

United States  
Department of  
Agriculture



Forest  
Service

Northern  
Region

# Clearwater

## Monitoring

## Fisc



# er National Forest

g & Evaluation Report

cal Year 1992







United States  
Department of  
Agriculture

Forest  
Service

Clearwater  
National  
Forest

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Date: October 21, 1993

Dear Forest User:

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

Monitoring is a key part of Forest Plan implementation. This report highlights Forest Service monitoring activities for Fiscal Year 1992 (October 1, 1991 to September 30, 1992). The monitoring report presents an evaluation of our management strategies to see if we are meeting the goals as set forth in the Forest Plan. The information we gain from monitoring helps us determine what is working and what is not working. In this way we can make adjustments to the Plan when necessary.

We invite you to review and comment on the 1992 Monitoring and Evaluation Report. We also invite you to call, visit or write us anytime.

Sincerely,

  
JAMES L. CASWELL  
Forest Supervisor



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# **I. Introduction**

## **Overview**

We have completed the monitoring of Forest Plan implementation for Fiscal Year 1992. This is the fifth year of Forest Plan implementation for the Clearwater National Forest. We are continually verifying our data and assumptions through monitoring. Upon completion of analyzing this year's data and the previous five years monitoring data, a review of the Forest Plan will be completed. As a result of settlement of a Forest Plan lawsuit in late FY 1993, this information will be included in a revision of the Forest Plan.

This report summarizes results of Forest Plan monitoring and evaluation conducted from October 1, 1991 through September 30, 1992. 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 seven main sections. Following Section I, the Introduction, Section II focuses on monitoring requirements by resource. Almost all resource sections contain a goal, strategy, monitoring requirement, monitoring action, and accomplishments/findings. Section III lists all forest plan and project level appeals, the status of each, and the major issues associated with each appeal. Section IV identifies actions which the Forest plans to take in FY 1993 and beyond to implement the Plan. These actions could result in amendments or clarifications to the Forest Plan. Section V identifies changes that have been implemented during Fiscal Year 1992, to include amendments made to the Forest Plan. Section VI lists those people who contributed to the preparation of the report. Section VII is the Forest Supervisor's Approval.

## **Evaluation**

As identified in the fiscal year 1990 monitoring report, certain changes in the original Forest Planning assumptions were recognized. These changes in assumptions could be the result of action taken by the Forest, other agencies and corporations, or changes that were not anticipated during the forest planning process. Additionally, we suspect that some errors may have occurred in the original planning process. The tracking of such information will enable us to determine the effects that these changes have on our ability to implement the Forest Plan. A four person team, the Forest Plan Review Team, was established to conduct the analysis needed to support the Forest Plan Review. The findings of this team were documented in "Preliminary Monitoring Information". These findings are summarized in Section IV, "Planned Actions", of this report.

A number of inefficiencies were observed in the course of assessing our progress and success in implementing the Forest Plan and conducting site specific analyses for projects. This led us to design

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## Introduction

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an integrated resource analysis (IRA) 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 decision of site-specific projects needed to implement the Forest Plan.

The Forest is currently utilizing this process on a district by district basis. The process is enabling us to identify and discover activities and practices that are reasonable and probable in the context of the Forest Plan. It is also enabling 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.

The conditions of watersheds on the Forest continue to be a major concern. Forest Plan standards with regard to water quality and fisheries direct us to improve the condition of these watersheds. The Forest will continue to emphasize watershed restoration.

Three Forest Plan Amendments were made in fiscal year (FY) 1992. Two of these amendments were a result of site specific analysis resulting from project analysis. The third dealt with management of the Selway-Bitterroot Wilderness. This one was made in conjunction with adjacent forests. A copy of these amendments, and all preceding amendments, may be found in Section V, "Implemented Changes", of this report.

## II. Monitoring Report

### 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 1992.

#### Accomplishments/Findings

Table 1 shows the outputs and activities occurring in FY 1992 along with the percent achieved compared with Forest Plan projections.

Table 1. Comparison of Outputs and Activities With Those Projected in the Forest Plan

Output or Activity	Unit of Measure	FY 1988	FY 1989	FY 1990	FY 1991	FY 1992	First Decade Avg. Annual From Plan	Percent of Predicted FY 1992 Achievements
<b>Recreation</b>								
Developed Use	M RVD's	348.2	256.9	192.5	256.7	257.8	201.1	
Dispersed Use	M RVD's	32.4	30.6	29.1	30.5	31.0	121.0	
Wilderness *	M RVD's	357.5	462.7	534.5	526.6	610.0	686.2	
Non-Wilderness								
<b>Wildlife &amp; Fish</b>								
Wildlife Habitat Improvement								
Non-structural**	Acres	1384	513	930	600	858	1300	NA
Structures	Structures	0	72	0	0	4	NA	NA
Fisheries Habitat Improvement								
Non-structural**	Acres	98	127	166	211	655.5	219	NA
Structures	Structures	29	151	154	186	130	NA	NA
T&E Species Habitat Improvement**								
Non-structural**	Acres	0	0	0	0	0	NA	NA
Structures	Structures	0	0	0	0	5	NA	NA
<b>Range</b>								
Grazing Use	M AUM's	13.0	13.0	15.0	13.8	10.3	16.0	
Range Improvement								
Non-structural***	Acres	2470	2470	3268	2500	3828	7000	NA
Structures	Structures	0	2	1	0	0	NA	NA
Noxious Weed Control	Acres	110	295	150	330	378	380	
<b>Soil and Water</b>								
Watershed Inventory	M Acres	.3	16.04	91.7	121.08	.20	NA	NA
Soil Inventory	M Acres	35.0	20	24	100	51	17.0	

\* The Forest Plan 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.

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

NA - The Forest Plan did not project an average annual output for this output or activity.

Recreation figures from RIM adjusted by 93 definitions of developed / dispersed.

Table 1. (Continued) Comparison of Outputs and Activities With Those Projected in the Forest Plan

Output or Activity	Unit of Measure	FY 1988	FY 1989	FY 1990	FY 1991	FY 1992	First Decade Avg. Annual From Plan	Percent of Predicted FY 1992 Achievements
<b>Minerals</b>								
Minerals Management	Cases	231	174	158	178	128	265	
<b>Timber</b>								
Volume Offered	MMBF	111.2	104.4	104.9	100.3	13.9	90	
Roaded Primary	MMBF	13.1	19.4	17.5	15.7	10.6	10	
Roaded NICS	MMBF	13.2	22.8	3.4	7.9	0	73	
Unroaded	MMBF	405.0	422.3	371.9	300.1	223.0	NA	NA
Volume Under Contract								
Reforestation								
App. Funds	Acres	1884	1675	1695	1311	1734	NA	NA
KV Funds	Acres	1366	3254	2896	3440	4066	NA	NA
Timber Stand Improvement								
App. Funds	Acres	355	444	583	754	384	1928	
KV Funds	Acres	343	473	618	83	75		
<b>Fuels Management</b>								
Natural Fuels Treatment	Acres	447	340	309	294	280	NA	NA
Brush Disposal	Acres	2308	3955	2733	3389	3129	NA	NA
<b>Facilities</b>								
Trails Construction and Reconstruction	Miles	2.0	8.0	13.0	21.6	36.1	14.0	
Road Const./Reconst.	Miles	49.9	30.5	31.2	26.4	0	69.0	
Timber - Construction	Miles	41.6	45.5	39.1	44.7	25.4	NA	NA
Timber - Reconstruction	Miles	1.3/8.7	42/2.31	25/.25	0.0/0.0	2/2.3	NA	NA
Recreation	Miles	0/0.1	0.0/0.9	0.0/0.0	0.0/0.0	0/0	NA	NA
Other	Miles							

NA - The Forest Plan did not project an average annual output for this output or activity.

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## Economics

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<b>Item No. 17</b>	<b>Document Cost of Implementation Compared to Plan Cost</b>
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

Table 2 displays figures for cost comparison.

Table 2. Comparison Between Yearly Expenditures and Forest Plan Projections (in 1992 Dollars)

Activity Description	FY 1988 Expenditures (Thousand \$)	FY 1989 Expenditures (Thousand \$)	FY 1990 Expenditures (Thousand \$)	FY 1991 Expenditures (Thousand \$)	FY 1992 Expenditures (Thousand \$)	Forest Plan Projections (Thousand \$)	FY 1992 Percent of Projection
General Administration	3,049	*2,409	**1,642	1,869	1,800	2,807	64
Fire Protection	706	724	668	678	770	1,135	68
Fire Protection (Fuel)	151	69	113	70	71	325	22
Timber Sale Prep./Admin.	2,287	2,215	2,547	2,995	2,001	3,378	59
Timber Resource Plans	337	138	348	267	146	382	38
Timber Silvicultural Exams	711	666	816	1,089	503	1,120	45
Range	85	62	60	91	88	136	65
Range (Noxious Weeds)	23	17	16	8	33	37	89
Minerals	97	90	101	100	98	219	45
Recreation	567	731	858	972	1020	1,354	75
Wildlife and Fish	687	637	1,164	803	947	1,419	67
Soil and Water	258	419	680	505	571	511	112
Maintenance of Facilities	221	170	240	247	333	628	53
Special Uses	56	56	39	38	65	117	56
Geometrics	0	0	0	0	0	0	0
Landownership Exchange	58	50	43	54	26	172	15

\* Reprogrammed \$261,000 of FY 1989 funds and \$147,900 of FY 1988 carryover to NFGA in FY 1989.

\*\* Nearly \$400,000 of activities previously financed from NFGA now financed from other resources. No reprogramming to NFGA in FY 1990. This table in the FY 1990 and 1991 Monitoring Report was not properly adjusted to the reporting year. All figures in this table have been updated and adjusted to 1992 dollars.

Table 2. (Continued) Comparison Between Yearly Expenditures and Forest Plan Projections (in 1992 Dollars)

Activity Description	FY 1988 Expenditures (Thousand \$)	FY 1989 Expenditures (Thousand \$)	FY 1990 Expenditures (Thousand \$)	FY 1991 Expenditures (Thousand \$)	FY 1992 Expenditures (Thousand \$)	Forest Plan Projections (Thousand \$)	FY 1992 Percent of Projection
Landline Location	199	333	216	349	244	456	59
Road Maintenance	704	869	741	815	907	1,064	94
Trail Maintenance	413	414	612	528	468	562	91
Co-op Law Enforcement	67	62	87	76	83	87	104
Reforestation-Appropriated	1,263	680	1,235	887	745	2,281	36
TSI-Appropriated	179	112	168	169	169	535	35
Tree Improvement	278	319	182	269	5	*77	7
KV-Reforestation	1,190	1,900	1,772	2,055	2,151	3,524	67
TSI-KV	103	113	324	60	22	110	22
Other-KV	141	584	539	515	652	758	94
Other-CWFS (Trust Fund)	902	1,066	390	447	648	862	83
Timber Salvage Sales (Perm. Fund)	191	235	486	1,271	1,255	385	358
Brush Disposal (Perm. Fund)	1,100	1,127	1,371	1,412	659	2,101	34
Range Betterment	9	4	2	2	4	10	50
Construction (Recreation Facilities)	62	111	127	258	224	110	224

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

Table 2. (Continued) Comparison Between Yearly Expenditures and Forest Plan Projections (in 1992 Dollars)

Activity Description	FY 1988 Expenditures (Thousand \$)	FY 1989 Expenditures (Thousand \$)	FY 1990 Expenditures (Thousand \$)	FY 1991 Expenditures (Thousand \$)	FY 1992 Expenditures (Thousand \$)	Forest Plan Projections (Thousand \$)	FY 1992 Percent of Projection
Facility Construction	0	622	221	307	493	731	67
Engineering Constr. Support	1,571	1,510	1,427	1,458	935	2,162	43
Construction-Capital Investment	1,616	1,343	324	159	1506	3,265	46
Trail Construction/Reconstruction	160	199	269	218	483	379	127
Timber Purchaser Road Const./Reconst.	1,526	1,807	156	23	0	5,786	0
Land Acquisition	44	44	44	22	70	82	85
<b>Total</b>	21,010	21,906	20,024	21,082	20,196	39,070	52

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## Effects

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## Effects

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

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

## Monitoring Action

Since the completion of the Forest Plan in 1987, the Forest Service has witnessed a shift in public views. National attention has focused on the Forest Service to carefully re-examine its timber program outputs in relation to other resources. Issues such as the chinook salmon and water quality related to roading and logging have brought national attention to the backyards of the 'communities of concern' in the Pacific Northwest and our own Clearwater area.

In June of 1992, the Northern Region responded to the prevailing sense of "changed perceptions" by initiating a Region-wide Public Perception Analysis for the purpose of improving its communications needs. The following summary of findings illustrates major shifts in public perceptions regarding key management issues on the Clearwater National Forest.

## Accomplishments/Findings

When asked about the most important issues, concerns, or problems facing the Clearwater National Forest, respondents most frequently mentioned:

- \*- too much logging and clear-cutting (31%)
- the need to preserve and protect what they already have (19%)
- the need for balanced use (12%)
- better forest management (10%)
- a fire policy (8%)

\* Unlike all other Northern Region Forest findings, this issue of concern was expressed primarily by the 55-64 year-old age group (54%), of which 38% are long-term residents (old-timers). Other Forests found this issue to be prevalent among the 25-40 year-old group of which the majority were newcomers.

### Current Major Resource Theme Perceptions

#### **Motorized Recreation**

Some seventy-eight percent of the respondents disagreed with developing more areas for motorized recreation such as snowmobiling, motorcycling, and other off-road vehicles. Sixteen percent agreed with this development.

#### **Fish and Wildlife**

Eighty-six percent agreed that the Clearwater National Forest should be more concerned with the fish and wildlife within the Forest. (53% strongly agreed while 7% disagreed)

#### **Wilderness**

Seventy-three percent agreed the Clearwater National Forest should be managed more for wilderness values while 19% disagreed.

#### **Recreation Development**

Sixty-three percent think the Clearwater National Forest should develop more recreational areas such as campgrounds, picnic areas, groomed trails, and scenic drives. (31% disagree)

#### **T & E Species and Sensitive Plants**

Fifty-one percent believe the Clearwater National Forest is doing an adequate job of protecting endangered and threatened species such as salmon and sensitive plants.

#### **Water Quality**

Forty-seven percent said that the Clearwater National Forest adequately protects water quality while 23% disagreed and 30% had no opinion.

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## Effects

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### Forest Management

Thirty-six percent believe the Clearwater National Forest is doing an average job managing its natural resources, 32% think our management of resources is good, and 17% say resource management is poor.

### Public Involvement

Forty-three percent are not satisfied, some 29% rate the Clearwater National Forest poor, and 13% think its performing poorly.

### Communicating With People

Thirty-two percent are not satisfied, some 29% consider the Clearwater National Forest's efforts average, and 26% are unsatisfied.

### Current Major Themes Characteristic of Community Relationships

Over the past few years, a combination of negative community perceptions, lack of Forest program accomplishment, internal Forest management problems, and unpopular Forest issue investments have contributed to a serious erosion of public confidence in the ability of the Clearwater National Forest to manage its public trust. Concurrent with a perceived lack of leadership and direction, the Forest Perception Analysis revealed the Clearwater National Forest is viewed by the 'communities of concern' as "insensitive to its responsibility towards maintaining community stability, unwilling to keep its communities informed, listening to only important people, and not letting the public have any say."

### Strategy To Improve Relationships

In 1992, the Forest saw Public Affairs spearhead an aggressive external relations program. The Forest focused on implementing two-way communications among key members and groups within its communities of interest. The strategy aimed at improving **Community Relations** and **Public Involvement**.

### **Community Relations**

The community relations program incorporated the use of many interactive communications approaches. However, the focus remained on the objective of developing one-on-one contacts and dialogue among nontraditional publics to gain their consent to our future direction. The strategy recognized the need to open communication avenues among opinion leaders and groups critical of the agency rather than with those who supported agency views.

Political and social influence assessments revealed that a handful of the Forest's critics have a significant influence on area citizens. The importance of these nontraditional publics cannot be underestimated.

The communications effort clearly illustrated the timber supply problem, the complexity of the problem, and the magnitude of the Forest's changed conditions. Information revealed the current situation with water quality and changed forest conditions in riparian areas, lack of entry into roadless areas, and the need for economic diversity within communities. Collectively, the resource monitoring information illustrated the Forest's inability to supply timber to the wood products industry at full mill capacity.

The communications effort recognized the Forest cannot successfully move forward without the informed 'consent' of its critical stakeholders. Hence, honest and open community relations contributed to a positive attitude accepting the notion that less timber is better than no timber at all.

### Results

- The overall negative tone of public sentiment has witnessed a slow shift to a positive tone of 'informed consent' among many individuals and sectors.
- While some community members continue to maintain the line, "we can live with no less than 120 to 150 mmbf," the majority of opinion leaders and groups recognize the need to accept less.
- Resistance to diversify local economies is softening. Some community leaders have moved forward progressively with economic diversification ideas and plans.

These actions have generated both employee and community respect for the notion that the Clearwater was serious about positive change.

### Conclusion

There is no substitute for aggressive and positive community relations which champions improving relationships with stakeholders. Supported by current perception data, successful community relations depends on accurately targeting the right messages to the right audience through appropriate communications management.

### **Public Involvement**

The Forest embarked on an aggressive public involvement improvement program beginning in early 1992. The goal of the Forest's public involvement strategy included:

- a. improving the public involvement skills of Forest NEPA coordinators by providing training involving interactive public participation techniques, two-way communication approaches, and meetings management.
- b. building working partnership between the Forest and its interested publics during both the identification of issues and the development of alternatives phases.

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## Effects

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### Results

Several projects have incorporated the use of formal public involvement with more emphasis placed on participatory meetings techniques.

- Formal public involvement is currently underway for major projects such as the White Sand Timber Sale, Clearwater Wild and Scenic Rivers Study (two Forests) and Prescribed Natural Fire (three Forests). It is too early to evaluate the benefits from any of these efforts.

- The Palouse Ranger District has revamped its approach to public meetings held over the past year. Their investment in meetings featuring interactive approaches has received several highly favorable media reviews and has resulted in the early mitigation of potential litigation and delays.

- The Forest is in the early stages of developing an "education" oriented public involvement approach for Ecosystems Management.

### Conclusion

Public involvement during the identification of issues and the development of alternatives (pre-decisional) phases has proven effective with the help of key interests. However, if planners choose to work closely with leaders of key interests (representative public involvement) rather than to put considerable energy into obtaining input from nonrepresented persons (participatory public involvement), information from both an updated social impact assessment and a Forest perception analysis is necessary to guide the process.

The role of a social impact assessment is to provide a more objective (i.e. less politically based) analysis of the social environment. This requires that planners identify social subgroups that may not be represented in public involvement efforts through the use of objective social analysis techniques such as surveys or ethnographic research methods. This analysis should serve as the basis for designing the public involvement program and assessing potential social conflicts and consequences for each planning alternative.

Participatory public involvement can be reasonably guaranteed utilizing perception studies and social assessments. Both should be updated every 3 to 5 years to be representative of the current situation. Public involvement and the social impact assessment and perception analysis functions should be viewed as complementary rather than supplementary functions. Both are key elements providing coordination between public involvement and the social impact assessment.

## Engineering

<b>Item No. 12</b>	<b>Land Ownership Adjustments</b>
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 1992 the Clearwater National Forest acquired 3,547.08 acres through a land exchange with Potlatch Corporation while exchanging out of 635.23 acres. The Forest also completed an exchange with Bennett Tree Farms, Inc., acquiring 157.44 acres while exchanging 152.9 acres.

The Forest Service acquired two tracts from Potlatch in the Orogrande Creek and Dull Axe areas on the Pierce and North Fork Ranger Districts. In exchange, Potlatch Corporation acquired six parcels from adjacent to and near the Beaver Block on the North Fork Ranger District.

Two parcels were acquired from Bennett Tree Farms, Inc. One parcel is located near the Gold Bug Mine area and the other is near the Klawe Creek area. In exchange, Bennett Tree Farms, Inc. acquired one parcel near Crane Creek. All of these parcels are on the Palouse Ranger District.

By completing these exchanges, fiscal costs were reduced for surveying and posting boundary lines, acquiring access easements, constructing access to manage National Forest land, acquiring/granting other use permits and trespass. An estimated \$11,725 was saved with the Bennett Tree Farms, Inc. exchange, while an estimated \$40,000 was saved with the Potlatch Corporation exchange.

The forest acquired productive timber land in order to manage timber stands for optimal growth and health, to address big game management (primarily elk), to provide for dispersed recreation and

## Engineering

livestock grazing. Implementation of these exchanges contributed considerably to the management objectives and administrative efficiency of the Forest.

<b>Item No. 13</b>	<b>Miles of Road Open/Restricted</b>
Frequency of Measurement:	Annual
Reporting Period:	Five Year Intervals (1993)

## Monitoring Action

The Forest Engineer annually will review and display total miles of road on the Forest. This data will be displayed to reflect miles of open roads and miles of restricted roads. The restricted roads will reflect those roads that are closed yearlong to all vehicle traffic and those roads that are restricted for some part of the year.

**Table 1. Miles of Open/Closed Roads**

Ranger District	Restriction Use		Miles		Closure Devices			
	Year-long	Seasonal	Open	Total	Gates	Guardrail	Earth	Sign
D-1	254	250	627	1131	140	56	50	20
D-2	230	232	731	1193	70	33	71	11
D-3	422	234	614	1270	64	35	165	24
D-5	135	209	127	471	80	50	52	5
D-6	368	185	393	946	42	45	137	7
<b>Forest Total</b>	1409	1110	2492	5011	396	219	475	67

## Accomplishments/Findings

The Clearwater National Forest road system is comprised of 5,011 miles of road that vary from narrow single lane gravel to double land asphalt. This system provides access to all major areas of the Forest. Calendar year 1991 ended with 1,260 miles of roads with yearlong restrictions. Between 1991 and 1992, restricted miles increased and additional roads were added to the forest system.

Road restriction is an important tool for resource protection. Total miles of restricted roads may vary from year to year.

## 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 and the training of people in Standards for Survival.

Continue to work toward developing an interagency fire management dispatch office. Evaluate fire protection boundaries to promote economic and efficient fire suppression.

Implement "Minimum Impact Suppression Tool" (MIST) practices for all lands under protection of the Clearwater National Forest. These are designed specifically to protect resource values within wilderness, research natural areas, cultural sites and any other sensitive areas from fire suppression impacts.

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.

Continue to implement the North Idaho Smoke Management Airshed Guidelines and coordinate prescribed burning and wildfire smoke impacts with this group and adjacent cooperators.

Continue to use prescribed fire as a tool when it is determined to be the best tool to accomplish management objectives for fuel hazard reduction, site preparation, wildlife habitat improvement, and ecosystem management.

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.

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## Fire

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Implement "Ecosystem Management" concepts into fire management programs. Look at methods for utilizing and incorporating fire in order to sustain ecosystems on the Clearwater National Forest.

### Accomplishments/Findings

In FY 1992, the Clearwater National Forest Fire Management Action Plan was revised from what it was in FY 1991. This plan provides specific direction for accomplishing the fire management objectives outlined in Appendix D of the Forest Land and Resource Management Plan.

The Forest coordinated efforts with the Bitterroot and Nez Perce National Forests in implementing the Selway-Bitterroot Wilderness Prescribed Natural Fire program.

### Funding

The National Fire Management Analysis System (NFMAS) was used to determine the Forest's most cost efficient level of operation for fire management. This analysis system incorporates 10 years of Clearwater National Forest fire history which includes actual fire weather, past organizational levels, and the size and occurrence of previous fires. The NFMAS analysis determined the most efficient level of funding to be \$1,421,300 for FY 1992. However, the Forest received a total Forest Fire Protection (FFP) budget of \$845,500 for FY 1992. This included \$22,500 in special funding from the Washington Office to fund a new developmental position on the Palouse Ranger District in fire management. The Forest was left with approximately \$823,000 to fund the Forest fire fighting forces and treat 300 acres of natural fuels. This meant the Forest was funded at about 58% of the most cost efficient level and that the Forest could fund approximately 58% of the fire fighting forces needed to meet Forest Plan standards and protect the Forest.

The Washington Office did provide \$193,900 of special fire severity funds (EFFS) during the fire season. The intent of this special funding was to bring the Forest fire protection toward the most cost efficient level. This funding brought the Forest up to 71% of the most cost efficient level.

This EFFS funding enabled the Forest to bring on a helicopter and support people to assist with the fire suppression effort on the Forest. The Forest experienced a more severe fire season than the ten year historical average. The energy release component (ERC) is the measure used in the National Fire Danger Rating System to show the Forest drying trend compared to the 10 year average. For 42 days throughout the 1992 fire season, the ERC was above the 10 year average. This indicated much dryer than normal conditions, especially during the month of June. Rains during the early part of July helped keep the fire danger low until drying in late July and August returned the Forest to a normal fire season.

The Forest was more than successful in meeting the fire protection standards outlined in the Forest Plan even though it was funded at only 71% level of the most cost efficient level. In FY 1992, 886 acres burned due to wildfire. The Forest's costs were approximately \$1,845,300 for fire fighting (FFF funds), \$173,200 in resource damage or loss, \$193,900 in fire severity dollars (EFFS) and \$823,000 for fire protection (FFP). The total cost of fire protection and resources loss was approximately \$3,035,400. See Table 1 for FY 1992 NFMAS projections compared with FY 1992 results.

Table 1. NFMAS Projections vs Actual Outcome

		FY 1992 Projections at 71% Level	FY 1992 Actual Outcome
Wildfire Acres		1,492 ac	886 ac
Expenditures	Fire Suppression	\$ 2,606,000	\$ 1,845,300
	Resource Loss	\$ 316,600	\$ 173,200
	Fire Severity	Not Projected	\$ 193,900
	Fire Protection	\$ 1,016,200	\$ 823,000
<b>Total \$</b>		<b>\$ 3,938,800</b>	<b>\$ 3,035,400</b>

**Aviation**

The Forest aviation program had six nonserious helicopter incidents, and was free of accidents during FY 1992 (see Table 2). There were 673 hours of flying under Forest contracts, including the severity funded helicopter. These figures do not include any other aircraft brought on Forest from other units, (smokejumpers, airtankers, etc.).

Table 2. Aviation Program - Aircraft Flight Hours

Type of Aircraft	Fire Management Hours	Administrative Use Hours	Total Flight Hours	Number of Incidents	Number of Acci- dents
Fixed-wing	333	22	355	0	0
Helicopter	262	56	318	6	0
<b>Total</b>	<b>595</b>	<b>78</b>	<b>673</b>	<b>6</b>	<b>0</b>

# Fire

## Wildfire Detection

The Forest continued to use the automated lightning activity detection system. 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 to concentrate detection efforts in areas of known lightning activity. The use of this system has improved the efficiency of the detection program.

The type and number of fires detected in FY 1992 are displayed in Table 3 below.

**Table 3. Number of Fires and Type of Detection**

Aircraft	=	144	43.0%
Lookouts	=	125	37.0%
FS Employees	=	37	11.0%
Cooperators	=	4	1.5%
Permittees	=	2	0.5%
Others	=	24	7.0%
<b>Total</b>	=	<b>336</b>	

The Forest experienced 336 fires during the 1992 fire season. The 1992 fire season was a record setting year in regards to total number of ignitions on the Clearwater National Forest. The 10 year average number of fires per year prior to 1992 (1982-1991) was 127 fires. Table 4 shows the number of fires by ranger district on the Forest.

**Table 4. Number of Fires by Ranger District**

District	1992 # of Fires	10 Year (1982-1991) Annual Average
D-1 Pierce RD	53	25
D-2 Palouse RD	4	10
D-3 North Fork RD	83	37
D-5 Lochsa RD	57	18
D-6 Powell RD	*139	37
<b>Total</b>	<b>336</b>	<b>127</b>

\*Eighteen of these fires were prescribed natural fires.

**Fire Suppression**

The Clearwater Forest is responsible for protection of approximately 1,705,000 acres of land. Wildfires were attacked and suppressed in accordance with the Forest Fire Management Action Plan using the control, contain, and confine suppression strategies. Fires were assessed as to their potential and location within each management area allocation and a suppression strategy was assigned.

Table 5 displays the number of fires, acres, projected FFF costs, and estimated savings by suppression strategy for FY 1992. Projected costs assume the application of a full control strategy to fires when first discovered. The Forest saved approximately \$255,700 in Forest Fire Fighting (FFF) expenditures by utilizing all of the suppression options and the prescribed natural fire program.

**Table 5. Forest FFF Savings for FY 1992**

	Projected * FFF (\$)	Actual Expenditures (\$)	Savings (\$)
Containment Strategy	239,200	135,500	103,700
Confinement Strategy	125,800	9,800	116,000
Prescribed Natural	37,500	1,500	36,000
<b>Total</b>	<b>402,500</b>	<b>146,800</b>	<b>255,700</b>

\* Projected FFF dollars assume the application of a full control strategy.

During the 1992 fire season, 886 acres burned in wildfires and 28 acres burned under prescribed natural fire status in the Selway-Bitterroot Wilderness. The 10-year average (1982-1991) total acres on the Clearwater National Forest is 1,151 acres. Of this total, 772 were wildfire acres and 379 acres were prescribed natural fire.

The Forest Plan allows fire managers to use appropriate suppression strategies on all wildfires as outlined in Appendix D. The Forest was able to meet these standards and guidelines for fire suppression on all but seven wildfires. The Forest Plan goal for private land fires is to control them at less than one acre. Due to weather, fuels (untreated logging slash), and topography, this was not achieved for three fires. These fires burned 424.5 acres.

The Forest Plan standards for fire suppression in E1 management areas (timber emphasis management area) call for limiting the size of individual wildfires to: (1) one acre or less in immature timber stands (especially in plantations, thinned areas, etc.) and (2) to 40 acres or less in mature timber. The Shintangle fire on Powell district burned 2.0 acres in immature timber. This fire was not controlled at less

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## Fire

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than one acre due to a shortage of initial attack personnel during a three day period when the Forest received over 160 fires. The Upper Cabin 17 fire burned in mature timber and reached a final size of 55 acres. This fire was a very intense fire, burning in the tree crowns. Initial attack personnel could not control this fire at less than 40 acres due to the high intensity.

The Gilfillian fire on the North Fork District burned in immature timber. This fire was in a C8S management area which calls for limiting fire size to less than one acre in immature stands of timber. This fire was not discovered until it was five acres in size. Personnel hiked in to the fire and it was finally controlled at ten acres. Brush was the main fuel type on this fire with regeneration in some areas.

The Forest Plan does not allow for the use of the confinement strategy for fires on private land within the Clearwater Forest fire protection boundaries. However, one private land fire on the Powell Ranger District was inappropriately assigned to the strategy. This fire was not staffed and burned less than 1/10th of an acre before going out.

Table 6 displays the causes of fires for FY 1992.

Possibilities for new interagency cooperation were tested during the FY 1992 fire season. The Forest provided dispatch support on three occasions for Idaho Department of Lands and Forest Service fire incidents in Northern Idaho.

Approximately 176,243 acres of the Clearwater National Forest are protected by two other fire protection agencies. The Palouse Ranger District is protected by the State of Idaho and a small portion of the North Fork Ranger District (Beaver Block) is protected by the Clearwater-Potlatch Timber Protective Association.

Off-unit wildfire support involved assignments both within the Idaho zone and other parts of the Region and nation. Total dispatches for the season included 134 overhead, 6 crews, and 6 engines for 1,231 person days on assignment.

The Clearwater Forest used a total of 164 smokejumpers on 38 fires during the 1992 fire season. An additional 71 personnel were delivered by helicopter to 29 fires for initial attack. About 38,000 gallons of fire retardant was dropped by air tankers on 12 fires.

### Wildfire Cause

The forest had thirteen (13) person-caused fires. The Forest collected \$130,000 from a negligent cooperator fire that occurred in 1991.

Table 6 displays the causes of fires for FY 1992.

Table 6. Number of Fires by Cause - FY 1992

Lightning	=	323	96.0%
Campfire	=	5	1.5%
Arson	=	5	1.5%
Powerline	=	2	.7%
Debris Burn	=	1	.3%

### Fuels Reduction

Prescribed fire (management ignited) was used as a management tool in fuels hazard reduction, site preparation, and wildlife habitat improvement on 4,228 acres. The target for all uses of prescribed fire to meet fire management objectives was 4,891 acres. Weather conditions, as usual, affected the burning program. Spring weather came very early and most districts were able to broadcast burn on low elevation hot aspects or pile burn on the cooler aspects in April and early May. With the extended drought, the forest was in high fire danger by mid May and most of June. Fire severity dollars were expended to bring on additional fire suppression resources and no fuel treatment burning was attempted during this time period. The forest received some rain in early July that reduced the fire danger. However, no burning was attempted with the prospect of a dry August just around the corner. August did turn out normal; hot and dry with little moisture falling. The forest experienced a record 160 lightning fires from August 19-21. Broadcast burning began again in late September and finished up by mid-October.

Smoke restrictions did not have a significant effect on prescribed burning accomplishments in FY 1992. The extended drought in May and June was the limiting factor for most burning. However, the Forest exceeded its target for fuels accomplishment, mostly due to aggressive burning in the early spring by all districts. Burning in the spring was very cost effective. Two districts were able to significantly reduce the deficit they had accumulated in their Brush Disposal accounts due to escalating burning costs.

Table 7 displays the prescribed burning accomplishments by district.

## Fire

Table 7. Prescribed Burning Accomplishments - FY 1992

District	Natural Fuels Target	Natural Fuels Accomplished	Brush Disposal Target	Brush Disposal Accomplished
Pierce RD	0 ac	0 ac	700 ac	959 ac
Palouse RD	120 ac	123 ac	600 ac	1089 ac
North Fork RD	60 ac	62 ac	600 ac	503 ac
Lochsa RD	60 ac	60 ac	300 ac	124 ac
Powell RD	60 ac	35 ac	515 ac	454 ac
<b>Total</b>	300 ac	280 ac	2,715 ac	3,129 ac

Most of the prescribed burning for fire hazard reduction in timber sale logging units occurred during the early spring or late fall. Little proescribed burning was done during the traditional burning period of late August to early September.

## **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 75% of backlog improvement projects for anadromous fish have been completed but only 15% of 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 fisheries entities in the Columbia River Basin 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.

The Forest will emphasize the implementation of the Tri-Regional Management Policy and Implementation Guide (PIG) for anadromous fish with priorities placed on monitoring, inventory, and NEPA compliance.

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## Fisheries

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<b>Item No. 8</b>	<b>Water Quality and Stream Condition for Fisheries and Non-Fisheries Beneficial Uses</b>
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 FY 1992.

Dependent upon funding, the program will be expanded and intensified to include more resident fish streams on the North Fork and Palouse Ranger Districts.

### Endangered Species Act (ESA) - Section 7 Process for Chinook Salmon

Rule document issued on April 22, 1992, in the Federal Register, and subsequently corrected on May 22, 1992, issued final determinations that Snake River spring/summer chinook and Snake River fall chinook salmon (*Oncorhynchus tshawytscha*) are ESU's or "species" under the ESA and should be listed as threatened. Spring/summer chinook populations within the Clearwater River Subbasin were not listed as ESU's. However, determinations for critical habitat were anticipated for the Clearwater River Subbasin. Therefore, the Forest chose to evaluate all USFS projects within the natural range of the chinook salmon to facilitate consultation requirements with the National Marine Fisheries Service (NMFS) if critical habitat was designated within the subbasin. Assessment of all ongoing and proposed projects for the Lolo Creek drainage and the Middle Fork/Lochsa River drainage were completed during the summer of 1992.

Rule document issued on December 2, 1992, in the Federal Register issued tentative determinations for critical habitat. Critical habitat for fall chinook salmon for the Clearwater River drainage included the mainstem of the Clearwater River upstream approximately 50 miles to the Clearwater/Idaho County line (downstream of the town of Greer, Idaho). No critical habitat for spring/summer chinook salmon was proposed in the Clearwater River drainage. Therefore, no Forest Service managed lands on the Clearwater National Forest have been designated critical habitat for the Snake River chinook salmon.

Even though no critical habitat for spring/summer chinook was designated, the assessment was a valuable process in monitoring projects for compliance with the Forest Plan. Although no critical habitat for fall chinook salmon occurs within the Clearwater National Forest, provisions of the ESA still require

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## Fisheries

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the USFS to assess cumulative impacts from federally authorized or funded projects on the Forest to the fall chinook populations of the lower Clearwater River.

**Lolo Creek Watershed:** The following is the executive summary from Clearwater National Forest. (1992a)

Lolo Creek, a principle tributary of the mainstem Clearwater River, contains significant spawning and rearing habitat for chinook salmon. Presently, only spring chinook salmon utilize this habitat. Fall chinook salmon presently utilize spawning and rearing habitat of the lower mainstem Clearwater River. Since critical habitats have not been determined for spring/summer and fall chinook stocks (as of FY92) of the Clearwater River Subbasin, assessments of management activities on the Clearwater National Forest were conducted on **both stocks**. The assessments were conducted under the auspices of Section 7 (consultation) of the ESA and pursuant regulations.

Assessments emanated from three perspectives: (1) Forest Plan compliance, (2) effects on spring/summer chinook, and (3) effects on fall chinook. Determinations were made according to direct, indirect, and cumulative effects analyses conducted by the forest and district fisheries biologists.

A total of 154 projects in 7 major management categories were analyzed. Of the total, 75% (116) involved timber sale activities. Both ongoing (119) and some proposed projects (35) were evaluated. Proposed projects were close enough to final form to warrant evaluation.

For fall chinook, 153 projects were determined to be "no effect" and 1 project (fire suppression) to be "not likely to adversely affect". Fall chinook are big river spawners and their habitats in the Clearwater River are located some 50 miles from the Upper Lolo Creek watershed. We have determined that impacts to fish habitat would be localized and have "no effect" on the downstream habitat of fall chinook.

For spring/summer chinook, 87 projects were evaluated as "no effect", 40 projects as "not likely to adversely affect", 8 projects as "beneficial effect", and 19 projects "affect" projects, all 19 do not comply with the Forest Plan Standards for water and fish habitat quality. Originally, 41 projects (40 timber) did not meet Forest Plan Standards for water and fish habitat quality. These 41 projects were also evaluated as "likely to adversely affect" habitat for spring/summer chinook. Management modifications to 22 projects brought them into compliance with the Forest Plan and into a determination of "not likely to adversely affect" spring/summer chinook. Nineteen (18 timber and 1 range) projects remain in a noncompliance and "affect" status as of the end of FY92. Final treatment is dependent upon field verifications in FY93 and modification plus designation of critical habitat in the Clearwater River Subbasin.

**Middle Fork and Lochsa River Watersheds:** The following is the executive summary from Clearwater National Forest. (1992b)

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## Fisheries

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The Middle Fork of the Clearwater River and the Lochsa River watersheds contain significant spawning and rearing habitat for chinook salmon. The presence and absence of chinook salmon and habitat is similar to the Lolo Creek watershed. The assessment used was the same process used in the Lolo Creek drainage (see Lolo Creek).

For both watersheds, a total of 329 projects in 6 major management categories were analyzed. Of the total, 71% (232) involved timber sale activities. Both ongoing (273) and some proposed projects (56) were evaluated. Proposed projects were close enough to final form to warrant evaluation.

For fall chinook, 327 projects were determined to be "no effect" and 2 projects (fire suppression) to be "not likely to adversely affect". Streams and management activities on tributaries to the Middle Fork were not sufficient magnitude or intensity to "affect" potential habitat for fall chinook. Activities on both Clearwater and Nez Perce National Forests were considered in the analysis of cumulative effects. Fall chinook are big river spawners and their habitats in the Clearwater River are located some 75-150 miles from these watersheds. We have determined that impacts to fish habitat would be localized and have "no effect" on the downstream habitat of fall chinook.

For spring/summer chinook, 235 projects were evaluated as "no effect", 76 projects as "not likely to adversely affect", 15 projects as "beneficial effect", and 3 projects in the upper Lochsa River drainage (all timber sales) were evaluated as "likely to adversely affect" habitat for spring/summer chinook. All 30 projects on the Lochsa Ranger District were or will be modified to remove the "affect" status and comply with the Forest Plan. On the Powell District, 10 of 13 projects were modified to comply with the Forest Plan and to remove the "affect" status. Three ongoing projects and five proposed projects on the Powell Ranger District (Upper Lochsa River) remain in a noncompliance status as of the end of FY92.

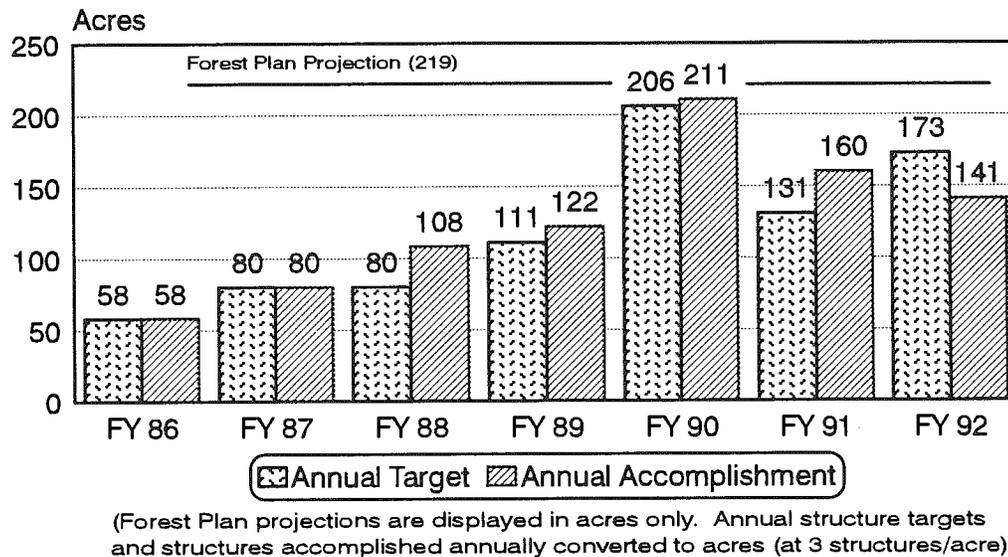
## Accomplishments/Findings

**Stream Inventory Targets:** A total of 984 acres of anadromous and inland stream inventories covering 190 kilometers (km) of streams were completed during FY 1992. As part of the Columbia River Basin Anadromous Fish Habitat Management Policy Implementation Guide (PIG), the Forest inventoried 860 acres of anadromous streams or 195% of the annual target. Due to funding constraints, only 49% (124 acres) of the inland stream target (250 acres) was completed in FY 1992.

**Improvement Targets:** In FY 1992, 70 acres and 213 structures of fisheries habitat improvement were accomplished. Comparisons to the Forest Plan projections (Figure 1) can only be made in acres. Therefore, annual targets and annual accomplishments were converted to acres only (three structures equal one acre). Although the structure targets for anadromous and inland fish were exceeded in FY 1992, the annual accomplishments for anadromous and inland for nonstructural target (acres) were only 55% and 51% respectively. The total accomplishment of 141 acres constituted 64% of the acreage target projected in the Forest Plan. In tracking achievement of Forest Plan targets, the cumulative shortfall after

five years is 353 acres, or 32% of the five-year total (1,095 acres). Rehabilitation projects are continually being identified although the Forest's ability to accomplish this work will depend primarily upon funding.

**Figure 1. Comparison of fish habitat acres accomplished with the annual target and the Forest Plan projection for the Clearwater National Forest, FY 1986-92.**



**Forest Overview:** Instream improvement projects were completed on the following Districts/streams:

- (1) Pierce District: Lolo Creek, Yoosa Creek, and Orogrande Creek.
- (2) Palouse District: Elk Creek, Gold Creek, Mannering Creek, and East Fork Potlatch River.
- (3) North Fork District: Beaver Creek.
- (4) Lochsa District: West Fork Deadman Creek, and Pete King Creek.
- (5) Powell District: Squaw Creek, West Fork Squaw Creek, Walton Creek, Papoose Creek, and Wendover Creek.

Habitat quantity and quality for chinook salmon, steelhead trout, cutthroat trout, brook trout, bull trout, and kokanee salmon were increased with the planting of riparian vegetation. The addition of side channels, log weirs, large woody debris, boulders, and sediment traps were also used to increase habitat.

**Challenge Cost-share Projects:** Two challenge cost-share projects initiated during FY 1991 were continued during FY 1992. These cooperative projects were the East Fork of Potlatch Creek (Palouse Ranger District) and Beaver Creek (North Fork Ranger District).

On the East Fork of Potlatch Creek, the Palouse Ranger District and River Masters Engineering, Inc. of Pullman, Washington, continued to work cooperatively to rehabilitate riparian and in-channel habitats

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## **Fisheries**

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(USFS), habitat conditions and monitor stream recovery. The Forest continued the riparian restoration activities by fencing off an additional 400 meters (m) of channel from grazing impacts. There is now a total of 2.2 km of riparian exclosure.

The partnership with River Masters was formed in FY 1991 to monitor and evaluate the East Fork Project. This is a long term arrangement in which River Masters will monitor habitat and fish populations responses in a critical 1.8 km reach over an extended period of time. During the field season of 1991, River Masters completely mapped the critical reach and collected baseline information on fish populations. River Masters also installed continuous recording flow and temperature gauges. Development of an enhancement plan for the project area and additional monitoring activities were planned for FY 1992. However, due to scheduling problems, River Masters is planning on completing these activities during FY 1993-94. Early evaluation of this project indicates that the system is recovering rapidly.

The Palouse Ranger District also enhanced two stream crossings that are used by livestock along the West Fork, Potlatch Creek. This was accomplished through "hardening" or using gravel to avoid stream bank erosion. Within the Elk Creek drainage, two sediment traps were constructed by hand in an unnamed tributary stream and one off-channel sediment trap was constructed in Elk Creek. Approximately 500 conifers were also planted within the riparian area along Elk Creek. In the Palouse River drainage, large organic debris was installed in a 1000 meter reach of Gold Creek (tributary of Big Sand Creek) to increase the frequency of high quality pools and cover for fish. Seven sediment traps were installed on tributaries of Mannering Creek. The District also continued to dredge sediment from Elk Creek.

The other cost-share project was conducted on the North Fork Ranger District. The second year of a three year project to improve fish habitat in Beaver Creek was completed during the field season of 1992. This project is a cooperative venture with Potlatch Corporation. A total of 103 structures were constructed over a 1.8 km reach distance with 54 on USFS lands and 49 on Potlatch portions of Beaver Creek. The structures were designed to provide high quality pools, instream cover, bank stabilization, and habitat type diversity. Early evaluation indicates that fish habitat in the improvement reaches now meets Forest Plan objectives for pool quantity. Approximately 270 structures have now been placed in an 6.4 km stretch of Beaver Creek. The project has been funded for FY 1993 and additional reaches will be improved.

### **Anadromous Fisheries**

#### **Habitat Improvement - Lolo Creek Watershed**

Two major projects of habitat improvement were completed in the Lolo Creek watershed (Pierce Ranger District). A total of 40 instream structures were installed in Yoosa Creek and Lolo Creek to improve summer and winter rearing habitats for spring chinook salmon, steelhead trout and westslope cutthroat trout. The improvement extended over total of 4 km and included large woody debris, rock and log weirs. Log weirs in Lolo and Eldorado were evaluated and maintained where necessary. Ten weirs were repaired in Lolo Creek.

Instream sediment removal with suction dredges was conducted in several key anadromous fish streams. Sediment was removed from Camp Creek, Dollar Creek, and Eldorado Creek (Lolo system) which improved 12 acres of stream habitat.

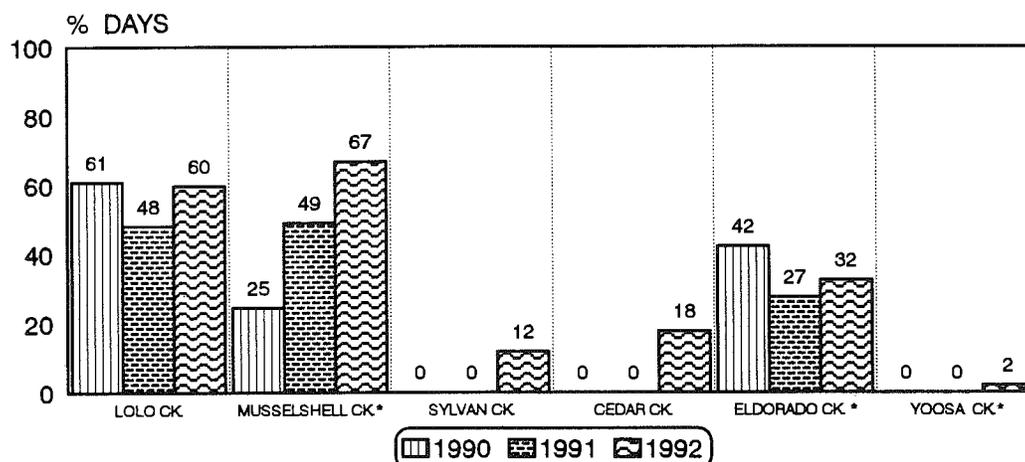
**Habitat Monitoring - Lolo Creek Watershed**

Lolo, Eldorado, and Yoosa creeks are designated "Stream Segments of Concern". They contain critical anadromous fish habitat that is monitored as part of the Forest Plan monitoring and evaluation process. In FY 1992, intensive habitat surveys were conducted on 71.8 km of Lolo Creek tributaries - Eldorado, Dollar, Yoosa, Camp, Knoll, Yakus, Weaver, and Dan Lee Creeks. A summary of the data indicates that these drainages, with the exception of Yoosa Creek, are well below standard with respect to sediment and habitat diversity components. Sediment conditions in Yoosa Creek were found to be within Forest Plan standards; an improvement over conditions found during a 1986 survey. However, Yoosa Creek, in addition to the other streams, lacked the habitat diversity that is dependent upon riparian structure.

**Water Temperature Monitoring - Lolo Creek Watershed**

In 1990, with the cooperation of the Nez Perce Tribe, the Pierce Ranger District initiated monitoring of water temperatures in key tributaries of the Lolo Creek system. A comparison of stream temperature data for the 1990-92 period for specific streams that exceeded the Forest Plan standard is displayed in Figure 2.

**Figure 2. Percent sampling days exceeding forest plan standard on selected streams within the Lolo Creek and Orogrande Creek drainages, Clearwater National Forest, 1990-92.**



\*Eldorado, Yoosa and the 1990 Musselshell Creek (@Gold Cr.) results come from Nez Perce Tribe tempentors.

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## Fisheries

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Thermograph data revealed that temperatures in Lolo Creek exceeded the desired criteria (16-17 degrees C) by several degrees and maintained these high temperatures for extended periods of time. Analysis of temperature data collected in Yoosa Creek, Eldorado Creek, and Musselshell Creek indicated that these streams were at or exceeded the desired criteria. Monitoring also indicated that temperature problems exist in upper Lolo and lower Eldorado creeks.

### Winter Habitat Monitoring - Lolo Creek Watershed

During FY 1991, monitoring of winter habitat quality in Lolo Creek was initiated. During FY 1992 and 1993 (November 1992 and 1993), monitoring of winter habitat quality in Lolo Creek will continue. In 1992, the number of sample sites was increased to 12, and in 1993, to 15. Optimum winter habitat for salmonids is a clean (low sediment) substrate of cobble and boulders in pool habitat types. The winter habitat sites were constructed during the period of 1987 to 1990. They displayed a quality index of 100% at that time. Fish populations have been monitored at these sites to derive a relationship between habitat and fish.

In FY 1992, the quality of winter habitat decreased to a mean of 41.5% (standard error = 6.7%) from a mean of 73.1% (standard error = 5.8%) in FY 1991. Late in 1992, the quality of winter habitat increased slightly to 45.9% for the same 12 units (standard error = 5.6%). This slight improvement is probably the result of cleaning (sediment dredging) sample site #12 where winter habitat quality was increased to 35.6% from 12.1% plus the natural scouring of several other units. The addition of 3 new sampling sites (1 natural) resulted in a mean of 47.6% (standard error = 5%). A summary of pertinent statistics for the 3-year sampling period is presented in Table 1.

The data was subjected to a nonparametric analysis of variance -- the Kruskal-Wallis test (Sokal and Rohlf, 1981) -- to test the null hypothesis of: "...there are no significant differences in winter habitat quality at the sampling sites during the evaluation period of 1987 to 1992 (fiscal years 1988-1993)."

The null hypothesis was rejected at the 1% level of probability ( $H=29.0$ , 3 d.f.,  $N=42$ ). The differences in winter habitat quality between the sample years was highly significant.

In summary, monitoring of winter habitat units in Lolo Creek (1987-92) indicates that considerable instream sediment still exists within the system. In a period of 3-4 years, "clean" winter habitat lost 50-60% of its available space to instream deposition of sediment. This level of habitat degradation correlates well with other measures of instream sediment such as cobble embeddedness (51%=overall mean Lolo Creek; Espinosa and Lee, 1991).

Table 1. A summary of pertinent statistics associated with winter habitat sampling in Lolo Creek during the period from 1987 to 1993.

DATE (Sample Year)	N	RANGE	MEAN WINTER HABITAT QUALITY (%)	STANDARD ERROR	COEFFICIENT OF VARIATION (%)
1987-90 <sup>1</sup>	14	0	100	0	0
1991 <sup>2</sup>	6	55.9-88.8	73.1	5.8	19.6
1992 <sup>2</sup>	12	12.0-80.3	41.5	6.7	55.7
1993 <sup>2</sup>	12	13.6-77.3	45.9	5.6	42.1
1993 <sup>3</sup>	15	13.6-77.3	47.6	5.0	40.3

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1/ Point of initiation, habitat units constructed.

2/ Fiscal year.

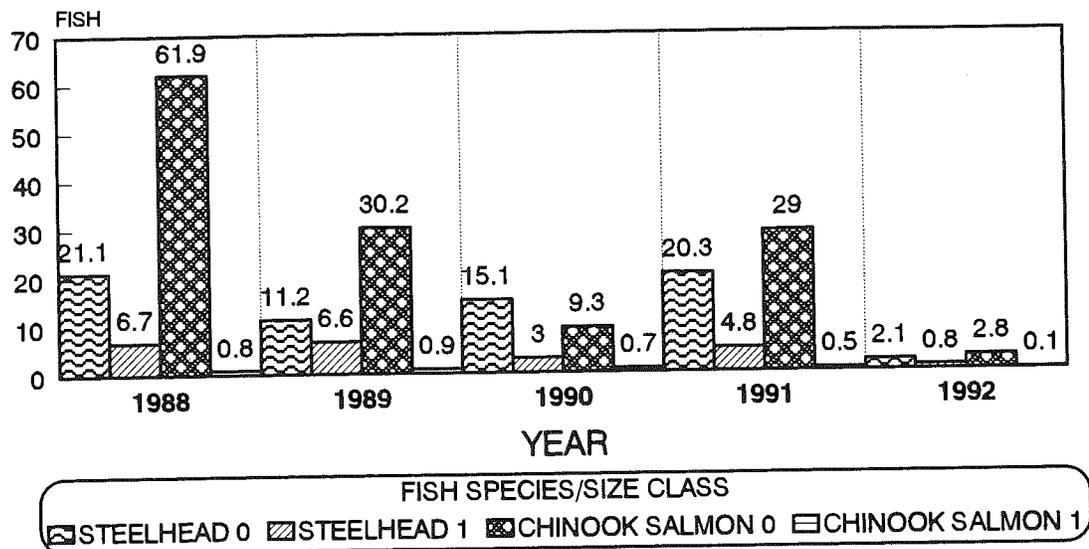
3/ Sample size increased by 3 units including 1 natural.

**Fisheries Population Monitoring - Lolo Creek Watershed**

In FY 1992, population assessments were conducted via snorkel diving to document trends in Lolo Creek. Fifteen transects (ten log weir pools and five control sites) established in 1988 were sampled. Results show a significant decrease in steelhead trout and spring chinook densities from 1991 (Figure 3). Densities of steelhead trout 1+ juveniles averaged 14% of those observed during 1991 in the enhanced reaches and 11% of the levels observed in the unenhanced control transects. Declines in densities of age 0+ steelhead juveniles for the enhanced and unenhanced reaches were similar with 1992 levels of 9% and 11% of 1991 levels, respectively. Densities of spring chinook age 0+ juveniles were only 7% of the 1991 levels in the enhanced reaches and 14% of the 1991 levels in the unenhanced control transects. The decline in both steelhead and spring chinook production was validated by the Nez Perce Tribe during their fish population monitoring in the Lolo Creek system. The low numbers of steelhead juveniles may be a result of low adult escapement into the Lolo Creek drainage during 1990-91 or a low egg-fry spawning rate during those years. Spring chinook spawning success decreased to a very low level of 11 redds in 1991 which accounts for the significant decrease in age 0+ juvenile spring chinook during 1992.

## Fisheries

Figure 3. Comparison of spring chinook salmon and steelhead trout densities in Lolo Creek, Clearwater National Forest, 1988-92.



Steelhead spawning surveys were conducted by Forest and District personnel to assess steelhead spawning success in the mainstem Lolo and Eldorado creeks. Spot surveys conducted by the District and Nez Perce Tribal Fisheries personnel in the lower reaches of Eldorado Creek have failed to document naturally-spawning steelhead in 1992. Excess hatchery adults were planted in Eldorado Creek in 1990 at the Dollar Creek Bridge to spawn in the upper reaches. These outplants make it difficult to ascertain if any age 0+ fish observed during snorkeling surveys were from natural production. No adult outplants were made in 1991 and 1992. Due to incomplete data from previous years and the 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, it was anticipated that the steelhead spawning surveys and/or juvenile population assessments conducted in 1991 would show evidence of the hatchery supplementation efforts. In 1988, over 400,000 steelhead smolts were released in Lolo and Eldorado creeks. Another 109,000 steelhead smolts were released in Eldorado Creek in 1989. Adult returns from these smolts would be appearing in 1990-1992 with the largest returns as two-ocean fish in the spring of 1991. As stated above, no naturally-spawning steelhead were observed in Eldorado Creek in 1992. Furthermore, population data shows limited spawning success as very few steelhead fry (age 0+ fish) were observed in the lower and mouth critical reaches. The final returns are primarily dependent upon the overall smolt-to-adult survival rates. These are a function of many variables, such as juvenile survival through the lower Snake and Columbia River subbasins and adult harvest.

Six spring chinook spawning ground surveys were conducted in the Lolo Creek drainage in 1992. In conjunction with the Idaho Supplementation Studies being conducted in the Lolo Creek drainage, the Nez Perce Tribe's Fisheries Department initiated the 1992 surveys on August 17-18. On August 18, the Nez Perce Tribe's Fisheries Department conducted the first survey of 1992 on the main spawning reach in Lolo Creek. This stream reach was established as an index area by the Idaho Department of Fish and Game 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 4 adults, but no redds in the 7.2 kilometer (km) index area.

Other areas surveyed by the Tribe during the August 17-18 survey period were the Lower Yoosa Creek reach and the remaining potential spawning areas in Lolo Creek; from Lolo Forks downstream to the first log weir (index area); and from the index area downstream to the Bradford bridge. No redds were observed in these reaches. However, seven adults were observed in the Lolo Creek downstream of the index area.

Tribal personnel also completed a survey on August 17, to observe the extent of spawning in Eldorado Creek. No fish or redds were observed in the three reaches surveyed: Eldorado Falls downstream to Lolo Creek, 200 meters upstream and 400 meters downstream of Linda Creek, and 400 meters downstream of the Fan Creek bridge (USFS road #519). These areas were resurveyed on September 14 and 15 by Tribal personnel; no fish or redds were observed.

On August 31, Tribal personnel resurveyed four of the six reaches in Lolo Creek from the index area downstream to the Section 6 bridge (reaches #2-5). Six redds were found in the index area and one redd was located in reach #5 upstream of the Section 6 bridge.

On September 2, USFS personnel surveyed the upper portion of the index area (Siberia Creek upstream to the start of the index area). The five redds identified by the Tribal survey on August 31 were observed as well as two additional redds for a total of seven redds.

On September 10, USFS personnel completed the final survey of the index area. Fourteen redds and nine adults (five female and four male) were observed. All females appeared to be spawned out. No carcasses were located for data collection.

On September 14, Tribal personnel resurveyed reaches #3-5 of Lolo Creek (index area downstream to Section 6 bridge). They found four new redds above the Section 6 bridge (reach #5), in addition to the redd found during the August 31 survey.

Finally, on September 23, District personnel surveyed Yoosa Creek from the Lolo confluence (mouth) upstream to the first major beaver dam (2000 meters from the Lolo confluence). No redds or fish were observed in this reach. On August 4, one adult chinook was observed in Yoosa Creek downstream of the beaver dam. Although only the lower portion of the Yoosa Creek reach was surveyed in 1992 (the entire reach of 4,700 meters to Camp Creek was surveyed in 1991), any spawning activity would have been observed downstream of the migration barrier at the beaver dam. Extreme low stream flows during the migration and spawning periods severely reduced the likelihood of any migration beyond the beaver dam. This situation has probably existed for several years. Fish population surveys (snorkel transects) conducted in 1992 by a USFS contractor and Tribal personnel only observed juvenile (age 0+) spring chinook downstream of the beaver dam in Yoosa Creek.

A total of 19 spring chinook redds were observed in the Lolo Creek drainage. Comparison of spawning surveys in the Lolo Creek index area from 1987-92 indicates a slight increase from last year's count of 11. However, this is still below the 1990 count (25 redds) and less than 50 percent of the thirty one redds observed in 1987 and 1988 (Table 2). This increase is consistent with the 1992 spawning in other Clearwater streams. Redd counts were higher in most streams due to the two-fold increase of adult spring chinook numbers from 1991 over Lower Granite Dam. However, spawning success in the Lolo Creek drainage did not increase significantly relative to other Clearwater tributaries.

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## Fisheries

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The results of the supplementation efforts in Eldorado Creek are still in question as the surveys did not observe any fish or spawning activity above or below Eldorado Falls. About 200,000 spring chinook smolts have been released annually in the Eldorado Creek drainage (at Dollar Creek Bridge) for the last four years (183,000 smolts in 1992 to 256,883 smolts in 1990). In addition, spring chinook fingerlings from Dworshak and Kooskia National Fish Hatcheries were released in Lolo and Eldorado creeks during the period of 1986-89. Fingerling numbers ranged from 43,772 in 1986 to 276,838 in 1989 with the largest number of fish (242,678) destined for Eldorado Creek in 1989. No adult spring chinook, juveniles, spawning activity and/or carcasses have been observed in Eldorado Creek during the last four years that surveys have been conducted. Any spring chinook adults during the 1992 spawning season would have primarily resulted from the supplementation efforts in 1989-1990.

The ability of adults to migrate effectively through the Eldorado Falls area is still questionable as successful migration has not been documented. The presence of adults and/or spawning activity would be expected downstream in the Eldorado Falls to Lolo Creek reach. Of the 200 to 400 adults that were expected to return to Eldorado Creek from smolt outplants in 1989-91, the absence of fish can be attributed to various causes:

- (1) lower smolt-to-adult survival rates resulted from the continual drought conditions during the last six years.
- (2) disease problems with hatchery fish.
- (3) straying of adults to the hatcheries.
- (4) the inability of smolts to imprint on Eldorado Creek due to the short time interval within the drainage.
- (5) possible bypassing of Eldorado Creek due to higher stream water temperatures at the confluence with Lolo Creek.

In 1992, the first spawning activity in recent years was observed in the Section 6 bridge reach. Although no formal surveys were conducted downstream of Utah Creek prior to 1992, no salmon spawning activity was observed during spot checks in past years. It is speculated that while the lower reaches of Lolo Creek (survey reaches #5 and 6) have spawning gravels, spring chinook adults probably select upper stream reaches due to cooler stream temperatures. The presence of spawning activity in 1992 may have resulted from the adults destined for Eldorado Creek that bypassed due to the lack of imprinting or the avoidance of the higher stream temperatures.

The Idaho Supplementation Studies that were initiated by the Nez Perce Tribe in 1992 will hopefully answer questions on the results of supplementation in the Eldorado Creek drainage. Research efforts are geared to track hatchery and natural spring chinook juveniles by PIT tagging groups of fish in Eldorado and Lolo creeks respectively. Juvenile and adult traps as well as future spawning surveys will enable researchers to collect data from the marked fish and determine smolt-to-adult survival rates of hatchery and natural stocks, migration timing and dispersal of outplants, and location of overwinter habitat. The District is currently assisting the Tribe's efforts through cooperative data collection projects.

**TABLE 2: Six year comparison of spring chinook redd counts in the Lolo Creek Drainage 1987 - 1992.**

Stream/Reach	Year Surveyed					
	1987	1988	1989	1990	1991	1992
Lolo Creek Index Area	31	31	20	25	11	14
County Bridge (Rd 103 & 5050) to White Creek Bridge (Rd 100)	N/A	N/A	1	0	0	0
Lolo Forks (Confluence Lolo and Yoosa Cr.) to Index Area	N/A	N/A	0	0	0	0
White Creek Bridge (Rd 100) to Utah Creek	N/A	N/A	2	0	2	0
Utah Creek to Section 6 Bridge (Rd 5150)	N/A	N/A	N/A	N/A	N/A	5
Section 6 Bridge to Bradford Bridge (Rd 5112)	N/A	N/A	N/A	N/A	N/A	0
Yoosa Creek Camp Creek to Lolo Creek	N/A	N/A	1	0	1	0
Eldorado Creek	N/A	N/A	0	0	0	0
<b>TOTAL</b>	<b>31</b>	<b>31</b>	<b>24</b>	<b>25</b>	<b>14</b>	<b>19</b>

N/A - No survey conducted.

**Habitat Improvement - Lochsa River Watershed**

Two major projects of habitat improvement were completed in the Lochsa Creek watershed. Three acres of riparian habitat on the West Fork Deadman Creek were improved with the planting of 500 deciduous trees. In Squaw Creek and the West Fork of Squaw Creek, ten log weirs were installed to enhance fisheries habitat as part of the KV program. In addition, repair and maintenance was completed on seven log weir structures in Papoose Creek and three log weirs structures in Wendover Creek. Rehabilitation efforts were also undertaken on the Powell District to prevent additional sedimentation of Walton Creek from erosion resulting off USFS roads #360 and #111 in the Walton Creek watershed. Seventy-one structures were installed as part of this project.

Instream sediment removal with suction dredges was conducted in the Pete King drainage. A total of 170 cubic meters of sediment were removed from four instream sediment traps.

## Fisheries

### Fisheries Habitat Monitoring - Lochsa River Watershed

On the Lochsa District, a total of 76.1 km of stream habitat was intensively surveyed in the Fish Creek and Hungry Creek drainages. Percent fines in spawning gravels were measured at critical reaches in Pete King Creek and Deadman Creek. Core sampling data in Deadman Creek shows spawning gravel sediments (<6.4mm) were 47%, no change from 1991 (Figure 4). Samples taken in Pete King Creek showed percent fines <6.4mm were 40% (Figure 5). This is a 15% decrease from 1991. This decrease in percent fines follows a three year upward trend and may reflect the effects of four instream sediment traps and watershed rehabilitation efforts in the Pete King Creek drainage.

Figure 4. Comparison of percent fines as defined as sediment < 6.4 mm, in monitored reaches of Deadman Creek, Clearwater National Forest, 1985-92.

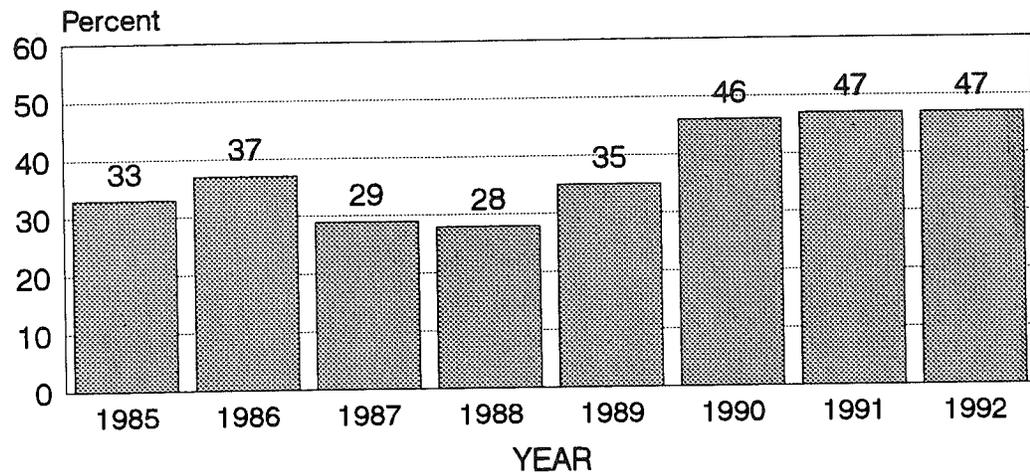
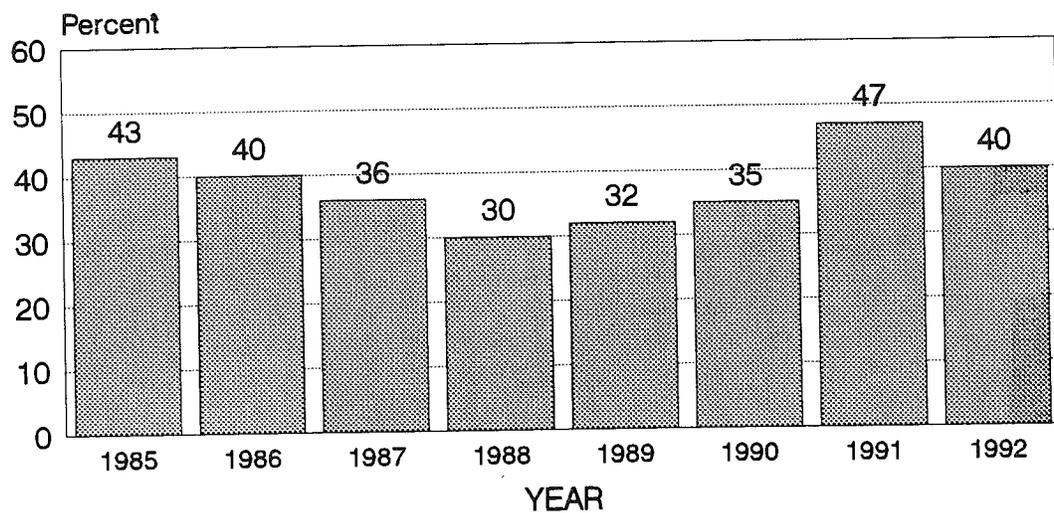


Figure 5. Comparison of percent fines as defined as sediment < 6.4 mm, in monitored reaches of Pete King Creek, Clearwater National Forest, 1985-92.



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## Fisheries

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A total of 24 km of stream habitat was intensively surveyed in the Postoffice Creek, Parachute Creek and Cliff Creek drainages in FY 1992. Analysis of the data reveals low to moderate levels of sediment in Postoffice Creek and Cliff Creek. However, excessive levels of sediment in Parachute Creek resulting from heavy development and mass failure events in the watershed.

Five long-term monitoring streams were surveyed in July and August 1992 to evaluate cobble embeddedness and fish distribution trends and possible relationships between sediment levels and fish populations. All of the streams selected as monitoring stations display a broad range of physical and biological conditions: (1) Weir Creek is an unmanaged, control stream for this monitoring, (2) Postoffice Creek is a low management, control stream for this monitoring, and (3) Squaw, Papoose, and Brushy Fork Creeks are the managed, experimental streams for the monitoring. 1992 represents the third year that monitoring has been conducted on the permanent sites established in 1988 on these streams. However, two of the five monitoring stations on Postoffice Creek and two of the five monitoring stations on Brushy Fork Creek were not sampled due to safety hazards associated with active timber sale operations.

Each monitored stream contained five stations; station one near the headwaters (if feasible) and station five near the stream mouth. Each station contained a representative habitat type: pool, riffle, and run. Both fish population and embeddedness data are collected from the same site. Data shows a slight to moderate decreasing trend in cobble embeddedness levels in all five streams.

## Fisheries

**Table 3. Comparison of mean cobble embeddedness and dominant substrate for selected habitat types within permanent monitoring sites on five streams, Lochsa River watershed, Clearwater National Forest.**

Monitoring Sites	1988 CE (%)	1990 CE (%)	1992 CE (%)	BR (%)	BO (%)	RU (%)	CO (%)	CG (%)	FG (%)	SA (%)	OR (%)
<b>Weir Cr</b>											
Pool	41	41	43	0.7	20.5	33.6	21.5	5.7	4.2	11.1	2.8
Riffle	38	30	29	0.0	16.4	43.4	32.7	3.0	2.2	2.2	0.0
Run	42	28	33	0.0	22.5	36.5	31.3	4.5	1.3	3.0	0.0
<b>Postoffice Cr</b>											
Pool	48	42	50	0.0	19.1	24.8	29.4	5.4	0.0	19.4	1.9
Riffle	51	42	38	0.0	10.0	20.2	44.5	13.9	4.8	6.9	0.0
Run	51	40	36	0.0	4.4	43.9	33.6	4.6	5.5	6.6	1.4
<b>Squaw Cr</b>											
Pool	44	38	38	0.0	16.8	27.5	18.8	12.1	13.2	8.5	1.5
Riffle	42	27	28	0.0	10.2	38.2	33.2	4.5	8.7	5.1	0.0
Run	50	43	34	0.7	21.1	35.0	22.8	5.0	8.0	6.6	0.0
<b>Papoose Cr</b>											
Pool	46	35	36	0.0	20.8	34.7	21.8	15.2	9.9	4.7	1.6
Riffle	44	29	26	0.0	14.8	49.8	25.3	3.7	3.4	2.5	0.6
Run	44	24	27	0.5	18.6	29.7	32.7	8.0	9.5	0.7	0.0
<b>Brushy Fork Cr</b>											
Pool	31	30	21	0.7	45.6	43.2	4.5	2.3	1.4	0.7	1.4
Riffle	33	24	16	0.0	26.3	57.1	15.5	0.7	0.5	0.0	0.0
Run	36	35	19	0.0	37.0	45.1	16.4	1.0	0.5	0.0	0.0

Note: CE = cobble embeddedness; BR = bedrock; BO = boulder; RU = rubble; CO = cobble; CG = coarse gravel; FG = fine gravel; SA = sand; OR = organic material.

### Water Temperature Monitoring - Lochsa River Watershed

Stream temperatures were monitored at 17 sites in the lower Lochsa River watershed during FY 1992. Sites were located in Pete King Creek, Canyon Creek, Glade Creek, Deadman Creek, and in the Fish Creek drainage. Data summaries show the following:

- (1) Instream temperatures in Pete King Creek exceeded the Forest Plan standard for moderate periods of time sampled, 31% in the mainstem of Pete King Creek, and 12% in Placer Creek. The highest recorded temperature was 20.8 degrees C. This data suggests that rearing temperatures in Pete King are sub-optimal for chinook salmon.
- (2) Monitoring in Canyon Creek revealed that temperatures exceeded the Forest Plan standards, 8% of the period sampled at the mouth and 6% and 13% at Middle and Upper Canyon Creek, respectively. The highest recorded temperature was 19.8 degrees C in Upper Canyon Creek. This indicates that rearing temperatures for cutthroat and steelhead trout are becoming marginal.
- (3) Glade Creek temperatures exceeded the standard for a short period (3%) of the sampled time.
- (4) Temperatures at the mouth of Deadman Creek exceeded the standard 28% of the period sampled. The highest recorded temperature was 20.3 degrees C. At the forks of Deadman Creek, temperatures exceeded the standard 7% of the sample period.
- (5) Hungery Creek had a high temperature of 22.6 degrees C and exceeded the standard 65% of the sample period.
- (6) Monitoring continued on the effects of riparian rehabilitation on water temperatures in the Bonanza Timber Sale.

In 1992, water temperature monitoring was conducted at seven streams in the upper Lochsa River watershed. Monitored streams included Brushy Fork Creek, Crooked Fork Creek, Shotgun Creek, Squaw Creek, White Sand Creek, Papoose Creek and Walton Creek. The Nez Perce Tribe cooperated with the district on the temperature monitoring efforts in Squaw and Papoose Creeks. Thermograph data indicates that temperature problems (where temperatures exceed the desired condition of below 16-17 degrees C for extended periods of time - Forest Plan standard) could exist for White Sand Creek. The data also suggests that Brushy Fork Creek is reaching temperatures in the 16-17 degrees C in late July and August.

### Fisheries Population Monitoring - Lochsa River Watershed

In 1992, fish population monitoring continued in the Lochsa River drainage. Fish species present in some or all of the study streams include: chinook salmon (*Oncorhynchus tshawytscha*), steelhead/rainbow trout (*Oncorhynchus mykiss*), westslope cutthroat trout (*Oncorhynchus clarki lewisi*), bull trout (*Salvelinus confluentus*), mountain whitefish (*Prosopium williamsoni*) and sculpin (*Cottus*) sp.

Population monitoring was conducted in selected tributaries of the lower Lochsa River. Streams monitored were Fish Creek, Hungery Creek, Pete King Creek, and Deadman Creek. Juvenile steelhead populations increased by 22% (over a 15-year running mean) in lower Fish Creek and 15% in lower Hungery Creek (16-year running mean). A 15-16 year summary of data for lower Fish Creek and lower Hungery Creek is displayed in Figures 6 and 7, respectively.

## Fisheries

Figure 6. Annual comparison of juvenile steelhead (age 1+) densities at permanent monitoring sites within the Lower Fish Creek drainage, Clearwater National Forest, 1978-92.

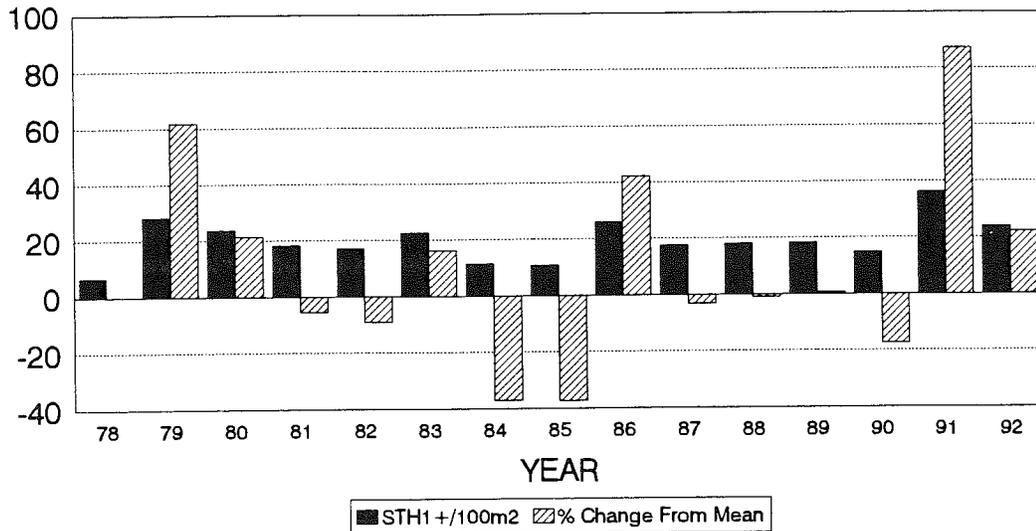
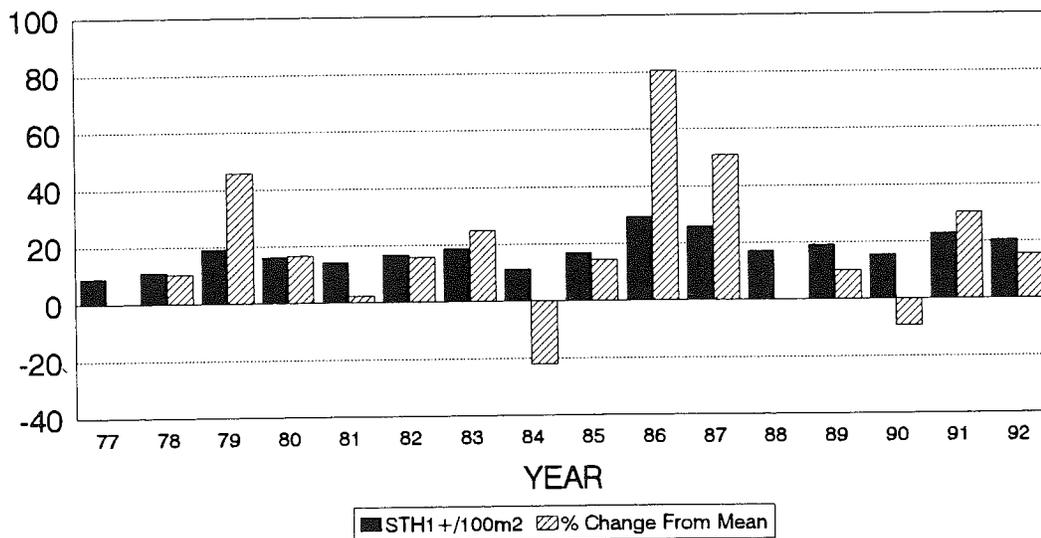


Figure 7. Annual comparison of juvenile steelhead (age 1+) densities at permanent monitoring sites within the Hungry Creek drainage, Clearwater National Forest, 1977-92.



In Pete King Creek and Deadman Creek, densities of juvenile steelhead also increase over a 11-year running mean by 32% and 41%, respectively. A 11-year summary of data for Pete King Creek and Deadman Creek is displayed in Figures 8 and 9, respectively.

Figure 8. Annual comparison of juvenile steelhead (age 1+) densities at permanent monitoring sites within the Pete King Creek drainage, Clearwater National Forest, 1982-92.

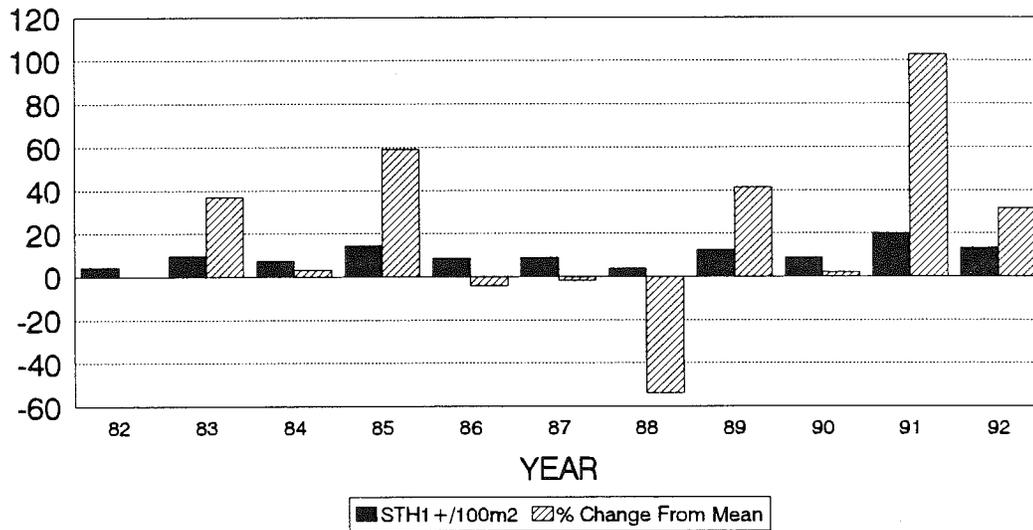
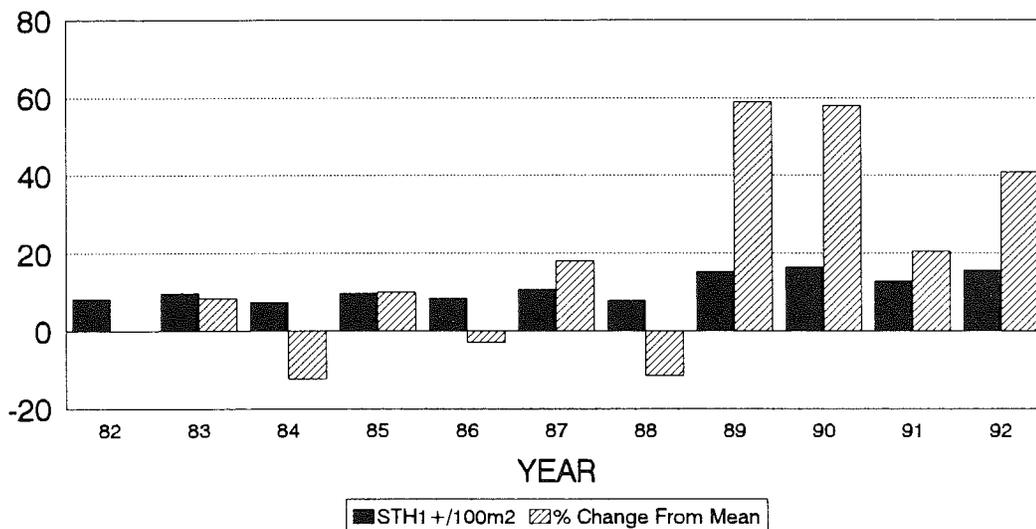


Figure 9. Annual comparison of juvenile steelhead (age 1+) densities at permanent monitoring sites within the Deadman Creek drainage, Clearwater National Forest, 1982-92.



Population density results of the 1992 monitoring efforts in the upper Lochsa River drainage are shown in Table 4. Population data was collected on Weir, Postoffice, Squaw, Pappoose and Brushy Fork Creeks.

## Fisheries

**Table 4. Comparison of overall salmonid abundance (#/100 sq m) by habitat type for five streams within the Lochas River watershed, Clearwater National Forest.**

Monitoring Sites	Monitoring Year	Age 0 Trout	SH Age 1 & Older	CT Age 1 & Older	BT Age 1 & Older	CH	All SPP
<b>Weir Cr</b>							
Pools (n=5)	1988	52.5	12.9	5.3	0.5	0.5	71.7
	1990	36.9	8.5	11.8	0.6	0.0	57.8
	1992	12.5	12.4	7.2	0.0	0.0	32.1
Riffles (n=5)	1988	24.6	5.6	1.8	0.0	0.0	33.8
	1990	18.4	2.7	5.2	0.0	0.0	26.3
	1992	5.6	3.9	0.0	0.0	0.0	9.5
Runs (n=5)	1988	41.0	8.3	3.1	0.0	0.0	52.4
	1990	32.3	6.9	4.8	0.0	0.0	44.0
	1992	9.4	4.1	0.7	0.0	0.0	14.2
<b>Postoffice Creek</b>							
Pools (n=5)	1988	64.3	22.2	15.4	1.0	0.0	102.9
	1990	64.1	11.7	13.2	0.7	0.4	90.1
	1992	41.1	16.0	7.7	0.8	0.8	66.4
Riffles (n=5)	1988	52.5	8.0	16.4	0.0	0.0	9.9
	1990	103.9	10.9	7.3	0.0	0.0	17.2
	1992	48.0	5.4	0.0	0.0	0.0	53.4
Runs (n=5)	1988	67.5	11.0	11.3	0.0	0.0	89.8
	1990	74.9	14.3	9.5	0.9	0.0	99.6
	1992	61.8	10.9	4.9	0.0	0.0	77.6
<b>Squaw Creek</b>							
Pools (n=5)	1988	39.2	12.8	1.9	1.9	0.0	55.8
	1990	15.2	6.0	8.5	0.8	0.0	30.5
	1992	10.7	6.5	5.0	0.0	0.0	22.2
Riffles (n=3)	1988	25.7	1.6	3.8	1.3	1.0	33.4
	1990	11.5	2.3	0.8	1.4	0.3	16.3
	1992	4.7	4.2	0.7	0.6	0.0	10.2
Runs (n=5)	1988	41.3	6.3	4.4	0.6	13.3	65.9
	1990	20.1	3.7	5.1	0.7	8.1	37.7
	1992	13.1	3.8	2.2	5.7	0.0	24.8
<b>Papoose Creek</b>							
Pools (n=5)	1988	55.8	10.7	4.5	1.4	72.2	144.6
	1990	71.1	13.0	15.8	0.4	24.5	124.8
	1992	18.5	7.6	7.9	0.4	1.1	35.5

## Fisheries

Runs (n=5)	1988	41.3	6.3	4.4	0.6	13.3	65.9
	1990	20.1	3.7	5.1	0.7	8.1	37.7
	1992	13.1	3.8	2.2	5.7	0.0	24.8
Riffles (n=5)	1988	43.8	4.9	3.8	0.0	15.3	67.8
	1990	53.2	7.7	5.5	0.0	10.2	76.6
	1992	25.4	5.0	4.0	0.0	0.0	34.4
Runs (n=5)	1988	72.4	8.4	4.4	1.0	37.6	123.8
	1990	40.4	9.5	6.7	0.0	8.9	65.5
	1992	53.2	9.9	6.2	0.0	0.0	69.3
<b>Brushy Fork Creek</b>							
Pools (n=5)	1988	3.0	5.9	16.0	0.0	47.3	72.2
	1990	10.5	8.6	22.8	0.3	21.2	63.4
	1992	18.1	10.5	1.8	0.0	15.8	46.2
Riffles (n=5)	1988	5.7	4.6	5.8	0.1	16.1	32.3
	1990	10.4	5.2	7.8	0.5	3.5	27.4
	1992	6.2	1.2	0.0	0.0	0.0	7.4
Runs (n=5)	1988	2.4	2.0	24.7	0.3	35.6	65.0
	1990	16.8	11.6	22.4	0.2	8.9	59.9
	1992	8.9	2.3	0.2	0.0	6.6	18.0

Note: SH = rainbow-steelhead; CT = westslope cutthroat; BT = bull trout; CH = chinook.

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## **Fisheries**

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### **Inland Fisheries**

#### **Habitat Improvement - North Fork Clearwater River Watershed**

The second year of a proposed three year fish habitat improvement project was completed in Beaver Creek (see challenge cost-share section). In addition, 120 instream structures were installed over a 5 km reach in the mainstem of Orogrande Creek to improve summer and winter rearing habitat for resident fisheries.

#### **Habitat Monitoring - North Fork Clearwater River Watershed**

Intensive habitat surveys were conducted on 20 km of inland fish streams in the Meadow Creek drainage (North Fork Clearwater River watershed). Meadow Creek is thought to be the stronghold for bull trout on the North Fork District. The habitat proved to be mostly suitable for bull trout in that it is a cold stream with very clean substrates. However, large wood, on the bank and in the stream was lacking for the most part. The results were alarming in that more brook trout than bull trout were found. Other suspect impacts on bull trout in Meadow Creek are overfishing of the large bull trout holding pools found close to the mouth.

Because of the lack of bull trout in the "premier" bull trout area, and because of the recent petition to list the species as threatened or endangered, the remainder of the upper North Fork Clearwater River and its tributaries were targeted for surveys in 1993.

#### **Water Temperature Monitoring - North Fork Clearwater River Watershed**

Thermographs were established in Quartz Creek and Meadow Creek in keeping with recommendations made for these Stream Segments of Concern. In Quartz Creek, one was placed in the mouth and the other above any anthropogenic impacts in order to identify any difference that might be associated with logging. Problems with the upper recorder prevented a comparison of data. However, the average temperature during August for the lower station was about 15 degrees C; a temperature within the Forest Plan standard of 14-16 degrees C.

Thermographs in upper and lower Meadow Creek showed a difference, although there is no development within the drainage. During August, average temperatures in lower Meadow were about 14 degrees C, while those in upper Meadow were about 11 degrees C.

Stream temperature monitoring was also initiated in Sylvan Creek and Tamarack Creek within the Orogrande Creek drainage. Data indicates that stream temperatures in Tamarack Creek are within the Forest Plan standard of 14-16 degrees C. However, stream temperatures in Sylvan Creek exceeded the desired level 12 percent of the days sampled during the summer of 1992.

#### **Fisheries Population Monitoring - North Fork Clearwater River Watershed**

Population data indicated that cutthroat trout were the primary species in Meadow Creek (about 4 fish/100m<sup>2</sup>). Brook trout was found in lesser numbers (<1 fish/100m<sup>2</sup>) in the middle and upper reaches. Rainbow trout and bull trout were also in lesser numbers (<1 fish/100m<sup>2</sup>), but were situated towards the mouth.

### Summation

The most significant event relevant to the fish resources of the Forest in 1991-1992 was the drastic decline in escapement of spring chinook to the Clearwater River Basin. This decline was evident from our sampling of parr densities in the summer and adult spawning (redd counts) in the fall. The Clearwater stock continues to teeter on the threshold of extinction.

Some developed watersheds are showing signs of recovery with respect to substrate sediment. The mainstem channels of Orogrande, West Fork Squaw, and West Fork Papoose creeks have apparently recovered. However, this may be short term as many of the tributary drainages continue to have high stored sediment loads.

Many other developed watersheds display substrates with excessive sedimentation or the lack of a high quality riparian area to provide stream shade, woody debris and sediment filtering. Watersheds in this condition include Lolo, Eldorado, Canyon, Pete King, and Deadman creeks to name a few. Most of the developed drainages are still below their respective Forest Plan standards.

### Literature Cited

Clearwater National Forest 1992a. Lolo Creek Subbasin - Assessment of Ongoing Management Activities. Clearwater National Forest, Orofino, Idaho.

Clearwater National Forest 1992b. Middle Fork and Lochsa River Subbasins - Assessment of Ongoing Management Activities. Clearwater National Forest, Orofino, Idaho.

Espinosa, A. and K. Lee 1991. Natural propagation and habitat improvement - Idaho: Lolo Creek and upper Lochsa. A final report submitted to the Bonneville Power Administration. BPA Project 84-6 (DE-A179-86BP-62665). Clearwater National Forest, Orofino, Idaho.

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## Heritage Program

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## Heritage Program

(formerly called Cultural Resources Program)

### Goal

Manage and interpret heritage 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 heritage resource values while enhancing public use and awareness. Nominate significant heritage sites to the National Register of Historic Places.

### Strategy

Examine and conduct appropriate surveys on all proposed project areas, document findings and provide direction for project implementation to ensure compliance with Heritage Resource laws. 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 heritage resources. Continue to assess heritage sites for nomination to the National Register of Historic Places.

<b>Item No. 4</b>	<b>Protection and Condition of Heritage Resource Sites</b>
Frequency of Measurement:	Annual
Reporting Period:	Annual

**Monitoring Action**

The Forest and District archaeologists will monitor heritage resources on the Forest. A minimum of 25% of all projects that may affect the following sites will be monitored:

- Known or suspected archaeological sites.
- Sites listed in the National Register of Historic Places.
- Sites considered eligible for listing in the National Register of Historic Places.
- Sites suspected of having heritage significance.

**Accomplishments/Findings**

Table 1 shows the number of projects, acres surveyed and sites identified during the course of project preparation.

**Table 1. Heritage Resource Surveys**

Year	Projects Tested**	Projects Surveyed	Acres Surveyed (Cleared)	Number of Sites Identified
1988	4	27	9,435	36
1989	1	16	4,246	26
1990	0	30	2,747	21
1991	5	85	5,227	20
1992	14	62	6,496	19

\*\*Archaeological test excavations are conducted in project areas within or near site locations, or on landforms that have a high probability of containing evidence of human activity. The tests indicate the absence, presence, and or amount of subsurface cultural material in project areas and help Forest Officials decide where ground disturbing developments may or may not take place.

Nineteen projects were monitored in FY 1992. This constitutes 65% of the sites that may have been affected by activities and therefore exceeds our monitoring plan minimum of 25%. Fourteen of these involved recreation/facilities construction while projects were in progress. Sites within the vicinity of another fourteen projects inventoried (mostly timber) were protected by redesigning project boundaries to avoid site disturbance. These avoidance techniques are in concert with the Guidelines for Standard Avoidance Procedures as described in Appendix B of the draft revised Programmatic Agreement (scheduled for final approval in March 1993) between the U.S.D.A Forest Service, Northern Region, the Idaho State Historic Preservation Officer, and the Advisory Council On Historic Preservation.

The Forest has a rather extensive backlog of unverified sites or sites that have been verified but not completely recorded. Unverified sites are sites that may or may not exist. These sites have come to the attention of the heritage resource staff through historical information and or informants. They are for the

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## Heritage Program

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most part thought to exist in a non-specific general area. In order to more effectively manage these types of sites, the Forest adopted a program in FY 1992 to do an intensive field search for unverified sites within or near project boundaries. If these sites are not located through intensive ground coverage they will be omitted from the unverified site list. All sites that have been field verified will be completely recorded.

Areas previously inventoried by currently unacceptable methods of survey (such as low-speed motorized/binocular survey) will continue to be re-inventoried to current standards. Likewise, older survey reports that have incomplete information (such as maps that do not clearly indicate the type of coverage or exact survey routes) will continue to be re-inventoried.

In situations where the Nez Perce Tribe may have concerns with spiritual, traditional gathering, or sacred areas, the Forest follows the NEPA scoping process to inform the tribe of all upcoming projects. Where projects are located in highly probable Nez Perce traditional use areas, testing is generally always initiated. In such cases, the tribe is notified of the proposed project and the dates and extent of the testing. Once the tests are completed and reviewed by the State Historic Preservation Office (SHPO), the tests results and SHPO comments are sent to the Tribe for comments and concerns.

The Forest continues to notify the Tribe of any disturbing effects to Nez Perce prehistoric/historic sites. Most sites (that the Forest is aware of) that are of major concern to the Nez Perce Tribe are monitored annually for the effects of vandalism, weathering, or disturbance by Forest visitors.

The Forest initiated a revision of the Programmatic agreement between the north Idaho (R-1) National Forests, the Advisory Council on Historic Preservation (ACHP) and the Idaho State Historic Preservation Officer (SHPO) designed to streamline the compliance process. It is expected to be signed during the first part of 1993. Although the agreement will require more coordination with the districts and higher standards for inventory and site protection, the compliance process for some projects may be faster and run smoother.

The Forest again hosted a 4-day trip along the Lolo Trail for Forest Service, National Park Service and Tribal officials. The objectives of the trip were as follows:

1. To view and understand the wide variety of Heritage Resources along the Lolo Trail System.
2. To discuss the draft "Lolo Trail System Guidelines" and its impacts on Heritage Resources, and to suggest additions, revisions, and alternatives to the Guidelines.
3. To obtain agreement to re-establish an actual trail within the Lolo Trail corridor across the Clearwater National Forest.
4. To discuss administration of and compliance with heritage resource laws, regulations, and procedures of the proposed Guidelines, particularly the possibility of a "Programmatic Agreement" between the Forest Service, SHPO, and the Advisory Council.

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## Heritage Program

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The Forest participated in a Passport in Time sponsored by the Bureau of Land Management and Forest Service. Called "Journeys to the Past Heritage Celebration", it was an opportunity to learn of lives and ways long past through exhibits, living re-creations, and traditional crafts. Over 10,000 people attended the event, including 4,000 school children.

The following events and activities were sponsored to promote and enhance heritage resources on the Forest.

### **Pierce Ranger District**

Boy Scouts from Moscow, Idaho helped construct a bridge along the Nee-Me-Poo trail route to keep hikers out of marshy grounds and off steep embankments.

The Northwest Children's Home continues to volunteer maintenance of a two mile section of the Lewis and Clark National Historic Trail.

Through the "Take Pride In America" program, the Forest continued work on the Nee-Me-Poo and Lewis and Clark National Historic Trails. Most work included drainage construction on trails. However, other work occurred such as painting signs and cleaning up of litter and hunter camps.

Members of the Smithsonian Institute and Forest officials visited significant sites along the Lolo Trail and discussed the opportunities for trail management.

The annual Q'USEYN'EISSKIT trail ride was sponsored by the Clearwater National Forest and the Nez Perce Tribe. The focus of this ride was to discuss trail locations and possible relocations.

### **Palouse Ranger District**

The District archaeologist gave slide show presentations to local interest groups about history of the Palouse Ranger District.

### **North Fork Ranger District**

All Forest archeologists (including seasonals) were involved in a test excavation as part of their training. Evidence of Native American use was found at this site.

### **Lochsa Ranger District**

The 1930-era Lochsa Historical Ranger Station, located along Highway 12, approximately 65 miles east of Kooskia, Idaho, was preserved for public interpretation as a memorial to the history of Forest Service efforts to bring management to the National Forests. The design for the Boulder Creek Cabin Historic interpretive displays was completed. In addition, the Regional Historic Building Preservation Team assisted in replacing the foundation for the Ranger's Dwelling.

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## **Heritage Program**

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A unique archaeological excavation project began near Kooskia, Idaho which involved a partnership between the Nez Perce Tribe, the University of Idaho Department of Anthropology, local schools, and the Clearwater National Forest. The excavation was under the U.S. Forest Service's "Windows on the Past" cultural resource awareness program. The project focused on excavation of 6 test units at the Tukaytesp'e (tuh kay tesp'e) Picnic Area, 2 miles west of Kooskia on the banks of the Middle Fork of the Clearwater River. From a previous excavation in 1990, the area was likely the site of a prehistoric Nez Perce pithouse. The data collected by University, Tribal, and Forest Service cultural resource specialists and archaeologists will be used by anthropologists to determine the age of the structure, what it may have looked like, and what activities occurred during its occupation. The data will be used to plan and develop future interpretive signing at the site.

### **Powell Ranger District**

Elk Summit Guard Station has been determined eligible for the National Register of Historic Places. The Regional Historic Building Preservation Team worked at Elk Summit to stabilize structures that were deteriorating.

## 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.

<b>Item No. 15</b>	<b>Minerals Prospecting and Development</b>
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

#### Caseload

A total of 128 minerals cases were processed on the forest during 1992. This was 48 % of the minerals activity predicted in the Forest Plan. It was lower than the 178 cases processed in FY 1991. This

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## **Minerals**

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decrease in minerals activity on the forest may reflect a drop in metal prices, or the status of local employment during the period, or both. The cases reported for both years are significantly lower than the 265 average annual number of cases anticipated in the Forest Plan.

### **Program Funding**

Regional FY 1992 allocations for the forest minerals program totaled \$100 M or 69% of our Forest Plan level for the year. This funding was adequate for the number of cases processed. However, it was still only 91 % of the base level of \$110M necessary for funding a professional minerals geologist plus the support and district costs for case administration. Fortunately, the caseload was down and few significant earth-disturbing operations were active. The forest was also fortunate that the forest minerals geologist was able to be funded off-forest for 6 weeks of the year. This allowed more money for minerals administration at the district level.

### **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 100 ounces of gold were mined from the forest during FY 1992. The value of this amount of gold would be approximately \$32,200 at the FY 1992 average price of \$320/oz.

During the summers of FY 1990 and FY 1991 the Idaho Geologic Survey, the U.S. Geologic Survey, and the U.S. Bureau of Mines worked together to conduct a mineral resource appraisal of the recommended wilderness areas on the forest. As a result of this study, two mineral appraisal reports and two geologic maps were published and distributed to the public in FY 1992. Both reports showed favorable mineral potential in portions of the areas studied. A significant amount of claim staking and prospecting activities occurred in the proposed Great Burn Wilderness as a result of these publications. The prospecting activities conducted in FY 1992 did not result in significant disturbance of the land.

The forest received three applications to prospect for minerals on acquired lands in FY 1992. The minerals applied for included feldspar, mica, and limestone. These minerals were not extracted in any significant quantity from the forest.

### **Mineral Patents**

In FY 1991, the forest received a mineral patent application for 20 acres of Federal land on the Palouse District. The lands included in the application were tested and evaluated for mineral validity in FY 1992. The land was determined to have valid mineral rights and a patent is expected to be issued sometime in 1993.

**Common Variety Minerals**

The forest provides mineral materials for road surfacing to county and state agencies, for Forest Service roads, and for use in private industry. Forest records show that 119,047 cubic yards of material were provided in FY 1992 with an estimated value of \$904,132.

**Monitoring**

All active earth-disturbing mining claim activities were monitored for compliance with operating plans and Forest Plan standards and State and Federal regulations. The Forest Service identified one public safety violation in FY 1992. This was an unsafe vehicle bridge over a perennial creek. Following negotiations with the operators, the bridge was removed and the area was reclaimed in FY 1992.

Impacts to all surface resources as a result of mining were mitigated in compliance with Forest Plan standards and guidelines and no violation notices were issued. No impacts on mining activities from other resources were identified.

<b>Item No. 36</b>	<b>Minerals Resource Availability</b>
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**

The Clearwater National Forest consists of a total of 1,812,700 acres. Of these acres, 259,167 (approximately 15 percent) are in the Clearwater portion of the Selway-Bitterroot Wilderness and are withdrawn from mineral entry.

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## **Minerals**

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In addition to wilderness, the forest currently has 52 individual sites withdrawn from mineral entry. This figure is unchanged from FY 1991.

Mineral potential reports were completed for six scenic easements along the Lochsa River and two land exchange proposals on the forest. Recommendations were to proceed with all easements and exchanges.

## 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.

<b>Item No. 6</b>	<b>Livestock Forage Available, Range in Good Condition per Established Allotments</b>
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 1992. Range allotments were monitored for use, possible resource damage, and maintenance needs. Range conditions overall are good. Some minor permit modifications were necessary during FY 1992 to protect range resources. There are currently 65 permittees using the available range on the Forest. There were 2,500 cattle and 2,100 horses permitted to graze on the Forest. This amounted to 13,000 Animal Unit Months (AUM's).

The Palouse Ranger District accomplished 300 acres of noxious weed control with its eradication project targeting creeping matgrass.

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## Recreation

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## 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 National Forest has developed several strategies to meet the Forest Plan goals in recreation. These 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 recreationists utilizing recreation vehicles (RVs) and represents the highest level of campground development on the Forest. Facilities within the Highway 12 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. Facilities at all sites will be reconstructed to meet the needs of people with physical disabilities where topography allows.

**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. Facilities at all sites will be constructed to meet the needs of people with physical disabilities where topography allows.

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

<b>Item No. 2</b>	<b>Wide Spectrum of Recreation Opportunities</b>
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 (see Table 1). This was especially true for on-the-ground operation and maintenance of recreation facilities and administration of recreation use, after costs for a base recreation organization, associated expenses, and timber support were subtracted from the Regional allocation.

Funding for developed site operation was approximately 35% of Forest Plan needs. Campgrounds were kept open to the public through a variety of reduced service level strategies. Older American programs and volunteers supplied much of the labor to do the daily maintenance work required. Even so, we were unable to keep up with routine maintenance needs and the backlog of this work continued to increase.

The Forest may be losing a significant amount of user fees due to our inability to provide adequate compliance checks and/or visitors services at our sites.

#### **Recreation Use**

Recreation use in FY 1992 was up 10% from the previous year and up 72% from 1988 (see Table 1). The recreation use number reflects total use of the Forest, not just campgrounds. The art of estimating people in all the backcountry roadless areas, in all the roaded areas, and in the Wilderness continues to be a significant challenge. User estimates are gathered from a variety sources. While fee campgrounds provide the most reliable user data, samples at trail heads and other locations also produce

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## Recreation

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reliable information. With the limited budget over the last ten or more years, little time has been spent in attempting to attain a high degree of reliability in use estimations.

**Table 1. Recreation Use and Funding**

	Forest Plan based on 1980	1989	1990	1991	1992
Funding (M \$)	1,100	NA	527	674	578
Recreation Use (M visitor days)	522	750	756	814	899
Fees collected	NA	36,256	48,089	50,661	51,773

Despite limited attention given to gathering use statistics, some significant changes were observed at specific locations in FY 1992 which gives credence to the use increases noted in Table 1. The entire Palouse District is showing significant increases in recreation use. For example, sign-up sheets at Giant White Pine trailhead are up 40% since 1987; use at Giant Western Red Cedar Tree is up 34% in five years; Elk Creek Falls visitation is up 19% in five years. Fee collections on the Palouse district campgrounds are up 77% in three years.

### Fourteen day limit

For years the forest has had a regulation limiting a stay in the Forest to 14 days in one place. The 14 day limitation was developed to give everyone equal access to publicly owned lands. This regulation has seldom been enforced. However, complaints about groups moving in and "taking over" an area have increased in recent years. The typical complaint is about a group camped near a prime hunting or fishing area for long periods. Often these groups have returned to the same location for many years. In some cases family groups have camped at the same location every year for more than 50 years. These groups often feel that they "own" that piece of public land and resent "outsiders" intruding in their personal place.

The Elk Vulnerability study, conducted on portions of Pierce and Lochsa Ranger Districts, required closure of many camping areas and enforcement of the 14 day limit in the areas adjacent to the study area. Consequently, many long term groups moved to new areas and selected spots next to other long term groups. The resulting conflicts required significant Forest Service involvement. Consequently, Clearwater National Forest management has determined to increase the enforcement of the 14 limit forest-wide to prevent the long term "appropriation" of public lands and to prevent similar conflicts in the future.

Lack of personnel and funds to adequately record dates when users come and go prevents adequate enforcement of the 14 day rule. This will undoubtedly be a major limitation in the future. The areas of special concern include the North Fork of the Clearwater River and the Lolo Motorway.

### Recreation Planning

Plans for reconstruction of existing campgrounds along the Highway 12 corridor continued. The Forest Plan directed campgrounds to be upgraded to meet requirements of modern RV's and to repair deteriorating facilities before building new campgrounds. The strategy adopted set the following priorities:

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## Recreation

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1. Upgrade of Palouse Ranger District developed sites. (completed in FY 91)
2. Highway 12 corridor facility upgrade and improvement of Wild and Scenic River facilities.
3. Lolo Trail Corridor dispersed sites, interpretation.
4. North Fork Clearwater River campground restoration.

The 5-year Capital Investment Plan calls for road work in all campgrounds in the Highway 12 corridor, reconstruction or replacement of all toilets to remove odor problems, improved access for physically disabled persons, improved informational and interpretive signing, and replacement of many camping facilities such as fire rings and tables.

### Special Volunteer Projects/Events

The American public continues to demonstrate a willingness to perform volunteer work on public lands. In FY 1992, this included the following projects:

- The annual Take Pride in America project at Weitas Meadows continued work on the Nee-Me-Poo and Lewis and Clark National Historic Trails. Most work included drainage construction on opened trails but other work such as brushing and clearing vistas from the Lolo Motorway occurred.
- Construction of a bridge over Sherman Creek on the Lochsa River National Recreation Trail constructed by the Backcountry Horsemen of North Central Idaho.
- Panhandle Off Road Vehicle Association (PORVA) opened 40 miles of mainline trail.
- Latah County Snowdrifters groomed 100 miles of snowmobile trails on National Forest lands and 50 on other lands around the North-South Ski Bowl.
- Adoption of Little Boulder Campground by the Deary Lions Club and the city.
- Finishing work on Wilderness Gateway Pavilion Landscaping.
- Opening maintenance of Lochsa River campgrounds by North Idaho Correctional facility.

### Recreation Construction

In FY 1992, work continued on Wilderness Gateway Campground. Completion is scheduled for August of 1993. The work includes widening roads and camping spurs to accommodate today's modern recreation vehicle, replacement of deteriorated facilities, and the construction of facilities for physically disabled individuals at the campgrounds. At Lochsa Historic Station, a new toilet suitable for use by people with physical disabilities, was started.

<b>Item No. 14</b>	<b>Off Road Vehicle Use Impacts</b>
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.

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## Recreation

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The Forest Plan Proposed Wilderness Areas have drawn much of the attention of ORV users. However, this report also considers off-road uses on all lands 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 trails in areas recommended for inclusion in the Wilderness system and roadless areas (B2 and C6 respectively) are open for motorized use. The number and significance of complaints regarding conflicts increased sharply in FY 1991 and continued at about the same level in FY 1992. As in FY 1991, the majority of comments centered on three areas. They were the Windy Ridge - Cook Mtn. Trail east of Weitas Creek, the Five Lakes Butte area, and the Fish Lake area in the Upper North Fork Clearwater River. There was one report of an injury accident caused by the unexpected meeting of horse riders and motorcycle riders.

The presence of motorized use in a proposed wilderness area is unlikely to cause damage that is serious enough to compromise wilderness character. If, however, motorized use becomes established in an area that later becomes wilderness it could be significantly more difficult to stop that nonconforming use. District Rangers are evaluating the need for additional closures on a case by case basis. Complete closure of the trails is expected when a wilderness bill is passed by Congress. The extent of trail closures on trails leading to these areas will require further evaluation depending on the location of final wilderness boundaries established by Congress.

During the past two years, all road, trail, and area closures on the Forest were reviewed. In the past, many closures were implemented as part of another project. For example, many roads were closed in conjunction with or subsequent to timber sale activities to protect elk habitat or to reduce soil erosion. The review found a discrepancy in closure dates and purpose between adjacent road closures. Often the timing difference was a matter of 15 days (i.e. September 15 or 30). Where possible, dates were adjusted for consistency throughout an area.

Off-road vehicle interest are requesting more ORV access with fewer restrictions. They are also asking that the Forest Plan be changed to accommodate their needs, especially in management areas that currently prohibit or restrict their use. Other forest users are predominately against (one poll indicates 76% opposed) increased ORV use. The forest needs to increase efforts to locate and construct some trails to meet ORV users needs. It is possible that some ORV travel corridors could be located through currently closed areas but this would have to be done through National Environmental Policy Act (NEPA) analysis and full public involvement. If a corridor was acceptable it could be done on a project specific plan amendment basis. See further discussion in the Trails section of this report.

### North Fork Clearwater River

The North Fork of the Clearwater River, including Kelly Creek and Cayuse Creek, was identified as eligible for classification under the Wild and Scenic Rivers Act. As yet, suitability studies have not been done. Studies are scheduled to begin in FY 1993. Recreation visitation to the North Fork and its major tributaries continues to increase at a moderate rate. In most summer weekends, all developed campgrounds and undeveloped campsites along the road paralleling the river are occupied. Developed facilities were installed during the 1960's and are not adequate to accommodate larger RVs now in use.

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## Recreation

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Undeveloped campsites lack toilets and are used often enough that human waste becomes obvious at some sites early in the summer.

The North Fork of the Clearwater is listed in floating guide books. Visitors now come in from around the United States and Canada. Although crowding is not a factor, the pattern of change in visitation is following that exhibited on other Idaho rivers and is expected to increase. The Idaho Outfitters and Guides Licensing Board changed its regulations to permit licensing of floating outfitters in the North Fork of the Clearwater River in 1992. A number of outfitters have expressed an interest in applying for licensing and permits. The Forest plans to begin scoping of public attitudes and analyze the potential effects of this activity in FY 1993.

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## **Research Natural Areas**

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## **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. Ten of them were officially designated previously. They are Aquarius, Bald Mountain, Bull Run Creek, Chateau Falls, Dutch Creek, Four-bit Creek, Grave Peak, Lochsa River, Sneakfoot Meadows and Steep Lakes.

The final two, Fenn Mountain and Rhodes Peak, are in the process of being officially designated.

## Research Needs

<b>Item No. 24</b>	<b>Research Needs</b>
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 11-15,16). As additional research needs are identified, they will be added to this list.

### Findings

Additional research needs that were identified are:

- Identification of alternate methods of slash disposal due to smoke management and air quality requirements. (FY 1990)
  
- Long term monitoring. Are the fisheries habitat structures and sediment removal measures achieving desired objectives? (FY 1991)

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## Riparian Areas

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## 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.

<b>Item No. 10</b>	<b>Riparian Area Condition</b>
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

#### Instream Channel Stability - Introduction

Baseline or current riparian conditions, including channel geomorphologic characteristics, were monitored on many of the major streams on the Forest between 1988 and 1990. Permanent channel cross

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## Riparian Areas

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sections were established at the mouths of 146 streams. Gradient, instream sediment concentrations, channel substrate composition, and photo points were established. Channel type and stability was determined for each of the streams. The Forest plans to selectively monitor many of these streams on a five to ten-year interval to determine trends in channel stability and instream sediment. An attempt will be made to associate cause with effect.

In FY 1992, the process of data analysis for these streams was initiated. Time only permitted the analysis of 23 channels in detail for instream sediment and riffle armor stability and stratification into basic parent material type. Our ultimate goal is to analyze all 146 channels by parent material type, landform, and landtype association. These watersheds would then be stratified by disturbance to determine base levels and impacts from sediment producing activities.

Instream sediment was analyzed using the Wolman pebble count technique. This technique measures a minimum of 100 particles in a run or riffle channel cross section. The data was then plotted by percent in each size class, from particles 2mm or less to large boulders. Where gravel or cobble channel types existed, a riffle stability index (RSI) was computed from a surveyed channel cross section. The gradient of the same run/riffle was also recorded. The index numbers can range from less than 50 to 100. An index number of 100 represents a riffle that is entirely aggraded. The range of indices between 60 and 99 are to be regarded as a continuum of aggradation with no single index number to be interpreted as a threshold. Index numbers between 40 and 60 indicate riffles that are in dynamic equilibrium. Index numbers less than 50 may either indicate stable large bed element channels or channels where downcutting (degradation) has occurred (Kappesser, 1992). This data is presented in the results section of this report. The instream sediment and RSI analysis has been stratified by parent material to determine inherent erosion rates and their effect on stream channels. Additionally, we have stratified the information into developed and undeveloped watersheds to determine the impact of roading and logging. One note of caution; the results are preliminary and based on a small data set. Undoubtedly, our estimations of natural instream sediment by parent material will change as additional data is analyzed and stream channels are further stratified by landform.

Inherent levels of instream fines in a watershed are, in part, a function of erosion hazard and the mean particle diameter size of eroded material. Parent material type and landform can be used to stratify watersheds by these characteristics. Mean particle size is primarily a function of the parent material and erosion hazard is a function of particle size and parent material weathering. Parent materials such as batholith granitics can have variable weathering classes which can cause the erosion hazard to vary. Weathering classes for a particular parent material can be stratified by landforms. Data was analyzed in watersheds with four different parent material types: weathered granitics, weathered Border Zone, weathered Belt, and weakly weathered Belt. A description of each follows.

### Weathered Granitics

Weathered granitics represent watersheds with Idaho batholith granitics and associated gneissic parent materials. Bedrock weathering is variable but is dominated by rocks in the well weathered class. Granitics generally weather to a very coarse sand. Because most of the weathered particle size is coarse, cohesion is low. This low cohesion results in an erosion hazard that is medium to very high.

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## Riparian Areas

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### Weathered Border Zone

The weathered Border Zone represents watersheds with micaceous schists, gniesses, and associated rocks of the Border Zone parent material. Border Zone rocks vary in hardness and particle size. Therefore, weathering is variable and can be very closely associated with landform. Weathered material from Border Zone rocks is high in mica and has a very fine particle size and cohesion is high. Erosion hazard is medium to high.

### Weathered Belt

Weathered Belt represents a well weathered quartzite of the Belt series occurring in a few watersheds in the upper North Fork of the Clearwater drainage. The quartzite weathers to a uniform fine sand and has a very low cohesion. It occurs on all landforms and has a high erosion hazard.

### Weakly Weathered Belt

Weakly weathered Belts consist of quartzites, argillites, and siltites of the Belt series. These rocks are very competent and weakly weathered on all landforms. They have a low erosion hazard.

## Instream Channel Stability - Results

Instream sediment levels were stratified for the four parent materials and the results are presented in Figure 1. Streams in the *weathered granitics* of the Idaho batholith had the highest range of variability of percent fines (2mm or less) in their substrate. This range extended from 1% at Washington Creek (Forest boundary transect) to 75% at Sprague Creek, a tributary to the North Fork of the Clearwater River in the Pot Mountain area.<sup>1</sup> Ten weathered granitic streams were analyzed and had a mean of 24.7% fines.

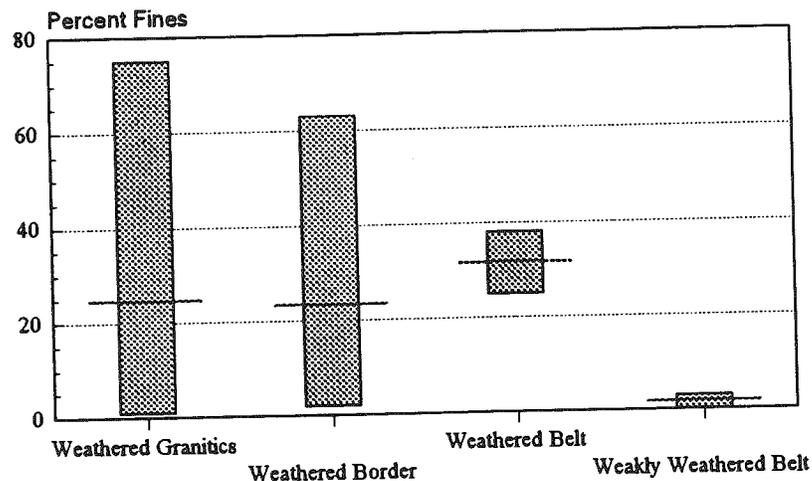


Figure 1. Channel substrate percent fines (2mm or less) by watershed parent material. Bar - Range of Data. Line - Mean.

**Table 1  
Weathered Granitics**

Watershed	Developed?	Channel Type	Qa <sup>1</sup>	% Fines <sup>2</sup>	RSI% <sup>3</sup>
Cub	No	A4	1.6	33	80
Sprague	No	A6	3.9	75	N/A <sup>4</sup>
Fish (Abv Friday)	No	C4	6.4	44	71
Squaw (NF)	No	B3	8.4	12	72
Bear	No	B3	24.4	14	33
Fish (Abv Hungary)	No	A2	53.2	1	N/A
<b>Mean</b>			<b>16.3</b>	<b>30</b>	<b>64</b>
Glade	Yes	B4	5.7	24	65
Deadman	Yes	B3	30.8	36	82
Washington (Forest Boundary)	Yes	C3	52.5	1	16
Washington (Mouth)	Yes	B2	80.2	7	N/A
<b>Mean</b>			<b>42.3</b>	<b>17</b>	<b>54</b>
<b>Total Mean</b>			<b>26.7</b>	<b>24.7</b>	<b>60</b>

<sup>1</sup> Qa = Mean Annual Flow in Cubic Feet per Second (cfs).

<sup>2</sup> % Fines = Channel substrate sediment 2 mm and less.

<sup>3</sup> RSI% = Riffle Stability Index in Percent of substrate moved at bankfull flow.

<sup>4</sup> RSIs can only be reliably calculated for gravel and cobble channels.

The weathered granitic parent material has a medium to very high erosion hazard depending on the degree of weathering and the landform, to some extent. Natural variability of instream sediment was found to be highly dependent upon watershed energy, or size, expressed as average annual flow (Qa). Small streams, where Qa is less than 10 cfs, have shown the greatest variability of instream sediment and the highest sediment loading (Figure 2). Large streams, with Qa's greater than 50 cfs, seem to have sufficient energy to remove fine sediment. The small weathered granitic streams used in this analysis reflect intensive erosion processes to a greater degree than watersheds with other parent materials and landforms. These watersheds are dominated by stream breakland landforms in which streams may at one time be found loaded with sediment because of the active erosion processes within the watershed. At another time, the same watershed may be found to be scoured to bedrock because of a recent debris torrent. This reflects the natural erosion cycle of these landforms and parent materials. This is the natural landforming process and reflects inherent fire and weather cycles.

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## Riparian Areas

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An example of this process is Sprague Creek. This creek showed 75% fine particles measured at the transect located near the mouth (Figure 3) with a  $Q_a$  of 3.9 cfs. An examination of this small watershed reveals that the soils lack an ash cap and have a long history of severe erosion. Vegetation is sparse because of poor site quality and frequent fire history. At sometime in the past, the channel upstream has experienced a debris torrent and the material has been deposited at the mouth of Sprague Creek and in the North Fork of the Clearwater River. This is entirely a natural process and is very common in these small, erosion prone, weathered granitic watersheds found extensively in breaklands of the North Fork of the Clearwater and Lochsa River drainages.

Other small headwater watersheds in the same parent material type with similar instream sediment loading have very different natural erosion regimes. This is a reflection of different landforms and landforming processes. An example is taken from an undeveloped portion of the upper West Fork of Deadman Creek. These headwaters are in low relief landforms which are not subject to debris avalanches or torrents and are not subject to severe, natural surface erosion. These streams have large amounts of stored sediment which is a long term, natural channel characteristic.

In larger, weathered granitic watersheds, such as Washington Creek, there appears to be sufficient energy at the mouth to remove instream fines (Figure 4). Washington Creek, at this location is a moderate gradient, boulder channel with a  $Q_a$  of 80.2 cfs. Percent fines in the stream are limited to less than 8% by the large flows. These large, weathered granitic watershed are made of many smaller watersheds that could very well be loaded with fines because of the processes previously described. From this analysis, we conclude that the large watersheds ( $Q_a$  greater than 50 cfs), may not be sensitive to sediment inputs, at least at current levels of roading and logging.<sup>2</sup> The smaller weathered granitic watersheds ( $Q_a$  less than 10 cfs), which combine to make these larger watershed, are in fact very sensitive to increases in stored sediment and need to be managed accordingly.

The differences in developed and undeveloped watersheds are presented in Figure 2. This data suggests there is a greater tendency for eroded material to accumulate in stream channels where  $Q_a$ 's are below 40 or 50 cfs. This information is preliminary and will be refined with additional analysis. One watershed, Deadman Creek, does stand out as exceeding our expectations for instream sediment based solely on the natural, physical characteristics of the watershed (Figure 5). Percent fines in the channel substrate measured at the mouth of Deadman Creek were determined to be 30% in 1988 (Figure 6). This level of fine particles in the substrate is higher than anticipated when considering the watershed size and granitic parent material. The RSI for Deadman Creek was also calculated at moving 82% of the channel substrate at bankfull flows. According to Kappesser, a stream moving this much of its substrate at bankfull flow is aggraded and may be approaching its geomorphic channel stability threshold (Kappesser, 1992). Examining Deadman Creek's watershed history, we see that WATBAL predicted that road construction in the West Fork of Deadman Creek exceeded its estimated geomorphic threshold from 1973 to 1975. Because of these impacts the site was remeasured in FY 1992 to determine trend in particle size distribution. At that time, percent fines was determined to be approaching 36%, an increase of nearly 6% in four years (Figure 7). This increase in percent fines completely collaborates with recent cobble embeddedness data trends (Stotts, 1993). The data suggests the sediment now being measured at the mouth of Deadman Creek is a wave of sediment moving through the watershed as a result of past road construction and logging in the West Fork.

Streams of the *weathered Border Zone* parent material had a high range of variability of percent fines in the substrate. This range extended from 2% at Quartz Creek to 63% in the West Fork of Pete King Creek. Eight weathered Border parent material streams were analyzed. They had a mean of 23.4% fine particles in the substrate. The data is presented in Table 2.

## Discharge vs. Instream Fines

### Developed and Undeveloped Watersheds

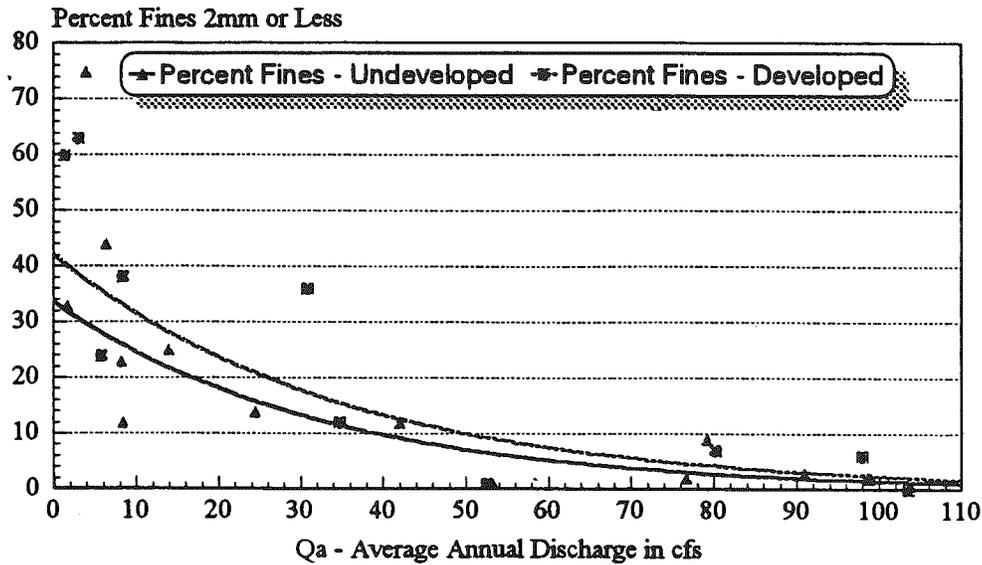


Figure 2. Developed: N = 10, R2 = 0.69. Undeveloped: N = 13, R2 = 0.46

## Washington Creek (Mouth)

### Developed Weathered Granitics

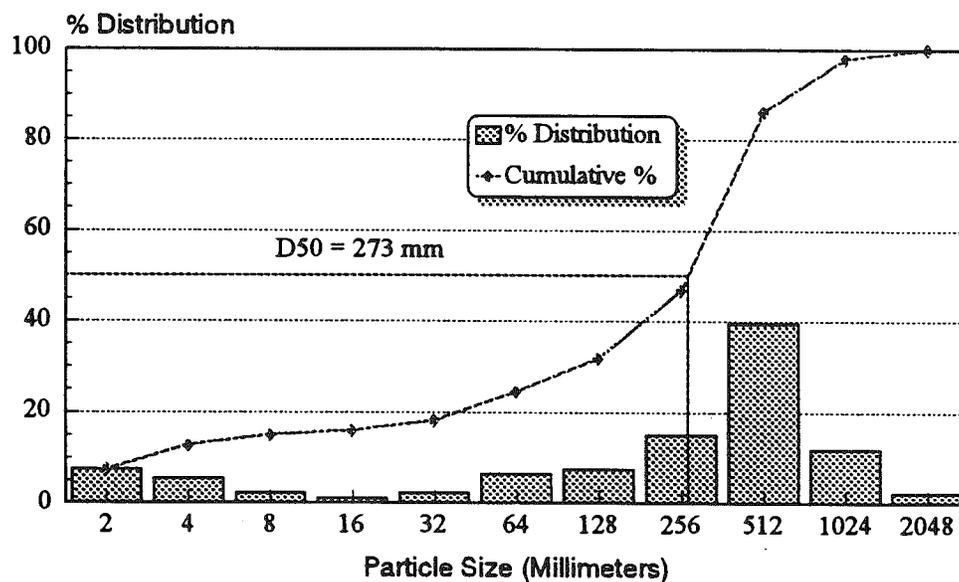


Figure 4. August 23, 1988. Gradient 3.0%. Channel Type = B2. Qa = 80.2 cfs

Riparian Areas

Washington Creek (Mouth)

Developed Weathered Granitics

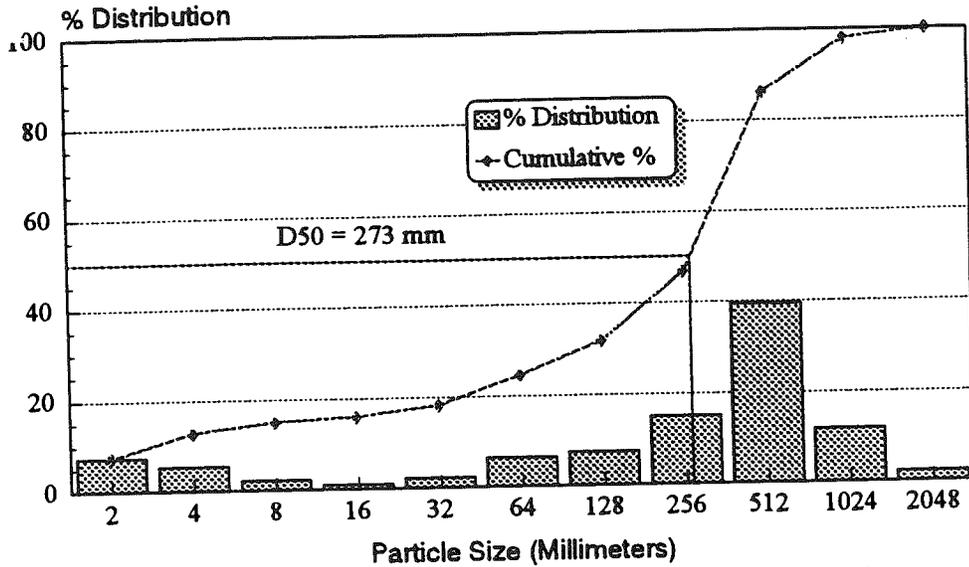


Figure 4. August 23, 1988. Gradient 3.0 %. Channel Type = B2.  $Q_a = 80.2$  cfs

Discharge vs. Instream Fines

Developed and Undeveloped Watersheds

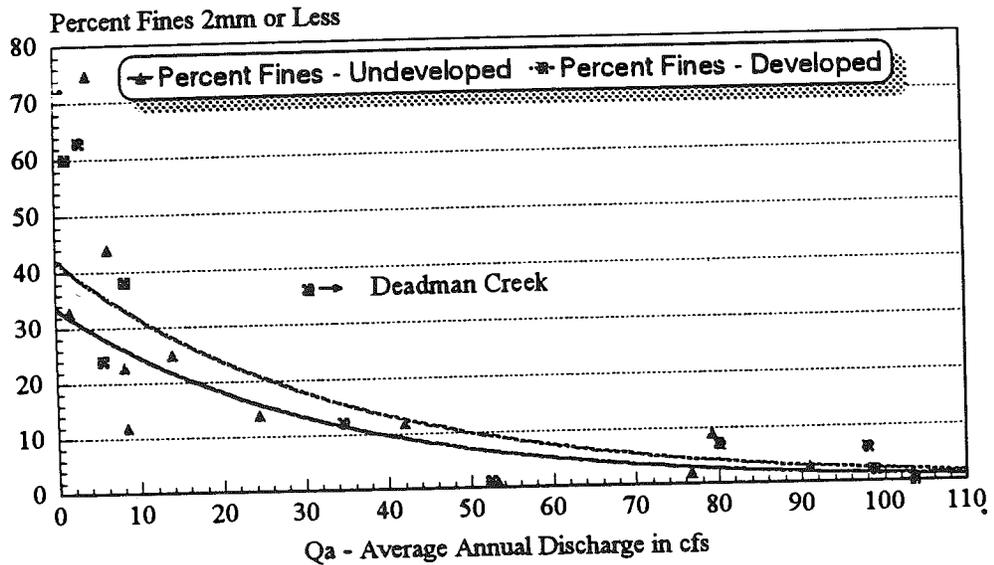


Figure 5. Developed:  $N = 10$ ,  $R^2 = 0.69$ . Undeveloped:  $N = 13$ ,  $R^2 = 0.46$

## Deadman Creek (Mouth)

### Developed Weathered Granitics

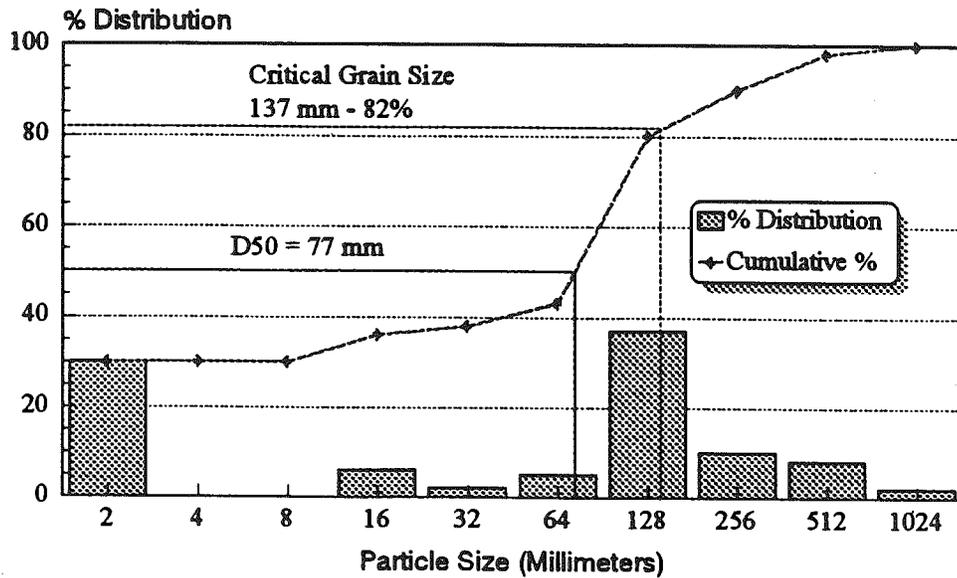


Figure 6. July 22, 1988. Gradient 2.5 %. Channel Type = B3.  $Q_a = 30.8$  cfs

## Deadman Creek (Mouth)

### Developed Weathered Granitics

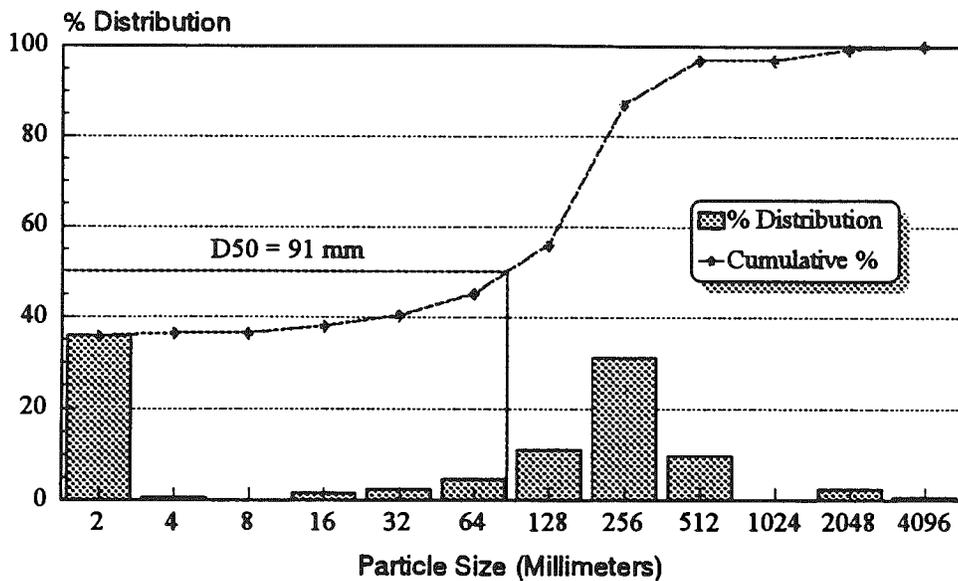


Figure 7. June 16, 1992. Gradient 2.5 %. Channel Type = B3.  $Q_a = 30.8$  cfs

## Riparian Areas

**Table 2  
Weathered Border**

Watershed	Developed?	Channel Type	Qa	% Fines	RSI%
Moose	No	A3	8.2	23	55
Quartz (Abv Wolf)	No	A4	42.0	12	79
Collins	No	B3	79.2	9	23
<b>Mean</b>			<b>43.1</b>	<b>15</b>	<b>52</b>
E.F.Pete King	Yes	A5	1.3	60	N/A
W.F.Pete King	Yes	B5	3.1	63	N/A
Pete King	Yes	B4	34.7	12	45
Skull (Abv Collins)	Yes	B3	98.0	6	34
Quartz	Yes	B3	98.8	2	45
<b>Mean</b>			<b>47.2</b>	<b>29</b>	<b>41</b>
<b>Total Mean</b>			<b>45.7</b>	<b>23.4</b>	<b>47</b>

This weathered Border Zone parent material has a medium to high erosion hazard depending on the degree of weathering and the landform, to some extent. As with the weathered granitic streams, the variability of instream sediment was found to be highly dependent upon watershed energy (Figure 2). Quartz Creek at the mouth (Figure 8) and Skull Creek above Collins (Figure 9), with Qa's that approach 100 cfs, had very little stored sediment. Moose Creek, with no development and having an average annual flow of 8.2 cfs, had 23% fines (Figure 10). Based on parent material and watershed size, the East (Figure 11) and West Fork (Figure 12) of Pete King Creeks should have a stored sediment that would somewhat exceed this 23% under natural conditions. From Figure 2, using the natural sediment curve, one could predict stored sediment as occupying approximately 30 to 35% of the substrate of these streams. In fact, these streams have stored fines of 60 and 63% respectively. Much of this apparent increase in sediment is suspected to be management induced sediment. In the West Fork of Pete King Creek, WATBAL predicted that the estimated geomorphic threshold was exceeded for 13 years, from 1960 through 1972. It is probable that in these low energy weathered Border streams that this anthropogenic sediment remains to this date. For an analysis of 15 years of suspended sediment and discharge data on Pete King Creek, see "Pete King Creek Water Quality Monitoring Results" (Jones, 1992).

The *weathered Belt* parent material has a high erosion hazard. The data gathered showed that streams had a mean of 31.5% instream fines, the highest of any parent material (Figure 1 and Table 3). This may be the result of a small sample size as only two streams were sampled. The sample size was small because there are very few weathered Belt watersheds on the Clearwater National Forest. Another reason for the high mean is that one data set is from Deception Creek (Figure 13), which has a long history of management induced sediment production and loading. Deception Creek has 38% fines and

a RSI of 96%. This RSI is an indication of the percentage of the channel substrate that is moving during bankfull flow. The high RSI also indicates a channel that is severely aggrading (Kappesser, 6/92). Logging began in the Deception Creek watershed

## Quartz Creek (Mouth)

### Developed Weathered Border

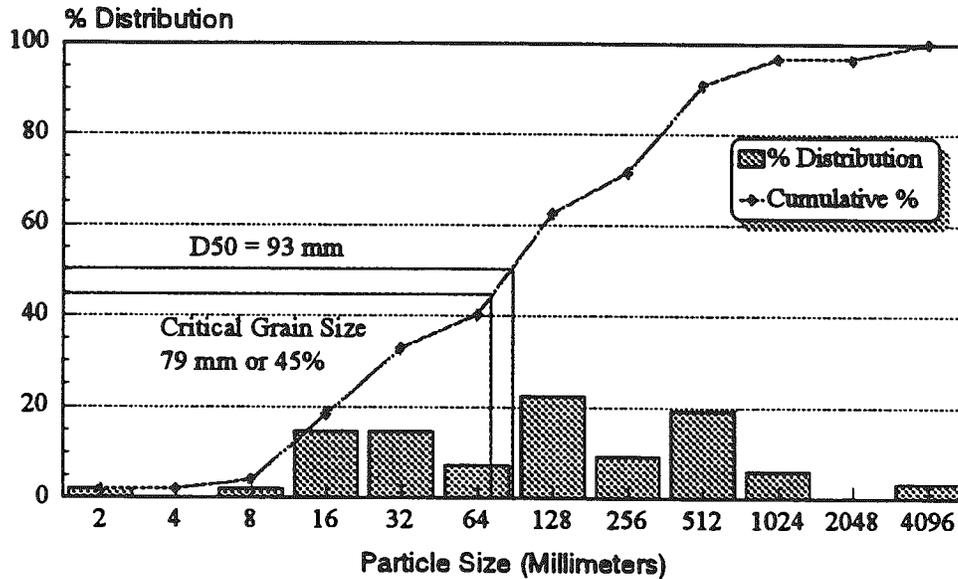


Figure 8. September 28, 1989. Gradient 1.6%. Channel Type = B3. Qa = 98.8 cfs

## Skull Creek (Above Collins)

### Developed Weathered Border

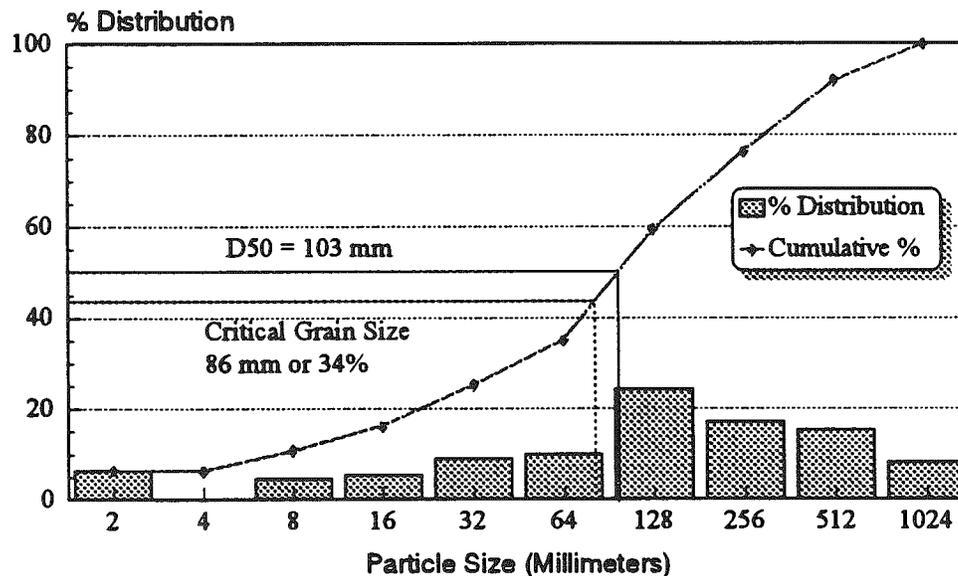


Figure 9. September 5, 1989. Gradient 2.0 %. Channel Type = B3. Qa = 98.0 cfs

Riparian Areas

Moose Creek (Above Mining)

Undeveloped Weathered Border

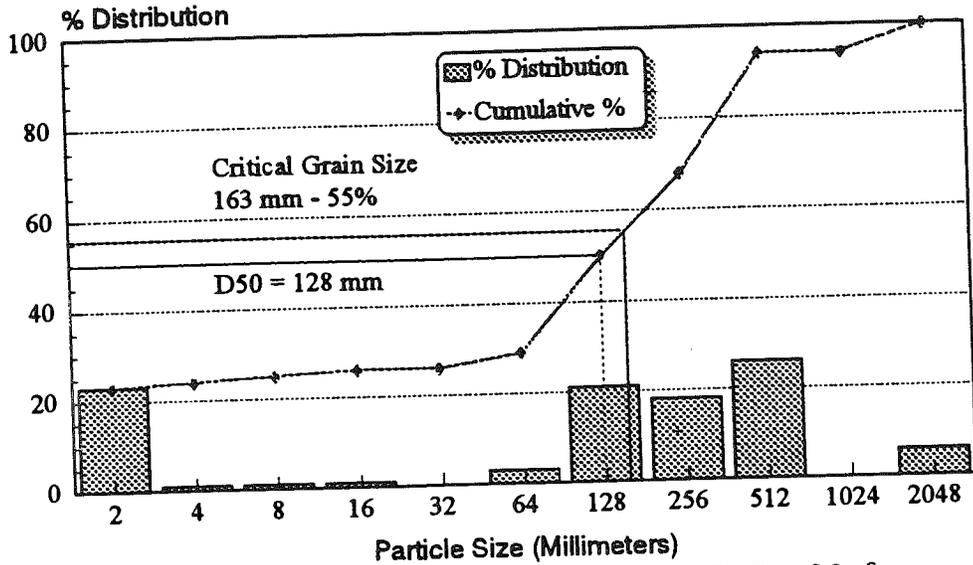


Figure 10. June 18, 1989. Gradient 5.2%. Channel Type = A3. Qa = 8.2 cfs

East Fork Pete King Creek

Developed Weathered Border

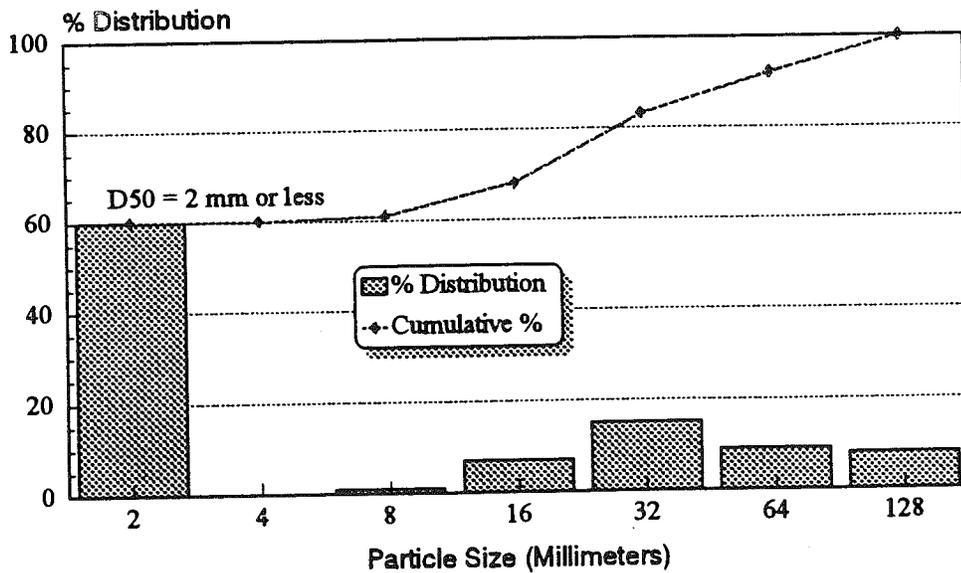


Figure 11. August 30, 1991. Gradient 6.8%. Channel Type = A5. Qa = 1.3 cfs

## West Fork Pete King Creek

### Developed Weathered Border

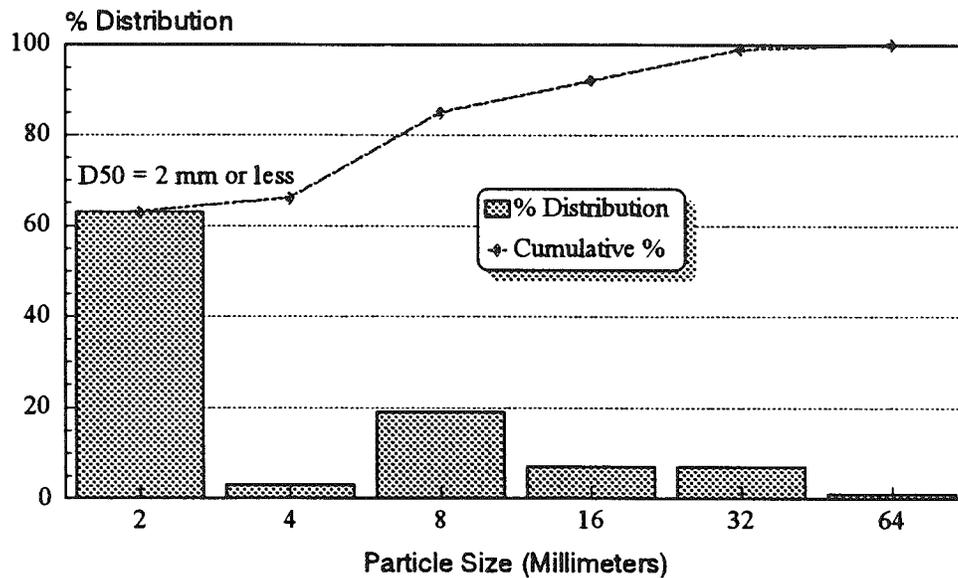


Figure 12. August 30, 1991. Gradient 1.7%. Channel Type = B5. Qa = 3.1 cfs

## Deception Creek (Mouth)

### Developed Weathered Belt

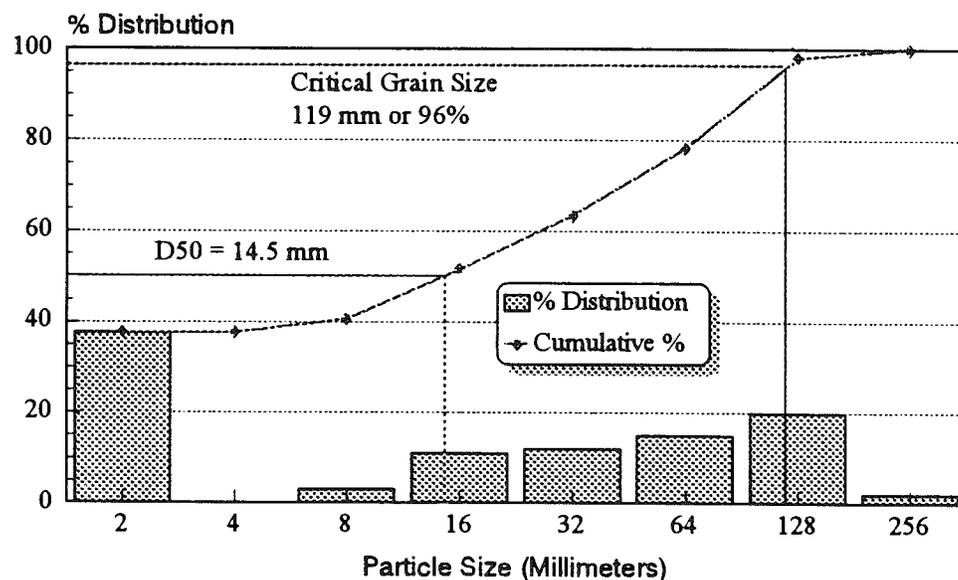


Figure 13. June 20, 1989. Gradient 3.2%. Channel Type = B4. Qa = 8.4 cfs

## Riparian Areas

in 1965. Activity was so intense that WATBAL predicted the geomorphic threshold would be exceeded that first year. By 1967 sediment production was predicted to exceed the geomorphic threshold by over five times. The estimated threshold was exceeded until 1985, or for 21 years. This, coupled with high surface erosion hazards and high ongoing levels of sediment production in a low energy stream, contributed to excessive instream fines and the high RSI.

**Table 3**  
**Weathered Belt**

Watershed	Developed?	Channel Type	Qa	% Fines	RSI%
Hidden Deception	No	B3	13.9	25	66
	Yes	B4	8.4	38	96
<b>Mean</b>			<b>11.2</b>	<b>31.5</b>	<b>81</b>

The *weakly weathered Belts* are the most stable parent material analyzed. This is reflected in the channels mean instream fines of 1.7% (Table 4). Although the authors believe that the low value of instream fines highly reflects the competency of the parent material, watershed energy is also playing a role. All three streams sampled are on the high end of the Qa curve in Figure 2; therefore, we expected to find low levels of sediment. Additional channel cross sectional data is needed in small, weakly weathered Belt watersheds to further determine parent material relationships and development to the level of instream fines. However, we would expect channel sediment to be less in this stable parent material than in parent materials previously discussed. The average RSI for the three streams analyzed was 33%. This indicates these are stable, large bed channels. From the data collected at Long Creek (Figure 14) and Lake Creek (Figure 15), it is apparent that management activities in the Lake Creek watershed are currently having no observable impacts at the mouth of the stream.

**Table 4**  
**Weakly Weathered Belt**

Watershed	Developed?	Channel Type	Qa	% Fines	RSI%
Meadow	No	C3	76.7	2	14
Long	No	B3	90.9	3	47
Lake	Yes	B3	103.6	0	38
<b>Mean</b>			<b>90.7</b>	<b>1.7</b>	<b>33</b>

## Long Creek (Mouth)

### Undeveloped Weakly Weathered Belt

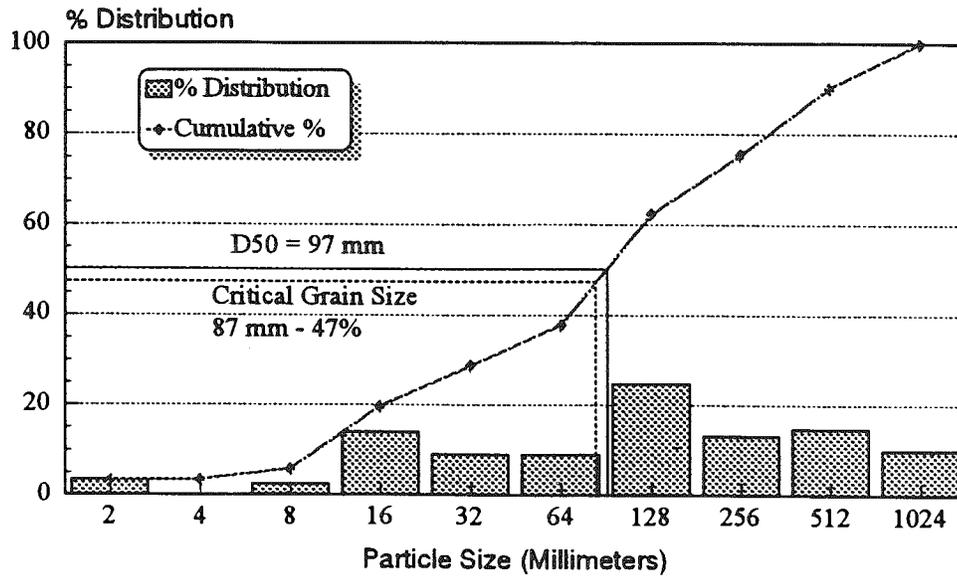


Figure 14. August 30, 1989. Gradient 2.2%. Channel Type = B3. Qa = 90.9 cfs

## Lake Creek (Mouth)

### Developed Weakly Weathered Belt

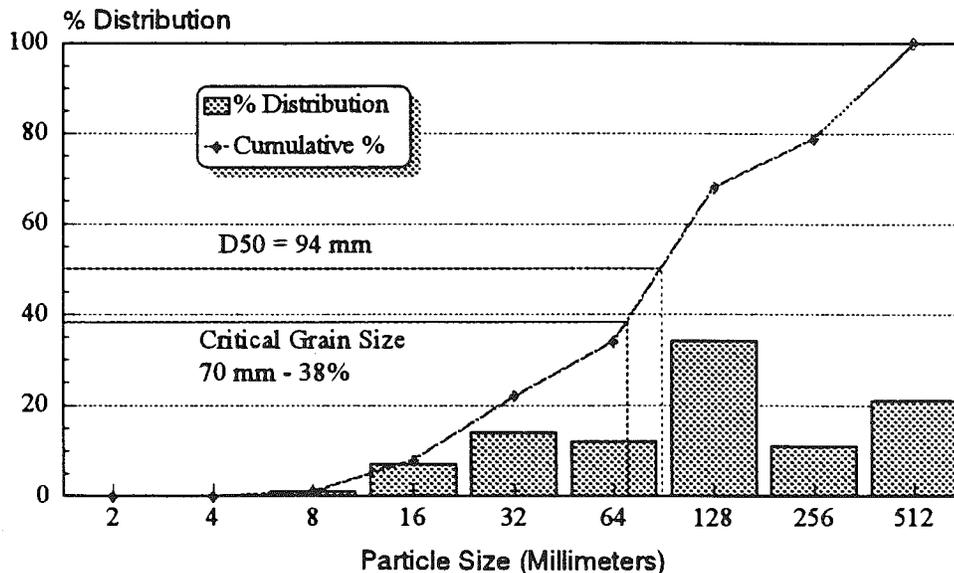


Figure 15. September 27, 1989. Gradient 2.0%. Channel Type = B3. Qa = 103.6 cfs

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## Riparian Areas

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### Instream Channel Stability - Conclusions and Recommendations

Data and analysis presented in this report clearly indicate that several physical watershed characteristics influence the accumulation of instream fines in both developed and undeveloped watersheds. These relationships and characteristics need to be understood and defined when analyzing the effects of development on beneficial uses. In fact, variation in instream sediment in smaller streams (less than 10 cfs) is greater for landforms and parent material erosion hazards than the variation between developed and undeveloped watersheds for this very limited data set.

To strengthen these relationships, the remaining cross sections in our data base will need to be analyzed. There are approximately 120 more stream cross sections that have been measured and could be used to further refine these conclusions. We also have additional needs for transects in the frost churned, basalt, and glacial tills to characterize these parent materials. Additional transects are needed in the small, weakly weathered Belts to determine the base level of instream fines and the relationship to the larger weakly weathered Belt streams presented in this paper. Future sampling by soil scientists, hydrologists, and fisheries biologists will need to be stratified by landform and parent material. This will enable a more accurate interpretation of that data as to the effects of past and potential development on beneficial watershed uses.

Data analysis in the Deception Creek watershed indicated that 96% of the stream substrate is moving during bankfull flow. This is an extremely high RSI that is characteristic of a stream that is out of dynamic equilibrium and is aggraded. In *Watershed Condition Analysis for the Roaded Watershed, Final Report*, Deception Creek was placed in the "yellow" watershed category, or found to not be currently meeting Forest Plan standards (Jones, 6/92). Based on the analysis in this report, we recommend that Deception Creek be moved from the "yellow" category to the "red", because this stream is estimated to be currently exceeding its geomorphic threshold.

<sup>1</sup>The reach in which the Washington Creek transect is located does not accurately represent actual instream conditions of the majority of the stream. Actual sediment levels have been observed to be substantially higher than reported here.

<sup>2</sup>Some watersheds greater than 50 cfs average annual flow were apparently impacted to such a great extent during the 1960's and 1970's that they had large mid and point channel bars of sediment. The North Fork of the Clearwater River was one such channel when numerous road failures and landslides were occurring due to extensive, poorly located and designed roads on unstable landtypes. The Lochsa River was also in a highly disturbed state due to landslides and surface erosion caused by the construction of Highway 12. These impacts apparently exceeded these rivers capacities to remove this sediment, at least in the short term. This sediment has now moved through these streams.

### Instream Channel Stability - Additional Analysis

In addition to the detailed information presented, all instream channel stability data collected on the Clearwater National Forest was stratified by Rosgen channel type. This data is presented in Figure 16 through 18. In Figure 16, the steep Rosgen "A" channels are shown. The great scatter in the data where  $Q_a$  is less than 40 cfs is probably due to the natural watershed and channel processes previously described. It is also likely caused by some channels aggrading and some degrading. These processes apparently mask any changes in instream sediment due to human activity. The two data points (squares) at approximately 100 cfs and 170 cfs are Beaver Creek and Orogrande Creek respectively. We believe both these streams have been impacted by management activities on both National Forest and private land. Both watersheds have been heavily roaded and logged and both have experienced much surface erosion and numerous landslides.

## Discharge vs. Instream Fines

### Developed and Undeveloped "A" Channels

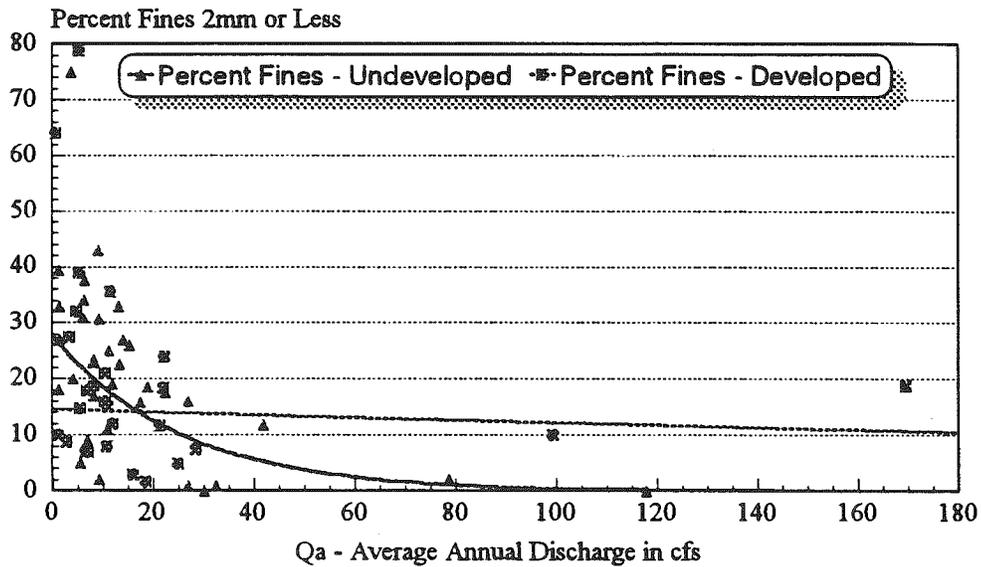


Figure 16. Developed: N = 27, R2 = 0.02. Undeveloped: N = 34, R2 = 0.25

## Discharge vs. Instream Fines

### Developed and Undeveloped "B" Channels

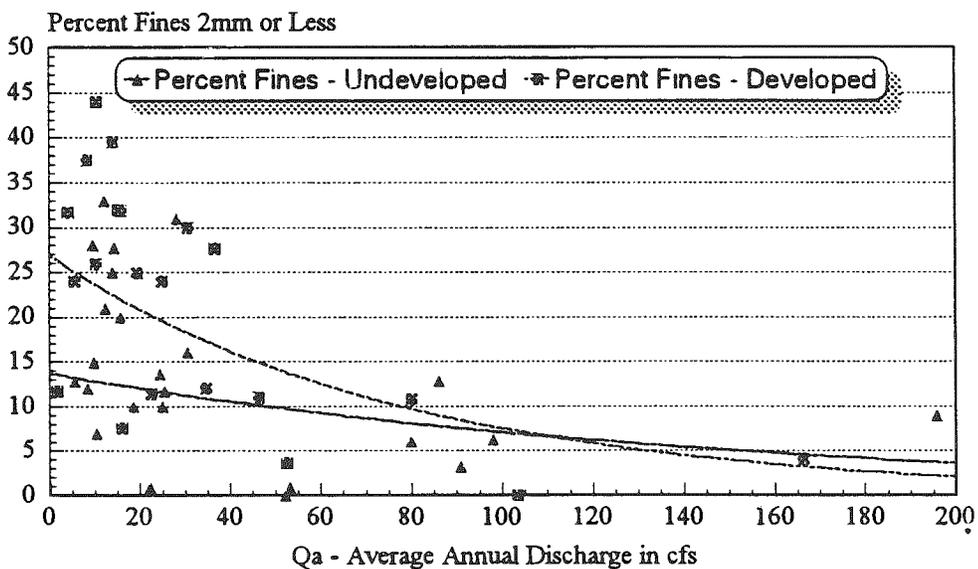


Figure 17. Developed: N = 21, R2 = 0.38. Undeveloped: N = 24, R2 = 0.16

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## Riparian Areas

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The data for Rosgen moderate gradient "B" channels is presented in Figure 17. There appears to be an increase in instream sediment as a result of management activities in these streams. This is especially evident in watersheds where  $Q_a$  is less than 50 to 60 cfs. We believe the difference in these and the steep "A" channels is also related to energy. The moderate gradient "B" channels are less prone to degradation and more to aggradation. In low gradient "C" channels, presented in Figure 18, there is a definite increase in instream sediment due to management activities. "C" channels have even less energy to remove sediment. Therefore, these channel types tend to aggrade to a greater degree than "A" and "B" channels. This appears to be most significant when  $Q_a$  is 100 cfs and less.

The Forest has also done an analysis showing the relationship of predicted historic sediment levels from WATBAL in the roaded watersheds to instream cobble embeddedness (CE). WATBAL and CE data from 101 roaded watersheds was analyzed. Thirty-two watersheds have been managed below the watershed's geomorphic threshold. Sixty-nine watersheds had levels of past management that produced sediment in excess of the geomorphic threshold, according to WATBAL. Of the 32 watersheds managed below the geomorphic threshold, 56% do not meet desired future condition (DFC) levels of CE. This is probably due to naturally high levels of instream sediment and management activities. The mean CE exceeded the DFC by 5.25% in these watersheds. Standard deviation was 17.9%. Of the 69 watersheds that exceeded geomorphic threshold, currently cobble embeddedness exceeds DFC in 83%. In these streams, the mean CE exceeded the DFC by 18.04% and the standard deviation was 18.6%. Using the Analysis of the Variance test, the two populations of watersheds, those that have exceeded and those that have not exceeded the geomorphic threshold, are significantly different at the 99% level of confidence. In simple terms, we have reason to believe that current instream sediment (C.E.) has been increased and remains elevated due to past management activities in at least 69 watersheds on the Clearwater National Forest. This is a condition that for the most part pre-existed the Forest Plan.

### Riparian Acreage

During project design and implementation several ranger districts have noted that stream densities appeared to be significantly higher than densities predicted in the Plan. District personnel questioned the original Forest Plan estimate of 110,721 acres, which was based on a sub-sample of 12% of the total forest acreage.

In response to the concerns being expressed by the districts, the Forest initiated a site specific analysis in FY 1992 to further refine acreage estimates. This exercise was conducted similarly to the methods that were used for the sample drainages in the original Forest Plan calculations. However, instead of projecting the sample to a Forestwide basis the entire suitable landbase was examined. Perennial streams were mapped by each ranger district on 1:24,000 maps based on information that had been collected for past project level analysis. Aerial photos and contour maps were relied on in areas without field data. Estimates in unsampled areas were based on the best professional judgements of the district personnel and a comparison with field sampled areas. A riparian width of 100 feet slope distance on each side of the stream was used to calculate acreage, similarly to what had been done in the original Forest plan. Results of the calculations are outlined in Table 5.

TABLE 5 - RIPARIAN ACREAGE SUMMARY

Length Class I (Miles)	Class I <sup>1</sup> Acres	Length Class II	Class II <sup>2</sup> Acres	Total Acres	Forest Plan Acres
1582.2	36,283	6548.3	161,218	197,501	110,721

/1 Idaho Forest Practices Act Stream Classification - Generally applies to fish-bearing streams.

/2 Idaho Forest Practices Act Stream Classification - Generally applies to non-fish-bearing streams.

**Riparian Prescription**

Project level analysis has shown it is difficult to implement the Forest Plan Riparian Timber Harvest Prescription along Class I fisheries streams. Requirements for woody debris recruitment and shading associated with fisheries habitat protection and enhancement necessitates leaving a large portion of the existing trees along these streams. The importance of woody debris recruitment was not completely understood at the time the Forest Plan was signed. Subsequent guidelines, as outlined in the Clearwater Fisheries Desired Future Condition (DFC) Analysis, reflect more current thinking. These guidelines were prepared in cooperation with the Columbia River Intertribal Fish Commission as part of the Columbia River Anadromous Fish Habitat Management Policy and Implementation Guide (PIG). They were

## Discharge vs. Instream Fines

### Developed and Undeveloped "C" Channels

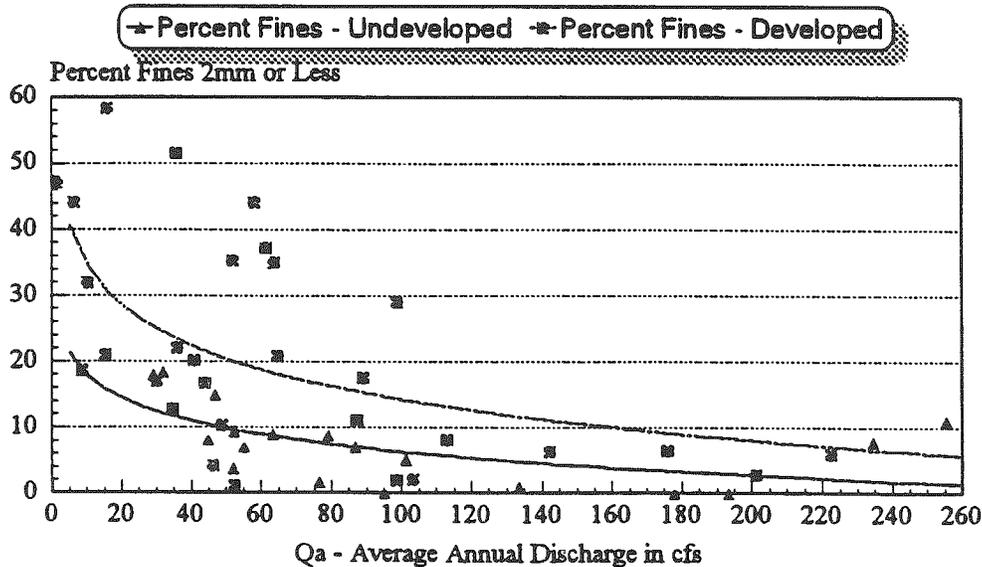


Figure 18. Developed: N = 30 , R2 = 0.31. Undeveloped: N = 18 , R2 = 0.14

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## Riparian Areas

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adopted by the Clearwater Forest Supervisor on July 25, 1989 as riparian direction along fisheries streams and as a further clarification of the riparian habitat protection standards outlined in the Forest Plan. The document details prescriptions to be used for the retention of riparian trees. Due to past timber harvest, existing roads and past wildfires, project level analysis has shown that sufficient trees are often not available along fisheries streams to meet the requirements outlined in this document. In the early 60's roads were often constructed adjacent to fisheries streams. Clearcut or heavy salvage operations were conducted within the riparian corridor. Also, the Forest has had a history of severe wildfire.

Another factor which appears to be affecting timber management along fisheries streams, that was not in place at the time the Forest Plan was signed, is the Idaho State Forest Practices Act. This Act requires that 75% of the current shade be retained along Class I streams. Class I streams are generally defined in the Act as those streams supporting a viable fishery. The Forest has been criticized by the State of Idaho for one violation of the Forest Practices Act in FY 1990. In this case a clearcut was harvested along a Class I stream. There have been no violations of the Act since then.

Monitoring indicates that it is highly probable that removing the source of future woody debris adjacent to Class II streams will release stored sediment. In some channels this may destabilize the stream.

### Recommendations

Implementation of the 1989 Fisheries Desired Future Conditions numeric guidelines would address the situations described above. The Forest will review these guidelines during the Forest Plan Review. More information on these guidelines may be found in the Planned Action section of this Report.

## 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.

<b>Item No. 8</b>	<b>Water Quality and Stream Condition for Fisheries and Non-Fisheries Beneficial Uses</b>
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 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.

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## Soil and Water

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### 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. In past years, "grab" samples (samples taken by hand) of suspended and bedload sediment have been periodically collected at many baseline stations. The Forest has decided to eliminate collecting grab samples for suspended sediment due to our inability to obtain statistically reliable information with these methods. Bedload sampling was also significantly reduced in FY 1992. We could not obtain statistically reliable results with the limited bedload sampling that we had been doing. In FY 1993, we will begin a much more intensive bedload sampling technique. Due to the costs of this technique, we are only monitoring three streams for bedload in FY 1993.

Project stations have been located downstream from management activities. Control (no activity) stations generally have been established upstream from activities, 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 is collected at each project station with automatic water samplers. Parameters measured are stream flow, suspended sediment, air and water temperature, specific conductivity and instantaneous water level. Water level recorders and automatic water samplers are normally in operation from March through September.

The Forest also initiated a new method of instream monitoring in FY 1992 that has been recently developed on the Idaho Panhandle National Forest. This method, called the Riffle Stability Index (RSI), is used as a measure of stream channel stability. The method consists of comparing the distribution of particle sizes in a riffle cross section with the size of the largest particles that are moving at bankfull flows. A complete description of this methodology is described in a paper entitled "Riffle Stability Index " by Gary Kappesser, Forest Hydrologist, Idaho Panhandle National Forest (5/93).

Table 1 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

Watershed	Station Established	Years of Record	Collected Data	Station Type	Remarks
<b>Pierce RD</b>					
Camp Creek	1974	10	*	P	Project Study with N.P Tribe
Cedar Creek	1984	9	*	P	Active Timber Sale
Dollar Creek	1984	9	*	P	Active Timber Sale
Eldorado Creek blw. Linda	1984	9	*Rec. WS SS	B	Sales on Eldorado Creek
Lolo Cr. @ Sec. #6	1980	12	Rec. WS SS	B	Mining and Timber Sales
Musselshell Creek	1991	2	*	P	Coop monitoring with State of Idaho DEQ
Yoosa Creek	1982	5	*	P	Project Study with N.P Tribe
<b>Palouse RD</b>					
Blakes Fork	1981	12	*	P	Past and Active Timber Sales
Elk Cr abv Elk R	1981	12	Rec. WS SS	B	Proposed Hydro and Timber Sales
Little Sand	1981	12	*	P	Past & Active Timber Sales
No. Fork Palouse	1981	12	*	P	Proposed & Active Timber Sales
Palouse abv L Sand	1981	10	*Rec.	B	Baseline-Mixed Ownership
<b>North Fork RD</b>					
Cold Spring Creek	1981	11	Rec.	B	Reference Station
Fern Creek	1990	3	*WS SS	P	Proposed Timber Sale
Isabella Creek	1980	10	*Rec.	B	Reference to Salmon Stations
Quartz Creek	1981	12	Rec. WS SS	B	Past and Proposed Timber Sales
Salmon Cr. upper	1986	5	WS SS	P	Control Above Activities
Salmon Cr. lower	1986	7	Rec. WS SS	P	Station Below Activities
So. Fork Beaver	1981	12	Rec. WS SS	B	Past and Active Sales
Swamp abv Osier	1980	13	Rec. WS SS	B	Timber Sales

# Soil and Water

Table 1. Water Quality Monitoring Network (continued)

Watershed	Station Established	Years of Record	Collected Data	Station Type	Remarks
<b>Lochsa RD</b>					
Canyon Creek (Mouth)	1992	1	*Rec. WS SS	P	Past and Active Sales
Cougar Cr (Lowell)	1986	6	WS Tur	P	Domestic Water Supply
Deadman Cr at mouth	1980	13	*Rec. WS SS	B	Began Rec., WS, in 1989
Fish Creek @ mouth	1980	12	Rec. WS SS	B	Long-term Baseline
Pete King Creek	1976	17	*Rec. WS SS	B	Long-term Baseline
<b>Powell RD</b>					
Crooked Fork at mouth	1980	13	*Rec. WS SS	B	
Crooked Fork abv Brushy	1986	6	WS SS	P	Mixed Ownership
Doe Creek @ mouth	1981	11	*	P	
Parachute Creek (Lower)	1991	2	Rec. WS SS	P	Landslide Study Two WS's
Parachute Creek (Upper)	1991	2	WS SS	P	Upstream Control
White Sand at mouth	1980	12	*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 3,750 suspended sediment and 13 bedload samples in FY 1992. 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. This data is available from the Forest hydrologist at the Supervisor's Office.

Information from the various monitored drainages is summarized below:

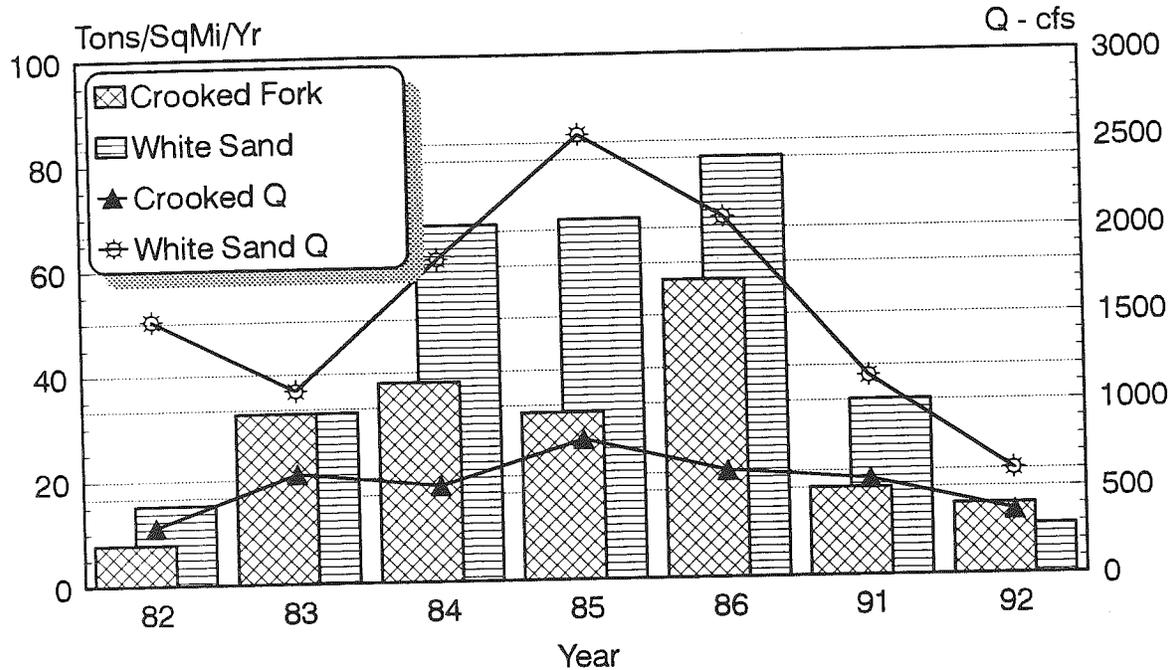
### **Crooked Fork and White Sands Creek**

In the FY 1990 and FY 1991 Monitoring and Evaluation Reports, Crooked Fork was reported to have higher levels of suspended sediment than White Sand Creek. This was reported in error. As presented here, Crooked Fork sediment levels are less than White Sand Creek (See Figure 1). We believe the error resulted because we used the wrong conversion factor for watershed size.

Monitoring in the White Sand and Crooked Fork watersheds began in 1982 with the purpose of comparing a mixed ownership managed watershed (Crooked Fork) with a relatively non-impacted watershed (White Sand). Unfortunately, it was not recognized that the two watersheds are inherently different. White Sand is a larger drainage (271 square miles vs 168 square miles) and has a completely different watershed geology. The glaciated granitic landforms in White Sand Creek are producing more sediment than the frost churned belt landforms in Crooked Fork. We have therefore concluded that these two drainages should not be evaluated on a comparison basis. We will continue monitoring and evaluating both streams individually since future timber sales are proposed in both drainages.

## Soil and Water

Figure 1. Sample of Total Sediment Load Comparison  
Crooked Fork @ Mouth vs. White Sand @ Mouth



### Individual Results White Sand Creek

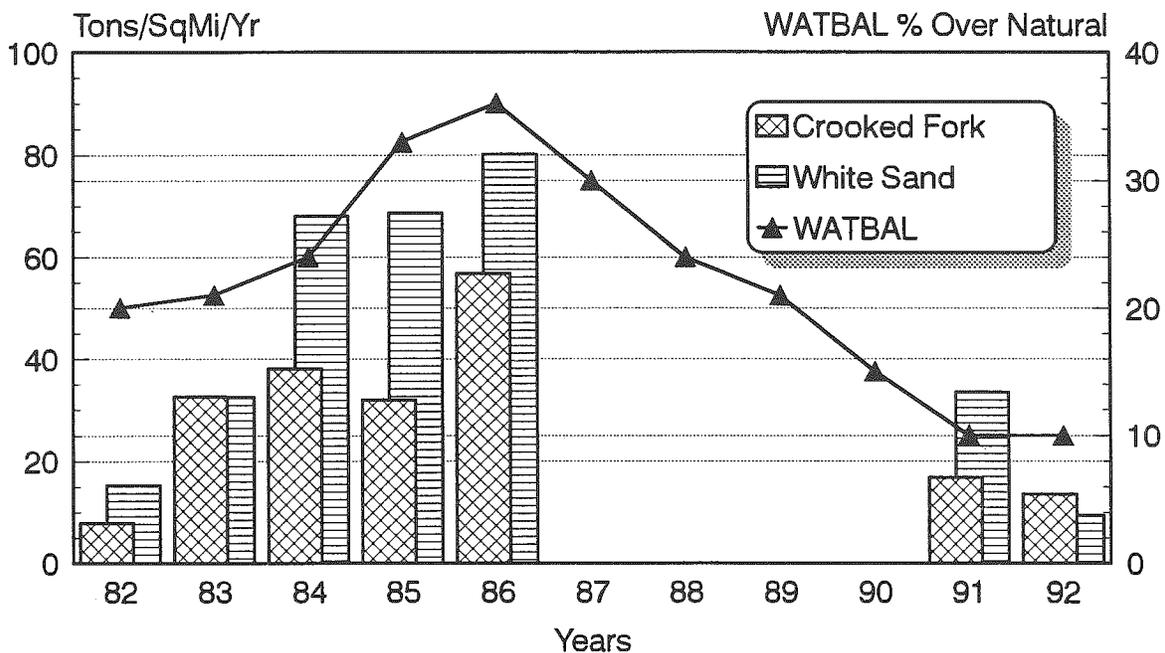
Sediment monitoring data of White Sands Creek has demonstrated that there are differences in natural sedimentation rates based on geology, stream size and channel type. Due to these inherent differences, comparisons of sediment data between drainages is often a difficult if not impossible undertaking. It appears that long term monitoring of individual drainages may be a better method for interpreting management effects, than the paired drainage technique. This data, also, suggests that there may be a need to further refine the Forest Plan watershed standards based on geology type. Actual monitoring data are presented in *White Sand and Crooked Fork Creeks Water Quality Monitoring Results* (Jones, 1992).

### Individual results from Crooked Fork

Although suspended sediment is highly related to flow, Figure 2 indicates that WATBAL (the watershed model that was used as a basis for the Forest Plan Watershed Analysis) was accurate in predicting sediment trends in Crooked Fork in the last decade. In Figure 2, the bars are sediment production (suspended only) and the line is the total sediment predicted by WATBAL (includes suspended and bedload). Road construction and logging activities caused WATBAL to predict a peak in sediment production in 1986, which our monitoring observed.

There may be an improving trend in the Crooked Fork suspended sediment data, as WATBAL predicts. However, as the suspended sediment levels are very dependent on discharge, this conclusion may be premature. The reader should not conclude anything about channel condition based on suspended sediment data. Suspended sediment is more an indication of the health of the watershed than the health of the channel. As has been observed in other streams on the Forest, instream channel recovery often lags behind suspended sediment recovery by several years. This is largely due to the time required for introduced sediment to move thru the stream system.

**Figure 2. Suspended Sediment/WATBAL Comparison  
Crooked Fork Fork Drainage**



**Pete King Creek**

The results of 15 years of suspended sediment and discharge monitoring on Pete King Creek are presented in Figure 3. In at least 6 of the last 15 years, monitoring has indicated that sediment levels exceeded the estimated geomorphic threshold of the watershed. This threshold is the point where excessive sediment can no longer be transported by normal stream flows. As the channel accumulates more sediment, channel changes, such as stream widening, braiding, pool filling and gravel bar formation, occur. In 1987, the suspended sediment was measured at 643 Tons/Mile<sup>2</sup>/Year. This far exceeds the background, natural watershed condition which has been estimated at 23 Tons/Mi<sup>2</sup>/Yr. This is also the highest suspended sediment level for the entire 15 year monitoring period. It appears we measured the effects of three landslides that occurred that year. The average suspended sediment for the past 15 years is 104 Tons/M<sup>2</sup>/Yr. Considering the estimated geomorphic threshold of 63 Tons/Mi<sup>2</sup>/Yr

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## Soil and Water

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includes both suspended sediment and bedload, 104 Tons/M<sup>2</sup>/Yr of suspended sediment is far in excess of the streams estimated geomorphic threshold. From reviewing the data, it is apparent that the Pete King watershed has been significantly impacted by past management activities.

### Parachute Creek

Monitoring in the Parachute Creek watershed began in 1991 with the installation of a stage recorder and automatic samplers at the stream mouth and upstream of a landslide that occurred in 1990. The purpose of the monitoring was to measure the impacts and recovery rates of both water quality and stream channel condition following the landslide. Riffle Stability Index (RSI) measurements were added to the other parameters in 1992.

Suspended sediment at the mouth of Parachute Creek in 1991 totaled 26.3 Tons/Mi<sup>2</sup>/Yr. The upstream control suspended sediment in 1991 was 17.8 Tons/Mi<sup>2</sup>/Yr. In 1992, suspended sediment was 30.8 Tons/Mi<sup>2</sup>/Yr at the mouth and 14.5 Tons/Mi<sup>2</sup>/Yr upstream (See Figure 1). We believe the increased sediment loads at the mouth are a result of:

- (1) Sediment deposited in the channel in the 1990 slide resuspended and moved past the monitoring station and into Papoose Creek.
- (2) Additional input of sediment from the slide. Much of the slide had not revegetated and was still downcutting.

RSI data was collected both above and below the 1990 landslide. Three channel cross sections were established at both locations. Transect results above the landslide indicate 69%, 69%, and 85% of the substrate is moving at bankfull flow. The first two transects are considered stable and the third is considered to be borderline between stable and unstable. Transects below the landslide were 65%, 55% and 96%. The third transect, moving 96% of the substrate at bankfull flow is considered highly unstable and indicates the stream is in an aggraded condition at this location. The other two transects are considered stable. Visual observations indicated that the channel is removing aggraded material from the slide and is recovering.

### Blakes Fork

Blakes Fork is a small watershed (1,261 acres) located on the Palouse Ranger District. Suspended sediment and discharge data have been collected for a 10 year period from 1981 to 1991 (See Table 2). During this time period approximately 2.7 miles of road have been built and 86 acres of timber have been harvested within the drainage. Most of these management activities occurred during the period 1984 and 1987. Review of the suspended sediment data suggests that there was an increase in suspended sediment in 1984 and 1985 with recovery in 1986. It appears that the peak in sediment in 1984 and 1985 was mostly from timber harvest and road construction and that there has been a recovery in sediment delivery since that time.

**Table 2**  
**Blakes Fork, Palouse Ranger District**  
**Suspended Sediment T/Mi<sup>2</sup>/Yr**

Year	N	Discharge (Inches)	Discharge (Inches) Palouse River	Sediment T/Mi <sup>2</sup> /Yr
1981	5	14	9.85	5
1982	7	8	16.17	1
1983	11	21	11.59	7
1984	12	21	13.52	13
1985	9	30	9.08	12
1986	11	8	9.16	2
1987	15	14	5.06	3
1988	13	8	3.93	2
1989	13	21	10.30	6
1990	11	14	12.10	1
1991	15	8	10.71	1

N = Number of samples collected during the water year (October 1 thru September 30).

In contrast to suspended sediment monitoring information, instream data taken in 1992 indicates that high levels of fine sediment still remain in the system (See Table 3). It is uncertain if this sediment is the result of past management activities or natural stream conditions. However, even with the increased instream sediment, the survey indicated the stream banks were stable. Therefore, it appears the watershed did not exceed its geomorphic threshold.

**Table 3**  
**Blakes Fork, Palouse Ranger District**  
**Channel Condition**

Reach	Channel Type	C.E. %	Bank Stability
1	A4	54	Stable
2	B4	60	Stable
3	B6	63	Stable
4	B6	58	Stable

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## Soil and Water

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### Channel Type.

A4 = 4.5% gradient; Gravel/sand channel.

B4 = 3.4% gradient; Gravel/sand channel.

B6 = 1.4-1.5% gradient; Meandering; Low W/D ratio; Gravel/sand channel.

C.E. = Cobble Embeddedness in percent.

We suspect, as has been previously discussed in the Riparian Section of this report, that landform, stream size, channel gradient, and parent material may all be influencing sediment accumulation in this channel. At this time, our understanding of these relationships is just starting to develop (See Riparian Section). However, it is clear that the Blakes Fork appears to have little energy for moving sediment that has been deposited from either management or natural causes. Therefore, a conservative management approach, minimizing sediment producing activities, should be implemented for this drainage and other drainages on the Forest with similar conditions.

### General Comments

Generally, monitoring of suspended sediment from past management activities has shown a recovery trend in this parameter Forestwide. Suspended sediment concentrations tended to be less in the late 1980's and in the 1990'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 applying Best Management Practices (BMP's), including better road location and design, and an overall decline in road construction.

Although the monitoring of suspended sediment data shows an improving trend for most watersheds, measurements of cobble embeddedness, and instream fines indicate that recovery of stream substrate from past activities are going to take longer than previously thought. 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.

A document entitled "Watershed and Stream Condition Analysis - Clearwater National Forest" was prepared by the Forest hydrologist and Forest fisheries biologist in December of 1991. This document details current watershed condition as related to the Forest Plan standards. Current conditions are listed for 127 streams, which represent most of the streams within the developed portion of the Forest. This document incorporates the results of all project level analysis, and actual instream monitoring for all 127 streams. It represents a compilation of the best available information regarding watershed condition available on the Forest.

Of the 127 drainages that were examined, 90 drainages or 71% of the total, currently do not meet Forest Plan standards. These drainages represent most of the developed portion of the Forest, where no problems with sediment production were predicted in the Plan. It appears drainages are taking much longer to recover from past management activities than was anticipated in the Plan. This is causing difficulty meeting both water quality/fisheries objectives and timber output expectations. At this time it is unclear how much sediment is due to management activities and how much is due to natural conditions.

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## Soil and Water

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An additional water quality study, an acid deposition survey of lakes in the Selway-Bitterroot Wilderness, occurred in FY 1992. The results of this survey are available upon request from the Forest hydrologist.

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

A total of 446 BMP's were audited from 17 timber sale units on the Clearwater National Forest in FY 1992. Units were prioritized for selection if they were within a stream segment of concern (SSOC) and if they were adjacent to a Class I or II stream. Units were located on each of the five ranger districts. The BMP rate of compliance was 99% and the effectiveness rate was 98%. Sediment was delivered to stream channels or draws in 9 of the 446 observations.

The practices were further analyzed by method of application: aerial harvest systems (cable, helicopter), tractor harvest, and temporary and system road design, construction, and maintenance when these roads were within or adjacent to the selected harvest unit. The audit included 114 checks of BMP's where aerial systems were used. The implementation and effectiveness rate was 100.0% for each. For tractor logging, 189 checks of the BMP's occurred. The implementation and effectiveness rate was 99% and 98%, respectively. For roading, including planning, construction, and maintenance of both system and temporary roads, 143 checks of the BMP's occurred. The implementation and effectiveness rate was 97% and 96%, respectively. The results of the audit are summarized in Table 4. It was concluded that implementation and effectiveness of BMP's is significantly improving over past years. This high rate of success may be attributed to increased awareness of BMP's, the selection of aerial logging systems where tractor logging would have been previously selected, and the implementation of a 25 foot minimum Stream Protection Zone (SPZ) along Class II streams.

## Soil and Water

**Table 4. BMP Implementation and Effectiveness - Aerial, Tractor, and Roads**

Activity	# of BMP checks	BMP's Implemented	% Implemented	BMP's Effective	% Effective
Aerial Systems	114	114	100.0%	114	100.0%
Tractor Logging	189	187	98.9%	186	98.4%
Roads	143	139	97.2%	137	95.8%
<b>Total</b>	<b>446</b>	<b>440</b>	<b>98.7%</b>	<b>437</b>	<b>98.0%</b>

The audit demonstrated that the districts are doing a much improved job of BMP implementation, and that these BMPs are effective in preventing the entry of sediment into streams. We believe one reason for this high effectiveness rate is the Forest is beginning to move beyond implementing the Forest Practices Act to applying Forest Plan standards, such as, "maintaining the integrity and equilibrium of all streams" by retaining trees adjacent to headwater (Class II) streams and applying DFCs in Class I streams. The results are beginning to show in the audits, such as the 100% implementation and effectiveness rate for aerial logging systems. Recommendations, or "feedback" that have been given in past BMP reports have worked and; therefore, need to be restated and applied. They are:

- Tractor logging is generally more erosive than aerial logging systems. Carefully evaluate options to choose aerial logging systems over tractor systems, considering sediment reduction opportunities, other mitigation needs, and economics.
- Construction and maintenance of temporary roads is still a problem and a sediment producer. Use designed and constructed system roads and follow current direction for the location and use of temporary roads. Make sure when erosion control measures are installed on temporary roads they are not removed during site preparation and reforestation activities. Return temporary roads to production as soon as possible.
- Construct the minimum size landing and skid trail necessary to accomplish the job safely and reduce erosion.
- Continue using the minimum 25 foot SPZ for Class II streams. This zone should be increased to buffer excavated landings and skid trails. In no case should landings and skid trails be located closer than 25 feet to a Class II stream unless a variance is authorized. An appropriate use of a variance would be to authorize entry into a SPZ only if that practice is better (less sediment) than a practice that accomplishes the same purpose and does not enter the SPZ.

BMP monitoring in FY 1993 will again concentrate on watersheds containing SSOC's and on areas where units are located adjacent to Class I or II streams. In addition, we will concentrate the timber

harvest BMP audit on tractor logging units and we intend to select some small sales to include in the audit. Small sales do not contain the detailed preparation in water quality as do large sales, and; therefore, in the past have occasionally not complied with the Idaho Forest Practices Act.

Table 5 lists the Stream Segments of Concern by district. Three streams were added to the list for the Palouse Ranger District in 1992. Previously, no streams had been listed for this district. Hungry Creek on the Lochsa District was deleted as a Stream Segment of Concern in 1992.

**Table 5. Stream Segments of Concern**

District	Watershed	Stream Segments of Concern
<b>Pierce</b>	North Fork Clearwater Clearwater River Clearwater River Clearwater River Clearwater River	Weitas Creek Lolo Creek Eldorado Creek Yoosa Creek Camp Creek
<b>Palouse</b>	Palouse River Clearwater River Clearwater River	N.F. Elk Creek E.F. Potlatch River Potlatch River
<b>North Fork</b>	North Fork Clearwater North Fork Clearwater North Fork Clearwater	Quartz Creek Meadow Creek Skull Creek
<b>Lochsa</b>	Lochsa River	Fish Creek
<b>Powell</b>	North Fork Clearwater Lochsa River Lochsa River Lochsa River Lochsa River Lochsa River Lochsa River	Gravey Creek Walton Creek White Sand Creek Crooked Fork Spruce Creek Brushy Fork Boulder Creek

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## Timber

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## 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 believe that we must manage the forest to achieve the goals and objectives of the Forest Plan. To accomplish this we must strive to better understand and expand our resource management options.

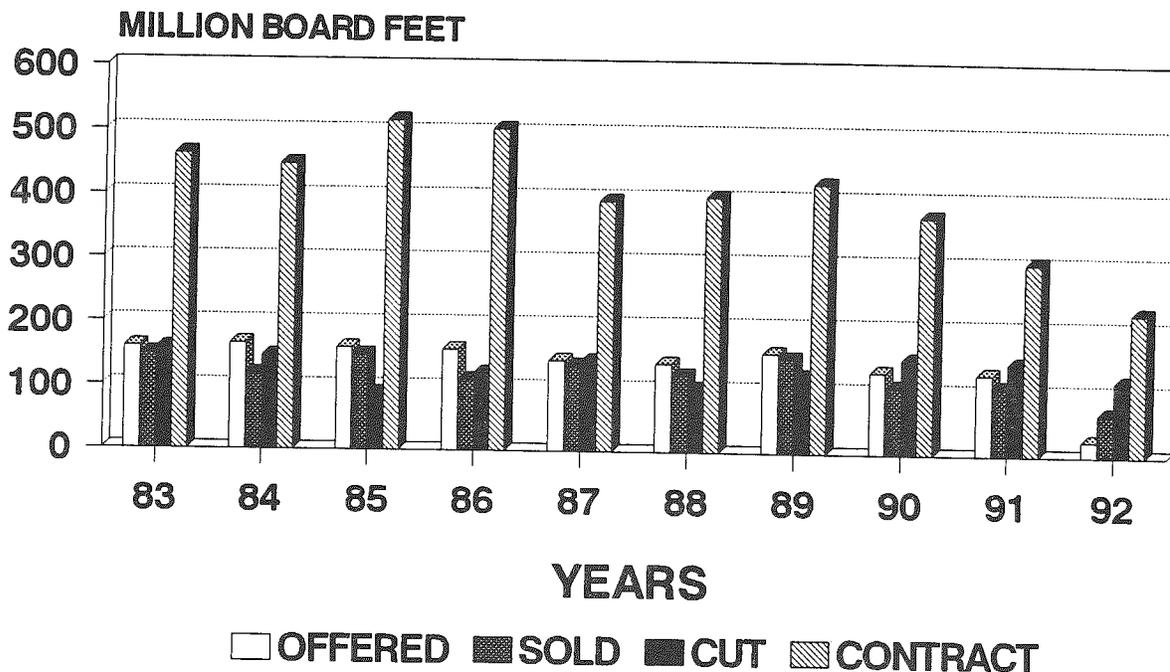
We will continue to manage the timber program to provide for the long term health, diversity, and productivity of the Forest. Complete site-specific analysis of the land base will be used to design the timber sale program. Silvicultural systems will be selected to build biological diversity and ecological 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 community stability, customer satisfaction, diverse user values, and the influence of urban culture on resource management. We must make every effort to respond to the needs of the local communities that depend upon the the forest for their economic survival. To meet their needs, the Forest must continue to pursue and develop new timber sale opportunities. The economy and the environment cannot be separated. Actions that harm one will also harm the other.

### Forest Product Sales and Allowable Sale Quantity (ASQ)

In FY 1992, 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 38 timber sales and 1,140 miscellaneous collection permits. A total volume of 66.5 MMBF was sold. Approximately 36.1 MMBF (54%) 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. Annual Timber Volume in Past Decade  
Offered, Sold, Cut and Under Contract



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 uncut volume under contract (CONTRACT). The uncut volume under contract has continued the decrease that began in 1987. It has reached its lowest level in over a decade. The decline in volume under contract has resulted in increased competition for the timber offered for sale and increased stumpage prices. This is the third consecutive year in which the volume offered has been less than the volume cut.

The Clearwater Forest Plan Record of Decision states that the average annual allowable sale quantity 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 includes 10 MMBF of non-interchangeable (NIC) species and size classes, mostly pulpwood, that are subject to fluctuating markets. The remaining 73 MMBF was to be harvested from the unroaded component.

Table 1 displays total volume sold on the roaded and unroaded portions of the Forest since FY 1988, the first year of Forest Plan implementation, through FY 1992. The volume sold on the roaded portion of the Forest is further divided into the primary, the standing sawtimber component; and non-interchangeable component (NIC) based upon species and product. Table 1 also displays projected future sales for FY 1993 through FY 1997. These projections are based on the volumes we plan to offer for sale. The volume actually sold could differ from these projections.

## Timber

**Table 1. Volume of Timber Sold and Current Projections for the Roaded and Unroaded Components of the Forest, 1988 through 1997**

Year	Primary MMBF	NIC MMBF	Roaded Total MMBF	Unroaded Total MMBF	Forest Total MMBF
1988	90	13	103	13	116
1989	102	19	121	23	144
1990	81	18	99	4	103
1991	80	16	96	8	104
1992	53	12	65	0	65
*1993	69	8	77	0	77
*1994	61	6	67	1	68
*1995	38	5	43	17	60
*1996	36	5	41	19	60
*1997	38	5	43	22	65
<b>Total</b>	648	107	755	107	862

\* Projections - Subject to site specific analysis and funding levels. Preliminary budget information indicates an expected target and funding of 60 - 70 MMBF/year through FY 1997.

Two important conclusions can be drawn from Table 1. First, if these projections hold, the Forest will sell 50% of the ASQ estimate for the first decade. Secondly, most of the shortfall will be in the unroaded component. The projected sell in the roaded component applied toward ASQ will be 749 MMBF. This is 25 percent below plan projections for the roaded component. The forecast sell of 113 MMBF in the unroaded component is 85 per cent below the amount projected in the Forest Plan.

The reasons for these projected shortfalls differ for the unroaded and roaded components of the Forest. The unroaded component has become critically important to the people we serve. These individuals and groups have requested that the unroaded areas receive special consideration and analysis before management activities are performed. Four factors - access and complexity of analysis, amount of timber, level of controversy, and higher costs and longer time to complete NEPA decision documents - have acted to significantly increase the time and effort needed to implement 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.

Appeals have also had an effect on the sales offered in the roaded component. In FY 1992, there were 21 appeals filed on 12 timber sales planned for this component.

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## Timber

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We have strived to meet Forest Plan standards and guidelines for 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. As our knowledge of erosional processes on different landtypes increases, management opportunities may also increase.

The FY 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.

**Table 2. Comparison of Forest Plan Projections With Timber Sales, 1988-1992**

Management Area Emphasis	Forest Plan Projections		Timber Sales, 1988-1992	
	Acres / Year	Volume MMBF	Average Acres	Volume MMBF
Timber production (E1/E3)	3561	81.2	4452	69.8
Road/trail corridors (A4/A6)	125	.8	50	.6
Big game summer range (C8S)	3099	62.5	75	2.1
Big game winter range (C4)	1007	23.6	666	15.8
Riparian areas (M2)	3516	5.2	195	3.6

Table 2 shows that the major deviation between projected ASQ volume and the average annual volume sold over the first four 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 five years of the Forest Plan, timber stand improvement projects were completed on an annual average of 822 acres. This is approximately 43 percent of the acreage projected in the Plan. During the same period, a total of 22,650 acres have been reforested, for an average of 4,530 acres annually. The Forest Plan projected an average annual reforestation accomplishment of 10,521 acres. This includes 7,298 acres of reforestation after harvest and an average annual reforestation of 3,223 acres of nonstocked 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 Genetic Tree Improvement

The Clearwater National Forest participates in many Region One selective breeding projects. Examples of these include selecting plus trees and making cone collections, establishing and maintaining progeny

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## Timber

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and performance test plantations, installing and managing a seed orchard, and making controlled crosses for advance generation breeding.

In October 1991, the Forest conducted first-year survival checks on the six long-term performance tests that were established in FY 1991. The survival results were 98% for the western white pine test, and the average survival for the five Douglas-fir rooted cutting tests was 97%. These are very good results for first year plantations.

In November 1991, a first-year survival check was conducted on the ponderosa pine early selection trial that was established at the Lenore Tree Improvement Area in FY 1991. The survival results were 94%. Terminal damage was recorded on 6% of the trees. Baseline height data was also taken at that time in order to assess the genetics of height growth.

Other accomplishments at the Lenore Tree Improvement Area in FY 1992 include additional site preparation and ground cover establishment, noxious weed control and general site maintenance. Monitoring of the early selection trial will continue, especially to assess the potential for damaging insects, such as tip moths.

<b>Item No. 18</b>	<b>Harvested Land Restocked Within Five Years</b>
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 harvests 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 1987 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 FY 1992. The time elapsed since harvest is five years.

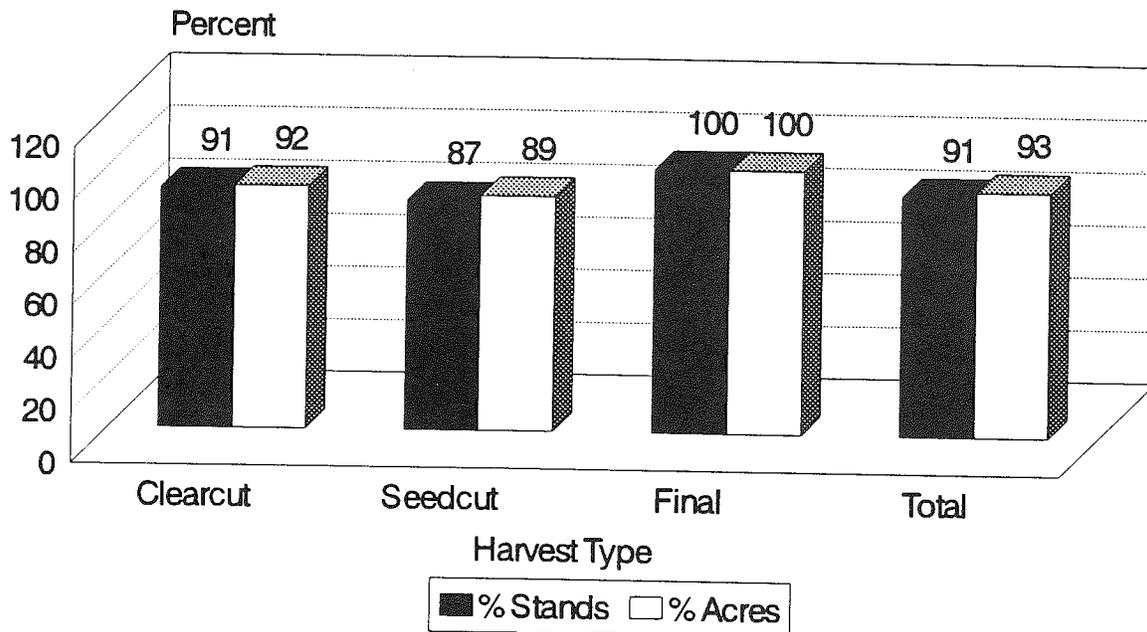
During FY 1987, clearcut harvest was conducted on 116 stands for 2,244 acres. The final removal harvest, using the seed tree and shelterwood harvest methods, was accomplished on 18 stands for 570

acres. The seed step harvest (initial cutting) of the seed tree and shelterwood method occurred on 23 stands for 471 acres.

Of the 157 stands that received regeneration harvesting in 1987, 11 clearcuts and 5 seedcuts have failed to attain adequate regeneration after five years. These stands are currently being retreated for reforestation. All final removals are now currently adequately restocked.

Regeneration success measured five years following the FY 1986 harvests is displayed in Figure 2.

Figure 2. 1987 Regeneration Harvests Adequately Restocked in 5 Years



We have tracked the 5-year restocking success in our regeneration harvests in the Monitoring and Evaluation Reports each year since 1988. The result of this tracking is displayed in Table 3.

## Timber

**Table 3. Summary of Regeneration Harvests Adequately Restocked in 5 Years, 1988-1992**

YEAR	Regeneration Harvest Method					
	Clearcut		Seedtree		Final Cut	
	% Stands	% Acres	% Stands	% Acres	% Stands	% Acres
1988	96	95	91	89	100	100
1989	79	83	89	91	93	94
1990	92	94	76	76	95	98
1991	88	91	86	80	87	93
1992	91	92	97	89	100	100

Our overall success rate for regeneration harvests has been 90 per cent of all stands have been restocked within 5 years of harvest. This total is divided among clearcuts (90% overall success), seedcuts (87% overall success) and final cuts (95% overall success).

<b>Item No. 19</b>	<b>Unsuited Timberlands Examined to Determine if They Have Become Suitable</b>
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.

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## Timber

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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 FY 1992, phase one had been accomplished on approximately 1,548,500 acres, or about 85% of the Forest. Phase one has not been completed in wilderness areas. Phase one is planned to be completed during FY 1993. In phase two, approximately 79% 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.

<b>Item No. 20</b>	<b>Validate Maximum Size Limits for Harvest Areas</b>
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 even-aged regeneration harvesting should normally be 40 acres. Harvest opening size may exceed 40 acres when certain exceptional conditions apply such as insect outbreaks threatening surrounding stands, catastrophic blowdown, or for final removal harvests needed to protect established regeneration in existing shelterwood and seed tree areas.

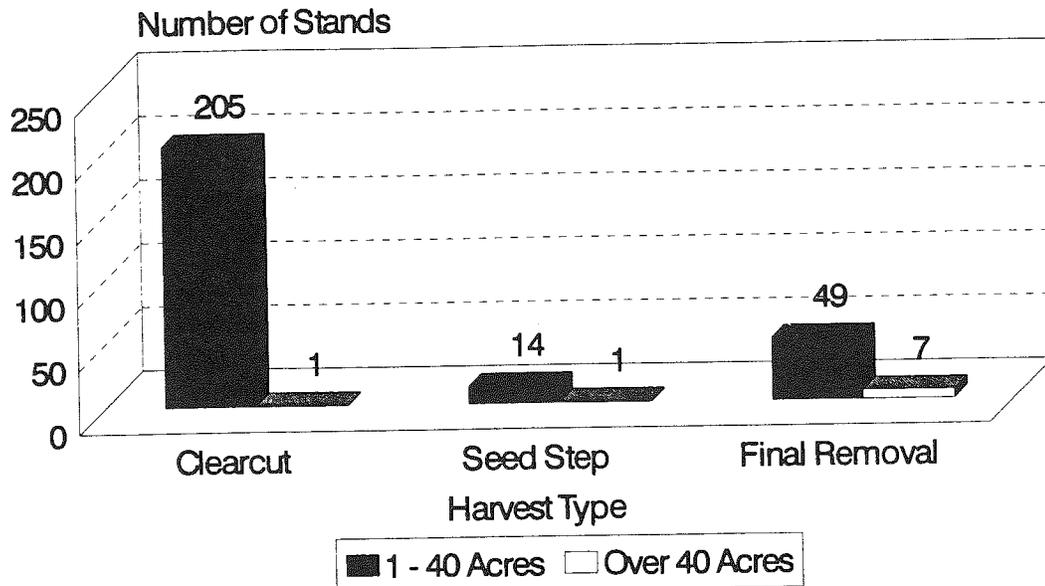
The average size of regeneration harvest units cut in FY 1992 was 19.4 acres. There were a total of 5,370 acres harvested in 277 units. Two hundred six of these units, totaling 3,828 acres, were clearcut. Nine of the 1992 harvest units exceeded 40 acres in size; one clearcut, one seedcut, and seven final removals. 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.

In the last five years the average size of regeneration harvest units has ranged from 29.8 in FY 1988 to 19.4 in FY 1992. The average over the entire period was 23.1 acres. During this 5-year period, 67 (7%)

# Timber

of 990 harvest units were larger than 40 acres in size. One of the exceptional conditions listed above applied in each case where the opening size exceeded 40 acres.

**Figure 3. Cutting Unit Size of 1991 Regeneration Harvests**



<b>Item No. 21</b>	<b>Insect and Disease Status as a Result of Activities</b>
Frequency of Measurement:	Annual
Reporting Period:	Five year intervals (1993)

## Monitoring Action

Insect and disease status is evaluated during posttreatment 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

Annual aerial detection surveys are used to assess current levels of insect and disease activity on the forest. Areas with active insect outbreaks and recent forest fires are summarized and mapped. However,

many types of forest disease mortality are not apparent from the aerial surveys and are not recorded. Because of this, losses from disease may not be fully reported.

The Douglas-fir bark beetle outbreak appears to be intensifying. Aerial detection surveys in FY 1992 reported nearly 1,900 acres of infestation. This represents an increase of 1,200 acres over last year's report. There is a corresponding increase in the area infested with the fir engraver bark beetle. Both of these bark beetles are probably responding to decreased tree vigor brought on by last summer's drought conditions. The infested area of both of these bark beetles is concentrated on the Lochsa and Powell Districts. Our management efforts, primarily salvage/sanitation cuttings in bark beetle mortality areas, have both directly and indirectly reduced bark beetle populations.

Another bark beetle, the western balsam bark beetle, was reported on 600 acres. This is the first survey that has found this insect in significant numbers. We will continue monitoring to determine if this increase signals a new infestation.

Balsam woolly aphid damage was reported on approximately 2,600 acres of subalpine fir stands on the Forest in FY 1992. This is a 30 percent increase over the level of infestation that was detected last year. Relatively warm temperatures over the winter of 1991-1992 could have facilitated the population increase. This aphid is an introduced pest. Its potential for killing trees in the Northern Rocky Mountains is not known from experience. Monitoring of the infestation and damage will continue.

A fungal disease, *Lophodermella concolor*, has been reported over large areas of the forest. The disease attacks last year's needles in the spring of the year. It is the cause of many of the red and brown lodgepole pines seen this last spring. This disease does not normally result in tree mortality. However, it can slow growth and leave the infected tree susceptible to attack from other, more serious, pests.

There have been reports of increased root disease infection in stands of managed, natural, advance regeneration. Late successional species, particularly grand fir and western red cedar, tend to be more susceptible to root diseases. Whether thinning in immature stands or conducting partial cuttings in overmature stands, research indicates these partial cuts tend to improve habitat conditions for root diseases and certain defoliating insects.

There is also a concern that fire suppression and lack of forest management may contribute to an increase in insect and disease activity on the forest. Resulting changes in stand species composition, stand density, stand vigor, and stand size structure may create favorable conditions for certain diseases and insect pests. The Region One Pest Management Group has on-going studies to provide further data and advice to forest managers.

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## Trails

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## Trails

### Goal

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

### Strategy

**1. Inventory trail conditions and maintain a record system.** The Forest goal is to conduct a log and prescription survey over 25% of the 1,600 mile trail system each year. The survey provides information about trail conditions. Maintenance and reconstruction contracts can be prepared from these surveys. Information about each trail will be maintained in a trail data base.

**2. Manage an effective trail maintenance program.** Drainage structures are key to maintaining the basic trail tread and preventing resource damage. Existing drainage must be maintained and new structures built where they have been lost or were never built. High priority must be placed on the maintenance program.

**3. Maintain safe bridges.** Frequently inspect bridges. Replace native wooden (log) bridge stringers with longer lasting materials to significantly increase structure life. Build trail bridges only when a ford is impassable or unsafe during half or more of the heavy use season.

**4. Manage an effective trail construction/reconstruction program.** Two principals shall be followed:

- \* Reconstruct trails to a standard that can be easily maintained. Generally this means most grades should be at 10% or less. It is impossible to maintain drainage structures and prevent erosion on grades steeper than 10% in most soils.
- \* Select high value recreation trails for construction/reconstruction. Place high priority and high design standards on trails that will provide loop opportunities, high visual experiences, and other recreational attributes. Provide for day use trail opportunities from campground, picnic areas, and at other locations where they will complement a high use recreation attraction.

## Trails

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

### Monitoring Action

The Forest recreation specialist will prepare a report annually which focuses on the status of the trail system, the bridges in the trail system, and the trail construction and reconstruction program.

### Accomplishments/Findings

#### 1. Status of the Trail System

Table 1 summarizes some of the available data for the Forest trail system.

**Table 1. FY 1991 Trail Status**

Status	Unit of Measure	Total
Total length of Forest trail system	miles	1,625
Trails open to all uses	miles	495.7
Closed to motorized (Mt. Bikes OK)	miles	327.4
Closed to over 24 inches (motorcycles OK, but not 3 or 4 wheelers)	miles	134.3
Closed to over 50 inches (closed to jeeps but 3 and 4 wheelers are OK)	miles	2.0
Closed to Stock	miles	2.2
Closed to motorized and to mountain bikes	miles	450.6
Closed to stock and to motorized	miles	11.0
Not specified (data base incomplete for some areas)	miles	192.3
Mainline trails	miles	703.5
Wilderness	miles	335.2
Bridges	number	96
Punchon (wooden deck over wet areas)	feet	3,131
Turnpike (wet areas ditched on both sides)	feet	1,191
Construction/reconstruction backlog identified (work which has been identified to the detail that costs have been estimated on a project basis)	\$	\$5,443,000*

\* At this time less than one-half of the trail system has been evaluated. This amount could more than double when planning is completed for specific projects.

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## Trails

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### Log and Prescription Surveys

Ninety-two miles of log and prescription survey were completed. This is down 46% of FY 1991. Since most of the high use trails were surveyed in recent years, and the trail budget was reduced, managers placed a priority on completing maintenance rather than completing the inventory.

## 2. Trail Maintenance

Table 2 provides information on accomplishments by trail maintenance levels. The miles of maintenance accomplished does not effectively describe the "logging out" dilemma faced by trail managers. As the snow melts in the spring and early summer, our crews and contractors "log out" the trails to allow passage. This spring opening is of prime concern to trail users eager to get out after a winter of inactivity. Unfortunately, the majority of the trail mileage on the Clearwater is without adequate drainage. This allows significant erosion to occur and leads to the loss of the entire trail as a useful and practical travel route. In an attempt to deal with the needed drainage work, the Forest attempted to divert crews from doing the quick logging out that opens a trail, into a program where the crews spent more time dealing with erosion problems. Travel time was a significant portion of the trail crew's time. Therefore, it was most efficient to complete all needed work while the crew was on site. This was very difficult to accomplish because of the high demand to open the trails. Frequent complaints were heard from users when a trail was not opened shortly after becoming snow-free.

Most of the trail maintenance was done on trails which lacked adequate drainage (Level I). Unfortunately, Level I maintenance did not construct waterbars where waterbars and other drainage structures did not exist. Maintenance contractors could only maintain existing drainage structures. Thus, structures could only be built by a construction contract or by Forest Service trail crews. A program utilizing contracts for routine trail opening and drainage maintenance while Forest Service trail crews did the Level II and III work could provide the best overall program for maintaining existing trail systems.

### **Volunteer Assistance**

Volunteer work increased to 178 miles this year, approximately 10% of the trail miles on the Forest. The value of this work was \$25,000 and costs to attain the maintenance was \$16,000. A significant contribution was made by the Boy Scouts of America, Northwest Children's Home, Youth Conservation Corps, Backcountry Horsemen, outfitters, Take Pride in America (TPIA), and others.

The Sherman Creek Bridge on the Lochsa Ranger District was built by volunteers working with Clearwater employees. Materials were purchased by the Forest Service.

The Take Pride In America project was again based at Weitas Meadows. Volunteers completed several miles of drainage work along the Lolo Trail system.

Table 2 provides information on work completed on the trail system between FY 1988 and FY 1992.

**Table 2. Trail Accomplishments for 1988 - 1992**

ITEM	1988	1989	1990	1991	1992	% change
Maintenance funds (\$1,000)	382	385	569	513	479	-7
Maintenance Level 0						
Maintenance Level I (min.clearing. No tread work & no drainage work) (Miles)				448	473	+6
Maintenance Level II (Some structure & tread work as well as brushing) (Miles)				106	114	+7
Maintenance Level III (Heavy clearing, tread repair, const. of drainage structures) (Miles)				205	187	-9
Force account Maintenance (Miles)				448	262	-41
Volunteer Maintenance (Miles)				147	178	+21
Contract Maintenance (Miles)				311	334	+7
Total Maintenance (Miles)	539	517	724	759	774	+2
Condition Survey (Miles)	158	145	350	198	92	-52
Construction funds (\$1,000)	148	185	250	212	503	+137
Construction (Miles)	2	8	13	21.6	36.1	+39

### 3. Bridge Inspections and Maintenance

The current inventory lists 105 trail bridges on the forest. Twelve were inspected to insure safety. Several bridges had decks or major support members replaced during the year.

Three steel bridges were built replacing old timber bridges which were becoming unsafe. The steel bridges should have a life expectancy of at least 50 years compared to only 20 years for most native timber bridges used in the past. Consequently, the long term maintenance cost will be reduced considerably.

### 4. Trail Construction and Reconstruction

Eight trail reconstruction projects with a total of 30.1 miles were completed or placed under contract in FY 1992. Four of these, St. Joe Divide, Lost Ridge, Louse Lake/Snow Lake, and Maple Lake, are old system trails and required significant amounts of relocation. All change elevation significantly and the relocation reduced grades to 10% or less in most places. This should significantly reduce maintenance difficulty and costs.

## Trails

East Fork Meadow Creek trail had significant wet areas which were drained. The resulting dry tread, in addition to being a more attractive recreation experience, will reduce maintenance costs and resource damage from muddy water run off.

Waterbars and erosion controls were installed on a section of the Lolo trail east of Musselshell Meadow to Camp Martin. This existing trail was generally in good location. However, the original erosion controls have long ceased to exist. Use of this trail, especially stock use, has increased significantly in the last few years. Consequently, gullying and loss of trail tread was occurring in places where the unmaintained and unused tread had remained unchanged for the last few decades. The drainage installation should reduce that recent acceleration in erosion and reduce overall maintenance costs.

**Table 4. FY 92 Trail Construction Program**

Project Name	District	Trail No.	Miles	Bridge Span (feet)	Est Cost (M\$)	Actual Cost <sup>1</sup>
Isabella Ck Bdg I	N.Fork	95	-	68	35	20
Isabella Ck Bdg II	N.Fork	96	-	60	30	19
St. Joe Divide II	N.Fork	233	4.5	-	36	40
Lost Ridge	N.Fork	283	11.3	-	98	80
Down River Bridge	N.Fork	297	-	60	50	20
E. Fork Mdw Ck.	Palouse	224	0.8	-	9	8
Elk Ck Falls	Palouse	745	2.0	-	16	20
Sherman Ck Bridge	Lochsa	2	-	40	20	20
Louse Lake/Snow Lk	Lochsa	444	3.0	-	105	100
Maple Lake	Powell	939	8.5	-	114	115
Md. Weitas	Pierce	174	6.0	-	13	13
Lolo Trail drain	Pierce	40	1.5	-	20	19
Out year Survey & Design		all	-	-	29	29
<b>Total</b>			36.1			503

<sup>1</sup> Actual cost includes construction cost (contract) plus administration.

Several of this years trail construction projects were given high priority because of the high recreation use or demand. This includes two trails on the Palouse district: East Fork Meadow Creek and Elk Creek Falls; some trails which access points on the Nez Perce National Forest in the Selway-Bitterroot Wilderness, such as Maple Lake; and the Sherman Creek bridge, which serves the recreation public near Wilderness Gateway Campground. In this case, hikers and riders can now cross the Lochsa River on the new trail bridge rather than the adjacent highway bridge. That bridge is located on a curve; a situation which is particularly dangerous for riders with stock. Several groups assisted in the construction of that project which lowered its cost.

## Visual Resources

### 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:

Become aware of proposed management activities through contact with personnel at 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, high use recreational areas, and administrative areas.

Provide recommendations for practices which will meet Forest Plan visual quality objectives (VQO's) of proposed management activities.

Be available for meetings with the public and other agencies to explain how the Forest Plan VQO's will be met with proposed management activities.

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

Evaluate management activities during implementation and upon completion for success in meeting Forest Plan VQO's.

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

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## Visual Resources

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### Monitoring Action

The Forest landscape architect, assisted by district visual resource paraprofessionals, will randomly sample five percent of the current year's completed management activities to determine if Forest Plan VQO's have been met. A minimum of one activity per ranger district will be included in the sample. Monitoring of management activities, primarily timber sales, will include observation of activities, discussion of visual quality concerns with district personnel and a review of timber sale or other project reports.

### Accomplishments/Findings

The Forest landscape architect and visual resource paraprofessionals serve on interdisciplinary teams (IDT) providing recommendations for meeting VQO's on 30 proposed projects.

There has been an increased effort to monitor the implementation of cutting units for meeting Forest Plan VQO's by district personnel. One hundred percent of the 47 timber sales that closed in FY 1992 were assessed for meeting Forest Plan VQO's. All sales, except East Fork Meadow Creek, met Forest Plan VQO's. Some units on the East Fork Meadow Creek sale do not meet the Forest Plan objective of Modification in middle ground viewing from Old Sampson Trail. To meet Modification the units should appear as a natural occurrence. These units do not.

District and Forest landscape field monitoring and evaluation of projects included:

Brady May Timber Sale cutting units.

Johnson Creek Timber Sale cutting units.

Lower Hidden Fix helicopter landing sites.

Harvest units of a number of sales on North Fork Ranger District.

Bridge Creek Timber Sale.

One unit of the Bridge Creek Timber Sale (sale not closed) did not meet Partial Retention VQO in middle ground viewing from US Highway 12. This unit was out of scale with existing openings on the landscape. In addition, its boundary presented a hard, unnatural line. During harvesting operations, the edge of the unit was modified to decrease the visual impacts. This made the unit appear more natural.

Project planning and project monitoring have identified the following travel routes for possible inclusion in the Forest Plan as visual travel corridors.

Road 369 from its junction with Road 368 to that portion of Road 369 that exists as a visual travel corridor.

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## Visual Resources

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Road 368 from its junction with Road 369 to its junction with Road 111.

Road 362 from its junction with Road 111 to that portion of Road 362 that exists as a visual travel corridor.

Road 360 from its junction with Road 111 to that portion of Road 360 that exists as a visual travel corridor.

Road 359 from its junction with Road 360 to that portion of Road 359 that exists as a visual travel corridor.

Road 111 from its junction with US Highway 12 to its terminus.

Road 700 from Aquarius Campground to Smith Ridge.

Road 705 from its junction with Road 700 to Isabella Creek Trailhead.

Trail 47.

Forest Plan Amendment No.5, dated September 16, 1992, changed the mileage of Trail #319 to 4 miles. The entire length of Trail #319 is now a visual travel corridor. This includes the .6 mile previously identified in the Forest Plan.

As a result of the creation of passing lanes on US Highway 12 near Powell, vegetative screening was lost between the highway and a log landing. Some rehabilitation or replacement of vegetation may be needed to meet Forest Plan VQO's.

Slash, logging debris, and burn piles need to be cleaned up along some visual travel corridors to improve foreground viewing. Districts need to strengthen sale administration to achieve cleanup standards or schedule the unfunded work with KV Funds.

Visual impacts of timber sale management activities viewed from the Lolo Trail Corridor need to be monitored closely for meeting Forest Plan VQO's. This corridor is a National Historic Landmark.

Clearcuts that do not borrow from the characteristic form, line, color, and texture found in the natural appearing landscape are appearing in the seen areas of some visual travel corridors. This could be the result of harvest prescriptions changing, for various reasons, before or during harvest. The Forest will continue to monitor prescriptions and provide follow-up training for district personnel charged with project implementation.

A perspective plot program has been used to design or adjust the design of harvest units to meet Forest Plan VQO's. Drawings developed with the HP 9000 perspective plot program tend to show less ground area within a cutting unit on steep slopes than does the PC NewPer perspective plot program. The HP 9000 perspective plot program is no longer used for designing cutting units on the Forest. However,

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## Visual Resources

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there may be some active sales harvest units that were designed with the HP 9000 program. Harvest units of these sales should be reanalyzed for meeting Forest Plan VQO's using the PC NewPer perspective plot program.

Some of the error of not getting cutting units to look on the ground as shown on perspective plot drawings could be related to the inaccuracy of map contour lines. The inaccuracy could be the result of interpreting elevations for contour lines through dense timber during the mapping process. There tends to be more error in the contour lines when sharp ridges are on steep slopes. Another error of getting units on the ground as shown in perspective plot drawings is that units are not located on the terrain where and how they were designed on a map. After units are located and traversed on the terrain, perspective plot drawings can be developed using the traversed mapped designs of units to see if Forest Plan VQO's are being met by the units as actually located on the terrain.

Forest Plan VQO Map information is stored in a computer database using the AutoCad computer program. These map boundaries are redefined as additional project level seen area analysis are completed. In the future, the computerized data will allow total acres, by VQO, to be calculated very efficiently.

## 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

#### Middle Fork of the Clearwater System

During FY 1992, construction of several recreation site improvements in the river corridor began. At the Wilderness Gateway campground, work began on retrofitting the campground to meet current accessibility standards and the needs of Recreation Vehicles (RV's). This work will continue in FY 1993 and will include construction of a campground host spur, renovation of the RV dump station, construction of a parking area and toilet for the activity pavilion, and replacement of campsite tables and fireplaces. Construction was also started on a new toilet at the Lochsa Historical Ranger Station. The potable water system at Wild Goose campground was upgraded and work began on retrofitting existing toilets at recreation sites to meet SST (Sweet Smelling Toilet) standards.

An Interim Guide for Recreation Facility Development for the river corridor was completed during FY 1992. The river corridor portion of the Clearwater National Forest Interpretive Plan was also completed. Site planning for recreation and interpretive site developments at Colgate Licks Trail, Devoto Grove, Lowell Watchable Wildlife/Selway River site, and the Boulder Creek Cabin at Lochsa Historical Ranger Station was completed.

A working group of Forest Service and Idaho Transportation Department managers and resource specialists began the development of the "U.S. Highway 12 Corridor Improvement and Maintenance Strategy and Implementation Guidelines". This effort is designed to integrate multi-agency planning efforts and to identify highway/river management issues. It will also establish on-going implementation

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## Wild and Scenic Rivers

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processes and action plans for accomplishment of project analysis, etc. Six unresolved issues were identified:

1. Encroachment on the river with new fill and rip-rap material.
2. Development of aggregate sources.
3. Use of Herbicides to control right-of-way vegetation.
4. Designation of Highway 12 as a Forest Service scenic byway.
5. Issuance of a Department of Transportation easement for the highway.
6. Rest stop policy and location in the corridor.

Both agencies are working to integrate management of the corridor and to resolve the identified issues.

Lochsa Ranger District completed the environmental analysis for a new well and potable water transmission and storage system at Idaho Transportation Department's Fleming Maintenance Station. In late FY 1991, the existing system was found to be inadequate and did not meet State health standards.

A number of recreation challenge cost-share projects were implemented in the U.S. Highway 12 corridor during FY 1992. These projects included:

Sherman Creek Centennial Trail trail bridge construction - volunteers from the North Central Idaho Chapter of the Backcountry Horsemen of America constructed a 40 foot long, steel web support pack bridge.

Tukaytesp'e "Windows on the Past" archeological project - This partnership involved the Forest Service, Nez Perce Tribe, University of Idaho, and local schools. More than 450 students from regional schools were exposed to the importance of preserving our cultural heritage. Students received "hands-on" experience investigating a 4000 year old pit house village site with archaeologists and anthropologists.

Wilderness Gateway pavilion landscaping and electrical wiring project - Volunteers from the Clearwater Resource Coalition and other local groups landscaped and wired the outdoor activity pavilion at Wilderness Gateway campground.

During the whitewater floating season on the Lochsa River (April 15 through June), a river ranger patrolled the river on weekends. The ranger discussed proper safety and resource stewardship techniques with river users. Floating use on the river has continued to increase over previous years. Five outfitters, under special use permit, continued to provide the unoutfitted public with river floating experiences on the river. One outfitting business was sold to a new owner during FY 1992.

The Lochsa Ranger District continued its administration of scenic conservation easements on 135 tracts along the Middle Fork of the Clearwater River. Seven new scenic easement administrative plans were completed for tracts along the river. Land ownership changes along the river continued to increase, with a corresponding increase in the need for new landowner contacts. Funding for scenic easement

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## Wild and Scenic Rivers

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administration continued to be inadequate to accomplish proactive management. Negotiations continued for acquisition of scenic easements on several high priority tracts in the Lowell and Syringa areas.

Approximately 1 mile of unauthorized road was constructed on an extremely steep side slopes within a scenic easement along the Middle Fork in FY 1992. Repeated administrative efforts to get a temporary restraining order to halt the work were ineffective. The Department of Justice was finally able to file a civil complaint late in the year. The case for restoration of the road is pending.

Funding was requested to complete an updated integrated resource management plan for the Middle Fork of the Clearwater Wild & Scenic River system for FY 1993. Preliminary budget advice indicated the project would not be funded. The earliest that such funding may be available appears to be FY 1994.

### Wild and Scenic River Studies

Kelly Creek, Cayuse Creek, Hungery Creek, Lower Fish Creek, White Sand Creek, portions of the Little North Fork, and portions of the North Fork of the Clearwater River were identified in the Forest Plan and subsequent amendments as being eligible for further Wild & Scenic river study. Funds were requested in FY 1992 to begin the suitability study process for these rivers. Preliminary budget advice indicates funds will be available in FY 1993.

Floating use of portions of the North Fork of the Clearwater River increased in FY 1992. The North Fork Ranger District received a request to consider the possibility of permitting outfitted floating services on the river in the future. Scoping for public comments on this request is expected to begin in FY 1993.

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## Wilderness

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## 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 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 and for proposed wilderness areas which include the Great Burn, Mallard-Larkins, and additions to the Selway-Bitterroot Wilderness. Each of these areas are considered separately below.

### Strategy

#### Forest Plan Proposed Wilderness

**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 delineates area boundaries.

#### 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.

**Continue 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.

<b>Item No. 5</b>	<b>Wilderness</b>
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 for Forest Plan Proposed Wilderness Areas.**

Funding has not allowed formal monitoring in these areas. However, informal observations are done on management trips to the area for other purposes such as for fire control, trail management and outfitter administration.

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 which have expressed concern about management direction have occurred and will continue in the future. 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 in the future. Development of formal management or LAC plans prior to Congressional wilderness classification would be inappropriate. However, coordination and interim direction seems appropriate to avoid actions which might foreclose future management options in these areas.

Motorized use is slowly increasing in the areas where it is not prohibited. Reports of conflicts are all third hand or older; but are being heard. At this time, there are no significant resource impacts or user conflicts that warrant action. However, as trails are reconstructed in proposed wilderness areas, it is likely some will be closed to motorized use for resource and investment protection.

### **Accomplishments/Findings for Selway-Bitterroot Wilderness.**

Annually the Selway-Bitterroot Wilderness Coordinator prepares a "State of the Wilderness Report" for the lands within the Selway-Bitterroot Wilderness on four National Forests and seven Ranger Districts. A summary of information from that report pertaining to the Clearwater National Forest portion of the

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## Wilderness

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Wilderness is presented below. Interested persons are urged to request the full "State of the Wilderness Report" from the Forest Supervisor.

### Areas That Do Not Meet Forest Plan Standards

The Forest has implemented the LAC process for identifying areas that do not meet standards for the Selway-Bitterroot Wilderness. Areas not meeting standards can be broken into two groups:

- (1) Camping area or geographic areas centered around a lake or point of concentration.
- (2) Non-system trails.

### Camping Areas

Camping areas are usually located at lakes, meadows, trail junctions, or other areas to which people are drawn for overnight camping. Often there will be several individual campsites in an area. The standards that typically are not met include bare ground from human and stock use, damage to trees from stock use and firewood cutting, and social impacts; such as number of parties in view or encountered.

Most of these sites had existed for some time but monitoring work had not identified them. Sixteen of these types of areas were identified on the Powell Ranger District and nine on the Lochsa Ranger District. During FY 1992 the Powell Ranger District completed its inventory.

After areas are identified, a management plan is prepared for each area. In FY 1992, planning was completed on the Lochsa District for the Maud/Lottie Seven Lakes area and rehabilitation work started. Initial planning started for one other site on each of the two districts.

### **Powell Ranger District**

Fish Lake/Airstrip: There are 6 sites within a square mile - 1 administrative site (cabin), 2 Extreme sites, 2 Heavy sites, and 1 Moderate site. As Fish Lake is located in Opportunity Class 4, this is an excess of 2 sites in general, and 1 Extreme, 1 Heavy, and 1 Extreme or Heavy site. One extreme site is an old outfitter base camp, now used as a spike camp with the shortening of the fall hunting season. However, new impact in this area is due mostly to airstrip users.

Lower Sponge Creek: There is 1 Heavy site which is unacceptable for Opportunity Class 3. This site is a well established hunter site and may receive trapping use as well.

Upper Sponge Creek: There are 2 Heavy sites within a square mile, which is two too many for Opportunity Class 3. One site is an outfitter spike camp and both receive mostly fall hunting and spring bear use.

Greystone Lake: There is 1 Heavy site which is unacceptable for Opportunity Class 3. This site appears to be primarily a hunter site.

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## Wilderness

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California Lake: There are 6 sites within a square mile. Four sites, 3 Moderate and 1 Heavy, are at California Lake itself. The situation at the lake has worsened since last year. Since then 1 Moderate site has become Heavy and 1 potential site has become Moderate. There are more moderate sites located across the ridge. As this area is located in Opportunity Class 2, there is an excess of 4 sites in general, and 1 Heavy and 4 Moderate sites in particular. Two of the sites at the lake are part of an old outfitter spike camp. Now California Lake receives mostly summer fishing use while the camps across the ridge receive light fall hunting use.

Robison Meadows (1 mile NE of Fish Lake): There are 3 sites within a square mile - 1 Heavy, 1 Moderate, and 1 Light. The Heavy site is unacceptable within Opportunity Class 3. It is a long established and well developed horse use and old outfitter site with excellent grazing opportunity.

Jct. Trails 211 and 644: There is an Extreme site which is unacceptable for Opportunity Class 3. This is an old outfitter camp with 8 excavated tent pads.

Pedro Ridge: There are 2 sites within a square mile - 1 Heavy and 1 Light. The Heavy site is unacceptable for Opportunity Class 3. This site has been used in the past as an outfitter drop camp during hunting season.

Lost Knife Meadows: There are 3 sites within a square mile - 1 Extreme and 2 Moderate. This is an excess of 1 Extreme and 1 Moderate site for Opportunity Class 3. The Extreme site is an outfitter spike camp. The Moderate sites are old camps which do not appear to receive much use anymore and were naturalized as much as possible in FY 1992.

East of Big Sand Lake, Section 5: There is 1 Extreme and 1 Heavy site within a square mile. Both are unacceptable for Opportunity Class 3. The Extreme site off Trail 906 in the saddle above Big Sand Lake has 51-75% unnatural mineral soil exposure and only 6-25% vegetation cover. This site needs restoration work. The Heavy site is a developed horse use site in a meadow on Big Sand Creek.

Upper Big Sand Creek: There are 2 more Heavy sites spread out along the route to Blodgett Pass. Although several miles apart, both are unacceptable in Opportunity Class 3.

Hidden Lake: There is a total of 2 Extreme, 1 Heavy, and 2 Moderate sites at the lake. In addition, an Extreme camp on Hidden Creek Ridge (Hangtough) is within a square mile of all but 1 Moderate site. This is an excess of 2 Extreme and 1 Heavy or Extreme site. Hangtough camp is a currently unused outfitter spike camp with extensive stock damage and mineral soil exposure. The Extreme and Heavy sites at Hidden Lake also show extensive stock damage and erosion problems.

Jct. Colt Killed/Big Flat Creeks: There are 4 sites within a square mile in the vicinity. In addition to the 1 Extreme, 1 Heavy, and 1 Moderate sites documented in 1991, an additional Moderate site was documented in 1992. This makes an excess of 1 Extreme, 1 Heavy, and 1 Moderate sites for Opportunity Class 3. The Heavy site is an old outfitter base camp which was relocated a long time ago, to the current Extreme site - which also hasn't been used in the past few years (most likely due to the shortening of the fall hunting season).

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## Wilderness

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White Sand Lake: In addition to the 5 sites at White Sand Lake inventoried in 1990 - 2 Heavy, 1 Moderate, and 2 Light - an additional Heavy site was inventoried in 1992 on Packbox Creek within a square mile of White Sand Lake. This exceeds the standard for Opportunity Class 3 by 3 Heavy sites.

Maud Creek: There are 2 sites within a square mile on upper Maud Creek - 1 Heavy and 1 Light. The Heavy site is unacceptable in Opportunity Class 2. It is an outfitter spike camp.

Siah Lake: There are 2 sites within a square mile in the vicinity - 1 Extreme and 1 Moderate. The Extreme site, located at Siah Lake, is unacceptable in Opportunity Class 3. A large excavated tent pad with mineral soil exposure contributes to much of the impact.

### Lochsa Ranger District

Stanley Hot Springs and Huckleberry Flat: This area is in Opportunity Class 4. Restoration efforts reported last year are succeeding. Visitors have not trampled revegetated sites. But several new fire rings (some are actual campsites) appeared this year. These have been completely naturalized. Campsite impact levels appear static, but the overall area is suffering because of wood gathering (hacking cedar snags, stripping bark), stock (chewing, pawing), and weeds. Four noxious and a dozen other exotics are established. Elaborate construction -- dammed pools, massive fire rings -- require frequent cleanup. Visitor use, monitored 21 days this year, shows the area is within standard 80% of the time, with a range of parties camped at 1 time of 0-6. Visitor reports, and evidence of heavy use, hint that use is actually much greater; or that any use over the standard is too much. Frequency of use seems much greater. NEPA planning for 1993 restoration project is rescheduled for this winter.

Horse Camp: This Opportunity Class 4 area is in the same condition as was reported in FY 1991 report. NEPA planning for 1993 restoration project will be re-scheduled when funds are available.

Cliff Creek: This Opportunity Class 3 area continues to improve. Two lightly used sites are no longer evident. Impact levels could improve further if tree wells were restored, stumps cut, and tree-tying discontinued. There are plenty of good locations for high-lining.

Seven Lakes/Maude & Lottie Lakes: NEPA planning was completed for this Opportunity Class 3 area in early summer. The Lochsa District has started a 3-4 year program of restoration, enforcement, and public information.

Florence/Lloyd Lakes: The Crags lakes, Opportunity Class 1, are visited every year by backpackers. Some campsites are improving and there is seldom litter. However, the wilderness setting is being degraded because of scattered fire rings, blackened rock ledges, accumulating stumps, and scorched sod. Meeting standards will require restoration work like revegetation, cutting stumps, and cleaning up fire scars. The feasibility of revegetation here is unknown but similar areas in the North Cascades have been restored. Preventing further degradation will require increased presence and education. While the Forest Plan says that "direct on-site management of visitors will seldom occur"; in Opportunity Class 1, wilderness rangers could make sure to visit the area at least once a season (instead of every other year

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## Wilderness

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as in past). Bulletin boards at Coolwater Ridge and Big Fog trailheads need to be kept up to date with good no-trace camping information (this began in FY 1992). Encounter levels are unknown.

Surprise Creek: This Opportunity Class 3 area was monitored this year. This area is seeing more use because of special restrictions at the Seven Lakes area three miles away. Since grazing is not permitted at the lakes, stock users are attracted to the large meadow area here. There is one new campsite and the Heavy site has shown increased tree root damage and barren area. The new site (south end of meadow) could be eliminated by restoring the bare area around the fire ring. Social encounters are within limits.

Long Lake: This Opportunity Class 4 area was also monitored this year. One site is no longer evident and has been dropped from inventory. The remaining sites are 1 Extreme, 1 Heavy, 1 Moderate, and 1 Lightly impacted (a new site). Only 1 Heavy/Extreme site is acceptable in Opportunity Class 4. The extreme site continues to be heavily used. Monitoring is showing the barren area has increased. There are materials nearby (rocks, soil) for restoring and reducing area. The meadow site is improving with less use. The rating here dropped from Extreme to Heavy; nevertheless, heavy damage to tree roots remains from past use. The site could be Moderate if the tree wells were restored. Facilities have been removed and the area naturalized. The new site is in a boggy meadow inaccessible most of the year. There are no facilities and damage to trees is the most apparent disturbance. This site could possibly be eliminated by digging up the fire scar and replacing it with sod from the meadow. Without further disturbance, trampled areas around trees could recover. Social encounters continue to stay within acceptable limits.

Outfitter Camp Upper Boulder Creek: This Opportunity Class 3 area was monitored this year. The impact rating has dropped from Extreme to Heavy due to the site being cleaner. Severe impact to vegetation remain. There are many stumps and green trees cut each year, mainly for tent poles. This first known population of yellowstar thistle is 1 of 5 noxious weeds in the corral. There are 17 other exotic species. Outfitter has been notified of the yellowstar thistle. The District will work with permittee to eliminate the corral. The use of kerosene heaters this year meant less firewood cutting. The Permit specifies 25% forage utilization to lessen overgrazing in nearby meadows.

Old Man Lake: Monitoring occurred in this Opportunity Class 3 area this year. Site density is the same as in FY 1991 but impact levels are improving. Two Heavy sites changed to Moderate. One site was unused by the outfitter and could be restored by removing tent poles and firewood, and cutting stumps. The Site at the lake inlet has no suitable highline area.

### Non-system Trails

Non-system trails are not listed on the Forest Service trails inventory. Cross-country travel (travel not occurring on system trails) is an accepted practice for both hiker and pack and saddle stock users, and for both the outfitted and non-outfitted public. However, as described in the Trails Handbook, such travel must meet the following standard:

## Wilderness

Travelers can remove obstructions as necessary to provide minimal passage through the area as long as it can be done in a manner such that impacts typically recover on an annual or shorter basis, and are essentially unnoticeable to the majority of visitors. Occasional "choke points" (short stretches seldom exceeding 300 to 400 yards in length that result from topographical features, stream crossings, and old fires) exist where the travelway may be visible to a moderate number of visitors. Impacts from these choke points may persist from year to year, but should not significantly detract from the experience intended within the opportunity class. Consistent with the "Prevention of Significant Deterioration" approach, conditions will not be permitted to worsen.

**Table 1. Non-system Trails That Do Not Meet Standard**

LEGEND:

Age: N = New, C = No change from previous monitoring

Change: S = Static, D = Declining, U = Up or Increasing

	Age	Change	Description of Problem
Trail A	C	S	Described in 1991 State of the Wilderness report (SOW) as Trail 1.
Trail C			Approximately 3 mile long short-cut access trail to a spike camp. First mile of trail is a short-cut between two system trails. Trail has been blazed and logged out and is well worn. Use is heavy during fall hunting season and very light the rest of the year. The short-cut section of the trail passes through Opp. Class 3.
Trail D	C	D	Described in 1991 SOW report as Trail 4.
Trail E	C	S	Described in 1991 SOW report as Trail 6.
Trail F	C	U	Described in 1991 SOW report as Trail 5.
Trail G	C	U	Described in 1991 SOW report as Trail 7.
Trail H	C	S	Described in 1991 SOW report as Trail 8.
Trail I	C	S	Described in 1991 SOW report as Trail 9.
Trail J	C	U	Described in 1991 SOW report as Trail 10.
Trail L	N	S	Approx 1 1/2 mile long access trail to a lake. Lightly impacted high ridge trail which used to be part of a system trail. Tread could resemble game trail, but trail has been blazed. Trail receives mostly light fall hunting use and passes through Opp. Class 1.
Trail M	N	S	Approx. 1 1/2 mile long access trail to a lake. Trail is well worn and blazed with eroded creek crossing. Trail receives mostly fall hunting use and is Located in Opp. Class 3.
Trail N	N	U	Old hunting trail which does not receive much use anymore due to shortening of hunting season. Trail has been heavily logged in the past but is now becoming brushed over. Located in Opp. Class 1.
Trail O	N	S	Approx. 1 1/2 mile long hunting trail out of airstrip over ridge into adjacent drainage. Trail is blazed. Receives light use. Trail enters Opp. Class 1.
Trail NS-3	C	D	Frequent use by outfitter during hunting season.

## **Accomplishments/Findings for the Composite Wilderness Resource**

### **Planning**

A Forest Plan amendment for recreation, trails, and airfield management in the Wilderness was signed by the four Forest Supervisors in February of 1992. The management direction in this amendment is included in a new version of the document titled, "*Selway-Bitterroot Wilderness General Management Direction*". This document includes previous management direction for wilderness resources that have not yet been updated as part of the LAC planning effort. As new direction is written (e.g., for soils, water, fisheries, etc.), it will be added to the General Management Direction and amended to the Forest Plans.

Two sub-task force working groups are drafting management direction for wildlife and vegetation management. Both groups expect to have their work completed by the spring of 1993.

### **Vegetation**

#### **Powell Ranger District**

Fifty-eight acres of noxious weed surveys along trails assumed to have potential weed problems.

#### **Lochsa Ranger District**

The 25% forage utilization rule was emphasized on one outfitter's permit this year. Overgrazing has been a problem in the past. The outfitter had complied during the beginning of the season but grazing was not been checked at end of the season.

New populations of kittentails, tofieldia, and deer fern were found this year.

Exotic species inventories were done on 15 miles of trail and five heavily used stock sites. The first known population of yellowstar thistle were found in an outfitter's camp 11 miles from Wilderness Gateway trailhead. The plants were pulled. Selected weeds were cut or pulled at this site, Horse Camp, and Stanley Hot Springs. These weeds were Canada thistle, goatweed, houndstongue, bull thistle, burdock, and mullein. A plan for spotted knapweed control is being prepared for consideration by Back Country Horsemen and other volunteers who have expressed interest. Control would include pulling the knapweed and the seeding of native species.

Grazing restrictions at Seven Lakes area were changed from no grazing within 500 feet of lakes to no grazing from June 1 - September 15 within the entire restoration area.

### **Wildlife and Fisheries**

#### **Lochsa Ranger District**

A biological evaluation, including a sensitive plant surveys, was prepared for the Seven Lakes Restoration Area. Two sensitive plants, kittentails and tofieldia, were found.

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## Wilderness

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### Soil and Water

#### **Lochsa Ranger District**

This year baseline data was collected for ten wilderness lakes on the Lochsa and Powell Districts. This completed baseline data collection for the Acid Rain Deposition Survey for Class 1 airsheds. Selected lakes will be monitored in future.

### Recreation

#### **Powell Ranger District**

Wilderness Rangers and a group of 7th graders from Minnesota were invited by outfitters to perform a skit which emphasized wilderness ethics and low-impact camping.

#### **Lochsa Ranger District**

A restoration project was begun in the Seven Lakes Area. In order to overcome problems, such as too many heavily impacted sites per square mile, the following changes were made:

- \* New regulations were issued.
- \* Stock sites were designated.
- \* Some sites and non-system trails were closed.
- \* 2000 feet of system trails was re-routed.
- \* Restoration was used to reduce impact levels.

A volunteer crew (6 high school students plus a supervisor) from the Student Conservation Association worked for 4 weeks and completed both the re-route and stabilization of the old tread, as well as, restoring 4 campsites. More volunteer help has been sought (AGO funds) to continue the site restoration work in FY 1993. There are more sites to restore and the area's shallow soils, vegetation, and climate combine to produce slow results. Compliance with the new regulations and designated sites has been good so far. A brochure and signs alert visitors to the changes, and personal contacts are made by wilderness rangers and campground hosts. David Cole (Forest Service Wilderness Research) wants to experiment with various revegetation methods and also help monitor progress.

The District continued its 6th grade education program in *Leave No Trace* with Kooskia and Kamiah schools. Central Idaho Back Country Horsemen filmed a low-impact stock camping video on the District.

NEPA planning is scheduled to begin this winter for the Stanley Hot Springs/Huckleberry Flat Problem Area. Use at the Hot Springs continues to rise as more visitors learn about the area from guidebooks.

Wilderness

Table 2. Summary of Recreation Related Projects

ITEM	POWELL	LOCHSA
Effective presence on ground, including field time, and office time to make work plans and update maps and files	20%	100%
Completed inventory of identified "Problem Areas" (from inventory action plan)	95%	100%
Completed inventory for 20% of sites	100%	100%
Documentation of new sites and non-system trails in district files	100%	100%
Site and visitor use data analyzed with problems identified	75%	100%
Data collected and analyzed for airfields including number of landings per day, year, and length of stay	0%	N/A
State of the Wilderness Report complete and submitted on schedule	100%	100%
Develop next season's operating plan	100%	100%
Number of sites inventoried during FY 1992 out of total on district	44/145 <sup>1</sup>	21/100 <sup>2</sup>
Number of sites inventoried cumulative out of total on district	136/145	98/100
Number of sites partially naturalized (normal cleanup of fire rings, structures, etc.)	60	18
Number of sites fully naturalized in effort to eliminate site (such as eliminating fire rings in new lightly impacted sites)	60	34
Number of district employees who routinely kept up the visitor contact records in the field versus the total number of field-going employees	0/4	2/4
Portion of district trails/destinations covered by wilderness ranger patrols	95% <sup>3</sup>	90%

<sup>2</sup> 8 sites = baseline, 13 sites = monitoring

<sup>3</sup> 20% of trails patrolled on a regular basis, 75% of trails patrolled at least once during the field season

## Wilderness

### Prescribed Natural Fire

The following tables and narrative summarizes the Prescribed Natural Fire (PNF) program for FY 1992. Table 3 displays report items identified in the Government Accounting Office report to Congress. While reviewing costs, the reader should be aware that dollar amounts do not reflect total costs. In particular, they do not include the cost of normal district operations, including the salaries of permanent fire personnel. The reader also needs to be cautious when comparing the costs of managing Prescribed Natural Fires with wildfires. During FY 1992, wildfires were more costly to manage per acre than Prescribed Natural Fires. However, Prescribed Natural Fires can become more costly if it becomes necessary to put them in wildfire status.

**Table 3. Summary of Wilderness Fire Program**

ITEM/AREA	NUMBER/AMOUNT
Total number of fire starts	54
Number of opportunities for prescribed natural fire (PNF) during the 1992 fire season.	54
Number of human-caused fires	0
Number of fires in PNF status	18
Number of acres burned in PNF status	28
Special costs of managing PNF's	\$2,500
Number of fires immediately declared wildfires	29
Number of fires later declared wildfires	7
Acres burned as wildfires	287
Special Cost of wildfire suppression	\$615,800

Table 4, below, lists the items in the "Initial Decision Analysis". Districts review this list to determine whether a natural ignition will be declared a wildfire or a prescribed natural fire. If any factor is considered unacceptable, than a natural ignition is declared a wildfire. A given fire may have multiple reasons for being declared a wildfire. This is why these columns add up to more than the total number of lightning-caused fires listed on the previous page.

**Table 4. Reasons and Number of Lightning Caused Fires Declared Wildfires**

REASON	NUMBER
Threat to life or property	1
Threat to wilderness boundary	25
Energy Release Component unacceptable	0
Current and forecast fire behavior weather unacceptable	0
Resources not available to manage PNF	4

**Table 4. Reasons and Number of Lightning Caused Fires Declared Wildfires (continued)**

REASON	NUMBER
Air quality unacceptable	6
Benefitting project funding not available to manage PNF	0
Local, regional, or national situation unacceptable	0
Forest Supervisor or Designated Acting approval not given	0

July 19 marked the date the Clearwater National Forest declared its first prescribed natural fire within the Selway-Bitterroot Wilderness during the 1992 fire season. This fire was the Hidden Ridge PNF. The fire weather indices took a sudden plunge during the latter part of July (7/20-24) due to several moderate rain storms. These rain storms extinguished this fire. Several other PNF's (10) were declared at the end of July and on the first of August. These also did not survive past the middle of August. Even though the weather gradually became hotter and dryer and the indices rose slightly each day, a combination of light fuels, lack of wind events, and periodic light rain (8/8-8/15) kept these PNF's from exhibiting any growth.

As the fire season progressed, conditions became right to ignite a multitude of fires across the entire Clearwater National Forest. During a three day period (August 19-21), the wilderness received a total of 23 fires, of which seven were declared PNF's. The entire Forest received about 160 fires during this period. The Forest made a decision that all wilderness fires would be low priority because of limited suppression resources and many fires occurring within higher resource value lands (i.e., timber allocation lands). Consequently, wilderness fires not declared PNF were put into confinement or containment strategy. On August 22-24, the Forest began receiving moisture in the form of rain and snow at the higher elevations. This held all PNF's to small acreages. On September 4-16, the Forest received heavy moisture basically ending the fire season.

The Forest did utilize the prescribed natural fire program. The question the Clearwater National Forest needs to ask is; did the Forest allow the right fires to play their natural role? Given the type of season that occurred, it is possible that the suppression action taken had a minimal effect on the amount of acres burned within the Selway-Bitterroot wilderness and the Forest had as successful of a season as we could have given the conditions. This is a hard question to answer because it is purely speculative and based on so many variables. However, reviewing exhibited fire behavior of unstaffed fires (PNF & wildfires) it is more likely that the previous conclusion is more true than false. Small fires (fires less than 100 acres) are just as much a part of meeting the objectives of allowing fire to play its natural role as having the larger fires (fires greater than 100 acres).

There were two wildfires that occurred on the Powell Ranger District within the Selway-Bitterroot Wilderness that required extended attack and placement of a Type II incident management team to manage both fires simultaneously. One of these fires, the Holdover Fire burned 172 acres but was suppressed because it threatened the wilderness boundary. The Corky Lake Fire, which was declared wildfire due to smoke management and risk considerations burned 110 acres. If allowed to burn naturally the acreages burned by these fires could have been higher but probably not significantly due to rain storms from August 8-15 and August 22-24 and the lack of wind to push the fires. The Holdover fire occurred on August 1, 1992, and the Corky Lake fire was discovered on August 3, 1992.

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## **Wilderness**

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Most of the other wildfires (21) that occurred within the Selway-Bitterroot Wilderness were confinement strategy wildfires. There were no resources committed to these fires. Therefore, it can be assumed that these fires burned as naturally as a prescribed natural fire. The final acreage of these fires was less than 3 acres. The other 15 wildfires that were under contain or control strategy either had some initial suppression action taken or the suppression action was delayed due to suppression resources being in short supply. These wildfires may have burned more acres if suppression action had not been taken. However, given the periodic rain storms and reviewing the exhibited fire behavior on other similar fires, any increase probably would not have been significant.

The Forest conducted reviews of two prescribed natural fires (both greater than 100 acres) that occurred in FY 1991. The results of these reviews have been documented and are on file at the Powell Ranger District and Clearwater Forest Supervisor's Office. These reviews evaluated the Two Mile (1,100 acres) and Hardtime (120 acres) PNF's. The objective indicators outlined in the 1990 program revision were used as the basis for each of these reviews. Some of the topics addressed in these reviews included the following:

- \* Effects of these fires on the ecosystem.
- \* Continuation of natural vegetative mosaics.
- \* Plant and animal inter-relationships that have evolved with fire.
- \* Reduction of unnatural fuel accumulation.
- \* Effects of past fire suppression efforts on ecosystems.
- \* Adequacy of PNF procedures and policy.

### **Heritage Resources**

#### **Powell Ranger District**

Cultural resource surveys were completed for Trapper's Cabin near Elk Summit and for the reconstruction of the Wind Lakes Trail.

#### **Lochsa Ranger District**

Surveys were completed on 4.5 miles of proposed trail reconstruction (3.5 miles on Trail #206, Stanley Butte - Old Man Meadow, and .5 miles on Trail #220, Seven Lakes) and 2 restoration areas (Seven Lakes and Stanley Hot Springs).

### **Law Enforcement**

When a violation of law is observed, Forest Service employees have three options on how to document it. A Notice of Violation is the same thing as a "ticket" and carries either a fine or a mandatory court appearance. It can only be issued if the violator is present or known. If the violation is not serious enough for a Notice of Violation, a Warning Notice can be issued instead. More often than not the violator is unknown; in which case districts fill out an Incident Report. As can be seen from the charts below, some districts place a priority on filling out incident reports; whereas, others do not.

Table 5. Wilderness Law enforcement Summary

TYPE OF ACTION	NUMBER	TYPE OF VIOLATION
Warning Notice	1	Litter
Violation Notice	1	Chainsaw
Incident Report	3	Litter
	3	Human Waste
	1	Campfire where prohibited
	1	Chainsaw
	1	Bicycle
	1	Exceed 14 day limit

**Minimum Tool Use Report**

Proposed management direction for the Selway-Bitterroot Wilderness includes the application of the "minimum tool principle" for fire suppression. This "principle" is defined as follows:

The minimum management actions necessary to correct a given problem will be identified. These will be implemented using the methods and equipment which accomplish the objective with the least impact on the physical, biological, and social characteristics of wilderness.

The following descriptions explain how each district applied this principle during the 1992 fire season. This includes any activities that required power tools, aircraft, extensive stock support, temporary structures or facilities, degradation of camps, degradation of the social setting, and the like.

**Powell Ranger District**

Type II overhead teams were assigned to two wildfires within the Wilderness during the 1992 fire season. These two wildfires required that "Light Hand" fire suppression tactics (Minimum Impact Suppression Tactics) be employed to lessen the resource damage by normal fire suppression activity. The Holdover and Corky Lake fires had very little fire line constructed. Much of the containment and control efforts were designed around the use of water, wet fire lines, and cold-trailing the fire perimeter with a minimal amount of actual fireline cutting with hand tools. The suppression efforts on these two fires were a total success from a control and resource protection standpoint.

All three Selway-Bitterroot Wilderness National Forests have been involved with the Regional Office and other Forest's in the region in developing regional guidelines for Minimum Impact Suppression Tactics (MIST) for application in all wilderness areas in Region One. This effort will be completed during FY 1993.

**Lochsa Ranger District**

Trail and campsite restoration work was done at Seven Lakes by a seven person crew using hand tools. During the four weeks they were in the area their presence affected the social setting but the social encounters standard was not exceeded. The group used a large heavily impacted campsite for four

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## **Wilderness**

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weeks. They carefully flagged in-camp travel routes, used a "pit" fire, free-standing tents, pit latrines, sieved dishwater, and burned food scraps. Their stay had a minimum impact on the site. Blasting was completed in one day. However, stock support resulted in heavy use of a non-system trail for a short while. This trail provided the route needed to make the round trip in one day rather than having to overnight stock in the restoration area.

The Lochsa District trail crew and maintenance contractors used hand tools for all work.

The Louse Lake/Snow Lake reconstruction project required motorized rock drilling and extensive blasting. The motorized use was approved only after considering the impacts of alternative methods.

### **Findings and Recommendations of Field Reviews**

The Selway-Bitterroot Wilderness Management Direction requires that a annual field review be conducted to review the effects of human activities on the wilderness resource. The field review was not held in FY 1992 due to scheduling difficulties and other priorities. In addition, the new Selway-Bitterroot Wilderness coordinator reported for duty late in the field season and was not able to assist in the coordination of this meeting.

A review of the Two Mile Prescribed Natural Fire on the Powell Ranger District was held in September. The fire was evaluated using the objectives listed in the Selway-Bitterroot Prescribed Natural Fire Program Revision (1990). The review team concluded that the main objective, allowing fire to play a natural role in the Wilderness, was met in the management of this fire. Other recommendations made by the team were to have a representative from wilderness management present during the review and to maintain a fire history atlas. An atlas would provide a more complete historical record for future wilderness and fire managers. A review of the Hardtime Prescribed Natural Fire on the Powell District was also completed. A copy of both reviews can be obtained from the Selway-Bitterroot Wilderness Coordinator.

### **Emerging Issues and NEPA Projects Affecting the Wilderness**

This section documents any emerging issues or forthcoming NEPA analyses. It includes any projects outside of the Wilderness with potential to affect the Wilderness; such as road improvements, changes in access, timber harvest activities, game regulation changes, lake stocking, shifts in use patterns, fires, or other natural disturbances.

#### **Protection of the Wilderness boundary from escaped PNF'S**

Currently the Clearwater Forest has a buffer strip along the north end of the wilderness where PNF's have not been allowed due to our inability to insure a PNF will not escape the wilderness. The width of this wilderness buffer varies by topography and fuels. In some areas, the management areas adjacent to the buffer have objectives which are compatible PNF management. A plan needs to be developed to allow PNF's in these areas. In this way, more defensible boundaries can be used to contain PNF's and also allow fire to play its natural (ecological) role across ecosystems; not administrative boundaries. This will significantly increase the area where prescribed natural fires are allowed to play their natural role, as well as allowing more fires to be considered for PNF status. The plan also needs to address areas where PNF's are not compatible with adjoining management area objectives. In addition, the management actions and activities necessary to keep PNF's from escaping into these non-compatible

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## Wilderness

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areas need to be identified. This should be a multi-Forest coordinated NEPA effort since the Bitterroot Forest has similar concerns along the Bitterroot Valley face.

### **Smoke management**

This issue is increasing in magnitude of importance and all Selway-Bitterroot Wilderness Forests will need to address this issue. As the demographics of the Bitterroot Valley and other areas surrounding the Selway-Bitterroot Wilderness continue to change, an extensive public education program needs to be implemented. The new populations moving into the area are trying to escape air pollution and have little tolerance for smoke from any source. The public really doesn't care whether smoke is coming from wildfire, PNF's, or our management ignited program. It's all the same to them. The Forest's need to educate the public about the benefits of both prescribed fire programs and the consequences if we do not allow these programs because of constraints on smoke. We need to explain that the northern Rocky Mountains are Forest's born of fire and smoke has been part of the environment for centuries. Trying to eliminate smoke from our environment, as we have tried to do through our suppression program over the past 50 years, has negative impacts. Some of these impacts are, but not limited to; the spread of some forest insects and diseases that are inhibited by smoke and other effects of fire, larger and more severe wildfires due to the unnatural buildup of forest fuels.

### **Wind Lakes Area**

This area receives high use. The poor condition of the trails used to access the area contribute to increasing problems in managing the area. These trails need to be rerouted to avoid continued resource damage.

### **Proposed Restoration at Stanley Hot Springs/Huckleberry Flat**

Management actions are needed to maintain a wilderness setting at this heavily used attraction five miles from a major portal. Use is year-round and the frequency has increased. The area is small and feels crowded even if there are only two or three parties there at one time. Fire rings, trash, elaborate pool construction and tree damage cause impact level standards to be exceeded. The warm microclimate downwind supports four noxious weeds and a dozen other exotics. Visitor contact and cleanup work has greatly increased. However, additional personnel are needed to focus on this heavily used area. NEPA planning is scheduled for this winter. Alternatives will consider actions like closing the area to overnight camping, prohibiting campfires and designating campsites.

### **Noxious weeds**

The spread and increasing number of noxious weeds is becoming more noticeable each year. Heavy infestations of spotted knapweed at the Boulder Creek trailhead and a one acre island in the Huckleberry Flat area are a threat to the the Boulder Creek drainage and the Lochsa portion of the wilderness. The Lochsa District has plans to begin mechanical removal and seeding native grasses during the early summer of FY 1993 by interested volunteers.

### **Dan Ridge**

The Desired Future Condition Map, which is part of the 1992 Update of the Selway-Bitterroot Management Plan, contains an error. It shows a Opportunity Class 3 corridor on along Trail #67 through sections 20 and 30 above Colt Creek up to Dan Ridge. Trail #67 has been abandoned for over 12 years. The bottom of this trail was eliminated when Trail #50 was reconstructed in 1992. This section of the trail is labeled Opportunity Class 3, but should be Opportunity Class 1. A related point is that Trail #903 in

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## Wilderness

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section 13 and 24 is inside the Wilderness by several hundred feet. (The Wilderness boundary follows a ridge line while the trail skirts around a knob to the east). This trail corridor is not given an Opportunity Class. This trail should be Opportunity Class 3.

### **Administrative Structures**

The Chief has given direction that all wilderness areas are to examine administrative use of structures in the wilderness. The purpose of the review is to determine if the buildings are essential for management. If the structures are deemed necessary, the Forest is to provide management direction for those buildings. This direction is to be included in the Forest Plan management direction for the Wilderness. Administrative structures to be addressed in this review include five lookouts and three administrative cabins. The lookouts on the Clearwater include Graves Peak, McConnel, Sponge Mt., Diablo, and Hidden Peak. The administrative cabins are McConnel Cabin, Fish Lake Cabin, and Horse Camp Cabin. A decision is expected late in the summer of FY 1993. Alternatives to be considered include removal, continued use, or some form partial use while allowing the site to deteriorate naturally until it is unsafe and must be removed. Public comments should be addressed to the Forest Supervisor.

## Wildlife

### Goal

Manage and provide habitat that will support viable populations of all resident 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. Annually improve an additional 1,000 acres of big-game habitat by logging. Implement a variety of management prescriptions that include use of road closures and modification of 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, endangered, proposed, and candidate 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 or promote the recovery of all listed 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 displaying the population trends and effects of management will be prepared annually.

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

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## Wildlife

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### Monitoring Action

To monitor the effects of Forest activities relative to maintenance and enhancement of plant and animal diversity. A wide variety of plant and animal habitats currently exist and are well represented on the Clearwater National Forest. The exception is old-growth habitat. A status report will be prepared and updated annually that displays the amount and distribution of old-growth habitat.

### Accomplishments/Findings

During FY 1992, the Forest developed an Ecosystem Management (EM) team of resource specialists that would coordinate and develop systematic and consistent methods and techniques to collect information on bio-diversity and EM. During 1992, a number of projects were initiated using the concepts of EM. On the Powell Ranger District a proposed project in the White Sand area began that would evaluate the options and alternatives of managing that area under the concepts of EM. An extensive amount of field data was collected for this proposal. Analysis of this data is expected to be completed in FY 1994.

Also, a forest field crew helped coordinate and collect EM data within the Clearwater National Forest for the development of Regional models of vegetation classification. Data will be used during the NEPA process to address a variety of landscape level issues and concerns. Approximately 200 permanent plots were randomly located throughout the Forest. An Ecosystem Management Action Plan that details specific tasks and time frames was completed.

Of paramount concern to maintaining the integrity of bio-diversity on the Forest is the management of old-growth habitat. The impacts of extensive past, present, and planned harvest activities in old-growth stands will need to be thoroughly evaluated. A detailed and comprehensive assessment of the amount and distribution of old-growth habitat on the Forest using the best available data was completed in March of 1992. This report will be updated annually to reflect the most recent field data findings.

<b>Item No. 25</b>	<b>Big Game Habitat Improvement</b>
Frequency of Measurement:	Annual
Reporting Period:	Annual

### Monitoring Action

The Forest wildlife biologist will coordinate a report detailing vegetative response on winter range acreage receiving rehabilitation treatment. All acres being treated under big game winter range rehabili-

tation 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 and Summer Range**

During FY 1992, approximately 900 acres of timbered winter range were logged to provide forage for big game in accordance with the Forest Plan goals and objectives. No other treatments, such as prescribed burning, slashing, seeding, or fertilization were conducted for winter range enhancement. Monitoring results indicate and reveal that it will be very difficult to meet the Forest Plan goals and objectives for winter big-game habitat. Prescribed fire and smoke management policies will 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, re-evaluated, and revised. The elk population on the Forest has stabilized at a relatively high level.

During FY 1992, the Forest coordinated and cooperated with the Idaho Fish and Game Department to implement a bull elk/road closure vulnerability study. The study began during the 1991 hunting season on portions of the Lochsa and Pierce Ranger Districts. It was determined through discussions with Idaho Fish and Game Department officials that funding for the study should be given high priority. Therefore, habitat improvement funds were used to account for assigned wildlife targets.

The elk population on the Forest has stabilized at approximately 20,000. According to current harvest figures from Idaho Fish and Game Department, record numbers of bull elk have been taken from hunting units on the Clearwater National Forest. Additional information on the elk resource can be found in Monitoring Item 26.

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

**Accomplishments/Findings**

**Indicator Species**

The following species were selected in the Forest Plan as indicator species: elk, moose, white-tailed deer, pileated woodpecker, goshawk, pine marten, kingfisher, and all indigenous threatened, endangered, and sensitive plant and animal species. The table at the end of this section lists all indicator species and their status.

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## **Wildlife**

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### **Kingfisher**

The kingfisher, a fish-eating bird that lives near most streams and creeks, was thought to be a good indicator species for monitoring riparian habitat. Additional information and consultation with Dr. Jeff Yeo, University of Idaho, indicates that an alternative indicator species should be developed. This will be done when the Forest Plan is revised.

### **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 due to bull elk vulnerability during the hunting season. Implementing road closures during hunting season can slow the downward trend. To better quantify the benefits of road closures, a cooperative study was implemented with the Idaho Department of Fish & Game on portions of the Pierce and Lochsa Ranger Districts in 1991 and will extend to 1996. The study involves the closing of several access roads during hunting season to determine the effects on bull elk harvest.

### **Deer**

Approximately 6,000 white-tailed deer inhabit the Forest. Annual harvest remained stable. Recent mild winter conditions significantly reduced mortality and the population is increasing. Implementation of management practices to mitigate impacts for elk, riparian, and old-growth dependent species will also benefit overlapping white-tailed deer habitat.

### **Moose**

Approximately 1,500 moose inhabit the Clearwater Forest. Harvest remained stable in 1992. Mild winters during the past five years contributed to a slight increase in the population. The Powell Ranger District continues to support habitat for approximately 75% of the Forest moose population. Moose populations are extremely sensitive to excessive hunter harvest and loss of winter habitat (i.e., multistoried timber stands). Coordination and biological input must be maintained for all projects planned in moose habitat.

### **Pileated Woodpecker, Goshawk, and Pine Marten**

These three species were selected as indicator species for monitoring a variety of old-growth habitats across the Forest. During 1991, permanent transects were established on portions of the Pierce and Lochsa Ranger Districts in the Upper Deadman, Canyon, and Eldorado Creek areas. Data on these species as well as for neotropical birds, small mammals, reptiles, and amphibians were collected within old-growth habitat. Vegetative plots using a combination of stand exams and ecodata methods were also established for each transect. Funding was not available in FY 1992 to monitor and collect data from these permanent transects. As funding becomes available, this type of monitoring should be continued and implemented on additional portions of the Forest.

### **Gray Wolf (Endangered)**

During FY 1992, a male wolf that had been radio-collared near Glacier National Park in 1991 was discovered in the Kelly Creek area. In cooperation with Central Idaho Wolf Recovery Team, University of Montana, and USFWS a monitoring plan was developed and implemented during the past year. A report documenting the movements of this wolf and the monitoring effort is currently in progress.

In addition, the forest received approximately 20 new reports of possible wolf sightings. None of these reports could be confirmed. Data on all wolf recovery is now being stored at the Conservation Data Center in Boise, Idaho.

Forest personnel remained active on the Central Idaho Wolf Recovery Team and technical sub-committee during FY 1992. The Forest continues to coordinate the use of the wolf educational kits (K-12). These educational materials were used by approximately 1500 students throughout north central Idaho. Approximately 10 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. 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 and chemically contaminated foods.

### **Grizzly Bear (Threatened)**

For the past five years, the Clearwater was 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 were analyzed for its suitability to recover a viable population of grizzly bears. A final report was prepared and delivered to the U.S. Fish and Wildlife Service during FY 1992. The Interagency Grizzly Bear Committee (IGBC) subsequently rendered a decision to proceed with the development of a recovery chapter for the Bitterroot recovery area as described in the evaluation report. The Idaho Fish and Game Dept. was given the lead responsibility to develop and implement a public involvement plan during the development of the recovery chapter. The Forest Biologist was designated to serve on the technical team for this effort. A series of public meetings was held on the Forest during FY 1992 to gather input and develop a Citizens Involvement Group.

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## **Wildlife**

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### **Sensitive Species**

Presently there are 9 animal and 21 plant species that are listed as sensitive. A revision of the Sensitive Species list was anticipated during FY 1992. However, the list remains unchanged since the Regional Forester did not approve the deletion or addition of any species. During FY 1992, most of the work conducted on sensitive species was accomplished through a partnership agreement with the Idaho Conservation Data Center. The focus of the work was to conduct basic surveys and inventories. Funding for monitoring during FY 1992 was limited. No new monitoring efforts were initiated and most on-going efforts were constrained or discontinued.

### **Animals**

#### **Wolverine**

The Clearwater Forest is on the periphery of wolverine habitat. A small number of confirmed observations continue to be reported on the Forest each year. A small remnant population is believed to still exist in remote portions of the Clearwater Forest. No direct surveys were conducted for wolverines in FY 1992. A conservation plan for the species is currently being written by the Regional Office in partnership with other agencies.

#### **Western Big-Eared Bat**

The western big-eared bat is a cave-dwelling bat that was suspected to occur on the Forest. To date, no observations have been made of the species. Suitable habitat for this species on the Clearwater is extremely limited if not nonexistent. A recommendation will be made to the Regional Forester to delete this species from the Clearwater Sensitive Species list.

#### **Harlequin Ducks**

For the past five years surveys have been conducted, in cooperation with the Idaho Conservation Data Center, for harlequin ducks on the Forest. Harlequins have been observed on the North Fork of the Clearwater and Lochsa Rivers. Numbers appear to be low, and very limited reproduction has been documented. Enough data has been collected so that a conservation plan is now being written for this species.

#### **Boreal Owl**

Boreal owl surveys have been conducted over the past five years. Boreal owls occur throughout the Forest in high elevation spruce fir and lodgepole habitats. 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. Five hundred nest boxes were installed and checked. To date, no boreal owls have nested in the boxes. However, some boxes have contained nesting flying squirrels. A conservation plan for boreal owls is being written.

**Coeur d'Alene Salamander**

Coeur d'Alene salamander surveys that have been completed for the Clearwater Forest indicate that the species is much more widely distributed than previously believed. A nocturnal species that is very difficult to observe, it is usually associated with a rocky waterfall/steep cliff-type habitat. A conservation plan for this region is being written.

**Black-Backed Woodpecker, Flammulated Owl, Lynx, and Fisher**

These four species were listed as Sensitive Species for the Clearwater Forest during FY 1991. We are in the process of conducting an extensive search for information on the management of these species. Funding was not available on the Forest in FY 1992 to conduct field surveys for these species.

**Plants**

Collecting information on sensitive plant species through field surveys and inventories is a critical part of the Clearwater's TES program. Funding was not available during FY 1992 to initiate any new or maintain previous levels of monitoring. Approximately 10 projects received sensitive plant coordination. In addition, a number of partnership projects with the Idaho Conservation Data Center were conducted. These included the establishment of permanent plots in the Steep Creek timber sale, monitoring of Pacific Dogwood, *Cornus nuttallii*, on the Clearwater and Nez Perce National Forest, and gathering data for community and population monitoring in Aquarius Research Natural Area.

# Wildlife

## - ENDANGERED, THREATENED AND SENSITIVE SPECIES ON THE CLEARWATER NATIONAL FOREST -

COMMON NAME LATIN NAME	STATUS				C1	(Candidate) C2	C3	Sensitive
	Endangered	Threatened	Proposed					
Gray Wolf <i>Canis lupus irremotus</i>	X							
Peregrine Falcon (no historical or suitable habitat documented on Clearwater) <i>Falco peregrinus anatum</i>	X							
Bald Eagle <i>Haliaeetus leucocephalus</i>	X							
Grizzly Bear <i>Ursus Arctos</i>		X						
Boreal Owl <i>Aegolius Funereus</i>								X
Lynx <i>Felis lynx</i>						X		X
Wolverine <i>Gulo gulo</i>						X		X
Harlequin Duck <i>Histrionicus histrionicus</i>						X		X
Fisher <i>Martes pennanti</i>								X
Flammulated Owl <i>Otus flammesculus</i>								X
Black-backed Woodpecker <i>Picoides Arcticus</i>								X
Townsend's Big-Eared Bat <i>Plecotus townsendi</i>						X		X
Coeur d'Alene Salamander <i>Plethodon Vandykei Idahoensis</i>								

COMMON NAME LATIN NAME	STATUS					C1	(Candidate) C2	C3	Sensitive
	Endangered	Threatened	Proposed	C1	C2				
Clustered Lady's Slipper <i>Cypripedium fasciculatum</i>								X	X
Dasynotus <i>Dasynotus daubenmirei</i>								X	X
Giant Hellebore <i>Epipactis gigantea</i>									X
Crinkle-awntescue (recommend delisting) <i>Festuca subuiflora</i>									X
Water Howellia <i>Howellia aquatilis</i>					X				X
Soft Rush (recommend delisting) <i>Juncus effusus var. pacificus</i>									X
Oregon Bluebell <i>Mertensia bella</i>									X
Bank monkey flower <i>Mimulus clivicola</i>								X	X
Licorice Fern <i>Polypodium glycyrrhiza</i>									X
Western Rattlesnake - root <i>Prenanthes alata</i>									X
Lance Leaved Stonecrop <i>Sedum lanceolatum var. rupicolum</i>									X
Evergreen Kittenail <i>Synthyris platycarpa</i>								X	X
Sierra Wood-fern <i>Thelypteris Nevadaensis</i>									X
Sticky Tofieldia (recommend delisting/species mis-identified) <i>Tofieldia glutinosa</i> SSP. <i>Absona</i>									X
Western Starflower <i>Trentalis latifolia</i>									X

# Wildlife

COMMON NAME LATIN NAME	STATUS					C1	(Candidate) C2	C3	Sensitive
	Endangered	Threatened	Proposed						
<b>FISH</b> Spring / Summer Chinook Salmon <i>Oncorhynchus tshawytscha</i>									
Westlope Cutthroat Trout <i>Oncorhynchus clarki lewisi</i>									
Bull Trout <i>Salvelinus confluentus</i>									
<b>PLANTS</b> <u>Oregon Benitgrass (recommend delisting)</u> <i>Agrostis oregonensis</i>									X
Maidenhair Spleenwort <i>Asplenium trichomanes</i>									X
Green Spleenwort <i>Asplenium viride</i>									X
Tolmie Onion (recommend delisting) <u>Allium tolmiei</u> Var. <i>platyphyllum</i>									X
Deerfern <i>Blechnum spicant</i>									X
Mingan Moonwort <i>Botrychium minganense</i>									X
Broad-fruit Mariposa <i>Calochortus nitidus</i>							X		X
Constance's Bittercress <i>Cardamine constancei</i>								X	X
California Sedge <i>Carex californica</i>									X
Henderson's Sedge <i>Carex hendersonii</i>									X
Bristle-stalked Sedge <i>Carex leptalea</i>									X
Pacific Dogwood <i>Cornus nuttallii</i>									X

### III. 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 four unresolved appeals. The following table summarizes the progress made and the status of the four appeals. (Note: During FY 1993, appeal decisions were also issued on Appeals 2163, 2172 and 2131. The results of these decisions will be included in the FY 1993 Monitoring Report.)

**Forest Plan Appeal Issues**

Appellant	Status	Issues
#2155 St. Joe Valley Association  #2161 Associated Logging  Contractors (Consolidated)	Decision upheld by Chief.  Letter issued  9/30/92.	1. Public participation requirements in the development and use of minimum management requirements and other constraints. 2. NEPA (National Environmental Policy Act) and NFMA (National Forest Management Act) 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.

## Appeals

### 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.	<ol style="list-style-type: none"> <li>1. Cumulative impacts.</li> <li>2. Old growth.</li> <li>3. Fire suppression.</li> <li>4. Rare and sensitive plants and wildlife.</li> <li>5. Anadromous fish.</li> <li>6. Wilderness recreation.</li> <li>7. Roads.</li> <li>8. Insect and disease.</li> <li>9. Noxious weeds.</li> <li>10. Wilderness and roadless values.</li> <li>11. Wild and Scenic rivers.</li> </ol>
#2172 Wilderness Society, et al.	Responsive statement sent to the Washington Office. Awaiting Chief's decision on the appeal.	<ol style="list-style-type: none"> <li>1. Development and analysis of alternatives and selection of preferred alternative.</li> <li>2. Increase timber harvest after the first decade of Forest Plan implementation.</li> <li>3. Water quality and fisheries.</li> <li>4. Evaluation and consideration of roadless areas for recommendations as potential wilderness.</li> <li>5. Timberland suitability and restocking.</li> <li>6. Non-declining even-flow constraint.</li> <li>7. Harvest of timber stands before the stand has reached the culmination of mean annual increment of growth.</li> <li>8. Protecting the endangered gray wolf.</li> <li>9. Determination of ASQ.</li> </ol>
#2185 Columbia River Intertribal Fish Commission	Negotiations progressing.	<ol style="list-style-type: none"> <li>1. Protection of Indian treaty rights.</li> <li>2. Cumulative impacts of roaded development on fisheries.</li> <li>3. NEPA site-specificity requirements.</li> <li>4. NFMA mitigation and monitoring requirements.</li> <li>5. Clean Water Act requirements.</li> </ol>

Forest Plan Appeal Issues (continued)

Appellant	Status	Issues
<p>#2186 Richard and Lana Schumacker</p>	<p>Decision upheld by Chief. Letter Issued 8/13/92.</p>	<ol style="list-style-type: none"> <li>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.</li> <li>2. Whether the Plan and EIS estimate and display the effects of implementation on income and employment in affected communities.</li> </ol>
<p>#2190 International Woodworkers of America</p>	<p>Decision upheld by Chief. Letter issued 8/13/92.</p>	<ol style="list-style-type: none"> <li>1. Local timber supplies and mill capacities were not considered in developing the Plan's ASQ.</li> <li>2. Forest Plan does not adequately address the impacts of the preferred alternative on timber-dependent economies.</li> </ol>
<p>#2191 Idaho Women in Timber</p>	<p>Decision upheld by Chief. Letter issued 9/30/92.</p>	<ol style="list-style-type: none"> <li>1. Adequate assessment of social, economic, and community impacts of the timber program.</li> <li>2. Whether the Plan's timber harvest program meets the demand of the forest products industry.</li> <li>3. Forest Service failed to recognize, assess, and protect the cultural resources found in dependent communities.</li> </ol>

## Appeals

### Forest Plan Appeal Issues (continued)

Appellant	Status	Issues
#2199 Intermountain Forest Industry Association	Decision issued by Chief.  Letter issued 9/30/92.	<ol style="list-style-type: none"> <li>1. Sufficiency of the Record of Decision.</li> <li>2. Alternatives must meet the requirements of NFMA, NEPA, MUSYA (Multiple-Use, Sustained Yield Act) and Organic Act.</li> <li>3. Disclosure of analysis process used to develop planning documents.</li> <li>4. Sufficient public participation.</li> <li>5. Forest Plan direction developed using adequate analysis.</li> <li>6. EIS contains all components and is readable.</li> <li>7. Effective monitoring program to ensure implementation.</li> <li>8. Allocation of roadless, semi-primitive recreation management areas.</li> <li>9. Protection from insects and disease.</li> </ol>
#2131 Bradley Chinn	Responsive Statement sent to the Washington Office. Awaiting Chief's decision on the appeal.	<ol style="list-style-type: none"> <li>1. Assessment of roadless areas.</li> <li>2. Protection of the water resource.</li> <li>3. Requirements of the Wild and Scenic Rivers Act.</li> <li>4. Determination of the allowable sale quantity.</li> <li>5. Identification of potential impacts to wilderness areas from development on adjacent lands.</li> <li>6. Whether the EIS meets the requirements of NEPA and NFMA in determining environmental impact significance.</li> </ol>

The Forest received 23 new project appeals during FY 1992. The following table presents the status of these appeals.

**Appeals**

**Project Level Appeal Issues**

<b>Appellant</b>	<b>Status</b>	<b>Project Appealed /Issues</b>
Nez Perce Tribe	Decision remanded to Pierce Ranger District.	<b>Coin Purse Timber Sale</b> 1. Direct, indirect, and cumulative effects on fish habitat and water quality. 2. Range of alternatives. 3. Sensitive fish species. 4. Use of WATBAL.
John Swanson	Dismissed.	<b>Coin Purse Timber Sale</b>
Alliance for the Wild Rockies	Decision remanded to Powell Ranger District.	<b>Goat Roost Cost Share Easement</b> 1. Cumulative effects. 2. Impacts to Water Quality. 3. Wilderness/nonwilderness recommendation. 4. Management indicator species. 5. Old growth. 6. Biological and ecosystem diversity. 7. Fragmentation. 8. Range of alternatives. 9. Threatened, endangered, and sensitive species. 10. Significance.
Plum Creek Timber Co.	Decision remanded to Powell Ranger District.	<b>Goat Roost Cost Share Easement</b> 1. Reasonable access. 2. Mitigation. 3. Flawed economic analysis.
John Swanson	Dismissed.	<b>Goat Roost Cost Share Easement</b>

## Appeals

### Project Level Appeal Issues (continued)

Appellant	Status	Project Appealed /Issues
Lolo-Clearwater Forest Defense	Decision upheld by Forest Supervisor.	<b>Dry Knob Timber Sale</b> <ol style="list-style-type: none"> <li>1. Cumulative effects.</li> <li>2. Biological diversity.</li> <li>3. Management indicator Species.</li> <li>4. Old growth.</li> <li>5. Fragmentation.</li> <li>6. Openings greater than 40 acres.</li> <li>7. Impacts to soils and water quality.</li> <li>8. Biological corridors.</li> <li>9. Range of alternatives.</li> <li>10. Significance.</li> </ol>
Clearwater Forest Watch and Idaho Conservation League	Decision upheld by Regional Forester.	<b>Plum Pickle Timber Sale</b> <ol style="list-style-type: none"> <li>1. Impacts to water quality.</li> <li>2. Monitoring of water quality/quantity.</li> <li>3. Cumulative effects.</li> <li>4. Openings greater than 40 acres.</li> <li>5. Significance.</li> <li>6. Violations of Federal and State law.</li> </ol>
Alliance for the Wild Rockies	Decision remanded to North Fork Ranger District.	<b>Mid-Skull/Upper Bear Timber Sale</b> <ol style="list-style-type: none"> <li>1. Cumulative effects.</li> <li>2. Sensitive species.</li> <li>3. Clearcutting.</li> <li>4. Size of openings.</li> <li>5. Disclosure.</li> <li>6. Soil stability.</li> <li>7. Water quality.</li> <li>8. Biological corridor.</li> <li>9. Management indicator species.</li> <li>10. Old growth.</li> <li>11. Biological and ecosystem diversity.</li> <li>12. Fragmentation.</li> <li>13. Threatened and endangered species.</li> <li>14. Range of alternatives.</li> <li>15. Roadless.</li> <li>16. Significance.</li> </ol>

Project Level Appeal Issues (continued)

Appellant	Status	Project Appealed /Issues
Clearwater Forest Watch, et al	Decision remanded to North Fork Ranger District.	<b>Sneaky Sheep Timber Sale</b> <ol style="list-style-type: none"> <li>1. Cumulative effects.</li> <li>2. Clearcutting.</li> <li>3. Size of openings.</li> <li>4. Water quality.</li> <li>5. Old growth.</li> <li>6. Use of WATBAL model.</li> <li>7. Riparian.</li> <li>8. Mitigation.</li> <li>9. Fisheries.</li> <li>10. Suitability.</li> <li>11. Noxious weeds.</li> <li>12. Multiple-use/sustained yield.</li> </ol>
Alliance for the Wild Rockies	Decision remanded to North Fork Ranger District.	<b>Sneaky Sheep Timber Sale</b> <ol style="list-style-type: none"> <li>1. Size of openings.</li> <li>2. Regeneration.</li> <li>3. Water quality.</li> <li>4. Old growth.</li> <li>5. Threatened, endangered, and sensitive species.</li> <li>6. Management indicator species.</li> <li>7. Fragmentation.</li> <li>8. Biological diversity.</li> <li>9. Cumulative effects.</li> <li>10. Clearcutting.</li> <li>11. Soil stability.</li> <li>12. Biological corridor.</li> <li>13. Range of alternatives.</li> <li>14. Significance.</li> <li>15. Disclosure.</li> </ol>

## Appeals

### Project Level Appeal Issues (continued)

Appellant	Status	Project Appealed /Issues
Clearwater Forest Watch, et al	Decision remanded to North Fork Ranger District.	<b>Sneaky Sheep Timber Sale</b> 1. Size of openings. 2. Water quality/quantity. 3. Fisheries. 4. Use of WATBAL model. 5. Mitigation. 6. Old growth. 7. Clean Water Act. 8. Threatened, endangered, and sensitive species. 9. Management indicator species. 10. Fragmentation. 11. Biological diversity. 12. Cumulative effects.
Lolo-Clearwater Forest Defense	Decision withdrawn by District Ranger.	<b>Steep Creek Timber Sale</b> 1. Roadless. 2. Sensitive plant species. 3. Diversity. 4. Management indicator species. 5. Old growth. 6. Protection of Research Natural Area.
John Swanson	Dismissed.	<b>Steep Creek Timber Sale</b>
Alliance for the Wild Rockies	Decision upheld by Regional Forester.	<b>Hyaak/Little Big Timber Sale</b> 1. Cumulative effects. 2. Viability. 3. Fisheries. 4. Water quality. 5. Sedimentation. 6. Old growth. 7. Management indicator species. 8. Impacts to recreation. 9. Significance.

Project Level Appeal Issues (continued)

Appellant	Status	Project Appealed /Issues
Ecology Center	Decision upheld by Forest Supervisor. Appealed to Regional Forester.	<p><b>New Pioneer/ Gold Timber Sale</b></p> <ol style="list-style-type: none"> <li>1. Effects on sensitive species and chinook salmon.</li> <li>2. Disclosure of essential information.</li> </ol>
Ecology Center	Decision upheld by Regional Forester.	<p><b>Red Cloud Timber Sale</b></p> <ol style="list-style-type: none"> <li>1. Range of Alternatives.</li> <li>2. Cumulative effects.</li> <li>3. Effects on sensitive species and chinook salmon.</li> <li>4. Rational basis for cutting timber.</li> <li>5. Disclosure of essential information.</li> </ol>
Ecology Center	Decision upheld by Forest Supervisor. Appealed to Regional Forester.	<p><b>Silver Dollar Timber Sale</b></p> <ol style="list-style-type: none"> <li>1. Effects to sensitive species and chinook salmon.</li> <li>2. Water quality.</li> <li>3. Cumulative effects.</li> <li>4. Significance.</li> </ol>
Ecology Center and Alliance for the Wild Rockies	Decision upheld by Regional Forester.	<p><b>Big Smith Timber Sale</b></p> <ol style="list-style-type: none"> <li>1. Range of alternatives.</li> <li>2. Regeneration.</li> <li>3. Water quality.</li> <li>4. Cumulative effects.</li> <li>5. Old growth.</li> <li>6. Management indicator species.</li> <li>7. Snag dependent species.</li> <li>8. Soil stability.</li> <li>9. Sensitive species.</li> <li>10. Chinook salmon.</li> <li>11. Endangered species.</li> </ol>

# Appeals

## Project Level Appeal Issues (continued)

Appellant	Status	Project Appealed /Issues
R.O.O.T.S.	Appeal withdrawn by Appellant.	<b>Potlatch River Recreation Project</b> <ol style="list-style-type: none"> <li>1. Proposed amendment and significance to the Forest Plan.</li> <li>2. Fails to analyze the recreation potential.</li> <li>3. Economic and social analysis not adequately documented.</li> </ol>
R.O.O.T.S.	Decision under review by Regional Forester.	<b>Coin Purse II Timber Sale</b> <ol style="list-style-type: none"> <li>1. Alternative descriptions.</li> <li>2. Accuracy of watershed analysis.</li> <li>3. Effects of mitigation measures.</li> <li>4. Documentation of economic and social analysis.</li> </ol>
Ecology Center	Decision under review by Regional Forester.	<b>Coin Purse II Timber Sale</b> <ol style="list-style-type: none"> <li>1. Cumulative effects.</li> <li>2. Sensitive species.</li> </ol>
Nez Perce Tribe	Decision under review by Regional Forester.	<b>Coin Purse II Timber Sale</b> <ol style="list-style-type: none"> <li>1. Failure to remedy defects of original sale proposal.</li> <li>2. Range of alternatives.</li> <li>3. Water quality standard.</li> <li>4. Cumulative effects.</li> <li>5. Mitigation.</li> <li>6. Best Management Practices (BMP).</li> <li>7. Effects on anadromous fish.</li> </ol>

## IV. Planned Actions

### INTRODUCTION

This section identifies actions which the Forest plans to take in FY 1993 and beyond to implement the plan. The first part discusses the Forest Plan review process and some of the major issues in the process of being reviewed. This is followed by a discussion of items the Forest will be considering for amendment in the coming year to keep the Plan current.

### A. FOREST PLAN REVIEW

#### Monitoring Actions

The Forest Plan was designed to guide forest management for a 10- to 15-year period. National Forest Management Act regulations require the forest plan be reviewed every five years. This review is to be based on monitoring data collected during the five years of Forest Plan implementation. The monitoring data will help validate estimates and projections made in the Forest planning process or show where changes have occurred.

In the process of monitoring forest activities since the plan was signed in 1987, the Forest has observed changes from some of the assumptions that were made during the planning process. Earlier monitoring reports identified some of these changes. These changes are being analyzed to determine if any modifications need to be made in the Forest Plan. This analysis will be combined with the analysis of other issues on the forest in the evaluation issues in the forest plan review. A preliminary summary of some of the potential major issues are described below.

#### Potential Major Issues

Our ability to meet timber output predictions identified in the 1987 Forest Plan have been a great concern to some of our employees and the general public. We are reviewing the following situations to determine if they need to be changed in the Forest Plan.

**Old-Growth Forests** - When the Forest Plan was signed (September 1987), old-growth dependent species were recognized as important wildlife resources. At that time, estimates concluded that there was approximately 19% of the Forest available for designation as old-growth habitat. No inventory was conducted to verify this estimate. Since then, field observations have indicated there is considerably less old-growth habitat than assumed in the Forest Plan. An assessment of the amount and distribution of old-growth habitat on the non-wilderness part of the Forest was completed in March 1992. This information, combined with the estimated old growth in the

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## Planned Actions

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Selway-Bitterroot Wilderness, has determined that there is sufficient old growth on the Forest to meet Forest Plan Standard.

**Prescriptions** - The Forest Plan had a Goal of having prescriptions reflective of the needs of individual stands. Monitoring data shows this is being accomplished. In comparing the actual stand specific prescriptions to the prescriptions modeled in the Forest Plan, some discrepancies have been found. However, these discrepancies are minor. The Forest will continue to monitor this topic to be able to better model prescriptions when the Forest Plan is revised.

**Timber Volumes** - At the time the Plan, conditions and constraints were identified for the roaded and unroaded portions of the Forest. Within these constraints, the Forest was estimated to be able to produce up to 173 MMBF of timber annually. However, several original assumptions have changed since 1987. Timber volume and yield assumptions and estimates are being reviewed and compared with recent monitoring data and updated surveys to verify that current estimates are accurate.

**Unroaded Area** - During the development of the Forest Plan, certain unroaded areas were proposed for designation as wilderness and others were expected to be available for timber management. Since completion of the Forest Plan, entry into the unroaded areas has been much less than anticipated. Each proposed timber harvest activity in unroaded areas has been highly controversial with the public. As a result, the Forest concentrated efforts mainly on the roaded portion of the Forest. Consequently, the Forest has moved timber sales on the roaded portion of the forest forward and no longer has sales in the "pipeline" to offer for sale. Recently, several unroaded projects, on which planning had been suspended, are again being analyzed.

**Spatial** - The Forest Plan was modeled using the FORPLAN computer program. However, this is a linear model that does not recognize the spatial arrangement of the resources. FORPLAN may be overestimating timber outputs as compared to what can actually be achieved on the ground under the Forest Plan Standards. In addition, monitoring data indicates other spatial assumptions made in the Plan may also be in error.

**Riparian** - The 1987 Forest Plan estimated that there was approximately 107,000 acres of riparian areas (Management Area M2). Current information suggests riparian acreage was underestimated by approximately 87,000 acres. The effect of having more riparian acres than anticipated may be a reduction in timber production from the levels assumed in the Plan.

**Water Quality/Fisheries** - In contrast to what was predicted in the Forest Plan, approximately 71% of the drainages within the developed portion of the Forest do not meet Forest Plan standards. Drainages appear to be taking longer to recover than anticipated in the Plan. This is causing the Forest difficulties in achieving fisheries/water quality objectives and timber output expectations.

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## Planned Actions

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As a result of settlement of a Forest Plan lawsuit late in FY 1993, this information will be considered in a revision of the Forest Plan.

Once the revision process begins, the Forest will ask for significant public involvement as well as consultation with various State and Federal Agencies, local governments, and the Nez Perce Tribe.

### **B. PROPOSED CLARIFICATIONS**

The following proposals will help clarify parts of the Forest Plan. The analysis of these proposals has not yet been initiated. The analysis, when initiated, will follow appropriate NEPA procedures.

#### **Clarification of 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.*

##### ***Pages II-20,21, Forest Standard 1.c., Forest Plan***

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

#### **Definition in Appendix B, page B-12, Forest Plan**

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

#### **Appendix G VISUAL TRAVEL CORRIDORS**

Project planning and project monitoring have identified the following travel routes for possible inclusion in the Forest Plan as visual travel corridors.

Road 369 from its junction with Road 368 to that portion of Road 369 that exists as a visual travel corridor.

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## Planned Actions

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Road 368 from its junction with Road 369 to its junction with Road 111.

Road 362 from its junction with Road 111 to that portion of Road 362 that exists as a visual travel corridor.

Road 360 from its junction with Road 111 to that portion of Road 360 that exists as a visual travel corridor.

Road 359 from its junction with Road 360 to that portion of Road 359 that exists as a visual travel corridor.

Road 111 from its junction with US Highway 12 to its terminus.

Road 700 from Aquarius Campground to Smith Ridge.

Road 705 from its junction with Road 700 to Isabella Creek Trailhead.

Trail 47.

### Appendix P DOCUMENTS AVAILABLE UPON REQUEST

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

### C. MONITORING REQUIREMENTS

The Forest will also review monitoring requirements.

### D. APPENDIX C. PROJECTED BUDGET

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 actual expenditures compared to Forest Plan projections adjusted for inflation in the Monitoring and Evaluation Report. A chart displaying this may be found in the "Economics" section of this Report.

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## Planned Actions

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### E. EFFECTS OF PROPOSED CHANGES

As a result of settlement of a Forest Plan lawsuit in late FY 1993, this information will be included in a revision of the Forest Plan.

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## Implemented Changes

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# V. Implemented Changes

### A. 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 in previous monitoring reports. As a result, the following changes have been implemented:

**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 Forest is currently utilizing this process on a district by district basis. The process is enabling us to identify and discover activities and practices that are reasonable and probable in the context of the Forest Plan. It is also enabling 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 identified and collected information comparing Forest Plan data with site-specific information for timber in a ground truthing exercise. The focus of the first step was 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 was to evaluate that information. This evaluation is being completed by the Forest Plan Review Team. The findings of this team will be reported in future Monitoring and Evaluation Reports.

**Watershed Restoration:** The conditions of watersheds on the Forest continue to be a major concern. Forest Plan standards with regard to water quality and fisheries direct us to improve the condition of these watersheds. The Forest will continue to emphasize watershed restoration in 1993. 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.

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## Implemented Changes

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**Stream Protection Zone:** The Forest will continue to utilize the 25 foot Stream Protection Zone (SPZ) on Class II streams.

**Improvements Needed:** The monitoring of road construction by the Forest soil scientist identified areas of concern highlighted by 1990 and 1991 monitoring. The areas of concern and a solution or recommendend solution for each is listed below.

**Road designs** need to reflect soil characteristics and limitations. Guidelines were implemented to better reflect soil strength in cutbank design and surfacing requirments.

**Uniform control** of grass seeding and fertilizing of temporary roads. A recommendation to prevent this problem is to separate the erosion control/vegetation establishment from the road construction contract. This would allow the use of experience specialty contractors. Vegetation establishment level could also be made part of the contract.

**Improved coordination** between timber sale administration and the engineering section. A better understanding of both watershed and road design objectives is necessary for a successful project.

**Watershed risks** need to be better identified and addressed in the Environmental Assessment (EA) stage of timber sale planning. A cost-effective mitigation model is being developed that will aid in solving this problem.

**Means of retaining effective erosion control measures** need to be developed. This is a continuing problem that needs to be addressed.

**More rapid road closure** during wet periods. This is a continuing problem that needs to be addressed.

The Forest will review these items and changes will be made as needed.

### B. AMENDMENTS

Three Forest Plan Amendments were made in FY 1992. They are as follows:

Amendment No. 3 was made in conjunction with the Bitterroot, Lolo and Nez Perce National Forests. These forests, along with the Clearwater, share in the management of the Selway-Bitterroot Wilderness according to the "General Management Direction for the Selway-Bitterroot Wilderness, 1982" incorporated by reference into each Plan. In 1992 this document was revised. This amendment integrates this revised document into the Forest Plan.

Amendment No. 4 corrects an error found in Appendix K of the Forest Plan. This error was found during site specific analysis of the Coin Purse Timber Sale.

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## Implemented Changes

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Amendment No. 5 places the entire length of Trail #319 Strychnine Ridge into Management Area A4. This changes the mileage for this trail to 4 miles. This error was found during site specific analysis for the Plum Pickle Timber Sale.

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## Implemented Changes

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### 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)

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## Implemented Changes

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### **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 NO. 1**

**Clearwater National Forest  
Land and Resource Management Plan**

**AMENDMENT NO. 2  
October 1990**

**Page II-36, Forest Standard 17, Paragraph 1, Forest Plan**

Change to read as follows:

This Forest Plan identifies seven streams and rivers, Kelly Creek, Cayuse Creek, the North Fork of the Clearwater River, the Little North Fork, Fish Creek, Hungery Creek and White Sand Creek, as candidates for study for potential inclusion in the National Wild and Scenic Rivers System. The river or stream area is generally defined as the river or stream segment extending the length of the river segment and one-quarter mile in width from each bank of the the river. Boundaries may include adjacent areas needed to protect the resources or facilitate management of the river corridor, and will be identified in site specific analyses. All of the potential candidates within the Forest are currently located within Management Areas A4, visual resource areas, and M2, riparian areas. The standards and guidelines provided below are intended to supplement the standards and guidelines found in those management areas and are designed specifically to protect wild and scenic river characteristics. In case of conflict the more restrictive standards and guidelines will apply. In-depth studies of each selected stream or river will be done in the future to determine whether the stream or river should be included in the System.

**Page II-39, Forest Standard 17.d.(1)(a), Paragraph 2, Forest Plan**

Change to read as follows:

Permit new transmission corridors only if there are no other feasible alternatives available and adverse effects on management area objectives and wild and scenic river potential can be mitigated.

**Page II-39, Forest Standard 17.d.(1)(a), Forest Plan**

Add the following standard:

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

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## Implemented Changes

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### Page II-39, Forest Standard 17.e.(1), Forest Plan

Add the following standard:

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

### Page II-40, Forest Standard 17.g.(1)(b), Paragraph 2, Forest Plan

Change to read as follows:

Pending studies to determine classification into the National Wild and Scenic River System, new road construction and significant realignment will generally not take place within the scenic river corridors. Roads may occasionally bridge the river area and short stretches of conspicuous or longer stretches of inconspicuous and well screened roads could be allowed.

### Page M-1, Appendix M, Table M-1, Forest Plan

Table M-1.

Wild and Scenic Rivers Highest  
Potential Classification and Highest Value  
by Segment for the Clearwater National Forest

River/Stream	Segment/Location	Potential Classification	Highest Value
Kelly Creek	1. Mouth to FR #581 bridge 2. FR #581 bridge to source	Recreation Wild	Recreation Recreation
Cayuse	1. Mouth to Silver Creek Jct	Scenic	Fish
North Fork of the Clearwater	1. Dworshak high pool to FR #255 bridge	Recreation	Recreation
Little North Fork	1. Clearwater River portion	Based on bordering IPNF Forest Plan	Recreation
Fish Creek	1. Mouth to Hungery Creek	Recreation	Fish
Hungery Creek	1. Entire Length	Wild	Fish
White Sand Creek	1. Mouth to Wilderness Border	Recreation	Fish

**END OF AMENDMENT NO. 2**

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## Implemented Changes

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### Clearwater National Forest Land and Resource Management Plan

#### AMENDMENT NO. 3 January 1992

Specific management direction for the Selway-Bitterroot Wilderness is contained in a document entitled "Selway-Bitterroot Wilderness General Management Direction" which was prepared in 1982 and is incorporated by reference into the Clearwater Forest Plan under the title of "Selway-Bitterroot Wilderness Management Guide." This direction has now been revised, and the purpose of this amendment is to establish that fact in the Forest Plan. The citation to the document is also corrected. Specific changes to the Plan are:

#### **Page III-32, Management Area B1, Goals, Forest Plan**

Change to read as follows:

Manage the Selway-Bitterroot Wilderness in accordance with the Wilderness Act of 1964. Protect and maintain the inherent wilderness resource while providing quality wilderness recreation. Specific management direction is contained in Appendix L, Selway-Bitterroot Wilderness General Management Direction (1992 update) prepared in conjunction with the Nez Perce, Lolo and Bitterroot National Forests. Changes in management will be prepared under the auspices of the four Forest Plans.

#### **Page III-35, Management Area B1, Monitoring and Evaluation Requirements, Forest Plan**

Add paragraph as follows:

Additional monitoring requirements specific to the Selway-Bitterroot Wilderness are summarized in Appendix A to the Selway-Bitterroot Wilderness General Management Direction (1992 update).

#### **Page IV-14, Table IV-1, Forest Plan**

Add sentence at end of table:

Additional monitoring requirements specific to the Selway-Bitterroot Wilderness are summarized in Appendix A to the Selway-Bitterroot Wilderness General Management Direction (1992 update).

#### **Page L-1, Appendix L, Selway Bitterroot Wilderness, Forest Plan**

Drop the current information in Appendix L and replace with the Selway-Bitterroot Wilderness General Management Direction (1992 update).

#### **Page P-1, Appendix P, Documents Available Upon Request, Forest Plan**

Change "Selway-Bitterroot Wilderness Management Guide" to "Selway-Bitterroot Wilderness General Management Direction (1992 update)".

\*\*\*End of Amendment\*\*\*

## Implemented Changes

### Clearwater National Forest Land and Resource Management Plan

#### AMENDMENT NO. 4 September 1992

#### Page K-8, List of Specific Stream Systems and Water Quality Criteria, Forest Plan

Change to read as follows:

WATERSHED (and critical reach)	Channel Type	Indicator Species	Water Quality Objective	Allowable yrs in 30 Exceeding Threshold
ELDORADO Cr to LUNCH Cr	B	steelhead	high fish	10
CEDAR Cr	B	cutthroat	trout mod	10
ELDORADO Cr - LUNCH to AUSTIN Cr	C	steelhead	high fish	10
ELDORADO Cr abv AUSTIN Cr	B	steelhead	high fish	10
AUSTIN Cr	B	steelhead	high fish	10
SIX BIT Cr	B	steelhead	high fish	10
DOLLAR Cr	B	steelhead	high fish	10
FOUR BIT Cr	B	steelhead	high fish	10
LUNCH Cr	C	steelhead	high fish	10
TROUT Cr	A	steelhead	high fish	10
FAN Cr	B	steelhead	high fish	10

END OF AMENDMENT

### Clearwater National Forest Land and Resource Management Plan

#### AMENDMENT NO. 5 September 1992

The Clearwater National Forest Land and Resource Management Plan will be amended as follows:

#### Page G-3, Appendix G

Change the mileage for Trail #319 Strychnine Ridge to **4 miles**.

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 1992.

Name	Telephone	Resource Area
Jerry Arseno	476-4541	Report Preparer/Forester
John Bledsoe	926-4275	District Ranger, Lochsa Ranger District
Byron Bonney	476-4541	Forest Fire Management Officer
Bob Boston	"	Staff Officer - Recreation
Art Bourassa	476-3775	District Ranger, North Fork Ranger District
John Case	476-4541	Forester
Juanita Cooper	"	Staff Officer - Internal Services
Randy Curtis	"	Engineer - Road Management
Dan Davis	"	Forest Wildlife Biologist/Range Specialist
Randy Doman	"	Forestry Technician - Fire
Dallas Emch	"	Acting Staff Officer - Ecosystem Management
Jeff Fee	"	Forest Archaeologist
Mary Ann Gerrish	"	Budget and Finance Officer
Doug Gochnour	"	Acting Staff Officer - Ecosystem Planning
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	"	Acting Forest Supervisor
Rick Kusicko	935-2513	Acting District Ranger, Pierce Ranger District
Bob Littlejohn	476-4541	Staff Officer - Technical Services
Irvin Michael	"	Landscape Architect
Pat Murphy	"	Acting Forest Fisheries Biologist
Terri Ott	"	Timber Assistant
Chuck Raddon	"	Recreation and Wilderness Specialist
Pam Stotts	"	Geologist
Susan White	476-3775	Report Preparer/Forestry Technician
Dale Wilson	476-4541	Soil Scientist
William Wulf	"	Silviculturist

**Cover illustration by Valeria Yost.**

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**Approval**

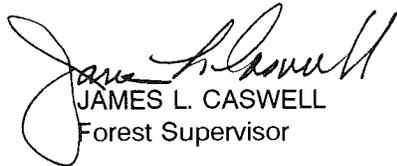
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## **VII. Forest Supervisor Approval**

### **APPROVAL**

I have reviewed the annual Forest Plan Monitoring and Evaluation Report for Fiscal Year 1992 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:

  
JAMES L. CASWELL  
Forest Supervisor

Date 10/21/93

