



United States  
Department of  
Agriculture

Forest Service  
Northern Region

# Clearwater National Forest

## Annual Monitoring & Evaluation Report

Fiscal Year 2008



# Clearwater National Forest

## FY 2008 Monitoring and Evaluation Report

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# Table of Contents

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<b>Section 1 - Introduction</b>	<b>1</b>
<b>Section 2 - Monitoring Report</b>	<b>2</b>
<b>Economics</b>	<b>2</b>
Item No. 1 - Quantitative Estimate of Performance Output or Services	2
Item No. 17 - Document Cost of Implementation Compared with Plan Cost	2
<b>Effects</b>	<b>5</b>
Item No. 22 - Effects of National Forest Management on Adjacent Land and Communities	5
Item No. 23 - Effects of Other Agencies on National Forests	6
<b>Fire</b>	<b>8</b>
<b>Fisheries</b>	<b>17</b>
Item No. 8 - Water Quality and Stream Condition for Fisheries and Non-Fisheries Beneficial Uses	18
Items No. 31 and 32 - Anadromous and Resident Fish Indicators	23
Item No. 32 - Inland Fisheries	41
<b>Heritage Program</b>	<b>49</b>
Item No. 4 - Protection and Condition of Heritage Resource Sites	49
<b>Lands</b>	<b>51</b>
Item No. 12 - Land Ownership Adjustments	51
<b>Minerals</b>	<b>53</b>
Item No. 15 - Minerals Prospecting and Development	53
Item No. 36 - Minerals Resource Availability	54
<b>Range</b>	<b>55</b>
Item No. 6 - Livestock Forage Available, Range in Good Condition Per Established Allotments	55
<b>Recreation</b>	<b>57</b>
Item No 2 - Wide Spectrum of Recreation Opportunities	57
Item No. 14 - Off Highway Vehicle Use Impacts	61
<b>Research Natural Areas</b>	<b>64</b>
<b>Research Needs</b>	<b>65</b>
Item No. 24 - Research Needs	65
<b>Riparian Areas</b>	<b>66</b>
Item No. 10 - Riparian Area Condition	66
<b>Road Decommissioning Program</b>	<b>71</b>
<b>Roads</b>	<b>84</b>
Item No. 13 - Miles of Road Open/Restricted	84
<b>Scenic Resources</b>	<b>86</b>

Item No. 3 - Visual Quality Objectives	86
<b>Water Quality (formerly “Soil and Water”)</b>	<b>88</b>
Item No. 8 - Water Quality and Stream Condition for Fisheries and Non-Fisheries Beneficial Uses	88
Item No. 9 - Best Management Practice (BMP) Applications	92
Item No. 11 - Site Productivity	96
<b>Timber</b>	<b>103</b>
Item No. 18 - Harvested Land Restocked Within Five Years	105
Item No. 19 - Unsited Timberlands Examined to Determine if They Have Become Suitable	106
Item No. 20 - Validate Maximum Size Limits for Harvest Areas	106
Item No. 21 - Insect and Disease Status as a Result of Activities	109
<b>Trails</b>	<b>111</b>
Item No. 16 - Trail Management	111
<b>Wild and Scenic Rivers</b>	<b>114</b>
<b>Wilderness</b>	<b>116</b>
Item No. 5 - Wilderness	116
<b>Wildlife</b>	<b>124</b>
Item No. 7 - Provision for Plant and Animal Diversity	124
Item No. 25 - Big-Game Habitat Improvement	125
Item No. 26-35 - Population Trends of Management Indicator, Threatened and Endangered Species	125
<b>Section 3 - Appeals and Litigation</b>	<b>129</b>
<b>Section 4 - Implemented Changes</b>	<b>130</b>
<b>Section 5 - Planned Actions</b>	<b>132</b>
<b>Section 6 - List of Contributors &amp; Consultants</b>	<b>134</b>
<b>Section 7 - Forest Supervisor Approval</b>	<b>135</b>

## SECTION 1 - INTRODUCTION

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### ***The Clearwater National Forest Monitoring and Evaluation Report, Fiscal Year 2008***

summarizes the results of Forest Plan monitoring and evaluation activities during Fiscal Year 2008. The fiscal year begins on October 1 and ends on September 30.

Verifying data and assumptions through monitoring is a continuous process; analysis of this and prior year data helps us prepare to revise the Clearwater National Forest Plan. Until the Forest Plan revision is complete, the current Forest Plan will remain the guiding document for management decisions on the Clearwater National Forest. Updates to the current Forest Plan will continue to be done using amendments. Any anticipated amendments are described in Section 4; amendments implemented during FY08 are summarized in Section 5.

The **Monitoring and Evaluation Report** is organized into seven main sections.

1. **Introduction** - provides an overview of the report.
2. **Monitoring Report** - focuses on monitoring requirements by resource, in alphabetical order. Some resource reports contain more than one "Item No." that refers to the numbering system established in the Forest Plan for items to be monitored.
3. **Appeals** - lists unresolved Forest Plan appeals and project level appeals received in FY08, the status of each and the major issues associated with each. (The term "project" is used throughout this report and refers to any Forest Service activity on National Forest Land such as campground construction, trail maintenance and timber sales.)
4. **Planned Action** - identifies actions the Forest plans to take in FY09 - and beyond - to implement the Forest Plan.
5. **Implemented Changes** - discusses agreements and actions concerning ecosystem management, the Forest Plan and amendments to the Forest Plan.
6. **List of Forest Contacts** - includes acknowledgment of people who contributed to the development of this report.
7. **Forest Supervisor Approval** - signature by the Forest Supervisor.

## SECTION 2 - MONITORING REPORT

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### ECONOMICS

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#### Item No. 1 - Quantitative Estimate of Performance Output or Services

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Frequency of Measurement: Annual  
Reporting Period: Annual

#### MONITORING ACTION

Present resource outputs and activities for FY08.

#### ACCOMPLISHMENTS/FINDINGS

See **Table 1: Comparison of Outputs and Activities with those Projected in the Forest Plan** for outputs and activities occurring in FY08, along with the percent achieved compared with Forest Plan projections. It is becoming increasingly difficult to make a direct comparison of outputs and activities described in the Forest Plan to present day activities due to changes in operational and accounting methods.

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#### Item No. 17 - Document Cost of Implementation Compared with Plan Cost

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Frequency of Measurement: Annual  
Reporting Period: Annual

#### MONITORING ACTION

The Forest Budget and Finance Officer will compile actual costs for comparison with Forest Plan projected costs.

#### ACCOMPLISHMENTS/FINDINGS

See **Table 2: Comparison Between Yearly Expenditures (in thousands \$) and Forest Plan Projections (in 2008 \$)** for a display of cost comparison. It is becoming increasingly difficult to make direct comparisons of yearly expenditures described in the Forest Plan to present day expenditures due to changes in operational and accounting methods.

**Table 1: Comparison of Outputs and Activities with those Projected in the Clearwater National Forest Plan**

Output Or Activity	Unit of Measure	FY04	FY05	FY06	FY07	FY08	First Decade Average Annual from Forest Plan	FY08% of Forest Plan predicted
<b>RECREATION<sup>1</sup></b>								
Developed/Dispersed Use	MRVD's	**	**	**	**	**	201	NA
<b>WILDLIFE &amp; FISH</b>								
Wildlife Habitat Improvement	Acres	3,000	1,742	4,500	1,120	6,000	1,300	462
Fish Habitat Improvement	Acres	36	51	55	50	75	219	5
T&E Habitat Improvement	Acres	0	0	0	0	0	NA	NA
<b>RANGE</b>								
Grazing Use	MAUM's	8.1	7.5	6.1	5.1	5.1	16.0	32
Range Improvement Structures	Str.	2	0	1	2	0.5	NA	NA
Noxious Weed Control	Acres	960	1,468	1,800	1,419	4,181****	380	906
<b>MINERALS</b>								
Minerals Management	Cases	107	104	106	103	56***	265	NA
<b>TIMBER</b>								
Volume Offered								
Roaded Primary	MMBF	30.0	28.7	10.8	19.8	41.1	90	46
Roaded NICS	MMBF	3.1	2.5	2.7	1.8	2.6	10	26
Unroaded	MMBF	0	0	0	0	0	73	0
Volume Under Contract	MMBF	30.8	31.2	31.3	26.9	60.8	NA	NA
Reforestation								
Appropriated Funds	Acres	327	356	726	456	824	NA	NA
KV Funds	Acres	475	813	1035	659	309	NA	NA
Timber Stand Improvement								
Appropriated Funds	Acres	0	0	0	268	2030	NA	NA
KV Funds	Acres	14	122	92	0	0	NA	NA
<b>FUELS MANAGEMENT</b>								
Natural Fuels Treatment	Acres	6,638	10,694	8,639	10,947	13,560	NA	NA
Brush Disposal	Acres	905	788	1,625	519	478	NA	NA
Wildland Fire Benefit	Acres	65	3,027	10,741	11,613	441	NA	NA
<b>FACILITIES</b>								
Trail Construction/Reconst.								
	Miles	22.0	24.0	23.0	20.2	20.2	14.0	144
Road								
Construction	Miles	2.1	5.6	6.3	5.9	0	69.0	0
Reconstruction	Miles	13.3	5.2	9.7	7.5	27.5	NA	NA
Obliteration	Miles	24.9	22.0	43.3	5.1	37.9	NA	NA

NA = The Forest Plan did not project an average annual output for this output or activity, or it is no longer comparable.

\*\* = MRVD data is no longer collected; visitor use in the future will be collected through the National Visitor Use Management (NVUM) system.

\*\*\* In FY96, the Washington Office issued new definitions for accomplishment indicators. Due to the difference in definitions of accomplishment, the 265 average annual number of cases predicted in the Forest Plan should not be compared to the 56 total operations processed and administered during FY08.

\*\*\*\* This figure includes 3,441 acres accomplished through the Cooperative Weed Management Areas, which includes private land.

<sup>1</sup> Updated monitoring standards and policy indicate there is not sufficient accuracy in recreation estimates to reporting a separate figure for developed and dispersed.

**Table 2: Comparison between Yearly Expenditures (in thousand \$) and Forest Plan Projections (in FY08 \$)**

Activity Description	FY04	FY05	FY06	FY07	FY08	Forest Plan	FY08 % of Forest Plan Predicted
General Administration	NA	NA	NA	NA	NA	3867	NA
Fire Protection	3322	2057	1948	2280	2430	1563	127%
Fire Protection Fuel	1065	650	1032	1052	1087	448	234%
Timber Sale Plan/Prep/Admin	772	788	1871	1543	1089	4654	41%
Timber Resource Plans	0	0	0	0	0	526	0%
Timber Silvicultural Exams	0	0	0	0	0	1543	0%
Range	99	78	56	68	71	187	30%
Range Noxious Weeds	169	191	134	126	131	52	265%
Minerals	175	114	122	164	150	302	41%
Recreation	1830	1139	1335	1105	927	1866	73%
Wildlife and Fish	1182	943	710	659	672	1955	37%
Soil and Water	399	301	244	260	237	704	35%
Maintenance of Facilities	433	321	282	298	168	866	33%
Special Uses	52	115	105	52	136	161	66%
Land Ownership Exchange	31	47	23	21	133	237	10%
Land Line Location	111	104	130	62	79	629	21%
Road Maintenance	1388	1211	1149	904	1140	1465	80%
Trail Maintenance	604	391	393	299	869	775	52%
Co-op Law Enforcement	0	0	0	0	0	120	0%
Reforestation Appropriated	624	367	375	453	280	3142	12%
TSI Appropriated	12	25	7	65	65	737	1%
Tree Improvement <sup>2</sup>	177	129	114	142	419	107	109%
KV Reforestation	716	703	909	932	382	4855	19%
TSI KV	14	75	161	9	42	151	108%
Other KV	0	16	6	0	0	1045	1%
Other CWFS Trust Fund	1930	454	605	664	81	1187	52%
Timber Salvage Sales	1353	1272	588	786	1084	531	113%
Brush Disposal	313	267	288	199	366	2895	10%
Range Betterment	4	1	1	4	10	14	10%
Construction Recreation Facilities	277	42	346	150	216	151	233%
Facility Construction	0	0	0	0	0	1007	0%
Engineering Construction Supp	0	0	0	0	0	2979	0%
Construction Capital Investment	245	0	0	0	0	4498	0%
Trail Construction/Reconstruction	201	281	248	267	87	522	48%
Timber Purchase Road C/R	0	0	0	0	0	7972	0%
Land Acquisition	127	47	27	46	31	113	24%
Insect/Disease Sup	220	0	0	118	0	0	NA
Economic Recovery	53	0	0	0	0	0	NA
Appeals/Litigation	170	0	0	0	0	0	NA
Ecosystem Management	1038	157	234	177	535	0	NA
<b>Total</b>	<b>18529</b>	<b>11915</b>	<b>13040</b>	<b>12735</b>	<b>12917</b>	<b>53827</b>	<b>25%</b>

NA = Not originally planned

# EFFECTS

## Item No. 22 - Effects of National Forest Management on Adjacent Land and Communities

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Frequency of Measurement: Annual

Reporting Period: Annual

### MONITORING ACTION

A report will be prepared to determine concerns and goals regarding Forest management.

### ACCOMPLISHMENTS/FINDINGS

**ISSUES AND CONCERNS:** Primary concerns during FY08 included the following.



### OFF-HIGHWAY VEHICLE POLICY

The Forest Service adopted a national rule regarding OHV's in FY06. The OHV Rule requires each National Forest to formally designate those roads, trails, and areas where motorized travel is permitted and to show them on a Motor Vehicle Use Map (MVUM). Implementing the OHV rule on the Clearwater National Forest began in FY06 with a travel planning effort to identify a motorized system. The Palouse Ranger District identified the Palouse District's motorized system in FY06. The Forest continued to work on its travel plan during 2007 and 2008.

The Clearwater National Forest Travel Planning Draft Environmental Impact Statement was advertised for public comment beginning July 17, 2009. The Forest expects to issue a MVUM in 2010.

### CLEARWATER ELK HABITAT INITIATIVE

Senator Mike Crapo chartered the "Elk Collaborative" in 2003. The goal was to bring various interests together and to identify actions they could all support that would benefit elk in the Clearwater basin. The collaborative group provided a list of consensus recommendations to Senator Crapo, and the Forest described how they would be addressed in a report to the senator in 2005. Many of the recommendations addressed ongoing activities in the areas of vegetation and habitat management. These included the manipulation of vegetation by using wildland fire, prescribed fire, and timber harvest, and by controlling noxious weeds.

Many of the collaborative recommendations regarding vegetation already were, or have since become, standard procedure in designing projects or managing wildland fires. For example, in fire management areas where it is permitted, a management rather than a suppression approach is now considered the default action when fires are discovered unless the fire's location or burning conditions warrant suppression. Vegetation changes that will occur on a scale large enough to produce elk population responses will primarily come from large fire events. These may include fires that will be formally managed for a beneficial effect, as well as fires that received a suppression response. Some suppressed fires will burn large areas. This may be due to burning conditions, or may result from modified suppression

efforts intended to reduce suppression costs. Modified suppression efforts may be warranted when the value of the resources that may be lost is small compared to the costs of full suppression, or where full suppression is a practical impossibility given the burning conditions. Weather conditions and lightning in 2008 did not provide the conditions for any fires of particular note.

Prescribed fire continues to be an important complement to wildland fire. It has considerable value, even though it generally occurs on a smaller scale than wildland fires because specific areas can be targeted for ignition under a pre-determined range of burning conditions. The Forest is continuing with an aggressive prescribed burning program that includes planning for new burns as well as completing burns as weather conditions permit. Significant prescribed burns were completed in 2008 in several units of the Toboggan Ridge Project, the North Lochsa Face Project and the Guard Station unit of the Weitas Creek project. These areas were not ready to burn until late August and were ignited just in advance of a widespread rain event. Several other planned burns could not be completed prior to the rain event and the long-duration, heavy rains effectively ended the burning season, at least for landscape burns. See the Fire section for a summary of prescribed fires.

Noxious weeds can displace native vegetation and degrade elk habitat. The Forest has now completed NEPA analyses that allow a full range of weed treatments in all areas except the Selway Bitterroot Wilderness. The Selway Bitterroot Noxious Weeds analysis is currently in progress. A variety of partners are engaged in weed treatment efforts which leverages the available funding. See the Recreation section for a more complete discussion of weed treatment efforts.

## UPPER LOCHSA LAND EXCHANGE (FORMERLY POWELL LAND EXCHANGE)

In September 2008, the Clearwater National Forest completed a feasibility analysis for the proposed Upper Lochsa Land Exchange. The outcome of the feasibility analysis was a recommendation to enter into an Agreement to Initiate, which was signed by both parties in September 2008. In the proposed land exchange the Forest Service would acquire approximately 39,371 acres of land from Western Pacific Timber, LLC (WPT) formerly owned by Plum Creek Timber Company in the upper Lochsa River drainage, in exchange for approximately 28,212 acres of federal land. The federal lands are located within the Clearwater, Nez Perce and Idaho Panhandle National Forests. Public scoping to begin the EIS for the land exchange was initiated with a notice in the Federal Register in December 2008. The draft EIS is anticipated to be available for public review in October 2009.

The Upper Lochsa Land Exchange is in compliance with the primary goals and objectives for the Lands program as stated in the 1987 Clearwater Forest Plan. The goals include: Achieve a land ownership pattern in the Forest that will provide for soil and watershed protection, and effective and efficient management of National Forest System lands. Acquire lands that will maximize short-range and long-range management opportunities. Dispose of lands which do not contribute to Forest Plan management direction.

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### Item No. 23 - Effects of Other Agencies on National Forests

Frequency of Measurement: Annual  
Reporting Period: Five Years

#### MONITORING ACTION

A report will be prepared to determine effects of the activities of other agencies on the Forest.



## ACCOMPLISHMENTS/FINDINGS

The Clearwater National Forest believes in the value of coordination, cooperation, and collaboration. Forest employees routinely work with many agencies through formal and informal processes. Key contacts include (but are not limited to):

**Nez Perce Tribe** ♦ The Forest has a unique government-to-government relationship with the Nez Perce Tribe. The Forest communicates and consults directly with the Tribe regarding proposed projects and activities. The Forest and Tribe also partner based on an active road obliteration and monitoring program.

**Idaho Department of Fish and Game (IDF&G)** ♦ IDF&G routinely provides advice regarding projects affecting fish and wildlife resources. Department personnel also enforce IDF&G laws on the Forest.

**Idaho State Historic Preservation Office (SHPO)** ♦ Clearwater National Forest personnel consult with SHPO regarding the impacts of proposed activities and projects on heritage resources.

**Idaho, Latah, and Clearwater County Sheriffs' Departments** ♦ Through a cooperative agreement these departments patrol campgrounds and Forest roads and assist Forest Service law enforcement officers. These counties participated in the development of a Lolo Motorway public safety plan.

**Natural Resources Conservation Service** ♦ This agency monitors precipitation stations on the Forest.

**Idaho Department of Lands (IDL)** ♦ Forest Service personnel coordinate with IDL when issuing burning permits. In addition, the agencies work together to train firefighters and suppress wildland fires.

**National Park Service** ♦ The Forest coordinates with the Nez Perce National Historical Park regarding the management of the Lewis and Clark National Historic Trail and the Lolo Trail National Historic Landmark.

**Idaho Department of Parks and Recreation** ♦ The Forest continues to apply to the Department's grant program and participate in the Park 'n Ski program.

**U.S. Army Corps of Engineers** ♦ The Forest shares resource management information and expertise with Corps managers. Forest Service offices routinely provide information about Corps recreation sites.

**U.S. Fish and Wildlife Service—Dworshak Hatchery** ♦ Forest personnel provide visitors with information about what they will find at this site.

**NOAA Fisheries Service** ♦ The Forest consults with this agency on resource issues that potentially affect listed anadromous fish under the requirements of the Endangered Species Act (ESA).

**U.S. Fish And Wildlife Service** ♦ The Forest consults with the U.S. Fish and Wildlife Service on resource issues that potentially affect listed fish and wildlife under the requirements of the ESA.

**Idaho Transportation Department** ♦ The Forest coordinates with the Transportation Department primarily on issues related to U.S. Highway 12 and the Lolo Pass Visitor Center.



# FIRE

## GOAL

The Clearwater National Forest will implement a safe and efficient fire management program that provides for the three separate but related parts of fire management included in the 1995 and 2001 Federal Wildland Fire Management Policy as well as one that complies with the management goals and objectives outlined in the Forest Land and Resource Management Plan (LMRP).

- Fire protection – The traditional fire prevention, preparedness, detection, dispatching, and implementing the full range of fire suppression strategies.
- Fuel treatment – The manipulation of vegetative material to meet fire and land resource management objectives.
- Fire Use – The use of planned and unplanned ignitions for prescribed fire provided that NEPA, an approved prescribed fire plan, and consultation with the Fish and Wildlife Service and the public are complete.

## STRATEGY

- Continue to stress **SAFETY** as the first priority in all fire management activities with special emphasis on the aviation program, firefighting, and recurrent training in *Standards for Survival*.
- Continue the use of appropriate management responses under *Federal Wildland Fire Policy* to meet fire management objectives.
- Integrate *ecosystem management* concepts into fire management programs. Look at ways to utilize and incorporate fire treatment into sustaining healthy ecosystems, concentrating on restoration of fire-adapted ecosystems
- Analyze and display organizational needs using the *National Fire Management Analysis System* to determine the most cost-efficient fire management organization. This tool will help evaluate fire protection boundaries to promote economic and efficient fire suppression through the closest resource concept.
- Continue to use fire to accomplish management objectives for hazardous fuel reduction, site preparation, wildlife habitat improvement, and ecosystem management through prescribed fire and wildland fire use programs. Continue wildland fire use implementation consistent with the Forest Plan and national fire policy.
- Continue cooperation with other fire protection agencies. Evaluate fire protection boundaries to promote economic and efficient fire suppression. Work with communities to increase fire protection capability and support expansion of economic diversity.
- Provide a cadre of specialists with the qualifications necessary to accomplish prescribed fire programs and to participate as members of incident management teams on large complex fires.
- Ensure sufficient funds are collected from timber sales to abate “activity-created” fuel hazards. Manage the trust fund accounts to ensure all work is completed.
- Continue to support and be involved in achieving the goals of habitat improvement and restoration of elk under the Clearwater Elk Initiative.
- Continue to implement the *North Idaho Smoke Management Airshed* guidelines and coordinate prescribed burning and wildfire smoke impacts with this group and adjacent cooperators.

- Implement Fire and Aviation Management activities through the *Fire Management Plan (FMP)*, including preparedness staffing, qualifications, initial action, large fire suppression, wildland fire use, and use of *Minimum Impact Suppression Tactics (MIST)* for lands under the protection of the Clearwater

The fire staff will annually prepare a FMP. The purpose of the plan is to implement decisions made in the Land and Resource Management Plan(s) as they relate to wildland fire. It is not a decision making tool, but an implementation guide.

The FMP sets forth the program and guidance to safely and efficiently manage wildland and prescribed fires within the context of the approved LRMP for the Clearwater and Nez Perce National Forests. The FMP incorporates existing interagency plans and assessments and considers the best available science to assess and plan on a landscape scale. It is a tool for fire managers to use in planning and directing wildland fire activities consistent with the goals and objectives identified in the LRMP; it provides the context for understanding strategic decisions, selecting appropriate fire management responses and implementing the supportive tactical actions appropriate for specific lands and identified areas. The FMP is supplemented by operational plans that describe fire preparedness and prevention, aviation management, preplanned dispatch, prescribed fire, cooperative agreements and wildland fire use guides.

## MONITORING ACTION

The LRMP is currently being revised. Fire management is working with the revision team to ensure plan objectives will allow for the greatest flexibility in choosing the appropriate management response and fire management tools in order to meet the desired future condition and to protect resources from catastrophic wildland fire; including human communities, watersheds, and threatened and endangered species habitat; and establish landscape objectives to achieve sustainable ecosystems.

The primary elements used to monitor the Clearwater National Forest fire management program are the number of fire starts and acreage burned for wildland fire events that are suppressed or managed for resource benefit, and hazardous fuels treatment acres in and out of the Wildland Urban Interface. The forest has also been reporting their figures for wildland fires and landscape burns to the Elk Collaborative.

Additionally, fire managers monitor management ignited fires to access the acres accomplished and ensure they are meeting prescription objectives outlined in the NEPA and burn plan.

## WILDLAND FIRE MANAGEMENT OPTIONS

APPROPRIATE MANAGEMENT RESPONSE is required on every wildland fire that is not a prescribed fire. The term appropriate management response (AMR) is defined as the specific actions taken in response to a wildland fire to implement protection and/or fire use objectives. The AMR is guided by the strategies and objectives outlined in the development of the LRMP, reflecting land and resource values and services. This FMP outlines fire management activities and procedures to accomplish those objectives. The objective of a wildland fire use project is to obtain resource benefits whereas a wildfire is to be extinguished at minimum cost. As conditions change, the particular response can change to accomplish the same objective.

The appropriate management response is not a replacement term for prescribed natural fire, or the suppression strategies of control, contain, confine, limited or modified, but it is a concept that offers managers a full spectrum of responses. It is based on objectives, environmental and fuel conditions, constraints, safety, and ability to accomplish objectives. It includes wildland fire suppression at all levels, including aggressive initial attack. Use of this concept dispels the interpretation that there is only one way to respond to each set of circumstances

The purpose of giving management the ability to select the appropriate management response on every wildland fire is to provide the greatest flexibility possible and to achieve greater balance in the program.

## 2008 SEASON SUMMARY

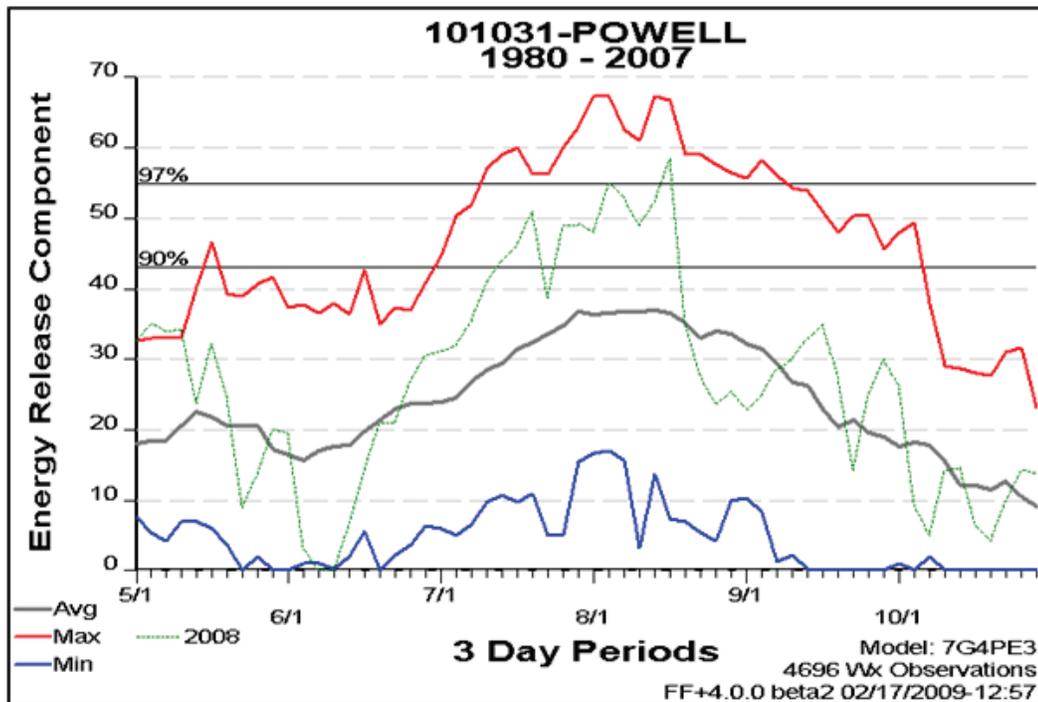
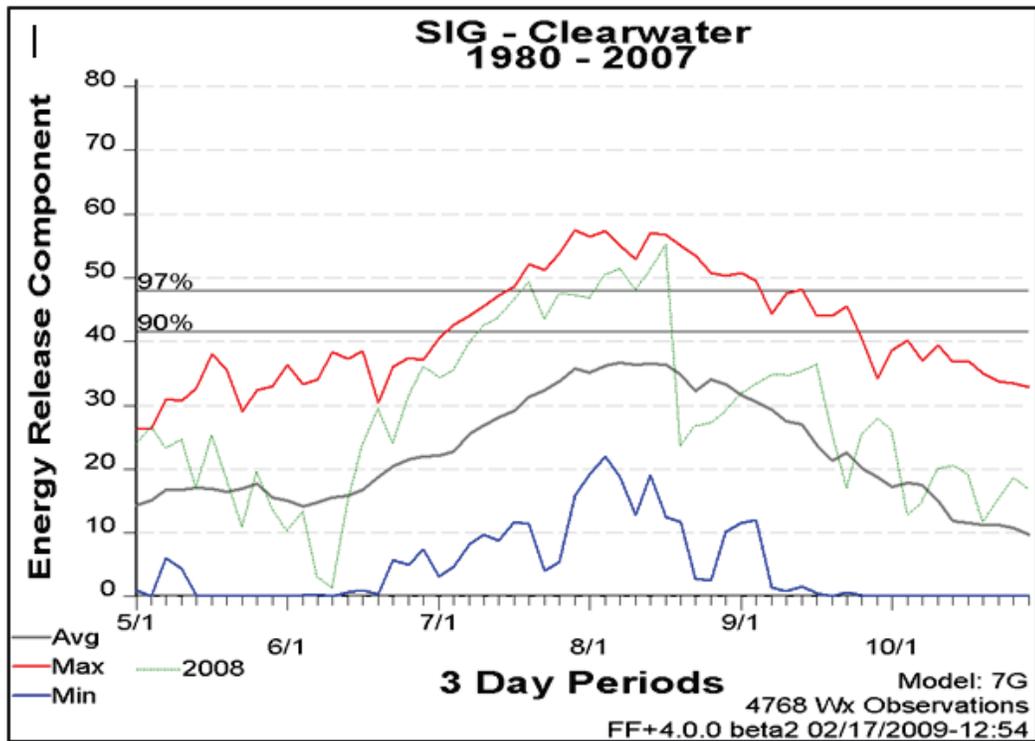
The Clear-Nez Fire Management Plan, updated annually, contains goals set by the Zone Fire Staff. In 2008 two goals were stated:

- Fire and Fuels personnel will collaborate with partners (County, State, and other Federal agencies) in implementing the County Wildfire Protection Plans. The intent will be to implement both mechanical and prescribed burn projects, leveraging funding where possible with grants and other agency resources, to effectively protect communities identified at risk in those plans. These plans must take into consideration the Regional Restoration and Protection Strategy.
- Reducing risk to communities will, over time, allow land managers the opportunity to make the most appropriate management response to all wildland fires. The appropriate management response policy reduces exposure for our wildland fire fighters, establishes a more natural role for fire where appropriate, and allows the line officer to make good decisions that will reduce firefighting costs.

The 2008 fire season was well below average in both number of starts and acres burned. A long winter and wet spring moderated fire activity from the extremes that were recognized in 2006 and 2007.

Although the 2008 fire season was quiet compared to the past two seasons, the zone supplied firefighting and support resources to other parts of the country and exceeded our target of \$750,000 in fire personnel time on incidents across the country. Fire Managers worked hard to accomplish a large scale fall prescribed fire program in a safe and cost efficient manner. We took advantage of additional funding available to accomplish a significant amount of pre-commercial thinning in the wildland urban interface by working in an integrated fashion with folks on both Forest's. We also worked collaboratively with the counties, State, and BLM to identify fuels treatments that will protect private lands, and allow more options for appropriate management response while reducing firefighting costs.

Figure 1: Weather Station Graph For Clearwater SIG And Powell 2008 Overlays Data From 1980-2007



## FIRE ORGANIZATION

The Nez Perce and Clearwater National Forests implemented a Fire Management Zone organization in 1995. The Zone has fire protection responsibilities for approximately 4 million acres, 2.2 on the Nez Perce and 1.8 million on the Clearwater. The purpose of creating the Zone was to improve utilization of resources across the two forests and increase effectiveness and efficiency in the fire management organization.

The Clear/Nez Fire Zone receives nearly 30% of the fire starts in the Northern Region. Ninety percent of these fires are lightning ignitions; the remaining 10% are from a variety of human causes. Despite the heavy fire occurrences on those that require suppression action 97% of fires are successfully initial attacked. This includes use of appropriate management response and wildland fire use. To meet fire protection objectives there is a significant dependence on aviation resources to support initial attack. The Zone consistently has the highest utilization of smokejumpers, helicopters, air attack, and retardant for initial attack in the Region.

The Clear/Nez Fire Zone is made up of a shared fire staff officer, one deputy fire staff, one fire planner, one fuels specialist, a zone aviation officer. The Zone is part of the Grangeville Interagency Dispatch Center. This center pulled all initial attack dispatching responsibilities into one central location in partnership with the Idaho Department of Lands, Clearwater-Potlatch Timber Protective Association, Bureau of Land Management, and the Nez Perce Tribe. The two Forests share the funding for the dispatch coordinator and the assistant coordinator positions. The other partners contribute funding and positions commensurate with their workload.

There are eight ranger districts in the fire zone, four on the Clearwater and four on the Nez Perce. District fire management organizations are responsible for the planning and implementation of fire-related activities on their respective units. The Zone is host to two Type III helicopters with supporting personnel modules, a smokejumper program, and a full service retardant base housed at the Grangeville Air Center. In addition there is a tri-region agreement in place that includes the Umatilla, Payette, and Wallowa-Whitman National Forests.

A complete description of roles and responsibilities of personnel/positions involved in the Clear/Nez Fire Zone management operations can be found in the annual FMP.

Cooperators play a vital role in fire management on the zone. Their programs and resources complement and augment those of the zone; their input and advice provide an additional forum for considering both public and other agency concerns and accounting for them, and their participation enhances the efficiency and effectiveness of fire management on the Clear/Nez Zone. Several interagency and cooperative agreements are currently in place and include those with the Idaho Department of Lands, Bureau of Land Management, Nez Perce Tribe, Clearwater Potlatch Timber Protection Association, and several Rural Fire Departments. The zone has an agreement in place to mutually share available resources with the Umatilla NF, and is also a participant in the Tri-Region Agreement with the Payette NF and Wallowa-Whitman NF. County Wildland Fire Mitigation Plan updates have been completed for all counties within the Clearwater and Nez Perce Forests. State, local and federal agencies participated jointly to complete these plans; and are currently working with counties to complete their Multi-hazard mitigation plans.

## PRESUPPRESSION / PREPAREDNESS

The Forest continued successful implementation of the Federal Wildland and Prescribed Fire Management Policy and National Fire Plan. In summary, federal fire management activities and programs are to provide for firefighter and public safety, protect and enhance land management objectives and human welfare,

integrate programs and disciplines, require interagency collaboration, emphasize the natural ecological role of fire, and contribute to ecosystem sustainability.

National Fire Management Analysis (NFMAS) was last certified in 1997, establishing the most cost effective level (MEL) for the Clearwater Forest. NFMAS modeled the Fire Fighting Production Capability (FFPC) for each district and the Fire Zone. The Forest took a conservative approach and only filled to the MEL minus 20 (or 80% of MEL), which equals a FFPC. Recent reductions in budget, or flat budgets with increasing costs, have resulted in a target FFPC of 56. In 2008 the Clearwater was able to exceed the regionally assigned FFPC to 67. Seventy three total firefighters, 8 engines, 4 initial attack modules, and 1 helicopter were included in the Clearwater FFPC.

Phase I of Fire Program Analysis (FPA), which is replacing the National Fire Management Analysis System (NFMAS), was begun in a joint effort with the following agencies: Idaho Panhandle National Forests (IPNF), Idaho State Department of Lands, Coeur d'Alene and Cottonwood Field Offices (BLM), Coeur d'Alene and Nez Perce Tribes (BIA), and to a lesser extent: Nez Perce Historical Site (NPS) and Kootenai National Wildlife Refuge (FWS). The intent of FPA is to increase efficiencies by working jointly with adjacent Federal, State and Local fire resources at a landscape, rather than unit level. This analysis models not just the suppression resources, but considers benefits of wildland fire use, fuels, and prevention programs as well. In 2008, the North Idaho Fire Planning Unit (FPU) continued in the second revision, first year analysis period.

The Forest received a budget of \$ 2,597,100 for fire presuppression in FY08. In an effort to meet FFPC the forest as in years past was asked to assume a certain amount of calculated risk in estimating p-code saving and using the saving to fund seasonal employees. This proved to be successful and the forest was not overspent in WFPR by year's end.

## WILDFIRE DETECTION

Wildfire detection on the Clearwater is primarily provided by staffed lookouts and fixed-wing detection flights. Staffed lookouts during the 2008 fire seasons included Bear Mountain, Hemlock Butte, Rocky Point, Walde, Black Mountain, and Coolwater.



Table 3: Clearwater Forest Fire Detection 2008

Detector	Number of Fires	Percent
Lookout	8	24%
FS Aircraft	14	41%
Other Aircraft	1	3%
FS Employee	6	17%
Other	3	9%
FS Patrol	2	6%
<b>Total</b>	<b>34</b>	<b>100%</b>

The type of detection, number of fires located and percentage of the total number of fires detected is displayed above. Orofino Aviation provided 2 exclusive use and optional use single-engine light fixed-wing aircraft for fire detection, recon, relief air attack, fire mapping, and

point-to-point passenger service for the Clearwater-Nez Perce Zone.

## STATISTICAL CAUSE

The Clearwater National Forest is responsible for the protection of approximately 1,715,726 acres of land. The Idaho Department of Lands and Clearwater-Potlatch Timber Protective Association protect about 146,136 acres of national forest lands.

Wildfires were attacked and suppressed in accordance with the 2008 Fire Management Plan, Clearwater and Nez Perce Forests, which tiers to the Forest Plan. The intent of the Clearwater National Forest Plan standards and guidelines were met by implementing an array of strategies. Each fire was assessed for its cause, potential, and location within each land allocation, and an appropriate management response was initiated based on each fire situation and management area objectives.

**Table 4: Clearwater Forest Wildland Fire Statistical Cause 2008**

<b>Cause</b>	<b>Number of Fires</b>	<b>Percent</b>	<b>Acres</b>
Lightning	30	88%	492.4
Equipment	0	0	0
Smoking	0	0	0
Campfire	2	6%	.2
Power Line	0	0	0
Debris Burning	1	3%	2.3
Miscellaneous	1	3%	.3
Arson	0	0	0
<b>Total</b>	<b>34</b>	<b>100%</b>	<b>495.2</b>

## WILDLAND FIRE

In 2008 the Clearwater Forest suppressed 4 person-caused fires that burned 2.6 acres. The 2008 fire season was well below both the ten year average number of fire starts and acres burned. The following figure displays the unplanned fire workload that occurred on the forest in 2008, compared with the previous ten year average.

**Table 5: Clearwater Forest 2008 Season Compared With Previous 10-Year Average (2007-1998)**

	Clearwater National Forest		
	2008		10 year ave.
Wildfire Acres	95	9%	9,730
Wildfire Starts	29	31%	95
WFU Acres	400	12%	3,474
WFU Starts	5	33%	15
Total Acres	495	37%	13,204
Total Starts	34	31%	110
Human Starts	4		5
Private/state acres	0.4		
Pvt/state starts	1		

## AVIATION

The Grangeville retardant base is designated as a Single-Engine Air tanker Base. The cooperative agreement with Idaho Department of Lands to station their two contracted single-engine tankers at Grangeville was implemented again for 2008 fire season. Two Air Tractor 802s, with an operational capacity of 700+ gallons each, operated out of Grangeville Air Center from mid-July through mid-September.

The retardant base delivered 101,732 gallons of retardant in 2008. The Clearwater NF received 5,811 gallons on the Martin Fire.

The helitack program for the Clear/Nez Zone provides initial attack, passenger and cargo transport, extended attack support, bucket work, and project support across the Zone with a 10-person module at the Musselshell and Grangeville Air Centers. The Clear/Nez exclusive use helicopter contracts were renewed with Hillcrest for the 2008 fire season, providing two Bell 206 L-4 Type III helicopters.

- During the 2008 fire season, the Musselshell helicopter (N767H) responded to 3 wildland fires on the CWF, providing both initial attack and support. In addition, the helicopter was assigned to 9 incidents off forest.
- The helicopter stationed at the Grangeville Air center (N662H) responded to 4 wildland fires on the CWF and 9 on the NPF providing both initial attack and support. In addition, the helicopter was assigned to 2 incidents off forest.
- The Zone hosted two National Exclusive Use contracted helicopters, one type 1 and one restricted use type 2, and the regional air attack platform.
- Grangeville hosted 30 smokejumpers. They jumped 6 fires on the zone (1 on the CWF, and 5 on the NPF) and responded to one fire on the NPF by ground.

## WILDLAND FIRE USE

Wildland Fires that are naturally ignited and occur within a Fire management Unit which allows for Wildland Fire Use to meet resource objectives as outlined in both the Forest Plan and Fire Management

Plans. Each fire use event meets strict prescription criteria prior to line officer approval, and a site-specific Wildland Fire Implementation Plan is developed.

This management option was selected for 5 fire starts on the Clearwater Forest in 2008. These fires burned a total of 400 acres. These figures are 1/3 of the past ten-year average for starts and barely 10% of the acres burned. There were no starts suppressed that could have been managed for resource benefit.

## FUELS REDUCTION

Brush disposal trust funds were used to treat 478 acres of timber harvest-related fuels in fiscal year 2008.

The 2008 hazardous fuels operating budget for the Clearwater was \$1,304,700. The Forest accomplished 13,560 acres of treatments with these funds 10,317 acres were planned treatments; 21% of the planned treatments were within the wildland urban interface, or 2,187 acres, and 8,130 occurred outside the interface. Unplanned treatments totaled 3,243 acres which included 441 acres of wildland fire use, and 2,802 acres of the Boundary wildfire that burned in the NEPA cleared Upper Fish Creek unit.

**Table 6: Clearwater Forest 2008 Hazardous Fuels Treatment Acres**

	Clearwater		
	WUI	Non-WUI	Total
<b>Core</b>	<b>1,290</b>	<b>7,716</b>	<b>9,006</b>
Prescribed Burning	41	7,534	7,575
Precommercial Thin/Mechanical	1,249	182	1,431
<b>Integrated</b>	<b>897</b>	<b>3,657</b>	<b>4,554</b>
WFU/	--	3,243	3,243
Precommercial Thin/Mechanical	336	414	750
Timber	561	--	561
<b>Unified</b>	<b>2,187</b>	<b>11,373</b>	<b>13,560</b>

The zone had a slow start in the prescribed burning program with no spring burn window on the Nez Perce Forest and little to none on the Clearwater- due to almost constant moisture and green up. The Clearwater Forest was able to burn in mid August and several burn windows were available on both Forests through most of September, which is very unusual. At least one significant burn window was missed due to smoke conditions. The excellent burn windows in the fall allowed the Zone to produce about 10,000 acres of prescribed fire for targets in both 2008 and 2009.

Another significant accomplishment was taking advantage of some late 3<sup>rd</sup> quarter supplemental fuels funding to accomplish a little more than 2,000 acres of pre-commercial thinning on both forests by a collaborative effort between Silviculture, Fuels, and the Procurement shops.

Smoke management coordination continues to be a significant part of managing fire, particularly prescribed fire and wildland fire use. The coordination between local partners, Montana/Idaho Airshed Group, Nez Perce Tribe, Montana DEQ, Missoula County, and Idaho DEQ (both Agricultural and Wildland smoke coordinators) and all the burners on the Zone requires extensive communication throughout the year, and constant communication during the burning season, to facilitate burning when smoke conditions have the potential to affect the public.

# 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 high quality existing habitat.

## STRATEGY

Provide management direction during the planning and implementation of activities. Identify and implement rehabilitation projects on the Forest.

Emphasis in habitat improvement will be directed toward the Endangered Species Act (ESA) threatened species of bull trout and steelhead trout, and sensitive species of westslope cutthroat trout, spring Chinook salmon, redband trout and Pacific lamprey.

The Forest will focus the challenge cost-share program on anadromous fish habitat improvement associated with fisheries in the Columbia River Basin and the direction of the Northwest Power Act. The Forest will develop cost-share partners and projects.

The Forest fisheries biologist will direct development of fisheries expertise and monitoring across the Forest. Information regarding restoration and monitoring projects and the results are available for anyone interested.

Ensure Forest activities meet the Forest Plan standards, especially PACFISH and INFISH standards that were included in a Forest Plan amendment.

Ensure Forest activities meet the terms and conditions as defined in the steelhead trout and bull trout biological opinions and project ESA consultations.

## ACCOMPLISHMENTS/FINDINGS

### PACFISH

No formal review by the PACFISH Implementation Review Team was conducted on the Forest in 2008. Since 1995, the Forest has been conducting the PACFISH/INFISH monitoring programs in conjunction with the annual Best Management Practices (BMP) reviews to determine project implementation compliance and effectiveness of resource protection measures on selected projects. In 2008, the Forest conducted a review of one project to determine compliance with Forest Plan direction as amended by PACFISH: Beaver Triangle Timber Sale. The reviews of timber harvest units (#3, 4 and 5 - NEPA units #8A,B,C and D) under the Beaver Triangle Timber Sale showed that the unit had default PACFISH riparian buffers and no observable impacts (i.e. sediment etc) to aquatic resources. This project met PACFISH standards and guidelines and did not retard the attainment of the Riparian Management Objectives (RMO's).

### INFISH

In 2008, the Forest conducted reviews of two projects within the North Fork Clearwater River drainage to determine compliance with Forest Plan direction as amended by INFISH: Independence Thinning and Trap Point Salvage. The reviews of timber harvest units (#1) for both projects showed that the units had default

INFISH riparian buffers and no observable impacts (i.e. sediment etc) to aquatic resources. The review of the road maintenance completed under the Independence Thinning Project showed good vegetative recovery on the road surface and good drainage. The review of the road maintenance work as part of the Trap Point Salvage noted no problems on the roads within the unit however the review found that the maintenance work resulted in direct deposits of sediment into Rawhide Creek during ditch cleaning and drainage work on the lower two miles of USFS road #5428. Given the past watershed problems associated with the road being adjacent to Rawhide Creek, the maintenance performed under the project is expected to improve the situation. In 2009, the Forest is schedule to implement a restoration project on the lower two miles of USFS road #5428 to reduce sedimentation via drainage improvements (reshaping the road surface (inslope - outslope), adding rolling dips and relief culverts, and placing spot surfacing).

The review re-emphasized the need to maintain the riparian zone between roads and streams, especially where the road is located within 25 feet of the stream. The project did not meet the INFISH standard and guideline RF-2f which states: "Sidecasting of road material is prohibited on road segments within or abutting RHCAs in priority watersheds." With the exception of the road maintenance issue, the review found that the project met INFISH standards and guidelines and did not retard the attainment of the Riparian Management Objectives (RMO's).

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### Item No. 8 - Water Quality and Stream Condition for Fisheries and Non-Fisheries Beneficial Uses

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Frequency of Measurement: Annual  
Reporting Period: Annual

Information for Non-Fisheries is included in the section entitled **Soil and Water** for water quality and stream condition for nonfisheries beneficial uses.

## MONITORING ACTION

The Forest fisheries biologist will coordinate the monitoring of critical anadromous and inland fish streams to determine habitat conditions and population trends. Forest field crews will measure key habitat characteristics, such as cobble embeddedness (the degree to which streambed gravel has been infiltrated by sediment).

Streams supporting both anadromous and inland fish were monitored during 2008. During 1998, the 1997 monitoring program was expanded and intensified to include more monitoring of anadromous and inland fish streams that were impacted as a result of the high flows, flooding and landslides within the Palouse River, Lochsa River and the North Fork Clearwater River drainages. In 1999, this intensity was maintained or expanded in most drainages. However, budget constraints during the past eight years (including 2008) have reduced monitoring efforts across the Forest.

## ACCOMPLISHMENTS/FINDINGS

### FOREST OVERVIEW

**Stream Inventory (Physical):** As in the past eight years, budget constraints limited the amount of stream surveys and associated monitoring as no seasonal personnel were employed during the field season. No stream inventories and stream habitat surveys were completed by the Forest in 2008. However, the Forest did establish aquatic monitoring sites on another three streams selected for future Forest Plan monitoring; during past two summers (2007-2008) eight of the 12 streams have been completed. This information will supplement the monitoring the PACFISH/INFISH Biological Opinion Effectiveness Monitoring Program (PIBO) has been conducting on the Forest since 2001. Forest personnel also completed substrate monitoring on selected streams; see the riparian section for more information.

**Stream Inventory (Biotic):** Forest completed fish population surveys via snorkeling and spawning ground surveys on approximately 22.6 miles of stream.

**Lake Inventory (Biotic):** Through a partnership with the Idaho Department of Fish and Game, the Forest contributed fisheries funds to assist IDFG personnel in the re-survey of seven high mountain lakes in the Warm Springs Creek drainage within the Selway Bitterroot Wilderness Area; approximately 42 acres of lakes were surveyed.

**Lake Restoration:** Through the same partnership with IDFG, the Forest contributed fisheries fund to assist IDFG personnel in the removal of non-native brook trout in three high mountain lakes in the upper North Fork Clearwater River drainage. Approximately 10 acres of lake were affected by the project.

**Stream Improvement:** Project targets in 2008 focused on riparian restoration, watershed restoration and fish passage improvement projects. Approximately 7.5 miles of stream were improved using fisheries funds. Other Forest funds and non-USFS partnership funds contributed to the completion of 46.0 miles of stream habitat improvements. Stream habitat was improved either directly through culvert replacements and removals, riparian plantings and riparian habitat protection, or indirectly through road decommissioning projects.

The 2008 stream improvement projects were completed on various streams throughout the Forest. Fisheries funded a riparian restoration project in the Potlatch River drainage. Fisheries funds were used to assist road decommissioning and fish passage improvement projects within the Lolo Creek and Lochsa River drainages. Forest funds and funds from the Nez Perce Tribe (Bonneville Power Administration and were used for two culvert and one bridge replacements in the Lochsa River drainage. As in past years, riparian fencing projects involving fence replacement, construction and maintenance were completed to meet Forest Plan Riparian Management Objectives (RMOs); starting in 2006, this work was funded by the range program.

**Stream Temperature Monitoring:** The stream temperature-monitoring program in 2008 monitored approximately 337 sites across the Forest (Table 7). Stream temperature data for 291 sites were processed in 2008. This includes streams that were monitored during the summer of 2008, units not retrieved in previous years and multi-year units deployed during previous years to collect data in 2003 and later years. This monitoring report summarizes the data collected during 2008 on 289 sites on 234 streams; this does not include the two units that were retrieved in 2008 with 2007 data. Temperature data for 31 sites are not available (instruments still instream (11), missing units (12), equipment failures (1), lost/stolen (5), or analysis pending (2)). During 2008, only six units were lost, vandalized or had equipment failures; this is approximately two percent of the units deployed in 2008. Forty-seven units deployed in years 1998-2008 are still out in the field and are not included in the above figures. An additional 17 units with insufficient 2008 data were also excluded from this analysis (Table 8). Dependent upon budgets, streams will be monitored for at least five consecutive years.

**Table 7: Summary Of Stream Temperature Monitoring Sites Processed In 2008 And The Current Status Of Recorders Across The Clearwater National Forest.**

Sites Monitored	Description	Status
281	2008 data sites processed	2008 data processed
1	2008 bad data/no data	Equipment failures
2	2008 data pending analysis	Analysis pending
5	2008 lost/stolen/vandalized data recorder	Lost/stolen
<b>289</b>	<b>Total 2008 sites processed</b>	
2	2007 data sites processed	2007 data processed
<b>291</b>	<b>Total sites processed in 2008</b>	
	Unprocessed Sites	
12	2008 data recorder missing	Missing unit
11	2008 data recorder still in field	Still instream
15	2008 long term data recorder still in field	Collecting data
8	2003 - 2007 data recorders still in field	Pending retrieval
<b>337</b>	<b>Total sites monitored in 2008</b>	
24	2005 -2007 long term recorder in field	Collecting data
12	2009 long term recorder in field	Collecting data
<b>373</b>	<b>Total sites monitored</b>	

**Table 8: Summary Of The Total Number Of 2008 Water Temperature Monitoring Sites On The Clearwater National Forest, Number Of Sites Analyzed, And The Total Number Of Streams Monitored For The 2008 Monitoring Report**

Sites	Streams	Description
281		2008 sites with data
-17		2008 sites with insufficient data for analysis
264		2008 sites with sufficient data for analysis
-30		Multiple monitoring sites within the same stream
	234	2008 streams analyzed and summarized

The 2008 summer showed stream flows substantially above the average streams flows during the summer months (Table 9). For example, the mean monthly stream discharges during June through September were approximately 146 percent of the average discharge recorded for the Lochsa River during the 95-year period (1911-2007). Given the higher stream flows through the summer months, stream temperatures would be expected be cooler than in past years, especially considering that the summer of 2008 was cooler than the summers of 2003, 2006 and 2007 based on air temperatures units stationed throughout the Forest.

In 2008, approximately 1.7 percent (4 streams) of the streams monitored exceeded the State’s cold water biota standard. This is unchanged from 2005 (most recent relatively cool summer) however the stream flows were substantially higher in 2008 as compared to 2005. The number of streams exceeding the State’s cold water biota standard was lower in 2008 (2 % vs. 9%) than the past two years. Of these four streams, two streams exceeded the State cold water biota standard for four days or less.

**Table 9: Comparison Of Air Temperature Data, Stream Flows And Water Temperature Information Collected Within Selected Watersheds Across The Clearwater National Forest During 2003-2008.**

Year	Average Number Of Hours Air Temperatures Exceeded 13° C Jun 15 - Sept 30 <sup>3</sup>	Percent Of Historic Average June-Sept Lochsa River Stream Flow <sup>4</sup>	Number Of Streams Monitored	Number Of Streams Exceeding State Cold Water Biota Standard (%)
2003	12,103 (12,122)	72.8	260	13 (5)
2004	9,362 (9,369)	119.8	230	13 (6)
2005	8,954 (9,591)	58.8	243	6 (2)
2006	10,733 (11,379)	65.6	236	21 (9)
2007	11,881 (12,363)	52.6	246	21 (9)
2008	9,389	145.8	234	4 (2)

Over the past several years numerous questions have been posed of why streams are not meeting various standards. While stream flows and associated snow pack in the drainages, summer precipitation, and the average summer ambient air temperatures affect stream temperatures during the summer months, the maximum daily temperatures are also regulated by various other factors, some unique to individual drainages. However, these factors as well as favorable high stream flows and cooler summer air temperatures may not be enough to keep stream temperatures from rising above imposed numeric standards in average years. The high stream flows during the summer months in 2008 were however of the magnitude and duration to substantially influence spawning and rearing conditions in many streams.

As an example, a comparison of available 2008 stream temperature data from streams (187 streams) located in wilderness/roadless/undeveloped areas and developed areas within the two major subbasins (Lochsa River and North Fork Clearwater River) showed no difference in streams meeting the State spawning standard of 13° C (Table 10). While data from 2006 and 2007 showed slightly more streams in developed drainages not meeting the State spawning standard of 13° C (3% and 5% respectively), data from 2003-2005 and more recently 2008 indicated that there was basically no difference between these wilderness/roadless/undeveloped areas and developed areas.

<sup>3</sup> Data was summarized from three air monitoring sites located throughout the Forest. Data in ( ) was summarized from five air monitoring sites; data from only three sites was available for 2008.

<sup>4</sup> USGS data; Lochsa River is shown to reflect annual stream flow conditions on the Forest.

**Table 10: Comparison Of State Spawning Standards Between Wilderness/Roadless/Undeveloped And Developed Streams Within The Lochsa River And North Fork Clearwater River Subbasins During 2003-2008**

Year	Number Wilderness/Roadless/Undeveloped Streams Monitored For State Spawning Standards	Number Of Wilderness/Roadless/Undeveloped Streams Meeting State Spawning Standards	Percent Of Wilderness/Roadless/Undeveloped Streams Meeting State Spawning Standards	Number Of Developed Streams Monitored For State Spawning Standards	Number Of Developed Streams Meeting State Spawning Standards	Percent Of Developed Streams Meeting State Spawning Standards
2003	71	8	11%	93	10	11%
2004	83	9	11%	93	10	11%
2005	89	12	14%	101	15	15%
2006	88	9	10%	97	13	13%
2007	100	3	3%	98	8	8%
2008	96	49	51%	91	46	51%

The high stream flows during the summer months in 2008 provided cooler stream conditions that led to a substantial increase in the number of streams meeting the State spawning standard of 13° C (Table 11). Approximately 51 percent of the streams monitored within wilderness/roadless/undeveloped areas met State spawning standards for steelhead trout and westslope cutthroat trout. In comparison, the same percentage (51 percent) of the streams monitored within developed areas met applicable State spawning standards (i.e. steelhead trout, westslope cutthroat trout, and spring Chinook salmon). While various variables (i.e. stream size, fire history, riparian alterations, riparian recovery, mean elevations, etc) would influence conclusions if further comparisons are made, the overall outcome of the above comparison indicates while attaining the State spawning standard of 13° C for the selected spawning periods is usually difficult in most years, higher stream flows throughout the summer months can influence stream temperatures substantially dependent upon the magnitude and duration.

Data from 192 streams located in wilderness/roadless/undeveloped areas and developed areas within the two major subbasins (Lochsa River and North Fork Clearwater River) showed 96 monitored streams (100%) located in wilderness/roadless/undeveloped areas met the State cold water biota standard<sup>5</sup> while 95 out of 96 streams (99%) in the developed areas of the drainages met the standard (Table 11). There is essentially no change from 2008 in the wilderness/roadless/undeveloped areas but the data for the developed areas in these drainages shows an increase in the number of streams (99%) meeting the State cold water biota standard as compared to previous years. Again the high summer stream flows provided the conditions that maintain cooler water temperatures throughout the summer.

<sup>5</sup> State standard for cold-water biota of the daily maximum of 22 °C and the maximum daily average of 19 °C.

**Table 11: Comparison Of State Cold Water Biota Standard Between Wilderness/Roadless/Undeveloped And Developed Streams Within The Lochsa River And North Fork Clearwater River Subbasins During 2003-2008**

Year	Number Of Wilderness/Roadless/Undeveloped Streams Monitored For State Cold Water Biota Standard	Number Of Wilderness/Roadless/Undeveloped Streams Meeting State Cold Water Biota Standard	Percent Of Wilderness/Roadless/Undeveloped Streams Meeting State Cold Water Biota Standard	Number Of Developed Streams Monitored For State Cold Water Biota Standard	Number Of Developed Streams Meeting State Cold Water Biota Standard	Percent Of Developed Streams Meeting State Cold Water Biota Standard
2003	71	70	99%	99	96	97%
2004	83	83	100%	99	95	96%
2005	90	89	99%	107	104	97%
2006	87	85	98%	103	96	93%
2007	100	98	98%	103	90	87%
2008	96	96	100%	96	95	99%

**Fish Population and Habitat Monitoring:** Fish population numbers and/or stream substrate conditions were monitored in selected drainages in the Lolo Creek, Lochsa River and North Fork Clearwater River watersheds. Personnel from the Idaho Department of Fish and Game, Nez Perce Tribe, U.S. Fish and Wildlife Service, and Idaho Department of Environmental Quality also monitored fish populations within various streams on the Forest; these monitoring projects were coordinated with the Forest programs to avoid unnecessary duplication of monitoring efforts.

**Items No. 31 and 32 - Anadromous and Resident Fish Indicators**

Five major watersheds within the Forest provide habitat for anadromous and inland (resident) fisheries. Within the mainstem Clearwater River subbasin, steelhead trout and/or spring Chinook salmon are found with inland fisheries in the Potlatch River, Orofino Creek and Lolo Creek drainages. Although anadromous fish do not migrate upstream into the Forest’s lands within Orofino Creek drainage, steelhead trout are present downstream on non-USFS lands. Upstream of the mainstem Clearwater River, the Middle Fork Clearwater River and several tributaries provide habitat for anadromous and inland fisheries. Finally the major anadromous fisheries on the Forest in terms of available habitat, is the Lochsa River drainage.

**POTLATCH RIVER WATERSHED**

**Watershed Status:** No natural or anthropogenic events occurred on USFS lands in the Potlatch River watershed during 2008 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads, vegetative treatments, mining and grazing). No wildfires occurred in the Potlatch River drainage in 2008. Various field reviews and monitoring activities have supported the conclusion that the habitat conditions are most likely similar to 1998-2007 conditions. However, anadromous fish numbers may vary annually due to influences outside the watershed and fish supplementation efforts by the Nez Perce Tribe involving coho salmon.

**Habitat Improvement:** Due budget constraints, aquatic restoration and enhancement work within the Potlatch River watershed were primarily completed with range funds in 2008 with fisheries funds contributing to a small riparian restoration project. Overall these two restoration activities focused on the two primary limiting factors (high water temperatures and excessive sedimentation) within the upper Potlatch River system. Reduction of summer water temperatures and anthropogenic sediment sources would assist the steelhead trout recovery efforts within the drainage. During 2008, approximately ten miles of riparian areas including stream banks and stream channels were protected from grazing during 2008; the range program took over the funding of the riparian fence maintenance projects that fisheries funded during 1992-2005. Previous stream surveys identified a riparian area along approximately 0.3 miles of Nat Brown Creek that needed restoration. Although no other major watershed restoration activities (i.e. road decommissioning, fish passage improvement, instream restoration projects) were scheduled in 2008, several restoration projects (i.e. meadow restoration, stream bank stabilization, road decommissioning) are scheduled for 2009 and later years.

**Riparian Fence Maintenance:** Fences on 19 permanent riparian enclosures and six temporary riparian enclosures were maintained in 2008:

- Six enclosures along the East Fork Potlatch River to protect 1.9 miles of stream.
- One enclosure along Ruby Creek to protect 0.25 miles of stream.
- Two pond enclosures within the Corral Creek watershed.
- A “Hi-Tensile” electric fence (2.3 miles) along Cougar Creek to protect one mile of stream.
- Five miles of “Hi-Tensile” fence along the West Fork Potlatch River and Feather Creek to protect 1.7 miles and 0.75 miles of stream respectively.
- One temporary electric fence and two permanent fences on Corral Creek and Hog Meadow Creek to protect the 1993 stream reconstruction projects along two miles of stream.
- Approximately one mile of “Hi-Tensile” fence along Nat Brown Creek to protect 0.5 miles stream.
- A permanent fence (Hank’s fence) within the East Fork Corral Creek drainage to protect 0.5 miles of stream.
- The East Fork Big Bear Creek enclosure to protect 0.25 miles of stream.
- The permanent/temporary trail fence upstream of Little Boulder Campground to protect one mile of the mainstem Potlatch River.

**Riparian Restoration:** The riparian area along 0.3 miles of Nat Brown Creek was planted with various shrubs to provide improved bank conditions through stabilization and short-term riparian shade. The project is expected to provide downstream benefits to approximately one mile of stream.

**Habitat Monitoring:** Stream inventories of all fish bearing streams within the Potlatch River drainage have been completed on National Forest System lands during 1990-1995. In 2005, the Forest completed resurveys of habitat, substrate, and fish population conditions via contract on 13 selected sensitive stream reaches within eight streams in the Potlatch River drainage to determine if stream conditions have changed since the previous surveys.<sup>6</sup> Resurveys of specific streams are planned every five to ten years dependent upon stream conditions, management proposals and available funds. Re-surveys of stream reaches may occur for specific projects in future years, but funding constraints will limit re-surveys of entire drainages. As noted in the summary section, the overall status and trend of habitat conditions will be monitoring via the PIBO monitoring process. The PIBO aquatic monitoring sites will provide the Forest an assessment of stream habitat, riparian and water quality conditions within the Palouse River drainage; this information will be reported under the current and future Forest Plans.

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<sup>6</sup> U.S.D.A. Forest Service - Clearwater National Forest. 2006. 2005 watershed and fisheries monitoring report. Clearwater National Forest, Orofino, Idaho.

**Stream Habitat Monitoring/Surveys:** No re-surveys of the PIBO aquatic monitoring sites within the Potlatch River drainage were scheduled in 2008. The full complement of PIBO sites (4) were established in 2001 and re-surveyed in 2006 by the Multi-regional PIBO Effectiveness Monitoring Staff. The PIBO sites are scheduled to be re-surveyed in 2011.

In 2008, stream re-surveys were scheduled within the Potlatch River drainage.

**Stream Channel and Substrate Conditions:** In 2008, no streams within the Potlatch River drainage were scheduled.

**Water Temperature Monitoring:** Stream temperature monitoring was conducted at 13 sites on 9 streams in the Potlatch River drainage in 2008 to evaluate habitat conditions for steelhead trout. From 1990-1996 and 1998-2008 the Forest has collected temperature data on selected streams within the Potlatch River drainage to determine if stream temperatures meet Forest and State standards, locate temperature problems, identify recovery trends, and prioritize riparian recovery efforts. Eighteen years of thermograph data indicate that most of the streams have summer stream temperatures that are higher than the desired objectives for salmonid rearing. In most years, all temperature sites within the Potlatch River system exceeded the desired future condition (DFC) for temperatures during the spring spawning period and all temperature sites within the Potlatch River system exceeded the State spawning standard of 13°C during the spring.

Comparison of the 2008 stream temperature data from the monitoring sites, the 13 monitoring sites on 9 streams with available data and the desired maximum temperatures as defined for the "low fishable" standard in the Forest Plan revealed that:

- The East Fork Potlatch River (mouth), mainstem West Fork Potlatch River at mouth, mainstem West Fork Potlatch River below Stout property, Corral Creek, Moose Creek (downstream of Moose Creek Reservoir), Nat Brown Creek (lower) and Ruby Creek did not meet the DFC (less than 20°C) for steelhead trout rearing. The mainstem West Fork Potlatch River at mouth, Nat Brown Creek (lower), and Ruby Creek exceeded the standard on three or fewer days.
- Six of the 13 sites, mainstem Potlatch River above West Fork Potlatch River, Nat Brown Creek (upper), Cougar Creek, Feather Creek, Moose Creek (upstream Moose Creek Reservoir) and West Fork Potlatch River (downstream Talapus Creek) met the DFC for steelhead trout rearing.

In 2008, three sites, mainstem East Fork Potlatch River (mouth), Corral Creek, and Moose Creek (downstream of Moose Creek Reservoir) exceeded the State standard for cold-water biota of the daily maximum of 22°C and the maximum daily average of 19°C. Corral Creek only exceeded the State cold-water biota standard on four days. The State temperature standard of 13°C or below for the spring spawning period (for steelhead trout) was not met at any of the 13 sites. All streams exceeded the bull trout maximum summer rearing temperature of 12°C (consecutive seven-day average of daily maximums) that EPA issued as final temperature guidance for water quality standards throughout the Pacific Northwest.

**Fish Population Monitoring:** In 2008, no fish population monitoring projects were completed by the Forest within the Potlatch River drainage. Cooler spring conditions resulted in a late spring runoff which prevented the Forest from conducting the annual steelhead trout spawning surveys. Monitoring of fish populations was not scheduled in 2008 by the Forest however, the IDFG completed fish population surveys (via snorkeling) on the mainstem Potlatch River and 11 tributaries as part of their ongoing research involving the steelhead trout habitat restoration on non-Federal lands.

**Watershed Status:** No natural or anthropogenic events occurred in the Lolo Creek watershed during 2008 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads, vegetative treatments, mining and grazing). No major fires occurred in the Lolo Creek drainage in 2008. Two small suppression fires totaled 0.6 acres. Various field reviews and monitoring activities have supported the conclusion that the habitat conditions are most likely similar to 1998-2007 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed to be similar to conditions observed in previous years. However, anadromous fish numbers may vary annually due to influences outside the watershed and fish supplementation efforts by the Nez Perce Tribe involving spring Chinook salmon.

**Habitat Improvement:** Most improvement work regarding the aquatic resources were focused on watershed restoration (i.e. road decommissioning, road maintenance) and riparian protection. Aquatic funds supplemented Forest funds from the engineering and watershed and BPA funds from the Nez Perce Tribe to complete road decommissioning activities in the White White project area. The Forest and Tribe participated in the design, implementation and monitoring of these projects. The Forest also funded the reconstruction of the Musselshell Meadows Fence in 2008.

**Riparian Fencing:** Fence maintenance on existing riparian enclosures was completed in 2008 using range funds. Approximately 4.2 miles of riparian areas including stream banks and stream channels within the Lolo Creek drainage were protected from grazing.

During 2008, the Forest concentrated its range funding and efforts in reconstructing the Musselshell Meadows Fence to protect meadow and riparian values along Musselshell Creek; steelhead trout and spring Chinook salmon spawn and rear within and adjacent to Musselshell Meadows. The Nez Perce Tribe assisted with the reconstruction efforts. Due to problems acquiring materials during the summer of 2008, only 50 percent of the fence (approximately 2,600 feet) was completed in 2008. The remaining materials were purchased with 2008 range funds and the rest of the fence will be reconstructed in early 2009.

**Fish Passage Improvement:** No fish passage improvement projects were completed during 2008. Several fish passage improvement projects are scheduled for completion in 2009-10.

**Road Decommissioning:** Besides general road maintenance work, the Forest completed approximately 13.1 miles of road decommissioning in the Lolo Creek drainage. Fisheries funds (21 percent), engineering funds (18 percent) and Bonneville Power Administration funds through the Nez Perce Tribe (61 percent) and were used to remove roads in the Chamook Creek, Mike White Creek, White Creek, Utah Creek, and Nevada Creek drainages; habitat conditions along approximately 12 miles of streams within the Lolo Creek drainage are expected to improve for steelhead trout, westslope cutthroat trout and bull trout via removing existing sediment sources.

Future road decommissioning projects are planned in the Yakus Creek drainage (Yakus Creek Project) and Musselshell Creek drainage (Swede Fuels Project).

**Habitat Monitoring:** The mainstream Lolo Creek and nine tributaries have been designated a WQLS by the State of Idaho. The primary pollutants of concern are sediment and water temperature. Stream inventories of all fish bearing streams within the Lolo Creek drainage have been completed on National Forest System lands between 1991 and 1994. Resurveys of specific streams have been planned every five to ten years dependent upon stream conditions and management proposals. In 1998, approximately 20 miles of the mainstem of Lolo Creek were resurveyed to assess any changes in habitat stream conditions from surveys conducted in 1988 and 1993. In general, the surveys noted that the fish habitat within Lolo Creek drainage were generally similar to conditions documented during the 1993 survey. No changes in overall

substrate conditions were observed; the 1998 average cobble embeddedness level of 41.5 percent for the 20 miles of stream was basically the same as the 1993 level of 41.0 percent. In 2008, no re-surveys were scheduled within the Lolo Creek drainage.

**Stream Habitat Monitoring/Surveys:** No Forest Plan and/or PIBO aquatic monitoring sites within the Lolo Creek drainage were scheduled in 2008. The full complement of PIBO sites (6) were established in 2001 (1) and 2006 (5) by the Multi-regional PIBO Effectiveness Monitoring Staff. The Forest established an additional site within the major anadromous spawning area in the mainstem Lolo Creek in 2007. The PIBO sites are scheduled to be re-surveyed in 2011; the Forest site will be monitored in 2010.

No inventories and stream habitat re-surveys were scheduled within the Lolo Creek drainage this past year.

**Stream Channel and Substrate Conditions:** Stream channel and substrate conditions were monitored at permanent sites on one stream: Lolo Creek. See *riparian section* for more information.

**Water Temperature Monitoring:** A cooperative arrangement to monitor selected key tributaries within the Lolo Creek system was initiated in 1990 between the Nez Perce Tribe and the Pierce Ranger District. In general, past monitoring data has indicated that stream temperatures in Lolo and Musselshell creeks exceeded the desired criteria (16-17°C) by several degrees and maintained these high temperatures for extended periods of time.

Stream temperatures were monitored throughout the summer at 19 sites on 17 streams (only USFS sites) within the Lolo Creek drainage to evaluate habitat conditions for steelhead trout, spring Chinook salmon, westslope cutthroat trout and bull trout. The following data is for Lolo Creek tributaries operated by the Forest, as the data recorders operated by the Nez Perce Tribe (i.e. Camp Creek, Eldorado Creek etc.) have not been summarized. Comparison of the 2008 stream temperature data and the desired maximum temperatures as defined for appropriate standards in the Forest Plan revealed that:

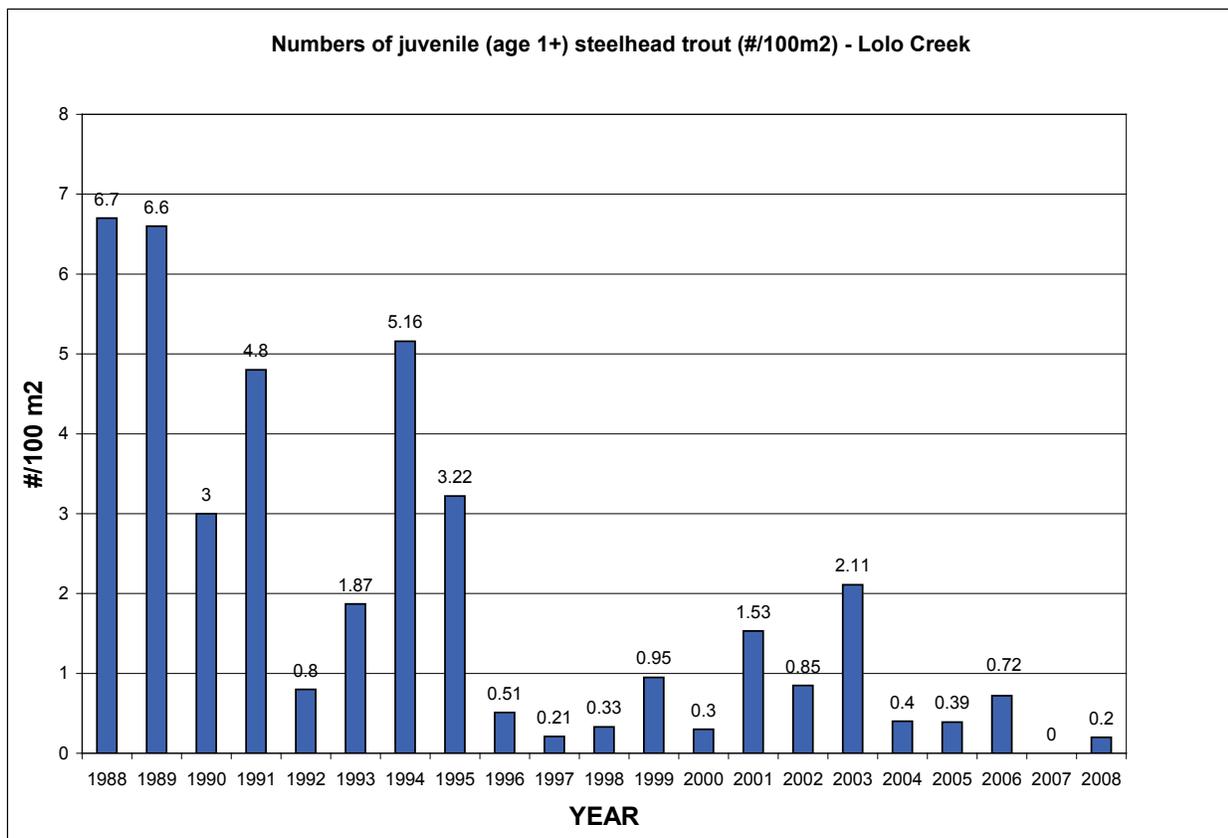
- The desired steelhead trout rearing temperature of 17°C was met at seven streams (Dutchman Creek, Knoll Creek, Mike White Creek, Fan Creek, Lunch Creek, Trout Creek and Nevada Creek) out of the ten streams monitored with a “high fishable” standard. Lolo Creek, Eldorado Creek and Musselshell Creek did not meet the “high fishable” standard for steelhead trout rearing. Insufficient data was available for Yoosa Creek.
- The desired spring Chinook trout rearing temperature of 17°C was not met at the current or potential spring Chinook salmon streams (Lolo Creek, Eldorado Creek and Musselshell Creek). Insufficient data was available for Yoosa Creek.
- The desired westslope cutthroat trout rearing temperature of 16°C or below was met at four streams (Brick Creek, Chamook Creek, Panther Creek, and White Creek) out of the six streams monitored with a “high fishable” standard. Yakus Creek exceeded the standard on one day.
- The desired westslope cutthroat trout rearing temperature of 18°C or below (moderate fishable standard) was met in Gold Creek.
- The desired westslope cutthroat trout rearing temperature of 20°C or below (low fishable standard) was met in Dan Lee Creek.

Overall, water temperatures within 16 of the 18 streams were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. The temperature data showed Eldorado Creek (8 days) and Musselshell Creek (at the mouth (27 days)) exceeded the State cold-water biota standard. The State standard of 13°C for the spring spawning period (steelhead trout) was not met on any of the monitored streams in the Lolo Creek subbasin. All streams exceeded the bull trout maximum summer rearing temperature of 12°C (consecutive seven-day average of daily maximums) that EPA issued as final temperature guidance for water quality standards throughout the Pacific Northwest.

**Fish Population Monitoring:** For the last 21 years, population assessments were conducted via snorkeling to document trends in Lolo Creek; 15 permanent transects established in 1988 were sampled (10 log weir pools and 5 control sites).

The 2008 fish population survey at the 15 transects observed eight steelhead fry (age 0+), and five steelhead trout (age 1+). Although a few age 1+ juveniles were observed in 2008 (as compared to none in 2007), the densities (0.2 age 1+ fish/100m<sup>2</sup>) continued to indicate a downward trend in steelhead trout production in Lolo Creek (Figure 2). Unlike previous years, the low densities the Forest observed could not be validated by other monitoring efforts; due to funding constraints the Nez Perce Tribe did not conduct any fish population monitoring via snorkeling in the Lolo Creek drainage. The low densities of juvenile steelhead trout in 2008 were most likely the result of low numbers of adult steelhead trout spawning in 2006 and/or low spawning success due to low stream flow conditions. The low stream flow conditions in 2007 may have also force steelhead trout to move out of the Lolo Creek system.

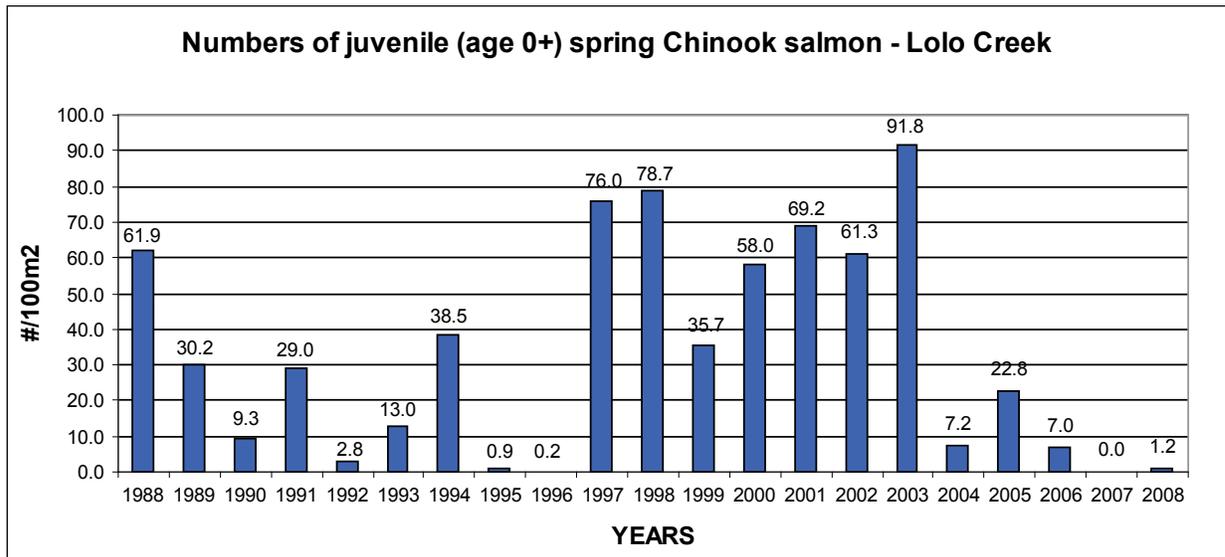
**Figure 2: Comparison Of The Average Densities (#/100m<sup>2</sup>) Of Juvenile Steelhead Trout (Age 1+) That Were Observed For Survey Period 1988-2008 At Permanent Snorkeling Stations On Lolo Creek By The Clearwater National Forest (Data For 1997 And 2000 Are Different Stations Conducted By The Nez Perce Tribe Within The Same Stream Reach)**



The 2008 fish population survey at the 15 transects did find low numbers of spring Chinook salmon juveniles; 2007 surveys did not find any juveniles. Densities observed in 2008 were some of the lowest observed by the Forest during the 21 years of monitoring (Figure 3). As with steelhead trout, the low number of juveniles observed by the Forest could not be validated by other monitoring efforts; due to funding constraints the Nez Perce Tribe did not conduct any fish population monitoring via snorkeling in the Lolo Creek drainage. The low number of spring Chinook salmon juveniles in 2008 was most likely the result of low numbers of adult spawning in 2007 and/or low spawning success due to low stream flow conditions. Similar to 2006, the Tribe retained a high proportion (67 percent) of the adult returns for hatchery

spawning; only 29 of the estimated 89 adult spring Chinook salmon returning to the Lolo Creek drainage were released for natural spawning.<sup>7</sup> The relatively low number of redds (14 redds) documented during the 2007 spawning season resulted in the lower densities of juveniles observed during 2008.

**Figure 3: Comparison Of The Average Densities (#/100m<sup>2</sup>) Of Juvenile Spring Chinook Salmon (Age 0+) That Were Observed For Survey Period 1988-2008 At Permanent Snorkeling Stations On Lolo Creek By The Clearwater National Forest (Data For 1997 And 2000 Are Different Stations Conducted By The Nez Perce Tribe Within The Same Stream Reach)**



Since 1992, the Nez Perce Tribe has also conducted fish population assessments in Lolo Creek tributaries such as Yoosa Creek, and Eldorado Creek. The Tribal data supplements the Forest’s data and is complementary in the establishment of trends for steelhead trout and spring Chinook salmon.

As part of the continuing Idaho Supplemental Studies being conducted in the Lolo Creek drainage, the Nez Perce Tribal Fisheries Department completed the 2008 Lolo Creek spring Chinook spawning ground surveys. These surveys were conducted in the main stems of Lolo, Eldorado, Musselshell, and Yoosa creeks.

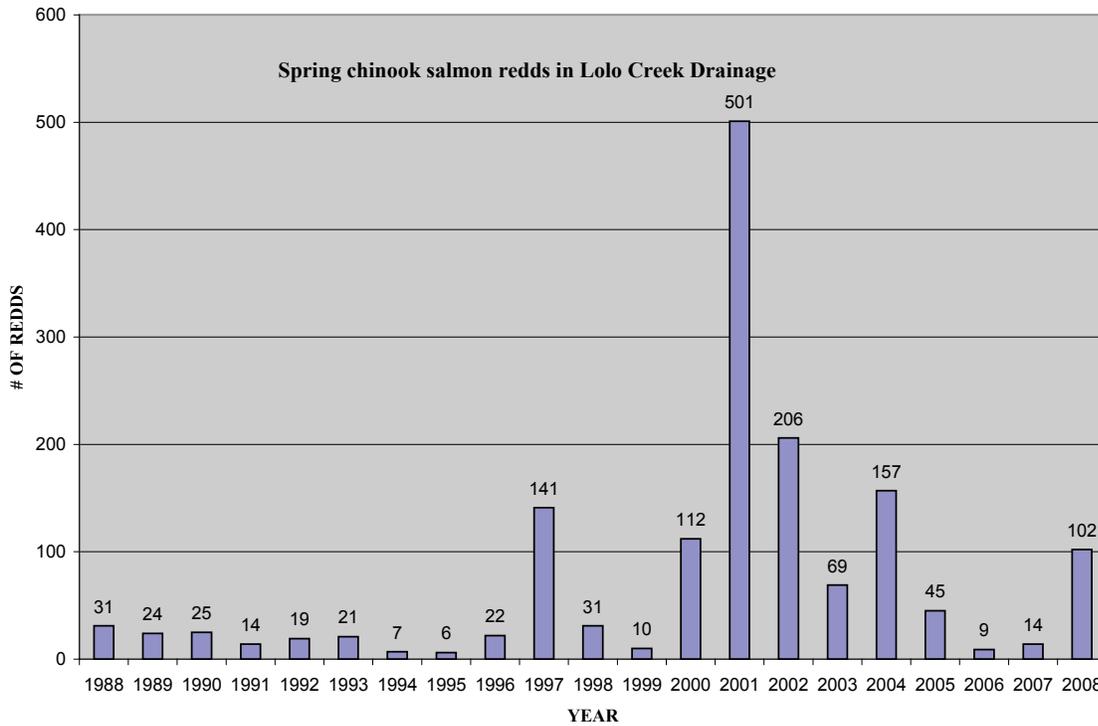
Results of the 2008 surveys indicated that a total of 102 redds were located within the Lolo Creek drainage; 97 redds were located within mainstem Lolo Creek and five redds were documented in Musselshell Creek (Figure 4)<sup>8</sup>. No redds were observed in Eldorado Creek or Yoosa Creek. The number of redds within the Lolo Creek drainage was about 20 percent of the 2001 redd count (the highest in the 21-year monitoring period). The total redd count was the largest redd count since 2004 and substantially above the previous five-year average (2003-2007) of 58 redds. Unlike 1999-2001, no hatchery supplementation of adult spring Chinook salmon was done by the Tribe during the 2002-2008 spawning seasons.<sup>9</sup> The relatively high number of spring Chinook salmon redds in 2008 was most likely the result of the high numbers of adults released for natural spawning versus hatchery broodstock.

<sup>7</sup> Nez Perce Tribe. 2008. Nez Perce Tribe Chinook salmon and steelhead adult escapement and spawning ground 2007 summary report. Nez Perce Tribe. Department of Fisheries Resource Management. Lapwai, Idaho.

<sup>8</sup> Nez Perce Tribe. 2009. Nez Perce Tribe Chinook salmon and steelhead adult escapement and spawning ground 2008 summary report. Nez Perce Tribe. Department of Fisheries Resource Management. Lapwai, Idaho.

<sup>9</sup> Nez Perce Tribe 2009. Personal communications, Ryan Johnson, fisheries, biologist, Nez Perce Tribe Fisheries Department, Orofino, Idaho.

**Figure 4: Comparisons Of Spring Chinook Salmon Redd Counts Observed Within The Lolo Creek Drainage During 1988-1999 (Data Provide By Idaho Department Of Fish And Game (1988-89), U.S. Forest Service (1990-1991) And Nez Perce Tribe (1992-2008)**



**Mussel Population Monitoring: Lolo Creek Drainage:** In 2008, the Forest started an inventory and monitoring program to assess native mussel populations in potential habitats across the Forest and identify nonindigenous mollusks that may be detrimental to the existing aquatic environments. Since mussels are sessile organisms that are long lived (100 years or more) and are sensitive to changing water quality and habitat conditions, they are considered good indicators of the health of aquatic ecosystems (Williams et al. 1993<sup>10</sup> and Nedeau et. al 2005<sup>11</sup>). Their existence depends on stream conditions that are relatively free from excessive sedimentation and unstable stream channels. The only native mussel that has been found within the Forest is the western pearlshell (*Margaritifera falcata*). Strong viable populations include all age classes.

In 2008, the Forest conducted a mussel workshop to train personnel in the survey protocol and establish a mussel monitoring program on the Forest. Field work conducted in 2008 was located within the Lolo Creek drainage; seven viable populations of mussels were documented by survey crews.<sup>12</sup> These populations were located within the mainstem Musselshell Creek, Jim Brown Creek, and Eldorado Creek. Marginal populations were found in Eldorado Creek and Lolo Creek.

<sup>10</sup> Williams, J.D., M.L. Warren, Jr., K.S. Cummings, J.L. Harris, and R.J. Neves. 1993. Conservation status of freshwater mussels of the United States and Canada. *Fisheries* Vol. 18, No.9. American Fisheries Society, Bethesda, MD.

<sup>11</sup>Nedeau, E., A.K. Smith and J. Stone. 2005. *Freshwater mussels of the Pacific Northwest*. U.S. Fish and Wildlife Service. Vancouver, WA.

<sup>12</sup> Stagliano, D. 2009. Personal communication by Pat Murphy, forest fisheries biologist; and provisional data from Dave Stagliano, aquatic ecologist, Montana Natural Heritage Program, Helena, MT.

## OROFINO CREEK WATERSHED

**Watershed Status:** No natural or anthropogenic events occurred during 2008 in the USFS drainages within the headwaters of the Orofino Creek watershed that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads and vegetative treatments). No wildfires occurred within the Orofino Creek drainage in 2008. Various field reviews have supported the conclusion that the habitat conditions for this drainage are most likely similar to 1998-2007 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed similar to conditions observed in previous years.

**Habitat Improvement:** In 2008, the only project within the Orofino Creek drainage that involved watershed restoration was the ongoing Gezel Stewardship Project. No other major habitat improvement projects (road decommissioning, fish passage etc) were scheduled during 2008.

**Road Decommissioning:** Besides general road maintenance work, the Forest completed approximately 11.6 miles of road decommissioning in the Orofino Creek drainage. The Gezel Stewardship Project provided the funding to remove roads in the upper Orofino Creek drainage (Jensen Creek, Gezel Creek and Trapper Creek); habitat conditions along approximately 5.0 miles of streams within the upper Orofino Creek drainage are expected to be improved via removing existing sediment sources.

**Habitat Monitoring:** As in 2001-2007, stream surveys that were scheduled for Orofino Creek in 2008 were not completed due to budget constraints. Dependent upon funding, surveys will be re-scheduled for 2011.

**Stream Habitat Monitoring/Surveys:** No Forest Plan and/or PIBO aquatic monitoring sites have been established or planned within the Orofino Creek drainage.

**Water Temperature Monitoring:** Due to migration barriers in lower Orofino Creek, streams within the Forest's boundary are considered non-anadromous (no potential for steelhead trout or spring Chinook salmon); only water quality and habitat conditions related to resident fish are monitored and analyzed. Although no westslope cutthroat trout have been documented in the drainage, cutthroat trout was designated an indicator species for the drainage in the Forest Plan. As in 1996-2007, Orofino Creek, at the Forest Service boundary, was monitored for summer stream temperatures in 2008. In addition, stream temperature data was collected at four tributary sites. Comparison of the 2008 stream temperature data and the desired maximum temperatures as defined for the "low fishable" standard in the Forest Plan revealed that the desired cutthroat trout rearing temperature of 20 °C or below was met at all sites. State standards for cold water biota were also achieved; water temperatures did not exceed the daily maximum of 22 °C and the maximum daily average of 19 °C. State standard of 13 °C for the spring spawning periods (for westslope cutthroat trout) was met at Gezel Creek and Rescue Creek. Jensen Creek, Orofino Creek (upstream Rosebud Creek) and Trapper Gulch exceeded the standard on 4, 5, 12 days respectively.

## MIDDLE FORK CLEARWATER RIVER WATERSHED

**Watershed Status:** No natural or anthropogenic events occurred in the USFS drainages within the Middle Fork Clearwater River watershed during 2008 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads and vegetative treatments). Only one wildfire (2.3 acres) occurred in the drainage during 2008. Various field reviews and monitoring activities have supported the conclusion that the habitat conditions are most likely similar to 1998-2007 conditions. Based on these assessments, the presence/absence and

relative abundance of fish populations within the watershed are assumed similar to conditions observed in previous years. However, anadromous fish numbers may vary annually due to influences outside the watershed.

**Habitat Improvement:** No major habitat improvement projects (road decommissioning, fish passage etc) were scheduled during 2008.

**Habitat Monitoring:** Stream inventories of all fish bearing streams within the Middle Fork Clearwater River drainage have been completed on National Forest System lands during 1996. Since no natural or anthropogenic events have occurred since 1996 that would possibly change habitat conditions in the tributaries, re-surveys were not warranted in 2008. Re-surveys of stream reaches may occur for specific projects in future years, but funding constraints will limit re-surveys of entire drainages. As noted in the summary section, the overall status and trend of habitat conditions will be monitoring via the PIBO monitoring process.

**Stream Habitat Monitoring/Surveys:** No re-survey of the PIBO aquatic monitoring site within the Middle Fork Clearwater River drainage was scheduled in 2008. One PIBO aquatic monitoring site was established in 2004 on Smith Creek by the Multi-regional PIBO Effectiveness Monitoring Staff. The PIBO site is scheduled to be re-surveyed in 2009.

**Water Temperature Monitoring:** Middle Fork Clearwater River Drainage: Stream temperatures were monitored throughout the summer at the mouths of Big Smith Creek, Little Smith Creek and Swan Creek to evaluate habitat conditions for westslope cutthroat trout. Insufficient data was available for Big Smith Creek and Swan Creek. During 1997, the Forest started collecting water temperature data from these streams to determine temperature problems and prioritize riparian recovery efforts. Comparison of the 2008 stream temperature data from Little Smith Creek and the desired maximum temperatures as defined for the "high fishable" standard in the Forest Plan revealed that:

The desired westslope cutthroat trout rearing temperature of 16°C was met at Little Smith Creek. This stream is relatively small and does not contain any significant spring Chinook rearing habitat. Minimal steelhead trout spawning and rearing occurs in this streams; the westslope cutthroat trout rearing standard and spawning period meets the "high fishable" standards for steelhead trout.

Little Smith Creek met the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. The State standard of 13°C for the spring spawning periods for westslope cutthroat trout was exceeded on 14 days. As for bull trout, Little Smith Creek has not been designated potential bull trout spawning habitat; it also has exceeded the maximum summer rearing temperature of 12°C (consecutive seven-day average of daily maximums) that EPA issued as final temperature guidance for water quality standards throughout the Pacific Northwest.

## LOCHSA RIVER WATERSHED

**Watershed Status:** No natural or anthropogenic events occurred in the Lochsa River watershed during 2008 that caused changes to the aquatic environment. Only three of the 12 wildfires were larger than one acre; these included Sheep Hill (14 acres), Willow (34), and Storm (340). These fires included designated wildland fire use (no suppression actions) or suppression fires. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads, vegetative treatments, mining and grazing). Various field reviews and monitoring activities have supported the conclusion that the habitat conditions are most likely similar to 1998-2007 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed to be similar to conditions observed in previous years. However, anadromous fish numbers may vary annually due to influences outside the watershed.

**Habitat Improvement:** Most improvement work regarding the aquatic resources were focused on watershed restoration (i.e. road decommissioning and fish passage improvement). Aquatic funds supplemented Forest funds from the engineering and watershed and BPA funds from the Nez Perce Tribe to complete two culvert replacement and one bridge replacement projects in the upper Lochsa River drainage. The Forest and Tribe participated in the design, implementation and monitoring of these projects. These activities improved access for adult anadromous and inland fish and allowed for unimpeded access for juvenile fish and other aquatic species to an additional 11.2 miles of stream.

**Fish Passage Improvement - Lower Lochsa River Area:** In 2008, no fish passage improvement projects were scheduled in the lower Lochsa River drainage.

**Road Decommissioning - Lower Lochsa River Area:** Besides general road maintenance work, the Forest completed approximately 5.7 miles of road decommissioning. Funds from the Clearwater Resource Advisory Committee (RAC) were used in conjunction with engineering funds. Habitat conditions along approximately 9.6 miles of streams within the Pete King Creek drainage are expected to improve for bull trout, steelhead trout, spring Chinook salmon and westslope cutthroat trout via removing existing sediment sources.

**Fish Passage Improvement - Upper Lochsa River Area:** In 2008, the Forest used fisheries improvement funds on two culvert replacement and one bridge replacement projects. Fisheries funds (1%), engineering funds (31%), Burn Area Emergency Response funds (3%), RAC (32%) and Bonneville Power Administration funds directed through the Nez Perce Tribe (33%) were used for culvert replacement projects within the Doe Creek and Bridge Creek drainages and one bridge replacement project in the North Fork Spruce Creek drainage. The Forest and the Nez Perce Tribe also provided funds for the project design, environmental analyses, consultations and monitoring.

The two culvert replacements Doe Creek (Waw'aalamnine (Squaw) Creek drainage) and Bridge Creek (Colt Killed Creek drainage) will improve access for westslope cutthroat trout and other aquatic organisms to approximately three miles of stream. The new structures will also reduce the risk of a culvert failure and potential sediment input into approximately 2.6 miles habitat within the impact zone downstream of the culvert sites.

The bridge replacement project was located in the North Fork Spruce Creek within the Brushy Fork Creek drainage. The old bridge had a beam set across the stream at the base of the abutments that had become a barrier to most aquatic species. The beam was needed to hold the abutments in place as they were tending to rotate toward each other.

The new bridge is a 64' span timber deck with steel beams set on pre-cast grade beam abutments. The entire structure is well outside of the active channel of the stream, allowing for a re-vegetated flood plain to be built under the bridge. This bridge will pass all aquatic species as well as expected high flows and debris and sediment loads. The new bridge will improve access for westslope cutthroat trout, steelhead trout, bull trout and other aquatic organisms to approximately 2.2 miles of stream. The new structures will also reduce the risk of a bridge failure and potential sediment input into approximately 3.4 miles habitat within the impact zone downstream of the bridge.

**Road Decommissioning - Upper Lochsa River Area:** Besides general road maintenance work, the Forest completed approximately 8.7 miles of road decommissioning and 4.0 miles road improvement with emphasis to aquatic restoration. Engineering funds (16%) and Bonneville Power Administration funds through the Nez Perce Tribe (84%) were used to remove roads in the Indian Grave Creek drainage; habitat conditions along approximately 2.8 miles of streams within the Indian Grave Creek drainage are expected to improve for bull trout, steelhead trout and westslope cutthroat trout via removing existing sediment sources.

Aquatic funds (1%), Engineering funds (19%) and Bonneville Power Administration funds through the Nez Perce Tribe (80%) were used for the Doe Creek Road Improvement Project (USFS road #566) is located within Waw'aalamnine (Squaw) Creek drainage. The objective of the project was to reduce sedimentation from road #566 which parallels Doe Creek for approximately four miles. The project involved drainage improvements (adding cross drains and culverts, replacement of three culverts, reshaping road, vegetative

transplants, vegetated riprap work and aggregate placements). The project is expected to reduce potential sediment input into approximately 4.0 miles habitat within Doe Creek and approximately one mile downstream in Waw'aalamnine (Squaw) Creek.

**Habitat Monitoring:** Stream inventories of all fish bearing streams within the Lochsa River drainage have been completed on National Forest System lands during 1990-1997. Re-surveys have been conducted on several streams (Pete King Creek, Deadman Creek and Walton Creek) in 1998-1999. As part of a research study regarding the effects of road obliteration on instream conditions, the Forest resurveyed Badger Creek in 2001. Due to the Crooked Fire in 2000, re-surveys were completed on Rock Creek and Haskell Creek in 2002.

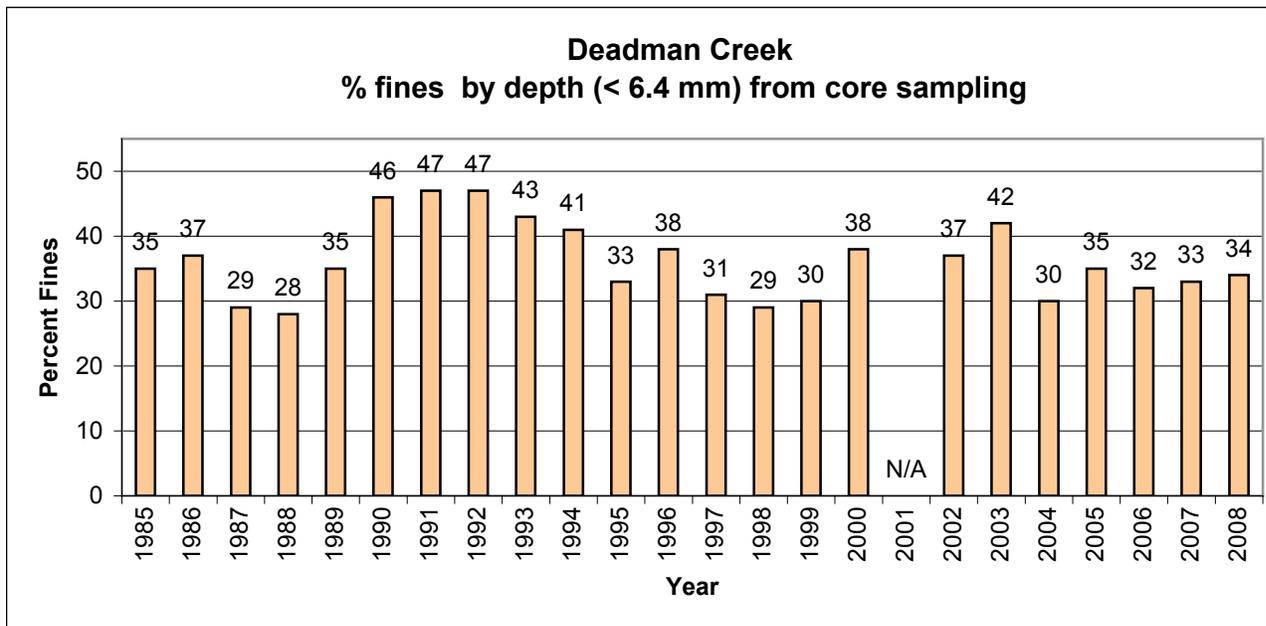
**Stream Habitat Monitoring/Surveys - Lower Lochsa River Area:** No Forest Plan and/or PIBO aquatic monitoring sites within the lower Lochsa Creek drainage were scheduled in 2008. The full complement of PIBO sites (9) were established in 2004 (6) and 2006 (2) by the Multi-regional PIBO Effectiveness Monitoring Staff. Six PIBO sites are scheduled to be re-surveyed in 2009 and two in 2011.

In 2008, no stream surveys were scheduled within the lower Lochsa River drainage.

**Stream Channel and Substrate Conditions - Lower Lochsa River Area:** The Forest continued the substrate-monitoring project in Deadman Creek to determine trends of sediment (% fines by depth) in steelhead trout spawning areas. Due to time and funding constraints, no substrate-monitoring was conducted in Pete King Creek during 2008. This monitoring consists of measuring the substrate particles that are collected by digging a core into the stream bottom at permanent stations. These stations have been monitored for the last 24 years. Analysis of the data indicates that the percentage of sediment (fine sediment < 6.4 mm) within the substrate of both streams have ranged between 27% and 47% fines.

At the Deadman Creek stations, the substrate conditions showed a slight increase in percent fines from 33% to 34% between 2007 and 2008 respectively (Figure 5). No new sediment sources (i.e. landslides road failures) were identified during 2000-2008. Therefore, the increase is most likely the aftermath of a pulse of instream sediment being transported through the system during the past seven years (2000-2007). Comparison of the percent fines between two time periods, 1990-1994 and 1995-1999, showed that the decreasing trend over those time periods was significant ( $p < 0.05$ ). However, the increases in 2000, 2002-2003, and the stable trend from 2005-2008 most likely show that the decrease is temporary and that sediment impulses resulting from past anthropogenic activities are still present in the drainage. Information collected in the next three years will hopefully show if a long-term decreasing trend is apparent or if sediment conditions will continue to fluctuate.

**Figure 5: Comparison Of Average Percent Fines (< 6.4 Mm) For Years 1985-2008 At Permanent Substrate Monitoring Sites In Lower Deadman Creek Within The Lochsa River Drainage. No Data Was Collected In 2001**



**Stream Habitat Monitoring/Surveys - Upper Lochsa River Area:** One Forest Plan and/or PIBO aquatic monitoring site (Storm Creek) within the upper Lochsa Creek drainage was established in 2008. The full complement of PIBO sites (14) were established in 2001 (4), 2002 (1), 2006 (5), 2007 (3) and 2008 (1) by the Multi-regional PIBO Effectiveness Monitoring Staff. The PIBO sites are scheduled to be re-surveyed in 2011. The Forest established two additional sites within Brushy Fork Creek and Badger Creek in 2007. These Forest Plan monitoring sites are scheduled to be re-surveyed in 2010.

In 2008, no stream surveys were scheduled within the upper Lochsa River drainage.

**Stream Channel and Substrate Conditions - Upper Lochsa River Area:** In 2008, no streams within the upper Lochsa River drainage were scheduled.

**Water Temperature Monitoring:** Stream temperatures were monitored throughout the summer at 87 sites on 75 streams within the Lochsa River drainage. The Forest has been collecting water temperature data from 1990-2008 to determine temperature problems and prioritize riparian recovery efforts. In past years, thermograph data revealed that temperatures exceeding the desired rearing temperature criteria by several degrees were maintained for extended periods of time. Comparison of the 2008 stream temperature data with desired maximum temperatures as defined for the "high fishable" and "no effect" standard in the Forest Plan revealed that:

- The desired bull trout rearing temperature of 12°C (no effect) was met at Beaver Creek, the only bull trout designated stream within the Forest Plan.
- The desired steelhead trout rearing temperature of 15°C (no effect) was met at four of the eleven streams (Fern Creek, Dan Creek, Swamp Creek and Willow Creek) monitored with a "no effect" standard. Sherman Creek exceeded the standard on four days.
- The desired steelhead trout rearing temperature of 17°C (high fishable) was met at 33 streams out of the 34 streams monitored with a "high fishable" standard. The remaining stream, Pete King Creek (upstream Placer Creek) exceeded the standard on two days.
- The desired spring Chinook trout rearing temperature of 15°C (no effect) was met at two of the five major streams with Chinook habitat; Waw'aalamnine (Squaw) Creek and Big Flat Creek.

- The desired westslope cutthroat trout rearing temperature of 13°C was not met at any of the six streams monitored with a “no effect” standard. Dodo Creek and Rabbit Creek exceeded the standard on five or fewer days.
- The desired westslope cutthroat trout rearing temperature of 16°C (high fishable) was met at all of 18 streams monitored with a “high fishable” standard.

Overall, water temperatures of 74 of the 75 monitoring streams within the Lochsa River drainage were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. One of the four sites on the mainstem Lochsa River (upstream Pete King Creek) exceeded the standard on four days. The State standard of 13°C for the summer period (spring chinook salmon was not met at any of the monitored sites but Crooked Fork Creek upstream Hopeful Creek and Waw’aalamnine (Squaw) Creek exceeded the standard on four days and two days respectively. The State standard of 13°C for the spring spawning period (steelhead trout) was met at 27 of the 44 streams monitored. An additional five streams exceeded the standard on five days or less. The State standard of 13°C for the spring period for westslope cutthroat trout was met at 15 of the 25 monitored streams with another four streams exceeding the standard on four or fewer days. The bull trout maximum summer rearing temperature of 12°C (consecutive seven-day average of daily maximums) that EPA issued as final temperature guidance for water quality standards throughout the Pacific Northwest was met at Bridge Creek, Williams Lake Creek, Muleshoe Creek, Spring Creek and West Fork Waw’aalamnine (Squaw) Creek upstream Spring Creek. Exceeding the bull trout maximum summer rearing temperature on 5 days or less were Beaver Creek (5 days), Cooperation Creek (4 days), Haskell Creek (3 days) and Parachute Creek and Walton Creek, (each 1 day).

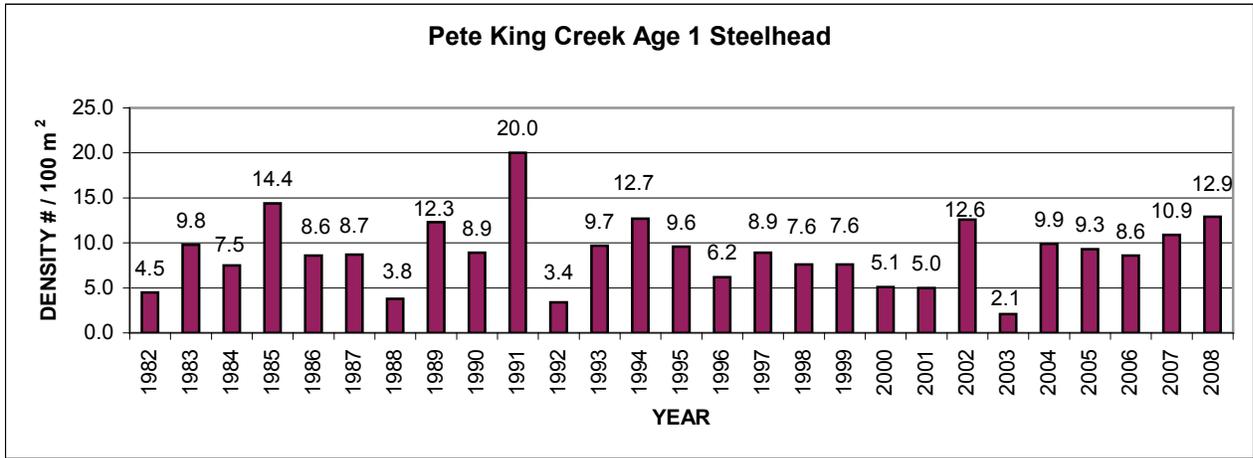
**Fisheries Population Monitoring - Lower Lochsa River Area:** As in previous years, fish population monitoring (via snorkeling) of selected streams continued at established long-term monitoring stations. However, budget constraints and inclement weather conditions during late August limited the number of sites to the Pete King Creek, Deadman Creek and lower Fish Creek drainages. No monitoring was conducted in Hungry Creek (lower and middle sections) or upper and mid Fish Creek in 2008. Average steelhead juvenile densities at the Pete King Creek sites showed moderate levels similar to 2004-2007 while densities at the Deadman Creek sites showed a decline from the relatively stable levels in the previous eight years. The lower Fish Creek sites showed fluctuating annual densities that are relatively good. Fish species present in some or all of the study streams included spring Chinook salmon, steelhead/rainbow trout, westslope cutthroat trout, mountain whitefish and sculpin. No bull trout were observed during the surveys.

Monitoring of age 1+ steelhead trout juveniles within the Pete King Creek drainage has been conducted over a number of years to assess the trend in steelhead production within developed watersheds within the lower Lochsa River drainage (Figure 6).

The 2008 data indicated that steelhead trout populations within Pete King Creek increased slightly over the 2004-2007 levels and were higher than the 26-year average of 8.8 age 1+ fish/100m<sup>2</sup>. Fish population data collected by the Forest showed densities of juvenile steelhead (age 1+) averaged about 12.9 fish/100m<sup>2</sup> in lower Pete King Creek. In 2008, the fish population monitoring only included eight of the ten original transects; changes in stream conditions have resulted in a majority of non-pool habitats at two original transects.

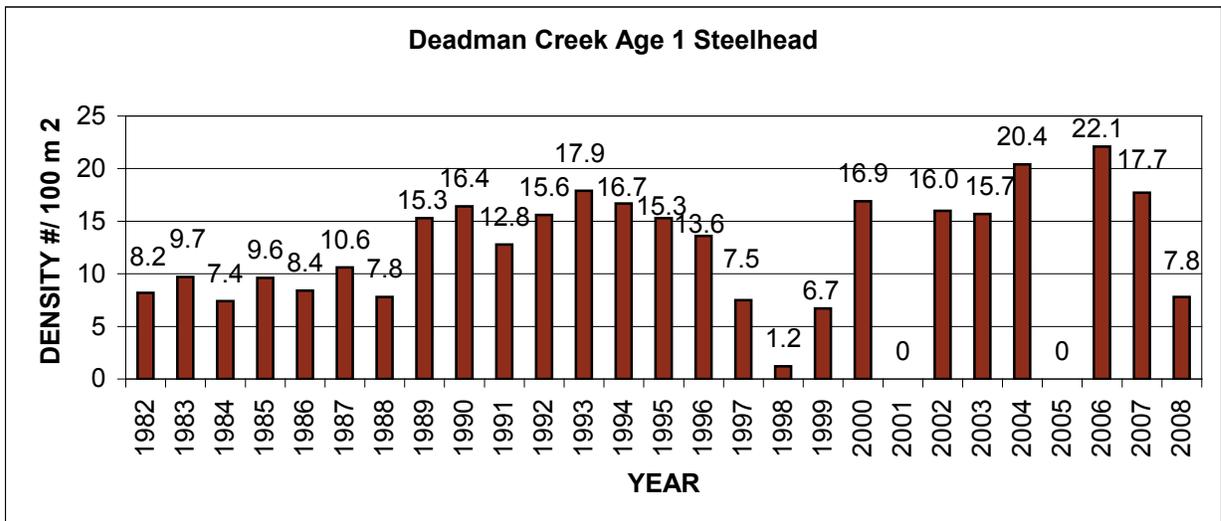
The 2008 densities are still below the desired densities of juveniles (age 1+) >15 fish/100m<sup>2</sup> (Figure 6). In past years, the low numbers of juvenile steelhead trout in Pete King Creek were most likely due to two conditions: (1) fair-poor habitat conditions have reduced potential spawning and rearing, and (2) low number of adult spawners due to downriver adult and juvenile escapement problems. Habitat conditions are expected to recover slowly until proposed watershed restoration activities (i.e. road obliteration) are completed over the next ten years and vegetative recovery occurs in the riparian areas. Following watershed restoration projects, stream channels will need to undergo undetermined number of spring runoff events to reconfigure the stream channels to reflect more natural and stable conditions.

**Figure 6: Comparison Of The Average Densities (#/100m<sup>2</sup>) Of Juvenile Steelhead Trout (Age 1+) That Were Observed For Survey Period 1982-2008 Permanent Snorkeling Stations On Pete King Creek In The Lochsa River Drainage By The Clearwater National Forest. Only Six And Eight Of The Ten Sites Were Monitored In 2006 And 2008 Respectively Due To Habitat Changes**



The 2008 data indicates steelhead trout populations within Deadman Creek did not maintain the relatively high stable trend that was shown over the past eight years. Fish population data collected by the Forest in 2008 showed densities of juvenile steelhead (age 1+) averaged about 7.8 fish/100m<sup>2</sup> in lower Deadman Creek; the densities are substantially lower than the desired densities of juveniles (age 1+) >15 fish/100m<sup>2</sup> (Figure 7) and lower than the 24-year average of 12.7 fish/100m<sup>2</sup>. Prior to 2008, the high densities observed during 2000-2007 (2001 and 2005 excluded) most likely indicates that Deadman Creek has a strong and stable steelhead population. However, due to downriver adult and juvenile escapement problems, and the relatively short monitoring period in relation to the 4 to 5 year life cycle for steelhead trout, the trend could be temporary and reversed in future years. Monitoring data over at least two additional life cycles (eight years) would be needed to support any firm conclusions.

**Figure 7: Comparison Of The Average Densities (#/100m<sup>2</sup>) Of Juvenile Steelhead Trout (Age 1+) That Were Observed For Survey Period 1982-2008 Permanent Snorkeling Stations On Deadman Creek In The Lochsa River Drainage By The Clearwater National Forest. No Data Was Collected In 2001 and 2005**

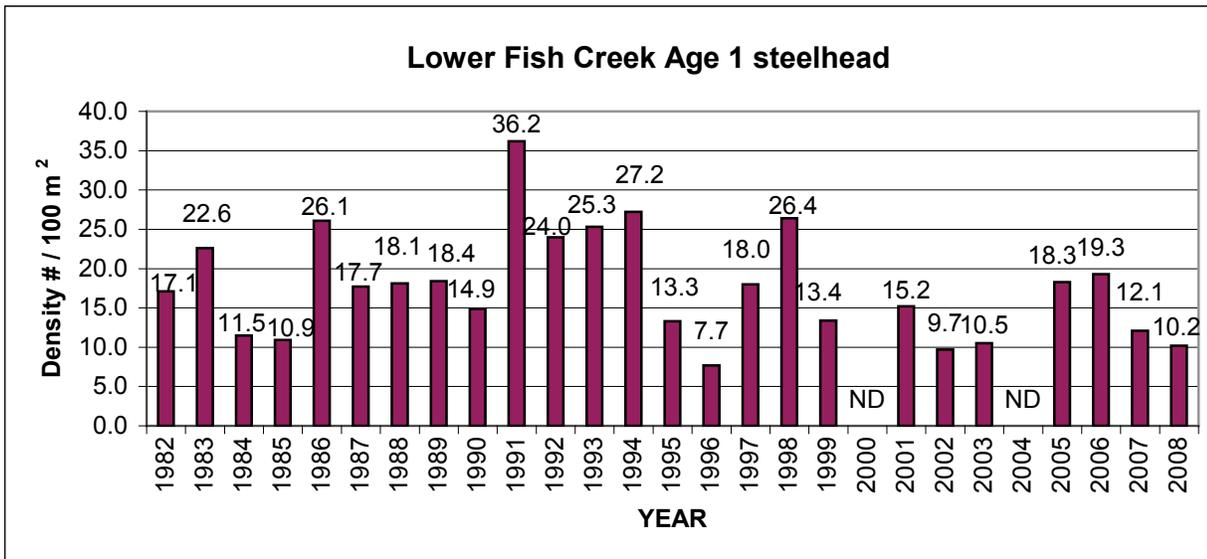


Monitoring of age 1+ steelhead trout juveniles within the Fish Creek and Hungry Creek drainages has been conducted over a number of years to assess the trend in steelhead production within undeveloped watersheds within the lower Lochsa River drainage (Figure 7). Budget and time constraints in 2008 limited fish population sampling to the ten permanent sites within lower Fish Creek.

Similar to 2007, the average steelhead trout juvenile densities in 2008 showed a moderate decrease (46%) at the lower Fish Creek sites as compared to the 2005-2006 average of 18.8 fish/100m<sup>2</sup> (Figure 8). The 2008 densities (10.2 fish/100m<sup>2</sup>) were approximately 16 percent lower than those observed in 2007 (12.1 fish/100m<sup>2</sup>) and are below the desired densities of juveniles (age 1+) >15 fish/100m<sup>2</sup> (Figure 8); the average density observed in 2008 is also lower than the period of record (24-year average) of 17.8 fish/100m<sup>2</sup>.

Although juvenile steelhead densities within the Fish Creek and Hungry Creek drainages have been and are relatively good when compared to drainages in the upper Lochsa River, the overall data over the past several years maintains the downward trend in steelhead production in these streams. As these drainages are basically undeveloped and current habitat conditions appear to be stable, the lower densities are most likely a function of a low number of adult spawners due to downriver adult and juvenile escapement problems.

**Figure 8: Comparison Of The Average Densities (#/100m<sup>2</sup>) Of Juvenile Steelhead Trout (Age 1+) That Were Observed For Survey Period 1982-2008 Permanent Snorkeling Stations On Lower Fish Creek In The Lochsa River Drainage By The Clearwater National Forest. No Data Was Collected In 2000 And 2004**



As part of the continuing Idaho Supplemental Studies being conducted in the Lochsa River drainage, the U.S. Fish and Wildlife Service completed the 2008 spring Chinook spawning ground surveys in lower five miles of Pete King Creek. The survey found two redds during the 2008 spawning period (U.S. Fish and Wildlife Service 2007)<sup>13</sup>. Spring Chinook spawning in Pete King Creek occurs infrequently as redds counts have ranged from 0-2 in most years. Three redds were observed during the 2004 spawning season. The

<sup>13</sup> U.S. Fish and Wildlife Service. 2009. Provisional data from Idaho Fishery Resource Office, Dworshak National Fish Hatchery, Ahsahka, Idaho.

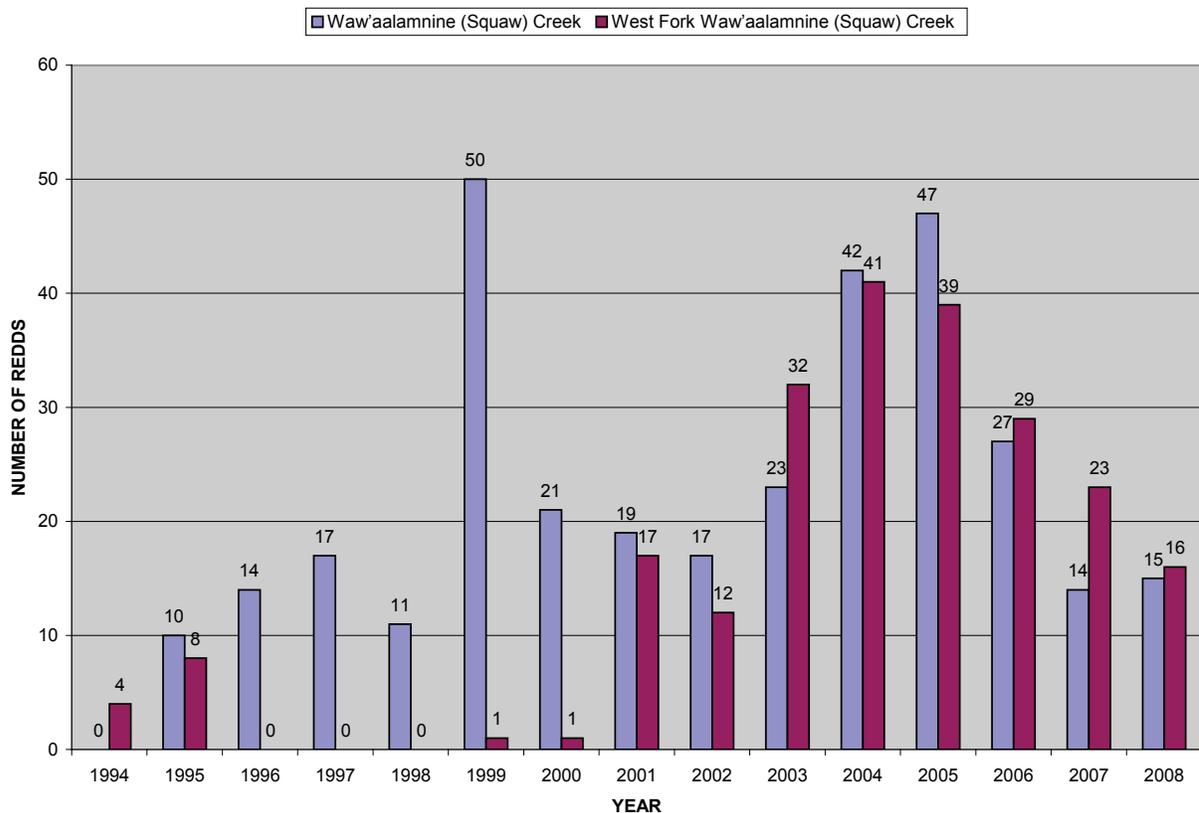
highest redd count during the 12-year monitoring period was during 2001 when the large spring Chinook salmon run into the Clearwater River basin contributed 17 redds.

**Fisheries Population Monitoring - Upper Lochsa River Area:** Due to budget constraints and other priorities, the Forest did not conduct any fish population monitoring (via snorkeling) in the upper Lochsa River drainage during 2007.

In 2008, the Forest continued bull trout spawning ground surveys on selected streams within the Lochsa River drainage. Due to time constraints, surveys were only conducted on the two streams. Approximately 4.1 miles of stream was surveyed during the spawning period of September through early October. Long-term index areas in two major bull trout streams in the upper Lochsa River drainage were surveyed: Waw'aalamnine (Squaw) Creek, West Fork Waw'aalamnine (Squaw) Creek. Spawning (31 redds) was documented during multiple surveys in these two streams.

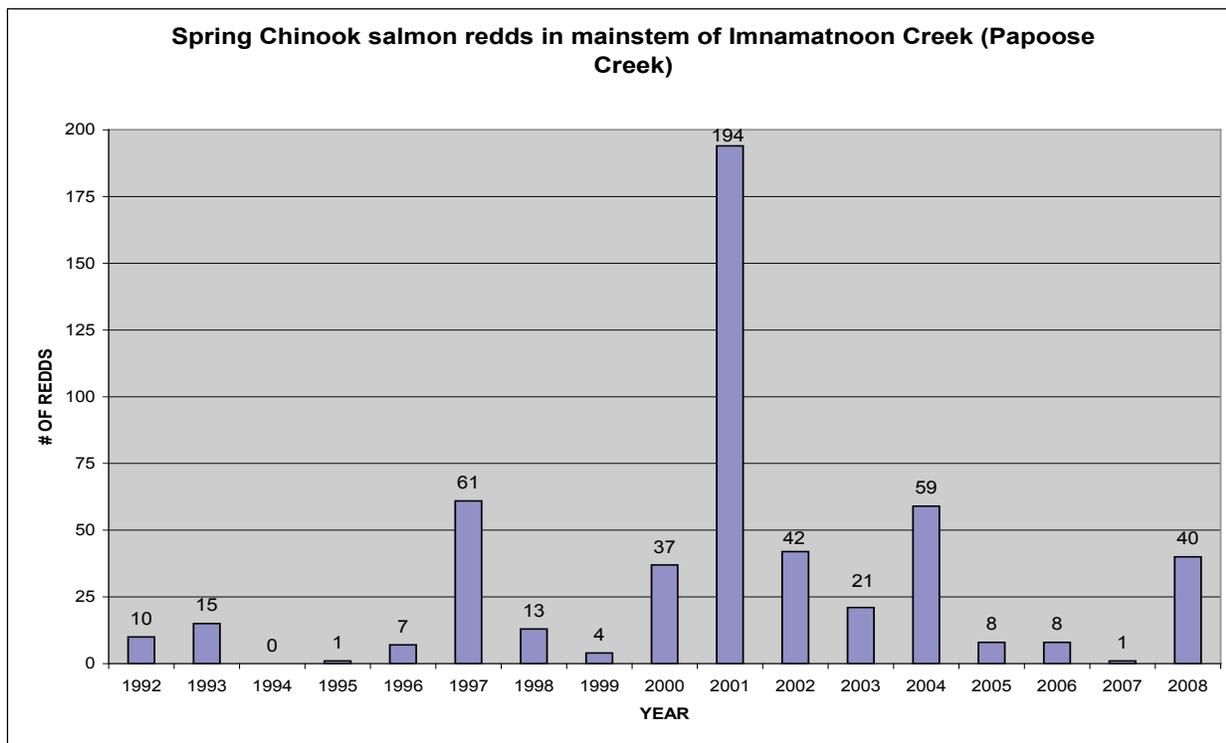
A summary of bull trout redds counted during the past 15 years (1994-2008) for the Waw'aalamnine (Squaw) Creek drainage is shown in Figure 9. The 2008 redd counts were lower than in 2007, showing a three year declining trend as compared to 2003-2005. During the earlier surveys (prior to 1999) only one survey was conducted; counts are assumed to be low and most likely do not reflect the actual redd counts. In addition, the 1995-96 flood event modified the culvert outlet at the mouth of the West Fork Waw'aalamnine (Squaw) Creek which caused a fish migration barrier during low stream flows. The absence or low number of redds found during spawning surveys reflect the effects of the migration barrier during the 1996-2000 migration periods and subsequent spawning seasons. The culvert was replaced during the summer of 2000 with a bottomless arch structure; the redd counts increased substantially the following years.

**Figure 9: Number Of Bull Trout Redds Observed By Forest In Waw'aalamnine (Squaw) Creek And West Fork Waw'aalamnine (Squaw) Creek During 1994-2008 Spawning Season**



As part of the continuing Idaho Supplemental Studies being conducted in the Lochsa River drainage, the Nez Perce Tribal Fisheries Department completed the 2008 spring Chinook spawning ground surveys in Imnamatnoon (Papoose) and Waw'aalamnine (Squaw) creeks. Results of these surveys indicated that spring Chinook spawning were substantially higher than the past three years and higher than the 15-year average in Imnamatnoon (Papoose) Creek and Waw'aalamnine (Squaw) Creek (Figures 10 and 11).<sup>14</sup> A total of 40 and 38 redds were located within Imnamatnoon (Papoose) Creek and Waw'aalamnine (Squaw) Creek respectively. This compares to an average of 30.1 redds/year in Imnamatnoon (Papoose) Creek and 10.0 redds/year in Waw'aalamnine (Squaw) Creek during 1992-2007 survey period.

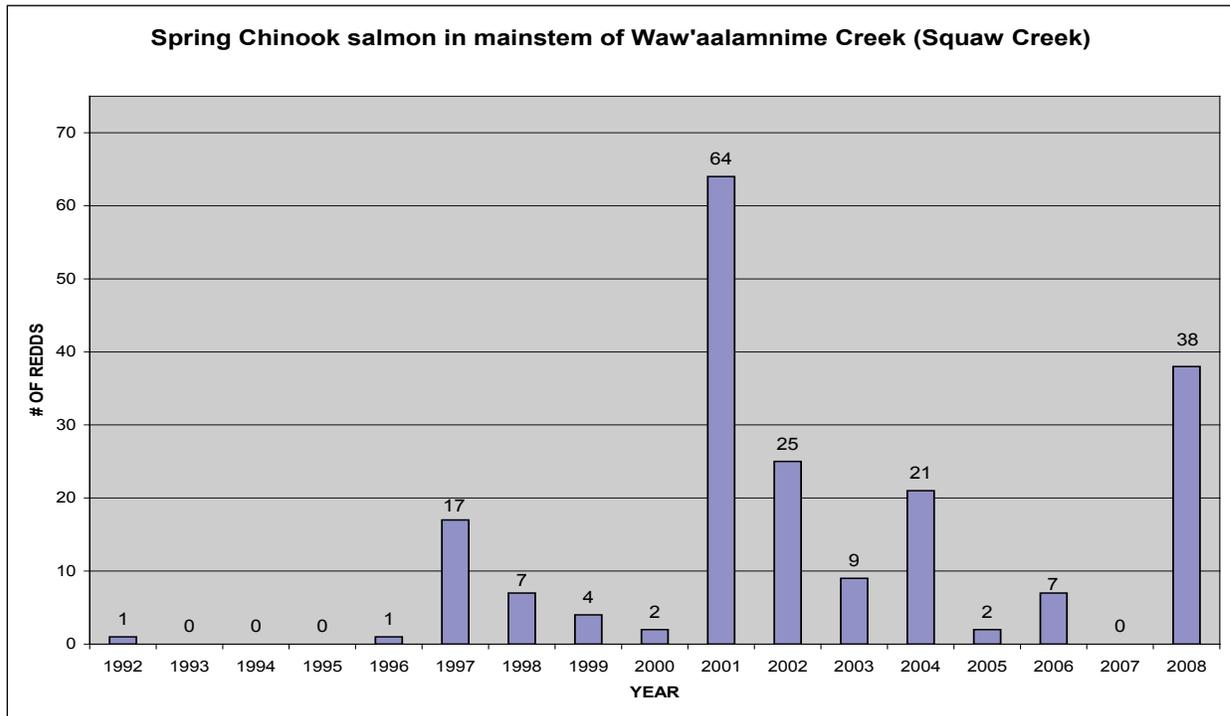
Figure 10: Number Of Spring Chinook Salmon Redds Observed By Nez Perce Tribe In Legendary Bear (Papoose Creek) During 1992-2008 Spawning Season<sup>15</sup>



<sup>14</sup> Personal communication via email, dated January 12, 2009, with Jerry Lockhart, fisheries biologist, Nez Perce Tribal Fisheries Department.

<sup>15</sup> Nez Perce Tribe. 2009. Nez Perce Tribe Chinook salmon and steelhead adult escapement and spawning ground 2008 summary report. Nez Perce Tribe Fisheries Department, Lapwai, Idaho.

Figure 11: Number Of Spring Chinook Salmon Redds Observed By Nez Perce Tribe In Fishing Creek (Squaw Creek) During 1992-2008 Spawning Season<sup>16</sup>



Item No. 32 - Inland Fisheries

**NORTH FORK CLEARWATER RIVER WATERSHED**

Two major watersheds within the Forest provide habitat only to inland (resident) fisheries. Dworshak Dam on the North Fork Clearwater River ended the anadromous fish migration into the watershed including USFS lands. The Palouse River drainage, a tributary to the Snake River does not have anadromous fisheries due to the migration barrier at Palouse Falls.

**Watershed Status:** No natural or anthropogenic events occurred in the USFS drainages within the North Fork Clearwater River watershed during 2008 that caused visible or measurable changes to the aquatic environment. Only five of the 19 wildfires were larger than one acre; these included Flame Creek (45 acres), Martin (3.6), Middle Ridge (5), Birch Ridge 2 (45) and Wallow (1.5). These fires included designated wildland fire use (no suppression actions) or suppression fires.

Overall, instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads and vegetative treatments). Various field reviews and monitoring activities have supported the conclusion that the habitat conditions are most likely similar to 1998-2007 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed to be similar to conditions observed during various surveys throughout the 1990's.

<sup>16</sup> Nez Perce Tribe. 2009. Nez Perce Tribe Chinook salmon and steelhead adult escapement and spawning ground 2008 summary report. Nez Perce Tribe Fisheries Department, Lapwai, Idaho.

**Habitat Improvement:** Due budget constraints, aquatic restoration and enhancement work within the North Fork Clearwater River watershed were primarily limited in 2008 to annual road maintenance projects.

**Fish Passage Improvement:** In 2008, no fish passage improvement projects were scheduled in this subbasin.

**Road Decommissioning:** In 2008, no road decommissioning projects were scheduled in this subbasin.

**Habitat Monitoring:** Stream inventories of the majority of fish bearing streams within the North Fork Clearwater River drainage have been completed on National Forest System lands during 1988-2005. Approximately 154 miles of stream remain to be inventoried; the mileage is primarily in the roadless areas within the Kelly Creek, Cayuse Creek and Fourth of July Creek drainages. Due to budget constraints, no new inventories or re-surveys were scheduled within the North Fork Clearwater River drainage.

Re-surveys of stream reaches may occur for specific projects in future years, but funding constraints will limit re-surveys of entire drainages. As noted in the summary section, the overall status and trend of habitat conditions will be monitoring via the PIBO monitoring process. The PIBO aquatic monitoring sites will provide the Forest an assessment of stream habitat, riparian and water quality conditions within the Palouse River drainage; this information will be reported under the current and future Forest Plans.

**Stream Habitat Monitoring/Surveys:** No re-surveys of the PIBO aquatic monitoring sites within the North Fork Clearwater River drainage were scheduled in 2008. The full complement of PIBO sites (28) were established in 2001 (1), 2002 (1), 2004 (15), and 2005 (6) by the Multi-regional PIBO Effectiveness Monitoring Staff. The PIBO sites are scheduled to be re-surveyed in 2009-2012. In addition to one supplemental monitoring site established by the Forest in the Moose Creek drainage in 2007, the Forest established and surveyed three additional Forest Plan aquatic monitoring sites in 2008: Deception Gulch, Lake Creek and Fourth of July Creek. This information will supplement the monitoring the PACFISH/INFISH Biological Opinion Effectiveness (PIBO) has been conducting on the Forest since 2001. These Forest Plan monitoring sites are scheduled to be re-surveyed in 2010.

In 2008, no stream surveys were scheduled within the North Fork Clearwater River drainage.

**Stream Channel and Substrate Conditions:** In conjunction with the Forest Plan monitoring efforts, stream channel and substrate conditions were monitored at permanent sites on three streams: Deception Gulch, Lake Creek and Fourth of July Creek. See riparian section for more information.

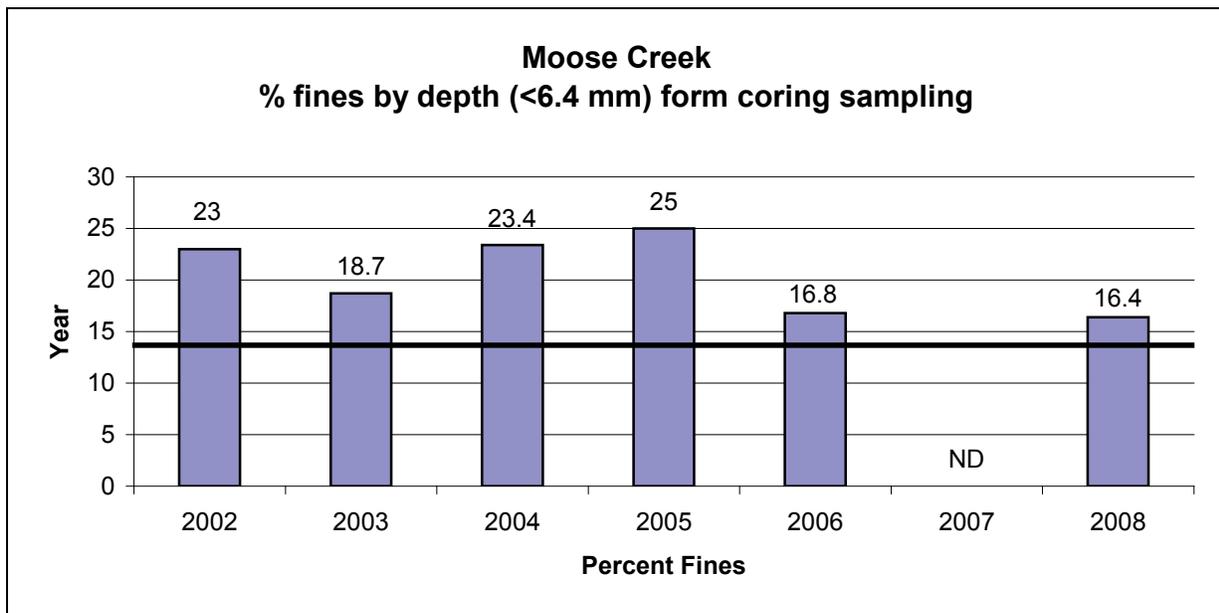
The six year of the substrate-monitoring project in lower Moose Creek (mouth upstream to Little Moose Creek) was completed in 2008 to determine trends of sediment (% fines by depth) in potential westslope cutthroat trout spawning areas. The monitoring data will also help assess any impacts of small suction dredge mining which occurs upstream in Moose Creek, Independence Creek and Deadwood Creek. This monitoring consists of measuring the substrate particles that are collected by digging a core into the stream bottom at selected riffle and pool tail-out sites. Data analysis indicates that the percentage of sediment (fine sediment < 6.4 mm) within the substrate at the monitoring sites averaged 16.5% in 2008 (Figure 12). The conditions were similar to 2006 the most recent year data was collected. The five-year average of approximately 20.6% fines is still above the desired condition of 12-14% fines for the "high fishable" Forest Plan standard for westslope cutthroat trout. Additional data is scheduled to be collected in 2009-2011 to verify if the substrate conditions show an improving trend or have stabilized slightly above the 14% threshold.

**Water Temperature Monitoring:** The Forest have been collecting water temperature data from 1992 to 2008 to determine temperature problems and prioritize riparian recovery efforts. Due to migration barrier at Dworshak Dam, streams within the Forest's boundary are considered non-anadromous (no potential for steelhead trout or spring Chinook salmon); only water quality and habitat conditions related to resident fish (i.e. westslope cutthroat trout and bull trout) were analyzed.

Comparison of the 2008 stream temperatures data from 128 sites on 117 streams with available data with the desired maximum temperatures as defined for the appropriate standards in the Forest Plan Forest Plan revealed that:

- The desired westslope cutthroat trout rearing temperature of 13°C (no effect) was monitored at 15 streams. The standard was met at Bear Creek, Birch Creek, Mink Creek, Silver Creek and Weasel Creek. One of the three sites monitoring on Cayuse Creek (Cayuse Creek upstream Silver Creek) met the standard. The standard was not met at any of the four sites on mainstem North Fork Clearwater River.
- The desired westslope cutthroat trout rearing temperature of 16°C (high fishable) was met at 68 streams out of the 78 streams monitored with a “high fishable” standard. Of the remaining ten streams, six streams exceeded the standard by five days or less.
- The desired westslope cutthroat trout rearing temperature of 18°C (moderate fishable) was met at nine of the ten streams monitored with a “moderate fishable” standard. Tumble Creek exceeded the standard on one day.
- The desired westslope cutthroat trout rearing temperature of 20°C (low fishable) was met at all 10 streams monitored with a “low fishable” standard.
- The desired brook trout rearing temperature of 17°C (high fishable) was met at both of the stream monitored: West Fork Elk Creek and Johnson Creek.
- The desired brook trout rearing temperature of 20°C (low fishable) was exceeded at all three monitored streams. Oviatt Creek, Partridge Creek and Long Meadow Creek exceeded the standard on one day.

**Figure 12: Comparison Of Average Percent Fines (< 6.4 Mm) For Years 2002-2008 At Permanent Substrate Monitoring Sites In Lower Moose Creek Within The North Fork Clearwater River Drainage. No Data Was Collected In 2007**



Overall, water temperatures of all 117 streams (with monitoring data) within the North Fork Clearwater River drainage were under the State standard for cold-water biota; water temperatures did not exceed the

daily maximum of 22 °C and the maximum daily average of 19 °C. The State standard of 13 °C for the spring period for westslope cutthroat trout was met at 53 of the 112 streams monitored with a State standard. An additional 13 streams exceeded the standard for five days or less. Sixteen of the streams monitored met the bull trout maximum summer rearing temperature of 12 °C (consecutive seven-day average of daily maximums) that EPA issued as final temperature guidance for water quality standards throughout the Pacific Northwest. Ten additional streams exceeded bull trout standard for five days or less.

**Fish Population Monitoring:** As in past years, bull trout spawning surveys were conducted on selected streams during 2008. IDFG also conducted bull trout spawning surveys on several streams.

**Bull Trout Spawning Surveys:** Surveys were conducted on seven streams within the North Fork Clearwater River drainage. Approximately 8.0 miles of stream within the upper North Fork Clearwater River and Moose Creek drainages were surveyed by the Forest during the spawning period of September through early October. The streams included: Moose Creek, Lake Creek, Goose Creek, Bostonian Creek, Niagara Gulch, Placer Creek and Vanderbilt Creek.

Bull trout spawning (61 redds) was documented in six of the seven streams; no bull trout spawning was found in the Moose Creek, Lake Creek and Goose Creek index areas. As in previous years, the surveys found major concentrations of fluvial or adfluvial bull trout spawning activity in the Vanderbilt Creek and Bostonian Creek drainages. The highest number of redds observed in any known major bull trout drainage within the upper North Fork Clearwater River subbasin during the past ten years was found in Vanderbilt Creek in 2008; 43 redds were documented in the two mile stream reach. Major concentrations of redds were also found in Bostonian Creek.

Comparison of redd count data collected in index areas of the four major spawning streams within the upper North Fork Clearwater River drainage indicates an average of nearly 56 redds over the past six years. Although redd counts show some minor annual fluctuations during the past six years, the trend is relatively stable in these four drainages. Redds counts in the other three drainages have been more sporadic. Prior to 2003, only one survey was conducted on these streams; the surveys were usually conducted during the last two weeks in September. During 2003, two surveys were conducted on three of these streams. Based on the relatively early spawning timing observed in 2003 and the low number or absence of adult bull trout observed during surveys conducted during mid-September, the 1994-2002 annual redd counts were most likely under estimates of the actual spawning success due to the inability to distinguish older redds. Therefore surveys were scheduled earlier in September and where necessary multiple surveys were scheduled during late August to mid- September to obtain an accurate count. Figure 13 displays the redd count information available for the bull trout spawning index areas that are monitored each year.

**IDFG Bull Trout Spawning Surveys:** In addition to the Forest's surveys, the IDFG conducted bull trout spawning surveys within several major tributaries in the North Fork Clearwater River drainage that have shown persistent bull trout spawning activity. The surveys conducted as part of a graduate project found bull trout redds in Skull Creek (9), Long Creek (10), Quartz Creek (8) and Isabella Creek (1).<sup>17</sup>

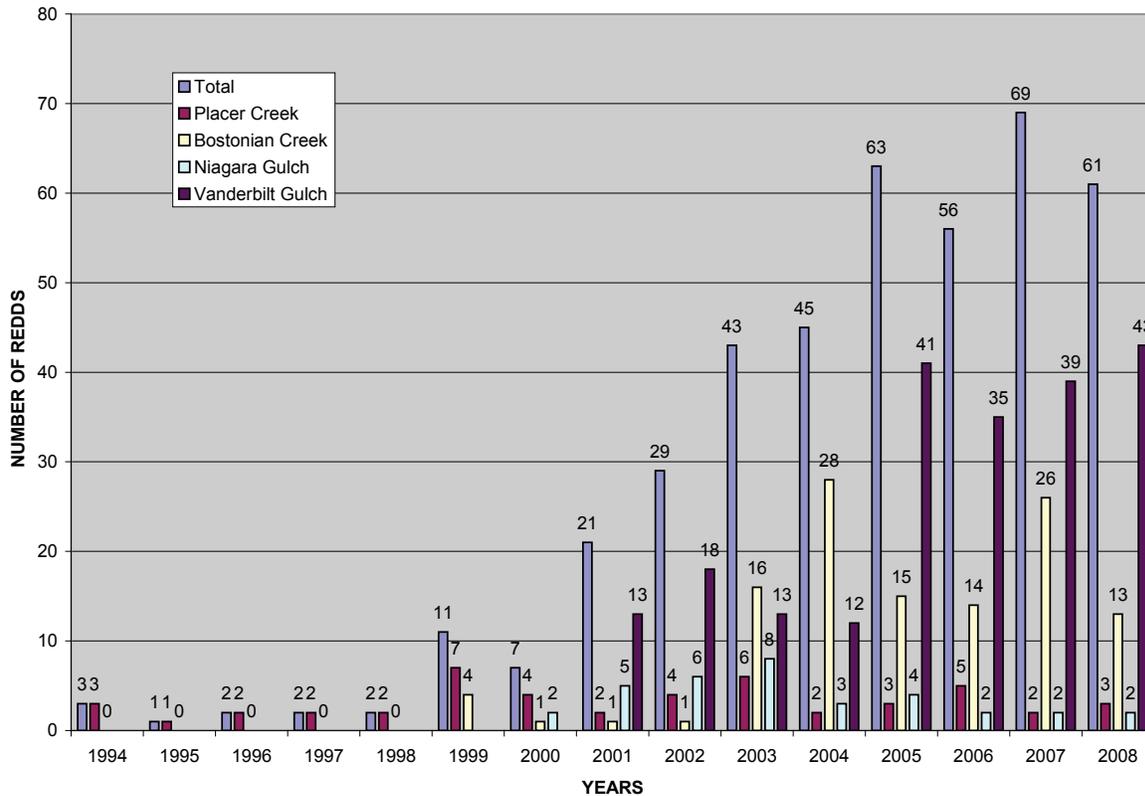
**IDFG Population Monitoring:** IDFG did not conduct their annual fish population monitoring via snorkeling at the permanent monitoring sites throughout the North Fork Clearwater River drainage in 2008. Monitoring is scheduled in 2009.

As part of their ongoing monitoring program, personnel from the Idaho Department of Fish and Game also conducted fish population monitoring via snorkeling and creel census activities within the mainstem North Fork Clearwater River and other selected tributaries.

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<sup>17</sup> Personal communication via email, dated November 19, 2008, with John Erhardt, graduate student, University of Idaho.

**Figure 13: Number Of Bull Trout Redds Observed By Forest And IDFG Personnel Within Spawning Index Areas On Four Streams Within The Upper North Fork Clearwater River Drainage (1994-2008)**



## PALOUSE RIVER DRAINAGE

**Watershed Status:** No natural or anthropogenic events occurred on USFS lands in the Palouse River watershed during 2008 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads and vegetative treatments). No wildfires occurred in the Palouse River drainage in 2008. Various field reviews and monitoring activities have supported the conclusion that the habitat conditions for most drainages are most likely similar to 1998-2007 conditions. Monitoring efforts have shown some improvement and degradation in specific drainages that were impacted by the 1995/96 floods. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed similar to conditions observed during 1997-98 surveys.

**Habitat Improvement:** No major habitat improvement projects (road decommissioning, fish passage etc) were scheduled during 2008.

**Habitat Monitoring:** Stream inventories of all fish bearing streams within the Palouse River drainage have been completed on National Forest System lands during 1990-1998. Re-surveys of specific streams have been planned every five to ten years dependent upon stream conditions, management proposals and available funds. Re-surveys of stream reaches may occur for specific projects in future years, but funding constraints will limit re-surveys of entire drainages. As noted in the summary section, the overall status and trend of habitat conditions will be monitoring via the PIBO monitoring process. The PIBO aquatic

monitoring sites will provide the Forest an assessment of stream habitat, riparian and water quality conditions within the Palouse River drainage; this information will be reported under the current and future Forest Plans.

**Stream Habitat Monitoring/Surveys:** No re-surveys of the PIBO aquatic monitoring sites within the Palouse River drainage were scheduled in 2008. The full complement of PIBO sites (3) were established in 2001 (1) and 2006 (2) by the Multi-regional PIBO Effectiveness Monitoring Staff. The PIBO sites are scheduled to be re-surveyed in 2011.

In 2008, no other Forest Plan monitoring or re-surveys were scheduled within the Palouse River drainage.

**Stream Channel and Substrate Conditions:** In 2008, no streams within the Palouse River drainage were scheduled.

**Water Temperature Monitoring:** Stream temperatures were monitored throughout the summer at 11 sites on 10 streams within the Palouse River drainage to evaluate habitat conditions for brook trout and rainbow trout. The upper Palouse River is not accessible to anadromous fish. In addition, bull trout and westslope cutthroat trout have not been observed in the upper Palouse River drainage. Comparison of the 2008 stream temperature data from the 11 baseline sites and the desired maximum temperatures as defined for the "low fishable" standard in the Forest Plan revealed that:

- The desired rainbow trout and brook trout rearing temperature of 20°C was met at nine of the ten monitored streams: Big Creek, Big Sand Creek, Little Sand Creek, Gold Creek, North Fork Palouse River, East Fork Meadow Creek, Meadow Creek (downstream Blakes Fork Creek), Palouse River (at gage and downstream Wagner Gulch) and Strychnine Creek.
- The remaining stream, Mannering Creek exceeded the standard on two days.

Water temperatures at all ten monitored streams, Big Creek, Big Sand Creek, Little Sand Creek, Gold Creek, Mannering Creek, North Fork Palouse River, East Fork Meadow Creek, Meadow Creek (downstream Blakes Fork Creek), Palouse River (at gage and downstream Wagner Gulch) and Strychnine Creek were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22 °C and the maximum daily average of 19 °C. The State standard of 13 °C for the spring spawning periods for rainbow trout was not met at the only site with a State standard; North Fork Palouse River exceeded the standard on 20 days. Water temperatures were not recorded throughout the fall spawning period for brook trout. However, the stream temperatures are most likely below the State standard of 13 °C.

**Fish Population Monitoring:** Due to the absence of ESA -listed and sensitive fish species (i.e. steelhead trout, bull trout, westslope cutthroat trout, spring Chinook salmon), fish population monitoring is not scheduled on an annual basis within the Palouse River drainage; no monitoring was conducted in 2008.

## HIGH MOUNTAIN LAKES: NORTH FORK CLEARWATER AND LOCHSA RIVER DRAINAGES

**Ecosystem Monitoring and Adaptive Management of High Lakes Project:** In 2006, the IDFG and the Clearwater and Nez Perce national forests started a partnership project establish and document the cooperation between the parties in funding field surveys, collection and analysis of data, and adaptive management activities related to high lakes management within the forests under the title Ecosystem Monitoring and Adaptive Management of High Lakes within the Department's Clearwater Region of Idaho. This project is a continuation of previous Challenge Cost-Share (CCS) Agreement projects between the Forest Service and the Department where comprehensive mountain lake data was collected to determine lake status and management classification.

As a result of these past efforts, a management plan has been developed to guide future high lakes management utilizing the data collected in previous work. Included in the plan is a landscape based,

ecosystem level approach to monitor native macro-fauna status and trend relative to the level of introduced fish populations and the amount of fishless habitat at the watershed scale. Criteria establishing levels of fishless habitat have been proposed and a monitoring strategy is in development. The Idaho Department of Fish and Game and the Forest Service administering the high lakes in the Department's Clearwater Region have entered discussions on the development of a long-term monitoring plan and an active restoration strategy to remove non-native fish from selected high lakes. The entities have agreed to complete in 2009 a master agreement for 2009-2011 and which will be updated annually via supplements.

The Ecosystem Monitoring and Adaptive Management of High Lakes Project is primarily composed of two activities:

- Activity 1: Monitoring and evaluation of ecosystem level impacts related to high lakes fisheries management activities. In general, Activity 1 will result in a long-term data set to evaluate trends in native fauna related to relative levels of introduced fish populations at the HUC 5 watershed level. Additional work under Activity 1 will include assessments of fish populations downstream of high lakes to determine population level effects of fish introductions. This information will advance the native fish risk assessment portion of the mountain lake plan and provide baseline information for additional adaptive management activities undertaken in Activity 2.
- Activity 2: Management related activities geared toward reducing legacy threats from past management activities. Activity 2 will represent active adaptive management addressing risks to native fauna. Activity 2 will include efforts to remove non-native fish species from mountain lakes and tributaries downstream from mountain lakes.

Specific actions proposed for the 2008 field season and included under the agreement for both forests under Activity 1 were as follows:

- Implementation of landscape based monitoring and evaluation program as described in the High Lakes Plan. Monitoring was conducted in the Warm Springs Creek drainage on the Clearwater National Forest in 2008.
- Determine distribution and genetic status of fish populations downstream of high lakes in the selected drainages.
- Management plan and database development and maintenance.
- Implement annual stocking program

Specific actions proposed for the 2008 field season under Activity 2 for the Clearwater National Forest included:

- Implement year three of electro-fishing brook trout removal from Ice Lake outlet.
- Assess success of removal effort at Ice Lake and need for future efforts.
- Assess the success of the brook trout eradication process in Fly Lake, Heather Lake and Platinum Lake; determine brook trout abundance and introduced tiger musky via surveys.

In 2008, specific accomplishments on the Clearwater National Forest included:

- Of the nine lakes remaining to be surveyed in the Storm Creek drainage (five were surveyed in 2007), none were surveyed in 2008 due to logistical issues with access; additional efforts are planned in future years.
- After one field trip into the Storm Creek drainage, the field crews focused on the Warm Springs Creek drainage in 2008; of the 10 lakes scheduled to be surveyed, seven lakes were completed in 2008; East Wind, Lower North Wind, Middle Wind, South Wind, Upper North Wind, West Wind and Wind Pond lakes. The remaining lakes (Dodge, Hungry and Northwest Wind lakes) are scheduled to be surveyed in 2009.

- Assisted IDFG crews with the population assessments of brook trout and tiger musky in three high mountain lakes in the upper North Fork Clearwater River drainage. Approximately 10 acres of lake will be restored following the elimination of brook trout.

# HERITAGE PROGRAM

## GOAL

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

## STRATEGY

Examine and conduct inventories on all proposed project areas, document findings and provide direction for project implementation to ensure compliance with state and federal regulations. Improve relations and develop working partnerships with American Indian tribes to facilitate communication, consultation and cooperation. Identify and enhance resource values on the Lolo Trail system. Work with the public to improve values and increase awareness of cultural resources. Continue to assess cultural resource sites for nomination to the National Register of Historic Places.

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### Item No. 4 - Protection and Condition of Heritage Resource Sites

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Frequency of Measurement: Annual  
Reporting Period: Annual

## MONITORING ACTION

Compare project effects to environmental analysis documents and project cultural resource reports to determine if projects had any effects on cultural resources. If this determination is made, consultation with the Idaho SHPO is carried out and necessary mitigation is prescribed.

## ACCOMPLISHMENTS/FINDINGS

The National Historic Preservation Act (NHPA) directs federal agencies to consider the effects of their planned activities on heritage resources. In compliance with that law, the Forest inventories proposed projects such as timber sales, recreation facilities development and others to identify heritage resources and develop plans to protect significant sites during project implementation. The Forest also has an active program to inventory additional areas of the Forest outside of project areas and monitor historic properties.

In fiscal year 2008, the Clearwater National Forest operated as a participating forest in the Programmatic Agreement between the Idaho State Historic Preservation Officer, The Advisory Council on Historic Preservation, and the Region 1 National Forests of Idaho (PA) for an entire year. This is an important aspect of the Heritage Program as it allows the Forest to operate under a program alternative for meeting the agency's responsibilities under section 106 of the National Historic Preservation Act. This alternative provides significant efficiencies in the section 106 process. For example, it facilitates local decision making and helps reduce the amount of time involved in consultation. Roughly 88 percent of the Clearwater National Forest's undertakings were categorized as "no inventory", or "no property" projects. These projects were reviewed locally and authorized to proceed by the Forest Archaeologist. Without the advantages of the PA, the 10 projects treated as "no inventory" or "no property" projects could have required an additional 300 days to secure concurrence from the State Historic Preservation Officer (SHPO). In the case of FY2008, this was particularly important as the number of heritage personnel was reduced by one while the amount of field and report work was more than double of the preceding year, primarily because of large scale projects requiring careful site evaluation, documentation and consultation.

Twenty-five section 106 projects were completed under the auspices of the PA during FY2008. Twelve of these involved field inventory and site evaluation, resulting in the inventory of approximately 2, 274 acres and the documentation of nine new historic properties and the re-evaluation and assessment of five previously recorded sites. In addition to the inventories conducted by Clearwater National Forest personnel, one survey was conducted by Forest Service Enterprise Team Personnel. This inventory, for a proposed timber sale and will be reported on in FY2009. Finally, through agreement with the University of Idaho Department of Anthropology, the Forest conducted limited test excavations at the Kooskia Administrative Site as part of a possible FREA related conveyance. This report will be completed in FY2009.

One project requiring mitigation of adverse effects was completed this fiscal year. This project involved the removal and replacement of the Colt Killed Creek Bridge and the possible removal of Boulder Creek Bridge. A Memorandum of Agreement stipulating the mitigation of adverse effect was negotiated between the State Historic Preservation Officer, the Advisory Council on Historic Preservation and the Forest. The documentation for this project was completed and will be submitted as part of the annual report to SHPO required under the Programmatic Agreement.

The Heritage Program continued to improve its efforts in the realm of information management in Fiscal year 2008. Federal Accounting Standards Advisory Board Standard #29 and the associated directive requires that all heritage assets (cultural resource sites) be entered into the Agency's corporate database system, INFRA. This was completed in September 30, 2007 and the focus has now moved into bringing the Forest's spatial heritage data (previous inventory and site layers) to standard. The site layer was completed in FY2008.

Along with the section 106 undertakings, the Clearwater continues to maintain an active section 110 Program and condition assessments were carried out for 33 historic properties. The goal of the assessments is to document site conditions and determine, where appropriate, the cost of bringing sites up to a minimal standard of protection. Many of the monitored sites were found to be in a stable state and therefore do not require additional actions at this time. In part, these activities are being carried under the auspices of the Regional Recreation Director's emphasis "Heritage Stewardship Enhancement" initiative. Using these funds, a Challenge Cost Share was developed with the University Idaho. The University, over the course of next several years, be revisiting sites within the Lolo Trail National Historic Landmark, conducting condition assessments and inventorying areas of the Landmark not previously inventoried.

Forest Heritage Program personnel remained very active in the arena of public outreach. The Forest participated in the 2008 Idaho Archaeology and Historic Preservation Month by hosting a local presentation on the Lewis and Clark expedition archaeological investigations conducted by State Archaeologist and Deputy State Historic Preservation Officer Ken Reid. Additionally, heritage program staff participated frequently in the Forest's recreation program "campfire talks", presenting numerous talks on local area prehistory and history.

# LANDS



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## Item No. 12 - Land Ownership Adjustments

Frequency of Measurement: Annual  
Reporting Period: Annual  
FY05-06

### MONITORING ACTION

The Forest Lands staff will prepare a report specifying the number of acres acquired, traded or sold. The report will contain the purpose of the land exchanges and how it contributes to the satisfaction of the Forest Plan objectives.

### FINDINGS

Phase 1 of the ***Boise Foothills-Northern Idaho Land Exchange*** closed September 2008. Participants included the Clearwater National Forest, Idaho Panhandle National Forest, Idaho Department of Lands, and the BLM. Phase 1 of the ***Boise Foothills-Northern Idaho Land Exchange*** on the Clearwater National Forest involved the conveyance of 4,120.60 acres of Federal land and the acquisition of 2,801.55 acres of non-Federal lands from the State of Idaho.

The Forest will continue to work on Phase 2 of the ***Boise Foothills-Northern Idaho Land Exchange*** in 2009. In Phase 2 the Forest Service will convey 132.50 acres in exchange for approximately 460 acres from the Idaho Department of Lands. The exchange is authorized by the Idaho Land Enhancement Act of 2006 (120 Stat. 2645).

In September 2008 the Clearwater National Forest completed a feasibility analysis for the proposed ***Upper Lochsa Land Exchange***. The outcome of the feasibility analysis was a recommendation to enter into an Agreement to Initiate which was signed by both parties in September 2008. In the proposed land exchange the Forest Service would acquire approximately 39,371 acres of land from Western Pacific Timber, LLC (WPT) formerly owned by Plum Creek Timber Co. in the upper Lochsa River drainage in exchange for approximately 28,212 acres of federal land. The federal lands are located within the Clearwater, Nez Perce and Idaho Panhandle National Forests. Public scoping to begin the EIS for the land exchange was initiated with a notice in the Federal Register in December 2008. The draft EIS is anticipated to be available for public review in October 2009.

Both referenced land exchanges are in compliance with the primary goals and objectives for the Lands program as stated in the 1987 Clearwater Forest Plan. The goals include: Achieve a land ownership pattern in the Forest that will provide for soil and watershed protection, and effective and efficient management of National Forest System lands. Acquire lands that will maximize short-range and long-range management opportunities. Dispose of lands which do not contribute to Forest Plan management direction.

***Kooskia & Kamiah Conveyance Project:*** This project involves conveying the Kooskia Administrative site (approximately 2.91 acres) and 2 residences on approximately 1 acre at the Kamiah Administrative site under the authority of the Forest Service Facility Realignment and Enhancement Act of 2005 (Title V. P. L. 109-54). The Forest contracted with the University of Idaho to complete the archeological survey and heritage report on the Kooskia site. The report is due to the Forest Service March 2009. The Heritage Report and mitigation will proceed into 2009. The Forest is working closely with Nez Perce Tribal Heritage Preservation Office.

The ***Kooskia & Kamiah Conveyance Project*** meets the objectives of the Forest Facilities Master Plan. The main purposes for the sale are to reduce facility maintenance costs by consolidating 2 administrative sites within 7 miles and improve district management effectiveness. Proceeds from the sale will be used to upgrade by remodeling and adding office space and storage space to the existing facility at Kamiah, Idaho, and to add parking spaces and improve RV access. Any remainder of funds will go towards realigning the facilities on the North Fork Ranger District.

# MINERALS

## GOAL

Encourage and facilitate the orderly exploration, development and production of the energy and mineral resources on the Clearwater National Forest. Ensure that this exploration, development and production are conducted in an environmentally sound manner.

## STRATEGY

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



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### Item No. 15 - Minerals Prospecting and Development

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Frequency of Measurement: Annual  
Reporting Period: Five Years

## 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

### OPERATIONS

A total of 43 operations were processed on the Forest during FY08. All 48 operations were non-bonded non-energy operations. A total of 56 operations were administered to standard. Of the 56, 13 were bonded non-energy operations.

In FY96, the Washington Office issued new definitions for accomplishment indicators. Due to the difference in definitions of accomplishment, the 265 average annual number of cases predicted in the Forest Plan should not be compared to the 56 total operations processed and administered during FY08.

### LOCATABLE MINERALS

The only significant locatable mineral mined from the Forest is gold. Miners are not required to report their production to the Forest Service. However, the Forest minerals geologist has estimated that approximately

7 ounces of gold were mined from the Forest during FY08. The value of this amount of gold would be approximately \$6097 at an average gold price of \$871/oz.

## COMMON VARIETY MINERALS

The Forest provided mineral materials for road surfacing to county and state agencies, for national forest roads and for use in private industry. Forest records show that 15 tons of materials were produced from national forest lands in FY08 with an estimated value of \$300.

## MONITORING

All active earth-disturbing minerals activities and suction dredge mining were monitored for compliance with operating plans, Forest Plan standards, and State and Federal regulations. No impacts on mining activities from other resources were identified.

### Item No. 36 - Minerals Resource Availability

Frequency of Measurement: Annual  
Reporting Period: Five Years

## 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.

## ACCOMPLISHMENTS/FINDINGS

The Clearwater National Forest consists of a total of 1,825,318 acres. Of these acres, 259,167 (approximately 14%) are in the Clearwater portion of the Selway-Bitterroot Wilderness and are withdrawn from mineral entry. In addition to wilderness, the Forest currently has 52 individual sites withdrawn from mineral entry. This figure has remained the same since FY94.



# RANGE



## GOAL

Manage livestock grazing land consistent with the protection and management of other resources.

## STRATEGY

Complete range environmental assessments analyzing present management. Prepare allotment management plans for all active allotments. (An allotment is an area of land where one or more individuals graze livestock.)

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### Item No. 6 - Livestock Forage Available, Range in Good Condition Per Established Allotments

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Frequency of Measurement: Annual

Reporting Period: Five Years

## MONITORING ACTION

Forest range personnel will annually monitor each grazing allotment for range readiness, use, condition of range, forage availability and protection of other resources. Data will be entered into the *INFRASTRUCTURE* database generating one source of information about the Clearwater National Forest Range Program. This is an ongoing process and there is a need to continue entering improvements.

## ACCOMPLISHMENTS/FINDINGS

Range allotments are routinely monitored for use, possible resource damage and maintenance needs. Current range conditions overall are good. There are 15 cattle allotments and 15 grazing permits on the Forest. The allotments are located within the Potlatch River and Lolo Creek drainages within the mainstem Clearwater River subbasin and the Palouse River drainage within the lower Snake River subbasin. One grazing permit was inactive during 2008. There were approximately 5,088 head months (HMs) this year.<sup>18</sup> These numbers reflect the permitted animals on cattle allotments, and do not include animals associated with recreational visitors.

**Maintenance:** Specific fence maintenance activities within the Potlatch River and Lolo Creek drainages were completed in 2008 to administer grazing as well as protection of riparian areas (see *fisheries section* for additional information). The range program took over the funding of the riparian fence maintenance projects that fisheries funded during 1992-2005.

**Potlatch River Drainage:** Riparian Fence Fences on 19 permanent riparian enclosures and six temporary riparian enclosures were maintained in 2008:

- Six enclosures along the East Fork Potlatch River.
- One enclosure along Ruby Creek.
- Two pond enclosures within the Corral Creek watershed.
- A “Hi-Tensile” electric fence (2.3 miles) along Cougar Creek.

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<sup>18</sup> For grazing purposes, a head month is a month’s use and occupancy of the range by one weaned or adult cow with or without a calf, bull, steer, heifer, horse, burro, mule or five sheep or goats.

- Five miles of “Hi-Tensile” fence along the West Fork Potlatch River and Feather Creek.
- One temporary electric fence and two permanent fences on Corral Creek and Hog Meadow Creek.
- Approximately one mile of “Hi-Tensile” fence along Nat Brown Creek.
- A permanent fence (Hank’s fence) within the East Fork Corral Creek drainage.
- The East Fork Big Bear Creek enclosure.
- The permanent/temporary trail fence upstream of Little Boulder Campground.

*Lolo Creek Drainage:* Fence maintenance on existing riparian enclosures was completed in 2008 using range funds.

- Musselshell Meadows fence
- Upper and lower Musselshell Creek fences
- Section 6 Meadow fence on Lolo Creek

**Improvements:** During 2008, the Forest concentrated its funding and efforts in reconstructing the Musselshell Meadows Fence to protect meadow and riparian values along Musselshell Creek; steelhead trout and spring Chinook salmon spawn and rear within and adjacent to Musselshell Meadows. The Nez Perce Tribe assisted with the reconstruction efforts. Due to problems acquiring materials during the summer of 2008, only 50 percent of the fence (approximately 2,600 feet) was completed in 2008. The remaining materials were purchased with 2008 funds and the rest of the fence will be reconstructed in early 2009.

**Monitoring:** During 2008, the Forest completed the following monitoring and evaluations projects:

- Range readiness observations were completed on all allotments prior to grazing.
- The Forest conducted clip and forage production sampling on the larger allotments with pasture rotations.
- Grazed loop measurements were taken on the larger allotments with pasture rotations.
- Stubble height measurements were taken on the smaller non-rotational allotments.
- Photo points were taken on all allotments; some of these points were newly established monitoring sites.

# 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 for a broad spectrum of dispersed activities and developed facilities.

## STRATEGY

The Clearwater National Forest has developed several strategies to meet Forest Plan goals in recreation. These strategies can be summarized as follows:

- **Identify Recreation Areas:** The Forest has been divided into seven areas with unique opportunities - the Palouse Plateau, the North Fork Clearwater River Corridor, the Lolo Trail Corridor, the Highway 12 Corridor, the Selway-Bitterroot Wilderness, roadless areas and roaded areas. Each of these areas has identified recreation opportunities and challenges, as well as visitor use patterns and needs.
- **Reconstruct Existing Recreation Facilities to Standards Appropriate:** Facilities at all sites will be evaluated for safety, repair and accessibility. Facilities will be maintained or reconstructed as funding and feasibility allow.
- **Provide for Construction of New Recreation Facilities:** Add new facilities to provide a diversity of recreation opportunities if funding is available. New facilities at all sites will be constructed to meet the needs of people with disabilities if possible.
- **Continue to Request Funding:** Funding is needed to operate, maintain and reconstruct sites to full service standards.

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### Item No 2 - Wide Spectrum of Recreation Opportunities

Frequency of Measurement: Annual  
Reporting Period: Five Years

## MONITORING ACTION

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

- Compare recreation use on the Forest with the broad range of opportunities that could occur and are supported in the Forest Plan,
- Identify changes or conflicts in existing recreation use, and
- Identify directions for changes and alternatives for conflict resolution.

## ACCOMPLISHMENTS/FINDINGS

Normally, recreation use estimates are arrived at primarily by observation and professional opinion. Use estimates for developed recreation sites reflect more closely actual use since they are based on fees paid and information provided by recreational users at points of contact such as visitor centers.

## GENERAL FOREST AREA USE

Recreation use within the Lolo Creek drainage, Lolo Motorway corridor, and Elk Summit, Parachute Hill and Saddle Camp roads did not see an increase, but more of a decrease in visitation in 2008, this is thought to have occurred due the national economy and the increase cost of fuel. Visitation was observed Memorial Day through Labor Day summer season, with dispersed camping, driving for pleasure, fishing and berry picking being the main activities. These GFAs are also visited during fall hunting season. However the low numbers of elk in theses areas continued to reduce the number of hunters visiting this area.

Recreation use within the North Fork Clearwater River corridor was similar to the above in 2008. Visitation was observed from late April through Labor Day summer season, with fishing, boating, driving for pleasure, developed and dispersed camping being the main activities. These GFAs are also visited during fall hunting season. The low numbers of elk in the North Fork Clearwater watershed continued to reduce the number of hunters visiting this area. These GFAs are also visited during fall hunting season.

Due to the proximity of major population centers (Spokane and Pullman, WA and Moscow and Lewiston, ID) recreation on the Palouse Ranger District continues to steadily increase, with an ever-growing draw for motorized recreation and developed camping. In addition Potlatch Corporation has begun to charge general access recreation fees and we continue to see a noticeable increase in use on FS ground.

Monitoring information for the Selway Bitterroot Wilderness is located in the Wilderness section.

Monitoring Information regarding for the Lochsa River including boating use on is located in the Wild and Scenic Rivers section.

## GREAT BURN

In 2008, the Forest continued with a participating agreement with the Great Burn Study Group. Under this agreement the forest funded the group to complete a variety of work in the Great Burn, including:

- Application of herbicides to noxious weeds along the Kelly Creek Trail #567 and various other locations in the Great Burn
- Weed inventories on a number of trails throughout the Great Burn
- Monitoring and documenting effectiveness of herbicide applications on all treated sites 2+ weeks after spraying
- Completion of a daily journal of work activities and final summary narrative of all work completed during the field season
- Completion of monitoring trips on the North Fork Ranger District to evaluate the wild and remote character of various areas, replace signs in the Great Burn, evaluate campsites and stock staging areas at Leo Lake, and rehabilitate campsites on lake shores in the Kidd Lake area

## DEVELOPED AREA USE

Campgrounds: Fees collected in FY2008 continued stayed similar to FY2007. This continued drop in visitation fees, from previous years is assumed to be related to fuel cost increases and the national

economy. Use of a better tracking system for campground fees (in place since 2000), is allowing more accurate trends for fee sites to be assessed for the present and the future.

**Table 12: Recreation Use**

Recreation Use And Fees Collected*	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08
Recreation Use* (M Visitor Days)	1600	1328	1347	1576	1702	1673	1715	1609	1411	**
Fees Collected	\$85,907	\$95,347	\$96,664	\$113,760	\$124,000	\$121,900	\$124,974	\$117,334	\$102,909	\$102,856
Recreation Use Change from Previous Year (%)	-11	-17	+1.5	+17	+8	-1.7	+2.5	-6.2%	-12.3%	**

\* Increases or Decreases for Recreation Visitor Use are calculated using the percentage increase or decrease resulting from the amount of fees collected.

\*\* = MRVD data is no longer collected; visitor use in the future will be collected through the National Visitor Use Management (NVUM) system.

## RECREATION FACILITY IMPROVEMENT

Improvement of developed and dispersed recreation facilities continues so that a variety of recreation opportunities can be provided in a way that also protects resources. Improvements during FY 2008 focused on reducing critical deferred maintenance items with emphasis on health and safety concerns such as sanitation improvements. Site upgrades that improve access to recreation facilities for disabled visitors are also a priority of the facility improvement program. Money to fund many of the improvements in FY 2008 came from Idaho Department of Recreation - Recreational Vehicle Grant funds. Funding through this program has provided opportunities to repair and improve multiple campsites over the last 18 years.

- During the summer of 2008 two concrete vault toilets and other trailhead amenities were installed at Camp 60/Sheep Mountain Trailhead, a popular dispersed site and OHV trailhead on the North Fork Ranger District near Headquarters, Idaho. This portion of the project was completed using IDPR Recreational Vehicle Grant funds.
- In 2007 work was started on the Elk Creek Interpretive Kiosk located near Elk River, Idaho. This project is a joint effort between the U.S. Forest Service and the community of Elk River to improve visitor information in the Elk River area. The project was completed during the summer of 2008. This project will be followed in 2009 with an upgrade to the Elk Creek Falls Trailhead, which sees nearly 5000 visitors per year.
- In FY 2007 the Forest received IDPR grant funds to improve Lolo Creek Campground and in FY 2008 for White Sand Campground including replacement of tables, firerings, fencing, and sign installation. A portion of the construction work for these projects was completed in FY 2008 with the remainder to be completed in FY 2009. The forest also received a grant to construct a Group Shelter at Elk Creek Campground. Design work was completed in FY 2008 with construction to begin in FY 2009.
- Work was completed on the replacement of 4 concrete toilet vaults at Kelly Creek Campground.

- Improvements to the water system were made at Wilderness Gateway Campground. Several table tops and firerings were also replaced as part of this RSI project.
- Replacement of the aging electrical system at Powell Campground was completed. This project was funded through IDPR Recreational Vehicle Grant funds.
- A campground host site was developed at Wendover Campground on the Powell Ranger District.
- The Palouse Divide grooming program on the Palouse Ranger District was expanded from 8 to 13 miles of regularly groomed non-motorized trails.

## PARTNERSHIPS

Partnerships continue to be important to the success of the Forest's recreation program. In FY2008, as in previous years, partners contributed a significant amount of labor and funding to improve recreational facilities, and help meet Forest visitor expectations by providing interpretive and "Good Host" programs.

Partnerships remain an important part of operating Lolo Pass Visitor Center. Partners helping to support the visitor center include: Idaho Department of Transportation, Montana Transportation Department, Montana Chamber of Commerce, Discover Your Northwest Interpretive Association, Glade Creek State Park, Traveler's Rest State Park, the Lolo National Forest, and the grooming of the Lolo Pass Ski trails.

Other Partnerships supported in FY 2008 included:

- The Idaho Humanities Council and Palouse-Clearwater Environmental Institute were partners in supporting the Forest's Campground Fireside Program.
- Idaho Outfitters and Guides Licensing Board, and the Idaho Department of Fish and Game both partners supporting the Forest Service efforts to complete a statewide GIS mapping project to facilitate public knowledge and administration of the Outfitters and Guides on the three north Idaho Forests (Panhandle, Clearwater, and Nez Perce N.F.'s).
- Various groups assisted with trail development and maintenance as well as recreation facility maintenance on all the Ranger Districts, including Public Lands Access Year-Round, Lewis and Clark ATV Club, Panhandle Trail Riders Association, the Valley Cats Snowmobile Club and Latah Youth Services.

## NOXIOUS WEED CONTROL

The Clearwater National Forest and the Idaho Transportation Department (ITD) coordinate noxious weed treatment in the Highway 12 corridor from Kooskia to Lolo Pass. For the ninth year, the ITD treated noxious weeds in the highway right-of-way from Kooskia to Lolo Pass. The Lochsa Ranger District, with assistance from the Moose Creek Ranger District, treated weeds in administrative sites including campgrounds, trailheads and river access sites from Tukaytespe to White Sands campground. Noxious weed treatments on the west end of the Highway 12 corridor are in a moderate to low maintenance range while efforts on the east end are at the initial attack phase.

Treatment is aimed at reducing noxious weed occurrence and invasion. Treatments include pulling, introducing biological controls, and herbicide application. Grass seeding in treatment areas helps to out-compete new weed starts. Monitoring has shown that most of the sites treated are exhibiting significant decline in the area of noxious weed infestation. After a site has been treated for several years, weed

proliferation appears to be reduced and treatment can then be less intensive. New sites have been identified for future treatment as sites treated for several years enter a maintenance stage.

Developed sites along the North Fork Clearwater River, the campgrounds on the Palouse, ATV trails and trailheads and elsewhere on the Forest were also treated to reduce the spread of noxious weeds.

## RECREATION ENHANCEMENT ACT (REA)

Revenue from the REA program continued to play a vital role in providing value-added products and services to Forest visitors.

The Clearwater National Forest's REA program includes retention of revenues collected from the fee campground program on the Forest, all cabin and lookout rentals on the Forest, all recreation special use permits, including outfitter and guide permits, and a recreation pass program for the Lolo Pass Visitor Center's winter program.

### Item No. 14 - Off Highway Vehicle Use Impacts

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Frequency of Measurement: Annual  
Reporting Period: Five Years

## MONITORING ACTION

The Forest recreation staff annually prepares reports displaying the effects of off highway vehicles (OHVs) on Clearwater National Forest resources. Monitored items include complaints and conflicts between user groups, impacts to trails from motorized use, snowmobile activity in the Great Burn recommended wilderness and in the Selway-Bitterroot Wilderness, changes in trail and campsite conditions at Fish Lake, citations for violations of closure regulations, and resource damage occurring on the Forest.

## ACCOMPLISHMENTS/FINDINGS

### CHANGES IN TRAIL AND CAMPSITE CONDITIONS AT FISH LAKE

In FY00, formalized monitoring of the effects of OHV activity on dispersed campsites at Fish Lake on the North Fork Ranger District was begun with the inventory of the location, number and physical condition of campsites at the lake, and recording of observations of the condition of the trail to the lake. These measurements and observations will be conducted annually to determine if trail and campsite conditions are changing over time. Some plant recovery has occurred with a scattering of grass and forbs, but the amount of foot traffic at campsites is keeping them essentially devoid of small vegetation. The installation of traffic barrier posts at campsites along the lake continues to be effective in deterring OHV users from driving and parking at campsites.

Monitoring of OHV activity on the trail to Fish Lake and at the lakeside campsites continued through FY08 with one or more visits to the lake during the July 4<sup>th</sup> through Labor Day holidays. Historically, trail #419 has been closed through approximately July 30<sup>th</sup> to prevent damage to meadows and other wet areas caused by riders leaving the trail to get around the remaining piles of snow.

Visitors observed at the lake during administrative visits appeared to be about the same as in previous years during the fishing season. No actual counts of persons camping or traveling to the lake were made.

## **SNOWMOBILE ACTIVITY IN THE GREAT BURN RECOMMENDED WILDERNESS AND IN THE SELWAY-BITTERROOT WILDERNESS**

Snowmobiling is currently allowed in the Idaho section of the great burn. Through discussions with avid local riders, the Blacklead area is very popular with advanced riders. On any given Saturday and Sunday between January 1 and mid April, 30+ riders have been reported.

Reports of a few Wilderness Incursions were reported near the Tom Beale Park area and the head end of Spruce Creek.

More monitoring information for the Great Burn area is located in the Wilderness section and below under the Accomplishments/Findings section.

## **RESOURCE DAMAGE AND INCIDENTS OF UNAUTHORIZED CONSTRUCTION OF A TRAIL**

Resource damage to trails and other resources resulting from motorized use is still considered to be minimal and relatively easily corrected though concerns over the effects of OHV use are increasing - particularly on the Palouse Ranger District. Incidents of unauthorized creation of OHV trails by cutting vegetation and repeated use of a route continue to occur throughout the Forest, and particularly in the North Fork of the Palouse River drainage. There have also been incidents of widening of Forest system trails by OHV users. As these incidents are found they are evaluated and action taken to deter further use. Additionally, with completion of the Upper Palouse ATV Project Environmental Assessment, cross country travel is prohibited throughout the district, both providing visitors with clear direction on legal routes and recreation staff with a tool for effective enforcement.

## **RESPONSE TO DEMANDS FOR OHV OPPORTUNITIES**

Construction of OHV system loop routes has taken place on the North Fork and Palouse Ranger districts. NEPA has been completed for the Sheep Mountain/Camp 60 OHV Trail system which will offer 58 miles of OHV riding opportunities on the North Fork District. The project was funded cooperatively with State OHV grant and federal monies. Approximately 55 miles of this trail system has been completed as of the end of the 2008 field season. Plans call for completion of the remainder of the system in 2009.

Table 13: Law Enforcement Statistics Relating to OHV Use

Violation*	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08
OHV Speeding	0	0	0	0	0	0	0	0	0	3	0	0
OHV Road Closure Violation Citations	1	0	8	2	2	0	0	5	2	4	3	0
OHV Off Road Violation Citations	0	0	0	0	0	0	0	2	0	1	1	0
OHV Trail Closure Violation Citations	1	0	0	0	0	0	6	1	2	0	6	0
Unauthorized Trail Building Citations	0	2	0	0	0	0	0	0	1	0	0	0
Incident Reports of Violations Related to OHV Use	48	116	137	188	190	107	72	96	110	127	75	52
Damaging a Natural Feature			1	0	1	0	0	4	0	0	0	0
OHV Parking Violation Citations*					2	0	0	0	0	0	0	0
No Registration for ATV Citations*								2	1	5	8	3
No Registration for Snowmobile Citations*								1	1	4	0	1
No State OHV Sticker on ATV Citations*					3	0	0	1	0	4	0	4
No State OHV Sticker on MC Citations*								1	0	4	1	1
No State OHV Sticker on ATV Incidents*					20	0	0	0	30	25	6	39
No State OHV Sticker on Snowmobiles*						5	1	0	45	36	0	4
Operating MC on road with suspended license*							1	0	0	0	0	0
Snowmobile Fatality								2	0	0	0	1
Operating OHV in unsafe manner Citations											2	5
<b>Total</b>	<b>50</b>	<b>118</b>	<b>146</b>	<b>190</b>	<b>218</b>	<b>112</b>	<b>80</b>	<b>115</b>	<b>192</b>	<b>213</b>	<b>102</b>	<b>110</b>

\*Source of information is LEIMARS law enforcement statistical report. Data regarding violations of requirement for an OHV sticker were not available for years prior to FY01 and were excluded from the TOTAL.

# RESEARCH NATURAL AREAS

## GOAL

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

## MONITORING ACTION

Establish a sufficient number of Research Natural Areas (RNA) on the Forest. Each should include at least two or three examples of major habitats and at least one example of a minor habitat. Major habitats are widespread, whereas minor habitats are unique, with little occurrence on the Forest.



## ACCOMPLISHMENTS/FINDINGS

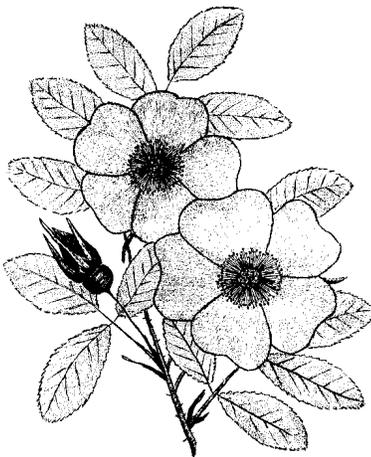
The 1987 Forest Plan identified candidate research natural areas (RNA) that contained the forest, non-forest and aquatic types assigned by the Forest Service Northern Region guide. All except two of the candidate RNAs have been established. The “Research Natural Areas of the Northern Region: Status and Needs Assessment” (1996) identifies the forest herbaceous and aquatic types that are typical on the Clearwater National Forest.

The existing recommended Research Natural Areas are Fenn Mountain and Rhodes Peak. Official designation will occur when an “Establishment Report” is completed for the proposed RNAs. Reports are completed as funding is available.

The Forest has received one proposal from the public to establish a research natural area in Hemlock Creek. The initial assessment submitted with the proposal indicates that this location may contain the two *Tsuga mertensiana* types recommended for additions in the Regional Assessment.

During FY08 no reports were prepared addressing Research Natural Area issues.

During FY08 no reports were prepared addressing Research Natural Area issues.



# RESEARCH NEEDS

## MONITORING ACTION

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

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### Item No. 24 - Research Needs

Frequency of Measurement: Annual  
Reporting Period: Five Years

## FINDINGS

There were no research projects initiated on the Clearwater National Forest in FY08.

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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.

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### Item No. 10 - Riparian Area Condition

Frequency of Measurement: Annual  
Reporting Period: Five Years

## MONITORING ACTION

Riparian monitoring stations have been established to determine baseline and current riparian conditions and also to determine the effects of road construction, timber harvest, site preparation and grazing.

## ACCOMPLISHMENTS/FINDINGS

Baseline or current conditions, including channel characteristics, are monitored annually on several streams. This monitoring is repeated on a five-year cycle to determine trend in channel condition. Permanent channel cross sections are established in which gradient (channel slope), instream sediment concentration, channel substrate (rock size) composition and photo points are established. Channel type and stability are determined for each of the streams. An attempt is made to associate cause with effect when conditions do not appear as natural.

Instream sediment was analyzed using the Wolman pebble count technique. Wolman pebble counts classify the size of the stream substrate. Channel cross-sections were measured to determine changes in deposition (sediment deposits) or scour (removal of channel rock) over time.

In 2008, the Forest measured channel geometry and instream sediment in 3 streams, all on the North Fork district. Table 14 lists these monitoring sites. Data collected at each site may be obtained by contacting the Forest Hydrologist at the Supervisor's Office.

**Table 14: Channel Morphology Sites - 2008**

Sub-basin	Stream	Beneficial Uses <sup>1</sup>	Activities	Year(s) Data Collected
Upper North Fork Clearwater River (17060307)	Fourth of July Creek	Westslope Cutthroat Trout	Baseline	2003,2006, 2008
	Lake Creek	Rainbow, Cutthroat trout, Mountain Whitefish	Timber Harvest	1989, 2003, 2008
	Deception Gulch	Bull Trout, Westslope Cutthroat Trout	Timber Harvest, Landslides, Road Decommissioning	1989, 2002, 2005, 2008

<sup>1</sup> Beneficial uses as listed in the Forest Plan.

Table 15 provides a summary of the Wolman pebble count data for each of the 7 sites measured.

**Table 15: Summary Of Wolman Pebble Count Data Collected In 2008. Channel Type, Gradient, Percent Fine Sediment, D50 (Mean Particle Size), And D84 (Two Standard Deviation From Mean)**

Stream	Channel Type	Gradient %	% Fines <sup>1</sup> 0-2mm	% Fines <sup>2</sup> 0-4mm	D50 in mm <sup>3</sup>	D84 in mm <sup>4</sup>
Fourth of July Creek	B3c	1.6	3.3	5.0	152 (Large Cobble)	441 (Small Boulder)
Lake Creek	B3	2.7	5.9	6.5	121 (Small Cobble)	256 (Small Boulder)
Deception Gulch	B4	3.5	23.3	28.2	35 (Very Coarse Gravel)	150 (Large Cobble)

<sup>1</sup> Clay, silt, and sand.

<sup>2</sup> Clay, silt, sand, and very fine gravel.

<sup>3</sup> The mean particle size. The stream classification is based on the D50.

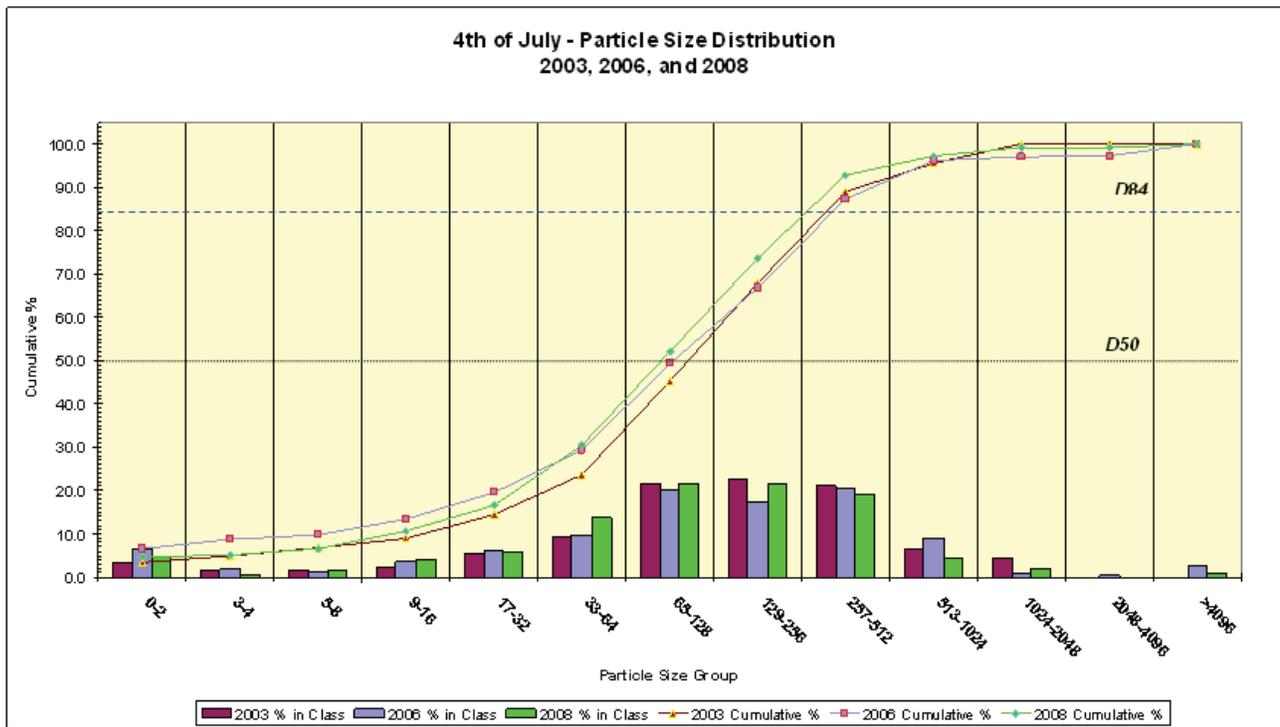
<sup>4</sup> The diameter that is equal to 84% of the bed particles. The choice of the 84% value is arbitrary; it is two standard deviations larger than the mean size, assuming a normal distribution. Experience has shown that particles larger than the median size play an important role in flow resistance, and therefore a single parameter to describe bed particle size should be some size larger than the median.

4<sup>th</sup> of JULY CREEK. 4<sup>TH</sup> of July Creek is monitored to analyze the variability of natural sediment over time (baseline). Wolman pebble count information was collected for 4<sup>th</sup> of July Creek in 2003, 2006 and 2008. The channel type is a B3 (moderate gradient, moderately confined, cobble substrate) stream with a gradient of 1.8 percent. Table 16 and Figure 14 show the Wolman pebble count data for the three years.

Table 16: 4<sup>th</sup> of July creek Wolman Pebble Count Data; 2003, 2006 and 2008

Year	% Fine Sediment 0-2 mm	% Fine Sediment 0-4mm	D50 in mm	D84 in mm
2003	3.3	5.0	147 (Large Cobble)	431 (Small Boulder)
2006	6.7	8.7	125 (Small Cobble)	426 (Small Boulder)
2008	4.6	5.1	118 (Small Cobble)	361 (Small Boulder)
Mean	4.9	6.3	130 (Large Cobble)	406 (Small Boulder)

Figure 14: 4<sup>th</sup> Of July Creek Wolman Pebble Count Data; 2003, 2006, And 2008



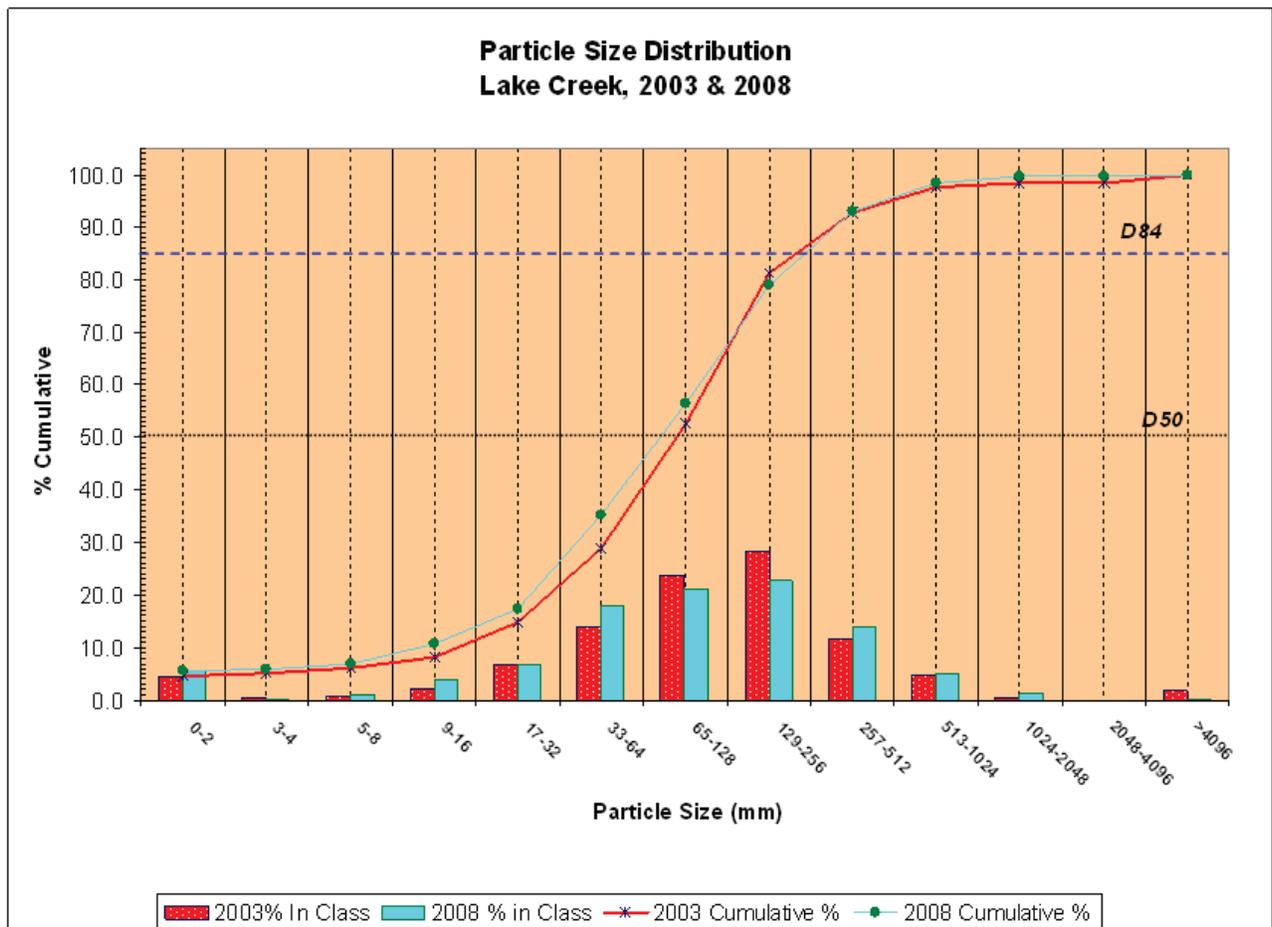
LAKE CREEK. Wolman pebble count information was collected in Lake Creek in 1989, 2003, and 2008. A complete channel survey was done in 1990.<sup>20</sup> The pebble count data has been collected in Reach LK-13, near the mouth. The channel type is a B3 (moderate gradient, moderately confined, cobble substrate stream) with a gradient of 2.7 percent. Bank stability was measured at 3.5, indicating there were bank stability problems in 1990. Cobble embeddedness was 23 percent. The Lake Creek watershed has a harvest density of 18.8% and a road density of 1.8 miles/mile<sup>2</sup>. Timber harvest and road construction began in 1958 and continued until 1993. There was one landslide during the 1995-1996 flood event. Table 17 shows the Wolman pebble count data for the three years.

<sup>20</sup> Clearwater BioStudies, Inc., Canby, Oregon. Habitat Conditions and Salmonid Abundance in Selected Streams Within the Lake Creek Drainage, North Fork Ranger District, Summer 1990. January 1991.

Table 17: Lake Creek Wolman Pebble Count Data; 1989 To 2008

Year	% Fine Sediment 0-2 mm	% Fine Sediment 0-4mm	D50 in mm	D84 in mm
1989	0.0	0.0	102 (Small Cobble)	419 (Small Boulder)
2003	5.9	6.5	121 (Small Cobble)	256 (Small Boulder)
2008	5.6	5.8	103.(Small Cobble)	322 (small boulder)
Mean	3.8	4.1	109 (Small Cobble)	332 (Small Boulder)

Figure 15: Lake Creek Wolman Pebble Count Data; 1989, 2003, And 2008



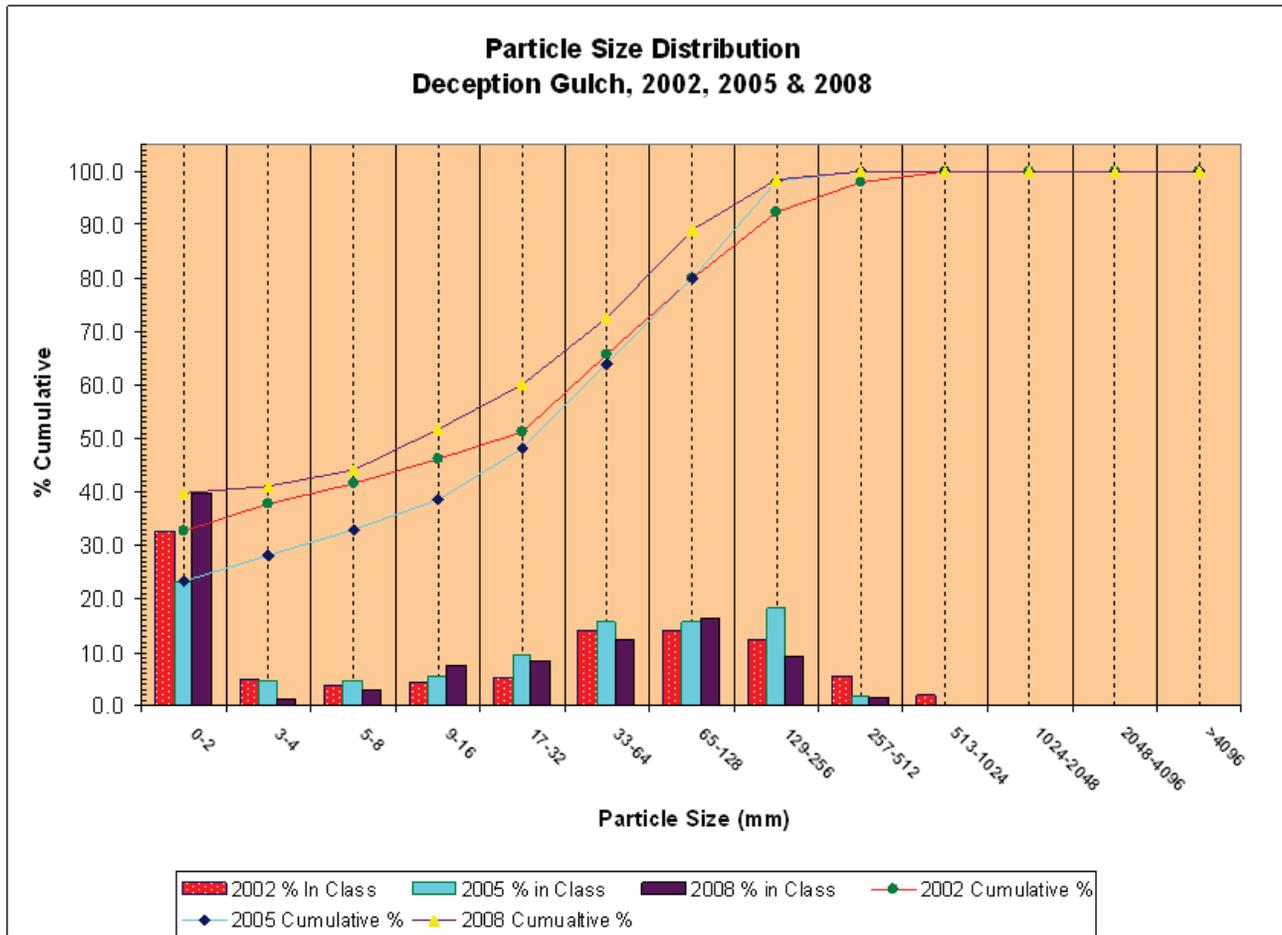
DECEPTION GULCH (mouth). Deception Gulch is being monitored to analyze the effects of historic timber harvest and landslides. Deception Gulch is a water quality limited segment (303d) stream with sediment as the pollutant of concern. Wolman pebble count information was collected for Deception Gulch in 1989, 2002 and 2005. A complete channel survey was done in 2002.<sup>21</sup> The channel type is a B4 (moderate gradient, moderately confined, gravel substrate stream) with a gradient of 3.5 percent. Bank stability was measured at 4.8 and cobble embeddedness was 47 percent. Table 18 shows the Wolman pebble count data for the four years.

<sup>21</sup> Clearwater BioStudies Inc, Canby, Oregon. Habitat Conditions and Salmonid Abundance in Deception Gulch, North Fork Ranger District, Summer 2002. March 2003.

Table 18: Deception Gulch Wolman Pebble Count Data; 1989 To 2005

Year	% Fine Sediment 0-2 mm	% Fine Sediment 0-4mm	D50 in mm	D84 in mm
1989	37	37	15 (Medium Gravel)	78 (Small Cobble)
2002	33	38	28 (Coarse Gravel)	161 (Large Cobble)
2005	23	28	35 (Very Coarse Gravel)	150 (Large Cobble)
2008	40	41	11 (Medium Gravel)	100 (Small Cobble)
Mean	33	36	22 (Coarse Gravel)	122 (Small Cobble)

Figure 16: Deception Gulch Wolman Pebble Count Data; 1989, 2002, 2005 And 2008



# ROAD DECOMMISSIONING PROGRAM

## IMPLEMENTATION OF ROAD DECOMMISSIONING

### GOAL

The goal of road decommissioning on the Clearwater National Forest is to reduce watershed impacts by reclaiming roads that are no longer a necessary part of the Forest's transportation system. The primary objectives are:

- Reduce erosion from road surfaces and slopes and related sedimentation of streams.
- Reduce the risk of mass failures and subsequent impact on streams.
- Restore natural surface and subsurface drainage patterns.
- Restore vegetation and site productivity
- Restore stream channels, at road crossings and where roads run adjacent to channels
- Use road maintenance funds more effectively - concentrate the available funds on roads that are needed for long-term access.
- Protect and restore fish habitat.

### ACCOMPLISHMENTS/FINDINGS

Road decommissioning includes activities that stabilize and restore unneeded roads to a more natural state. In most cases, road decommissioning involves using heavy equipment to decompact road surfaces, remove drainage structures and fill material from streams and draws, recontour through unstable areas, and revegetate.

The Clearwater National Forest and the Nez Perce Tribe have worked together since 1996 to decommission roads on National Forest under a watershed restoration partnership. Over 600 miles of problem roads have been decommissioned since 1996. Approximately half of these have been decommissioned in partnership areas where the Tribe contributes funds and labor directly to the project.

Based on field information about the road's condition, a road to be decommissioned is targeted either for abandonment or some level of decommissioning (previously referred to as obliteration). A road to be abandoned is already stable and is revegetating naturally. No physical work is required for abandonment, just a change in the database to reflect the fact that it no longer will be tracked as a road. However, roads to be decommissioned will require some physical work in addition to the database change. The extent of decommissioning work required is classified in four levels.

- Level 1. Recontouring at the start of the road to restrict vehicle access.
- Level 2. Some work required to address mass failure or erosion risk factors.
- Level 3. Substantial work required along the full length of the road.
- Level 4. Recontouring of most of the road.

Decommissioning roads to Levels 2 through 4 includes several standard approaches to treatment. Treatments along the road prism range from decompaction in areas with stable fill but reduced infiltration and productivity, to strong outlopes or complete recontours in areas requiring fill stabilization. For every road, all culverts and ditches are pulled. Revegetation of treated areas combines seeding with a non-persistent grass mix, scattering duff excavated from natural ground above road cutslope, and transplanting native forbs and shrubs which are growing on-site either adjacent to or on the road surface. Natural mulch consisting of onsite woody debris, logs, and stumps as well as imported weed-free straw mulch (used in areas where natural mulch is scarce) cover most disturbed ground. Treatments along stream crossings require a complete recontour of all fill material with stream channels restored to natural grade and dimensions. Each stream crossing receives the same revegetation prescription as the roadbed with a special emphasis on transplants maintenance.

Roads that are needed for the long-term transportation system but are not being used now (and probably won't be needed for 20 years) are put into "intermittent storage" status. This requires ensuring that the road is stable and will not need to be maintained for the non-use period. Roads put into IS status typically have their culverts and associated fill removed. The road may be outloped and fills in unstable areas may be pulled.

**Table 19: Miles of Road Reconstruction, New Construction, Decommissioning, and Intermittent Storage Since 1987**

<b>Year</b>	<b>Reconstruction</b>	<b>New Construction</b>	<b>Decommissioning</b>	<b>Intermittent Storage</b>
	(Miles)	(Miles)	(Miles)	(Miles)
1987	20.1	18.9	0	0
1988	45.4	49.2	0	0
1989	77.6	34.7	0	0
1990	39.8	31.5	0	0
1991	61.4	36.1	0	0
1992	66.4	37.2	9.5	1.6
1993	45.3	3.8	2.6	1.9
1994	61.6	8.6	1.4	0
1995	108.9	1.5	9	0.6
1996	72	1.8	15	0.3
1997	7.6	1	52	8.2
1998	85.3	1.1	134	8.6
1999	19.8	1	83.5	10.6
2000	33.1	8.6	47.4	4
2001	11.6	0	64	8.3
2002	5.6	0.1	40.4	3
2003	24.4	0	33.3	4.6
2004	13.3	2.1	29.4	8.5
2005	15.1	4.0	21.4	15.0
2006	16.7	4.2	58.1	9.1
2007	17.0	5.9	21.5	3.3
2008	27.5	0	37.9	6.4
<b>Total</b>	<b>875.5</b>	<b>251.3</b>	<b>660.4</b>	<b>94.0</b>

In FY08, 37.9 miles of road were decommissioned at a cost of approximately \$10,000 per mile. This cost includes contract cost and project administration and inspection. In addition, 6.3 miles of road were stored for future use in a hydraulically neutral condition such that the risk to aquatic resources was minimized. The Nez Perce Tribe contributed funding and labor under a watershed restoration partnership for the decommissioning and storage of roads in Lolo Creek and Indian Graves Creek.

## GOAL

The Clearwater National Forest and the Nez Perce Tribe monitor road decommissioning projects in order to track the effectiveness of the road decommissioning program on the Forest. The Nez Perce Tribe and the Forest Service cooperatively monitor road decommissioning projects. The monitoring crew is made up of a crew leader from the Tribe and a crew member from the Forest. Monitoring protocols are designed to answer questions pertinent to decommissioning goals (listed above) and provide feedback to the decommissioning program on treatment effectiveness.

This monitoring plan looks to provide some feedback to the program goals by looking for answers to the following questions:

- Is there surface erosion associated with the decommissioned road segment and how much?
- Are there mass failures present?
- Are natural surface and subsurface drainage patterns restored?
- Is there vegetation coverage? Is there succession to native plants?
- Are stream channels restored to the point that subsequent adjustments are minimal?

## MONITORING ACTION

Field methods include both qualitative assessments and quantitative measurements on selected ¼ mile segments of decommissioned roads (Table 20). Approximately one monitoring segment is set up for every 10 miles of road decommissioned. These segments are established in the year they were decommissioned (year 0). Data is collected along the segments in the first year after decommissioning (year 1), the second year after decommissioning (year 2), the fifth year after decommissioning (year 5), and the tenth year (year 10) after decommissioning. The findings and discussion below apply only to monitoring segments that were visited in 2008 (Table 15) with the exception of mass failures, which are reported annually for all monitoring segments.

Table 20: Monitoring Segments visited in 2008

Date Monitored	Yr of Decom	Monitoring Yr	Drainage	Road	Segment
1-Oct	2008	0	Indian Graves	75741	1
1-Oct	2008	0	Indian Graves	75744	1
Oct	2008	0	Gezel		1
Oct	2008	0	Pete King		1
7-Jul	2007	1	Rock Cr	860526	1
2-Jul	2006	2	Badger	75676	1
9-Jul	2006	2	Spruce	5690	1
9-Jul	2006	2	Spruce	5691	1
29-Jul	2006	2	NF Face	830256	1
29-Jul	2006	2	NF Face	74551	1
8-Jul	2003	5	Badger	5620 T2	1
20-Aug	2003	5	Pete King	75158	1
8-Jul	1998	10	Legendary Bear	563 8/9	1
10-Jul	1998	10	Fishing Cr	5619	1
15-Jul	1998	10	Walde	460	1
16-Jul	1998	10	Walde	75181	1
24-Jul	1998	10	Fuzzy Cr	5220 B	1
28-Jul	1998	10	Salmon Cr	4801	1
15-Sep	1998	10	Orogrande	250 (CM1)	1
17-Sep	1998	10	Sneak Cr	6056	1
18-Sep	1998	10	Washington Cr	6016	1

## ACCOMPLISHMENTS/FINDINGS

1. **Surface Erosion:** Is there surface erosion associated with the decommissioned road segment and how much? Define the feature or treatment associated with the recorded erosion.

Any surface rilling or gullyng or sheet erosion is noted and the dimensions recorded by quantitatively estimating the percent of surface area of a feature is affected by surface erosion. Mass failures less than 10 cubic yards are tracked as surface erosion.

### Findings:

- 55% of segments monitored (10 of 18) exhibited at least one instance of surface erosion. This compares with 54.17% in the previous six years.
- There were 3 sites in year 10 that showed signs of surface erosion, and all were in the SGC's with slopes greater than 20%.
- Two segments (11% of the segments with surface erosion) showed signs of surface erosion of greater than 5% outside of channel areas in the interfluvial zones only. This trend is typical of most years except 2005 when 67% of surface erosion occurred outside the fluvial zones.
- Road 5690 (Spruce yr 2) exhibited surface erosion over 20% of access trail over entire segment due to flatness and, in some places, inslope of trail along with erodible soil type and lack of vegetation. Last year erosion accounted for 80% at this site, so some stabilization is occurring.
- Road 5691 (Spruce Cr yr 2) exhibited surface erosion over 10% of access trail, due to water running from road 5690 directly above.

## Discussion:

This is the first year that we've seen surface erosion associated with roads decommissioned ten or more years ago. Average daily flows in 2008 were 15% to 30% higher than average on most of the watersheds on the Forest. The energy associated with these sustained higher flows appears to be causing widening of steeper stream channels. Future emphasis should be put on reconstructing channel geometry including bankfull width plus banks where appropriate.

We continually find surface erosion associated with our higher elevation (over 5000 foot) sites. This is partly due to slower revegetation where we have shorter, cooler growing seasons and less developed soils. In addition, the Spruce Creek segments lie on glaciated landtypes: 47L91, Glacial Trough Bottoms, and 49L66, Dissected Trough Walls. Both landtypes have very high water tables as evident in the field. Harvest and fire, both of which have occurred in the vicinity of these roads within the past 10 years, exacerbate the problems associated with shallow subsurface water. The roads intercepted the shallow watertable resulting in severe scouring prior to decommissioning.

Road 5690 provides access to Trail 63 to Spruce Creek Lakes. It was outslope and waterbarred and placed in Intermittent Stored condition with a foot trail on it in 2006. The trail and the waterbars continue to intercept ground water causing erosion over much of the disturbed area.

**2. Mass Failures:** Are there any mass failures along the decommissioned road? How large are they (cubic yards)? For monitoring purposes, any slide, slump or debris flow larger than ten cubic yards that initiates on a road after it has been decommissioned is monitored as a mass failure. An attempt is made to identify the cause of the failure, the feature it is associated with, and the likelihood of it continuing or becoming larger. Decommissioned road segments with known mass failures are designated as monitoring segments or noted as sites to visit annually. Not all segments listed in this section are listed in Table 21.

## Findings:

From a total of over 600 miles of road decommissioned on the Clearwater National Forest since 1996, there are 13 known mass failures over 10 cubic yards in size (Table 21).

**Table 21: Mass Failures**

Road	Drainage	District	Year Decom.	Year Noted	Size (CY)	Associated Feature/Treatment
564	Post Office	Powell	2001	2002	27*	Strong outslope on glacial till
729B	N.F. Face	N.F.	2001	2003	12	Stream Grad Channel
4773	Schwartz	Palouse	1995	1999	340	Outslope near top of old landslide
4773	Schwartz	Palouse	1995	1999	370	Cross drain channel, crosses old landslide
6056	Fish Cr	N.F.	1998	1998	12	Top old failure, stream grade channel
4801	Salmon Cr	N.F.	1998	1999	531	Old debris torrent, stream grade channel
5540	Glade Cr	Lochsa	1997	1998	27	Sideslope saturation
5540	Glade Cr	Lochsa	1997	2003	510*	Fill failure into stream
830476	Deception	N.F.	2002	2002	10**	Pre-existing rotational slump approx. 1100 cy
729	Deception	N.F.	1999	2003	550*	Fill failure into intermittent stream
74551	N.F. Face	N.F.	2006	2006	291*	Stream Grade Channel
74551	N.F. Face	N.F.	2006	2006	216**	Pre-existing rotational slump
75675	Badger	Powell	2006	2007	76'	Fill failure onto lower road

Movement subsequent to decommissioning.

\*\* Movement noted in 2005.

- A road fill failure exists at the beginning of a monitoring segment on an abandoned segment of road (Road 5540, Glade Cr).
- A fill failure into an intermittent stream was identified on an un-monitored portion of road 729 (Deception) placed in "intermittent storage" in 2003. The treatment at this site was a slight outslope.

- One growing slump area was noted in 2003 on Road 564 (Post Office) of 26.6 cubic yards associated with unstable glacial deposits.
- Six mass failures are associated with historic or pre-existing landslides.
- New movement associated with a pre-existing rotational slump on a road 830476 segment recounted in 2002 is being tracked as a 10 cubic yard failure. There is also new tension cracking at this site, indicating potential future movement.
- There are two existing failures on Road 4773, Schwartz Creek, (340 cubic yards and 370 cubic yards), both associated with one historic landslide.
- There are two existing failures on Road 74551 (291 cubic yards and 216 cubic yards), one associated with a stream grade channel and one with a rotational slump.
- A fill failure was identified on an unmonitored portion of road 75675 in Badger in 2007. The treatment of the failed portion of road was strong outslope due to steepness of area, and previous fill failure (cutbank at site of failure is 30 feet).
- The only new movement noted new this year is on Road 729, where there was 10 CY of new movement at the top of existing failure.

**Discussion:** Half of the large mass failures are associated with landslides that were evident prior to decommissioning the road and perhaps prior to road construction. However, there were at least three failures (roads 5540 and 729) observed on high risk segments where the treatment was probably too light. All mass wasting is on high risk landtypes. The segment on road 830476 is not mapped as a high risk landtype; however this road crosses a large rotational slump.

Based on these observations, one might suggest that lighter treatments such as abandonment or minor (+10%) outslope are inappropriate treatments for high risk landtypes. Prior to decommissioning a road, we should record the mapped land type and then ground truth. Prescriptions for treatment should account for high risk landtypes, both mapped and observed in the field.

Although average daily and peak flows in 2008 were higher than normal across streams on the Forest, no new mass failures were identified on decommissioned roads and there was relatively little new movement associated with the previously identified failure areas.

**3. Cross Drain Channels (CDC's):** Are natural surface and subsurface drainage patterns restored? Are the CDC's associated with surface water drainage or converted (intercepted) groundwater? Do the CDC's function to restore natural surface and subsurface drainage patterns? How well are they mimicking natural function while minimizing risk?

Cross drain channels promote the drainage of saturated hillsides, seeps, natural swales, subsurface water, and other areas that may accumulate water. When monitoring cross drain channels, we note whether they lie in a natural topographic feature such as a draw or swale, we determine whether they primarily drain surface water or intercepted subsurface water (such as wet ditches) and we note any surface erosion or mass wasting associated with the channel. In addition, we note any other problems observed.

#### **Findings:**

In 2008, out of 23 cross drain channels monitored, the following was found:

- 14 (61%) in natural swales (draining primarily surface groundwater)
- 9 (39%) in seeps (draining primarily converted subsurface groundwater)

The following problems were found associated with cross drain channels:

- Surface Erosion: 5 incidents (22%)

- 4 (17%) CDC's exhibited signs of surface erosion associated with natural swales, due to a longer period of high flows associated with runoff this year. These sites are normally drier than seeps, resulting in less wet site vegetation (moss, sedges) and, thus, higher susceptibility to erosion due to flow.
- 1 (4%) CDC associated with a seep (road 860526) exhibited signs of erosion due to steepness of channel and complete lack of vegetation. There was available vegetation that could have been used for clump plant recruitment.

**Discussion:** Construction of cross drain channels provides a drain for seeps or saturated areas resulting from road construction. In addition, cross drains provide drainage at minor swales and undefined draws. Forest roads can intercept shallow subsurface flow paths, converting groundwater to surface water. True restoration of the natural slope hydrology would necessitate reconstruction of the preexisting subsurface flow paths; however, because of the complexities of flow path development and extensive alteration of the hillside during road construction, it is unlikely that these flow paths could be recreated through a simple recontour or outslope may cause saturation of the reconstructed hill slope resulting in landslides. While, true restoration may not be possible, the most effective treatments should return groundwater exposed as surface flow back to subsurface. The goal is to encourage infiltration of the shallow subsurface water without causing saturation and subsequent landslides.

Brush blankets can be used in cross drain channels to encourage infiltration of water in boggy or saturated areas. The excavator operator uses the bucket and thumb to transplant existing vegetation from the untreated road or adjacent slopes. Transplants are planted in strips across the constructed channel at 4' to 8' intervals from the top to the bottom of the channel. Vegetation slows surface water movement and breaks up the soil serving the dual purpose of filtering suspended sediment and increasing infiltration. The clump plantings in cross drain channels that exhibit surface erosion survived the concentrated overland flow of water (note: photos below).

Clump plantings in CDC's on road 5690 monitoring segment: 2007 (yr 1) on left, same planting in 2008 (yr 2) on right.



We see both mass wasting and surface erosion associated with cross drain channels. The mass failures tend to be associated with saturation, while the surface erosion tends to be associated with concentrated overland flow. Surface erosion in cross drain channels is likely a result of concentrating flow in a feature that never evolved to handle concentrated flow. This year's monitoring results showed a trend similar to the last couple years; the CDC's monitored showed a decrease in surface erosion compared to prior years. 37.4% of sites monitored in previous 5 years have shown signs of erosion compared to 22% from this year exhibiting signs of surface erosion. This reduction corresponds to our use of brush blankets. Revegetation of cross drain channels and reinfiltration of converted subsurface water should continue to be a major emphasis of the road decommissioning program.

**4. Revegetation:** Is there vegetation coverage? Is there succession to native plants? Are we seeing an invasion of weeds on the disturbed ground associated with decommissioned roads?

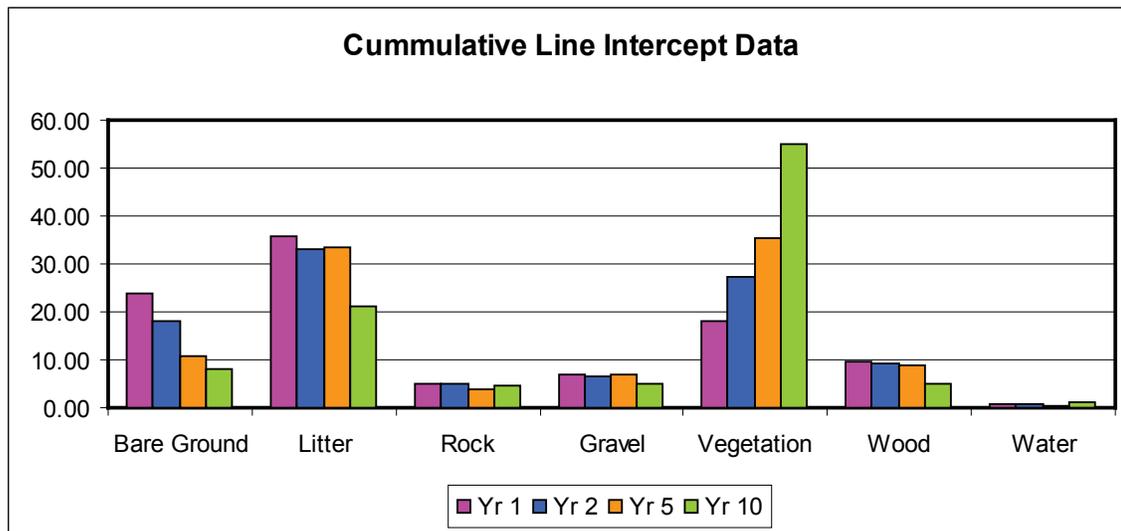
Revegetation goals are twofold: Short-term erosion prevention and long-term conversion to the native vegetation of the slope. The seed mixture used from 1999-2004 was designed to be aggressive in the short term and less persistent over time, promoting native species succession. In 2005, in response to monitoring data that showed that clover and other non-native species were more persistent than anticipated, we switched to a native mix of bluebunch wheatgrass, mountain brome and Idaho fescue plus annual rye. All disturbed areas are seeded for short-term erosion prevention and soil amending properties.

In addition, during road decommissioning, the excavator transplants clumps of native brush and sod during the treatment of the prism. The excavator operator conserves vegetation growing on the untreated sideslopes as well as on the untreated roadbeds. As the excavator operator works out the road, he uses the bucket and thumb to plant the conserved vegetation, including the root mass and surrounding soil, on the treated prism. The excavator operator can also scatter some of the duff layer from the top of the cutslope across the treated road prism. This incorporates organic material on the newly treated slope, recruiting seeds, nutrients, soil microbes and other organisms. In areas of specific need, we plant nursery grown stock, either trees or shrubs. We also sprig wet areas with willow, cottonwood, dogwood, and other species that grow from cuttings.

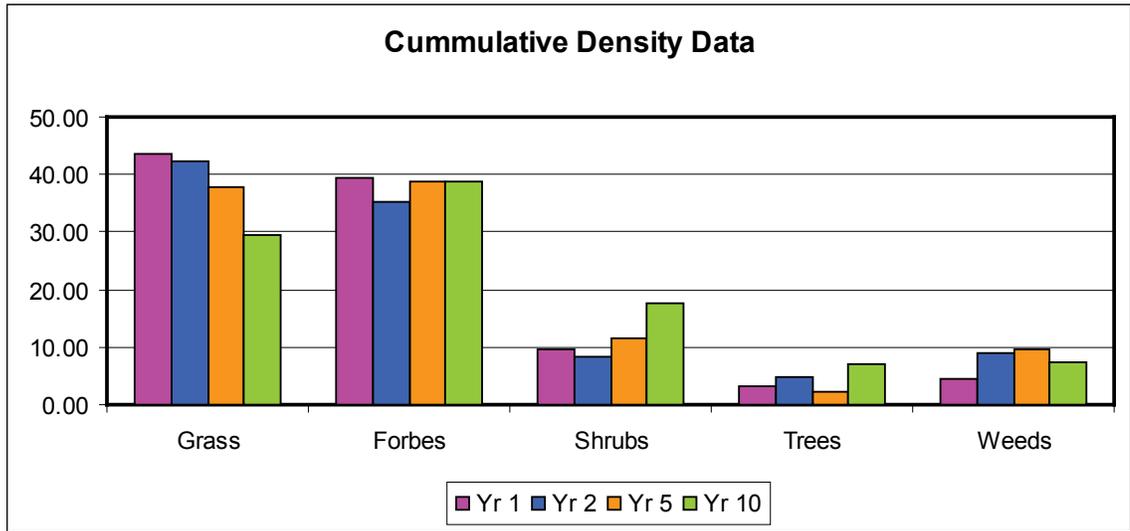
Methods for monitoring vegetation and ground cover are borrowed from ECODATA (USDA Forest Service, 1992). The point cover method is used to measure the amount of ground cover after decommissioning. Ground cover is important in controlling surface erosion. Most ground cover is in the form of mulch or planted vegetation.

**Findings:**

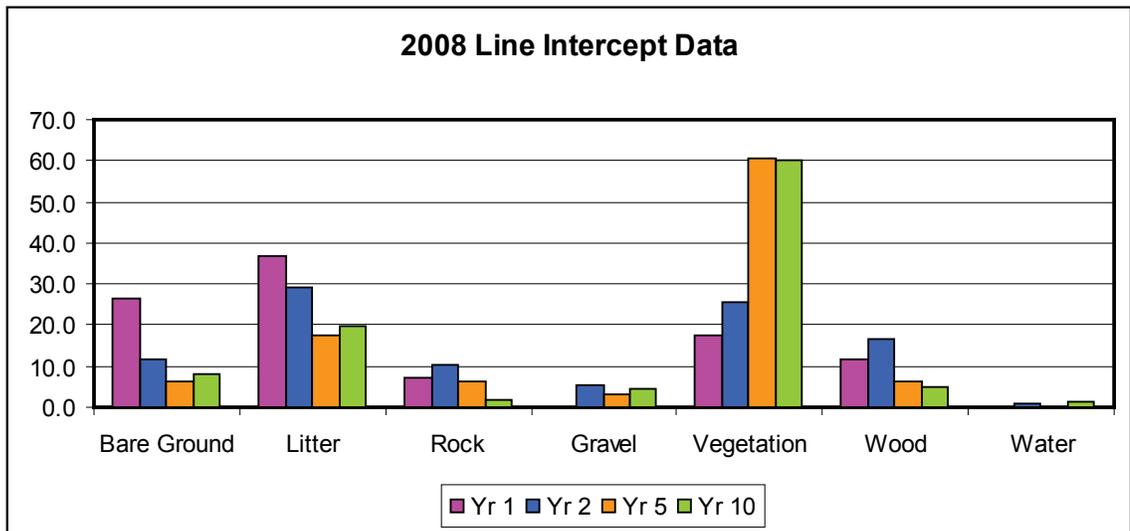
**Figure 17: Changes In Ground Cover Type Over Time On All Decommissioned Roads Monitored To Date. Data Sets Break Down As Follows: Year One Has Data From All 45 Sites With Vegetation Plots, Year Two Has All Data From 43 Sites That Have Past Or Just Reached Monitoring Year Two, Year Five Has 34 Sites, And Year 10 Has 8 Sites**



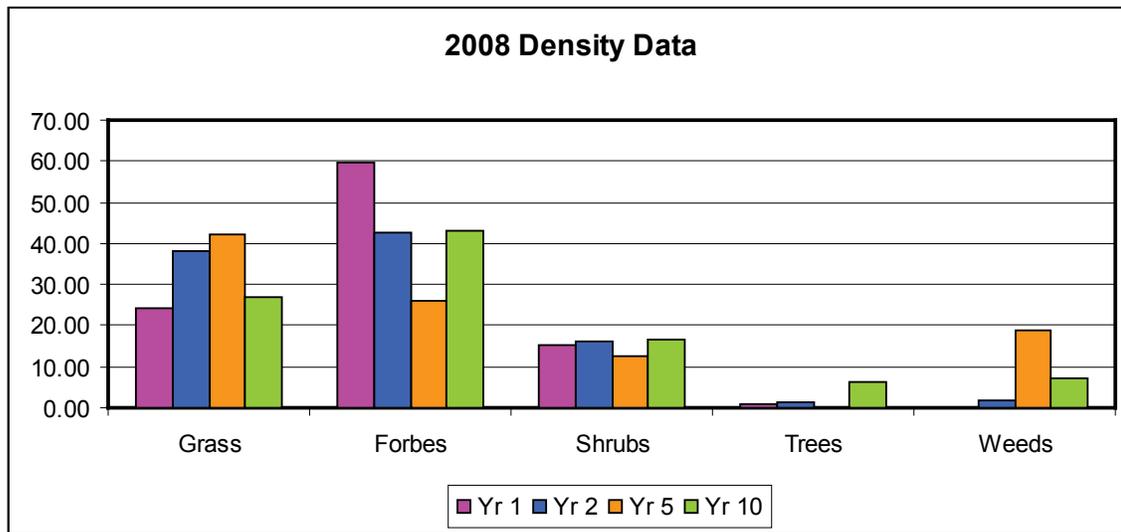
**Figure 18: Breakdown Of Vegetative Cover Type Changes Over Time On All Segments Monitored To Date With Same Data Set Breakdown As Figure 1**



**Figure 19: Change In Ground Cover Type On All Roads Monitored This Year**



**Figure 20: Change In Vegetative Cover Type On All Roads Monitored This Year**



**Discussion:** If we take a look at our cumulative data we see an average increase in vegetation from 18.18% at year 1 to 55.10% at year 10. Likewise on data collected this year we see an increase in vegetation of 17.6% to 60.0% from year 1 to year 10. Now that we are monitoring segments decommissioned 10 year previous, we are able to establish a baseline on what we should expect to see on our roads at each year of the monitoring cycle. If we have a site that does not fit the expected trend, we should take a closer look in order to come to some hypothesis as to the reason for the abnormality such as the aspect, soil type, elevation, or some other factor and possibly change our approach on how we address similar sites in the future.

There appears to be moderate succession to native species, although nonnative grasses are persistent to 10+ years (Figure 20). The grass mix used from 1999 through 2004 and part of 2005 consisted of:

- 15% perennial ryegrass
- 20% annual ryegrass
- 10% hard fescue
- 35% mountain brome
- 15% sheep fescue
- 5% white dutch clover

Much of this mix is non-native but somewhat non-persistent. When we started using this mix in 1999, the native seed mixes were quite expensive (5-10 times the cost of the above mix). However, as demand for the native mixes has increased, supply has increased and the cost has become comparable to the non-native. In 2005, we adjusted our seed mix to:

- 20% annual rye
- 25% Idaho fescue
- 35% mountain brome
- 20% bluebunch wheatgrass

This mix is native except for the annual rye grass, which is often used when a fast establishment is desired, but low long-term persistence. The annual rye grass will provide good ground cover for a year or two and then decrease, hopefully as the native species re-establish themselves. We will be monitoring the success of this new mix in preventing short term erosion and its persistence as compared to the old mix.

**5. Stream Grade Channel:** How much does each channel adjust (degrade/aggrade) over time? Is the size of the bed material increasing (indicating degradation) or decreasing (indicating aggradation) over time?

Stream grade channels are restored live water crossings, usually where a culvert (metal, log, or slash) was removed. Restoration of channels includes: removal of structure, removal of full to grade, recontour of adjacent slopes, installation of channel stabilization structures (weir and bank armor) and Revegetation of the area.

In order to track channel stability and channel adjustment over time, we collect the following information:

- Channel cross-sections
- Longitudinal surveys
- Wolman pebble counts (Wolman, 1954)

#### **Findings:**

In 2008, out of the 16 Steam Grade Channels monitored, the following was found:

- Nearly all channel cross sections show settlement of six to twelve inches over the first winter.
- Minor changes (primarily degradation, less aggradation) occur on nearly every cross section from year to year.
- Changes in cross sections from year 5 to year 10 tend to be more lateral than vertical.
- Longitudinal Surveys indicate some minor changes to the stream channel including small headcuts, establishment of step/pool systems, and minor degradation.
- 4 (25%) channels monitored showed greater than 5% erosion adjacent to stream
- 9 (56%) channels showed no sign of erosion
- 3 (19%) showed less than 5% erosion
- The four channels that showed high erosion rates all had gradients 20%+ and a wetted width of at least 2 feet

**Discussion:** In 2008 we experienced a higher than average water year for a longer period of time (note Figure 21), which seemed to take a toll on Stream Grade Channels that annually pass fair amounts of water. There were four Stream Grade Channels that we monitored this year (three 10 year sites and a 2 year site) that had high gradients, (20% or greater) and at least 2 foot wetted width that all showed very high erosion percentages, from a low of 40% to a high of 95% of the adjacent stream banks. Normally we expect that once a SGC reaches the 5 to 10 year mark that the channel has stabilized itself enough that we are not going to see these percentages of erosion, but with the amount of water passed this year we can see that this is not the case. These high gradient streams tend to be in deeper draws than lower gradient streams and are more difficult to get the channel walls pulled back enough. In the future it is my recommendation that when we encounter a SGC that fits the wetted width, and gradient criteria listed above that we widen the channel bottom to allow the stream more lateral migration, and to pull more material away from the channel to allow for more gentle slopes so that if we do get another long duration, high water year like we had this year we won't be contributing the sediment into the streams that these four sites did this year.

The cross sections, the profiles and the pebble count all indicate that in the first year of these newly constructed channels, we see a flush of fines and small particles from the channel surface. The changes in the aggregated pebble count indicate scouring of silt and sand size particles. We predict that we will see less change as the channel adjusts then stabilizes.

Figure 21: Hydrograph For Lochsa River Flows For 2008

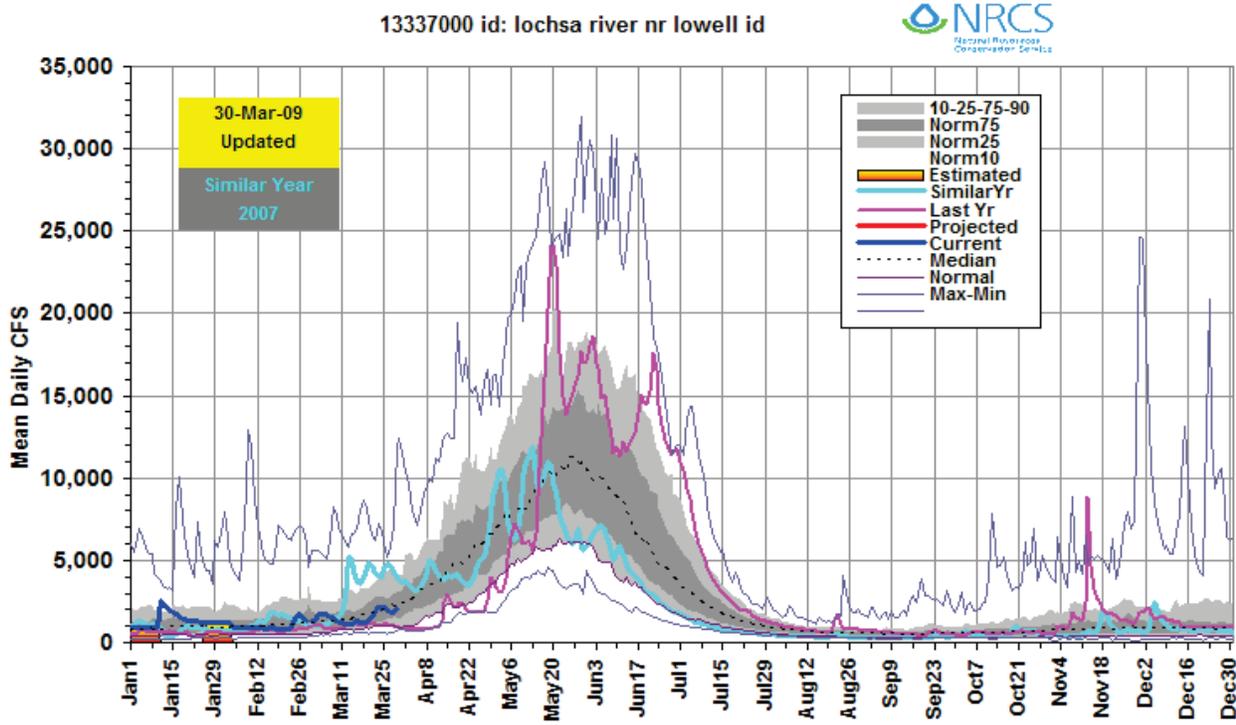


Figure 22: Example Cross Section Road 563 80/90. Note The Lateral Migration Of Thalweg From Year 5 To Year 10

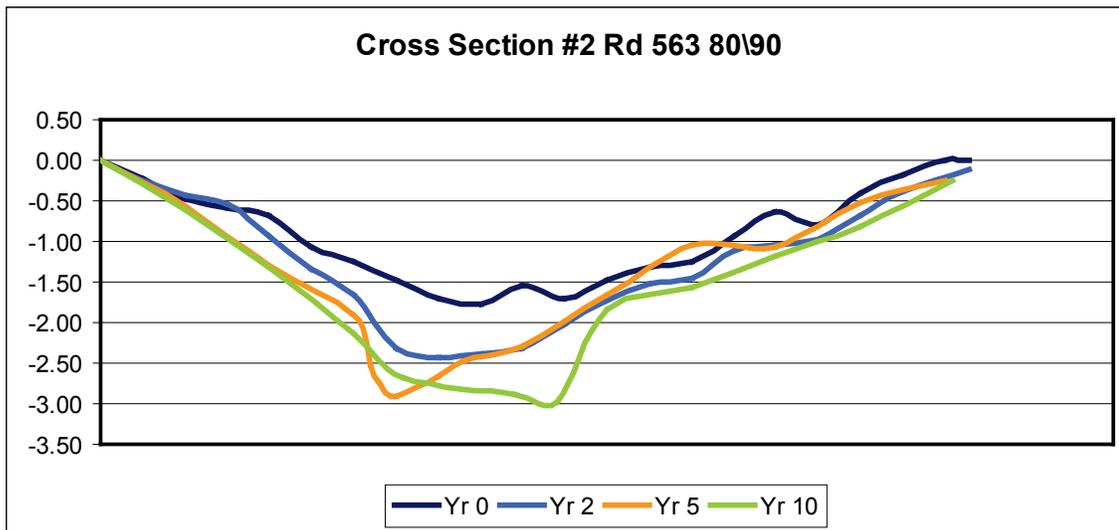
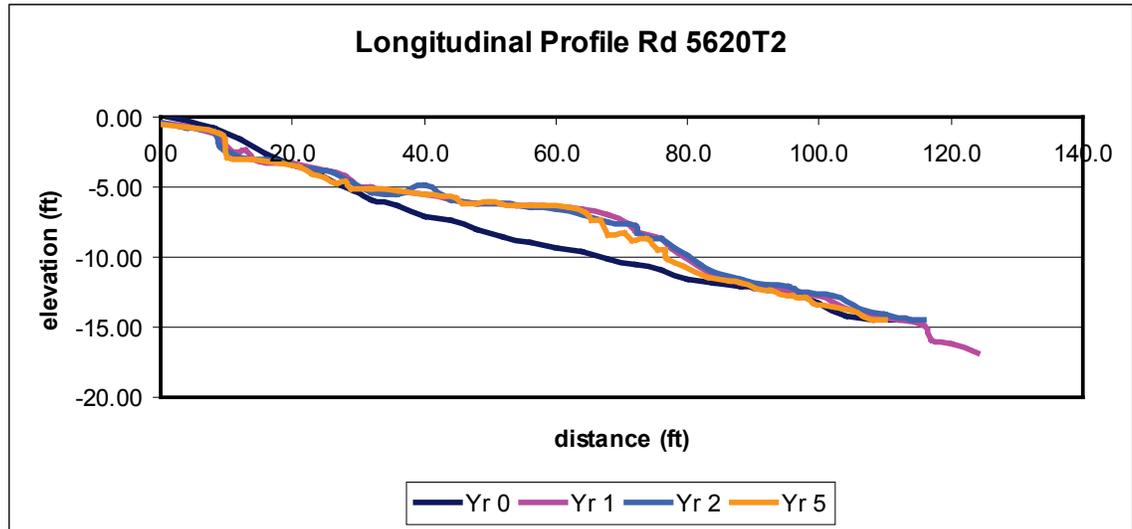


Figure 23: Example Longitudinal Profile Of Stream Grade Channel Road 5620 T2. Note Aggradation Of Fines At Cross Section #2 Due To Log V-Weir Retaining Sediment After Initial Set-Up Year



## SUMMARY

The monitoring program on the Clearwater National Forest is designed primarily as a feedback loop to the road decommissioning program to ensure that the goals of the program are being met. In the future, we will continue to focus emphasis on techniques identified through monitoring as needed and successful.

## ACKNOWLEDGEMENTS

The Nez Perce Tribe and the Clearwater National Forest joined together in a watershed restoration partnership in 1996. The road decommissioning monitoring program is a part of this partnership. The monitoring crew is made up of employees of both the Forest and the Tribe. Since 2006, the Nez Perce Tribe has led the analysis and summary of the data for this report.

# ROADS

## Item No. 13 - Miles of Road Open/Restricted

Frequency of Measurement: Annual

Reporting Period: Five Years

### MONITORING ACTION

The Forest engineer has chosen to adjust the display of the road data to show the current miles of open roads and miles of restricted roads in a different manner than in previous years. The road information is broken down to show the different restriction groups of roads. The mileage in each travel code is shown. A brief description of the travel group appears below the table. This information will help the user picture what roads are open, when they are open and what type of vehicle is allowed. There is no information on snowmobile restrictions included in the table.

### ACCOMPLISHMENTS/FINDINGS

The Clearwater National Forest development road system is made up of roads that vary from narrow single-lane un-surfaced to double-lane paved roads. This system of approximately 4,095 miles provides access to many areas. Road restrictions are a major component in resource protection. Driven by resource needs, including big game habitat needs and water quality, road restrictions are reviewed annually and revised when necessary to meet the current management situation.

Table 21: Summary of Restricted Road Mileage

Restriction Groups Travel Codes	Miles	% of Total Designated Roads
CYA – Closed yearlong to all-wheeled vehicles	999.3	24.6%
OSA – Open seasonally to all-wheeled vehicles	770.7	19.0%
OSS - Open seasonally to small (motorcycle and ATV) but closed yearlong to full-sized vehicles	117.5	2.9%
OYA – Open yearlong to all-wheeled vehicles	1,632.2	40.2%
OYS – Open yearlong to small-wheeled vehicles (motorcycle and ATV)	537.5	13.2%
<b>Total Designated Road Mileage</b>	<b>4,057.2</b>	<b>100.0%</b>

During 2008 no new miles of road were constructed, 27 miles of road were improved, five stream crossings were replaced for aquatic organism passage, 38 miles of road were obliterated, and 994 miles of road received recurrent maintenance.

There has also been some interest in how these roads are distributed across the Forest Landscapes. Therefore, a display of the miles of road per square mile in different Forest Land Management units was created.

Table 22: Road Density Per Square Mile in the Clearwater National Forest's Management Areas

Management Areas		Management Area Size in Square Miles	Road Miles Per Square Mile
8S	Big Game Summer Range where there are high fishery stream values	472.73	0.35
A3	Dispersed Recreation Areas	116.31	0.08
A7	Middle Fork-Lochsa Recreation River Corridor	48.64	0.33
B1	Selway Bitterroot wilderness	409.85	0.00
B2	Recommended Wilderness Areas	312.81	0.04
C1	Big Game Summer Range	73.57	0.01
C3	Big Game Winter Range south aspect	34.94	0.50
C4	Big Game Winter Range north aspect	181.24	1.46
C6	Critical Watersheds with high fishery values	190.99	0.13
E1	Timber producing lands to be managed for healthy timber and optimal potential for timber growth	883.85	3.60
E3	Timber producing land located on steep unstable ground	25.14	0.49
M1	Existing and Proposed Natural Research areas	12.06	0.30
PVT	Private	77.88	2.38
US	Unsuitable Timber Management lands	118.44	0.63
	Forest wide	2958.47	1.39



# SCENIC RESOURCES

## GOAL

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

## STRATEGY

The Forest landscape architect and District personnel will review proposed management activities; provide input when proposed management activities are located in the viewshed of designated visual travel corridors, recreation sites, wild and scenic rivers, high use recreation areas and administrative areas; and recommend actions that will meet Forest Plan scenic integrity objectives (formerly referred to as Visual Quality Objectives). Management activities will be monitored during implementation and at completion for success in meeting scenic integrity objectives (SIOs).

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### Item No. 3 - Visual Quality Objectives

Frequency of Measurement: Annual  
Reporting Period: Five Years

## MONITORING ACTION

The Forest landscape architect, assisted by District personnel reviewed all management activities for their effects on the scenic resource. Activities that were monitored for their effects on the scenic resource were timber harvesting, recreation development, fire and road decommissioning projects. The monitoring process included field observations of selected management activities and an office review of project reports.

## ACCOMPLISHMENTS/FINDINGS

The Forest landscape architect and District personnel provided input to District Rangers by serving on interdisciplinary teams (IDT) for timber harvesting proposals, recreation projects, watershed analysis and prescribed fire proposals. Recommendations were provided for these projects that outlined practices, which would aid the Districts in meeting SIOs on several proposed management actions. These activities will continue to be monitored during the implementation phase of the project. One watershed analysis, the upper Lochsa Corridor plan was completed in FY 2008. During FY 2008 there were four timber sales completed and closed out. These included the Compound Hazard Tree and Feather Creek projects on the Palouse District and the Powerline Salvage and Austin Thinning projects on the Lochsa District.

- Compound Salvage - Several diseased trees were removed from the area around the Palouse Ranger District office. The area was open ponderosa pine and grass so the visual character of the area was not changed.
- Feather Creek - There were two salvage harvest units in this project were not visible from any travel corridor or use area.
- Powerline Salvage - This project removed individual marked trees from under and adjacent to the powerline near Syringa and Lowell, Idaho. While very small openings were created in some area, there was no significant change to the visual character and the project met the SIO of High (VQO of Retention) as viewed from U.S. Highway 12 and the Lochsa Wild and Scenic River.
- Austin Thinning - This project included just one large thinning unit. This project also was not visible from any designated travel corridor or use area.

There were several prescribed fires on the Clearwater National Forest in FY 2008. The burns reduced the brush undergrowth, removed a few trees and darkened the bark on some, but by spring the effects were very minimal and the corridor appears natural, with no long term negative visual effects. Most burn areas were small in size and in areas outside of critical viewing corridors. There was no significant impact on the scenic integrity from any critical viewpoints from these activities.

Another area of concern in protection of the scenic quality of forested landscape is in road and recreation improvements. Currently, the Forest is completing a number of culvert replacement projects all of which were outside critical visual travel corridors this year. With most culvert replacement projects, there is a short-term effect on the visual condition during the period when excavation takes place, but vegetative cover returns within one year and a positive effect on the scenic quality of an area is obvious within five years. There were no major recreation trail or campsite improvement projects during FY 2008. All the completed projects were small replacement projects or repair projects that had no visual impacts on the landscape. One new facility was created during FY 2008, the Camp 60/Sheep Mountain Trailhead was developed at a site that has been used as a major dispersed site for many years. Toilets and signs were added to the site. The site currently has a SIO of Low, which was exceeded by the added improvements. All facilities installed were minor improvements, using naturally colored materials. Overall the improvements will reduce resource damage due to unrestricted use of the site and sanitation issues

Additional information regarding effects on scenery of other FY 2008 management activities is available at the Supervisor's Office.

# WATER QUALITY (FORMERLY “SOIL AND WATER”)

## GOAL

Manage watersheds and soil resources to maintain Forest Plan water quality standards that meet or exceed State and Federal standards. Protect all beneficial uses of water, including fisheries, water-based recreation and public 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 (BMPs) 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.

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### Item No. 8 - Water Quality and Stream Condition for Fisheries and Non-Fisheries Beneficial Uses

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Frequency of Measurement: Annual  
Reporting Period: Annual

## MONITORING ACTION (NON-FISHERIES)

This section deals with water quality and stream conditions for non-fisheries beneficial uses. To read about water quality and stream conditions for fisheries, please refer to the Fisheries section.

The Forest Hydrologist will coordinate with District personnel to establish water quality monitoring stations. These stations will collect data so as to monitor water quality to determine trends or impacts of past and/or current road construction, timber harvesting and mining activities.

## ACCOMPLISHMENTS/FINDINGS

The primary emphasis of Forest water quality monitoring has been to determine the effects of sediment and water yields from timber production and road construction on water quality and fisheries. Baseline monitoring and project water quality monitoring of streams has occurred in the following way. 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 collect suspended sediment samples at predetermined intervals.

Project stations have been located downstream from management activities. Control stations (no activity) generally have been established upstream from activities, in a different but similar watershed, or at the same project station but prior to the activity. Project sampling allows the quantification of site-specific impacts, primarily sediment yield. Data is collected at each project station with automatic water samplers. Parameters measured are stream flow, suspended sediment, turbidity and instantaneous water level. Water level recorders and automatic samplers are normally in operation during times of peak flow, primarily from March through beginning of July.

Table 23 shows the Forest's monitoring network by major drainage basin and watershed. The number of years of record and the type of monitoring station is also presented. Additional water temperature monitoring was done during the summer months at approximately 320 stations. See the Fisheries section for more information on water temperature monitoring.

**Table 23: Water Quality Monitoring Network**

Basin	Watershed - Location	Years Of Monitoring <sup>1</sup>	Data Type
Palouse River (17060108)	Palouse River (Moscow Mountain)	51	SNOTEL, Precipitation (NRCS)
Lochsa River (17060303)	Lochsa River (Near Lowell)	82	Discharge (USGS)
	Pete King Creek (Walde Lookout)	42	Annual Precipitation
	Pete King Creek (Mouth)	32	Discharge, Suspended Sediment
	Canyon Creek (Mouth)	17	Discharge, Suspended Sediment
	Deadman Creek (Mouth)	21	Discharge, Suspended Sediment
	Fish Creek (Mouth)	41	Discharge, Suspended Sediment
	Badger Creek (Mouth)	12	Discharge, Suspended Sediment
	Crooked Fork (Crooked Fork)	43	Snow Course (FS and NRCS)
	Crooked Fork (Lolo Pass)	52	SNOTEL, Precipitation (NRCS)
	White Sand Creek (Savage Pass)	71	SNOTEL, Precipitation (NRCS)
Clearwater River (17060306)	Potlatch River (Sherwin)	51	SNOTEL, Precipitation (NRCS)
	Potlatch River (Near Spalding)	6	Discharge (USGS)
	Orofino Creek (Pierce R.S.)	57	Snow Course (FS and NRCS)
	Orofino Creek (Shanghi Summit)	70	SNOTEL, Precipitation (NRCS)
	Lolo Creek (Mouth)	29	Discharge (USGS)
	Lolo Creek (Hemlock Butte)	48	SNOTEL, Precipitation (NRCS)
	Lolo (Sec 6)	27	Discharge, Suspended Sediment (Bedload through 2007)
Upper North Fork Clearwater River (17060307)	North Fork of the Clearwater River (Aquarius Bridge)	42	Discharge (USGS)
	Quartz Creek (Mouth)	25	Discharge, Suspended Sediment
	Quartz Creek (Indian Henry Ridge)	9	Annual Precipitation
	Cold Springs Creek (Mouth)	19	Discharge, Suspended Sediment
	Cold Springs Creek (Cool Creek)	23	SNOTEL, Precipitation (NRCS)
	Long Creek (Hoodoo Basin) <sup>4</sup>	41	SNOTEL, Precipitation (NRCS)
	Cayuse Creek (Cayuse Landing)	42	Annual Precipitation
	Weitas Creek (Doris Butte) <sup>5</sup>	38	Annual Precipitation
Weitas Creek (Creator Meadows)	45	SNOTEL, Precipitation (NRCS)	
Lower North Fork Clearwater River (17060308)	Beaver Creek (Beaver Divide) <sup>5</sup>	38	Annual Precipitation
	Elk Creek (Elk Butte)	45	SNOTEL, Precipitation (NRCS)
	Elk Creek (Road 1705)	27	Discharge and Suspended Sediment (Bedload through 2007)

<sup>1</sup> Monitoring intensity can vary from several grab samples to automatic samplers that run for five months or more.

<sup>2</sup> Site is located in Montana.

<sup>3</sup> Precipitation gauge will be dropped from monitoring in 2009.

The Forest processed 1,224 suspended sediment samples in 2008. Most of these samples were collected using an automated water sampler and then processed in the laboratory at the Clearwater National Forest Supervisor's Office. Bedload sediment samples have been collected in past years to determine the proportion of sediment moving as suspended and bedload. Relationships between suspended and bedload sediment have been established based on past data. Total sediment load can be determined for the watershed using the suspended sediment measurements and the historic relationships between bedload and suspended. No bedload samples were collected in 2008.

Total estimated annual sediment loads are useful for determining the effects of activities and calibrating watershed models. Stream discharge and suspended sediment data is summarized in Table 24.

Table 20 displays the period of record; mean daily discharge through 2007; mean daily discharge in 2008; mean daily suspended sediment through 2007 and mean daily suspended sediment in 2008. Mean daily discharge is calculated from 12 flow measurements per day and mean daily suspended sediment is a composite of four sediment samples.

**Table 24: Water Quality Monitoring Results**

Station	Period Of Record Used In Analysis	Mean Daily Discharge (Cfs) Through 2007	2008 Mean Daily Discharge (Cfs)	% Over Historic Average	Mean Daily Suspended Sediment (Mg/L) Through 2007	2008 Mean Daily Suspended Sediment (Mg/L)	% Over Historic Average
Pete King Creek (Mouth)	1976-2008	43	34	-21%	17.9	18.6	4%
Canyon Creek (Mouth)	1992-2008	43	49	14%	9.8	19.8	102%
Deadman Creek (Mouth)	1988-2008	41	50	22%	10.9	13.2	21%
FishCreek <sup>1</sup> (Mouth)	1958-1966	217	279	29%	7.81	10	28%
	1976-2008						
Badger Creek (Mouth)	1983-1984	12	12	0%	4.1	19.6	378%
	1988-1989						
	2001-2008						
Lolo Creek (Section 6)	1982-2008	93	116	25%	10.9	11.4	5%
Quartz Creek (Mouth)	1982	147	195	33%	11.8	26.5	125%
	1984-2008						
Cold Springs Creek (Mouth)	1983-1992	34	-- <sup>2</sup>		5.5	7.1	29%
	2000-2008						
Elk Creek (Road 1705)	1982-2008	76	88	16%	9.5	5.3	-44%
Mean of all stations		79	92		9.8	14.6	

<sup>1</sup> Suspended sediment in Fish Creek is representative of a granitic geology watershed with little or no timber harvesting and roads.

<sup>2</sup> Equipment malfunction

Flows in 2008 were from 16% to 33% higher than the historic means with the exception of Badger Creek, which had an average flow year and Pete King Creek, which appears to have had a below average flow. There was a corresponding response in suspended sediment concentrations. Both Fish Creek, which has had very little management activity, and the more heavily managed watersheds exhibited higher than historic mean suspended sediment.

Badger Creek, though it appears to have experienced an average flow year, had very high suspended sediment measurements. Between 2001 and 2006, over 60 miles of road have been decommissioned in the Badger Creek watershed including the removal of over 100 headwater stream channel crossings. An increase in sediment due to this activity was expected but in the long term a decrease in sediment should occur.

In Quartz Creek, this is the fourth year in a row that the average suspended sediment for the year is higher than the average suspended sediment for dates of record. The landslide which occurred in the '96-'97 floods near the mouth created a natural dam which ponded the area above. This may be due to downcutting or adjustment in the 1995 landslide that dammed the creek. The increase of sediment warrants field verification this summer.

Generally, monitoring of suspended sediment has shown a recovery trend forest-wide from past management practices. Suspended sediment concentrations have overall tended to be less in the 2000s and the 1990s than in the 1980s. Much of the recovery is believed to be the result of less land disturbing activities, better application of BMPs, PACFISH and INFISH buffers, and better road location and design.

Turbidity has been monitored at ten to twenty stations before 1991 and after 1997. The results of turbidity monitoring in 2008 are presented in Table 25.

**Table 25: Turbidity Monitoring Results - Period Of Record, Mean Daily Turbidity Through 2007, Maximum Turbidity Period Of Record, Mean Daily Turbidity In 2008 And Maximum Turbidity In 2008**

Station	Period of Record	Mean Daily Turbidity (ntu) Through 2007	Maximum Turbidity (ntu) Period of Record	Mean Daily Turbidity (ntu) 2008	Maximum Turbidity (ntu) 2008
Pete King Creek (Mouth)	1978-1990 1998-2008	3.3	99.9	6.8	45.9
Canyon Creek (Mouth)	1998-2008	2.0	48.5	6.3	39.8
Deadman Creek (Mouth)	1988-1990 1998-2008	2.3	46.9	3.9	35.3
Fish Creek (Mouth)	1998-2008	1.7	26.6	2.7	21.8
Badger Creek (Mouth)	1983-1984 1988-1989 2001-2008	1.3	31.9	4.3	39.8
Lolo Creek (Sec 6)	1985-1988 1990, 1998-2008	2.5	19.0	2.7	10.7
Quartz Creek (Mouth)	1988-1990 1998-2008	2.4	60.5	7.3	45.3
Cold Springs Creek (Mouth)	1983-1986 2000-2008	1.5	35.1	2.9	10.3
Elk Creek (Road 1705)	1982-1987 1990 1998-2008	2.7	87.0	2.8	6.4
Mean of all stations		2.2	--	4.1	--

In Idaho Water Quality and Waste Treatment (IDAPA 58.01.02) turbidity standards have been set as follows:

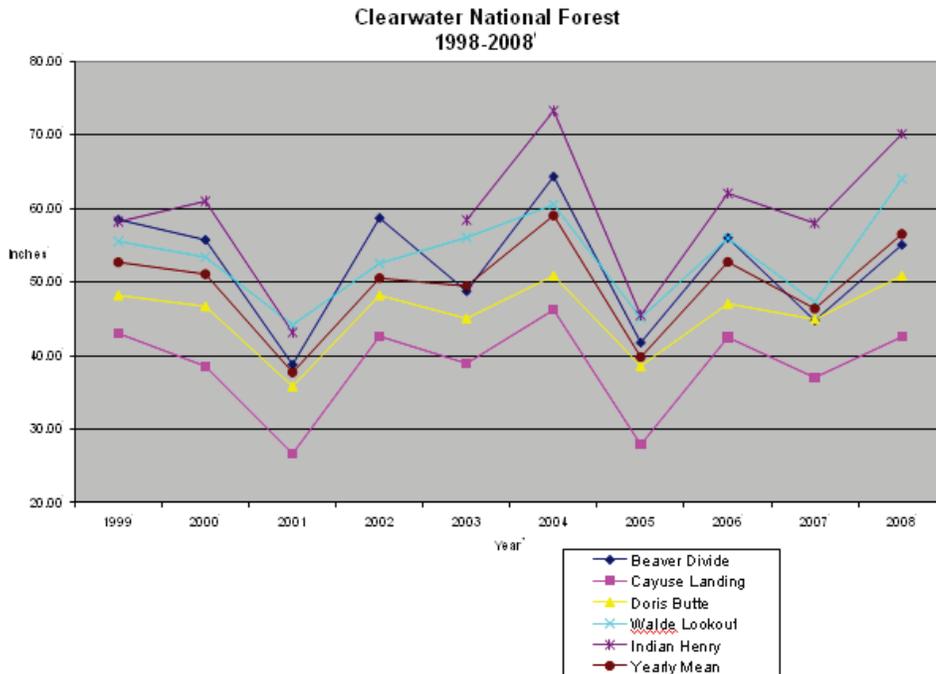
*Turbidity, below any applicable mixing zone set by the Department, shall not exceed background turbidity by more than fifty (50) NTU instantaneously or more than twenty-five (25) NTU for more than ten (10) consecutive days.*

At the nine Clearwater National Forest water quality monitoring stations, 1,213 turbidity samples were collected and analyzed in 2008. Mean daily turbidity was generally higher than the mean daily turbidity for the period of record due to higher than average flows. No samples exceeded the State turbidity criteria. The maximum turbidity measurements in Quartz and Pete King Creek did approach the turbidity threshold.

**2006 Precipitation Measurements:** The Forest has maintained five yearly catch precipitation stations for the purpose of assisting the State Climatologist in developing isohyetal maps (maps of equal rainfall areas). The gages are located at Beaver Divide, Cayuse Landing, Doris Creek, Walde Lookout and Indian Henry Ridge. Precipitation in the 2008 water year (October 1, 2007 - September 30, 2008) was slightly above the mean for the period of record. Records go back to the 1960's in most cases.

Overall, precipitation was above average at all stations. Beaver Divide received 55.05 inches in 2008 (105 percent of the period of record average); Cayuse Landing received 42.55 inches (108 percent of average); Doris Butte received 50.88 inches (1118 percent of average); Walde Lookout received 64.00 inches (131 percent of average); and Indian Henry received 70.10 inches (119 percent of average). The mean precipitation for the five stations in 2007 123 percent of the period of record average. Figure 24 shows precipitation at the five stations over the last ten years.

Figure 24: Clearwater National Forest Precipitation 1998-2008



**Item No. 9 - Best Management Practice (BMP) Applications**

Frequency of Measurement: Annual  
Reporting Period: Five Years

**MONITORING ACTION**

The Forest hydrologist will coordinate with employees, including timber sale administrators, engineering representatives, contracting officer representatives, the Forest Soil Scientist/Ecologist, and fire management officers to monitor all projects for compliance with Best Management Practices (BMPs). BMPs are actions taken to minimize negative, detrimental or undesirable effects that may result from implementation of management activities and are defined in the Idaho Forest Practices Act. The primary objective of BMPs is the maintenance of water quality.

In addition, the Forest Hydrologist will monitor 10 percent of timber sale units and 100 percent of all new permanent road construction for BMP implementation and effectiveness. The sale administrator and road contracting officers are responsible for BMP implementation.

**ACCOMPLISHMENTS/FINDINGS**

The following individuals were involved in the 2008 BMP audits: Pat Murphy - Forest Fisheries Biologist, Anne Connor - Forest Hydrologist, Dan Davis - Forest Wildlife Biologist, Jim Mital - Forest Ecologist. The following timber sales were selected for BMP monitoring:

**Table 26: Timber Sales Selected for BMP Monitoring in 2008**

<b>Sub-Basin</b>	<b>Timber Sale</b>	<b>Activity Harvest Unit/Road</b>	<b>BMP Review Date</b>
Lochsa River (17060303)	Spruce Moose	Road Construction	9/22/2008
Lochsa River (17060303)	Beaver Triangle	(Harvest Units 3, 4, 5, and 10)	9/22/2008
North Fork (17060307)	Trap Point Salvage	Unit 1 Road Maintenance	9/3/2008 10/17/2008
North Fork (17060307)	Independence Thinning	Unit 1 and Road Maintenance	9/3/2008

Table 27 summarizes the 2008 Forest Practices Act Internal Audit and includes the following information, by column:

- FPA# refers to the rule number in Rules Pertaining to the Idaho Forest Practices Act (Title 38, Chapter 13, Idaho Code)<sup>22</sup>;
- Description of the FPA rule;
- Number of BMPs that were observed Forest wide;
- Number of BMP observations that were in compliance with the FPA rules (Implementation);
- Percent of BMP compliance;
- Number of occurrences where sediment or other pollutants were not delivered to a stream or draw (effectiveness); and
- Percent of BMP effectiveness.

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<sup>22</sup> April 1, 2000

**Table 27: 2007 Forest Practices Act Audit Summary**

	Description	# of Inspections	Implemented	% Implemented	Effective	% Effective
030	TIMBER HARVEST	////////	////////	////////	////////	////////
030.03	SOIL PROTECTION	////////	////////	////////	////////	////////
a.	Skidding Erosion	3	3	100	3	100
b.	30% Limitation	3	3	100	3	100
c.1.	Number of Skid Trails	3	3	100	3	100
c.2.	Tractor Size Appropriate	1	1	100	1	100
d.	Cable Yarding	1	1	100	1	100
030.04	LOCATION LANDINGS/SKIDS	////////	////////	////////	////////	////////
a.	Locate Landings and Skid Trails out of SPZ	3	3	100	3	100
b.	Size of Landings	3	3	100	3	100
c.	Landing Fill Stabilization	3	3	100	3	100
030.05	DRAINAGE SYSTEM	////////	////////	////////	////////	////////
a.	Drainage Skid Trails	3	3	100	3	100
b.	Drainage Landings	1	1	100	1	100
030.06	TREATMENT OF WASTE MATERIALS	////////	////////	////////	////////	////////
a.	Slash out of Class I Streams	--	--	--	--	--
b.	Slash out of Class II Streams	3	3	100	3	100
c.1.	Soil out of SPZ	3	3	100	3	100
c.2.	Oil, Fuel out of SPZ	3	3	100	3	100
<b>030.07</b>	<b>STREAM PROTECTION</b>	////////	////////	////////	////////	////////
a.	Lakes - Riparian Management Px	--	--	--	--	--
b.	Skidding, Stream Crossing SPZ	3	3	100	3	100
c.	Skidding in SPZ	3	3	100	3	100
d.	Cable Stream Crossing	--	--	--	--	--
e.1.	Hardwoods, Shrubs, Grasses, Rocks - Shade	3	3	100	3	100
e.2.	Class 1 - 75% Current Shade	--	--	--	--	--
e.3.	Logging of SPZ	3	3	100	3	100
e.4-8.	Large Organic Debris	3	3	100	3	100
f.	Prescribed burns	////////	////////	////////	////////	////////
f.1	Hand Piles	--	--	--	--	--
f.2	Machine Piles	1	1	100	1	100
<b>030.08</b>	<b>MAINTENANCE OF RELATED VALUES</b>	////////	////////	////////	////////	////////
c.	Wet Areas	3	3	100	3	100
<b>040</b>	<b>ROAD CONSTRUCTION AND MAINTENANCE</b>	////////	////////	////////	////////	////////
<b>040.02</b>	<b>SPECIFICATIONS AND PLANS</b>	////////	////////	////////	////////	////////
a.	Minimize Road Construction in SPZ	1	1	100	1	100
b.1.	Roads No Wider Than Necessary	1	1	100	1	100
b.2.	Minimize Cuts and Fills	1	1	100	1	100
c.	Plan for Natural Road Drainage	1	1	100	1	100
d.	Plan for Ditches and Culverts	1	1	100	1	100
e.	Installation of New Culverts	////////	////////	////////	////////	////////
e.1.	Fish Passage	1	1	100	1	100
e.2.	50 year Culvert Design	1	1	100	1	100

	Description	# of Inspections	Implemented	% Implemented	Effective	% Effective
f.	Minimum Stream Crossings	1	1	100	1	100
g.	Avoid Reuse of Roads in SPZ	--	--	--	--	--
<b>040.03</b>	<b>ROAD CONSTRUCTION</b>	////////	////////	////////	////////	////////
a.	Construction Followed Plan	3	3	100	3	100
b.	Debris Cleared From Drainage ways	3	3	100	3	100
c.	Stabilize Exposed Areas	3	3	100	3	100
d.	Compact and Minimize Soft Material in Fills	3	3	100	3	100
e.	Remove Berms on Outsloped Roads	--	--	--	--	--
f.	Quarry Drainage	--	--	--	--	--
g.	Minimize Erosion of Embankments at Culverts	--	--	--	--	--
h.	Wet Weather Delays	--	--	--	--	--
i.	Stabilize Cutslopes	3	3	100	3	100
j.	60% Slope Full Bench	--	--	--	--	--
<b>040.04</b>	<b>ROAD MAINTENANCE</b>	////////	////////	////////	////////	////////
a.	Sidecast Out of Streams	4	3	75	3	75
b.	Stabilize Slumps and Slides	3	3	100	3	100
<b>c.</b>	<b>ACTIVE ROADS</b>	////////	////////	////////	////////	////////
c.1.	Culvert and Ditch Function	4	4	100	3	75
c.2.	Crown and Waterbar	4	4	100	4	100
c.3.	Minimize Road Surface Erosion	4	4	100	3	75
c.4.	Postpone Hauling During Wet Periods	--	--	--	--	--
c.5.	Road Stabilization Material out of Stream	3	3	100	3	100
<b>e.</b>	<b>INACTIVE ROADS</b>	////////	////////	////////	////////	////////
e.1.	Culverts and Ditches Cleaned	--	--	--		
e.2.	Road Closed					
f.	Long Term Inactive Roads	////////	////////	////////	////////	////////
f.1.	Outslope, Waterbar, Seed					
f.2.	Road Closed					
f.3.	Remove or Maintain Drainage					
<b>g.</b>	<b>ABANDON ROADS</b>	////////	////////	////////	////////	////////
g.1	Structures Removed and Gradient Restored	--	--	--	--	--
g.2	De-compact Roads	2	2	100	2	100
g.3	Pull Back Fill Slopes in SPZ	--	--	--	--	--
g.4.	Stabilize Fills	2	2	100	2	100
g.5.	Cross Ditch or Outslope to Eliminate Ditches	--	--	--	--	--
g.6.	Seed, Mulch, Armor Bare Earth	2	2	100	2	100
<b>040.05</b>	<b>WINTER OPERATIONS</b>	////////	////////	////////	////////	////////
a.	Adequate Cross Drainage	--	--	--	--	--
b.	Road Maintenance	--	--	--	--	--
	<b>SUMMARY</b>	<b>103</b>	<b>102</b>	<b>99 %</b>	<b>100</b>	<b>97%</b>

There were 103 BMP observations conducted last year with overall implementation of 99% and effectiveness rates of 97 percent. Though the audits reflect a high rate of compliance with Forest Practices Act and Best Management Practices, ongoing and final maintenance on the haul roads, in particular a stream adjacent road, resulted in sedimentation and an FPA violation that could have been

avoided. Maintenance of such routes should be carefully implemented to avoid sidecast into the stream and to maintain stream buffers wherever possible. In addition, cross-drainage on such roads must continually function to avoid excessive concentration of runoff that can scour and erode and deliver sediment directly to the stream during storms.

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**Item No. 11 - Site Productivity**

Frequency of Measurement: Annual  
Reporting Period: Five Years

### **MONITORING ACTION**

The Forest Soil Scientist will coordinate with District personnel to monitor soil conditions for compliance with Forest Plan and Regional Standards. Monitoring focuses on the impact of management actions on the soil resource. Specifically, the detrimental soil disturbances reviewed include: compaction, displacement, rutting, severe burning, surface erosion, loss of surface organic matter, and soil mass movement. Monitoring from FY 2004-2008 focused on assessing impacts of past management actions in proposed treatment units in new projects. In addition, soil scientists from a Forest Service Enterprise Team were contracted to conduct post-project monitoring reviews on four completed projects. Monitoring was also conducted in three BAER (burned area emergency response) projects for soil impacts caused by wildfires.

### **ACCOMPLISHMENTS/FINDINGS**

**Pre-project Monitoring:** The primary emphasis of site productivity monitoring has been to ensure that site productivity is being maintained by limiting detrimental soil disturbances to less than 15% of activity areas as specified in the Clearwater Forest Plan and the Northern Region Soil Quality Monitoring Supplement ((FSM 2500-99-1). Pre-project soil monitoring was conducted in nine proposed projects from FY 2004-2008: Cherry Dinner, Coralled Bear, Gold Bug, Gezel, Yakus, Johnson Thinning, Austin Thinning, Swede Fuels, and Beaver Triangle

In each project area, on-the-ground field soil reviews were conducted in each proposed treatment unit (with past management actions) to assess the areal extent of detrimental soil disturbances associated with those past actions. Examination of landtype maps, aerial photos, and project maps was used to determine areas of likely soil impacts. The following tables show the monitoring results for each project area:

**Table 28: Areal Extent of Detrimental Soil Impacts within Proposed Cherry Dinner Treatment Units (Palouse District)**

Unit	Previous Treatment Type and Year <sup>1</sup>	Unit Size (acres)	Primary Landtype(s)	% of Unit with Previous Detrimental Soil Impacts
1	none in database	68	11A40, 22A06	0.1%
3	CC, DP-1976, IMP-1977	36	11A40, 22A06	0%
4	none in database	27	22A00, 22A06	0%
5	CC-1935	76	22A00, 22A06	0.4%
6	none in database	10	22A00	1.5%
7	none in database	291	22A06	0.1%
9	CT, GP-1989	94	22A06	0.3%
10	none in database	25	22A06	1.4%
11	none in database	13	22A06	0%
12	none in database	19	22A06	0.5%
13	none in database	13	24S25, 24T25	0.3%
14	Sel,DP-1977	60	22A06, 24T25	3%
15	none in database	28	22A06	2.3%
16	Sel-1976	7	22A06, 31T25	0.6%
17	CC-1976	29	10A40, 22A06, 24T25, 61T20	30%
19	none in database	22	22U25, 24Q20, 31Q10	3.3%
20	none in database	64	22A00, 22U25, 24Q20, 24T25	0.6%
21	none in database	28	24Q20, 24Q25, 22A00	1.4%
22	none in database	108	22S00, 24S20, 24S25, 24S10, 31S10	1.6%
23	none in database	31	11A47, 22A01, 22A06	4.4%
24	none in database	149	10A40, 11A47, 22A07, 24T25, 31T25	1.9%
25	CC-1960, DP-1961, Imp-1962, CC-1981, DP-1982	41	24S25, 31S10, 31S25	3.2%
26	none in database	10	24S25, 31S25	1.9%
27	none in database	28	22A07, 22U25, 24S25	2.3%
28	CC-1965,DP-1966	26	22A07, 22U25, 31T26	1.3%
29	none in database	83	22U25, 24S25, 31S10	0.3%
30	CC-1993, DP-1994	79	22A07, 22U25, 31T26	2.5%
31	CC-1968, DP-1971	43	22A07, 31T26	4.1%
36	ST-1996	91	22A06, 31S20	3.3%
37	none in database	40	11A40, 22A06	2%
39	none in database	154	11A40, 22A06	0.6%
40	none in database	24	22A06	0%
42	none in database	36	22A06	2.3%
45	none in database	43	22A06	0%
47	none in database	68	22A00, 22A06	0%
55	CC,DP-1982	18	31S10, 31U26	5.5%
57	none in database	57	22S00, 22U25, 24S20	0.4%
58	none in database	41	22U25, 24S10, 24S25, 31S10	0.6%
59	none in database	52	24S10, 24S20, 24S25, 31S10	1.5%
61	none in database	7	22A06	0%
63	none in database	13	22A06	0.9%

<sup>1</sup> Previous Treatment and Proposed Activity Type Codes: CC=clearcut harvest, CT=commercial thin, DP=dozer pile and burn, IMP=improvement harvest, GP=grapple pile and burn, Sel=selection harvest, ST=seed tree harvest

**Table 29: Areal Extent of Detrimental Soil Impacts within Proposed Coralled Bear Treatment Units (Palouse District)**

Unit	Previous Treatment Type and Year <sup>1</sup>	Unit Size (acres)	Primary Landtype(s)	% of Unit with Previous Detrimental Soil Impacts
1	SS-1997	86	22A06, 31Q20	2%
2	SS-1997	54	22A06, 24T11, 24T25, 31T10, 31T26	1%
3	none in database	40	22A06	0%
4	SS-1997	73	22A00, 22A06, 24T25	0%
5	none in database	16	22A06	2%
6	SS-1997	40	22A06	1%
7	SS-1997	65	11A40, 22A06	0%
8	none in database	22	11A40, 22A06	0%
9	none in database	56	22A00, 22A06	3%
10	none in database	60	22A06, 24G20, 24S25, 24G20	2%
11	ST-1961, SS-1997	166	22A06, 22U25, 24G20	1%
15	none in database	54	22A06, 22U25	2%
16	none in database	59	22A00, 22A06, 22U25, 22G01	8%
17	none in database	20	11A40, 22A06, 22G01, 22U25	9%
20	SS-1997	73	22A06	18%

<sup>1</sup> Previous Treatment and Proposed Activity Type Codes: SS=salvage sale, ST=seed tree harvest

**Table 30: Areal Extent of Detrimental Soil Impacts within Proposed Gold Bug Treatment Units (Palouse District)**

Unit	Previous Treatment Type and Year <sup>1</sup>	Unit Size (acres)	Primary Landtype(s)	% of Unit with Previous Detrimental Soil Impacts
1	none in database	32	22Q00, 24Q20, 31Q20	3
2	Sel-1965, burnpile=1967	72	31U26, 31Q20	10
3	Sel-1965, burn piles-1968	11	24Q25	3
4	none in database	25	24Q20, 31Q20	1
5	none in database	8	22Q00, 24Q20, 31Q20	2
6	none in database	21	31Q20	2

<sup>1</sup> Previous Treatment and Proposed Activity Type Codes: Sel=selection harvest

**Table 31: Areal Extent of Detrimental Soil Impacts within Proposed Yakus Treatment Units (Lochsa District)**

Unit	Year of past intermediate harvest <sup>1</sup>	Unit Size (acres)	Primary Landtype(s)	% of Unit with Previous Detrimental Soil Impacts
1	1965	113	22A01, 24S10, 31S10	5%
4	1959/1983	33	22A01, 24S10, 31S20	12%
5	1959/2000	22	22A01	13%
6	?	13	22A01, 22S00	1%
7	1973	39	22S00, 24S10, 24S20	2%
8	1997	39	22S00, 24S10	3%
9	1959/1967	13	22S00, 24S10	4%
10	1959	12	24S10	8%
20	Prior to 1973	36	22A01, 24S20	7%
22	1960/1997	42	22A01, 24S10, 24S20	6%
25	1978	37	22A01, 24S10	7%
26	1978	38	22A01, 22S00	16%
27	1978	34	22A01, 22S00	12%

<sup>1</sup> Intermediate harvest includes sanitation salvage, liberation, and improvement cuts.

**Table 32: Areal Extent of Detrimental Soil Impacts within Proposed Gezel Treatment Units (Lochsa District).**

Unit	Unit Size (acres)	Primary Landtype(s)	Percent of Unit with Previous Detrimental Soil Impacts
1	41	24G20, 24G95, 24S20	0.0%
2	17	24G10, 24G20	2.9%
3	12	24G10	5.0%
4	7	24G20, 24S20	7.1%
5	10	24S20	0.0%
6	16	24S20	6.3%
7	16	24S10, 24S20	5.0%
8	23	22S00, 24S10, 24S20	2.2%
9	43	24G20, 31G20	0.0%
10	45	31G20	0.0%
11	18	31G20	1.0%
12	17	24G45, 31G20	2.8%
13	15	22G00, 24G45	14.1%
14	19	24G45, 31G45	5.8%
15	14	24G20, 24G45	4.3%
16	71	22S00, 24S20, 31S20	3.9%
20	31	24G95, 32U60, 32U70	4.0%

**Table 33: Areal Extent of Detrimental Soil Impacts within Proposed Johnson Thinning Treatment Units (Lochsa District).**

Unit	Year of Past Intermediate Harvest	Unit Size (acres)	Primary Landtype(s)	Percent of Unit With Previous Detrimental Soil Impacts
1	1981, 1987	55	22A01, 24A01	3%
2				6%

**Table 34: Areal Extent of Detrimental Soil Impacts within Proposed Austin Thinning Treatment Units (Lochsa District).**

Unit	Unit Size (acres)	Primary Landtype(s)	% of Unit with Previous Detrimental Soil Impacts
1	68	22G00, 24G10, 24G20	3%

**Table 35: Areal Extent of Detrimental Soil Impacts within Proposed Swede Fuels Treatment Units (Lochsa District).**

Unit	Year of Past Harvest <sup>1</sup>	Unit Size (acres)	Percent of Unit with Previous Detrimental Soil Impacts
1	1967, 1986	25	9%
2	1970	18	9%
3	1966	49	11%
4	1973	15	10%
5	1961, 1966, 1973	217	11.4%
6	1952, 1960, 1962, 1966, 1969, 1971, 1973, 1974, 1977	567	12.2%
7	1958	58	18%
8	1965	3	12%
9	1957	24	27%
10	1958	85	14%
11	1951, 1958, 1960, 1972	88	14%
12	1972	24	14%

<sup>1</sup>Past harvest includes sanitation salvage, liberation, improvement cuts, clearcuts, and seedtree cuts.

**Table 36: Areal Extent of Detrimental Soil Impacts within Proposed Beaver Triangle Treatment Units (Powell District)**

Unit	Previous Treatment Type and Year <sup>1</sup>	Unit Size (acres)	Primary Landtype(s)	Percent of Unit with Previous Detrimental Soil Impacts
5	None	6	32L91, 38U80	0%
6	SALV-79	12	32L91	<1%
8A	None	13	33U66, 38U80	0%
8B	SALV-?	29	38U80, 33U66	2%
8C	SWSC-81,SWFC-85	5	38U80	2%
8D	None	10	33U66, 38U80	0%
8E	SWSC-81,SWFC-85	56	33U66, 38U80	1%
9	SCC-73	9	38U80, 32U80	2%
11	SALV-80	21	33U80	2%
12A	SALV-?	36	33U80, 36U92	2%
12B	SALV-?			1%
14	SALV-?	9	33U80	1%
15	SALV-79	25	33U80	2%

<sup>1</sup> Previous Treatment and Proposed Activity Type Codes: CC=clearcut harvest, CT=commercial thin, DP=dozer pile and burn, IMP=improvement harvest, GP=grapple pile and burn, Sel=selection harvest, ST=seed tree harvest

A number of wildfires occurred on the Clearwater National Forest in from 2004-2008. BAER assessments were conducted on three wildfires during that time period to determine the need for rehab treatments. During the BAER surveys, burn severity/intensity impacts to the soil/vegetation were assessed. The following table shows the burn severities/intensities for the fires that BAER assessments were conducted in 2005 (Black Canyon Face) and 2007 (Boundary Junction and Bridge).

**Table 37: Burn Severity/Intensity of Clearwater NF Wildfires as Developed from Satellite Imagery and Field Reviews**

Fire	Burn Severity/Intensity				Area (acres)
	Percent Unburned or Underburned	Percent Low	Percent Moderate	Percent High	
Black Canyon Face (2005)	60.3%	25.2%	8.8%	5.7%	1951
Boundary Junction (2007)	38.2%	37.8%	18.7%	5.4%	5081
Bridge (2007)	39.6%	21.8%	34.5%	4.1%	42,101
<b>Total BAER fires (2005 &amp; 2007)</b>	<b>40.3%</b>	<b>23.6%</b>	<b>31.8%</b>	<b>4.3%</b>	<b>49,133</b>

The relationship between burn severity (soil impacts) and burn intensity (vegetation impacts) is not necessarily a direct one. In areas where there is naturally little forest vegetation (meadows, rocky slopes, talus fields, etc.), the burn impacts picked up by satellite imagery will likely more reflect burn severity. Conversely, in areas with well developed forest canopies, satellite imagery may more accurately depict changes in vegetation caused by the fire. In developing the burn impact (severity/intensity) maps for the 2003 Clearwater NF fires, the classifications developed are interpreted as follows:

- Unburned/underburned: Low severity, low intensity. The fire did not actually burn through this class or burned at such low levels that there were minimal impacts to either the vegetation or the soil.

- Low: Low severity/low to moderate intensity. The fire generally burned in a mosaic pattern throughout these areas with low impacts to the soil and tree mortality was generally less than 25%.
- Moderate: Generally low to moderate soil impacts (severity), moderate to high vegetation impacts (intensity). The fire created a mosaic condition of varying intensity and severity. Tree mortality is moderate to high ranging from 50-100%, averaging 70-80%.
- High: Moderate to high soil impacts (severity), high vegetation impacts (intensity). Soil impacts can be high if sufficient surface fuels are present, but vegetation mortality is usually complete.

# TIMBER

## GOAL

Provide a sustained yield of timber and other forest products to help support the economic structure of local communities and provide regional and national needs. Select on the ground those silvicultural systems that will be the most beneficial to long-term timber production, but modified as necessary to meet other resource and management area direction. Continue to work toward achieving the desired future condition identified in the Forest Plan.

## STRATEGY

The Forest 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 maintain 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. The Forest will make every effort to respond to the needs of the local communities that depend upon the Forest for their economic survival by continuing to pursue and develop new timber sale opportunities.

### TIMBER STAND INVENTORY

The compartment inventory program, initiated in FY85, produces a comprehensive inventory and database representing all timber stands on the Forest. The compartment inventory looks at a geographic unit (average unit size is 10,000 acres) in three phases.

- In the first phase, aerial photographs are examined to identify areas that are relatively alike in size, tree density and species. Phase one has been completed; all stands on the Forest have been mapped and identified for suitability and management area.
- The second phase involves field stand examination of randomly selected stands. Phase two has been completed on approximately 82 percent of the 173 Forest compartments. No additional compartments were field sampled in FY03; however, approximately 23,500 acres of stand exams were accomplished, thereby increasing the number of stands with current field inventories as well as adding to the pool of stand exams from which to match to unsampled stands.
- The third phase involves data compilation, then application of the data to unsampled stands. The introduction in FY93 of the "**Most Similar Neighbor Estimation Procedure**" allowed the Forest to initially complete phase three on most of the timbered strata. This procedure matches sampled stands to unsampled stands using photo-interpreted and physical characteristics of the stands. It results in timely, statistically unbiased estimates of the important characteristics for every stand on the Forest. Testing and validation of this process is complete and a vegetation inventory database has been established to store the generated data.
- Now that the compartment field sampling has been completed and the "**Most Similar Neighbor**" programs are operational and have been updated to draw information out of the FACTS and FS-VEG data bases, the inventory program has shifted to maintenance and updating. The inventory



compilation programs are periodically rerun, and new project stand exams are added, especially for stands that have experienced changes due to harvest, wildfire and insect outbreaks. The photo interpretation data is selectively updated for stands that have notably changed.

## FOREST PRODUCT SALES AND ASQ

In FY08, the Forest offered a variety of products including sawlogs, cedar products, firewood, Christmas trees, boughs, herbs, roots, mushrooms, posts and poles. These products were sold through four larger timber sales, 1200 firewood permits, 452 Christmas tree permits, and 50 miscellaneous collection permits. Two of the timber sales were stewardship sales where a portion of the timber receipts are credited to the TS Purchaser to offset costs of implementing resource management and restoration projects in and near the sale area. The annual volumes offered, sold, harvested, and under contract since FY04 are shown in Table 38 below.

**Table 38: Annual Timber Volume Offered, Sold, Cut, and Under Contract (MMBF)**

	FY04	FY05	FY06	FY07	FY08
Offer	30.0	27.4	1.6	19.8	41.1
Sold	30.0	28.7	10.8	19.8	27.9
Cut	25.4	21.7	19.3	6.0	7.3
Contract	30.8	31.2	31.3	40.8	60.8

The total acres of timber sold by harvest method during the past five years are shown in Table 39 below.

**Table 39: Total Acres of Timber Sold on the Forest by Harvest Method**

	FY04	FY05	FY06	FY07	FY08
Clearcut and Clearcut with Reserves	423	153	0	491	627
Shelterwood and Seed Tree	252	502	0	146	335
Final Removal	168	0	0	0	0
Selection	0	0	0	26	0
Intermediate Harvest	26	79	113	499	480

Table 40 shows the volume of timber sold for the roaded and unroaded components of the Forest.

**Table 40: Roaded and Unroaded Timber Sold**

Year	Roaded Sawtimber	Roaded NIC*	Roaded Total	Unroaded Sawtimber	Unroaded NIC*	Unroaded Total	Forest Total
04	26.9	3.1	30.0	0	0	0	30.0
05	26.2	2.5	28.7	0	0	0	28.7
06	8.1	2.7	10.8	0	0	0	10.8
07	18.0	1.8	19.8	0	0	0	19.8
08	25.3	2.6	27.9	0	0	0	27.9

\*NIC = non-interchangeable component

Table 41 compares the projected annual acres and volumes used to derive the annual ASQ, with the number of actual acres and volumes sold by management area as defined in the Forest Plan.

**Table 41: Comparison of Forest Plan Projections with Annual Acreage of Timber Sales, 1989-2008**

Management Area	Forest Plan Acres	Forest Plan Volume Mmbf	Timber Sale Average Acres	Timber Sale Average Volume Mmbf
Timber Production	3,497	81.2	2,080	33.8
Road/Trail Corridors	125	.8	23	0.4
Big-Game Summer Range	3,099	62.5	23	0.4
Big-Game Winter Range	1,007	23.6	207	4.6
Riparian Areas	3,516	5.2	39	0.7
Middle Fork Clearwater Scenic Corridor	0	0	13	0.4

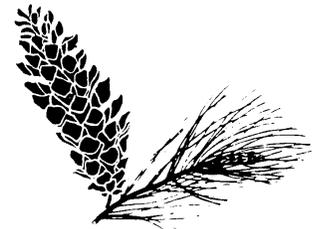
The difference between planned ASQ volume and the average annual volume sold shown in Table 41 is due, in large part, to not harvesting in the unroaded portion of the Forest.

**Item No. 18 - Harvested Land Restocked Within Five Years**

Frequency of Measurement: Annual  
Reporting Period: Five Years

**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 cut on lands suitable for timber production, the cuttings shall be made in such a way as to ensure that the technology and knowledge exist to adequately restock the land within five years after final harvest. Reforestation records pertaining to regeneration harvests that occurred in 2002 were compiled and the required percentages calculated. The data presented in Table 34 are based on the status of regeneration at the end of 2008. The time elapsed since harvest is five years but time elapsed since site preparation and planting is two to five years. Seedtree cuts are not considered final harvests, but because seedtree cutting initiates stand regeneration, the Forest monitors restocking success on the same basis as with the final harvests.

Table 42: 2002 Regeneration Harvests Adequately Restocked in Five Years

	Clearcut	Seedcut	Final	Selection	TOTAL
<b>Number of Stands</b>	22	23	7	0	<b>52</b>
<b>Number of Acres</b>	294	451	172	0	<b>917</b>
<b>Stand Status Certified</b>	11	9	5	0	<b>25</b>
<b>Stand Certified %</b>	50	39	71	0	<b>52</b>
<b>Acres Certified %</b>	48	30	97	0	<b>60</b>
<b>Stand Status Progressing</b>	11	13	2	0	<b>26</b>
<b>Stand Progressing %</b>	50	57	29		<b>50</b>
<b>Stand ac progressing%</b>	52	65	3	0	<b>49</b>

Of the 48 stands that received regeneration harvesting in 2002, site preparation and subsequent planting occurred from 2004 to 2007 which delays reforestation examination for certification by two to five years. There is only one stand, 19 acres, that was planted in May 2008 was determined as a failure due to animal damage and is scheduled to be replanted in the spring of 2009.

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**Item No. 19 - Unsuitable Timberlands Examined to Determine if They Have Become Suitable**

Frequency of Measurement: Annual  
Reporting Period: Ten Years

**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**

In 2008, validation of suitability occurred during one NFMA project (Upper Lochsa Corridor) and three NEPA projects (Robo Elk, Coralled Bear, Yakus). No changes in suitability occurred.

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**Item No. 20 - Validate Maximum Size Limits for Harvest Areas**

Frequency of Measurement: Annual  
Reporting Period: Annual

**MONITORING ACTION**

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

## ACCOMPLISHMENTS/FINDINGS

The maximum size of harvest openings created by even-aged regeneration harvesting (a method of harvest that results in a regenerated stand of similar age) should normally be less than 40 acres. Harvest opening size may exceed 40 acres when certain exceptional conditions apply such as insect outbreaks that threaten surrounding stands, excessive blowdown, final removal of shelterwood trees in order to protect established regeneration in existing shelterwood and seedtree areas and with Regional Forester approval.

Tables 43 and 44 show the acres reported as accomplished, which means the timber sale sold but the units haven't necessarily been harvested, in the stand database for fiscal year (FY) 2008 by district, type and size.

Table 43: Even-aged Regeneration Harvests Accomplished by Harvest Type and Size Category

District	Clearcut & Clearcut with Reserves		Seedtree & Shelterwood		Final Removal	
	#Stands/Total Acres <40 Acres	# Stands/Total Acres > 40 Acres	#Stands/Total Acres < 40 Acres	# Stands/Total Acres > 40 Acres	# Stands/Total Acres < 40 Acres	# Stands/Total Acres > 40 Acres
Pierce	16/ 318 ac	0	0	0	0	0
Palouse	10/ 178 ac	1/ 92 ac	7/ 98 ac	4/ 269 ac	0	0
North Fork	0	0	0	0	0	0
Lochsa	21/ 312 ac	0	5/ 93 ac	0	0	0
Powell	7/ 97 ac	0	0	0	0	0
<b>TOTAL</b>	<b>54/ 905 ac</b>	<b>1/ 92 ac</b>	<b>12/191 ac</b>	<b>4/ 269 ac</b>	<b>0</b>	<b>0</b>
Average Size	17 Acres	92 Acres	16 Acres	67 Acres	0 Acres	0 Acres

In addition to regeneration harvest units, selection or intermediate harvest units such as commercial thin or improvement cuts were accomplished in 2008.

Table 44: Selection and Intermediate Harvests Accomplished by Size Category

District	Selecion/Intermediate Harvest # Stands/Total Acres < 40 Acres	Selection/Intermediate Harvest # Stands/Total Acres > 40 Acres	Total
Pierce	6 / 168 ac	1 / 103 ac	7 / 271 ac
Palouse	21 / 399 ac	7 / 549 ac	28 / 948 ac
Lochsa	2 / 40 ac	0	2 / 40 ac
<b>TOTAL</b>	<b>29 / 647</b>	<b>8 / 652</b>	<b>37 / 1259 ac</b>
Average Size	22 acres	81 acres	

Tables 45 and 46 show the acres reported as completed (last log has left the unit) in the stand database for fiscal year (FY) 2008 by district, type and size.

**Table 45: Even-aged Regeneration Harvests Completed by Harvest Type and Size Category**

District	Clearcut & Clearcut with Reserves		Seedtree & Shelterwood		Final Removal	
	#Stands/Total Acres <40 Acres	# Stands/Total Acres > 40 Acres	#Stands/Total Acres < 40 Acres	# Stands/Total Acres > 40 Acres	# Stands/ Total Acres < 40 Acres	# Stands/ Total Acres > 40 Acres
Pierce	3/ 27 ac	0	1/ 5 ac	0	0	0
Palouse	10/ 178 ac	0	6/ 78 ac	1/ 45 ac	0	0
North Fork	2/ 15 ac	1/ 83 ac	0	0	0	0
Lochsa	0	0	0	0	0	0
Powell	0	0	7/ 97 ac	0	0	0
<b>TOTAL</b>	<b>15 / 220 ac</b>	<b>1/ 83 ac</b>	<b>14 / 180 ac</b>	<b>1 / 45 ac</b>	<b>0</b>	<b>0</b>
Average Size	15 Acres	83 Acres	13 Acres	45 Acres	0 Acres	0 Acres

In addition to regeneration harvest units, selection or intermediate harvest units such as commercial thin or improvement cuts were completed in 2008.

**Table 46: Selection and Intermediate Harvests Completed by Size Category**

District	Selecrion/Intermediate Harvest # Stands/Total Acres < 40 Acres	Selection/Intermediate Harvest # Stands/Total Acres > 40 Acres	Total
Palouse	19 / 328 ac	5 / 429 ac	24 / 757 ac
North Fork	3 / 28 ac	1 / 41 ac	4 / 69 ac
TOTAL	22 / 356 ac	6 / 470 ac	28 / 826 ac.
Average Size	16 ac	78 ac	30 ac.

All units over the 40 acre limitation for even-aged regeneration were approved by the Regional Forester.

The type and amount of silvicultural prescriptions/systems written and implemented on the Clearwater NF shows a wide diversity. Almost as many acres of intermediate/selection harvest (1,259 ac) were accomplished as even-age regeneration harvest (1,457 ac). Over twice as many intermediate harvest acres were completed than even-age regeneration. This is because we are able to commercially thin or improve those stands that were even-age regenerated in the 1950's and 1960's or older stands where there is a need to manipulate stand density and species composition towards desired conditions.

For evenage harvest, stand or patch size still trends to less than 40 acres which doesn't mimic fire disturbance patch. Patch size in the intermediate treatments accomplished this year is about equal acreage which helps meet the objective to mimic fire disturbance regimes by increasing stand or patch size.

**Item No. 21 - Insect and Disease Status as a Result of Activities**

Frequency of Measurement: Annual  
Reporting Period: Five Years

**MONITORING ACTION**

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

**ACCOMPLISHMENTS/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 mapped and summarized. Many types of forest disease mortality, however, are not apparent from the aerial surveys and are not recorded. Because of this, reported losses from disease are significantly underestimated.

Regular aerial detection surveys were conducted on the Forest in FY 2008. Mapping of current tree mortality and damage occurred on all ranger districts exclusive of the Selway-Bitterroot Wilderness. Table 47 shows a comparison of mortality recorded in 2008 and 2007.

**Table 47: Mortality Caused By Insects, Pathogens And Disturbance**

<b>Insect/Pathogen/Disturbance</b>	<b>2008 acres</b>	<b>2008 Number of Trees</b>	<b>2007 acres</b>
Western Pine beetle	1,958	49	166
Mountain Pine beetle	135,208	969	32,214
Douglas-fir beetle	4,640	377	833
Spruce beetle			6
Western balsam bark beetle	810	85	238
Pine engraver			43
Fir engraver	7,659	167	4,365
Defoliators			528
Western spruce budworm			399
Balsam woolly adelgid	40,370	116	4,928
Larch needle cast			349
Diplodia blight			457
White pine blister rust	1,948	45	1,419
Wildfire			13,748
Flooding/high water			27
Dieback			4
Winter Damage	39,899	273	
Aspen decline	773	7	
<b>Total</b>	<b>192,593</b>	<b>2088</b>	<b>59,723</b>

As in the past five to ten years of monitoring, drought and competition between trees for moisture and nutrients that are overly dense continues to result in high level of insects and disease. Mountain pine beetle epidemics have been recorded from British Columbia to the Southwest and is evident on the Clearwater NF, especially in the 1910 fire, lodgepole pine dominated landscapes. Downed, woody material is anticipated to continue to accumulate as dead trees fall. Wildland fire use and prescribed burning are the primary tools available as these lands are mainly allocated to roadless and wilderness.

# TRAILS

## GOAL

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

## STRATEGY

- Public safety, use and resource considerations will be used to set trail work priorities.
- Identify relocation and construction needs,
- Manage an effective trail maintenance program.
- Maintain safe bridges.
- Manage an effective trail construction/reconstruction program.

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### Item No. 16 - Trail Management

Frequency of Measurement: Annual  
Reporting Period: Five Years

## MONITORING ACTION

The Forest trails coordinator will prepare a report annually that focuses on the status of the trail system, trail bridges, and the trail construction and reconstruction program. Reports from the INFRASTRUCTURE database will be reviewed to ensure this information is current.

## ACCOMPLISHMENTS/FINDINGS

### TRAIL MAINTENANCE

Approximately 350 miles of snow trails are maintained annually. Three hundred of these miles are groomed for snowmobiles in Clearwater County using state of Idaho snowmobile funds. Two hundred of these miles are on National Forest lands.

The table below shows annual accomplishments by maintenance level for the Forest's summer trail system.

- Level I: minimum clearing, minimum drainage work and no tread work
- Level II: brushing with some structure and tread work
- Level III: heavy clearing, tread repair, and construction of drainage structures

**Table 48: Miles of Trail Maintenance Accomplished\***

	2004		2005		2006		2007		2008	
	Motorized	No Motor	Motorized	No Motor	Motorized	No Motor	Motorized	No Motor	Motorized	No Motor
<b>Level I</b>	<b>1025.08</b>		<b>851</b>		<b>651</b>		<b>822</b>		<b>927</b>	
	591.67	433.41	468	383	345	306	500	322	658	269
<b>Level II</b>	<b>45.10</b>		<b>58</b>		<b>42</b>		<b>40</b>		<b>69</b>	
	20.8	24.3	27	31	17	25	21	19	58	11
<b>Level III</b>	<b>82.87</b>		<b>24</b>		<b>38</b>		<b>26</b>		<b>70</b>	
	51.76	51.76	9	15	20	18	11	15	62	8
Total Maintained	1153.05		933		731		888		1066	
	664.23	488.82	504	429	382	349	532	356	778	288

\*Wilderness trail accomplishments are located in the Wilderness section of the Monitoring Report.

**Table 49: Trail Maintenance**

Trail Maintenance Labor Type	2004	2005	2006	2007	2008
Force Account Maintenance	343	220	170	130	98
Volunteer Maintenance	230	394	240	336	503
Contract Maintenance	319	319	321	422	465

## TRAIL RECONSTRUCTION

Reconstruction work was completed on 4 trail projects that were started in 2006 - Wind Lakes, Cliff Creek, Camp 60/Sheep Mountain OHV and Pedro Ridge. The Cliff Creek project was essentially completed in 2006, the work in 2007 included touchup brushing, drainage work and rehabilitation of 2 old trails in the area. This work was completed by a Student Conservation Association crew. Wind Lakes and Pedro Ridge trail reconstruction projects were completed by Forest Service crews. The Camp 60/Sheep Mountain work was by a combination prison crew labor, contract and State trail cat.

**Table 50: 2007 Trail Reconstruction Program**

Projects Completed	Trail No.	Miles
Wind Lakes	24	2.5
Cliff Creek	226	0.3
Camp 60/Sheep Mountain OHV	Multi	17.0
Pedro Ridge	917	0.2
Deferred Maintenance	Various	0.2
<b>Total Trail Reconstruction</b>		<b>20.2</b>

The Eagle Mountain (Roundtop) project was scheduled to be contracted, but was not due to funds needed for fire transfer. The Forest hopes to recover this funding and complete the project in 2009. Reconstruction work was completed on 2 trail and 1 trail bridge projects: Lochsa Peak, Palouse OHV System II and the Colt Killed Bridge. Work was also continued on the Camp 60/Sheep Mountain OHV system. The Lochsa Peak project was completed, with the exception of approximately .4 miles by a Student Conservation Association crew. It is expected that in 2009 a conservation crew will complete the

reconstruction of this project. An excavator contract was used to complete culvert work on the Camp 60/Sheep Mountain OHV system.

**Table 51: 2008 Trail Reconstruction Program**

<b>Projects Completed</b>	<b>Trail No.</b>	<b>Miles</b>
Lochsa Peak	220	2.0
Palouse OHV System	Multi	19.0
Colt Killed Bridge		0.1
Deferred Maintenance	Various	1.0
<b>Total Trail Reconstruction</b>		<b>20.2</b>

# 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.

## MONITORING ACTION

- Monitor ongoing projects for adherence to established protection measures.
- Manage existing scenic easements to standards defined in the Forest Plan.
- Improve access to rivers, facilities along their banks, and availability of interpretive information.
- Work with river floaters and Special Use Permittees to insure that the best available river experience is preserved.

## ACCOMPLISHMENTS/FINDINGS

### SCENIC EASEMENTS

The Clearwater and Nez Perce National Forests continue to share the Wild and Scenic Rivers Administrator position. This position provides scenic easement administration services to both forests for easements along the Lochsa, Middle Fork Clearwater, Selway and Main Salmon Rivers.

The scenic easement review board evaluated a variety of landowner proposals during monthly meetings in FY05 and 06. An example of project types before the board included: timber harvest, remodeling and additions to existing homes, new home construction, road construction, bare land development, barn, and shop proposals.

Several Forest Service projects occurring in the Wild and Scenic River corridor were also evaluated including trailhead reconstruction and interpretive sign installation. All Lochsa Ranger District projects were in compliance with the River Plan. Suggestions were provided to address other issues such as safety.

The Forest Service has entered an era in which the challenge is to maintain the character of the landscape and river corridor while working with landowners having different desires, often more development oriented, than those traditionally found in the river corridor. New property owners did not directly benefit from the compensation for acquisition of the scenic easements and likely paid an increased value for their properties because of the protections the easements provide. It is sometimes difficult to gain voluntary compliance.

In FY06 the Clearwater National Forest filed suit against two easement landowners for non-compliance with their scenic easements. These cases are pending judicial review.

### RIVER ADMINISTRATION

Five outfitters continue to operate on the Lochsa River under special use permit. Four outfitters operate on the Middle Fork Clearwater River under special use permit. The Clearwater National Forests cooperated

with the Bureau of Land Management (Cottonwood Field Office) in sharing a river ranger for the Lochsa patrol season.

Outfitted fishing on the Lochsa, Middle Fork and North Fork Clearwater Rivers is an ongoing challenge. The Forest completed an Outfitted Fishing Needs Analysis in FY05.

Issues, such as highway safety and congestion continue to raise hard questions for management. The Forest Service and ITD continue to meet semi-annually to coordinate projects. The agencies are developing an MOU to formalize the working relationship.

A diesel spill occurred on US Highway 12 at mile post 132 in January 2005 which required removal of contaminated material from beneath the roadway and temporary closure of the west-bound lane. No diesel reached the river with this incident.



# 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.

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### Item No. 5 - Wilderness

Frequency of Measurement: Annual  
Reporting Period: Annual

## MONITORING ACTION

Note changes occurring within existing and potential wilderness areas, analyze trends, and determine if they are affecting the wilderness character of the lands. Recommend management practices to correct adverse changes.

## ACCOMPLISHMENTS/FINDINGS

The following report is a summary of the Clearwater National Forest's findings located in the Selway-Bitterroot Wilderness (SBW) "State of the Wilderness Report" (SOW). The full SOW reports can be obtained from the Clearwater National Forest web site.

## MONITORING USE IMPACTS

The Selway Bitterroot Wilderness spans the border of north central Idaho and western Montana and is one of the wildernesses established with the 1964 Wilderness Act. Its' 1.3 million acres lie within four National Forests.

Based on Levels of Acceptable Change (LAC) monitoring and field inventory, the following identifies areas where Forest Plan standards are not being met. These are identified by Opportunity Class Areas. Opportunity Classes are used in the Forest Plan to delineate areas with different management goals. In general, Opportunity Class I provides the most primitive visitor experience with the least social encounters while Opportunity Class IV provides the least primitive visitor experience with the most social encounters.

Both site and social indicators are monitored by wilderness rangers during their time in the field. Site indicators are measured at each campsite a minimum of once every five years. Each year, wilderness rangers visit a percentage of campsites and conduct complete campsite inventories. They also visit and naturalize a number of sites in addition to those officially inventoried. Rangers monitored 93 campsites in 2006, 55 campsites in 2007, and 82 campsites in 2008.

### Opportunity Class I - One site per square mile; one light site

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### **Crags Lakes**

The Crags Lakes area includes Old Man, Elizabeth, Kettle, Dishpan, Lloyd and Florence lakes, an area encompassing approximately 5 square miles. Sites at Florence Lake are monitored each year in coordination with Idaho Fish and Game. Twenty-two campsites are on record for the area. Twelve of the sites were monitored in 2007. Of these sites, nine were rated as light, two moderate and one site was fully recovered. Overall site ratings remained consistent and out of standard. Only the sites at Florence Lake were monitored in 2008. Of these sites, one was rated as light and nine were rated as not a site.

### **Colt Lake Basin**

This area was last monitored in 2005. The area has historically shown two sites with a light rating within the roving square mile, and appears to be receiving use.

### **Opportunity Class II - Two sites per square mile; one light, one moderate site**

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### **White Sand Lake**

This area was last monitored in 2006. Four campsites are on record for the area. Campsite ratings include three moderate and one heavy rating. The area has been receiving use and impacts have increased somewhat over the last few years.

### **Army Mule/Warm Springs Junction**

This area was last monitored in 2006. There are four campsites on record for the area, one in every rating category from light to extreme.

### **California Lake**

This area was last monitored in 2006. Field data has shown the area as being out of standard with one moderate and two light sites. Impacts have remained the same over the last 5 year period.

### **Opportunity Class III - Three sites per square mile; two light, one moderate site**

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### **Wind Lakes**

There are eleven campsites on record in the immediate Wind Lakes area, which encompasses approximately one square mile. These sites were monitored twice in 2007 in accordance with the monitoring plan for the Wind Lakes Trails Environmental Assessment. The Decision Notice for the Wind Lakes Trails Environmental Assessment was released in September 2004. All associated trail work was completed in 2007. Campsite ratings included five light, two moderate, three heavy and one extreme rating. Restoration efforts were initiated in 2007 to reduce impacts at the two sites with the most severe resource damage.

Monitoring was continued in 2008. Campsite ratings included one six not a site, one light, three moderate and one heavy rating.

## Seven Lakes

Forest Service employees and volunteers began restoration work in the area during the summer of 1992. Additional work continued during succeeding years to bring the area nearer to the desired future condition identified for Opportunity Class III. The area will continue to be monitored to measure results and identify trends. Future management of the area will be based on effectiveness of restoration and use trends.

The original campsite designation at Seven Lakes was reviewed in 2004 with Dave Spildie from the Aldo Leopold Wilderness Research Institute (ALWRI). Dave concluded that the Seven Lakes Restoration Plan provided a unique opportunity to research the effectiveness of a confinement strategy to reduce pack stock impacts. The Forest order remains in effect until it is revoked or rescinded.

There are a total of twenty-nine campsites on record for the area, which encompasses approximately 4 square miles. Campsite impact ratings include thirteen light, twelve moderate and four heavy ratings. Five of the twenty-nine sites were monitored in 2007. Three of the sites monitored remained the same (2 light, 1 moderate) as when previously monitored, one moderate site increased to a heavy rating and another moderate site decreased to a light rating. Twenty-two additional sites were monitored in 2008. Of the sites monitored, two could not be found, ten were rated as not a site, two as light, four as moderate, three as heavy and one as extreme.

## Big Sand Lake

This area was last monitored in 2003. There are three campsites on record for the area, consisting of one moderate and two extreme ratings. These were monitored again in 2008. Monitoring revealed one site rating as not a site, one heavy and one extreme.

## Cedar and Moose Junction

Two campsites are on record for the area. One site was monitored in 2004 and one in 2006, and classified as light and heavy respectively.

## Junction Trail 211/644

This area was last monitored in 2006. There are two campsites on record, each with a heavy rating.

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## Opportunity Class IV - Four sites per square mile; one heavy or extreme, two moderate site

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## Fish Lake

There are six campsites on record for the area. Campsite ratings include three moderate, one heavy and two extreme ratings. Of the six sites, one was monitored in 2007, two in 2006, one in 2004, and two in 2003. Two of the sites were again monitored in 2008. One site received a rating of not a site and one received a light rating.

Volunteers obtained airstrip use data from 2002-2008.

## Stanley Hot Springs/Huckleberry Flats

These two areas are within the same roving square mile and are monitored together. There are sixteen campsites on record for Stanley Hot Springs and an additional six campsites in the adjacent Huckleberry

Flats area. All but one of the sites were monitored in 2007. At Stanely Hot Springs there were three light ratings, ten moderate ratings, two heavy ratings and one site fully recovered. At Huckleberry Flat, there was one light rating, three moderate ratings, one heavy rating and one site fully recovered. The area continues to receive constant use and trend levels have remained relatively constant. Attempts have been made to close some of the sites by signing, blocking off, and planting, but use levels counter all efforts.

Volunteers have been intermittently stationed/or patrol at the hot springs most years since 2002.

## ACTIVITY MONITORING

### Selway-Bitterroot Wilderness - 2008 State of the Wilderness Report

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The annual State of the Wilderness Report is developed to share information with the public regarding management activities in the Selway-Bitterroot Wilderness (SBW). This Report provides a summary of 2008 SBW management, visitor use, and campsite monitoring efforts that we hope meets public needs and interests. This report is compiled for all 3 National Forests (Bitterroot, Clearwater & Nez-Perce) managing the Selway Bitterroot Wilderness. Status reports are for the whole wilderness, while the Wildenress Program Accomplishment Summary is specific to the Clearwater's activity monitoring.

### Status Reports

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#### Noxious Weeds DEIS

Noxious Weeds - Noxious and invasive weeds continue to exist along travel routes, in suitable habitat, and along rivers and streams. Weed seed free feed is required on all Forestlands in both Montana and Idaho.

The spread of noxious weeds continues to be a concern on the Clearwater NF. Spotted Knapweed is the most common weed below 4,000 ft and is at the greatest risk of spreading to the interior of the wilderness from wilderness portals along Hwy 12. A variety of thistles, Sulfur Cinquefoil, Spotted knapweed, Hounds tongue, St. John's Wort and Oxeye Daisy were also noted by Wilderness Rangers along certain trail segments and heavily used campsites. When rangers and volunteers encountered small concentrations of weeds the patches were hand grubbed and recorded for future monitoring. All Clearwater employees are encouraged to record/report weed sightings when working in the Wilderness.

A Draft Environmental Impact Statement for managing invasive plants in and adjacent to the Selway-Bitterroot Wilderness is near completion. Scoping for the Proposed Action began Oct. 26, 2006 and continued through the end of November, 2006. The release of the DEIS occurred March, 2008 and the anticipated date for release of the FEIS is Summer, 2009.

#### Wildland Fire

The summer of 2008 was not a very active year for wildland fire in the Selway-Bitterroot Wilderness on the Clearwater National Forest. Only one wilderness fire event occurred, the Storm Fire which was managed between August and October for a total of 340 acres burned.

## 10-Year Wilderness Stewardship Challenge

Table 52: 10-Year Wilderness Stewardship Challenge Accomplishments

Accomplishment Level	Top Possible Score	2008	2007	2006
Fire Plans	10	10	10	10
Noxious/Invasive Weeds	10	5	5	5
Air Quality	10	10	10	10
Education	10	10	10	4
Solitude	10	6	6	6
Recreation Site Inventories	10	6	6	6
Outfitter & Guide Operations	10	8	8	8
Adequate Forest Plan Direction	10	6	6	8
Information Needs	6	4	2	2
Workforce	10	8	2	2
<b>Total</b>	<b>94</b>	<b>73</b>	<b>67</b>	<b>61</b>

In 2008, the Selway-Bitterroot Wilderness showed improvement in meeting the goals of the Stewardship Challenge, primarily due to the significant contribution of a dedicated and trained volunteer workforce. The score for adequate forest plan direction to prevent degradation of the wilderness resource dropped in 2007 and remained the same for 2008. This score is based on a combination of existing forest plan direction and having monitoring accomplished on schedule. Managers agree that monitoring for the standard related to public use (number of parties encountered and number of parties camped within sight or sound) is not being effectively met, and are looking at ways to better monitor existing public use.

## Wilderness Program Accomplishment Summary

Table 53: Wilderness Program Accomplishment Summary

Type of Activity	Unit of Measure	Clearwater NF 2007	Clearwater NF 2008
Field Presence	Wilderness Rangers (include River Rangers)	3	3.5
	Wilderness Ranger Field Days	156	171
	Volunteers	38	36
	Volunteer Hours	3,944	2928
Education	Formal Education Programs	17	13
	Audience Members Reached	530	447
Trails	Miles of Trail Maintained	211.4	226.6
	Total Wilderness Trail Miles	325.3	325.3
Known Use / Visitation (Unknown # visitors not contacted or registered)	Individuals Contacted by Wilderness Rangers in the Field	195	100 groups 237 people
	Trailhead Registration (people)	818	306 cards 237 people
	Monitoring Days / Landings at Moose Cr. Airstrip	NA	NA
	Monitoring Days/	NA	NA

Type of Activity	Unit of Measure	Clearwater NF 2007	Clearwater NF 2008
	Landings at Shearer Airstrip		
	Monitoring Days / Landings at Fish Lake Airstrip	56/88	52 days 70 landings
O/G use	Outfitters	5	5
	Camps Used in the SBW	6	6
	Camps Inspected	21	20
Violations	Violations Recorded (incidents & citations combined)	25	14
Campsites	Total Existing Campsites/ Campsite Inventory Baseline Completed	331/331	328
	Campsites w/ Inventory Accomplished in 5 Year Cycle & (% of Total Campsites)	299 (90%)	297 (90%)
	Campsite Inventory Accomplished & (% of Total Campsites)	55 (17%)	82 (25%)
Fire	Wilderness Fire Events	13	1
	Wilderness Acres Burned	44,674	340
Authorizations	Mechanical Use Authorizations	7	3

## ADMINISTRATIVE SITES

Administration of the SBW for the purposes for which it was established, entails maintenance of certain structures and facilities both within (W) and immediately adjacent (A) to the Wilderness. The following list identifies use at these sites during 2008.

- Horse Camp: (W) Used through out the summer for wilderness rangers and trail crew.
- Fish Lake: (W) Used throughout the summer for wilderness rangers, trail crew and volunteers.
- Diablo Lookout: (W) Intact structure, not usually staffed.
- McConnell Mountain Lookout: (W) Deteriorating structure, not staffed
- Grave Peak Lookout: (W) Deteriorating structure, not staffed.
- Hidden Peak Lookout: (W) Deteriorating structure, not staffed.
- Bear Mountain Lookout: (A) Staffed in '08.
- Beaver Ridge Lookout: (A) Staffed in '08.
- Lochsa Historic Ranger Station: (A) Staffed by volunteers in the summer.
- Elk Summit Guard Station: (A) Staffed by a volunteer for the summer. Trail crew use.
- Colt Creek Cabin: (A) Not staffed, cabin burned to the ground in '06.

The Wilderness Act specifically refers to the value of wilderness to science. Because wilderness areas encompass an array of habitat types and provide homes for a wide range of organisms in a relatively undisturbed setting, these areas offer rich opportunities for research. In the SBW, research needs are prioritized annually. Projects must be approved by the Forest Supervisor and must be conducted so as to preserve the natural conditions of the wilderness with the imprint of human work substantially unnoticed. Research must be carried out in a manner consistent with opportunity class requirements and avoid impacting users' pursuits of isolation in opportunity classes 1, 2 and 3.

The following research is currently underway in the SBW:

- Temperature Monitoring for Fish Bearing Streams: Clearwater National Forest: 1999-2008. Monitoring provides year-round temperature data on some creeks within the SBW to determine if the streams meet Cold Water Biota Standards. This monitoring information can be reviewed in the fisheries monitoring section of the annual Clearwater NF Monitoring Plan. Contact: Pat Murphy (208) 476-4541
- Idaho Fish and Game (IDFG) surveys high mountain lakes on the Forest for location, size, depth, and fish/amphibian data. IDFG has a Fisheries Management Plan started in 2001 through 2008, and can be obtained from the Fisheries Bureau Headquarters in Boise, ID at (208) 334-3791.
- Idaho Fish and Game also tagged Bull Trout the summer of 2003 in the Lochsa River to see where the fish go to spawn. They were found in SBW locations. For more information, you can call Dani Schiff at IDFG in Lewiston as the primary contact at 208-799-5010.
- Wolf Population Monitoring Project: As part of an ongoing survey, wolves are being radio collared by both the Nez Perce Tribe and Idaho Fish and Game. Data is being collected to help understand populations, home ranges and movement patterns of wolves. The Selway-Bitterroot Wilderness is part of this study area. Contact: Steve Nadeau at 208.334-2148.
- Forest Inventory: remeasuring of permanent plots occurred. This inventory provides information on tree growth and development and other indicators of ecosystem health. The Selway-Bitterroot Wilderness is part of this long term study. Contact: Bev Yelczyn, Forest Silviculturalist at 208.476-8264.

WILDERNESS TRAIL MAINTENANCE

Table 54: Wilderness Trail Maintenance by Forest and Opportunity Class

Opportunity Class	1			2			3			4			Total Miles/Forest*
	I	II	III	I	II	III	I	II	III	I	II	III	
Miles Maintained (Clearwater NF)	0	0	0	24.5	0	.7	170.1	7.2	7.2	4	11.4	1.5	226.6
<b>Total Miles</b>	<b>9.1*</b>			<b>35.9</b>			<b>259.3</b>			<b>23.5</b>			<b>328.1**</b>

\* Discrepancies in total miles recorded may vary slightly from year to year as a result of updated measurements from trail condition surveys.  
 \*\* For 2008, trails occurring along the outer SBW boundary of the Clearwater NF and adjacent to Opportunity Class 1 (OC1) compartments have been recorded as miles of trail in OC1. These miles may or may not fall officially within the OC1 compartment.

In 2008, 226.6 trail miles of the 328.1 miles of trail located in the Selway Bitterroot Wilderness on the Clearwater National Forest were maintained by contractors, Forest Service crews and volunteers. A number of trails on the Powell Ranger District that are usually opened and maintained annually were not able to be accessed for maintenance due to the Bridge Creek Fire. It is anticipated that these trails may be closed for a number of years due to the heavy downfall anticipated as a result of the fire.

# 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 and endangered species 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 Forest activities on preservation and enhancement of biological diversity and provide biological input to proposed management activities.

Each year improve approximately 1,300 acres of big-game habitat using a variety of methods such as prescribed fire, fertilization, slashing, logging, and planting. Use road closures, decommissioning, and modification of timber sale design, layout, and scheduling to maintain or enhance wildlife habitat.

Review, coordinate, and consult with the US Fish & Wildlife Service on projects that involve adverse impacts to threatened and endangered species. Conduct biological assessments for all projects where threatened and endangered species may occur. Recommend practices to lessen or mitigate adverse effects of projects and ensure viable populations or promote the recovery of all listed species.

Provide the public with current information on the programs and status of wildlife habitat management.

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### Item No. 7 - Provision for Plant and Animal Diversity

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Frequency of Measurement: Annual  
Reporting Period: Five Years

## MONITORING ACTION

Monitor the effects of Forest activities to maintain and enhance plant and animal diversity.

## ACCOMPLISHMENTS/FINDINGS

A wide variety of plant and animal habitats currently exist and are well represented on the Clearwater National Forest. The exception is old growth or late successional habitat. The primary cause for the declines of old growth was intensive timber harvesting.

On a Forest-wide scale, old growth habitat for the Clearwater National Forest is analyzed using Forest Inventory and Analysis (FIA) data. A complete description of these data and the methodology used is available in the following reports: *Detailed Estimates of Old Growth, Clearwater National Forest* by Renate Bush et al. ( November 29, 2006) This document and additional information on old growth habitat management is available on the internet at <http://fia.fs.fed.us> or [http://www.fs.fed.us/r1/clearwater/terra\\_org/terra.htm](http://www.fs.fed.us/r1/clearwater/terra_org/terra.htm).

### Percent Old Growth in the Clearwater National Forest

Table 55 provides a summary of the estimates of percent old growth on forest lands for the Clearwater National Forest as per the Northern Region’s Green and others 2005 definition of old growth.

**Table 55: Clearwater National Forest Estimates Of Percent Of Old Growth, Standard Error, And 90 Percent Confidence Intervals**

Forest	Estimated Percent Old Growth	90% Confidence Interval - Lower Bound	90% Confidence Interval - Upper Bound	Total Number PSUs	Number Forested PSUs
Clearwater	9.4%	7.3%	11.8%	305	300

During project analysis individual stands within the project area are field checked and evaluated as to whether or not they meet the criteria from Appendix H of the Forest Plan and the Old Growth Forest Types for the Northern Region by Green et al.

**Item No. 25 - Big-Game Habitat Improvement**

Frequency of Measurement: Annual  
Reporting Period: Annual

**MONITORING ACTION**

Areas being treated will have monitoring plans developed.

**ACCOMPLISHMENTS/FINDINGS**

In FY08 approximately 6,000 acres of big game habitat was improved with prescribed fire across the forest in a variety of low to mid elevation habitat types . Additional accomplishment information can be found in the *Fire* section of this report.



**Item No. 26-35 - Population Trends of Management Indicator, Threatened and Endangered Species**

Frequency of Measurement: Annual  
Reporting Period: Annual

**MONITORING ACTION**

Information will be provided on these species focusing on population trends and effects of management of these species.

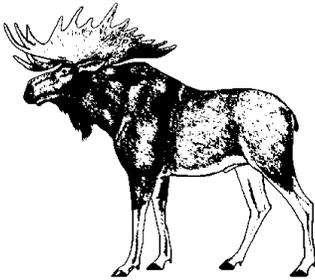
**ACCOMPLISHMENTS/FINDINGS**

**MANAGEMENT INDICATOR SPECIES**

Forest Service regulations provided that “Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area”. The Forest Service’s focus for meeting the requirement of NFMA and its implementing regulations for MIS is on assessing and monitoring habitat to provide for diversity of species. The following species were selected in

the Forest Plan as management indicator species: elk, moose, white-tailed deer, pileated woodpecker, goshawk, pine marten, belted kingfisher, and Threatened and Endangered species.

**Elk:** Elk summer habitat is evaluated using the latest Interagency Guidelines for Managing Elk Habitat in North Central Idaho. Population data are from the Idaho Department of Fish and Game (IDFG) big game surveys. Elk summer habitat conditions continue to improve. Road closure and obliteration projects along with prescribed burns and wildfires continues to improve, restore, and enhance areas of habitat across the forest. The elk population on the Clearwater National Forest is estimated at 7,000. Sufficient habitat exists to increase elk populations. Winter conditions during FY08 were above average snowfall which would have had an overall negative effect to the elk population. The elk population trend is downward. Idaho Fish and Game data indicates that wolf predation is a possible cause for the downward trend.



**Moose:** There are no specific habitat management guidelines for moose habitat. Implementing elk habitat guidelines should have a positive effect on maintaining moose habitats. The Powell Ranger District continues to support habitat for approximately 75% of the moose population on the Forest. Population data are from the Idaho Department of Fish and Game (IDFG) big game surveys. Moose habitat conditions continue to improve. Road obliteration projects along with prescribed burns and wildfires continues to improve and enhance areas of habitat across the forest. The moose population on the Clearwater National Forest is estimated at 1,500. Sufficient habitat exists to increase populations. Winter conditions during FY 08 were generally mild. The population trend appears stable to

increasing.

**Deer:** There are no specific habitat management guidelines for deer habitat. Implementing elk habitat guidelines should have a positive effect on maintaining deer habitats. Population data are from the Idaho Department of Fish and Game (IDFG) big game surveys. Deer habitat conditions continue to improve. Road obliteration projects along with prescribed burns and wildfires continues to improve and enhance areas of habitat across the forest. The deer population on the Clearwater National Forest is estimated at 6,000. Sufficient habitat exists to increase populations. Winter conditions during FY 08 were generally mild. The trend in deer population over the past five years is increasing especially on the Palouse Ranger District and other lands adjacent to agricultural areas.

**Pileated Woodpecker:** A recent habitat assessment for the pileated woodpecker indicates adequate habitat exists and is well distributed on the Forest and across the Northern Region. Based on this assessment, the Clearwater National Forest is estimated to have approximately 337,000 acres of suitable nesting habitat to support pileated woodpeckers. This habitat is well-distributed across the forest at lower to mid elevations. Partners in Flight Landbird Conservation Plan estimates the population for pileated woodpeckers across their range to be at 930,000 with an accuracy/precision rating of 4A. Idaho Fish and Game estimates the population of pileated woodpeckers on the forest to be in the mid to upper range of 1000-10,000 individuals.

At the Regional scale, habitat modeling estimated that there is enough suitable nesting habitat to support about 2362 pairs of pileated woodpeckers, and enough winter foraging habitat to sustain about 19,430 pairs of birds (Samson, 2006). Median dispersal distance for pileated woodpeckers is estimated to be about 150 miles, which indicates that pileated woodpeckers across the entire Region belong to a single, well connected population. The Forests neighboring the Clearwater to the south and east show pileated woodpecker habitat in excess of the quantity modeled to maintain a minimum viable population on their Forests alone (Lolo -165%, Clearwater -346% and Nez Perce -459%). The large amount of apparently suitable habitat well distributed across the Region combined with the interconnectedness of the population indicates that short-term viability of pileated woodpeckers across the Region is not an issue (Samson, 2006).

These findings are also consistent with the broader view offered by the Natural Heritage and Partners in Flight Programs. The international network of Natural Heritage Programs employs a standardized ranking system to denote global (G range-wide) and state (S) status. Species are assigned numeric ranks ranging from 1 (critically imperiled) to 5 (demonstrably secure), reflecting the relative degree to which they are

“at-risk.” The pileated woodpecker is listed as G5 and S4 in Idaho. G5 indicates that throughout its range, it is considered common, widespread, and abundant, although it may be rare in parts of its range. It is not vulnerable in most of its range. S4 indicates that in Idaho, it is apparently secure. It is not identified by PIF or Idaho Comprehensive Wildlife Conservation Strategy (CWCS) as a priority species in need of conservation measures at this time. No pileated woodpecker habitat was harvested in FY 08.

**Goshawk:** Recent habitat assessments for the Northern goshawk indicate adequate habitat exists and is well distributed on the Forest and across the Northern Region. Based on habitat and goshawk detection estimates, breeding goshawks and their habitat appear abundant and well distributed across R1 (Kowalski 2006, Samson 2006a). Based on these assessments, the Clearwater National Forest is estimated to have approximately 600,000 acres of suitable nesting habitat (Samson, 2006). Partners in Flight Landbird Conservation Plan estimates the population for goshawks across their range to be at 490,000 with an accuracy/precision rating of 3A. Idaho Fish and Game estimates the population of goshawks on the forest to be in the low to mid range of 100-1000 individuals.

Using the best available information during a species status review, the U.S. Fish and Wildlife Service concluded that:

- There was no evidence of a declining population trend for goshawks in the western United States (west of the 100<sup>th</sup> meridian).
- There is no evidence that goshawk habitat is limiting the population, or that significant curtailment of the species’ habitat or range is occurring.
- The goshawk continues to be well-distributed throughout its historical range.
- There are no significant areas of extirpation.
- While the goshawk uses stands of mature and older forests it is not dependent on old-growth, and uses a variety of forest habitats in meeting its life history requirements.
- Listing as endangered or threatened is not warranted.

According to NatureServe (accessed 12/19/2006) the northern goshawk has a conservation status rank of G5. This indicates the species is globally secure - common, widespread and abundant. The state conservation status rank is S4 indicating that in Idaho, the goshawk is apparently secure. It is not identified by PIF or Idaho Comprehensive Wildlife Conservation Strategy (CWCS) as a priority species in need of conservation measures at this time. No goshawk habitat was harvested in FY 08.

**Belted Kingfisher:** According to the 2008 NatureServe the belted kingfisher has a conservation status rank of G5. This indicates the species is globally secure - common, widespread and abundant. The state conservation status rank is S5 indicating that in Idaho, the species is secure. It is not identified by PIF or Idaho Comprehensive Wildlife Conservation Strategy (CWCS) as a priority species in need of conservation measures at this time. No additional data are available on population levels. Riparian habitats for kingfishers is protected via the implementation of PACfish and/or INFish riparian habitat buffers.

**Pine Marten:** A recent habitat assessment for the American marten indicates adequate habitat exists and is well distributed on the Forest and across the Northern Region. Based on this assessment, the Clearwater National Forest is estimated to have approximately 800,000 acres of suitable habitat to support the American marten (Samson, 2006). This habitat is well-distributed across the Clearwater NF at higher elevations. Idaho Fish and Game estimates the population of American marten on the forest to be in the low to mid range of 1000-10,000 individuals.

These findings are also consistent with the broader view offered by the Natural Heritage Program. The international network of Natural Heritage Programs employs a standardized ranking system to denote global (G range-wide) and state (S) status. Species are assigned numeric ranks ranging from 1 (critically imperiled) to 5 (demonstrably secure), reflecting the relative degree to which they are “at-risk.” The marten is listed as G5 and S5 in Idaho. G5 indicates that throughout its range, it is considered common, widespread, and abundant, although it may be rare in parts of its range. It is not vulnerable in most of its

range. S5 indicates that in Idaho, it is secure. Approximately 25 marten are legally trapped on the Clearwater each year. No pine marten habitat was harvested in FY 08.

#### REFERENCES:

Samson, F. B. 2005 (amended March 6, 2006). Conservation assessment of the northern goshawk, blacked-backed woodpecker, flammulated owl, and pileated woodpecker in the Northern Region, USDA Forest Service., Northern Region, Missoula, Montana, USA.

Sauder, J. Personal Communication, June 29, 2007.

Hennekey, R. Personal Communication, July 18, 2007.

**Gray Wolf (Experimental/non-essential):** Wolves have been reintroduced into North Central Idaho in 1995. Recent data indicates the wolf population in Idaho is growing with an estimated population of 750 statewide. At least 72 known packs or potential pairs, 175 pups, and areas of suspected wolf activity have been investigated, resulting in the documentation of 45 or more breeding pairs of the Central Idaho Experimental Population Area. In the Clearwater Region there are 20 documented packs. The process for delisting the wolf is currently ongoing. Additional information can be found at: <http://www.r6.fws.gov/wolf>.

**Bald Eagle (Sensitive):** The bald eagle occurs mostly as a winter resident on the Clearwater Forest. Approximately 60 bald eagles winter in the Clearwater basin and its tributaries. Biologists from the Forest work on the National Wildlife Federation's annual bald eagle survey each January. Most of the bald eagle habitat is found along major watercourses. Recovery goals for the bald eagle have been exceeded for the past five years. The bald eagle has been delisted to a FS sensitive species. A trend in numbers of bald eagles over the past five years is increasing based on incidental observations and annual surveys.

**Lynx (Threatened):** The Canada lynx was listed as a threatened species. A Conservation Strategy and Assessment and Forest Plan amendment have been approved. No new surveys have been conducted for lynx on the forest. Additional information on lynx management can be found at: <http://www.fs.fed.us/r1/projects/lynx-index.shtml>.

## SECTION 3 - APPEALS AND LITIGATION

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There are two parts to this section: a listing of individual project level appeals on the Clearwater National Forest, and a listing of the lawsuits in which the Forest is currently involved.

### PROJECT LEVEL APPEALS

The Forest received four appeals on four projects during FY08. Information about each appeal and the outcome of the appeal is shown in the following table.

Project Name FY08	Appellant	Status	Major Appeal Issues
J&D and Homestead Placer POO	Dick Artley	Dismissed (No Standing)	--
Lochsa Weeds EA	Friends of the Clearwater Alliance for the Wild Rockies	Dismissed (No Standing)	--
Cherry Dinner EIS	Friends of the Clearwater	Resolved (Withdrawn/Late)	--
Yakus EIS	Friends of the Clearwater	Dismissed (Not Timely)	--

### LITIGATION

The Forest was not involved in any lawsuits during FY08. If it had been, information about each lawsuit and its current status would be shown in the following table.

Topic of Lawsuit, Plaintiffs and Defendants	Status	Major Issues
N/A	N/A	N/A

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## SECTION 4 - IMPLEMENTED CHANGES

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### ECOSYSTEM MANAGEMENT

The Forest continued with the implementation of Ecosystem Management and restoration concepts and principles when designing projects. The Forest continued to use an integrated strategy when designing projects. In FY07 and FY08, the Clearwater National Forest reviewed and adjusted its Program of Work to better reflect the priorities identified in the Regional Integrated Restoration and Protection Strategy. The Region's strategy was aimed at aligning increasingly scarce resources (dollars and people) and focusing them on doing the highest priority restoration work in an integrated and efficient manner. Priority for restoration needs was assigned in four broad scale "values at risk": community threat zones (which on the Clearwater equates to the County WUI areas identified in the County Wildfire Mitigation Plans; municipal watersheds; priority watersheds for aquatic restoration; and big game winter range (which on the Clearwater is focused on elk winter range). Areas across the forest were mapped with the above values at risk and assigned a priority which reflected how many of the above "values at risk" areas intersected. The Clearwater actively re-shuffled projects within the program of work to emphasize projects in the priority areas.

Shifts in program emphasis affected planning in FY08 and will continue to influence outyear programs, as the above strategy will guide a process for assessing projects in the program of work. Our objective is to integrate our work across functional boundaries so we can achieve multiple objectives and targets from any given project.

The Upper Lochsa Corridor Assessment (EAWS) was completed in September 2008.

### FOREST PLAN REVISION

Revision of the Forest Plan was halted in FY 08 as a result of a lawsuit challenging the planning rule. It is likely work on Forest Plan Revision will resume in FY2010.

### CLEARWATER NATIONAL FOREST AND NEZPERCE NATIONAL FOREST SHARED LEADERSHIP

Forest budgets have been declining steadily. During FY08, the Clearwater and Nezperce National Forests took advantage of opportunities to share resources and leadership skills. Starting in Fy08, the two Forests agreed to share the Safety Officer and the Fleet Manager positions. In August 2008, the Clearwater Forest Supervisor was assigned as the Acting Forest Supervisor for the Nezperce National Forest. Also starting in FY08, the two Forests held monthly joint Forest Leadership Team meetings.

### FOREST PLAN AMENDMENTS

Two Forest Plan amendments (Amendments #23 and #25) were implemented during FY08.

Amendment #23 amended Appendix K to change the water quality objective for the Potlatch River (abv Forest bdy), Little Boulder Creek, East Fork Potlatch, and Ruby Creek, Palouse District, Cherry Dinner EIS (March 2008).

Amendment #25 amended Appendix K to change the water quality objective for Corral and the East Fork Big Bear Creeks, Palouse District, Corralled Bear EIS (December 2008)>

## SECTION 5 - PLANNED ACTIONS

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### INTRODUCTION

This section identifies actions slated for 2009 and beyond, in the following order:

- (1) Discussion of Clearwater National Forest Ecosystem Management Documents
- (2) Steps in the Revision of the Forest Plan
- (3) Amendments that may be Proposed to the Current Forest Plan
- (4) Discussion of Projected Budget (Appendix C in the Forest Plan)
- (5) Clearwater and Nezperce National Forests Shared Leadership
- (6) List of Other Activities Planned in FY08

**Ecosystem Management Documents:** There are no EAWS scheduled to be completed in FY09. Forest resource specialists are assisting in development of an Environmental Management System (EMS) for the Regional Office. They are using the WO EMS protocols for FY 2008 focusing on fleet.

**Steps in the Revision of the Forest Plan:** The Draft Revised Forest Plan is on hold and was not released in 2008. Work on Forest Plan Revision is scheduled to resume in FY10.

**Amendments That May be Proposed to the Current Forest Plan:** The Clearwater Travel Planning DEIS, released in July 2009, proposed two site-specific Forest Plan amendments. A Decision for the Travel Plan is expected in FY10. Most needed changes for the current Forest Plan will be forwarded to the Forest Plan Revision team to be accomplished with that effort.

**Projected Budget (Appendix C of Forest Plan):** As implementation of the Forest Plan continues, actual dollars versus projected dollars are continually adjusted. Instead of amending the Forest Plan, Table 2 under Economics displays this information annually.

**Clearwater and Nezperce National Forests Shared Leadership:** In October 2008, the Regional Leadership Team presented a blueprint for leadership realignment in the Northern Region. No formal consolidation of Forests would occur, and no office closures or District reductions were proposed. Position reductions were targeted at the GS-13 to GS-15 level. As opportunities develop over time, the program managers at the GS-12 level may be shared between the Clearwater and Nezperce National Forests. The main goal of the Region's blueprint for change is to reduce overhead and share leadership skills. The savings that would be realized from these changes would be used for resource management work and resource stewardship. Locally, the blueprint initially proposed to shift the Palouse Ranger District leadership to the Idaho Panhandle National Forest, and would adjust the Idaho portion of the upper Selway from the Bitterroot National Forest back to Idaho. Over time, Staff Officer positions would be reduced to three on each Forest.

### Other Planned Activities:

<b>Fisheries</b>	<ul style="list-style-type: none"><li>♦ Monitoring in Lolo Creek and the North Fork and Lochsa River drainages is scheduled to continue in 2009.</li><li>♦ Three to six culverts would be replaced in Lolo Creek and the North Fork and Lochsa River drainages in 2010.</li></ul>
<b>Lands</b>	<ul style="list-style-type: none"><li>♦ The Upper Lochsa Land Exchange would exchange up to 28,212 acres of NFS land in Benewah, Clearwater, Latah, Shoshone, Bonner, Kootenai, and Idaho counties for 39,371 acres of Western Pacific Timber LLC (WPT) land. Scoping for this proposal began 11/5/2008. A Draft EIS is expected in 2009 and a Final EIS is expected in 2010.</li></ul>
<b>Recreation</b>	<ul style="list-style-type: none"><li>♦ The Clearwater Travel Plan is expected to be implemented in 2010. Routes that would be open to summer motorized travel would be designated, and motorized travel off of designated routes would be prohibited.</li></ul>
<b>Road Decommissioning</b>	<ul style="list-style-type: none"><li>♦ Road obliteration to eliminate unneeded roads is planned to continue in FY09.</li></ul>
<b>Wildlife</b>	<ul style="list-style-type: none"><li>♦ Implementation of various Middle Black projects will continue in 2009. These activities may include up to 1,000 acres of brush cutting.</li></ul>

## SECTION 6 - LIST OF CONTRIBUTORS & CONSULTANTS

Name	Telephone	Resource Area
Laura Barrett	208-983-7015	Fire, Fuels Outputs
Heather Berg	208-926-4274	Wild and Scenic Rivers
Vern Bretz	208-476-8322	Minerals, Mineral Outputs
Anne Connor	208-476-8235	Water Quality, Road Decommissioning, Riparian
Mark Craig	208-476-8291	Timber Targets, Timber Outputs
Don Curnutt	208-476-8238	Roads/Facilities Outputs
Dan Davis	208-476-8353	Wildlife, Wildlife Outputs
Lori Deford	208-983-4059	Law Enforcement, LEMARS
Bruce Ellis	208-476-8350	Heritage
Colleen Fahy	208-476-8278	GIS, Database
Lois Foster	208-935-4258	Writer Editor, Economic Modeling, Effects, Appeals/Litigation, Implemented Changes, Planned Changes
Doug Gober	208-476-8223	Effects
Susan Graves	208-476-8207	Roads
Carol Hennessey	208-935-4270	Trails, Wilderness
Diana Jones	208-476-8239	Scenic
Mark Klinke	208-476-8300	Silviculture, TSI, Reforestation, etc.; Outputs
Rick Kusicko	208-476-8374	Timber
Jim Mital	208-476-8348	Soils, RNA, New Research
Roberta Morin	208-476-8354	Lands
Pat Murphy	208-476-8208	Range, Fisheries, Fisheries and Range Outputs
Debbie Phillips	208-476-8282	Economic Model Budget Information, Target Accomplishment
Molly Puchlerz	208-942-0303	Recreation
Robert Sanchez	208-476-8316	Soils and Water, Riparian
Mike Stayton	208-875-1171	Trails
Keith Stockmann	406-329-3549	Economic Modeling Factors
Lynne Swayne	208-476-8233	Economic Model Budget Information
Beverly Yelczyn	208-476-8264	Timber, Silviculture, TSI, Reforestation, Outputs
Rachel Young	208-983-4025	Fire, Fuels

## SECTION 7 - FOREST SUPERVISOR APPROVAL

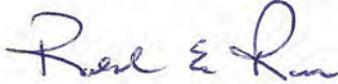
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### Approval

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I have reviewed this annual Forest Plan Monitoring and Evaluation Report for FY08. This report meets the intent of the Forest Plan (Chapter IV) and 36 CFR 219. I have also considered the recommendations of my staff on proposed changes to the Forest Plan. Amendments needed to keep the Forest Plan current will be implemented only after appropriate participation and analysis.

This report is approved.



RALPH E. RAU

9/1/2009

Date

