1995

Monitoring and Evaluation Report

Gifford Pinchot National Forest

Dear Reader,

After reviewing this report, I think you will agree that we have made progress in improving both the quality of our on-the-ground Forest Plan implementation and the quality of this annual Monitoring Report. Some of the credit for the improvement in our monitoring program goes to the efforts of our Province Advisory Committee who conducted a thorough review of our monitoring activities and made recommendations for its improvement. This year you will note that we are able to report satisfactory or better results in all but one of the more than thirty items monitored. I also think you will find the new format of this year's report more "reader-friendly" than those of previous years. We are already working on additions to our next year's report as we become more involved in effectiveness monitoring. To make this information more accessible to the public we hope to have our monitoring report among many pieces of public interest information on our Internet site by the end of the year.

This was our fifth year of implementing the Forest Plan. We conducted a five year review of our Plan and determined that a Forest Plan revision was not needed at this time. This is largely because of the 1994 amendment to incorporate the Northwest Forest Plan. I've included my letter to the Regional Forester, which makes this finding, on page 35 of this report.

This report describes results for 33 items the Forest Leadership Team and our Province Advisory Committee felt were most critical to monitor in 1995. Because of limited budgets and personnel, not all of the 50 items described in Chapter V of the Forest Plan were monitored. A summary table beginning on page 2 highlights the results of our 1995 monitoring program.

The last section of the report, beginning on page 36, describes the many monitoring activities conducted on the Forest which are not directly related to Forest Plan implementation.

As we expand our monitoring efforts on the Gifford Pinchot National Forest, we invite you to become involved. Send me a letter and let us know what you think of the report or how you would like to become involved in our monitoring program.

TED C. STUBBLEFIELD
Forest Supervisor

1995 Monitoring and Evaluation Report

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Monitoring and Evaluation Report

Gifford Pinchot National Forest

Fiscal Year 1995

A. Introduction

This document reports Forest activities and accomplishments of 1995 and compares them to the Forest Land and Resource Management Plan (Forest Plan, or Plan) direction, and projected outputs and effects. Monitoring and evaluation are important elements in the implementation of the Forest Plan. They are key to making the Plan a dynamic and responsive tool for managing a complex set of natural resources and values in a climate of social and economic change. This document reflects the fifth full year of implementing the Gifford Pinchot National Forest Plan which was approved on June 1, 1990.

The Plan was amended by the Northwest Forest Plan Record of Decision to incorporate new standards and guidelines to ensure protection of late-successional and aquatic ecosystems in April 1994.

Monitoring and Evaluation

There are three types of monitoring:

- **Implementation Monitoring:** determines if goals, objectives, standards and guidelines are implemented as described in the Plan. The question being asked is, "Did we do what we said we would?"
- **Effectiveness Monitoring:** determines if management practices as designed and implemented are effective in meeting the Plan goals and desired future conditions. The concern here is, "Did the management practice accomplish what we intended?"
- **Validation Monitoring:** determines if data, assumptions, and coefficients are accurate. Here, the important question is, "Is there a better way to meet the Plan goals and objectives?"

Our 1995 monitoring effort emphasizes implementation monitoring, although several items contain elements of both implementation and effectiveness monitoring.

Evaluation is the analysis and interpretation of monitoring results. Essentially, the question being asked in evaluation is, "Are changes needed?" These changes may involve amending or revising the Plan or changing the way activities are implemented.

The following outline briefly describes each section of this report:

A. Introduction - This brief overview of what monitoring is about.

B. Monitoring Results - At a Glance - Summarizes monitoring results described in detail in Section C.

C. Monitoring Item Results - Displays the individual results, evaluations and recommended follow-up actions for all items monitored in 1995.

D. Accomplishments - Shows trends in program accomplishments over FYs 1991-1995 and compares 1995 accomplishments to our assigned targets.

E. Expenditures - Compares expenditures over the last 5 years by program and in total.

F. Forest Plan Amendments - Lists all Forest Plan amendments and briefly describes the content of the amendment and when it was approved.

G. Five-Year Forest Plan Review - Letter to the Regional Forester explaining why a Forest Plan revision is not needed at this time.

H. Other Forest Monitoring Activities - Briefly describes monitoring activities conducted by the Forest which do not relate directly to the Forest Plan.

Glossary of Terms - Definitions of the technical terms used in this document.

B. Monitoring Results - At A Glance

The following table briefly summarizes monitoring results by resource area. Detailed information for each monitoring item can be found on the page referenced in Section C, beginning on page 4. Not all items in the Forest Plan have been monitored this fiscal year, which accounts for the gaps in the in the item numbers. **Monitoring items preceded with an asterisk in the table below are all or part effectiveness monitoring, others are implementation monitoring.** Refer to the Glossary for meanings of technical terms used in this report.

Monitoring Results - At A Glance

RECREATION	☺	***#1 Wild/Scenic Rivers** (page 4) - Activities in compliance, character of potential Wild and Scenic River corridors has been protected.
	☺	***#2 Recreation Setting** (page 4) - Activities monitored met semi-primitive and nonmotorized standards and guidelines.
	☺	***#3 Scenic Quality** (page 5) - Scenic standards were met on all projects monitored.
	😐	***#4 Wilderness Use and Condition (**page 5) **-** The Forest is considering limiting use at peak times to reverse degradation of recreation sites.
	☺	***#6 Trail Inventory, Setting and Condition, ORV** (page 7) - Trail standards and guidelines are being met. Approximately three-quarters of the trail construction and reconstruction projects scheduled in the Forest Plan were completed and about three-fourths of the trails were maintained
	😐	***#7 Recreation Use and Facility Condition** (page 9) - Campgrounds on the Forest have benefited from operation in 1995 by concessionaires. Still, many developed recreation sites are in need of reconstruction or heavy maintenance.
CULTURAL	☺	**#10 Cultural Resource Inventory** (page 10) - Three ground-disturbing projects were initiated before cultural survey reports were completed. Cultural resource reports were approved after initiation of all three projects.
	☺	***#11 Cultural Resource Protection** (page 11) - Cultural resource properties associated with projects were successfully protected.
NATIVE AMERICAN	☺	**#20 Native American Coordination** (page 11) - The tribes were notified of the location and activities proposed on all projects initiated in 1995.
WILDLIFE	☺	**#31 Forage Production** (page 12) - The Forest is meeting standards and guidelines for wildlife forage enhancement.
	☺	**#32 Optimal Cover** (page 12) - No harvest occurred in optimal cover in the allocated winter range. The standard and guideline was met.
	☺	**#35a TE&S Wildlife Species** (page 13) **-** Standards and guidelines for protecting TE&S wildlife species were met. All projects monitored had Biological Evaluations.
	☺	**#35b Raptor Habitat** (page 14) - No projects were implemented in 1995 which impacted raptor habitat.
	☺	**#40 Retention of Snags and Downed Logs** (page 15) - Forest Plan standards and guidelines were met for sales planned under the Forest Plan.

***All or part effectiveness monitoring.**

Monitoring Results - At A Glance (Continued)

BOTANICAL ☺	***#5 Research Natural Areas** (page 6) - Standards and guidelines and management objectives are being met in the Thornton T. Munger Research Natural Area
☺	**#35c TE&S Plant Species** (page 14) - TE&S species are being protected. Biological Evaluations were completed on all projects.
☺	**#35d Botanical Special Interest Areas** (page 15) - No negative impacts to plant populations were observed at the sites visited.
TIMBER ☺	**#50 Adequate Reforestation** (page 16) - Three years after harvest, 98 percent of the harvested area was adequately stocked.
😐	**#51 Silvicultural Methods** (page 16) - Silvicultural activity was approximately 60 percent of the amended Plan projection.
☺	**#52 Regeneration Harvest Units Size** (page 16) - The standard and guideline limiting the maximum size of created openings was met.
☺	**#54 Volume Sold** (page 16) - In 1995 the Forest sold 45.8 million board feet which is 63 percent of the amended Forest Plan projection. The goal for 1995 was 60 percent of the projection.
😐	**#55 Timber Revenue and Expenses** (page 17) - Declining for its fourth consecutive year, the timber program showed a net revenue of $2 million dollars in 1995.
☺	**#56 Silvicultural Prescriptions** (page 17) - All prescriptions reviewed met Forest Plan standards and guidelines.
SOIL AND WATER ☺	**#60 Soil Productivity** (page 18) - Soil productivity standards and guidelines were met on all sales monitored.
☹	**#61 Best Management Practices** (page 19) - Several BMPs prescribed in timber sale EAs were not incorporated in the timber sale contract or implemented on the ground.
FISHERIES 😐	***#62e Fish Management Indicator Species Population** (page 21) - Self-sustaining populations of cutthroat trout were found in the North Fork Cispus River and Pepper Creek. Numbers of steelhead found in the Wind River Basin do not constitute a self-sustaining population.
😐	**#62h Aquatic Habitat Objectives** (page 23) - The Forest has begun identifying aquatic habitat objectives through watershed analyses.
☺	***#62i Threatened, Endangered and Sensitive Fish Species** (page 24**)** - The Swift Reservoir Bull trout population appears to be above the minimum needed to sustain a viable population.
☺	***#62j Effectiveness of In-Channel habitat Improvement Structures** (page 26) - 80 percent of instream structures fully or partially met objectives.
TRANSPORTATION ☺	***#70 Road Closures** (page 27) - Road closures are at 83 percent of the projected goal for the decade.
COMMUNITIES ☺	**#84 Community Effects - Payments to Counties** (page 28) - The U.S. Treasury returned $11.3 million dollars to the six counties with lands within the Forest administrative boundary.
MINING 😐	**#91 Mining Operating Plans** (page 29) - No operating plans were submitted in 1995.

***All or part effectiveness monitoring.**

C. Monitoring Item Results

Monitoring Item: 1. Wild and Scenic Rivers

Introduction: There are no Congressionally Designated Wild, Scenic or Recreational Rivers on the Gifford Pinchot National Forest. However, the Forest Plan recommended the Lewis, Cispus, Muddy Fork and Clear Forks of the Cowlitz be designated as Wild, Scenic or Recreational river. Twelve other rivers were recommended for further study prior to making a recommendation.

Values for which these corridors were either recommended or eligible for recommendation are to be protected until Congress takes action on the Forest's recommendation or further studies are completed. The Forest monitors activities in each of these corridors to ensure they are not jeopardizing the future Wild and Scenic River designation.

Results: All projects within potential Wild and Scenic River corridors were monitored. The results are shown in the following table.

Table 1 - Project Monitoring in Potential Wild and Scenic River Corridors

River/Creek	Project	Stds. Met
Cispus River	Walupt-Cispus Tbr Sale	Yes
E. Fork Lewis River	Dispersed Campground	Yes
Quartz Creek	Trail Reconstruction	Yes
Wind River	Trail Maintenance	Yes

Evaluation: After analysis of the activities shown above, all projects were found to be in compliance with the Plan standards and guidelines. The free flowing characteristics, the identified outstandingly remarkable values, and the classification are being protected at the levels prescribed by the Plan.

Recommended Action to be Taken: No corrective action required - monitoring to continue.

Monitoring Item: 2. Recreation Setting

Introduction: The Forest Plan provides a framework for managing different classes of outdoor recreation settings, activities and opportunities. The settings, activities and opportunities have been arranged along a continuum or spectrum comprised of seven classes: Primitive, Semi-primitive Nonmotorized, Semi-primitive Motorized, Roaded Modified, Roaded Natural, Rural and Urban. This monitoring item focuses on maintaining the character of the two semi-primitive classes. The emphasis in these areas is to maintain a predominantly natural or natural appearing environment. Motorized recreation use is not permitted in the semi-primitive non-motorized category.

Results: The following activities were planned or completed within the semi-primitive motorized or non-motorized management areas.

Table 2 -Project Monitoring in Semi-Primitive Recreation Areas

Project	Standards Met
Backcountry Toilets	Yes
French Cr. Trail Reconstruction	Yes
Lakes Trail 211 Construction	Yes
Thomas Lake Trail Relocation	Yes

Evaluation: All projects reviewed were in compliance with Forest Plan standards and guidelines.

Recommended Action to be Taken: No corrective action required - monitoring to continue.

Monitoring Item: 3. Scenic Quality

Introduction: The Forest Plan delineated 37 viewshed corridors across the Forest. Lands within view of 21 of these viewshed corridors are assigned objectives for maintaining or improving scenic values. In these viewsheds management activities are coordinated to assure that scenic quality objectives are met.

Results: Project monitoring, shown below, was completed in 1995. Projects were reviewed to determine if standards and guidelines for scenic quality, as specified in the Plan, were being met.

Table 3 - Scenic Quality Project Monitoring Summary

Project	Viewshed	Standards Met
Davis Friend Tbr Sale	Cowlitz Valley	Yes
Davis Skyo Tbr Sale	Cowlitz Valley	Yes
Walupt Cispus Tbr Sale	Cispus River	Yes

Landscape scale viewshed conditions were not monitored in FY 1995.

Evaluation: All projects met the standards and guidelines.

Recommended Action to be Taken: No corrective action required - monitoring, including monitoring landscape scale viewshed conditions to continue.

Monitoring Item: 4. Wilderness Use and Condition

Introduction: The Forest currently has about 180,000 acres in seven wildernesses. Each wilderness is partitioned according to the nature of recreation opportunity. The range of these opportunities is called the Wilderness Recreation Opportunity Spectrum. Each category has a set of standards describing the desired recreation experience. This monitoring is directed in maintaining the standards for the experience in each category. It measures wilderness use and impacts of recreation use on wilderness character.

Results:

A. Wilderness Use - The following chart and graph compares the 1993 through 1995 wilderness use:

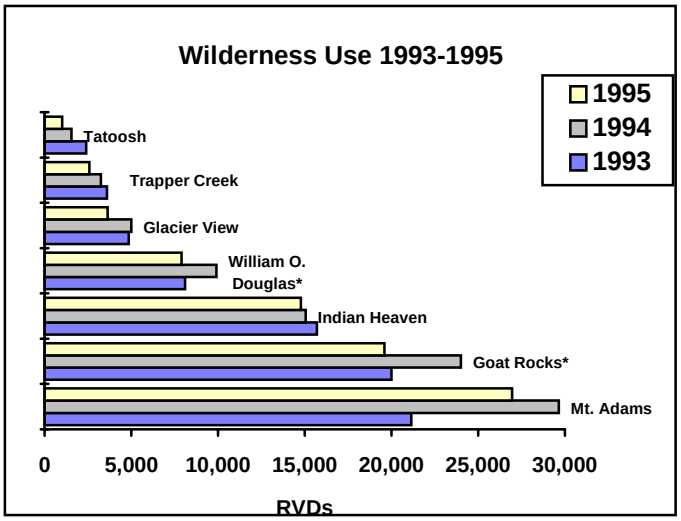


Table 4 - Wilderness Use

Wilderness Name	Recreation Visitor Days			
	1993	1994	1995	94-95 % Change
Mt. Adams	21,150	29,650	26,960	-9
Goat Rocks*	20,000	24,000	19,590	-18
Indian Heaven	15,700	15,050	14,770	-2
William O. Douglas*	8,100	9,900	7,900	-20
Glacier View	4,850	5,000	3,640	-27
Trapper Creek	3,600	3,250	2,590	-20
Tatoosh	2,400	1,550	1,010	-34
TOTAL	75,800	88,400	76,460	-10

*Gifford Pinchot National Forest portion only.

B. Limits of Acceptable Change (LAC). Limits of Acceptable Change is a measure of impacts associated with recreation use such as trampled area, vegetation loss at camp sites, and mineral soil exposed. The following table summarizes field monitoring results for Limits of Acceptable Change:

Table 5 - Wilderness Sites Monitored - 1995

Wilderness	Site Changes from Baseline
William O. Douglas	39% improved 7% no change 54% degraded

Evaluation:

A. Wilderness Use
None of the Wildernesses currently exceed the 120% use/capacity threshold of concern. However, the localized use patterns and impacts indicate that some sites and trails are being overused. Based on recent permit data, the capacity figures calculated for the Forest Plan appear to be overestimated.

B. Limits of Acceptable Change
The information gathered in the LAC field studies indicates a majority of the sites show evidence of continued degradation from recreation use. Examples include establishment of new and expansion of existing camp sites and recreation related impacts to riparian areas.

Recommended Actions to be Taken: The need for corrective action in the William O. Douglas Wilderness is indicated by resource conditions that are degrading rather than improving. Recent monitoring on other wildernesses on the Forest has yielded similar results. Measures such as rehabilitation, education, and attempts to confine damage to areas already impacted have worked to some degree to reduce impacts. However, it has become clear that these are not always effective, and that further actions will be needed to protect wilderness resources. Consequently, the Forest is considering limiting use at peak times. These limits on use are scheduled to be in effect for all wildernesses on the Forest by summer of 1997.

Monitoring Item: 5. Preservation of Research Natural Area (RNA) Attributes

Introduction: The Forest Plan requires that no level of activity occur within an RNA which would adversely affect the natural values of an RNA for which it was established. Prohibited activities include livestock grazing, timber and miscellaneous forest products harvest, recreation development and use, road construction, temporary facility installation, unlawful mining or mining of common variety materials, establishment of exotic plant, animal, or insect species, and establishment of non-endemic levels of insects, pathogens, or disease.

The six areas designated as RNAs through the planning process are listed in the table below. The Forest is presently studying the Monte Cristo area on the southeast side of the Forest for addition to the system of RNAs. These areas provide representative examples of biologically important ecosystems and are managed to conserve their biological diversity. They serve as undisturbed controls for comparison with managed areas and are valuable for studying natural processes. Research Natural Areas are permanently protected federally designated reserves where long-term studies that contribute to our knowledge of the ecosystem is encouraged. The standards and guidelines for Research Natural Areas focus on maintaining their natural state for research and education. Monitoring serves to evaluate whether the natural conditions of the Research Natural Area have been modified and prescribes corrective actions, if necessary.

Results:

Table 6 - Research Natural Area Monitoring Results

Name	Year Last Monitored	Standards & Guidelines Met?
Butter Creek	1991	yes
Cedar Flats	1993	no
Goat Marsh	1993	no
Sisters Rock	1994	yes
Steamboat Mtn	1994	no
Thornton T. Munger	1995	yes

T.T. Munger Research Natural Area was the only RNA scheduled to be monitored in 1995. The development of the Canopy Crane Research Facility in 1995 had the potential to adversely affect the RNA values. The PNW Research

Station RNA Coordinator was involved in siting the crane and the activity was approved by the PNW Station Director.

An old road was improved to move in the equipment associated with the crane. Standards and guidelines specify that trail construction or reconstruction will be permitted only if required to meet the needs of research, for educational purposes, or to protect RNA values. The road improvement work was deemed necessary for installation of the canopy crane. Restoration and noxious weed control efforts were implemented along this road.

Standards and guidelines prohibit exotic plants and animals in the RNA. Within the last monitoring period, the non-native weed woody groundsel (*Senecio sylvaticus)* has invaded. Weed control efforts were initiated, however, not all noxious weeds have been eliminated from the RNA.

Standards and guidelines prohibit collection of special forest products in RNAs. There has been evidence of mushroom harvest in this RNA.

Evaluation: The Forest has taken appropriate measures to remedy the invasion of noxious weeds in the RNA. Incidental mushroom harvest is very difficult to prevent, posting the area could attract more mushroom harvest than it prevents.

Overall, the impact of the Canopy Crane Research Facility on RNA values has been minimal. Efforts have been made to interpret the RNA to visitors and discourage recreational use. Over 4,000 visitors viewed the crane facility in 1995. T.T. Munger Plan revision, scheduled to be completed in the spring of 1996, will address increased use and propose means to minimize impact, while educating the public on the value of RNAs.

Action to be taken:

- Continue noxious weed eradication efforts.
- Consider posting signs that state that harvest of special forest products (specify mushrooms and berries) is prohibited within Research Natural Area.
- Implement new monitoring plans in 1996.
- Complete T.T. Munger RNA Management Plan Revision.

Monitoring Item: 6. Trail Inventory, Setting and Condition

Introduction: There are 1,470 miles of trail on the Forest, including 317 miles within Wilderness. These trails are managed to maintain a diverse array of travel opportunities. Difficulty, mode of travel, and distance factor into the mix of travel opportunities. Each Forest trail has been assigned a trail management level, with associated standards and guidelines for management of adjacent lands. These management levels offer a range of protection from roading and timber harvest impacts. We monitor the amount of trail construction and maintenance, use, and management.

Results:

A. **Trail Construction and Maintenance -** The following table compares the amount of trails constructed or reconstructed in 1995 with the amount projected in the Forest Plan.

Table 7 - Trail Construction and Maintenance

Trail Activity	Miles from Forest Plan	1995 Miles Accom-plished	Percent of Plan Level
Construction or Reconstruction	75 1/	55	73%
1/ Trail mileage listed in Appendix A of the Forest Plan for construction/reconstruction in 1995.			

Reconstruction occurred on 12 of the 279 miles of trails designated for motorcycle use.

Approximately 903 miles of the 1,470 miles of existing system trails were maintained. Downed trees were removed from all system trails.

B. **Trail Setting -** The following table shows trails that were reviewed either in the planning phase (through the review of planning documents) or on the ground.

Table 8 - Trail Setting

Trail Reviewed Name and No.	Planned Mgt Level	Meets Management Level in Plan	Existing Trail Meets Standards
Grassy Knoll #146	II	Yes	Yes
Buck Creek # 54	I	Yes	Yes
Allen Mountain #269	III	Yes	Yes
Teepee Creek #251	II	Yes	Yes
Bishop Ridge #272	I	Yes	Yes
Blue Lake Butte #119	I	Yes	Yes

C. **Trail Use -** The Boundary Trail #1 continues to be a problem with considerable off-trail travel and user developed play areas. Trail rangers are making contacts with users as part of the ORV Education and Enforcement Program.

The Lewis River Trail #31 has been the subject of complaints from hikers and horse riders who have been startled by the sudden appearance of fast moving mountain bikers. On the Cussed Hollow Trail #19, motorbikers and mountain bikers have short-cut the trail causing damage and adversely affecting hiker experience.

Evaluation: Approximately 73 percent of the trail construction/reconstruction estimated in the Forest Plan was accomplished. Changes in budgets and priorities either delayed or accelerated projects from the original timeline envisioned in 1990 when the Forest Plan was published.

Another figure for comparison is the annual average 34 miles projected to be constructed in the first decade of the Forest Plan. Using this measure, 162 percent of the annual average of the per decade projection was accomplished in 1995.

About three-fourths of the trail system miles were maintained to standard level of maintenance in 1995, mostly by volunteers.

Trail Management Level monitoring indicates that standards and guidelines are being implemented according to the Plan.

User conflicts were reported on fewer than 1 percent of the system trails.

Recommended Action to be Taken: Volunteer trail maintenance should be expanded to include the maintenance of the entire trail system. The ORV Education and Enforcement Program, jointly funded by the State of Washington and the Forest Service, should continue to make ORV Trail Ranger patrols a high priority.

Monitoring Item: 7. Non-wilderness Recreation Use and Facility Condition

Introduction: The Forest has about 120 developed recreation sites, not including visitor centers, with a combined capacity of 10,800 persons-at-one-time. The Forest has experienced increasing demand for recreation opportunities from the fast growing populations of the Portland metropolitan area and the international notoriety of Mount St. Helens and the Columbia Gorge. Accompanying the growth in demand has been a decline in recreation budgets. The Forest has pursued some innovative measures to close the gap between demand for services and the recreation budget through partnerships and use of campground concessionaires but conditions of some recreation facilities continue to deteriorate.

Results: Last year's monitoring report listed numerous recreation sites that did not meet standards for developed recreation sites. In addition to the these deficiencies, a 1993 accessibility study identified 53 recreation sites not meeting minimum standards for accessibility. Some work has been accomplished to bring these sites to standard. The past year has shown dramatic improvement in 30 sites operated and maintained by concessionaires operating under special use permit. Revenue generated from concessionaires fees helps pay for improvements.

A dispersed camping activity review during the summer of 1994 also indicated numerous dispersed camping sites, accessible by vehicle, were showing evidence of overuse. Concerns include inadequate sanitation, resource damage, tree removal, trash, user conflicts, and user-defined sites located too close to streams, lakes, and scenic highways.

Evaluation: Developed recreation facilities are continuing to show the need for reconstruction or heavy maintenance. Deferring routine maintenance in many sites over the past 10 years has resulted in a devaluation of the capital investment to the point that the cost to bring to standard will be nearly equal to the cost of developing a new facility.

Survey data of developed recreation sites indicates that a majority do not meet accessibility or sanitation standards. Monitoring of dispersed roaded recreation camping sites indicates that many of these sites do not meet standards.

Recommended Actions to be Taken: The Forest will continue to evaluate our ability to meet existing and future developed recreation needs while providing facilities that meet operation, maintenance and accessibility standards. The Forest is currently developing a *meaningful measures* database which will provide guidance for determining sites to be retained, closed, expanded or reduced in size; new sites to be constructed; priorities for construction and reconstruction, fee status, and concessionaire operation.

Monitoring Item: 10. Cultural Resource Inventory

Introduction: Cultural resource surveys are conducted prior to ground-disturbing projects and other activities having the potential to effect heritage resources. The purpose of each survey is to inventory archaeological, historic, and traditional cultural sites within the area of possible project effects. Inventory data are used in project planning to develop measures for site protection, avoidance, or mitigation, if necessary. Effective project planning incorporates data from cultural resource surveys in the development of alternatives that will ensure the protection of cultural resource values. The timely completion of surveys is a legal requirement that ensures heritage sites are identified and managed properly.

Results: A total of 38 ground-disturbing projects were initiated on the Forest during 1995. Cultural resource survey reports were completed prior to project initiation for all but three projects as directed by the regulations. Cultural resource reports were approved after initiation of these three projects.

Evaluation: Cultural resource reports were not completed for three projects involving the installation of toilets at recreation sites. This situation is at variance with Forest Plan standards and guidelines as well as legal requirements under 36 CFR 800. Adherence to the standard project planning protocol would have resulted in the timely completion of the required survey and report.

Field examinations indicate that no cultural resource values were compromised by the toilet installations. In two of the cases involving approval after initiation of a project, field surveys were done prior to ground disturbance and reports submitted within a week or two. In the third case, field survey was delayed until after decision memo.

Recommended Action to be Taken: Ensure projects are not initiated prior to approval of cultural resource survey report. Small ground disturbing projects, such as the installation of toilets, need to be prioritized along with other planned Heritage Program support work. Better planning is needed for these kinds of projects, including the development of firm implementation dates and budgets that provide for the required cultural resource inventory. **Each skill center has initiated a project planing checklist which should minimize the likelihood of this type of oversight in the future.**

Short training sessions are proposed during 1996 at each field unit to provide an overview of cultural resource management objectives and requirements. The sessions will focus on projects that typically fall under categorical exclusions, with respect to NEPA.

Monitoring Item: 11. Cultural Resource Protection

Introduction: Cultural resource sites identified in the project survey and inventory process include those which are significant and those which are not. Significance is measured by the criteria of the National Register of Historic Places. Projects are usually designed to protect significant sites through avoidance. In rare cases, potential project effects are mitigated through data recovery methods, including scientific excavation and analysis. Typical site protection strategies involve the establishment of non-activity buffer zones. Monitoring ensures that prescribed protective measures were properly implemented in the field. Monitoring also provides an opportunity to evaluate the effectiveness of various protection strategies.

Results: There were 12 cultural resource properties associated with ground-disturbing projects completed in Fiscal Year 1995.

- Two properties determined eligible to the National Register of Historic Places were successfully protected through avoidance, a third through mitigative measures.
- Three prehistoric sites not evaluated for NRHP eligibility were successfully avoided by careful project design.
- Two properties determined eligible to the NRHP were avoided.
- Four cultural resource properties were formally evaluated against NRHP criteria and found ineligible. No protective measures were implemented.

Evaluation: Cultural resource properties were successfully protected.

Recommended Action to be Taken: No corrective action required; monitoring to continue.

Monitoring Item: 20. Native American Coordination

Introduction: Through treaties and agreements, Native Americans reserve rights to continue traditional uses on lands ceded to the federal government and other historical-use areas. The Forest Services recognizes an obligation under the treaties and agreements to protect the lands for their cultural values and continued historical uses by Native Americans. While the level of coordination varies, at a minimum, tribes are included in project scoping processes. Those with an interest in Gifford Pinchot National Forest lands include the Cowlitz, Nisqually, Puyallup, Squaxin Island and Yakama tribes.

Results: Thirty-one NEPA documents were reviewed, of which 6 were on ceded lands. The tribes were notified of the location and proposed activities for all thirty-one projects.

Evaluation: The Forest is fulfilling its responsibility to coordinate project planning with Native American.

Recommended Action to be Taken: No corrective action required, monitoring to continue.

Monitoring Item: 31. Forage Production

Introduction: The Forest has an objective of maintaining populations of deer and elk (Forest Plan, page IV-25). The Forest seeks to meet that objective by providing cover and forage in the proportions needed to support the populations (see Item 32). Timber harvest is the primary means of creating new forage on the Forest.

The Forest has a goal of producing 550 pounds of forage per acre after harvest of timber. The harvest level proposed by the 1990 Forest Plan was not expected to provide adequate forage to meet population goals without enhancing forage production by seeding and fertilizing. Subsequent reductions in harvest brought by the Northwest Forest Plan in 1994 cast further doubt on the Forest's ability to support existing populations of deer and elk. In the future, forage seeding and fertilization will play an increasingly important role in supporting deer and elk populations.

Results: Five timber sale harvest units were monitored. Four of the five units were producing above 550 pounds per acre. In the fifth unit, seeded forage on the temporary road was destroyed when the road was reopened to allow fuelwood gathering. This unit was planned prior to the Forest Plan and had a contractual requirement to forage seed the temporary road.

Evaluation: In spite of the unfortunate loss of valuable forage on the road through one unit, these results indicate the Forest is meeting the direction for forage enhancement.

Recommended Action to be Taken: The Sale-area Improvement Plan will be updated to obliterate the temporary road and seed with annual grasses and other forage species. Unit managers must ensure biologists coordinate their forage enhancement activities with post sale projects to ensure investments are protected.

Monitoring Item: 32. Optimal Cover

Introduction: The Forest seeks to maintain populations of deer and elk by providing cover and forage in the proportions needed to support the populations (see Item 31). Part of that strategy involves maintaining 44 percent of the winter range (Management Area Category E) in a vegetative condition characterized by four levels of vegetation from trees larger than 21 inches in diameter in the overstory to an herbaceous layer providing forage in the understory. This *optimal cover* supports deer and elk by providing thermal cover, hiding cover and forage.

Results: Only one of our three skill centers had a project in the biological winter range. This was a commercial thinning in the Cispus Burn of 1918 where optimal cover comprised only 26% of the biological winter range in the watershed.

The trees being removed from the thinning project ranged from 65 to 70 years in age, too young to produce the attributes of optimal cover. Therefore, optimal cover was not further reduced by this thinning project. To the extent that the thinning increases the growth rate of the remaining trees, this project will contribute to the goals for deer and elk by accelerating the recovery of optimal cover in the watershed.

Evaluation: Because no harvest occurred in optimal cover, the standard and guideline was met. The project monitored will contribute to the restoration of optimal cover in a habitat deficit watershed.

Recommended Action to be Taken: Pursue similar opportunities to restore habitat in optimal cover deficit watersheds. Continue monitoring.

Monitoring Item: 35a. Threatened, Endangered, and Sensitive (TE&S) Wildlife Species

Introduction: Under the Endangered Species Act of 1973 (ESA) all natural resource agencies are required to conduct consultation with either the US Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS) on any ground disturbing activities that may adversely modify suitable habitat or jeopardize the population viability of federally listed species.

The Forest Service is required to provide Biological Evaluations (BE) and other documentation of site specific and cumulative effects that the project may have on the habitat or populations. The FWS or NMFS then decides whether the project should be permitted. This decision is based on the nature of the proposed project and the past activities that were allowed within and around the project area.

Results: Nine projects were monitored this fiscal year. All had Biological Evaluations and include mitigation measures to minimize the potential for impact to TE&S species.

Table 9 - Projects Monitored for T.E.&S. Wildlife Species

Name of Sale Project	Biological Evaluation Complete	Species Mgt Guide Prepared	Consultation with USFWS
*Lama	Y	Y	Y
Pin/Boulder	Y	Y	Y
*Page	Y	Y	Y
Swifty	Y	Y	Y
*Pre-Commercial Thinning, Pruning, Bough Cutting	Y	Y	Y
*Platinum & Snagtooth Cr	Y	Y	Y
**Takhlakh Lake Trail	N/A	N	N
⊕*Squawk 2	Y	Y	Y
*Blimp	Y	Y	Y

*These sales had presence of spotted owl and operating restrictions from March 1 to July 31.
**There was a "No-affect" decision made, this project caused no disturbance to any listed species.
⊕Larch Mountain Salamanders were confirmed, and the harvest units affecting the population were dropped.

Evaluation: The standards and guidelines were met for conducting consultation with the Fish & Wildlife Service. Appropriate habitat mitigation measures were implemented to support continued viability of the listed species.

Recommended Action to be Taken: The Forest biologist is investigating opportunities to begin effectiveness monitoring. Effectiveness monitoring would look beyond project implementation to identify trends in species populations.

Monitoring Item: 35b. Raptor Habitat for Osprey, Swainson's Hawk, Goshawk, Great Blue Heron, and Ferriginous Hawk

Introduction: The Forest Plan (2-75) provides standards and guidelines aimed at minimizing the disruption of raptor habitat during critical nesting periods. Direction is also provided to minimize disturbance of key winter habitat. Species protected include: Bald Eagle, Peregrine Falcon, Golden Eagle, Osprey, Swainson's Hawk, Goshawk, and Great-Blue Heron.

Results: None of the projects implemented on the Forest in 1995 impacted raptor or heron nesting or wintering habitat.

Evaluation: These standards and guidelines did not apply to projects in implemented in 1995.

Recommended Action to be Taken: No action required, continue monitoring.

Monitoring Item: 35c. Threatened, Endangered, and Sensitive Plant Species

Introduction: Biological evaluations for sensitive plants are prepared prior to all ground disturbing activities. If sensitive species are located within planned project areas, mitigation measures are proposed and implemented to minimize risk to endangered, threatened, and sensitive species. In addition, Conservation Strategies are prepared to provide comprehensive plans to effectively manage for species and habitats of concern, when site- or species-specific guidelines are warranted beyond what it dictated by existing plans.

Results: Biological evaluations were prepared for a total of 24 NEPA documents. Fringed pinesap was found in four timber sale projects and on one recreation trail project; in all cases, the populations were avoided or protected. Pine broomrape was identified on one timber sale. In some cases, suitable habitat for fringed pinesap and pine broomrape was impacted. No Conservation Strategies were completed.

Recommended Action to be taken:

Modify monitoring item by consolidating with other NEPA compliance activities (e.g., cultural resource surveys, wildlife surveys, Survey and Manage species surveys).

Develop effectiveness monitoring items that evaluate effectiveness of mitigation measures implemented.

Monitoring Item: 35d. Botanical Special Interest Areas

Introduction: Thirty Botanical Special Interest Areas (Botanical Areas) have been designated on the Gifford Pinchot National Forest. These areas often contain plant species or communities which are significant because of the occurrence of threatened, endangered, or sensitive plant species, are floristically unique, or have noteworthy specimens, such as record-sized tree specimens. They range in size from one to over 2,000 acres, though most are 20 acres or less. Some of these areas are popular destinations and warrant monitoring to ensure that recreational impacts do not compromise the integrity of the sites. Other Botanical Areas serve as baselines for monitoring trends of sensitive species. Botanical Areas are selected for monitoring each year, based on level of risk to resources and vulnerability to change. In addition, three Botanical Areas are monitored annually to track population trends of fringed pinesap.

Results: Three Botanical Special Interest Areas were visited in 1995 (sites 3053, 3054, and 3115). Of the five fringed pinesap populations that were monitored in 1995, four had more individuals than were observed in 1991. The number of individuals at one site declined by 17 percent. Three and five fold increases were observed at two of the sites. Population increases during 1995 are suspected to be correlated to high summer precipitation. No negative population impacts were observed at the sites visited.

Action to be taken: No corrective action required. Revise monitoring protocol to reflect level of risk and collect baseline data for other Botanical Special Interest Areas.

Monitoring Item: 40. Retention of Snags and Down Logs for Cavity Excavators

Introduction: Dead and partially dead trees referred to as "snags" are important to certain wildlife species. They serve as breeding areas, shelter, and a host to insects which provide food for birds. To provide suitable habitat a snag needs to be at least 17 inches in diameter and 40 feet high. Species dependent on snags include the pileated woodpecker and several other woodpecker species, red-breasted sapsucker, red-breasted nuthatch and northern flicker.

Science is expanding our understanding of the role of downed material in forest ecosystems. Down logs are important because of their role in mineral cycling, nutrient mobilization, and natural forest regeneration. In addition, down logs provide structure and habitat suitable to many wildlife species.

Results: While reviewing these results, it is important to understand why some well planned and executed timber harvesting projects may not meet the Forest Plan standards and guidelines:

- A project can not be required to follow current standards and guidelines of the Forest Plan if the project was sold before the standard and guidelines were in place. Such projects are evaluated against the guidelines in place when the projects were planned.
- The average diameter of the stand was too small, making it impossible to meet the snag and down log size requirements specified by current guidelines. In such cases, the purchaser is required to leave the largest trees when the required diameter is not available.

A total of five timber sales were monitored in 1995 for compliance with Forest Plan's standard and guidelines. The summary of the sales is provided by the chart below.

Table 10 - Projects Monitored for Green Trees, Snags, and Downed Log

Timber Sale Projects	Standards Met? (Yes or No)		
	Green Tree	Snag	Down Woods Debris
Pre-Forest Plan			
Blue 2	Y*	N/A*	Y
Puget	Y*	N/A	Y
Ought (Unit 2)	Y**	N/A	N
a. Unit 4	Y	N/A	N
b. Unit 9	N	N/A	Y
c. Unit 10	Y	N/A	N
Post-Forest Plan			
Midway 2	Y	Y	Y
Power Unit 5	Y*	(Y)	Y
Unit 6	Y*	(Y)	Y
Unit 8	Y**	Y	Y

* = Trees in excess of wildlife needs were retained to meet visual objectives.

** = Trees in addition to wildlife needs were retained to provide dispersal habitat for spotted owl.

Pre-Forest Plan:

Since these sales predate Forest Plan standards and guidelines, they were monitored with respect to their EA requirements. Their EAs did not include requirements to provide snags.

Post-Forest Plan:

(Y)= Snags not present after harvest but green trees were retained for the purpose of creating snags.

Evaluation: As shown above, three of the five sales are Pre-Forest Plan. Though the pre-Forest Plan sales did not meet Forest Plan standards and guidelines, they met the requirements as documented in each respective EA and timber sale contract. Some of the pre-Forest Plan sales were negotiated with the purchasers to leave more trees than specified, providing foraging and dispersal habitat for spotted owls, and better protection of streams. All post-Forest Plan sales met requirements of the Forest Plan.

Recommended Action to be Taken: Unit managers should notify the Forest Supervisor of circumstances which lead to conflicts between standards and guidelines and existing contract provisions. There may be opportunities to negotiate modifying the now obsolete requirements to bring them closer or into compliance with current standard and guidelines.

Timing of the monitoring is important. When sales are scheduled for snag and down log creation, it is important they be monitored after the work is completed; otherwise, we can only speculate on the outcome.

Monitoring Items: 50-55. Timber Program

Introduction: In 1994 the Gifford Pinchot National Forest began implementing the standards and guidelines of the Northwest Forest Plan. Beginning this year we compare accomplishments to the projections made for the 1994 Northwest Forest Plan. In past years, we have compared accomplishments to our 1990 Forest Plan projections.

Results:

50 - Adequate Reforestation

Table 11 - Adequate Reforestation

Plantation Acres	Adequately Stocked	% Adequate Stocking
6892	6750	98%

Standards and guidelines regarding plantation stocking were met.

51 - Silvicultural Harvest Methods

Table 12 - Silvicultural Harvest Methods

Silvicultural Practice	1995 Acres Sold	NW Forest Plan Projection
Clearcut Harvest	0	0
Regeneration Harvest	**1004**	**1839**
Commercial Thinning	1431	2309
Totals	**2443**	**4148 acres**

Overall, the Forest treated an acreage of about 60 percent of the Northwest Forest Plan projection as we ramp up to full probable sale quantity.

52 - Regeneration Harvest Units

Thirty-nine Harvest units were sampled to see if they met Forest Plan standards for size and separation. All harvest units met the standards.

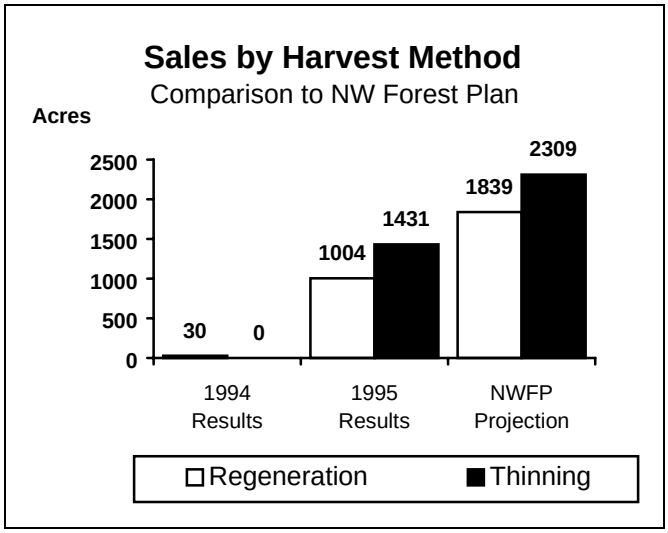
54 - Volume Sold

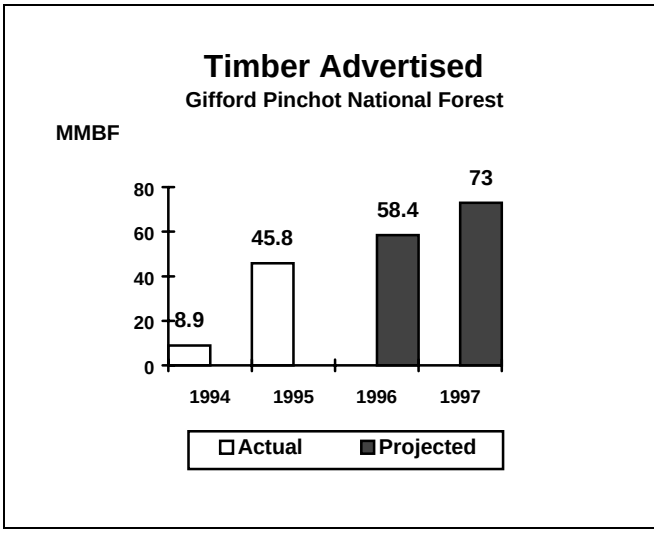
As the Forest Service transitions from old Forest Plans to the Northwest Forest Plan, the timber sale goal was set at 60 percent Northwest Forest Plan volume projection for 1995, 80 percent in 1996, and 100 percent by 1997. By selling 62.7 percent of our volume projection in 1995, the Forest accomplished the 1995 sale goal.

Table 13 - Volume Sold

Year	Volume sold MMBF	Volume sold MMCF	NW Forest Plan Projected Volume MMBF	NW Forest Plan Projected Volume MMCF	% of Forest Plan volume sold
1995	45.8	8.4	73	13.4	62.7%

The two figures below help to illustrate the results discussed in Item 54 on the preceding page.





55 - Timber Revenue and Expenses

The following table shows timber harvest and monetary outlays since 1991. The fluctuations in figures are due 318 timber sale legislation, an injunction on sales in spotted owl habitat, and the adoption of the NW Forest P Declining harvest and revenues should stabilize as the NW Forest Plan is implemented.

Table 14 - Timber Revenue and Expenses

Timber Harvest and Monetary Outlays	1991	1992	1993	1994	1995
Revenues	$68,439,000	$41,380,000	$44,751,000	$30,894,000	$16,501,000
Total Timber Expenses	$18,310,000	$16,257,000	$17,924,000	$15,745,000	$14,474,000
Net gain	**$50,130,000**	**$25,123,000**	**$26,827,000**	**$15,149,000**	**$2,028,000**
Payments to States	$15,205,000	$12,389,000	$11,701,000	$11,701,000	$11,287,000
Volume harvested (MMBF)	286	160	155	96	59
Volume under contract (MMBF)	535	343	196	83	34
Volume advertised (MMBF)	19	22.6	14.4	8.9	45.8
Volume sold (MMBF)	19	24.8	22.7	5.8	45.8
Total Acres Harvested	6,346	3,003	3,234	3,459	2,229

Monitoring Item: 56. Silvicultural Prescriptions

Introduction: The silviculture prescription is the result of examining forest stands and diagnosing treatment needs. It prescribes the methods and timing of silvicultural activities. These determinations take into account numerous factors involving silvics of the trees and the local site conditions but also other resource objectives and Forest Plan direction. The process consists of preparing a general prescription and having an interdisciplinary team establish limits and objectives to be achieved based on Forest Plan goals and objectives and standards and guidelines. The purpose of this item is to ensure that silviculturists are considering other resource objectives and the prescriptions are developed through an interdisciplinary process.

Results: Five silvicultural prescriptions were selected for review for compliance with the Forest Plan. Each prescription was reviewed with respect to the following standards and guidelines:

- Prescription Logic
- Created Openings
- Dead/Down in Riparian
- Current Hardwoods in Riparian Areas
- Chemicals in Riparian Areas
- Silviculture Exam in all Developed Recreation Areas
- Consistent with Visual Quality and other Objectives in Recreational Rivers
- Cavity Excavators
- Species Conversion
- Chemicals in Deer/Elk Winter Range
- Forage Seed in Deer/Elk Winter Range
- Select Criteria from Appendix F of the Final Environmental Impact Statement
- Site-Specific Considerations

Evaluation: All prescriptions reviewed meet the standards and guidelines and several standards and guidelines are exceeded.

Action to be Taken: Continue monitoring.

Monitoring Item: 60. Soil Productivity

Introduction: Soil productivity is critical to all management activities. The 1976 National Forest Management Act directs forest and range managers to carry out their management activities such that they do not significantly or permanently impair the future productivity of the land. The purpose of this monitoring item is to ensure that guidelines for maintaining long-term soil productivity are being implemented when ground-disturbing activities occur.

Results: Two of the three sales monitored had mitigation measures that required temporary roads, landings, and skid trails to be ripped, seeded and fertilized. This was done well on two sales. The third sale had only a two to three acre area that was tractor yarded. No ripping was required.

Observation of the organic matter on harvested units revealed that the duff layer and ground cover continued to cover 80 percent or more of the unit for all harvest units. A few units on one sale will be broadcast burned to reduce the fire hazard. The expectation is to get a light burn which would not significantly change the current organic matter layer situation.

In one harvest unit, one-third of the unit used cable yarding to remove the timber. There were at least five cable roads where, for more than a third of the road length, logs had no suspension and a furrow was developed. The organic matter and surface soils where removed exposing the subsoil to erosion.

Evaluation: The standards and guidelines that require ground disturbing activities to not exceed 20 percent of the harvest area where adhered to in all harvest units of the three sales reviewed. Ground disturbance in the one cable harvest unit did not reach the threshold for disturbance, but the capability of the yarding equipment may not have been utilized, thus results where less than desired under these circumstances.

This is the first year in five years of monitoring that the soil productivity standard and guideline criteria was met in all timber sales visited providing evidence that our monitoring program is leading to improved management practices.

Recommended Action to be Taken: Monitoring for this standard and guideline should continue.

Monitoring Item: 61. Implementation of Best Management Practices (BMPs)

Introduction: Best Management Practices are the primary mechanism enabling the achievement of water quality standards. BMPs are selected and tailored for site-specific conditions to provide project level protection of water quality. The 1976 National Forest Management Act directs us to protect streams, streambanks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where activities are likely to seriously and adversely affect water conditions or fish habitat.

Each of the three Skill Centers reviewed one timber sale selected randomly from twenty completed timber sales.

1. **Results:** *Streamside Management Unit Designation -- a zone of special management consideration because of its high resource values.* Buffers were not left along stream channels as prescribed, resulting in streambank disturbance, loss of shade, and loss of streambank stability. The sale-area map for one unit showed a Class IV stream. Field inspection revealed that the Class IV stream was actually a Class III. Another harvest unit on the same timber sale also had an unidentified Class III stream. The EA called for a 50 foot non-merch buffer along Class III and Class IV streams. *(Pin Timber Sale, sold 1990)*

   On another timber sale a Class IV stream on one unit was not identified on the sale-area map. *(Horse Porky Timber Sale, sold 1990)*

   Evaluation: This BMP departure was a direct result of improper identification of streams or lack of stream identification and placement on the sale area map during the sale layout/prep and/or contract preparation phase of the timber sales.

   Some protection was afforded when wildlife leave trees where located along the Class IV stream channel of the second timber sale. *(Horse Porky Timber Sale)* The Class III stream identified on the sale area map of the first sale *(Pin Timber Sale)* as a Class IV received a 25 foot large tree buffer rather than a 50 foot non-merch buffer called for in the EA. In both these cases the sale administrators negotiated partial remedies of the errors made in the preparation phase.

2. **Results:** *Streamcourse Protection -- All project debris shall be removed from streamcourses, unless otherwise agreed...* Stream cleanout on one sale was not done in two cases per BMP in the EA. *(Pin Timber Sale*). In both these cases, new woody debris resulting from harvest activities was left in a Class III stream channel. The amount and potential affect would rate as minor.

   Evaluation: This BMP departure resulted when streams were not identified on the sale area map. This mitigation measure was documented in the EA and the contract included the correct clause.

3. **Results:** *Streamcourse Protection* Failure to directional fall away from perennial streams. On the one Class III stream which was not identified on the sale area map, a few stumps and bank disturbance indicated that directional falling away from the stream had not occurred. Yarding out of and perhaps across the stream had occurred.

   Evaluation*:* The stream was not identified on the sale area map. The EA mitigation measure calling for directional falling and contract language was in place but not followed. *(Pin Timber Sale)*

4. **Results:** (*Obliteration of Temporary Roads... road surface deeply ripped*) Ripping of the two temporary roads was called for in the EA on one timber sale. Where the road was not ripped it was very rocky with large boulders.

   Evaluation: This BMP departure was inconsequential. Ripping would not have provide the desired result. *(Mac III Timber Sale, sold 1993)*

5. **Results:** (*Revegetation of Areas Disturbed by Harvest Activities)* A temporary road which was ripped did not receive seed and fertilizer. Rationale for the failure to seed and fertilize was not documented and so it is presumed to be an oversight.

   Evaluation: This BMP was called for in the EA as mitigation measure. However, not all ripped roads need to be seeded and fertilized. In this case, the ground was flat and no streams were in the vicinity. The ripped ground will naturally revegetate within a couple years. The situation is a minor departure. *(Mac III, sold 1993)*

6. **Results:** *Obliteration of Temporary Roads...* On two different timber sales, a temporary road was obliterated at the point were it crossed a Class IV stream. In both cases no effort was made to reestablish the stream channel. The loosened soil of ripped truck roads is susceptible to erosion by accumulated water. In the case of the Class IV stream it will down-cut through this loose soil material. The sediment will work its way down the channel and eventually reach a perennial stream.

   Evaluation: This BMP departure did not meet "Road effectively drained" intent. This sediment is not natural. It, along with other unnatural sediment, is cumulative and can lead to other degrading effects including stream widening, loss of pools, etc. in the aquatic and riparian systems. *(Pin Timber Sale; and Horse Porky Timber Sale)*

Recommended Actions to be Taken: ID Team members, those doing pre-sale layout and contract preparation must take responsibility for making sure the unique features found on the ground - streams, meadow and lakes - are located and identified correctly on the sale area map.

Sale administrators must make sure that directional falling is adhered to when and where it is called for in the contract. Contract preparation staff must make sure that language and the location for directional falling is correctly included in the contract when it is called for as mitigation in the EA.

When roads of any kind, system roads to tractor skid roads, cross a Class IV stream and are being obliterated, soil material should be removed back down to the original stream channel substrate so that the sediment source is eliminated. If there is any bank area which might also erode, this too should be sloped back so that it does not become a source for sediment. In addition, seeding of grass and forbs and the planting of willow or alder should be consider as mitigation measures near stream channels.

Monitoring Item: 62e. Fish Management Indicator Species Population

Introduction: Cutthroat trout (*Oncorhynchus clarki*) and steelhead (*Oncorhynchus mykiss*) are fishes that live in several streams and rivers on the Forest. The numbers of fish present is an indication of the "health" of the stream and aquatic environment.

Results: Information is provided for four distinct populations of cutthroat trout or steelhead occurring within the Forest boundaries.

CUTTHROAT TROUT

Table 15 - Cutthroat Trout

Population Identifier	Species	Sample Size	Miles Inhabited	Extrapolated Population	Trend
Trout Lake Creek	O.clarki	0	unknown	unknown	unknown
Pepper Creek	O.clarki	217	2.5	830	unknown
North Fork Cispus	O.clarki	17	15.0	2693	unknown

Evaluation: The sampling approaches and resulting data reliability are variable for the cutthroat population estimates, but results indicate that viable populations exist in the North Fork Cispus River and Pepper Creek. Each system is discussed below:

Trout Lake Creek: Sampling in 1995 produced brook and rainbow trout, but no cutthroat trout. A technician who was present during sampling at Trout Lake Creek in 1994 and 1995, believes that the cutthroat trout reported in the 1994 monitoring report were misidentified and were actually rainbow trout. We now believe that cutthroat trout do not inhabit Trout Lake Creek. Fish surveys from 1987 indicated that cutthroat trout were present then, but the reliability of that data is also questionable. Cutthroat trout have never been found in the upper White Salmon River Watershed (which includes Trout Lake Creek) by Washington Department of Fish and Wildlife biologists.

Pepper Creek: The reported population size of Pepper Creek was derived from snorkel counts from 10% of the available habitat in the stream. Electrofishing was also conducted, but the data was used for species composition rather than enumeration. All sampled fish in Pepper Creek were identified as cutthroat trout. A comparison between snorkel counts and electrofishing data indicates that the population estimate derived from snorkeling is substantially lower than the true population size. A total of 128 fish were sampled during electrofishing from 662 linear feet of stream, but only 83 were observed in snorkel counts from 1,320 linear feet of stream. Population estimates associated with the 3 electrofishing sites totaled 144 fish, with standard errors of the estimates of 7.05 or less.

North Fork Cispus: Population size of cutthroat trout was approximated by extrapolation of a snorkel count from less than 1% of the available habitat. Because of the limited sampling area, the results cannot be considered reliable. An attempt was made to conduct a 3-pass electrofishing estimate at the snorkeled site, but because a non-descending removal pattern was observed, the sampling was terminated. Although the population estimate is not reliable or statistically valid, it is highly probable that a viable population level occurs in this system because of the high density of cutthroat trout in the sampled area, and the large amount of available habitat for the population.

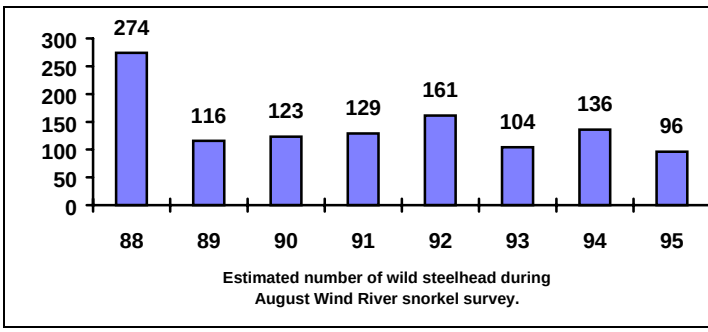
Programmatic Recommended Action to be Taken:

The Ecosystem Staff Officer will:

1) Determine the current distribution of cutthroat trout on the Gifford Pinchot National Forest.
2) Determine if sufficient resources are available to do the intensity of sampling needed to determine species viability for resident cutthroat trout.

STEELHEAD - Wind River Basin

Results: Population data in the chart below is based on the annual Wind River snorkel survey conducted by the Washington Department of Fish and Wildlife, Clark Skamania Flyfishers, the USDA Forest Service, and concerned citizens.



Estimated number of wild steelhead during August Wind River snorkel survey.

Evaluation: The estimated population does not constitute a viable population. The upper Wind River and upper Trout Creek drainages lack

riparian vegetation because of past management practices which have led to unstable stream banks and a lack of shading. Water temperatures continue to exceed Washington state water quality standards (1977-1995) and have been recorded above lethal limits (1990-1995). Timber harvest in the riparian area also reduced or eliminated the source of large woody material resulting in poor pool habitat, wide, shallow streams, and inadequate hiding and holding habitat. Difficulties with fish passage at Hemlock Lake may also have an adverse effect on fish survivorship. Global weather patterns and sport and commercial fishing have also taken their toll, but are not directly related to Forest management activities.

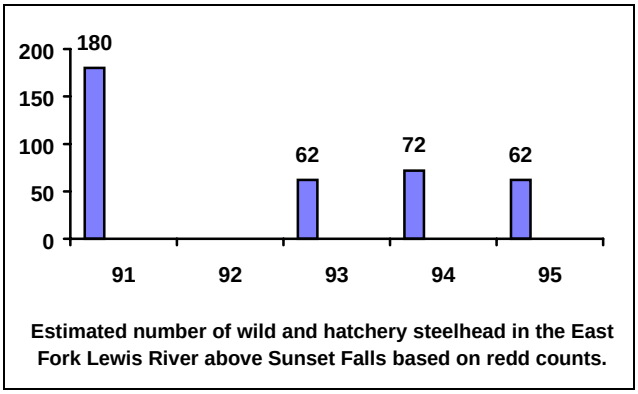
The Northwest Forest Plan now provides adequate riparian protection for streams across the Forest. Watershed analysis of the Wind River basin is identifying the areas most in need of restoration, and an aggressive restoration program is in progress.

The US Forest Service, in partnership with the US Fish and Wildlife Service, Underwood Conservation District, Clark Skamania Flyfishers, Washington Trout, and Washington Dept. of Fish and Wildlife has done the following restoration projects during the past 3 years in the Wind River basin:

- Improved fish passage at the Hemlock dam and fish ladder in an effort to increase the number of steelhead returning to spawn upstream in Trout Creek.
- Planted 56,000 conifers, 20,000 hardwoods, and done extensive seeding with native grasses along 3.6 miles of Trout Creek, Layout Creek, and Crater Creek. The trees and grasses are helping to stabilize the stream banks; the hardwoods and conifers will eventually shade the river, and provide a source of large wood to the rivers.
- Planted large trees into sections of Trout Creek and the Wind River to help prevent bank erosion, provide hiding cover for fish, and create large pool habitat areas.

STEELHEAD - East Fork Lewis River

Results: Population data was collected during a July snorkel survey, conducted from the base of Sunset falls downstream to the mouth of Mason Creek near tidewater (approximately 75% of the available steelhead habitat). The estimated number of wild adult summer steelhead in this section was 85 at the time of the snorkel survey. This is the first extensive snorkel survey completed on the EF Lewis River, and is expected to become an annual event. Washington Department of Fish and Wildlife, Clark Skamania Flyfishers, US Fish and Wildlife Service, Gifford Pinchot National Forest, and concerned citizens conducted the survey. Results are shown below for winter steelhead population estimates above Sunset Falls for the 1991, 1993, 1994 and 1995 return years. Redd count data includes the mainstem EF Lewis River and several of its tributaries: Green Fork, Little Creek, and Slide Creek.



Estimated number of wild and hatchery steelhead in the East Fork Lewis River above Sunset Falls based on redd counts.

Evaluation: It is unknown whether the population size constitutes a viable population. The entire East Fork Lewis River needs to be considered to determine whether a viable population exists. Results from the snorkel and redd count surveys are not comparable because they are done to count summer and winter steelhead, respectively. Habitat loss, illegal fishing, increased stream temperatures and lack of large woody debris all contribute to low fish numbers. Although our National Forest fishery biologists are working to identify habitat restoration projects, the bigger challenge may be in restoring the river downstream on state and private lands, where the majority of spawning and rearing habitat occurs.

Recommended Action to be Taken: The Ecosystems Staff will:

1. Continue coordinating steelhead recovery efforts with concerned parties (State, Federal,

Tribal governments, private groups and individuals). This includes re-establishing riparian vegetation and streambank stabilization.

2. Work with WDFW and other concerned groups to expand the East Fork Lewis River snorkel survey to include anadromous waters above Sunset Falls.

Monitoring Item: 62h.
Aquatic Habitat Objectives

Introduction: Establishing clear and concise objectives helps us to:

1) determine the health of a watershed,

2) identify what types of restoration projects are needed, and

3) identify monitoring needs.

A key objective is the number of deep pools per mile of stream; others include water temperature, shade, and width-to depth ratio and amount of woody debris. The purpose of this monitoring item is to assess our progress in defining objectives in the context of each 6th-field watershed on the Forest. (A 6th-field watershed is the sixth subdivision of a hierarchical system for classifying watersheds, often referred to as a drainage.)

Results: Five watershed analysis documents were reviewed for the establishment of aquatic habitat objectives: 1) Upper and Middle Cispus, 2) Lower Cispus West, 3) Upper Lewis, 4) Middle Lewis, and 5) Little White Salmon. Objectives were established in each document, but not for all 6th-field watersheds. The table below summarizes the percent of 6th-field watersheds with aquatic habitat objectives.

Table 16 - Aquatic Habitat Objectives

Watershed	Upper/ Middle Cispus	Lower Cispus	Upper Lewis	Middle Lewis	Little White Salmon
Objectives Established	**15%**	**5%**	**56%**	**60%**	**37%**

Evaluation: The variability in established aquatic habitat objectives between watershed analysis areas is the result of varying levels of restoration opportunities identified in the analyses. Objectives were usually not established for:

1. areas that are not a high priority for restoration,
2. areas where restoration is not needed at this time, and
3. areas where restoration may not be feasible at this time.

Recommended Action to be Taken: The Ecosystem Staff Officer will support the establishment of aquatic habitat objectives for all 6th-field watersheds where restoration activities are identified as a high priority.

Monitoring Item: 62i. Threatened, Endangered, and Sensitive (TE&S) Fish Species

Introduction: Bull trout are currently listed as a sensitive species, and are the only TE&S fish species on the Forest. The only verified population exists in the North Fork Lewis River. It is an adfluvial population that migrates to and from Swift Reservoir. Because Bull trout need cold, clean water to live in they are a good indicator of watershed condition.

Results: The distribution of this species has not changed since monitoring began in 1990. The population currently occupies 11.9 miles of stream habitat in the North Fork Lewis River, Rush Creek and Pine Creek.

Table 17 - Current Population and Miles of Stream Habitat

Description	1990	1991	1992	1993	1994	1995
Population Data (Confidence Interval)	N/A	46 (22-148)	.23* N/A	.37* N/A	101 (85-118)	246 (193-326)
Stream Miles Occupied	11.9	11.9	11.9	11.9	11.9	11.9
*Catch per effort data, confidence intervals were not estimated.						

Evaluation: The Swift reservoir bull trout population is considered to be at a viable population size because it exceeds 200 spawning adults.

It has been difficult to obtain reliable population size data for the North Fork Lewis River bull trout. Four different population size indicators have been used since 1990:

1. a mark and recapture population estimate in 1991.
2. catch/unit effort calculations based on short-term gill net sets in 1992 and 1993.
3. snorkel counts in 1994.
4. mark-visual observation technique in 1995.

The 1995 population estimate is the first estimate to have statistical validity, and is considered our best population estimate. The 1995 population estimate was calculated using the Joint Hypergeometric Maximum Likelihood Estimator (JHE). Data adjustments included: 1) a 10% reduction in marked fish available for those fish that did not migrate (based on radio-tracking data from previous years), and 2) a 10% reduction in marked fish available for tag loss. Based on confidence interval calculations, we are 95% certain that the true spawning population size is between 193 and 326 adults. This estimate is for only adult fish that migrated from Swift Reservoir to Rush and Pine Creeks in the North Fork Lewis River Basin.

Because of the differences between the population estimators, a population trend analysis is not possible. However, the opinion of biologists from USFS, WDFW, and PP&L, who have monitored this population since 1990, is that the population is increasing.

Recommended Action to be Taken: The Forest should explore opportunities to re-establish conifers in riparian areas along Pine Creek. The Ecosystems Staff Officer will continue to evaluate population estimation techniques for use on the North Fork Lewis River bull trout population.

Monitoring Item: 62j. Effectiveness of In-Channel Habitat Improvement Structures.

Introduction: In-channel structures are used to help restore fish habitat in streams. Monitoring gives us feedback on how to improve our structures and shows us what works best in different types of river systems.

Results: Information is provided for whether in-channel structures (logs and boulders) are meeting their objectives (e.g., bank protection, hiding cover for fish, creating pools, accumulating spawning gravels).

Table 18 - Channel Habitat Improvement Structures

Installed in 1988 Meet Objectives?			
Structure Type	Fully	Partial	No
Bank Protector	1	2	1
Cover Log	3	4	3
log deflector		2	1
Logjam			1
Log Sill			
Rock Deflector			
Upstream "V"	1	1	
TOTAL	**5**	**9**	**6**
Percent	25%	45%	30%

Installed in 1993-94 Meet Objectives?			
Structure Type	Fully	Partial	No
Bank Protector		1	
Cover Log	4	0	
log deflector	2	5	1
Logjam			
Log Sill		1	0
Rock Deflector		1	
Upstream "V"			
TOTAL	**6**	**8**	**1**
Percent	40%	53%	7%

Evaluation: We discovered that site-specific objectives for instream structures were often not recorded in project files. Therefore, fisheries specialists had to base evaluations on their "best guess" at what the objectives were. More structures placed in 1993-94 either fully or partially met their objectives than structures placed in 1988. However, it is unclear if this is because of better design and contract work, or because the structures are simply newer and haven't been exposed to as many floods. Several structures installed in 1988 were moved to different positions during high flows, and they are either no longer in position to protect the banks with which they were once associated, or, in some cases the structure exacerbated the high flow, and actually caused increased bank erosion. The high flows moved some structures into more stable positions, where they are still providing fish cover.

Of all structures in place, 80 percent either fully or partially meet objectives.

Recommended Action to be Taken:

1. The lack of clearly stated objectives is unacceptable. Recognizing this, the Forest is developing a restoration protocol that includes identifying both project and site specific objectives for all future restoration projects.

2. Watershed analyses should continue to be used to determine high priority restoration needs. No instream channel work should be done until adverse upslope conditions are addressed.

Monitoring Item: 70. Road Closures

Introduction: There are several factors leading to road closures across the forest. The Northwest Forest Plan calls for no net increase in roads in key watersheds; some roads have been identified as sources of sediment in streams. Road use can lead to harassment of wildlife. We are also closing roads because in an era of declining budgets and reduced support from our timber program we can no longer afford to maintain them properly.

Permanent closures are year-round closures created by berms, or rock barricades, or by allowing vegetative growth to obscure the road. Seasonal closures are effected by gates or other barriers that allow the road to remain open during non-critical periods.

Table 19 - Road Closures and Density

Forest-wide Road Closures	
Closures	1995 Levels
Permanent	718.0
Seasonal	301.0
Total	1,019.0

Road Density in Deer & Elk Winter Range	
Miles of open road	708.0
Land Area (sq. mi.)	297.4
Road Density	2.4 mi./mi.2

Results: Road closures are one of the means of reducing wildlife harassment in deer and elk winter range. The Forest Plan projected a density of 1.1 mile of open road per square mile within the winter range. Currently the density within biological winter range is 2.4 miles of open road per square mile. This translates to a total of 1,230 miles of road in seasonal or permanent closure, according to the Forest Plan. With 1,019 miles closed, the Forest is at 83% of the projected goal.

Evaluation: This year, our road closure data are more accurate than last year, since the effectiveness of road closures was more thoroughly checked. We found that some of the roads categorized as closed in our road inventory are no longer closed on the ground. The illegal breaching of road closures is a problem, since funds are often not available immediately to close the roads again. This has resulted in the miles of closed roads shown in this year's report being smaller than the miles of closed road shown in last year's report. (1,019 miles in 1995, vs 1,416 in 1994.) For the same reason, the miles of open road in deer and elk winter range is larger than the miles shown in last year's report, and the density of 2.4 is higher than last year's reported density of 1.6 miles per square mile of area.

About 30 miles of system road were "decommissioned" or restored to more natural conditions and taken off the road system during 1995. Of these, about 21 miles were decommissioned within key watersheds, and 9 in non-key watersheds.

Recommended Action to be Taken: Continue to check for the effectiveness of road closures, repair road closure devices that are breached or ineffective, and continue to close unneeded roads.

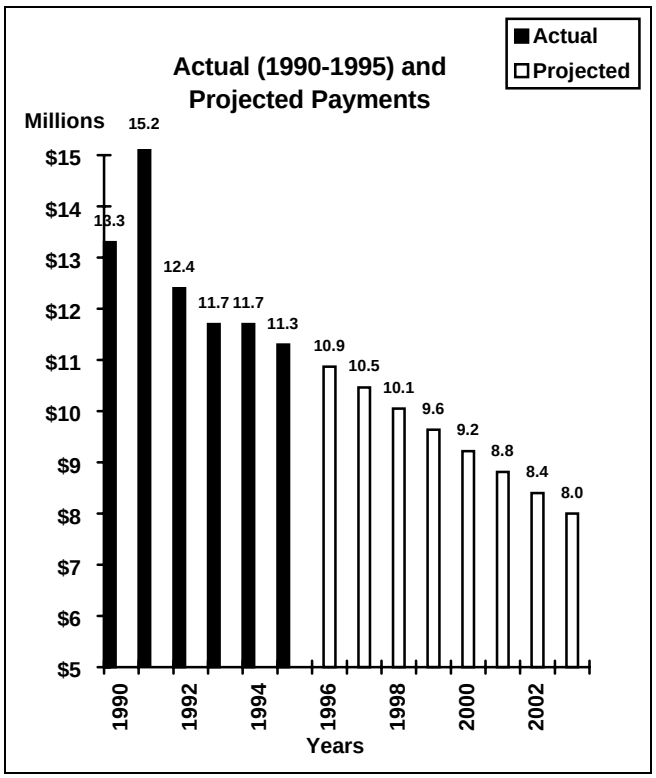
Monitoring Item: 84. Community Effects - Payments to Counties

Introduction: By an act of Congress in 1908, 25 percent of revenues are paid to the counties in proportion to the amount of national forest land in each county. The act stipulates that the money generated is to be spent on public schools and roads.

County receipts on the Gifford Pinchot National Forest are generated primarily by timber harvest. Collections from recreation, mining, grazing and administrative uses account for less than 2 percent of the total receipts.

Table 20 - Community Effects--Payments to Counties

County	Percent Total Receipts	1995 Distribution
Clark	0.1	$ 10,160
Cowlitz	2.5	$ 294,681
Klickitat	1.1	$ 126,199
Lewis	28.6	$ 3,218,085
Skamania	64.8	$ 7,315,151
Yakima	2.9	$ 323,327
Total	100.0	$ 11,287,603



Results: Timber harvest of 59 million board feet in 1995 was the lowest figure on records going back to 1956. If payments were based on actual receipts from timber harvested, they would be only about one-forth these amounts. Instead, payments were computed under a provision of the Interior and Related Agencies 1993 Appropriations Act which provides for payments to counties of not less than 85 percent of the five-year average payments for fiscal years 1986-90 for those National Forests affected by decisions on the northern spotted owl. Beyond 1994, guaranteed payments are reduced 3 percent per year until 2003. Under the law, payments for 1995 were computed as 82 percent of the 1986 to 1990 average. Next year the receipts will be 79 percent of the same average. These funds are distributed to the counties based on the proportion of the total National Forest in each county. In 1995, $8.61 was returned to the counties for each acre of the Gifford Pinchot National Forest within each county. The current distribution among counties within the Forest boundary is displayed in the table above.

Monitoring Item: 91. Mining Operating Plans

Introduction: The Forest Service has been charged with making minerals available to the economy, while at the same time, minimizing the adverse impacts of mining activities on other resources. Mining is unlike other "multiple use" activities on federal lands in that the General Mining Law of 1872 grants the federal land management agencies far less authority over mining activities than over timber harvest, recreation, grazing and other activities. The Forest Service minerals regulations, 36 CFR 228, require that where feasible, mining operations be conducted to minimize environmental impacts. These regulations require that a Notice of Intent be submitted to the Forest Service District Ranger on the district where the mining is proposed. The operator is required to submit a Plan of Operations if the District Ranger determines "that such operations will likely cause significant disturbance of surface resources."

Results: Only one plan was received in FY95 and it was later withdrawn by the claimant. There are two ongoing plans from previous years with minor operations taking place. These existing plans are located on the Wind River District and the Randle District. Both were visited by the FH Program Coordinator and the Area Mining Engineer.

No cases of noncompliance were identified or reported.

There were no required reclamation activities and none accomplished

Evaluation: Standards and guidelines are being met.

Recommended Action to be Taken: No corrective action required - monitoring to continue.

D. Accomplishments

The following table compares program accomplishments for FY's 91-95:

Table 21 - Program Accomplishments

Output	Units	Outputs					1995 Target
		1991	1992	1993	1994	1995	
Developed and Dispersed Recreation Use	Recreation Visitor Days	NA	NA	NA	NA	7,740	*
Wilderness Use	(thousand	NA	69.5	75.8	88.4	76.5	*
Wildlife Habitat Imp:							
• Structural	Structures	2,727	2,881	1,720	592	1,919	100
• Nonstructural	Acres	8,245	600	39,046	120	46	
Trail Const/Recon.	Miles	64	32.2	20	54	55.3	22.6
Trails Maintained	Miles		988	1015	712	903	*
Wildlife Indicator Species:							
• Deer	Habitat Capability	20,210	19,480	18,760	18,030	17,310	
• Elk	animals	5,230	4,870	4,690	4,510	4,330	*
• Mountain Goat	animals	240	250	260	275	290[1/]	290
• Pileated Woodpecker		552	552	552	552		*
• Pine Marten		1,130	1,130	1,130	1,130		*
• Cavity Excavators	% Habitat Potential	50	49	49	49	49	*
• Spotted Owl	Pairs	145	145	145	145	145	*
Vegetation:							
• Old Growth Retained	Acres						
• Gross Sell Volume	MMCF	3.7	4.2	3.1	0.6	8.7	*
	MMBF	19.1	22.3	15.6	8.9	45.8	*
• Net Sell Volume	MMCF	2.4	3.8	2.9	1.0	8.3	*
	MMBF	11.7	19.8	14.8	5.8	43.6	65
• Volume Harvested	MMBF	286.4	160.3	154.9	96.1	58.7	*
• Reforestation	Acres	8,843	5,703	6,104	5,622	3109	5,557
• Fuel Wood	CF	847	469	511	509	560	*
• Precommercial Thin	Acres	3,340	3,091	1,861	3,089	3113	4,359
• Release	Acres	158	0	0	0	100	*
• Fertilization	Acres	2,018	3,100	3,166	971	100	*

*There are no regional targets for these items.

[1/]Increase due to reduction in open roads and hunting permits issued.

D. Accomplishments (continued)

Output	Units	Output					1995 Target
		1991	1992	1993	1994	1995	
Grazing	AUMs	2,430	2,193	1,732	1,732	1,732	*
Watershed Improvement	Acres	34	168	18.6	24	155	24
Air Quality	Particulate/ Tons	NA	NA	584	43	74	*
In-service Min. Material use	1,000 Tons	219	167	65	19	10	*
Fuel Treatment	Acres	7,897	6,684	4,002	4,143	2,183	2,210
Timber Purchaser Roads:							
• Construction	Miles	32.7	7.5	7.8	2.3	2.9	*
• Reconstruction	Miles	17.0	5.4	1.3	6.5	4.9	*
Allocated Funding (Roads):							
• Construction	Miles	0.5	0.1	0.3	3.1	0	*
• Reconstruction	Miles	10.7	10.7	0.9	16.1	14.4	*
TOTAL ROAD ACTIVITY	Miles	60.9	23.7	1.2	28.0	22.2	1.2
Roads Open to:							
• Passenger Cars	Miles	1,247	997	998	811	828	*
• High Clearance	Miles	2,488	2,428	2,295	2,091	2,424	*
Roads Closed	Miles	773	897	1,035	1,416	1,019	*
TOTAL ROAD SYSTEM	Miles	4,508	4,322	4,328	4,318	4,271	*
Returns to Govt.	$ Million	62.4	34.3	31.3	32.8	11.3	*
Payments to Counties	$ Million	15.6	12.4	11.7	11.7	11.3	*
Potential Timber Related Jobs Source: TSPIRS	Jobs	4,200	2,362	2,219	1,425	864	*
Landlines:							
• Located	Annual Mi.	18	28	19	10	10	10
• Maintained	Annual Mi.	20	0	5	2	6	20
Congressionally Designated Boundaries	Miles	21	10	10	5	5	*
TOTAL BUDGET	$ Million	67.8	50.5	42.5	39.5	27.7	*

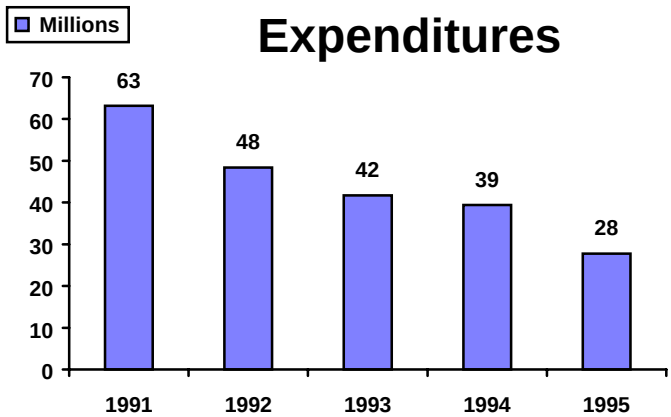
*There are no Regional targets for these items.

E. Expenditures

The budget for the Gifford Pinchot National Forest is an outcome the annual Congressional appropriations process. Budgets are not directly related to receipts from timber sales or other activities on the Forest. With few exceptions, receipts collected on the Forest are returned to the General Fund.

Congress allocates an annual budget for the Forest Service which is subsequently disaggregated to the nine Forest Service Regions. Forest Service Regional Offices then allocate the Regional budget among Forests in each Region.

The charts and table below and on the following page display expenditures on the Gifford Pinchot National Forest over the five years we've implemented the Forest Plan. The categories chosen for displaying expenditures were developed for the Forest Plan. The Forest Service has adopted a new accounting system named All Resources Reporting (ARR) which we will implement on the Gifford Pinchot for monitoring our expenditures beginning in FY 1996. Timber sale roads constructed with purchaser credit are included in the transportation expenditure. Working Capital Fund, Land Management Planning, and Human Resources Program expenditures are combined in the Other category. This system is somewhat arbitrary, adopting ARR will provide more resolution in our expenditure reporting while allowing consistent comparisons among national forests.



The graph and table on the next page provides more detail on expenditures by program area.

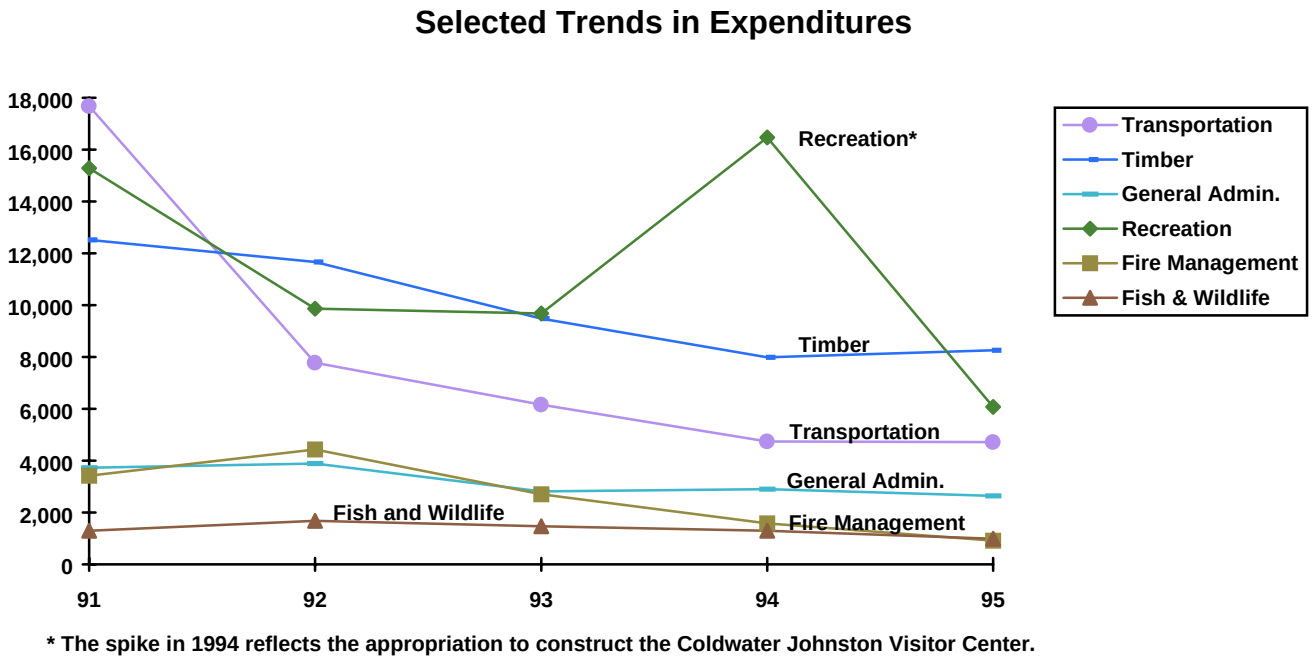


Table 22 - Selected Trends in Expenditures

Program	Expenditures (thousand $)				
	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Transportation	17,678	7,779	6,158	4,742	4,720
Facilities	687	482	612	638	553
Timber	12,517	11,672	9,477	7,986	8,258
General Admin.	3,725	3,895	2,813	2,901	2,641
Recreation	15,287	9,861	9,676	16,468	6,078
Fire Management	3,424	4,438	2,699	1,577	909
Fish & Wildlife	1,291	1,682	1,472	1,292	989
Soil, Water, Air	1,053	1,322	697	590	550
Lands and Minerals	540	639	1,043	502	451
Law Enforcement	415	365	733	384	295
Range	34	28	28	37	64
Ecosystem Mgt.	0	0	0	1,733	1,918
Other	6,517	6,200	6,266	589	312
Total	**63,168**	**48,363**	**41,674**	**39,439**	**27,741**

F. Forest Plan Amendments

The following is a list of amendments to the Forest Plan that have been approved to date:

Table 23 - List of Forest Plan Amendments

Amendment No.	Approved	Remarks
1	5/1/91	Decision Memo - Adds Pacific Yew to the list of Acceptable Species in all working groups.
2	9/24/91	Decision Memo - Provides additional direction for visual resource management and mineral claims and leases in Wild River corridors.
3	9/24/91	Decision Memo - Clarified the lower terminus of the Cispus River Wild and Scenic River recommendation in the Forest Plan documents to be coincident with the Federal Energy Regulatory Commission license boundary of the Cowlitz Falls Hydroelectric Project.
4	9/24/91	Decision Memo - Adds Bigleaf Maple as an Acceptable Species in the Western Hemlock Working Group.
5	9/24/91	Decision Memo - Includes monitoring criteria for the goldeneye and wood duck.
6	8/12/92	Decision Memo - Adds a section on Managing Noxious Weeds and Unwanted Vegetation to the Forest Plan.
7	11/24/92	Decision Notice - Opens Blue Horse Trail 237 to winter motorized use (snowmobiles).
8	3/3/93	Decision Memo - Modifies boundaries of the Forest Plan Map of Record.
9	12/13/93	Decision Notice - Allows grazing in exclosure area of the Cave Creek Wildlife Special Area.
10	7/08/94	Decision Memo - Allows grazing in the Grand Wildlife Special Area, a great blue heron rookery.
11	4/13/94	Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl. Subsequent documentation reconciles Forest-wide and Management Area Standards and Guidelines and the Forest Plan Map with the Record of Decision for the President's Plan. Replaces Forest Plan pages IV-45 through IV-150.

G. Five Year Forest Plan Review

File Code: 1920 Date: AUGUST 08, 1995

Subject: 5-year Forest Plan Review Required by NFMA Regulations
(36 CFR 219.10g)

To: Regional Forester, R-6

The Gifford Pinchot National Forest Land and Resource Management Plan (Forest Plan) has been implemented and monitored for five years, since it became effective June 1, 1990.

The April 1994 Record of Decision for the Northwest Forest Plan (ROD) amended the Gifford Pinchot National Forest Plan to enhance biodiversity, increase the amount of late-successional habitat, and increase protection of aquatic ecosystems. These changes led to a reduction in the level and intensity of timber harvest. Changes in the ROD are the result of new scientific information concerning ecosystem functions since the Forest Plan was released in 1990.

The soon-to-be-completed Eastside Ecosystem Management Strategy is another effort to better integrate science and resource management which could further affect how we manage lands east of the Cascade Crest.

Our planning team completed an update of our Forest Plan to reflect the ROD amendment in February, 1994. This update was the eleventh amendment of our Forest Plan and was accomplished through a thorough review of our Forest Plan by our Forest Planning Interdisciplinary Team.

Through monitoring, we have revealed difficulties in implementing certain of our Forest Plan Standards and Guidelines and underachievement of several output projections, mostly related to timber. However, monitoring has not disclosed any disparity between the Forest Plan and Forest conditions or public demands which would warrant a revision at this time.

I have considered the Gifford Pinchot National Forest conditions, the Forest Monitoring Reports from 1991 to 1994, and the changes in public demands for the Gifford Pinchot National Forest. Based upon this information, I find that conditions and demands are well accounted for in our amended Forest Plan, and a revision is not needed at this time.

For further information, please contact Richard Stem, Natural Resources Staff Officer, at (360) 750-5115.

/s/ J.SHARON HEYWOOD for
TED C. STUBBLEFIELD

cc: T.Nygren, R06A

H. Other Forest Monitoring Activities

The Forest routinely conducts a wide range of monitoring activities which are not directly linked to the Forest Plan. Examples of these monitoring activities which we conduct to evaluate the effectiveness of resource program management and trends in the resources are briefly described in this section. We begin with scientific monitoring conducted as part of research conducted on the Mount St. Helens National Volcanic Monument and follow with more administratively oriented monitoring activities conducted across the Forest.

Mount St. Helens National Volcanic Monument

1995 Monitoring Projects

Listed below are monitoring projects that were conducted by Monument Science program during 1995. This effort is the result of an ongoing collaboration between the Monument and the Pacific Northwest Research Station which was established in 1987 as a result of the Monument's Comprehensive Land Management Plan FEIS. This collaboration recognizes the importance of long-term research and innovative public information and technology transfer programs at Mount St. Helens. The majority of these projects are accomplished through the assistance of partners from state and federal agencies, universities and private industry.

1. **Title**: Recovery of Small Mammal Populations at Mount St. Helens

   Partners: Pacific Northwest Research Station-Ecosystem Processes Research Program-Olympia, Utah State University and University of New Mexico

   Objectives: Document the patterns of small mammal recolonization on lands impacted by the 1980 eruption of Mount St. Helens.

   Description: Small mammal live-trapping, using mark/recapture techniques, was conducted at nine sites during August and September, 1995. A total of 423 captures were made which included members of 13 different small mammal species. The 1995 monitoring effort was part of a long-term project initiated following the 1980 eruption.

2. **Title:** Community Reassembly Following Volcanic Disturbance: The Role of Ground-Dwelling Beetles (Coleoptera)

   Partners: University of New Mexico and Utah State University

   Objectives: Document the recolonization of beetle communities on lands impacted by the 1980 eruption of Mount St. Helens. The information from this study will provide an index to the rate and stage of ecosystem recovery at various points in time since the eruption.

   Description: Insect pitfall traps were installed and operated at seven sites (10 traps/site) from May through November of 1995. Beetles were sorted from the remaining contents of the samples and were identified (about 230 species).

3. **Title**: Primary Plant Succession on the Pumice Plain at Mount St. Helens

   Partners: Colorado State University, Texas A & M University

   Objectives: Document community composition, population dynamics and spatial patterns in areas undergoing primary succession on the Pumice Plain at Mount St. Helens.

   Description: During September, 1995 plants were censused in six, 12 x 14 m plots. Plants were identified to species, counted and their percent coverage estimated in 1008, one meter square plots. Soil samples were collected from 12 locations in each plot, which later received complete laboratory analysis (chemical and physical characterization).

4. **Title**: Recovery of Stream Communities from Catastrophic Natural Disturbance

   Partners: Utah State University, Pacific Northwest Research Station, Aquatic/Land Interaction Program-Corvallis

   Objectives: Document the patterns and processes involved in the recovery of stream biota following the 1980 eruption of Mount St. Helens.

Description: During August, 1995 stream habitat features, and species composition and densities of insects, amphibians and fish were measured in 10 streams in the Clearwater Creek, Bean Creek, Smith Creek and Green River drainages. These data are used to assess the rate and processes of recovery in severely disturbed streams.

5. **Title**: Amphibian Communities: Species Composition and Relative Abundance of Pond-Breeders in Intensively Managed and Naturally Disturbed Landscapes.

   Partners: Weyerhaeuser Company

   Objectives: Characterize the amphibian communities of lakes in undisturbed late seral forests, intensively managed plantations, and in areas impacted by the 1980 eruption of Mount St. Helens.

   Description: Twenty lakes were surveyed for amphibians during June and July of 1995. Habitat features of the lakes and adjacent riparian zones were measured. Animal measurements included: amphibian species occurrence, relative abundance, habitat use and reproductive biology. This information is used to correlate amphibian community composition and species abundance patterns with land condition.

6. **Title**: Amphibian Primary Succession on the Debris Avalanche Deposit at Mount St. Helens.

   Partners: Western Washington University

   Objectives: Document the rate and pattern of amphibian colonization on the Debris Avalanche deposit. Investigate factors that appear to be contributing to the observed colonization patterns.

   Description: Eighteen ponds were surveyed for amphibians from June through September of 1995. Species presence, reproduction and habitat use were measured. Ponds were mapped and measured (length, width, depth and shape) to provide spatial and physical information to link with the biological data.

7. **Title**: Habitat Associations and Biogeography of a Rare Endemic Salamander: The Larch Mountain Salamander (Plethodon larselli), [Caudata, Plethodontidae]

   Partners: Washington Dept. of Fish and Wildlife

   Objectives: Characterize the micro and macro-habitat features of Larch Mountain Salamander sites throughout its known range. Survey sites in areas where the species is not known to occur, but likely does, based on recent habitat relationship data.

   Description: Surveys were conducted for Larch Mountain salamanders along a south/north transect, beginning at the Columbia River Gorge and ending at Mount Rainier National Park, during the spring and fall of 1995. All amphibians observed were identified to species, measured, and released. At each capture location a suite of microhabitat parameters (vegetation, substrate, soils, litter) and physical factors (temperature, % slope, aspect) were measured.

8. **Title**: Survey Protocol Development for the Larch Mountain Salamander (Plethodon larselli)

   Partners: Washington Dept. of Fish and Wildlife, USFS-Regional Ecosystem Office and Pacific Northwest Research Station, Aquatic/Land Interactions Program-Corvallis

   Objectives: Develop and test (field validate) a variety of methods for determining the presence of Larch Mountain salamanders.

   Description: About 60 forest stands were surveyed for Larch Mountain salamanders during spring and fall of 1995. A number of methods were employed: visual encounter, area-constrained, time-constrained and pitfall trapping. It was determined that an extensive area-constrained search using a series of belt transects, arrayed in parallel was the most effective means of determining Larch Mountain salamander presence.

9. **Title**: Morphological Variation Among Disjunct Populations of Larch Mountain Salamanders (Plethodon larselli)

   Partners: Utah State University

Objectives: To assess and quantify morphological variation among and within populations of Larch Mountain salamanders.

Description: Larch Mountain salamanders were collected from eight sites across the species' range, animals were euthanized and preserved as vouchers for the American Museum of Natural History. A suite of anatomical features are measured to determine morphological variation. Depending on the extent of variation taxonomic revisions may be warranted.

10. **Title**: Genetic Variation and Population Divergence in the Larch Mountain Salamander (Plethodon larselli)

    Partners: USDI, National Biological Service and Oregon State University

    Objectives: To quantify the extent of genetic variation within and among disjunct populations of Larch Mountain salamanders. To provide estimates of the time since genetic isolation of disjunct populations.

    Description: Tail tissue from 120 animals was collected from eight sites across the range of the Larch Mountain salamander. Tissue was frozen in liquid nitrogen and transported to the laboratory at Oregon State University. Two different genetic approaches are being used. RAPDs will assess genetic variation by sampling a large number of loci and MtDNA will be used to assess the time since reproductive isolation of populations. If genetic variation is great enough among some populations then taxonomic revisions may ensue.

11. **Title**: Assessing Visitor Impacts in the Mount Margaret Backcountry, Mount St. Helens National Volcanic Monument

    Partners: Portland State University and Aldo Leopold Wilderness Research Institute

    Objectives: Develop and field test a number of methods for measuring and monitoring recreational impacts to high-elevation lake systems. Provide managers with information to make scientifically-based management decisions with respect to maintaining the ecological integrity of the lake systems.

    Descriptions: During the summer of 1995 a variety of biological and physical measurements were made at six lakes in the Mount Margaret Backcountry. Included were: 1) limnology (physical, chemical and biological components of the lake), 2) vegetation [(campsites and riparian zones), (Species composition, frequency and % coverage)] and, 3) amphibians [(species composition, relative abundance, reproductive biology, habitat use), (riparian and littoral zone habitat inventory)].

12. **Title**: Plant Succession Following the 1980 Eruption of Mount St. Helens

    Partners: USFS: Area 7 Ecology Program and Oregon State University

    Objectives: To examine successional responses over a range of pre-eruption plant community types and eruption impacts. This information will be used to improve our understanding of how different plant communities respond to eruption impacts (pyroclastic flow, blast and ashfall).

    Descriptions: Vegetation survey plots that had been surveyed one to two years prior to the 1980 eruption were relocated and surveyed immediately following the eruption. Since 1980 reconnaissance plots have been repeatedly monitored at eight blast zone and 17 ashfall forest sites. Mortality of overstory trees and understory recruitment has been tracked at 15 of the 17 forested sites. In 1995 these sites were relocated and measured to document overstory mortality and understory vegetation responses 15 years after disturbance.

13. **Title**: Mortality and vegetation responses of an old-growth forest buried by mudflow.

    Partners: Oregon State University and University of Washington

    Objectives: To examine patterns of overstory mortality, growth and development of understory vegetation in an old-growth terrace forest buried by between 25 and 100 cm of mudflow deposit. A secondary objective is to determine fragmentation and decay rates for a variety of species and size classes over time.

Description: In 1995 sample plots were remeasured & rephotographed. Remeasurement included mortality and growth of overstory trees and composition and cover of understory vegetation.

14. **Title**: Effects of Elk and Deer on Early Forest Succession at Mount St. Helens

    Objectives: To determine the role of elk and deer in the recovery of both natural and managed vegetation following volcanic disturbance.

    Description: In 1995 vegetation sample plots were remeasured on three one-half hectare elk exclosures and adjacent control plots. The exclosures are located on debris avalanche, blast zone hillslope with natural vegetation and blast zone that had been salvage logged and reforested.

15. **Title**: Baseline Monitoring of Vegetation Near Developed Trails and Facilities

    Objectives: To monitor the status of naturally developing vegetation within the legislated Monument in relation to visitor use. This information is useful for determining how well stay on the trail programs are protecting vegetation in adjacent areas. It is used for determining management policies.

    Description: In 1995 vegetation sample plots were remeasured along the shoreline of Coldwater Lakes and at high lakes in the Mount Margaret Backcountry.

Forest-Wide Administrative Monitoring Activities

Recreation

- Campsite facilities monitoring.
- Activity reviews.
- Review and inspection of special-use permittees at visitor centers.

Research Natural Areas (RNAs)

- Monitoring for compliance with RNA management plans. Long-term structure monitoring every three to four years.

Wildlife

- Monitoring of northern spotted owl nests not connected to timber sales.
- Effectiveness monitoring for K-V projects.
- Periodic monitoring (throughout the year) of raptor (osprey/goshawk) nests.
- Nest box monitoring (ducks, etc.).
- Annual surveys for harlequin ducks.
- Annual breeding bird surveys.
- Monitor restoration projects.
- Verification of wildlife sitings.
- Status checks on various habitats (e.g. heron rookeries).
- Monitoring for challenge cost-share projects (e.g. amphibian project).

Botany

- Informal monitoring of sensitive species sites.
- Monitoring of specific species across the Forest in partnership with Partners for Plants.
- Tracking of population trends of rare plant species (such as the fringed pinesap, which has 9 sites across the Forest).
- Pine broomrape monitoring study.
- Pale blue-eyed grass monitoring study on grazing impacts.

Fisheries

- Annual stream surveys.
- Annual steelhead snorkel surveys.
- Bull trout monitoring in the Lewis River.

Hydrology/Watershed

- Implementation monitoring for restoration projects
- Monitoring of restoration projects within the Adaptive Management Area (in collaboration with Jim Weigand of PNW Research).
- Yearly utilization monitoring for grazing allotments.
- Informal observation/monitoring of watershed/ soils condition when FH personnel out in the field.
- Monitoring of mass movement through the watershed analysis process.
- Baseline stations monitoring water temperature (25 stations across the Forest).

Air Quality

- Air quality monitoring (Packwood Lake) in collaboration with EPA and WA State Ecology Department, June through September.
- Lichen surveys, one quarter of the Forest each summer.

Timber

- Surveys for down and dead woody material and standing wildlife trees during sale administration.
- Random sale inspections documented with Inspection Reports.
- Monitoring of roads, landings, mitigation, riparian areas, wildlife trees and down woody material.
- Forest Headquarters sale area visits.
- Contracting Officer Review of performance/ techniques of individuals administering timber sales.
- Official sale inspections.
- Genetics program monitoring.
- K-V reforestation surveys (1st and 3rd year).
- Informal slash monitoring.

Engineering/Roads

- Maintaining status of roads gated and decommissioned (necessitated by p. C-7 of ROD, which requires no net increase in roads).
- Inventory of number and mileage of temporary roads.
- Monitor road maintenance activities (ours and purchasers) for compliance with Road Management Objectives and Road Management Specifications.
- Monitor road and trail bridges for safety.
- Monitor public drinking water stations.
- Monitor traffic signing program (monitoring of uniform traffic control devices).
- Quarterly ground water monitoring at Chelatchie Prairie.
- Year-round traffic counts across the Forest.
- Weather conditions, especially rain-on-snow events for flood forecasting.

Fire

- Effectiveness monitoring in units after prescribed burning.
- Annual preparedness monitoring.
- Periodic NIFMAS monitoring.
- Pre/post-prescribed burn fuel inventories.

Glossary

A

Anadromous fish - Those species of fish that mature in the sea and migrate into streams to spawn. Salmon, steelhead, and searun cutthroat trout are examples.

B

Big game - Large mammals hunted for sport. On the National Forest these include animals such as deer, elk, antelope, and bear.

Big game winter range - A range, usually at lower elevation, used by migratory deer and elk during the winter months; usually more clearly defined and smaller than summer ranges.

C

Cavity - The hollow excavated in trees by birds or other natural phenomena; used for roosting, food storage, and reproduction by many birds and mammals.

Ceded lands - Lands surrendered to the federal government by treaty.

CF (cubic foot) - The amount of timber equivalent to a piece of wood one foot by one foot by one foot.

Creel - A wicker basket used by anglers to carry fish.

Cultural resource - The remains of sites, structures, or objects used by humans in the past-historic or prehistoric.

Cumulative effects - Those effects on the environment that result from the incremental effect of the action when added to the past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

D

Diameter at breast height (d.b.h.) - The diameter of a tree measured 4 feet 6 inches above the ground.

Dispersed recreation - A general term referring to recreation use outside developed recreation sites; this includes activities such as scenic driving, hiking, backpacking, hunting, fishing, snowmobiling, horseback riding, cross-country skiing, and recreation in primitive environments.

E

Endangered species - Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act.

F

Forage - All browse and nonwoody plants that are available to livestock or game animals and used for grazing or harvested for feeding.

Fringed pinesap - A sensitive plant species

K

Knutson-Vandenberg (K-V) - Legislation authorizing the collection of money from timber sales receipts for reforestation, stand improvement or mitigation projects on timber sale areas.

M

Management Area Category (MAC) - Provides direction (practices for specific portions of the Forest. Each MAC identifies a goal, or management emphasis, and the desired future condition of the land. Each MAC includes one or more Management Prescriptions.

Management indicator species - A species selected because it's welfare is presumed to be an indicator of the welfare of other species using the same habitat. A species whose condition can be used to assess the impacts of management actions on a particular area.

Mass movement - A general term for any of the variety of processes by which large masses of earth material are moved downslope by gravitational forces - either slowly or quickly.

MMBF - Million board feet

MMCF - Million cubic feet

MRVDs (Thousand recreation visitor day) - A measure of recreation use, in which one RVD equals twelve visitor hours, which may be aggregated continuously, intermittently, or simultaneously by one or more persons.

N

National Forest Management Act (NFMA) - A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act, requiring the preparation of Regional Guides and Forest Plans and the preparation of regulations to guide that development.

National Environmental Policy Act of 1969 (NEPA) - An Act to declare a National policy which will encourage productive and enjoyable harmony between humankind and the environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, to enrich the understanding of the ecological systems and natural resources important to the nation, and to establish a Council on Environmental Quality. (The Principle Laws Relating to Forest Service Activities, Agriculture Handbook No. 453, USDA, Forest Service, 359 pp.)

O

Optimal cover - For elk, cover used to hide from predators and avoid disturbances, including humans. It consists of a forest stand with four layers and an overstory canopy that can intercept and hold a substantial amount of snow, yet has dispersed, small openings. It is generally achieved when the dominant trees average 21 inches diameter at breast height or greater and have 70 percent or greater crown closure.

ORV - Off Road Vehicle A category of recreational vehicles which includes four-wheel drive vehicles and trail bikes.

P

Partial Retention - Management activities remain visually subordinate to the characteristic landscape.

PC (Precommercial) thinning - The practice of removing some of the trees less than marketable size from a stand so that the remaining trees will grow faster.

R

Raptor - Predatory birds, such as falcons, hawks, eagles, and owls.

Redd - Depressions in gravel in streams where salmon, steelhead, and trout lay their eggs.

Riparian - Pertaining to areas of land directly influenced by water. Riparian areas usually have visible vegetative or physical characteristics reflecting this water influence. Stream sides, lake borders, or marshes are typical riparian areas.

S

Selection - The annual or periodic removal of trees (particularly mature trees), individually or in small groups, from an uneven-aged forest, to realize the yield and establish a new crop of irregular constitution.

Semiprimitive motorized - A classification of the Recreation Opportunity Spectrum, characterized by a predominantly unmodified natural environment in a location that provides good to moderate isolation from sights and sounds of people, except for those facilities/travel routes sufficient to support motorized recreational travel opportunities which present at least moderate challenge, risk and a high degree of skill testing.

Semi-primitive non-motorized - A classification of the Recreation Opportunity Spectrum, characterized by a predominately unmodified natural environment of a size and location that provides a good to moderate opportunity for isolation from sights and sounds of people. The area is large enough to permit overnight foot travel within the area, and presents opportunity for interaction with the natural environment with moderate challenge, risk, and use of a high degree of outdoor skills.

Sensitive species - Plant or animal species which are susceptible or vulnerable to activity impacts or habitat alterations. Those species that have appeared in the Federal Register as proposed for classification or are under consideration for official listing as endangered or threatened species, that are on an official State list, or that are recognized by the Regional Forester as needing special management to prevent placement on Federal or State lists.

Seral - Transitory stage in an ecological succession.

Shelterwood - A regeneration method under an even-aged silvilcultural system. A portion of the mature stand is retained as a source of seed and/or protection during the period of regeneration. The mature stand is removed in two or more cuttings.

Silviculture - The art and science of controlling the establishment, composition, and growth of forests.

Skill Center - Informal administrative units within which ranger districts share resources. The North Skill Center comprises the Packwood and Randle Ranger Districts, the Central Skill Center is the Mount St. Helens National Volcanic Monument, the South Skill Center is the Wind River and Mt. Adams Ranger Districts.

Snag - A standing dead tree.

Soil productivity - The capacity of a soil to produce a specific crop such as fiber or forage under defined levels of management. Productivity is generally dependent on available soil moisture and nutrients, and length of growing season.

Special Interest Areas - Areas managed to make recreation opportunities available for the understanding of the earth and its geological, historical, archeological, botanical, and memorial features.

T

TE&S - Threatened, endangered and sensitive species.

Threatened species - Those plant or animal species likely to become endangered species throughout all or a significant portion of their range within the foreseeable future. (See also Endangered species.)