

1996

Monitoring and **E**valuation
Report

Gifford **P**inchot **N**ational **F**orest

Dear Forest User:

This year you will note that we are able to report satisfactory or better results in all but two of the resource related monitoring items. A summary table beginning on page 1 highlights the results for the 25 items in our 1996 monitoring program.

Required cultural resource protection monitoring was not completed because of the unusual workload demands associated with the 1996 flood restoration projects. Two cultural resource sites associated with a trail reconstruction were damaged during the reconstruction. See page 10 for more information.

We found two small perennial streams in one harvest unit of a sale planned in 1988 which were not discovered during sale preparation. The two streams were not identified on the sale area map and were not properly protected with a riparian buffer. For more information see Best Management Practices, page 19.

In spite of reducing timber program costs by half from the previous year, our timber program reported a \$4 million loss for FY-96. This is the first time on record the timber program has shown a net loss. This far in the decade of the 1990s the timber program has returned \$160 million to the US Treasury. The loss in 1996 is the result of the lowest level of logging in forty years. The low level of logging activity was the result of the Forest having little sale volume nearing contract expiration. We are not anticipating a loss for FY 1997. See page 18 for more information.

In this climate of a shrinking workforce and budget, we chose to discontinue four process-oriented monitoring items; I prefer to focus our limited monitoring resources on field activities. However, because of a vacancy in our fisheries staff, I regret we have had to postpone the reporting of fisheries monitoring this year. Fisheries will return in our 1997 Monitoring Report. This year we have added an effectiveness monitoring item which looks at the use of snags by wildlife, Snag Effectiveness, on page 15.

Section G, page 28, of this report describes the encouraging results of our first year of an interagency effort to monitor our implementation of the standards and guidelines of the Northwest Forest Plan.

The last section of the report, beginning on page 30, describes the many monitoring activities conducted on the Forest which are not directly related to Forest Plan implementation.

To make this information more accessible to the public, it will be posted with last year's report and many other items of public interest on our internet site (<http://www.fs.fed.us/gpnf>).

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

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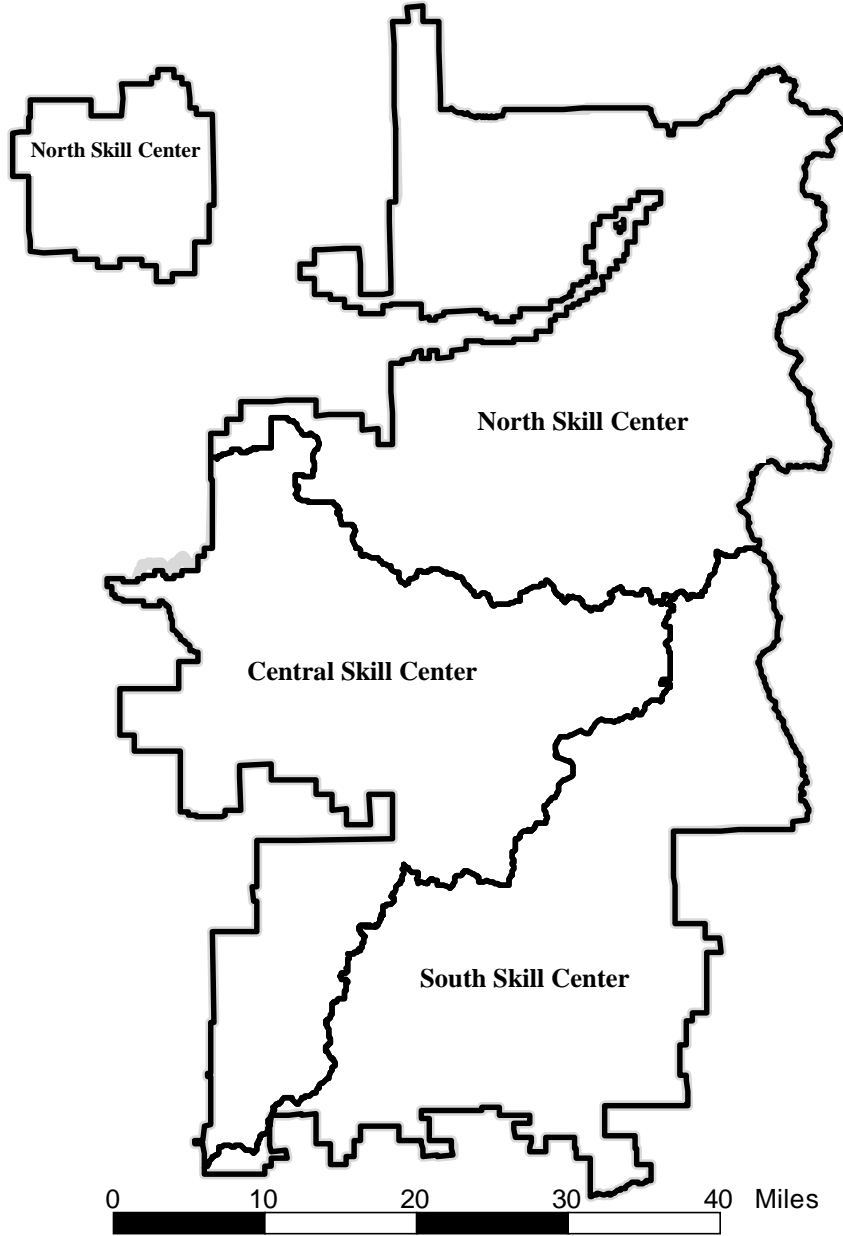
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Gifford Pinchot National Forest Skill Center Map



Monitoring and Evaluation Report

Gifford Pinchot National Forest

Fiscal Year 1996

A. Introduction

This document reports Forest activities and accomplishments of 1996 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 sixth 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 1996 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 1996.
- D. Accomplishments** - Shows trends in program accomplishments over FYs 1991-1996 and compares 1996 accomplishments to our assigned targets.
- E. Expenditures** - Compares expenditures over the last 5 years and the composition of FY 1996 expenditures.
- F. Forest Plan Amendments** - Lists all Forest Plan amendments and briefly describes the content of the amendment and when it was approved.
- G. Northwest Forest Plan Monitoring** - Included is the report from our first year of implementation monitoring conducted on the Gifford Pinchot as part of an owl region-wide monitoring program.














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.

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) - Campsites exceed standards for impacts and are located too near lake shores.
		*#6 Trail Inventory, Setting and Condition, ORV (page 8) - Trail standards and guidelines are being met. Trail construction and reconstruction exceed the Forest Plan projection in 1996.
		*#7 Recreation Use and Facility Condition (page 9) - Conditions of campgrounds on the Forest are improving from operation by concessionaires. Still, many developed recreation facilities continue to show the need for reconstruction or heavy maintenance.
	CULTURAL RESOURCES	
WILDLIFE		#31 Forage Production (page 12) - Two skill centers did not have projects in biological winter range, no forage monitoring was conducted on the third.
		#32 Optimal Cover (page 12) - Watersheds surveyed were found to be below the desired 44% optimal cover. No regeneration harvest occurred in optimal cover in the allocated winter range. The standard and guideline was met.
		#35b Raptor Habitat (page 14) - One project on the Forest had the potential for impacting raptor habitat. Standards and guidelines were met.
		#40 Retention of Snags and Down Logs (page 15) - With the exception of one research project, standards for snags, retention trees and down wood were met on the timber sales reviewed.
		#40a Snag Effectiveness (page 15) Snags monitored on the North Skill Center showed signs of use by woodpeckers, those on the Central Skill Center did not.
*All or part effectiveness monitoring.		

BOTANICAL		*#5 Research Natural Areas (page 7) - Standards and guidelines and management objectives are being met in the Cedar Flats Research Natural Area.
		#35d Botanical Special Interest Areas (page 14) - Stable and increasing populations support the discontinuation of fringed pinesap monitoring.
TIMBER		#50 Adequate Reforestation (page 17) - Three years after harvest, 100 percent of the harvested area was adequately stocked.
		#51 Silvicultural Methods (page 17) - Silvicultural activity was approximately 47 percent of the amended Plan projection.
		#52 Regeneration Harvest Units Size (page 17) - The standard and guidelines pertaining to the size of created openings were met. One research project with openings exceeding the standard was approved by the Regional Forester.
		#54 Volume Sold (page 17) - In 1996 the Forest advertised 59.8 million board feet which is 82 percent of the amended Forest Plan projection. The goal for 1996 was 80 percent of the projection.
		#55 Timber Revenue and Expenses (page 18) - Declining for its fourth consecutive year, the timber program showed a net loss of \$4.7 million dollars in 1996.
		#56 Silvicultural Prescriptions (page 19) - Review of six prescriptions found one harvest unit where the heavy retention canopy cover objective was not fully achieved.
	SOIL AND WATER	
		#61 Best Management Practices (page 19) - One harvest unit monitored had two small perennial streams and several springs which were not identified on the sale area map nor protected with riparian buffers.
TRANSPORTATION		*#70 Road Closures (page 21) - Twenty six miles of system roads were decommissioned during 1996.
COMMUNITIES		#84 Community Effects - Payments to Counties (page 22) - The U.S. Treasury returned \$10.9 million dollars to the six counties with lands within the Forest administrative boundary. The Forest administered \$2.7 million in community assistance grants.
MINING		#91 Mining Operating Plans (page 23) - Three plans of operation were approved in FY 1996.
*All or part effectiveness monitoring.		

C. Monitoring Item Results

Monitoring Item: 1. Wild and Scenic Rivers

Introduction: On the Gifford Pinchot National Forest there are no Congressionally designated Wild, Scenic or Recreational Rivers; however, the Forest Plan recommended the Lewis River, Cispus River, and the Muddy Fork and Clear Fork of the Cowlitz River be designated as Wild and Scenic Rivers. In addition, twelve other rivers were recommended for further study.

The values for which these corridors were either recommended or deemed eligible for recommendation are being 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 a future Wild and Scenic River designation.

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

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

Corridor	Project	Stds. Met
Cispus River	Walupt-Cispus Timber Sale	Yes
	20/35 Timber Sale	Yes
	Butte Demo timber sale	No*
	Cispus Flats timber sale	Yes
	Stream bank stabilization	Yes
	Music Bridge replacement	Yes
	Greenhorn timber sale	Yes
*See discussion under Evaluation, below.		

Evaluation: After reviewing the activities shown in Table 1, all but one of the projects were found to be in compliance with the Plan standards and guidelines. The Butte Demo project does not meet the unit size guidelines. The Decision Notice acknowledges that unit 6 exceeds visible unit size in the foreground of the river corridor but that the overall rating for the river corridor would change by less than 0.04 percent. Under the Northwest Forest Plan, exemptions from the standards and guidelines are allowed for research projects after review by the Regional Ecosystem Office.

The project will not have enough of an effect to compromise the eligibility of the Cispus River for designation. The free flowing characteristics, the identified outstandingly remarkable values, and the classification are being protected at the levels prescribed by the Forest 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. This framework is a continuum comprised of seven classes: Primitive, Semi-primitive Non-motorized, 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
Ed's Trail Construction	Yes
Bluff Mountain Trail Construction	Yes
Mt. Margaret Backcountry Toilet Const.	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 have management objectives requiring maintenance or improvement of scenic values. In these viewsheds, management activities are to be compatible with scenic quality objectives.

Results: Project monitoring, shown below, was completed in 1996. The project review determined that standards and guidelines for scenic quality, as specified in the Forest Plan, were being met.

Table 3 - Scenic Quality Project Monitoring Summary

Project	Viewshed	Standards Met
Swifty timber Sale	Lewis River	Yes

Landscape-scale viewshed condition monitoring did not occur in FY 1996. Each viewshed is monitored every 5 years to determine if changes in the condition have occurred.

Evaluation: The project 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 determines if standards for the experience in each category have been met. It measures wilderness use and impacts of recreation use on wilderness character.

Results:

A. Wilderness Use - The following chart and graph compares the 1994 through 1996 wilderness use:

Figure 1 - Wilderness Use

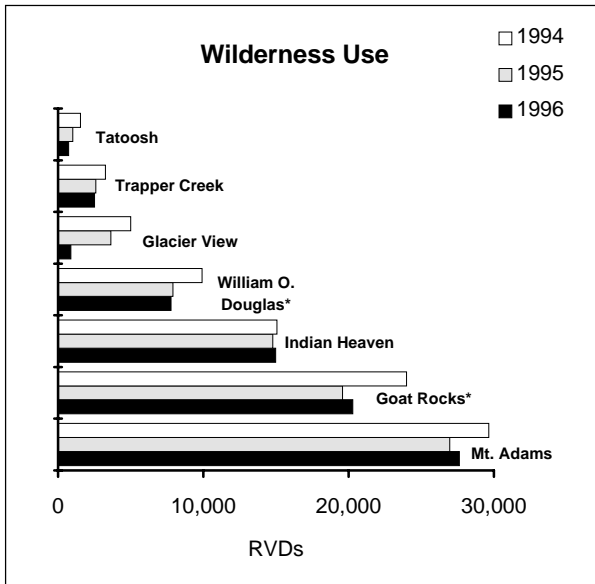


Table 4 - Wilderness Use

Wilderness Name	Recreation Visitor Days			
	1994	1995	1996	95-96 % Change
Mt. Adams	29,650	26,960	27,630	+2
Goat Rocks *	24,000	19,590	20,300	+4
Indian Heaven	15,050	14,770	14,960	+1
William O. Douglas *	9,900	7,900	7,780	-1
Glacier View	5,000	3,640	890	-75
Trapper Creek	3,250	2,590	2,520	-3
Tatoosh	1,550	1,010	730	-28
TOTAL	88,400	76,460	74,824	-2

* Gifford Pinchot National Forest portion only.

Access roads to Glacier View and Tatoosh Wilderness trailheads received significant damage during winter and early spring flooding in 1996. The sharp reduction in use is attributed to the increased difficulty of access caused by closed roads.

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. Table 5 summarizes field monitoring results for Limits of Acceptable Change:

Evaluation:

A. Wilderness Use

None of the Wildernesses currently exceed the 120 percent use/capacity threshold-of-concern. 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 an overestimate.

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: In the sampled wildernesses, resource conditions that are degrading rather than improving are a clear indication of the needs for corrective action. Recent monitoring on other wildernesses on the Forest has yielded similar results. Measures such as rehabilitation, education, and attempts to confine damages 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 are necessary to protect wilderness resources. Consequently, the Forest, in cooperation with users and other interested parties, is evaluating alternatives for increased protection in a wilderness management environmental assessment scheduled for completion in 1997.

Table 5 - Wilderness Sites Monitored - 1996

Wilderness	Site Changes from Baseline
Tatoosh	35% improved 19% no change 46% degraded
Glacier View	30% improved 20% no change 50% degraded
Indian Heaven (Blue Lake)	Thirteen sites monitored. All sites exceeded standards for vegetation loss and exposed mineral soil and all are located within 100 feet of the lakeshore.
Indian Heaven (Thomas Lake)	Three sites monitored. All sites exceeded standards for vegetation loss and exposed mineral soil, and are located within 100 feet of the lakeshore.
Trapper Creek (Soda Peaks Lake)	Two sites monitored. Both sites exceeded standards for vegetation loss and exposed mineral soil, and are located within 100 feet of the lakeshore.
Mt. Adams (South Climb)	No specific formal sampling was conducted. However, observations indicate this area exceeds standards for recreation density and number of campsites visible when occupied. In addition, the standard for number of parties encountered (40+ on several weekend days) is being exceeded.

**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: Cedar Flats RNA

Standards and guidelines prohibit exotic plants and animals in the RNA. Within the last monitoring period, the non-native weed tansy ragwort (*Senecio jacobaea*) has been introduced in the Cedar Flats RNA along the 25 road and in disturbed areas along the floodplain of Muddy River. Plants were hand-pulled before seed dispersal.

**Table 6 - Research Natural Area
Monitoring Results**

Name	Last Monitored	Standards & Guidelines Met?
Butter Creek	1991	yes
Goat Marsh	1993	no
Sisters Rock	1994	yes
Steamboat Mountain	1994	no
Thornton T. Munger	1994	no
Cedar Flats	1996	yes

Hiking appears to be primarily limited to the nature trail, with no apparent impact to RNA values.

Down trees from the wind and ice storms were removed within right-of-way along 25 road.

We are seeking to compile species lists of bryophytes, lichens, fungi, vascular plants, and animals for each proposed and established RNA on the Forest. In 1996, under contract we prepared bryophyte inventories for T.T. Munger, Cedar Flats, Goat Marsh, and Steamboat RNAs, and the Weigle Hill proposed RNA.

Evaluation: The Forest has taken appropriate measures to remedy the invasion of noxious weeds in the Cedar Flats RNA.

Action to be taken:

- Continue noxious weed eradication efforts.
- Continue compiling species lists to determine plant and animal diversity.

**Monitoring Item: 6.
Trail Inventory, Setting and
Condition**

Introduction: On the Forest there are 1,490 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 are factors affecting the mix of travel opportunities. Each Forest trail includes 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, maintenance, use, and management.

Results:

A. Trail Construction and Maintenance --

The following table compares the amount of trails constructed or reconstructed in 1996 with the amount projected in the Forest Plan.

**Table 7 - Trail Construction and
Maintenance**

Trail Activity	Miles from Forest Plan	1996 Miles Accomplished	% of Plan Level
Const. or Reconst.	34 ^{1/}	46.7	137%
Maintenance	1490	256	17%

^{1/} Trail mileage average based on projects listed in Appendix A of the Forest Plan.

Reconstruction occurred on 8.3 miles of the 227.9 miles of trails designated for motorcycle use. An estimated 20-30 percent of motorized trails were temporarily closed all or part of the season due to flood damage to the trail and were thus unavailable for use.

Approximately 256 miles (17 percent) of the 1,490 miles of the existing summer and winter use trails in the Forest Trail System were maintained to full Meaningful Measures Standards. An additional 644 miles (43 percent) of the trail system were maintained to less than full standards. Approximately 430 miles of the trail system (29 percent) were damaged by winter storms which occurred early in 1996. Many roads, trails and other recreation sites were damaged. Part of this

was repaired in time for use during at least a part of the 1996 summer use season.

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
Falls Creek # 152	III	Yes	Yes
Little Huckleberry #49	II	Yes	Yes
Valley #270	III	Yes	Yes
Packwood Lake #74	II	Yes	Yes
Silver Star #180	III	No *	Yes
Pyramid Rock	III	No *	Yes

*Motorized vehicle use was found to be occurring on Silver Star Mountain, on the Silver Star and Pyramid Rock Trails within the Silver Star Scenic Special Interest Area, which is closed to vehicle use. Most was four-wheel drive use on roads open only to hikers, horses and mountain bikes.

Trail Use - User complaints on Silver Star Trail #180 and Pyramid Rock Trail #180F related to the use of non-motorized trails by motorized vehicles. Some motorized users complained that the trails were not clearly posted as closed to motorized use. During the summer of 1996 the road was reconstructed to trail width virtually ending 4-wheel drive use. Continued incursion by motorcycles has been reported since the reconstruction. Additional signing has been ordered and law enforcement patrols will be increased in 1997.

Evaluation: Approximately 137 percent of the annual average 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 approved.

About 60 percent of the trail system was maintained to some degree in 1996, although only about 17% was maintained to full Meaningful Measures Standards. The reduction in miles maintained to standard (from 65 percent in 1995) is primarily due to the adoption of more stringent Meaningful Measures Standards in 1996. The new standards span a broader range of visitor

satisfaction measures including health and cleanliness, responsiveness to public information needs, safety and security, and accomplishment of capital improvement needs and trail tread condition. Heavy flood damage also kept a significant portion of the trail system closed or very difficult to use in 1996. Crews normally used for routine maintenance were diverted to repairing flood damaged trails.

Trail Management Level monitoring indicates that standards and guidelines are being implemented according to the Plan. In some cases, the existing situation does not meet standards. However, for planned activities, deviations from the standards and guidelines do not exceed the 95 percent threshold-of-concern.

User conflicts were reported on fewer than 10 percent of the system trails and thus do not exceed the threshold of concern for complaints.

Recommended Action to be Taken: There are four reasons that trail maintenance was not accomplished: new standards, inadequate staffing, reduced trail maintenance budget and substantial flood damage.

Meeting the new standards at a time of declining maintenance budgets and increasing use will present a major challenge to the Forest. We plan to make greater use of partnerships and volunteers, and consider opportunities for initiating user fees, such as the Regional TrailPark Fee Demonstration project. Beginning in 1998, the fees generated from the sale of Regional Trail Park passes will be returned to the Forest to fund trailhead and trail maintenance activities. The resulting improved maintenance should be apparent beginning in 1999. In addition to expanded partnerships and possible user fees, the Forest will be reviewing the overall trail system. In light of our reduced ability to maintain the current system, changes may need to be made based on cost/benefit and other factors.

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: Previous monitoring reports have listed numerous recreation sites that did not meet pre-1996 Forest Service Manual standards for developed recreation. Adoption of more stringent Meaningful Measures standards for developed recreation sites in 1996 have further reduced the number of sites being operated to full standard. For instance, a 1993 accessibility study identified 53 recreation sites not meeting minimum standards for accessibility. Unless accessibility standards are met, a recreation site cannot be considered to be maintained to standard. It is estimated that modifications to bring the sites to minimum standard could range from \$200 to \$75,000 per site. A total of 14 capital maintenance or reconstruction projects were completed on Forest campgrounds in 1996; however, the majority of all developed sites are still in need of repair. Several campgrounds received significant flood damage during 1996. Repairs were made to six of the nine damaged facilities, leaving three campgrounds scheduled for repair in 1997.

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. The cost to bring many of these sites 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: All of the Forest fee campgrounds and some day-use sites are operated by concessionaires. This helps ensure that these sites are managed to standard since sites are operated and maintained according to the concessionaires' operating plans which are approved by the Forest Service. In addition, most of the revenues generated from camping fees go toward operation and maintenance.

The Forest will continue to evaluate the ability to meet existing and future developed recreation needs, while providing facilities that meet operation, maintenance, and accessibility standards identified in Meaningful Measures (see Glossary). A Forest-wide recreation review in 1997 will utilize criteria and standards developed through the Meaningful Measures process. A strategic action plan will recommend sites to retain, close, expand or reduce in size; new sites to be constructed; priorities for construction and reconstruction, fee status, and concessionaire operation.

A new source of revenue will be available for operating and maintaining recreation facilities on Mount St. Helens National Volcanic Monument. This will come from a user-fee that is being charged as part of the Congressionally-authorized fee demonstration program.

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 39 cultural resource properties associated with projects completed in Fiscal Year 1996. The projects included 12 commercial timber sales, 5 road engineering projects, 2 trail construction projects, 2 mine development projects, a hazard tree removal project, a recreation development project, and a facilities modification.

Monitoring was completed for only 10 of the 39 cultural resource properties. As the result of an aggressive flood damage repair program, workload demands for cultural resource surveys precluded efforts to complete monitoring for all 39 sites. The surveys are a legal requirement under Section 106 of the National Historic Preservation Act, and were considered a higher work priority. The following assessment is based on field inspection of 10 sites.

- Prescribed buffers were successful in protecting five prehistoric archaeological sites from potential heavy equipment and construction disturbance.
- Data recovery mitigation was successfully completed for a peeled cedar site in the Lewis River watershed, in accordance with measures specified in the Peeled Cedar Management Plan. Data recovery at a second site was unsuccessful when the cedar tree shattered during the felling process.

- Mitigation involving the documentation of significant architectural features was successfully completed for an historic building at the Mt. Adams Ranger Station.
- Two cultural resource sites associated with a trail reconstruction project were damaged by new tread construction. Disturbance up to 25 cm. deep occurred within the boundaries of the two sites.

Evaluation: Monitoring is incomplete. Protective measures were successful in 70 percent of the cases. Regrettably, two prehistoric archaeological sites on the Central Skill Center were damaged as a result of a contracted trail construction project. Several factors may have contributed to the ineffective protection of the two sites. Site inventory methods may not have included enough subsurface sampling to adequately define site boundaries. To ensure compliance with the National Historic Preservation Act, avoidance was prescribed. Between 1992, when the cultural resource survey was conducted, and 1996, when the construction occurred, minor changes were made in the planned trail location. One of these changes occurred in the area of the damaged sites. This situation indicates a problem in tracking project modifications through the planning and implementation stages.

Recommended Action to be Taken:

1. Site monitoring not completed during 1996 will be added to the list of sites to be inspected in 1997.
2. Damage assessment of the two disturbed prehistoric sites will be conducted as early in 1997 as possible. Documentation will include determination of the spatial extent of both sites, calculation of percent of disturbance, and significance evaluation.

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, compared to the approximately 300 pounds per acre which would be produced under unmanaged conditions. 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: In FY 96 there was harvest in only one watershed in the biological winter range. Because of the pressure of other work priorities, monitoring of forage production did not occur.

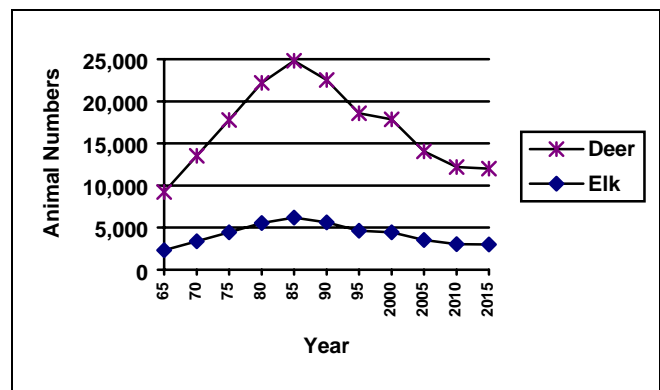
Recommended Action to be Taken: Continue monitoring. Develop a photo series to facilitate monitoring data collection. Continue to enhance forage production by seeding and fertilizing.

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 in a vegetative condition characterized by four vegetation layers from trees larger than 21 inches in diameter in the overstory to an herbaceous layer providing forage. The overstory can intercept and hold a substantial amount of snow, yet has dispersed, small (less than 1/8 acre) openings. These conditions are generally achieved when the dominant trees average 21 inches dbh or greater, have 70 percent or greater crown closure, and are in the large tree or old growth stand structure condition. This *optimal cover* supports deer and elk by providing thermal cover, hiding cover and forage. Where the winter range in a watershed is below 44 percent optimal cover, regeneration harvest should be deferred from Management Area Category E (Deer and Elk Winter Range) in the same watershed.

Under the Northwest Forest Plan, the amount of optimal cover will, in time, exceed 80 percent of the biological winter range. This addition, beyond the 44 percent goal, will not offset the reduction in open forage. The present population of deer and elk will not be supported on National Forest System lands. Our review of the forage/cover ratio by the year 2015 has a potential habitat reduction of about 35 percent of the potential deer and elk population. Figure 2 projects deer and elk populations under current management direction.

Figure 2 - Projected Deer and Elk Populations



1. Lower Iron Planning Area

Results: About 9,500 acres in biological winter range were monitored in the Lower Iron planning area. About 32% of the winter range in this area is in optimal cover. The shortage of optimal cover in this area is attributed to past timber harvest and forest fires around the turn of the century.

Evaluation: Most of the Lower Iron timber sale is a thinning operation. Thinning will increase the growth rate on remaining trees which will lead to accelerated development of optimal cover.

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

2. Upper East Fork Lewis

Results: About 8,100 acres in biological winter range were surveyed in the Upper East Fork Lewis River watershed. The watershed was found to be comprised of only 2 percent optimal cover.

Evaluation: The shortage of optimal cover in this watershed is accounted for by the large wildfires that occurred in this area in the early 1900s.

3. Middle Lewis

Results: Watershed analysis for the 9,400 acre watershed shows that past timber harvest and fire have reduced optimal cover to about 20 percent of the biological winter range.

Evaluation: There is no allocated deer and elk winter range on Matrix lands in this watershed. The Late-Successional Reserve portion of this watershed will contribute to providing thermal cover.

4. Lower Lewis

Results: Watershed analysis for the 14,000 acre watershed shows that past timber harvest and fire have reduced optimal cover to about 25 percent of the biological winter range.

Recommended Action: Regeneration harvest should be deferred on allocated deer and elk winter range (ES and EM Management AG113reas) until more optimal cover develops. Consider deer and elk objectives when planning commercial thinning projects in this watershed.

5. Wind River

Results: Watershed analysis for the 57 thousand acre Wind River watershed showed that approximately 25 percent of the biological winter range provides optimal cover for deer and elk.

Evaluation: Optimal cover is below the level needed to maintain populations of deer and elk. Areas where stand structure functions as thermal and hiding cover may be converted to optimal cover over time. Forage production is also limited in this watershed.

Recommended Action: Defer regeneration harvest from allocated deer and elk winter range. Consider deer and elk objectives when planning projects in this watershed.

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

Introduction: The Forest Plan (page 2-75) provides standards and guidelines aimed at minimizing the disruption of 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: One of the three Skill Centers reported a project where known nesting habitat for raptors exists. The project was a in a timber sale conducted as part of the Demonstration of Ecosystem Management (DEMO) research project. The raptor species is a nesting northern goshawk pair. Normally a 660 foot protection buffer would be established around the nest and a management plan developed for management of the portection buffer. After consultation with biologists in our Regional Office the decision was made to forgo the protection buffer in the interest of maintaining the integrity of the research project. A seasonal operating restriction was applied which prohibited harvest during the breeding season between March 1 and August 30.

During a monitoring visit prior to the harvest, the biologist discovered that the nest had fallen out of the tree. The fledglings had presumably already dispersed from the nesting area. The loss of the nest is attributed to the young age of the stand, 35 years, and the exposure of the nest tree. The nest tree fell prior to the logging of the unit.

Evaluation: The Northwest Forest Plan contains a provision to relax standards and guidelines in the interest of bona fide research. This DEMO project was reviewed by the REO Research and Monitoring Committee and met the intent of the Northwest Forest Plan.

Recommended Action: The sale area will be surveyed for goshawks in 1997 to determine whether the pair will select another nest site in the sale area. If a new nest is discovered, a management plan will be implemented which will establish a 660-foot protective buffer around the nest.

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: Field visits were made to five Botanical Special Interest Areas in 1996. These areas included South Prairie Bog, Trout Lake Big Tree, fringed pinesap sites 3114 and 1109, and Camp Creek Cliffs. Population monitoring continued on the two sites established to maintain viable populations of fringed pinesap (*Pleuricospora fimbriolata*). Monitoring was initiated at South Prairie Bog to evaluate a population of pale blue-eyed grass (*Sisyrichium sarmentosum*) within and outside a cattle grazing enclosure.

Preparation of a management plan for the South Prairie Bog Biological Special Interest Area was funded through the Challenge Cost Share program.

Evaluation: Fringed pinesap population trends are stable at the two sites monitored. No adverse impacts to any of the sites were noted.

There have been reports of large divots removed from the sphagnum bog area at South Prairie. This is probably the result of illegal harvesting of sphagnum moss, a commercially valuable forest product. Law enforcement officers have been alerted.

Stable and increasing population trends support the discontinuation of fringed pinesap monitoring.

Action to be taken: No corrective action required. Revisit South Prairie Bog in 1997 to evaluate recovery of sphagnum and assess impacts.

Complete preparation of the South Prairie Management Plan.

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 down woody 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 current Forest Plan standards and guidelines:

- Some projects were designed and implemented prior to the 1990 Forest Plan and can only be updated by agreement with contractor. 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.

Three timber sales were monitored in 1996 for compliance with Forest Plan's standard and guidelines. The summary of the sales is provided by the chart below.

Table 9 - Projects Monitored for Green Trees, Snags, and Down Logs

Timber Sale Projects	Standards Met? (Yes or No)		
	Green Tree	Snag	Down Woods Debris
Pre-Forest Plan			
Blimp Timber Sale*			
a. Unit 1	Y	N/A	Y
b. Unit 4	Y	N/A	Y
c. Unit 18	Y	N/A	Y
d. Unit 28	Y	N/A	Y
e. Unit 29	Y	N/A	Y
Post-Forest Plan			
Hopkins Unit 6	Y	Y	Y
Head 2 Unit 4	Y	Y	Y
Pre-Forest Plan:			
*Since these sales predate Forest Plan standards and guidelines, it was monitored with respect to the EA requirements. Their EAs did not include requirements to retain snags.			
Post-Forest Plan:			
** The Hopkins and Head 2 timber sales are in compliance with NWFP standards and guidelines for green trees, and down woody debris. Snags will be created from snag recruitment trees in 1998.			

Evaluation: As shown in Table 8, one of the three sales is a pre-Forest Plan project; it meets the requirements as documented in the EA and timber sale contract. Snags were felled during harvest because they were unstable and presented a safety hazard. The two post-Forest Plan sales meet requirements of the Forest Plan for retention trees, snags and down wood.

Recommended Action to be Taken: In 1998 snag creation from green trees will occur in Hopkins Unit 6 and Head 2 unit 4 to meet the required 2.6 snags per acres.

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 into compliance with current direction.

Monitoring Item: 40a. Snag Effectiveness

Introduction: The Forest Plan standards and guidelines (Amendment 11, pages 6-4 to 6-6) call for the retention of snags and green trees in timber sale areas. To determine whether retention of snags and green trees is effective in providing habitat for cavity excavators, 19 sites were monitored. The areas monitored were those where snags were created at least 5 years previous.

Results: At the North Skill Center a total of 24 snags were monitored at two sites. The snags, created in 1989, ranged from 17 to 30 inches in diameter at breast height (dbh). Twenty-two snags were created by blasting the tops of green trees and two were created by girdling live trees. One of the girdled trees was still alive and showed no sign of use by cavity excavators. Bark was

characteristically tight on all trees except two that had patches of bark removed by woodpeckers. Evidence of use by woodpeckers was found in 83 percent of the snags at one site and 75 percent at the second site. Evidence suggests that the woodpeckers were foraging, probably for bark beetles. No nest holes were excavated.

At the Central Skill Center 27 snags were monitored. All of these snags were created by girdling live trees between 1989 and 1991. The snags ranged in size from 16 to 32 inches dbh and showed no sign of foraging or nesting by cavity excavators. Insect use was present in 95 percent of the snags. Two of the 27 snags, each 17 inches dbh had blown down. All of the snags had bark attached.

Recommended Action to be Taken: Continue monitoring.

Vegetation Management

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:

Monitoring Item: 50. Adequate Reforestation

Table 10 - Adequate Reforestation

Plantation Acres Surveyed	Adequately Stocked	% Adequate Stocking
3943	3943	100%

Standards and guidelines regarding plantation stocking were met.

Monitoring Item: 51 Silvicultural Harvest Methods

Table 11 - Silvicultural Harvest Methods

Silvicultural Practice	1996 Acres Sold	NW Forest Plan Projection
Clearcut Harvest	0	0
Regeneration Harvest	1093	1839
Commercial Thinning	863	2309
Totals	1956	4148 acres

Overall, the Forest treated an acreage of about 47 percent of the Northwest Forest Plan projection as we ramp up to full probable sale quantity.

Monitoring Item: 52. Regeneration Harvest Units

Fifty-two harvest units were sampled to see if they met Forest Plan standards for size and separation. Two units did not meet the standard for separation and four units did not meet the standard for size. These units were configured to facilitate a research project (DEMO). All six were approved by the Regional Office prior to harvest.

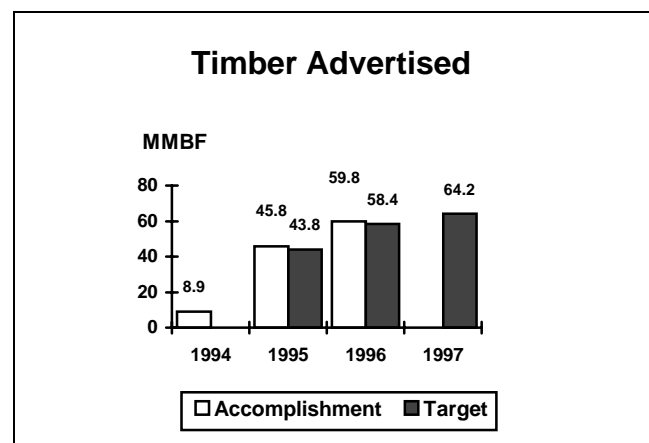
Monitoring Item: 54. Volume Sold

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 advertising 81.9 percent of our volume projection in 1996, the Forest accomplished the 1996 sale goal.

Table 12 - Volume Advertised to be Sold

Volume Advertised MMBF	Volume Advertised MMCF	NW Forest Plan Volume Goal MMBF	NW Forest Plan Volume Goal MMCF
59.8	9.4	58.4	13.4

Figure 3 - Target Accomplishment



**Monitoring Item: 55.
Timber Revenue and Expenses**

Table 13 shows timber harvest and monetary outlays since 1991. The fluctuations in figures are due to 318 timber sale legislation, an injunction on sales in spotted owl habitat, and the adoption of the NW Forest Plan. In spite of reducing costs by nearly half in FY-1996 the timber program shows a loss of \$4.6 million. This is the first time in recent history that the Forest has recorded a net loss from timber management activities. The loss is the result of the low level of harvest in 1996 which was due in part to the low level of timber under contract.

Figure 4 - Net Revenue

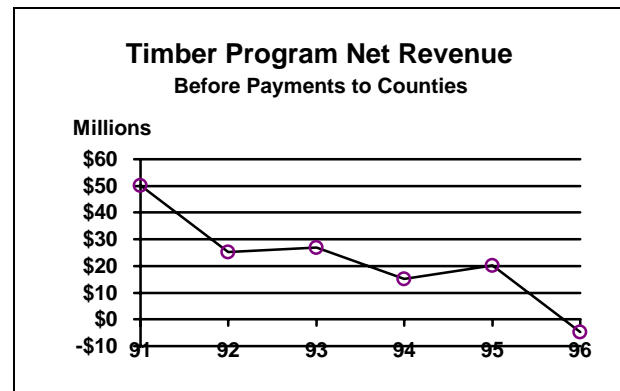


Table 13 - Timber Revenue and Expenses

Timber Harvest and Monetary Outlays	1991	1992	1993	1994	1995	1996
Timber Revenues	\$68,439,000	\$41,380,000	\$44,751,000	\$30,894,000	\$16,501,000	\$3,296,012
Timber Expenses	\$18,310,000	\$16,257,000	\$17,924,000	\$15,745,000	\$14,474,000	\$7,408,798
Net Revenue Before Payments to Counties	\$50,130,000	\$25,123,000	\$26,827,000	\$15,149,000	\$2,028,000	(\$4,665,040)
Payments to Counties	\$15,205,000	\$12,389,000	\$11,701,000	\$11,701,000	\$11,287,000	\$10,874,642
Volume harvested (MMBF)	286	160	155	96	59	11.3
Volume under contract (MMBF)	535	343	196	83	34	63
Volume advertised (MMBF)	19	22.6	14.4	8.9	45.8	59.8
Volume sold (MMBF)	19	24.8	22.7	5.8	45.8	48.8
Total Acres Harvested	6,346	3,003	3,234	3,459	2,229	643 ¹

¹Estimated. Data unavailable.

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: Six 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
- Silviculture Exam in all Developed Recreation Areas
- Consistent with Visual Quality and other Objectives in Recreational Rivers
- Cavity Excavators
- Species Conversion
- Forage Seed in Deer/Elk Winter Range
- Select Criteria from Appendix F of the Final Environmental Impact Statement
- Site-Specific Considerations

Evaluation: One unit on the Swifty Timber Sale did not fully achieve the cover objective prescribed in a heavy retention prescription. All other prescriptions reviewed met the management objectives and standards and guidelines.

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.

Three sales were reviewed, one on each skill center.

Results: One sale had existing harvest skid trails (Swifty, CSC). As was called for in the EA mitigation measures, existing skid trails were reused. New skid trails were constructed where needed to avoid unacceptable damage to other resources.

On the other sales, designated skid trails and the truck road were properly located and used during harvest operations. Designated truck roads were required to be ripped, seeded, and fertilized after harvest. This was met in all cases. Methods used to treat mechanically compacted soil require the soil to be fractured to 18 inches in depth.

However, where compaction was dense, a depth to 18 inches was not always accomplished by the grapple method (Swifty TS, CSC). Organic matter/duff layer was found on all harvested units to be greater than 80 percent undisturbed.

Evaluation: The standards and guidelines that require ground disturbing activities to not exceed 20 percent of the harvest area were adhered to on all harvest units of the three timber sales reviewed.

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 to ensure water quality standards are met during project implementation. 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 have the potential 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.

Results: Three timber sales (Galahad LSR, NSC; Swifty TS, CSC; Idle TS, SSC) were reviewed and evaluated, one on each Skill Center. Two of the reviewed timber sales (Galahad LSR, NSC and Swifty TS, CSC) did not have harvest units in the vicinity of streams or wetlands. Surface erosion control measures were in place and adequate as prescribed. These efforts met the BMPs for the timber sales.

A harvest unit within one timber sale area (Idle TS, circa. 1988) had two small perennial streams and several springs which were not buffered. Mitigation using 50 foot buffers that included all non-

merchantable trees on streams was called for in the Environmental Assessment. Directional felling away from all streams was also called for in the environmental assessment. Since streams were not identified on the sale area map and they were not buffered, BMP objective to "*minimize potential adverse effects of nearby logging and related land disturbance activities on water quality and beneficial uses*" was not met. Further, one landing was not located to minimize disturbance to the stream channels and stream side management unit from yarding per Draft Forest Plan - 1988, the planning document under which this sale was designed.

Evaluation: The stream banks and riparian area were damaged during harvest. These streams should have been identified during harvest unit layout and added to the sale area map with mitigation measures to protect a minimum of 100 foot riparian area.

Recommended Actions to be Taken: The District Ranger and person preparing the timber sale contract must ensure that all mitigation measures, and standards and guidelines are addressed in the timber sale contract.

Identification of perennial and intermittent streams, and wetlands should become a part of the sale layout employees training. Forest Service Representatives shall also be knowledgeable of riparian standards and guidelines and their implementation. If springs or streams are found before or during the sale, the Forest Service Representative shall act promptly to add the required riparian reserve to the sale area map.

**Monitoring Item: 70.
Road Closures**

Introduction: Several factors lead 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 14 - Road Closures and Density

Forest-wide Road Closures		Road Density in Deer & Elk Winter Range	
Closures	1996 Levels		
Permanent	747	Miles of open road	742
Seasonal	304	Land Area (sq. mi.)	339
Total	1,051	Road Density	2.2 mi./mi.2

Results: Road closures are one of the means of reducing wildlife harassment in deer and elk winter range. The Forest Plan established a goal of reducing open road density to 1.7 mile of open road per square mile within the biological winter range. Currently the density within biological winter range is 2.2 miles of open road per square mile. This average has improved from 2.4 miles per square mile last year.

The projected miles of road closure from the Forest Plan is 1,230 miles of road in seasonal or permanent closure. With 1,051 miles closed, the Forest is at 85 percent of the projected goal, an improvement of 2 percent for the year.

Evaluation: This year, our road closure data are probably less accurate because of the February, 1996 floods and landslides. We do know that some of the roads categorized as closed in our road inventory are no longer closed because of unlawful breaching of barriers. However, there are other roads which were closed by storm damage and have not yet been repaired. Some funding will be available in 1997 and 1998 to repair storm damage to roads and hillsides. Other roads will be decommissioned (restored to more natural conditions) to prevent further resource damage.

About 26 miles of system road were decommissioned and taken off the road system during 1996. All were located in the Wind River Watershed, a key watershed under the Northwest Forest Plan (IWF-1).

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 15 - Community Effects--Payments to Counties

County	Percent Total Distribution	1996 Distribution
Clark	0.1	\$9,783
Cowlitz	2.5	\$ 283,751
Klickitat	1.1	\$ 120,174
Lewis	28.6	\$ 3,098,706
Skamania	64.8	\$ 7,050,894
Yakima	2.9	\$ 311,334
Total	100.0	\$10,874,642

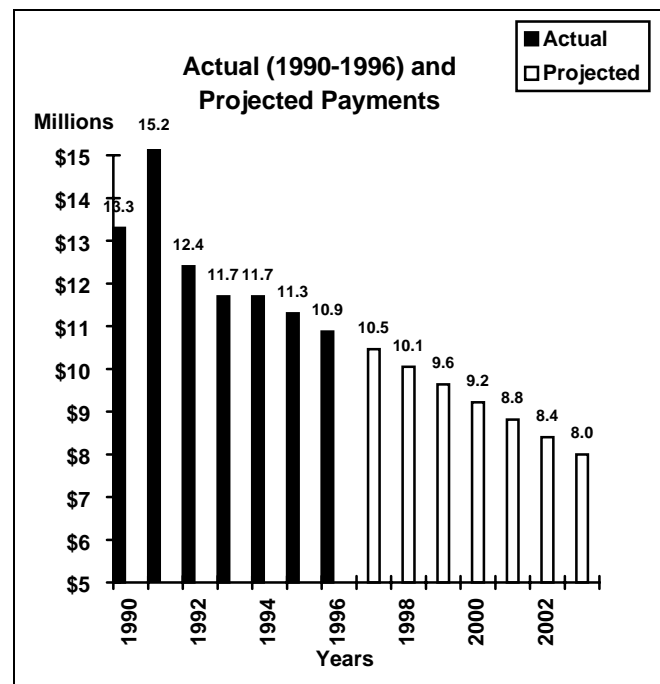
Table 16 - Rural Community Assistance Grants

County	1996 Grants
Cowlitz	\$1,284,328
Klickitat	\$864,128
Lewis	\$420,200
Yakama	\$64,700
Wahkiakum	\$48,200
Clark	\$24,000
Skamania	\$23,728
Pierce	\$20,000
Total	\$2,749,284

Results: Timber harvest of 11.3 million board feet in 1996 was the lowest figure on records going back to 1956. If payments were based on actual receipts from timber harvested, less than \$700 thousand would be returned to the counties. Instead, payments were computed under a provision of the Interior and Related Agencies 1993 Appropriations Act which provided for 1994 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 1996 were computed as 79 percent of the 1986 to 1990 average. Next year the receipts will be 76 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 1996, \$8.29 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 Table 15.

Figure 5 - Historical and Projected Payments



An important Forest Service goal in recent years has focused on helping rural communities adjust to changing federal land management practices and policies. The Forest Service has developed a program designed to provide both financial and technical assistance to natural resource-based communities and rural development organizations striving to diversify and revitalize local economies. The program, called Rural Community Assistance, invested \$2.7 million in the infrastructure of communities surrounding the Forest. Grants by county in FY 1996 are tabulated in Table 16, page 22.

Monitoring Item: 91. Mining Operating Plans

Introduction: 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: On the South Skill Center one Plan of Operation was approved in 1996. There is one ongoing plan from previous years with operations taking place.

On the North Skill Center ten notices of intent were filed. Two plans of operation were received and approved.

No cases of noncompliance were identified or reported.

No reclamation activities were required and none were 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 91-96:

Table 17 - Program Accomplishments

Output	Units	Outputs						1996 Target
		1991	1992	1993	1994	1995	1996	
Developed and Dispersed Recreation Use	Recreation Visitor Days	NA	NA	NA	NA	7,740	3,981	*
Wilderness Use	(thousand)	NA	69.5	75.8	88.4	76.5	74.8	*
Wildlife Habitat Improvement:								
• Structural	Structures	2,727	2,881	1,720	592	1,919	1,253	100
• Nonstructural	Acres	8,245	600	39,046	120	46	433	*
Trail Const/Recon.	Miles	64	32.2	20	54	55.3	46.7	22.6
Trails Maintained	Miles	955	988	1015	712	903	256	*
Wildlife Indicator Species:								
• Deer	Habitat Capability	21,745	20,960	20,170	19,385	18,600	18,450	*
• Elk	animals	5,435	5,240	5,040	4,845	4,650	4,610	*
• Mountain Goat	animals	240	250	260	275	290	290	290
• Gross Sell Volume	MMCF	3.7	4.2	3.1	0.6	8.7	11.4	*
	MMBF	19.1	22.3	15.6	8.9	45.8	59.8	58.4
• Net Sell Volume	MMCF	2.4	3.8	2.9	1.0	8.3	11.3	*
	MMBF	11.7	19.8	14.8	5.8	43.6	57.8	*
• Volume Harvested	MMBF	286.4	160.3	154.9	96.1	58.7	11.3	*
• Reforestation	Acres	8,843	5,703	6,104	5,622	3109	1,801	5,557
• Fuel Wood	CF	847	469	511	509	560	506	*
• Precommercial Thin	Acres	3,340	3,091	1,861	3,089	3113	3,123	4,359
• Release	Acres	158	0	0	0	100	0	*
• Fertilization	Acres	2,018	3,100	3,166	971	100	0	*
*There are no Regional targets for these items.								

Table 17 - Program Accomplishments (continued)

Output	Units	Outputs						1996
		1991	1992	1993	1994	1995	1996	Target
Grazing	AUMs	2,430	2,193	1,732	1,732	1,732	1,732	*
Watershed Improvement	Acres	34	168	18.6	24	155	50	50
Air Quality	Particulate/ Tons	NA	NA	584	43	74	41	*
Fuel Treatment	Acres	7,897	6,684	4,002	4,143	2,183	1,279	1,450
Timber Purchaser Roads:								
• Construction	Miles	32.7	7.5	7.8	2.3	2.9	2.9	*
• Reconstruction	Miles	17.0	5.4	1.3	6.5	4.9	15.1	*
Allocated Funding (Roads):								
• Construction	Miles	0.5	0.1	0.3	3.1	0	0	*
• Reconstruction	Miles	10.7	10.7	0.9	16.1	14.4	10.8	*
TOTAL ROAD ACTIVITY	Miles	60.9	23.7	1.2	28.0	22.2	28.5 ^{1/}	*
Roads Open to:								
• Passenger Cars	Miles	1,247	997	998	811	828	808	*
• High Clearance	Miles	2,488	2,428	2,295	2,091	2,424	2,402	*
Roads Closed	Miles	773	897	1,035	1,416	1,019	1,051	*
TOTAL ROAD SYSTEM	Miles	4,508	4,322	4,328	4,318	4,284	4,261	*
Returns to Govt.	\$ Million	62.4	34.3	31.3	32.8	11.3	2.7	*
Payments to Counties	\$ Million	15.6	12.4	11.7	11.7	11.3	10.9	*
Potential Timber Related Jobs	Jobs	4,200	2,362	2,219	1,425	864		*
Source: TSPIRS Reports								
Landlines:								
• Located	Annual Mi.	18	28	19	10	10	6	5.3
• Maintained	Annual Mi.	20	0	5	2	6	6	*
Congressionally Designated Boundaries	Miles	21	10	10	5	5	6.5	8
TOTAL BUDGET	\$ Million	67.8	50.5	42.5	39.5	27.7	39.3	*

*There are no Regional targets for these items.

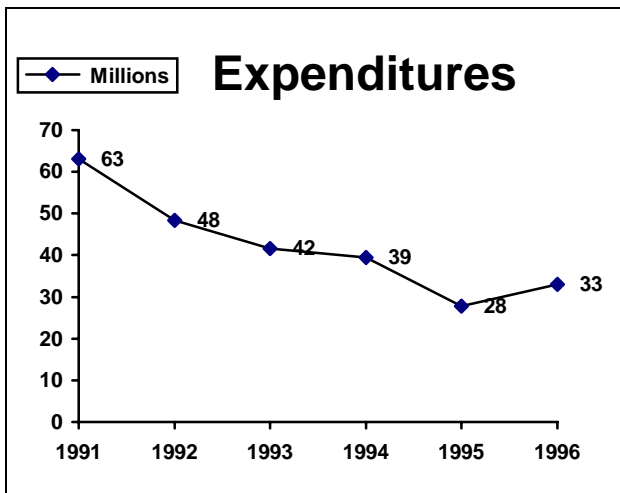
^{1/} Does not include 35 miles of ERFO funded road reconstruction.

E. Expenditures

The budget for the Gifford Pinchot National Forest is an outcome of the annual Congressional appropriations process. 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. 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 US Treasury. Beginning in FY 1997, the Forest will begin collecting user fees on the Mount St. Helens National Volcanic Monument. Eighty percent of those receipts will be kept on the Forest for use in maintaining recreation facilities.

The chart below displays expenditures on the Gifford Pinchot National Forest over the six years we have implemented the Forest Plan.

Figure 6 - Total Expenditures 1991-1996



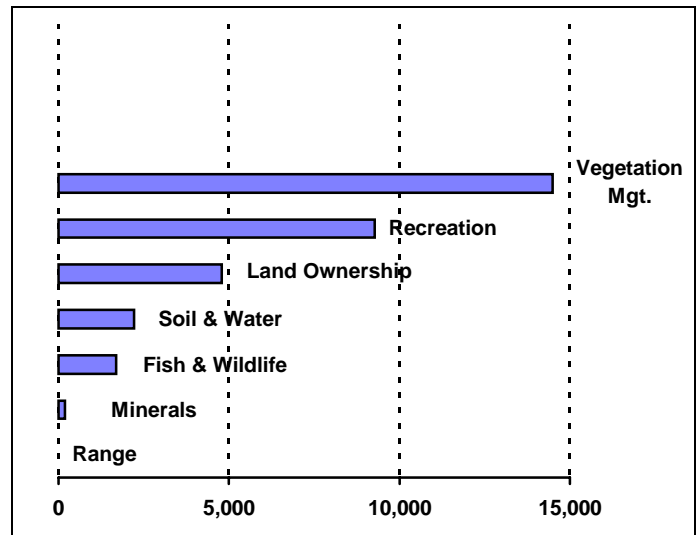
The Forest Service has adopted a new accounting system called All Resources Reporting (ARR) which we implemented on the Gifford Pinchot for

ARR provides more resolution in our expenditure reporting while allowing consistent comparisons among national forests.

Figure 7 shows the composition of 1996 expenditures by program area.

Figure 7 - Expenditures by Program Area

FY 1996 Expenditures



F. Forest Plan Amendments

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

Table 18 - List of Forest Plan Amendments

Amendment No.	Approved	Description
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 so that it coincided 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 enclosure 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. Northwest Forest Plan Implementation Monitoring

Monitoring is a key component of the Northwest Forest Plan. A Region wide implementation monitoring program was initiated in FY 1996 to monitor our implementation of the Northwest Forest Plan standards and guidelines. Two sales on the Gifford Pinchot were drawn in a 10 percent random sample from a pool of sales among the

national forests and BLM districts in the range of the northern spotted owl. Monitoring was conducted by field trips to both sales and by completing a 131 question survey relating to compliance with the standards and guidelines from the Northwest Forest Plan. Below is an excerpt from the monitoring report filed by the Gifford Pinchot and Southwest Washington Province.

Southwest Washington Province
NWFP Implementation Monitoring

The Gifford Pinchot conducted the FY-1996 Northwest Forest Plan monitoring on June 26, 1996. The two selected projects were visited and answers to the monitoring questions were reviewed. Members of the monitoring team from outside the Forest Service are members of the :

<u>Member</u>	<u>Organization/Title</u>
<u>Province Advisory Committee:</u>	
Bill Marshall	- Lewis County Economic Development Council
Todd Williams	- US Fish and Wildlife Service
Ron Lee	- Environmental Protection Agency
Lee Carlson	- Yakama Indian Nation
John Squires	- Province Advisory Committee Member
Philo Gregg	- Province Advisory Committee Member
<u>Gifford Pinchot N.F.:</u>	
	<u>Title</u>
Randy Shepard	- Packwood District Ranger
John Roland	- Team Leader

The monitoring team was supported by North Skill Center staff who had been involved in the planning, layout or administration of the projects:

Bill Uyesugi - Sale Planning	Jim Hall - Sale Administration
Dick Core - Sale Preparation	Harry Cody - Randle District Ranger
Linda Fitzer - Sale Administration	Paul Miller - Wildlife Biologist
Loyal Mehrhoff of the Portland Office of the US Fish and Wildlife Service joined us to observe the process.	

This report was reviewed at the July meeting of the Southwest Washington Province Advisory Committee.

SH Head 2

SH Head 2 is the suitable owl habitat portion of the 1991 Head Timber Sale. SH Head 2 was subjected to two “re-do” efforts, one after the release of the SAT Report in 1993 and the second following the release of the NWFP in 1994. Being easily accessible from Randle, the sale was recognized by the district as an opportunity to show-case results of applying the NWFP. As such, sale prep and administration personnel have been very careful to ensure standards and guidelines are fully implemented. From the results of our review they have succeeded.

SH Head 2 is a single 17 acre unit in two blocks separated by a riparian reserve. The sale is located in the Matrix and in the General Forest (least restrictive) Forest Plan land allocation. The riparian reserve is approximately 190 feet (one site-tree height) on each side of a non-fishbearing intermittent stream. Since a watershed analysis has not been prepared for the sale area, the interim reserve widths were applied and no activities occurred within the riparian reserves.

The logger had just completed yarding the day before we visited the sale. The timber sale contract called for directional felling away from the riparian reserves, trees which fell within the riparian reserves were not yarded. Four one-half acre clumps were left in the unit and the equivalent of 0.7 acres of trees were left scattered throughout the unit to meet the 15 percent retention requirement. Because the unit had few snags before logging, an additional 5 percent of the trees in the unit were left scattered through out the unit to provide snag recruitment trees. A member of the monitoring team using a Relaskop agreed that 20 percent of the original stand was standing after logging.

To ensure that the required 240 feet of coarse woody debris was left in the unit, the sale administrator had designated standing trees to be felled after yarding was completed to meet the coarse woody debris requirements.

There were no owl sites or great gray owl habitat near the sale. Sale reconnaissance did not identify habitat for any survey and manage species or protection buffer species. There are no locations in the survey and manage database near the sale. There were no caves or wooden structures near the sale and no available standardized protocol for bat surveys when the sale was sold.

Wallupt Wabbit

Much of the sale area was closed by snow to passenger vehicles but the team was able to view two units which were representative of the sale. The sale has not been logged. This sale is a blow-down salvage of about 85 thousand board feet of silver fir. It was not sold under the provisions of the “salvage rider.” The sale is located in the Cispus Adaptive Management Area and the General Forest (least restrictive) Forest Plan management area.

The sale was originally about 200 thousand board feet prior to implementation of the NWFP standards and guidelines. The reduction in volume is mostly the result of applying interim riparian reserve standards to the original sale design. The blowdown had occurred in the winters of 1991 and 1992 and with the subsequent deterioration of the wood there is some question whether the sale will ever be logged.

A watershed analysis had not been completed for the watershed prior to the sale. No wood will be removed from the riparian reserves. Since it is located in an area subject to wind throw, there is no difficulty in meeting coarse woody debris requirements. The only green trees which would be felled by this sale are hazard trees.

There are no owl sites or great gray owl habitat near the sale. Sale reconnaissance did not identify habitat for any survey and manage species or protection buffer species. There are no locations in the survey and manage database near the sale. There were no caves or wooden structures near the sale and no available standardized protocol for bat surveys when the sale was sold.

Findings

Both projects appear to be in compliance with NWFP standards and guidelines. The team found room for improvement in coordination with the tribes. While the tribes were notified during the scoping process they were not consulted.

It was suggested that when standing timber is designated for felling to meet coarse woody debris requirements, the felling of such trees should be deferred a year or two to see if blow-down of retention trees make up any coarse woody debris deficit.

It was noted that the Forest’s current policy on campfire wood cutting does not prevent removal of wood from riparian reserves by campers. Some long-term campers may consume large amounts of firewood during their stay in campgrounds.

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.

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 nine 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 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 groundwater 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.

Central Skill Center - An administrative unit of the Gifford Pinchot National Forest which generally corresponds to the boundary of the Mount St. Helens National Volcanic Monument and Ranger District.

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 and 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 its 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.

Meaningful Measures - A recreation management process to better guide recreation management activities at the project and site level intended to provide quality service to recreation visitors. It includes standards of quality, as well as prioritization for work to be accomplished based on documented expectations, needs, visitor preference and resource condition. Examples of standards for trail maintenance include: trees removed, tread maintained and brush cleared to predetermined widths.

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.)

North Skill Center - An administrative unit of the Gifford Pinchot National Forest which generally corresponds to the boundary of the Packwood and Randle Ranger Districts.

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.

Owl Region - National Forests and BLM districts within the range of the northern spotted owl.

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. Streambanks, 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 silvicultural 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.

South Skill Center An administrative unit of the Gifford Pinchot National Forest which generally corresponds to the boundary of the Wind River and Mt. Adams Ranger Districts.

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.

Threshold of Concern - Degree of departure from a standard and guideline which would trigger an analysis to determine if a change in practices or plan adjustment is needed.

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.)