the detailed elk summer habitat monitoring plan is available upon request.

The elk population on the Forest has stabilized at approximately 20,000. Record numbers of bull elk have been harvested from hunting units on the Clearwater (see Table 1 below). Additional information on the elk resource can be found in Item 26.

Table 1 - Current Deer, Moose and Elk Harvest on National Forest Lands

Units	Deer	Elk	Moose
8	365	125	0
8A	550	152	0
9A	no data	90	2
10	1257	1427	17
10A	200	40	0
12	304	416	34
TOTAL	2676	2250	53

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

Accomplishments/Findings

Indicator Species

The following species have been selected in the Forest Plan as indicator species: elk, moose, white-tailed deer, kingfisher, pileated woodpecker, goshawk, pine marten and all indigenous threatened, endangered and sensitive plant and animal species.

Elk - The elk population on the Clearwater National Forest is estimated at 20,000. Bull/cow ratios average 25/100. A downward trend in this ratio is anticipated. Implementing road closures during hunting season can slow the downward trend. To further test the benefits of road closures, a cooperative study has been designed with the Idaho Department of Fish & Game. That study would close a significant amount of access during the hunting season to determine the effects on bull elk harvest. During FY 90, this research proposal was sent out for public comment. It was subsequently approved for implementation from 1991-1996 on portions of the Lochsa and Pierce Ranger Districts. Copies of the research proposal are available upon request.

Deer - Approximately 6,000 white-tailed deer inhabit the Forest. Annual harvest has remained stable. Recent mild winter conditions have significantly reduced mortality and the population is slightly increasing. Implementation of management practices to mitigate impacts for elk, riparian, and old growth dependent species will also benefit overlapping white-tailed deer habitat. The white-tailed deer population will be monitored using harvest data from the Idaho Department of Fish and Game surveys.

Moose - Approximately 1,500 moose inhabit the Clearwater Forest. Harvest has remained stable. Mild winters during the past five years has contributed to a slight increase in the population. The Powell District continues to support habitat for approximately 1000 moose. Moose populations are extremely sensitive to excessive harvest and loss of winter habitat (i.e. multi-storied timber stands). Coordination and biological input must be maintained for all projects planned in moose habitat.

Kingfisher - The kingfisher, a fish eating bird living near most streams and creeks, was thought to be a good indicator species for monitoring riparian habitat. Additional evaluation and research now suggest that an alternative method should be developed. Monitoring kingfisher populations would not yield the desired results nor indicate the health of riparian communities. Riparian habitat monitoring will be part of the overall biological diversity index that is presently being developed. Riparian habitat is a vital

and integral component of terrestrial wildlife habitat. There is no documentation of a wildlife species that is solely dependent on riparian habitat.

Pileated Woodpecker, Goshawk, and Pine Marten - These three species have been selected as indicator species for monitoring old growth habitat. A contract with the University of Idaho to develop the best methods and techniques available to monitor old growth habitat species was implemented in FY 90. Preliminary field testing of the methods and determinations of sample size were conducted on the Palouse Ranger District. A copy of the monitoring plan for old growth is available upon request. Implementation of the old growth monitoring plan is anticipated for FY 91 on all ranger districts.

Grey Wolf (Endangered) - During FY 90, big game winter ranges were surveyed for evidence of wolf. Approximately 10 reports of wolf sign or sightings were received and forwarded to the Idaho Heritage Program for evaluation and filing. No confirmed sightings of wolves have been made on the Clearwater in the past year. A number of potential sightings have been reported near the Powell Ranger Station. In an attempt to confirm these reports infrared cameras have been installed over scent or bait stations for the past six months. No wolves have been photographed.

Forest personnel have remained active on the Central Idaho Wolf Recovery Team and technical sub-committee during FY 90. A partnership contract was developed with the National Wildlife Federation to produce a Wolf Identification Manual and wolf educational kits (K-12). These projects have been completed and are available upon request. Approximately 15 presentations on wolf recovery on the Clearwater were given to a wide variety of institutions, organizations, and groups throughout north central Idaho.

Bald Eagle (Endangered) - The bald eagle occurs only as a winter resident on the Clearwater. Approximately 50 bald eagles winter in the Clearwater basin and its tributaries. Biologists from the Forest cooperate with the National Wildlife Federation's annual Bald Eagle Survey each January. This year a reporter from the Lewiston Tribune accompanied the biologist on the survey and a special article appeared in the Outdoor section of the newspaper. Observations will continue to be made during the spring and summer season to document any nesting activity. Most of the bald eagle habitat is found along major watercourses. No Forest activities are proposed that would impact eagle habitat or potential nesting sites. The biggest threat to bald eagles appears to be poaching or indiscriminate shooting.

Grizzly Bear (Threatened) - For the past four years the Clearwater has been the lead Forest in cooperation with the University of Idaho, Idaho Department of Fish & Game, U.S. Fish & Wildlife Service, and adjacent national forests in conducting a habitat analysis for the Bitterroot Grizzly Bear Evaluation Area. This project involves an extensive evaluation and ground truthing analysis of the habitat using the latest Landsat technology. Approximately 3.5 million acres of north central Idaho is being analyzed for its suitability to recover a viable population of grizzly bears. A preliminary report and field trip of the project area was given to the Interagency Grizzly Bear Committee during August of 1990. Subsequently, public meetings were held at Lewiston, Idaho.

During FY 90, a partnership project was developed with the Idaho Department of Fish & Game and the Wildlife Forever Foundation to use infrared cameras in an attempt to document the presence of grizzly

bears on the Forest. No grizzly bears were photographed. A copy of the project findings is available upon request. A large bear track was investigated during October. Circumstantial evidence strongly suggests the possibility of it being a grizzly. Follow-up surveys are planned for FY91.

Sensitive Species

Presently there are 9 animal and 21 plant species that are listed as sensitive. During 1990, most of the work conducted on sensitive species was accomplished through a partnership agreement with the Idaho Natural Heritage Foundation. The focus of the work is to conduct basic surveys and inventories. A strategic management plan was written for all sensitive plant species and priorities were assigned. Because funding is very limited, only species with a high priority will be surveyed.

Animals

Wolverine - The Clearwater Forest is on the periphery of wolverine habitat. During the past two years an attempt has been made to document the presence of wolverine use on the Forest through extensive field surveys conducted during the winter. A number of valid observations have been made on the Forest and at least 1 accidental trapping mortality has occurred. The field surveys did document that a very small population of wolverines is present on the Forest. A detailed copy of the report is available upon request. Based on the information collected, a conservation plan will now be written for the species during FY 91 in partnership with other agencies.

Western Big-Eared Bat - The western big-eared bat is a cave dwelling bat that is suspected to occur on the Forest. No observations have ever been made of the species. Preliminary sampling has not documented the presence of this species. A general survey of suitable habitat on the Clearwater finds cave and other suitable habitat to be extremely limiting, if non-existent. Continued surveys are necessary before further recommendations will be made concerning the existence of this species on the Forest.

Harlequin Ducks - For the past 3 years surveys have been conducted for harlequin ducks on the Forest in cooperation with the Idaho Natural Heritage Foundation. Several harlequins have been observed with limited numbers of off spring in tow. A detailed copy of the field surveys is available upon request. Additional surveys are planned for FY 91. In cooperation with the Idaho Panhandle National Forest a conservation plan will be written during 1991.

Boreal Owl - Boreal owl surveys have been continuously conducted during the past four seasons. Boreal owls occur throughout the Forest in high elevation spruce fir habitat. A detailed copy of the field findings is available upon request. In cooperation with the University of Idaho and as part of the mitigation for a timber sale in boreal habitat, an administrative study and monitoring project using nest boxes is being conducted. One hundred seventy nest boxes were installed and checked during 1991. No boreal owls have nested in the boxes. Four boxes contained nesting flying squirrels. Five hundred nest boxes will be installed and monitored in FY 91. Additional field surveys are planned in conjunction with timber sale area analysis. A conservation plan will be written during 1992.

Wildlife

Coeur D'Alene Salamander - Coeur d'Alene salamander surveys have been completed for the Clearwater Forest. They indicate that the species is much more widely distributed than previously thought. It is a nocturnal species that is very difficult to observe and is usually associated with a rocky waterfall/steep cliff type habitat. A conservation plan will be written for the species and additional information about field surveys is available upon request.

Black-Backed Woodpecker, Flammulated Owl, Lynx, and Fisher - These four species have been proposed for listing as sensitive species for the Clearwater Forest. We are in the process of conducting an extensive literature search for information on the management of these species. No surveys have been conducted for them on the Forest.

The following table lists the sensitive plant species currently known to exist on the Forest and the status of each.

Sensitive Plants

Common Name	Scientific Name	Current Data/Status	Priority Level
oregon bentgrass	(Agrostis oregonensis)	Distribution and population status unknown.	2
candystick	(Allotropa virgata)	Distribution and population status unknown.	1
maidenhair spleenwort	(Asplenium) trichomanes)	Field surveys have been conducted. Unable to locate on Forest.	3
deerfern	(Blechnum spicant)	Distribution and population status unknown.	1
broad-fruit mariposa	(Calochortus nitidus)	Surveys & inventories completed. No suitable habitat on Forest.	1
Constance's bittercress	(Cardamine constancei)	Distribution and population status unknown.	4
California sedge	(Carex californica)	Distribution and population status unknown.	3
Pacific dogwood	(Cornus nuttallii)	Ninety-eight percent mortality of existing plants. Develop conservation strategy.	1
clustered lady's slipper	(Cyprepedium fasciculatum)	Permanent monitoring plots have been established. Additional surveys needed.	3
dasynotus	(Dasynotus) daubenmirei	Surveys completed. Conservation plan needed.	4
soft rush	(Juncus effusus)	Preliminary surveys completed. Further inventorys needed to complete conservation plan.	3

Wildlife

Common Name	Scientific Name	Current Data/Status	Priority Level
Oregon bluebell	(Mertensia bella)	Distribution and Population status unknown.	4
bank monkeyflower	(Mimulus clivicola)	Surveys and inventories complete. Establish permanent monitoring plots and develop conservation plan.	1
Sierra woodfern	(Thelyptersis nevadensis)	Extremely rare. Only 1 location in Idaho. Surveys and inventories needed.	1
sticky tofieldia	(Tofieldia glutinosa)	Distribution and population status unknown.	1
western starflower	(Trientalis latifolia)	Distribution and population status unknown.	4
fescue-grass	(Festuca subuliflora)	Distribution and population status unknown.	2
sedge	(Carex hendersonii)	Distribution and population status unknown.	2
licorice	(Polypodium) glycyrrhiza	Distribution and population status unknown.	3
rattlesnake-root	(Prenanthes alata)	Distribution and population status unknown.	2
sedge	(Carex leptalea)	Distribution and population status unknown.	2

Priority Level 1- This list includes species that appear to warrant the most attention. Some of these species are listed as Category 1 or 2 candidates. Others are in imminent threat of extinction in Region 1. Still others lack sufficient distribution or taxonomic data to permit assessment of their conservation status.

Priority Level 2- This category consists mostly of species that lack sufficient distribution data to permit assessment of their status in Region 1. Also included in this list are species that exhibit a limited distribution within the Region and, therefore, warrant management consideration. All of these taxa exhibit a distribution that extends into other forests, principally the Nez Perce and Idaho Panhandle National Forests. Cooperative work between forests is necessary.

Priority Level 3- Most of the species within this category have recently been investigated. Although most of these taxa exhibit fairly restricted distribution in Region 1, no further surveys specifically directed at these species are recommended at present. Clearance surveys, however, should be conducted for activities within suitable habitat.

Priority Level 4- Species that fall into this category are those that exhibit a fairly well-documented distribution and appear to be healthy with few threats. Most of these taxa appear to be tolerate and possibly benefit from slight to moderate disturbance.

III. All Resources Reporting System

Introduction

The Clearwater National Forest is breaking new ground with the 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 four national forests developing and evaluating alternative ways of gathering and reporting resource data.

The Clearwater has contributed to the ARRS national testing effort for fiscal years 1988, 1989 and 1990. When completely developed, ARRS will report on a Forest's effectiveness from varied perspectives. These perspectives will include the following reports: a) The Financial Report, b) The Employment and Income Report, and c) The Results of Integrated Management Report. The latter two reports are the most fully developed of the reporting formats. We would like to share the results of those reports for 1990.

Employment and Income Report

This report provides information on employment and income resulting from Clearwater National Forest management with respect to local communities. Nearly 3,500 jobs and approximately $70 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 during 1990.

The report consists of three parts. Part One, the Resource Program Summary, displays the number of jobs and the amount of income associated with each basic Forest resource. These figures include both primary and secondary jobs and income but not Forest Service employment.

Part Two, the Economic Sector Summary, displays the number of jobs and the amount of income in various sectors of the local economy which were associated with Forest programs during 1990. Approximately 13% of the jobs in the six-county area influenced by the Forest were attributed to Clearwater National Forest programs during 1990.

Part Three, Taxes Paid as a Result of Forest Management, displays household and business taxes paid on income generated in association with Forest programs during 1990. Approximately $21 million was paid.

Statement of Employment and Income

Part One - Resource Program Summary

	Employment (Jobs)	Income ($Million)
Recreation	1,672	25.716
Wildlife and Fish	19	.448
Rangeland Management	8	.137
Timber Management	1,719	43.128
Minerals Management	3	.070
Soil, Water and Air Management	13	.315
Protection	19	.448
Total - Forest Management Supported	3,453	70.262

Part Two - Economic Sector Summary

	Employment (Jobs)	Income ($ Million)
Agriculture	155	.678
Mining	1	.137
Construction	41	18.472
Manufacturing	1,111	11.351
Transportation	67	2.252
Communication and Utilities	34	2.705
Wholesale and Retail Trade	883	9.148
Finance	25	.787
Insurance and Real Estate	15	4.559
Services	1,029	16.461
Government Enterprises	33	.839
Special Industries	61	2.873
Total - Forest Management Supported	3,455	70.262
Total - Forest Zone of Influence	26,585	533.566
Percent - FS Support in Area of Influence	13%	13%

Part Three - Taxes Paid as a result of Forest Management

Taxes Paid	($Million)
Household	12.8
Business	8.4
Total	21.2

Results of Integrated Forest Management Report

The Results of Integrated Management Report, found on the following page, displays the quantities and values of key commodity outputs to the American people. The "average annual" output value projected in the Forest Plan and "total value" associated with the current year's production of each commodity are also displayed in this table. The sum of the values in the "total value" column represents the estimated economic value of the outputs produced on the Forest during FY 1990. The total value of all Forest products is termed "gross forest value."

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 values were determined based on the The Forest Service Program for Forest and Rangeland Resources: A Long-Term Strategic Plan, Recommended 1990 RPA Program (USDA Forest Service 1990).

Results of Integrated Forest Management Statement
Clearwater National Forest
Fiscal Year 1990

Results 1/	Unit Of Measure	Forest Plan Ave. Annual 2/	Average Year To Date 3/	Current Year 4/	Total Value ($) 5/
Dev.Recreation	M RVD	201.1	304.7	246.9	2,141,000
Disp. Recreation	M RVD	808.2	475.4	560.6	15,148,000
Wilderness	M RVD	121.0	30.7	29.1	467,000 *
Rec.Special Uses	PERMITS	NA	NA	43	NA
Cultural Use	SITES	NA	NA	NA	NA
View Wildlife/Fish	M WFUD	NA	4.4	4.6	204,000 *
Hunting Big Game	M WFUD	80.1	103.0	96.5	4,772,000 *
Hunting -Other	M WFUD	NA	22.2	21.2	971,000 *
Fishing-Anad. 6/	M WFUD	NA	54.7	59.4	3,840,000
Fishing-Resident	M WFUD	61.5	45.5	45.1	1,170,000 *
Fishing - Comm. 6/	M lbs.	NA	122.6	145.4	276,000
Cattle Grazing	M HM	16.0	11.4	13.0	84,000
Sheep Grazing	M HM	NA	NA	0	0
Grazing (other)	M HM	NA	2.3	2.0	13,000
Sawtimber 7/	MMBF	173.3	122.4	147.7	13,101,051
Other Forest Prod.	$	NA	700	1,700	1,700
Locatable Minerals	Oz.(gold)	NA	158	150	16,000
Leaseable Minerals	NA	NA	0	0	0
Mineral Materials	M TONS	NA	92.2	96.4	56,000
Water	M Ac.-Ft.	5.0	4.3	4.8	NA
Gen. Special Uses	PERMITS	NA	NA	81	NA
GROSS FOREST VALUE 8/					$34,676,751

Footnotes:

* Numbers followed by an asterisk are included in the "dispersed recreation" figure. They have not been included in the sum of gross forest value to avoid double counting.

1/ "N/A" indicates that there is no associated projected output in the Clearwater National Forest Plan, or that no appropriate figure or value exists.

2/ **Forest Plan Average Annual** is the average annual amount of production for a resource attribute which was anticipated when the Forest Plan was approved. Mathematically, it represents the total amount of production anticipated for the first decade during which the Plan is in effect divided by 10.

3/ **Average Year To Date** is the average amount of annual production of a resource attribute which has occurred since the Forest Plan was approved, including the current year.

4/ **Current Year** is the amount of production of a resource attribute which occurred during the current year.

5/ **Total Value** is calculated by multiplying the CURRENT YEAR coefficients by the dollar value associated with the resource attribute from The Forest Service Program for Forest and Rangeland Resources: A Long-Term Strategic Plan (USDA Forest Service 1990).

6/ "Fishing-anadromous" and "fishing-commercial" occur off the Forest. The Forest provides spawning and rearing habitat for young anadromous fish before they migrate to the sea.

7/ 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 Forest Service Program for Forest and Rangeland Resources: A Long-Term Strategic Plan (USDA Forest Service 1990).

8/ **Gross Forest Value** is the estimated market clearing value of all commodities and recreational experiences produced on the Forest during the current year.

Interpretation of Employment and Income Graphs

The graphs on the preceding page illustrate that among the Forest resources, timber and recreation generated the most employment and income during 1990.

Timber Harvest Up in 1990

The increased timber harvest during 1990 was due to three primary factors:

High lumber prices and a very competitive market for sawlogs and pulp encouraged the harvest of timber under contract to purchasers. The particularly strong pulp market permitted profitable logging of highly defective economically marginal timber.

A high proportion of the Forest's timber volume under contract was nearing contract expiration and had to be harvested soon.

New timber sale contract provisions were recently adopted which increase the cost of holding large volumes of timber under contract for extended periods. Higher down payments on timber sales are now required. A payment is required at the mid-point of the contract period.

Recreational Use and Investment Continued to Increase During 1990

Increased investment in recreational resources led to greater employment and income during 1990. The Forest's recreation budget increased by nearly 30% last year, much of it for increased trail maintenance and construction.

Interpretation of Gross Forest Value

The gross forest value figure from the Results of Integrated Forest Management Statement on page 97 illustrates that the total value of Forest products was approximately $34.7 million during 1990. This represents an increase of over 66% compared with 1988. Most of this increase was due to increases in the non-market values assigned to recreational forest uses. These values are revised every five years and published in the latest recommended Resources Planning Act (RPA) Program, in this case the 1990 RPA Program (USDA Forest Service 1990). A continuation of the resurgence in timber harvesting which began during 1989 also contributed to the increased gross forest value.

Literature Cited

USDA Forest Service 1990. The Forest Service Program for Forest and Rangeland Resources: A Long-Term Strategic Plan. Washington Office of the USDA Forest Service, Washington, DC.

IV. 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, and the second 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. There are currently ten unresolved appeals. The following table summarizes the progress made and the status of the twelve appeals.

Forest Plan Appeal Issues

Appellant	Status	Issues
#2155 St. Joe Valley Association #2161 Associated Logging Contractors (Consolidated)	Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.	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.

Forest Plan Appeal Issues (continued)

Appellant	Status	Issues
#2163 George Wuerthner	Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.	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.
#2172 Wilderness Society, et al.	Responsive statement . sent to the Washington Office. Awaiting Chief's decision on the appeal.	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.
#2185 Columbia River Intertribal Fish Commission	Negotiations progressing.	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.

Forest Plan Appeal Issues (continued)

Appellant	Status	Issues
#2186 Richard and Lana Schumacker	Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.	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.
#2190 International Woodworkers of America	Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.	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.
#2191 Idaho Women in Timber	Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.	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.

Forest Plan Appeal Issues (continued)

Appellant	Status	Issues
#2199 Intermountain Forest Industry Association	Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.	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.
#2131 Bradley Chinn	Responsive Statement sent to the Washington Office. Awaiting Chief's decision on the appeal.	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.

The Forest received five new project appeals during 1990. One of the appeals concerned the development of a road and four of the appeals concerned timber management. The following table presents the status of these appeals.

Appeals

Project Level Appeal Issues

Appellant	Status	Project Appealed /Issues
Nick Chenoweth (Representing Appealing Parties	Decision upheld by Regional Forester.	**Dworshak Access Road** 1. Research Natural Area. 2. Socio-economic impacts. 3. Effects upon the Forest Plan. 4. Industry and political support. 5. Recreational benefits. 6. Dworshak Reservoir pool level.
Dr. Cole MacPherson	Decision remanded to Powell Ranger District	**Brushy Creek Timber Sale** 1. Cumulative effects analysis.
The Ecology Center	Decision withdrawn by the Powell Ranger District.	**Crooked Fork Analysis** 1. Effects on threatened, endangered, sensitive and old growth indicator species. 2. Effects on the roadless area. 3. Conformance to objectives and guidelines for visual quality, recreational opportunity. 4. Old growth. 5. Effects on soils. 6 Harvest units exceeding 40 acres. 7. Cumulative effects to water quality and wildlife. 8. BMP's for Crooked Fork drainage.
Jack Tuholske	Decision withdrawn by the Powell Ranger District.	**Crooked Fork Analysis** 1. Issues the same as above.
Friends of the Clearwater	Decision remanded to Lochsa Ranger District.	**Van Camp IRA** 1. Finding of No Significance (FONSI). 2. Roadless areas. 3. Effects on the gray wolf. 4. Effects on the RNA.

V. Planned Actions

Introduction

One Forest Plan amendment was made in 1990. We anticipate that in 1991, additional amendments to the Forest Plan will be made with regard to proposed changes and other management actions identified in this section. Amendments will be implemented following appropriate public notification and satisfactory completion of NEPA (National Environmental Policy Act) procedures.

A. Clarification of Goals, Objectives, and Standards

The following is a proposed change to the Forest Plan. This change will help clarify the goals, objectives, and standards.

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-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.*

Planned Actions

B. Revision of General Standard 1.c. on pages II-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.*

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

As we continue to implement the Forest Plan, we find that we are continually updating costs to comply with strategies outlined in Chapter II 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 table found on the following two pages 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	Revised Forest Plan Budget FY 90
00	General Administration	2,589	2,508	2,335	2,245
01	Fire Protection	1,047	759	783	753
02	Fire (Fuels)	300	209	62	60
03	Sale Preparation and Administration	3,116	3,395	4,156	3,996
04	Timber Planning	352	293	260	250
05	Silvicultural Exams	1,033	910	1,092	1,250
06	Range	125	108	123	118
07	Range (Noxious Weeds)	35	34	32	31
08	Minerals	202	162	135	120
09	Recreation	1,249	1,145	1,290	1,030
10	Wildlife/Fisheries	1,309	1,163	2,085	2,177
11	Soil/Water	472	599	1,066	1,145
12	Facilities Maintenance	580	426	411	395
13	Special Uses	108	103	110	106
14	Geometronics	0	0	0	58
15	Landownership Exchange	159	168	104	100
16	Land line Location	421	351	432	415
17	Road Maintenance	981	949	1,002	963
18	Trail Maintenance	519	642	520	400
19	Co-op Law Enforcement	81	66	62	60
20	Reforestation - Appropriated	2,104	2,460	2,524	1,200
21	TSI - Appropriated	493	407	417	205
23	Tree Improvement	71	159	153	355

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	Revised Forest Plan Budget FY 90
26	KV - Reforestation	3,251	4,408	2,288	2,100
27	KV - TSI	101	160	177	170
28	KV - Other	699	556	566	547
29	Other CWFS (Trust Fund)	795	653	657	632
30	Timber Salvage Sales	355	345	360	365
31	Brush Disposal	1,938	1,597	1,295	1,245
32	Range Betterment	9	9	8	8
33	Construction - Recreation Facilities	101	152	426	200
34	Facility Construction - FA&O	674	634	640	615
35	Engineering Construction Support	1,995	1,833	2,050	1,971
36	Construction - Capital Investment	3,011	2,682	2,600	2,500
37	Trail Construction and Reconstruction	350	349	504	235
38	Timber Purchaser Road Construction/ Reconstruction	5,337	3,103	2,890	2,779
43	Land Acquisition	76	592	328	0
	TOTAL	36,040	34,090	33,966	30,799

G. Implemented Change

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.

The following areas were identified as needing assessment. This assessment led to the following action.

Integrated Resource Analysis (IRA): In the course of assessing our progress and success in implementing the Forest Plan and conducting site specific analyses for projects, we observed a number of inefficiencies. These inefficiencies led us to design an integrated resource analysis process for the Forest. The IRA process was designed to provide a stronger link between the desired future condition (DFC) identified in the Forest Plan and the decisions of site-specific projects needed to implement the Forest Plan. The process will enable us to identify and discover activities and practices that are reasonable and probable in the context of the Forest Plan.

A team of Forest level resource specialists will use this process. Their task will be to work with the district ranger and develop the "proposed actions" for large and/or complex project proposals. These proposals will then become the starting point for NEPA (National Environmental Protection Act).

This process should enable us to start the NEPA process on a much more solid and reasonable foundation because the proper focus and scope are established from the beginning.

Ground Truthing: As we move from the programmatic Forest Plan document to the site-specific NEPA decisions, we are finding that 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 data with site-specific information for timber in a ground truthing exercise. The focus of the first step will be to determine the existing condition of the Forest, visually display that condition, and track the decisions made since the Forest Plan was signed. The second step will be an evaluation of that information. This information will be reported in future Monitoring and Evaluation Reports.

Watershed Restoration: Monitoring results for 1990 indicate that the conditions of watersheds on the Forest are of major concern. Forest Plan standards with regard to water quality and fisheries direct us to improve the condition of these watersheds. We will emphasize watershed restoration in the year 1991. This will include working with the Nez Perce Tribe, timber industry, wildlife and fisheries interests, conservationists, local communities and others. Through this combined effort, watershed improvement needs can be identified, watershed restoration plans can be made, improvements completed, and results monitored.

Stream Protection Zone: Monitoring has shown that the five foot Stream Protection Zone (SPZ) on Class II streams is insufficient in preventing sediment from entering streams and insufficient in stabilizing stream channels. The Forest has taken steps to correct these problems by increasing the SPZ on Class II streams from 5 to 25 feet.

Planned Actions

Improvements Needed: The monitoring of road construction by the Forest soil scientist has identified areas needing improvement. They are:

Road designs need to reflect soil characteristics and limitations.

Uniform control of grass seeding and fertilizing of temporary roads.

Improved coordination between timber sale administration and the engineering section.

Watershed risks need to be better identified and addressed in the Environmental Assessment (EA) stage of timber sale planning.

Means of retaining effective erosion control measures need to be developed.

More rapid road closure during wet periods.

Monitoring of Cultural Resources: The Forest also sees the need to add the monitoring of sites considered significant by the Nez Perce Tribe to the list of items found in the monitoring action for Item No. 4.

The Forest will review these items and changes will be made as needed. All items will be reported in the Monitoring Report for 1991.

H. 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.

I. Amendments

One Forest Plan Amendment was made in 1990. This amendment was a result of negotiations with the Independent Miners Association, an appellant of the Clearwater National Forest Plan (see page 111-112). The amendment modifies the standards in Chapter II (Forestwide Management Direction) and Chapter III (Management Area Direction).

Clearwater National Forest
Land and Resource Management Plan

AMENDMENT NO. 1
June 1990

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 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-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 restriction other than valid existing rights and such resource protection measures as may be required under 36 CFR 228.

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

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.

END OF AMENDMENT

VI. 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 1990.

Name	Telephone	Resource Area
Ken Anderson	(208)476-4541	Forester - Planning
John Bledsoe	926-4275	District Ranger, Lochsa Ranger District
Byron Bonney	476-4541	Staff Officer - Fire
Bob Boston	"	Staff Officer - Recreation/Minerals
Art Bourassa	476-3775	District Ranger, North Fork Ranger District
Chris Carr	476-4541	Staff Officer - Timber
John Case	"	Forester
Juanita Cooper	476-4541	Staff Officer - Administration
Randy Curtis	"	Engineer - Road Management
Dan Davis	"	Wildlife Biologist
Randy Doman	"	Forestry Technician - Fire
Dallas Emch	935-2513	District Ranger, Pierce Ranger District
Al Espinosa	476-4541	Fisheries Biologist
Jeff Fee	476-4541	Archaeologist
Mary Ann Gerrish	"	Budget and Finance Officer
Margaret Gorski	942-3113	District Ranger, Powell Ranger District
Win Green	476-4541	Forest Supervisor
Dick Hodge	875-1131	District Ranger, Palouse Ranger District
Bill Jones	476-4541	Forester - Lands
Richard Jones	"	Hydrologist
Ted King	"	Operations Research Analyst
Bert Kulesza	"	Deputy Forest Supervisor
Bob Littlejohn	"	Staff Officer - Engineering/Lands
Irvin Michael	"	Landscape Architect
Terri Ott	"	Timber Assistant
Chuck Raddon	"	Recreation and Wilderness Specialist
Tom Rhode	"	Staff Officer - Planning/Wildlife-Fish-Watershed-Range
Cecilia Romero	"	Report Preparer/Forester
Paul Steenberg	"	Forester - Economist/Operations Research
Pam Stotts	"	Geologist
Lynne Swayne	"	Report Preparer/Computer Assistant
Dale Wilson	"	Soil Scientist

Cover illustration by Valeria Yost.

VII. Forest Supervisor Approval

APPROVAL

I have reviewed the annual Forest Plan Monitoring and Evaluation Report for Fiscal Year 1990 for the Clearwater National Forest. 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 my staff on proposed changes to the Forest Plan and will process the necessary amendments after appropriate public notification.

This report is approved:

Win Green

WIN GREEN
Forest Supervisor

Date May 31, 1991