Siskiyou National Forest

Grants Pass, Oregon
Region 6, United States Forest Service
United States Department of Agriculture

Fiscal Year 1997
Monitoring Report

FOREST CONTACTS

OFFICE	ADDRESS	TELEPHONE
SUPERVISOR'S OFFICE J. Michael Lunn FOREST SUPERVISOR	PO Box 440 200 NE Greenfield Rd Grants Pass, OR 97528-0242	541/471-6500 FAX: 541/471-6514
CHETCO RANGER DISTRICT Michael J. Frazier DISTRICT RANGER	555 Fifth St. Brookings, OR 97415	541/469-2196 FAX:541/469-2196 ext. 238
GALICE RANGER DISTRICT Nancy Rose DISTRICT RANGER	PO Box 440 200 NE Greenfield Rd. Grants Pass, OR 97528-0242	541/471-6500 FAX:541/471-6514
GOLD BEACH RANGER DIST. Gilbert Zepeda DISTRICT RANGER	29279 Ellensburg Gold Beach, OR 97444	541/247-3600 FAX:541/247-3617 ext 233
ILLINOIS VALLEY R. DIST. Joel King DISTRICT RANGER	26568 Redwood Highway Cave Junction, OR 97523	541/592-2166 FAX:541/592-6545
POWERS RANGER DISTRICT Carl Linderman DISTRICT RANGER	Powers, OR 97466	541/439-3011 FAX:541/439-7704
EASTSIDE ENGINEERING ZONE I Ozzie Cummins EASTSIDE ZONE PROJECT LEADER	PO Box 440 200 NE Greenfield Rd. Grants Pass, OR 97528-0242	541/471-6500 FAX:541/471-6514
WESTSIDE ENGINEERING ZONE II Diana St. Marie WESTSIDE ZONE PROJECT LEADER	29279 Ellensburg Gold Beach, OR 97444	541/247-3600 FAX:541/247-3690
INTERAGENCY FIRE CENTER (MERLIN HELIPORT)	657 Flaming Road Grants Pass, OR 97528-0242	541/471-6830 Fire:541/479-6425 FAX: 541/471-6888
ILLINOIS VALLEY VISITOR CENTER	201 Caves Highway Cave Junction, OR 97523	541/592-2631
ROGUE RIVER RAFTING PERMITS **RAND VISITOR CENTER**	14335 Galice Road Merlin, OR 97532	541/479-3735

United States Department of Agriculture | Forest Service | Siskiyou National Forest | 200 NE Greenfield Rd P.O. Box 440 Grants Pass, OR 97528

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Date: July 1, 1998

Dear Reader:

This monitoring report summarizes information gathered this past year. Each year of monitoring adds to our knowledge and allows us to adapt our management to meet future needs. The state of the Forest is generally good and getting better.

We have learned by checking on the outcomes of our activities, by observing the Forest which we manage, and by referencing other scientific efforts for detecting trends on the National Forests.

We continue to complete watershed analyses, an important part of the Northwest Forest Plan. West Fork Illinois River, Sixes River, Briggs, Collier, Horsesign, and Lawson Creek watershed analyses provide more detailed insight for trends in resource conditions on the Forest. With your help, we can continue to improve conditions in these high quality watersheds, especially for the salmon.

Future activities and natural processes will continue to constantly change our landscape. Monitoring efforts are important to provide information about our activities and resource conditions within the forest.

Forest Service employees are working hard to provide a National Forest with tremendous resources and reasonable resource outputs commensurate with conservative forest management.

Thank you for your keen interest and active involvement in the Siskiyou National Forest. Please call, write, or drop in to see me or my staff and District Rangers.

Sincerely,

J. MICHAEL LUNN
Forest Supervisor

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A Myriad of Monitoring

Monitoring of natural resources and natural resource management activities requires a wide array of monitoring techniques to provide a response to the many questions which need to be answered. There are questions that are best answered at a very large scale such as a province or river basin. There are questions that deal with site specific effects of our project activities in a given stream or wildlife habitat. Therefore, some monitoring efforts are based on plots being established at a nationwide or regionwide scale to sample and measure certain characteristics of the forest. The Siskiyou National Forest participates in the gathering of this information, but does not manage the information. Information from these types of plot measurements are really meaningful only at the scale for which they are designed. The Vegetation Plots that were established this year are an example of this type of monitoring. These plots are described below. A large portion of the effort spent on monitoring on National Forest monitoring is geared towards implementation monitoring of the Forest Plan and specific projects. A second type of monitoring is effectiveness monitoring. This type of monitoring answers the question "did what we implement actually work as expected and achieve the desired goal?" Another type of monitoring is validation monitoring, which answers the question "are the underlying assumptions guiding our management correct?" Some validation monitoring occurs each year. Typically, monitoring of this type is meaningful at the larger scales and over an appropriate period of time. The monitoring in this report is a blend of various monitoring types over various scales and time frames.

Vegetation Plots

In December of 1996, the Pacific NW Experiment Station published research paper PNW-RP-493, which describes the Pacific Northwest Region Vegetation and Inventory Monitoring System. This broad scale inventory and monitoring of forest lands on the Siskiyou National Forest has a sound statistical basis from which to detect trends in vegetation characteristics. The plots consist of circular one hectare areas, which are sampled with fixed area subplots and line transects. The circular plots are part of a grid with 5.47 kilometers between plot centers. These plots are designed to assess vegetation and monitor changes over time. The information will be used to update Forest Plans, as needed, over time. Inventory specialist John McCullough administers this program for the Siskiyou, Umpqua, and Rogue River National Forests.

Potential natural vegetation (vegetation present under climax conditions) have been described using 2500 plots established by the USDA Forest Service Ecology Program, plots from Oregon State University Forestry Intensified Research Program, plots installed by the Natural Resource Conservation Service, and other plots established by Oregon State University researchers. The Field Guide to the Forested Plant Associations of Southwestern Oregon documents species abundance and plant responses to natural gradients such as aspect, slope, slope position, soil type, and moisture. These permanent plots will document changes over time. Dr. Tom Atzet, forest ecologist, coordinates this program for southwestern Oregon.

Modeling of plant succession and disturbances over time is underway. Preliminary results indicate disturbances without management will result in a reduction of older forests and an increase in younger forests than that which we have at present.

Fire Management and Fuels Treatment

"It is senseless to have these woods burning up when we know what we can do to reduce wildfires." (Jim Lyons, Undersecretary of Agriculture, 1994)

"...too hot, destructive, dangerous, and too ecologically, economically, aesthetically, and socially damaging to be tolerable... We cannot, in my opinion, simply step back and wait for nature to take its course." (Dr. Jack Ward Thomas, 1994)

"Wildfires are going to occur regardless of how we collectively manage our forests. However, active forest management, including prescribed fire and thinning, can reduce hazardous fuel loading and lessen the potential for catastrophic wildfire." (A Report to Congress on the Status of Wildfire Management in the United States, 1997).

The document, Forest Ecosystem Management: An Ecological, Economic, and Social Assessment, published in 1994 as part of the Northwest Forest Plan, documents the general ecological basis for forest management. Under the topic of management of disturbance risks, it states *"natural disturbance is an important process within late-successional forest ecosystems but humans have altered disturbance regimes. Management may be required to reintroduce natural disturbance such as fire or to minimize socially unacceptable impacts.*"

Fire suppression has resulted in significant increases in accumulated fuels within some forests, particularly in the Eastern Cascades Province of Washington and Oregon and in the Klamath Province of southern Oregon and northern California (Agee 1990; Deeming 1990; Kauffman 1990). At the same time, these forests may have become much more vulnerable to insects and diseases (Mitchell 1990; Wickman 1992; Mutch et al. 1993). In Late-Successional Reserves in the Eastern Cascades or Klamath Provinces, silviculture aimed at reducing the risk of stand-replacing fires may be appropriate. Treatments may include thinning, underburning, and establishment of fuelbreaks. With fire suppression, some forests have become quite dense and multistoried, primarily from the invasion of shade tolerant species (Tappeiner et al. 1992). Reduction in mid-level canopy layers by thinning may reduce the probability of crown fires. Also, underburning can be used to reduce fuel loads and vertical fuel continuity. Wildfires entering underburned stands generally are less sever and direct control is often possible. To be effective, underburning should be implemented over large areas (Agee and Edmonds 1992).

The use of prescribed fire on National Forests requires sound science, social acceptance, and cost effectiveness. This feedback presents the objectives, background, methods, and results of a site specific application of landscape strategy for ecological management of the Siskiyou National Forest. Herein is the story of the prescribed fire on Sugarloaf Mountain on the Siskiyou National Forest.

Objectives

The goal of the original silvicultural activities planned in 1990 for the Sugarloaf landscape was to create vigorous multi-aged stands across the landscape and promote both structural and species diversity. Other goals include maintaining long term site productivity, encouraging natural regeneration, enhancing stand vigor, providing a range of habitat conditions for wildlife, structure, and last of all, promoting species and structural diversity. The original prescription maintaining the roadless character of the area, maintaining or developing "Old Growth", completed in 1990, also included the harvest of timber as an objective. Portions of the stand were harvested in 1996. The Northwest Forest Plan now has this area to be managed as a Late-Successional Reserve - an area where older forests dominate the landscape and no programmed timber harvest occurs.

The original prescription for the Sugarloaf area contained a prescribed fire treatment to reduce the fuels created by the harvest. This underburn was to treat concentrations of fuels and help achieve the objectives of the original silvicultural prescription. Implementation of the underburn was accomplished by strip firing approximately 10 feet of fuel across the slope, beginning at the top of the unit. This backfiring method minimizes preheating of the canopies by burning the top of the unit first. The next 10 feet of fuel is not lit until the previous 10 foot patch has cooled down. This allows the fire to creep downhill to avoid preheating fuels. The result is a fairly high consumption of ground fuels with low flame heights and good soil protection.

The results of the monitoring for the immediate and long-term goals at the site and landscape levels are not yet available. However, the flamelengths generally did not exceed five feet in height, and were generally two feet or less. There were concentrations of slash where higher flame heights occurred and

there were some overstory trees where fire went up the bole. The flames generally lasted approximately 10-15 minutes in duration and consumed the fine litter on the forest floor. Inspection of the duff did not reveal much consumption.

More quantitative measurements of the burn will be taken. An ecology plot exists within the burn area. As one means of detecting effects, the plot data will help document changes between harvest, preburn, and post burn effects. Applications of this monitoring data need to consider any site specific effects. The majority of the overstory was not killed by the fire. The fuels have been reduced and white fir mortality has occurred. How much has occurred and what are the effects need to be examined in detail. The effects of prescribed fire may be more severe where fire has been absent for long periods. Prescribed fire may need to be repeated on sites where several fire cycles have been missed to keep impacts acceptable and to achieve objectives. This process of management is called "adaptive management", as mentioned in the Northwest Forest Plan.

"The implementation of the burn went extremely well. Now it's time to watch nature react. We will watch, monitor, and readjust as necessary." (Dr. Atzet, area ecologist for Southwest Oregon, October, 1997)

Cedar Log Natural Area Prescribed Fire Monitoring

A separate study has been set up in cooperation with the Nature Conservancy of Oregon. This study will gauge the effects of prescribed burning on plant communities on serpentine soils. The preliminary pre-burn surveys of plant abundance and frequency were reported in 1997. The prescribed burn took place in the winter/spring of 1998. Post burn monitoring will take place in 1998 and the results reported, perhaps in next years's monitoring report.

Implementation Monitoring

During 1997, several personnel from the Pacific Northwest Regional Office and Siskiyou National Forest monitored implementation of projects on the Siskiyou National Forest. The team reviewed storm damage associated with roads, stream improvement projects, wildlife transplants, timber sales, road decommissioning, watershed rehabilitation efforts, mining, and road access projects. Some conclusions of the monitoring were:

1. The Forest has healthy partnerships with local watershed councils and communities.
2. The Forest is actively managing 100% of the National Forest to achieve various land allocation objectives.
3. Forest monitoring in the documented range of the marbled murrelet is finding the range may be more limited than what is described in the NW Forest Plan. Statistical analysis is being done to determine a more accurate range for the marbled murrelet.
4. There is a need to link funding with the monitoring efforts.
5. The Forest is doing some good water quality improvements. The water quality off Forest is limiting for salmon recovery. Consequently, downstream efforts are essential for fish recovery.
6. The Forest is implementing the Standards and Guidelines of the Northwest Forest Plan.
7. Many efforts may require a third set of trained eyes to facilitate interactions with the public.

There was a Regional Implementation Monitoring Pilot Program report which was released during 1997. While this was a Regional report, there were projects from the Siskiyou which were included in the findings. The teams which conducted the project implementation reviews were interagency, intergovernmental, and included some private citizens. The conclusions of that report showed that the Forest Service is in compliance with the Record of Decision of the Northwest Forest Plan 95% of the time. Adverse biological effects associated with the instances of noncompliance appeared to be minimal at the regional scale. Their recommendations included placing additional management emphasis on the need to use known site information on Survey and Manage species; strengthening efforts to control non-native species; providing agency oversight to purchasers and contractors; and facilitating efforts to consistently identify intermittent waterways. Some clarification and improvements to the Northwest Forest Plan standards and guidelines were recommended as well. Further details can be found in the final report.

The Forest Engineering staff conducted a review of contract administration on timber sale and construction projects by engineering personnel on the Powers Ranger District. This review was to help insure that projects are being performed as specified, documentation of work completed is satisfactory, and contracts were administered fairly and accurately. The review revealed that some improvement could be achieved in the administration of contracts but many aspects of the contract administration program were very good.

Watershed Analyses and Watershed Health

People on the Forest continue to systematically characterize the aquatic, riparian, and terrestrial features of your valuable National Forest watersheds. Teams studied the Lawson, Briggs, Collier, and Horsesign Creek watersheds and the Sixes and West Fork Illinois River watersheds. This monitoring report incorporates, by reference, these analyses. The reader needs to refer to the specific watershed analysis for more detailed information than that provided below.

Lawson Creek

This is a key watershed under the Northwest Forest Plan. This 25,241 acre watershed is almost entirely managed by the Siskiyou National Forest and flows into the Illinois River 3.5 miles above its confluence with the Rogue River. Key findings of the watershed analysis include the fact that this watershed receives more recorded rainfall than any other measured location on the Siskiyou National Forest.

- Lawson Creek has a higher than optimum summer stream temperature, mostly due to natural conditions.
- The North Fork of Lawson Creek is the most heavily altered portion of the watershed and is the highest priority for restoration.
- High road density and large clearcuts in the transient snow zone contribute to the altered condition of the North Fork.
- This watershed has a higher proportion of late successional habitat than adjacent watersheds and this proportion will steadily increase in the absence of any disturbances.
- Early successional habitat is declining due to meadow encroachment and growth of harvested areas.
- Snow Camp Botanical Area contains exceptionally diverse unique habitats.
- Port-Orford-cedar is relatively healthy compared to areas from Coos Bay south to the Rogue River.
- Fire and timber harvest have been the major factors affecting vegetation patterns.
- Of the 60 miles of road currently open in the watershed, 18 miles are candidates for closure and 42 miles are either primary or secondary roads which are more heavily used. 16 miles of road have already been either closed or decommissioned.

West Fork Illinois River

This analysis of 77,000 acres in the Illinois River basin focused on the serpentine and ultramafic areas within the basin. While the capability to produce vegetation growth on these soils is limited by the chemical properties of the soils, this area is renowned for the diversity of plant species found here. This watershed was named #1 for rare species based on an Oregon Natural Heritage Program consideration of 1,400 watersheds in Oregon. Some of the resource condition findings of this watershed analysis include:

- The dominant erosion process in serpentine over a long time scale is large landslides.
- The river becomes less vegetated and has more gravel bars below its confluence with Rough and Ready Creek.
- Steep road grades and cut banks that concentrate water on the finely textured soils found within this watershed may lead to erosion and water quality impacts.
- Water temperature is the primary limiting factor in most of the watershed for salmonid production.
- The active alluvial portions of Rough and Ready Creek provide habitat for a high concentration of rare plants.
- Wildlife species associated with older interior forests are far less abundant on serpentine.

- Port-Orford-cedar root disease has been identified in the headwaters of Whiskey Creek.
- Logging, wildfire, agriculture, and rural development have removed most of the largest trees once growing in the watershed. These areas with large trees are limited in distribution in the watershed.

Sixes River

This large watershed, 85,800 acres, consists of approximately 50% National Forest land. This drainage has had an increase in delivery of sediments into the stream channel due to timber harvest and road construction over the past 50 years. Stream temperatures in the lower main stem have shown a cooling trend since the late 1960's, indicating a recovery from the 1964 flood and harvest activities adjacent to streams. Decades of historic mining altered the water quality in the stream, although stream conditions are showing signs of improvement. All salmonid populations are depressed over historic levels due to land use activities and adverse ocean conditions.

Horsesign Creek

The Horsesign Creek watershed drains approximately 4,906 acres into the lower Illinois River. A large percentage of the watershed is allocated to the Lower Lawson Backcountry Recreation Area. This watershed analysis found that this watershed provides excellent water quality, a healthy wildlife population, a limited amount of human induced disturbance, and largely natural erosion and hydrologic processes.

Collier Creek

Wilderness and Late Successional Reserve are the predominant land use classifications in this 22,878 acre watershed which flows into the Illinois River. Excellent water clarity in the creek was one of the key findings of the analysis. Erosion processes and sediment delivery in this watershed are predominantly due to natural processes. Stream temperatures in this creek are warmer than optimal temperatures for salmonids, which is a characteristic natural condition of streams of comparable size in the western Siskiyous. Collier Creek provides high quality habitat for several populations of wild anadromous fish. The watershed provides largely unfragmented wildlife habitat. A relatively large herd of elk make their home here as early successional habitat is well represented due to fires and natural soil conditions. There is a wide variety of sensitive plants present in the upper portions of the drainage. Noxious weeds and Port-Orford cedar root disease are relatively minor disturbances in this watershed. An active fire history indicates that use of prescribed fire may be an appropriate tool in this watershed.

Briggs Creek

Briggs Creek is a major tributary to the Illinois River, providing 10-20% of the water flow at their confluence. Timber harvesting and road building have contributed to the current condition where 41% of the watershed is in an early seral stage and roads have impacted stream conditions. 37 miles of roads were identified as candidates for closure, obliteration, or conversion to another use. Placer and hydraulic mining were common in this drainage for several decades and still occurs in some areas. The stream channel in Briggs Valley has changed tremendously from its historic condition - the channel has straightened, down cut, and dewatered the meadow. Reintroduction of large woody material and planting of vegetation and conifers in some stream reaches are some of the recommendations from this analysis.

Neotropical Migratory Bird Monitoring

The Forest Service continues to monitor populations of migrating songbirds in different areas of the forest. A cooperative agreement with the Audubon Society has helped the Siskiyou National Forest to accomplish this important program to give us a stronger idea of population trends for many species of

birds. 62 land points were visited covering a total of 153 acres. There are, of course, many factors affecting these birds and it is very difficult to determine the causes of fluctuations in numbers.

The Chetco Ranger District also has been involved in collecting data from mist netting on Long Ridge. Forest personnel have been participating in 4 breeding bird surveys and 4 avian productivity and survivorship bird banding studies. There has been no analysis of the local data to date. The information has been forwarded to the national level for analysis. The results of that analysis have not been released.

Your observations of unusual sightings are important. Please report any unusual bird species including the size, colors, bill shape, location, habitat, and photographs to the Siskiyou National Forest, Supervisor's Office, 200 NE Greenfield Road, PO Box 440, Grants Pass, Oregon 97528-0242. (541-471-6500).

Summary of Accomplishments

Table 1 provides a summary of Forest outputs and activity for 1991 through 1997. In general, the Siskiyou NF met or exceeded the amount of work scheduled for 1997 by the budget allocated from Congress. There are discrepancies between Forest Plan level identified in the table and accomplishments listed. Included in this report are two pages of graphs showing the budget allocation towards selected programs on the Forest. These graphs are displayed to show where significant changes have occurred since the implementation of the Siskiyou Land and Resource Management Plan. Programs that are increasing include heritage resources, showing the increased commitment to interaction with Tribal governments in the Northwest Forest Plan, wilderness, and recreation. State and private support programs have also risen dramatically as a result of the rural development and Jobs-in-the-Woods programs. The minerals program has also risen dramatically as a result of increasing costs of analysis for mining plans of operations due to additional restrictions created in the Northwest Forest Plan. Reduced timber harvest levels and changes in types of harvest treatments is resulting in less reforestation, fuels treatment, and timber stand improvement needs. Natural fuels treatments are not meeting the desired levels and activity fuels, which is treating fuels created by timber sale projects, has dropped tremendously. In addition to the graphs shown, other programs are experiencing changes as well. Many wildlife structures and improvements funded through the timber sale KV program are no longer needed or the money is no longer available throughout the KV program. Recreation trail construction has averaged more than the Forest Plan predicted amount, with over half of the miles coming from the Glendale to Powers bike route. Road construction and maintenance dropped tremendously during this time period, although maintenance dollars did receive an increase in funding over the past year.

Forest Plan Monitoring

Each element of the existing Siskiyou National Forest Monitoring Plan is listed below and discussed.

RESOURCE ELEMENT: ALL ELEMENTS

Monitoring Questions

1. Ensure that applicable S&G's are incorporated into project level planning and implementation.
2. Ensure that unavoidable deviations from S&G's, along with appropriate measures, are identified in project-level NEPA planning, and that these measures are carried through to implementation.

Forest Service personnel conducted a formal monitoring of planning and implementation of projects on the Siskiyou National Forest during one week in April, 1997. An overwhelming conclusion of the

TABLE 1

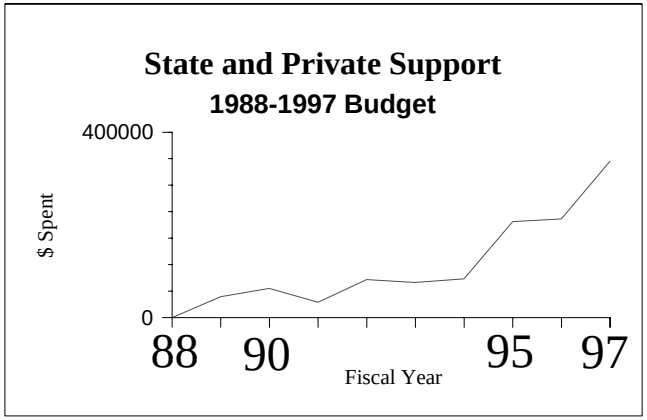
Output	Units	Forest Plan	1991	1992	1993	1994	1995	1996	1997
RECREATION									
Trail Construction	Miles	2.3	0.3	2.0	7.9	1.8	1.0	18.9*	1.8
WILDLIFE & FISH									
Wildlife Structures	#	328	10	271	436	477	776	710	665
Wildlife Improvements	Acres	1614	0	200	1327	537	208	904	349
Fish Structures	#	480	271	218	328	42			
Fish Habitat	Acres	60	12	20	252	600			
	miles						7**	40	45.6
T&E/SENSITIVE									
SPECIES	#	16	2	13	42	60	54	23	7
Structures	Acres	1160	2	180	11	60	20	47	353
Non-structures									
TIMBER									
Potential Sale Quantity	mmbf	24	1.9	1.7	5.0	9.9	16.6	28.4	24.4
Sawtimber (green)	mmbf	24	1.5	1.1	3.4	6.6	11.0	18.9	18.1
Salvage (dead)	mmbf		0.45	0.6	0.6	1.6	3.3	9.5	6.3
Reforestation	acres	6222	6080	3664	2049	822	866	963	827
Timber Stand Improvement	acres	5357	14800	13367	10605	5468	5252	3363	3410
SOIL & WATER									
Watershed Improvements	acres	479	178	184	326	224	231	340	565
MINERALS									
Proposals, Leases, &									
Applications	Cases	335	541	937	886	771	239	121	249
TRANSPORTATION									
Road Construction	Miles							7.1	5.4
Road Reconstruction	Miles	157	122	1.2	0.8	2.8	29.7	128	191.3
Roads decommissioned	Miles								29.7
FIRE MANAGEMENT									
Natural Fuels Treatment	acres	400	0	0	0	0	300	0	200
Activity Fuels Treatment	acres	3539	2348	1740	1055	957	430	604	1000

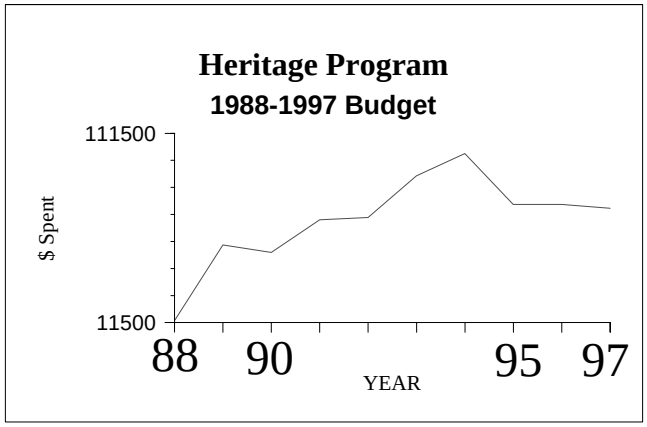
* - Powers to Glendale Bicycle Route

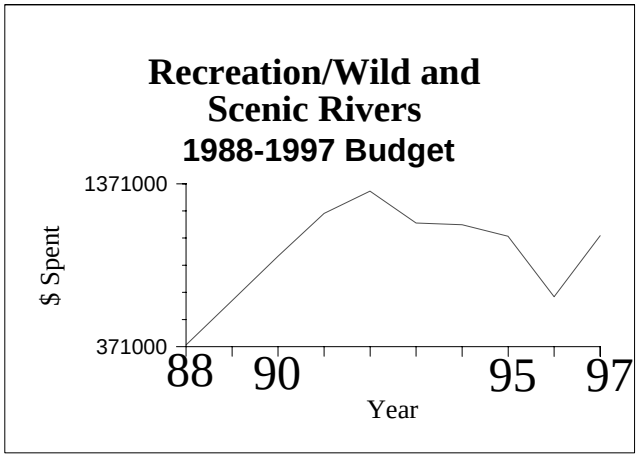
** Units to report changes from structures and acres to miles of stream improved.

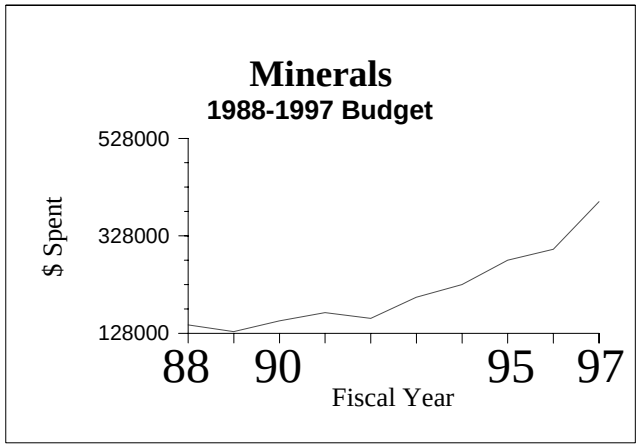
monitoring week was the successes in managing complex situations on the Forest. The diversity of the Forest and its many disturbances (or lack of disturbances) have spawned different challenges across the landscape. The Forest has a diverse workforce, reflecting the landscape.

Planners and implementing personnel have appropriately used the Standards and Guides of the Forest Plan, as amended by the Northwest Forest Plan. The Province, Districts and Forest have reviewed several projects and programs. All activities have complied with Forest Standard and Guidelines except where variations are planned in the NEPA documents. The objectives for the 15 Management Areas and



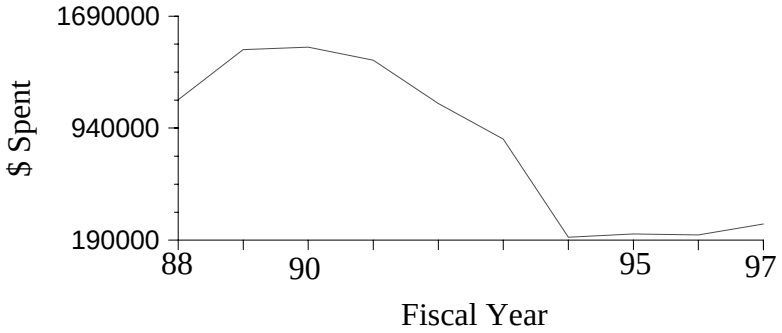




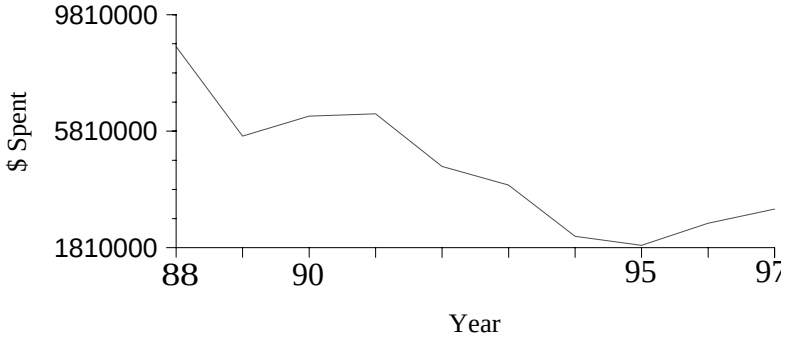


Programs with Increasing Budgets

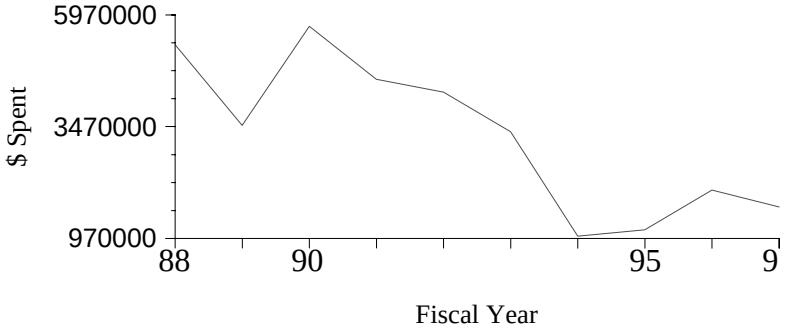
Fuels Treatment
1988-1997 Budget



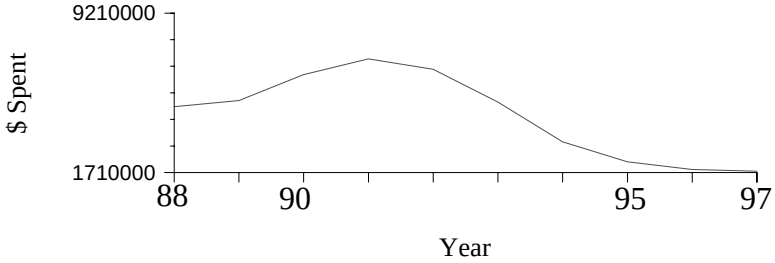
TRANSPORTATION SYSTEMS
Budget FY 1988 - 1997



Timber Sale Planning
1988-1997 Budget



Reforestation and Timber Stand Improvement
1988-1997 Budget



Programs with Decreasing Budgets

six land allocations (Late Successional Reserves, Riparian Reserves, Matrix, Adaptive Management Areas, Congressionally Reserved, and Administratively Withdrawn), and key watersheds were successfully implemented across the Forest.

RESOURCE ELEMENT: ALL ELEMENTS (Forest Programs and Budgets)

Monitoring Questions

1. Is the management of the Forest achieving planned outputs?
2. Are funding levels for capital investments adequate to achieve projected improvements?
3. Are the major variable costs used in the analysis consistent with actual implementation costs?

Representatives from the Chief's Ecosystem Management Office, Regional Strategic Planning, and the Regional Natural Resources Department visited and toured the Forest during the summer of 1997. They wrote that the trip "significantly increased our understanding and support for the Siskiyou's many diverse programs and projects." The Forest is meeting the planned outputs specified in the Northwest Forest Plan. The Northwest Forest Plan changed forest management in many ways which have led to declines in some of the programs described in the Siskiyou Forest Plan. Timber stand improvement, reforestation, fuels treatments, and road construction will not meet the levels described in the Siskiyou Forest Plan. These programs need to be re-evaluated given the current standards and guidelines in the Northwest Forest Plan. Requirements in the Siskiyou Forest Plan for monitoring of some types of wildlife, such as pileated woodpecker,northern spotted owls, and pine marten, are not required under the Northwest Forest Plan. The network of Late Successional Reserves and Riparian Reserves were designed to maintain habitat for wildlife which require these types of forest for habitat.

Investments vary tremendously from year to year for capital investments. The variable costs for some activities have increased beyond what was predicted in the Siskiyou LRMP, however, some costs have realized some savings over what was predicted. Budget allocations have not been closely tied to the Forest Plan.

RESOURCE ELEMENT: AN121(a) Recreation (Undeveloped)

Monitoring Questions

1. Are the setting indicators of access, non-recreation management, impacts, social encounters, facilities, and visitor management maintained at levels sufficient to provide Primitive and Semi-primitive (Motorized and Non-motorized) recreation opportunities?
2. Is resource degradation occurring as the result of sanctioned Off-road vehicle (ORV) use?

There is a less than five percent variance from LRMP objectives for Primitive and Semi-primitive Non-motorized recreation opportunities in Backcountry Recreation.

No visible degradation to soil, water, or vegetation resources on trails or in other areas open for ORV use has been detected. The amount of ORV use is decreasing as roads are closed by natural and administrative means. Barrier placement and road maintenance on and along roads and ORV trails in the vicinity of Chetco Pass have reduced ORV impacts to insignificant levels.

Several monitoring trips to review ORV use occurred during the year. A review of the Onion Camp and Chetco Pass area found no evidence that there had been any ORV use on either road 885 or trail 1124.4 for at least a year. The Onion Camp gate and the gate located at the junction of road 885 and the Kalmiopsis Wilderness about a mile south of Chetco Pass were both closed and locked. The "tank trap"

barriers that were installed on road 885 at Chetco Pass appear to be completely effective in preventing ORV access to the road and trail. Road 885 is actually returning to a natural condition very rapidly .

One incursion of a set of motorcycle tracks entering the Wilderness was discovered. The tracks began on the 4402112 road and continued onto Trail 1210-2. There were two sets of tracks and both entered and left the Wilderness. Two or three vehicle barriers outside the Wilderness on Road 4402112 had been removed, including the barrier at the junction with the 475 road.

In March, a review of the 087 road discovered that the gate had been altered to allow easy removal and there were faint dirt bike and ATV tracks in the road surface. Logs had been placed along the bank on one side of the gate and were used as a by-pass around the gate. We could see ATV tracks in the by-pass around the gate. Forest Service personnel removed the logs and the location of the gate was changed to make access more difficult. There was no evidence of use of this road during a visit earlier in the year.

A review of a road closure to Star Flat revealed that this area, which was closed to vehicle traffic to protect rare botanical plants, is recovering from the wheel ruts and effects of the 4X4 vehicles. Grass is now covering much of the wheel tracks and only a few of the deeper ruts are still present. The tank traps which were installed have not been totally effective since 4 wheel drives had been by-passing the tank traps and in some cases had filled in the tank traps. Access had been occurring from both the Illinois River road and from the Eight Dollar Mountain Road. Overall, however, the reduction in traffic has helped to provide protection for the Star Flat botanical area.

RESOURCE ELEMENT: AN121(b) Wild and Scenic Rivers

Monitoring Questions

1. Is the protection and management of the Forest's Wild and Scenic Rivers consistent with the Wild and Scenic Rivers Act and the management objectives identified in the applicable River Management Plan?
2. Are the facilities and improvements scheduled in the LRMP being accomplished?
3. Do management activities within the Rogue River corridor meet inventoried or allocated Visual Quality Objectives?
4. Does Partial Retention in middleground distance zones satisfy the user demand for scenic quality within the Rogue River corridor?

Monitoring of daily party launches on the Wild Section of the Illinois River continued. 1997 was a very dry spring with very few days when the objectives of 2 parties launching per day were exceeded. Floating opportunities were limited by the water flow.

A Fee Demonstration Project was implemented in coordination with the BLM on the Wild Section of the Rogue River. Also, an Environmental Assessment was completed allowing limited commercial jet boat use by the 4 private lodges in the Rogue River Wild Section.

No permanent visible degradation of the setting on National Forest lands within or adjacent to the Wild River corridors due to human disturbance has been detected. The flood of January, 1997 did cause some damage to vegetation and equipment located along the banks of the river. The flood left debris hanging in tree branches and shrubs high on the river bank.

The scheduled facilities and improvements are being accomplished, although at a reduced rate. The Rogue River Fee Demonstration Project should accelerate accomplishment and help reduce the backlog of needed work through time.

RESOURCE ELEMENT: AV121 Visual

Monitoring Questions

1. Are planned or programmed management activities implemented within the constraints identified for the Retention and Partial Retention VQO's?
2. Are the allocated VQO's being achieved?

There is no increase over recommended levels of activity in Retention, Partial Retention, or Modification VQO's areas. There is a decrease in timber sale activity due to implementation of the Northwest Forest Plan. The Visual Quality Objectives are being achieved or exceeded. Considerable visual rehabilitation is occurring in many viewsheds with regrowth in older harvest units and along roads.

RESOURCE ELEMENT: AW121 Wilderness

Monitoring Questions

1. Are the physical/biological, social, and managerial settings of each Wilderness Recreation Spectrum (WRS) class maintained within the levels outlined in the S&G's and R-6 Supplement No. 81 to Forest Service Manual (FSM) 2320, as included in the LRMP?

Less than five percent of Wilderness acres are a lower WRS class than Semi-primitive condition. Annual use is much less than eighty percent of estimated capacity for WRS classes. Some illegal access has occurred within the Kalmiopsis Wilderness. Enforcement efforts are ongoing.

RESOURCE ELEMENT: CF121 Fish Habitat

Monitoring Questions

1. What are the cumulative effects on fish habitat capability?
2. Is fish habitat and smolt production being maintained or improved as predicted by the LRMP Final Environmental Impact Statement (FEIS)?
3. Is the quantity and quality of rearing pools being maintained?
4. Is the fish population changing in terms of numbers, species composition, or age structure?
5. Is large woody material being retained in the stream channel for fish habitat?
6. Is stream temperature being maintained or decreased as predicted by the LRMP FEIS?
7. Is sediment affecting stream habitat?
8. What are the effects of fish habitat improvement structures on stream channel configuration, large woody material, and fish populations?
9. What is the life-span of stream habitat improvement structures?

No adverse cumulative effects on fish habitat due to Forest activities implemented after 1989 have been detected. Stream surveys and watershed analyses provide a baseline for comparison with future monitoring results. Fish habitat is being maintained. An amendment to the Forest Plan, the Aquatic Conservation Strategy of the Northwest Forest Plan, has changed the management of riparian areas for

fish habitat. More detailed discussions are found in the Record of Decision and FEMAT report for the Northwest Forest Plan, the Late-Successional Reserve Assessment, and the various watershed analyses.

Stream surveys indicate some increase in the depth and frequency of pools in watersheds most affected by the November, 1996 and January, 1997 flood, e.g. South Fork Coquille River, Grayback Creek. This can be attributed to several factors, notably the addition of very large wood pieces into upper South Fork Coquille River which accumulated gravels and scoured pools under wood complexes formed.

In Grayback Creek it appears that pools scoured in steeper stream gradient areas during the flood event. In low gradient habitat, pools lost depth and much of the large wood supplying overhead cover in pools washed downstream or to adjacent terraces. Considerable fine sediment was transported to lower Grayback Creek from two large road fill failures. Lower Grayback Creek is a crucial area for coho salmon, listed as threatened under the Endangered Species Act. Observation of more fine sediment working it's way downstream in subsequent years necessitates continued monitoring of pools in the lower two miles of this stream.

Fall spawning coho and chinook salmon evidently had many redds displaced by the November, 1996 and January, 1997 flood events. Juvenile coho salmon, usually dominant in lower Grayback Creek, were seen in fewer numbers during the summer of 1997. Coho salmon spawning surveys conducted by the Forest Service and the Oregon Department of Fish and Wildlife for the past five years are showing some increase in the number of coho adults returning. This can probably be attributed primarily to less ocean fishing as changes in land management, including extensive watershed restoration work, have not been in place long enough to cause substantive changes in aquatic and riparian habitat conditions.

No projects have removed any woody material naturally found in the stream channel. In addition, we have placed some large woody structures in many streams to improve fish habitat. The large storms in the winter of 96-97 did not transport these structures off forest. The recent floods have caused considerable shifts of natural large wood in streams draining greater than ten thousand acres (fifth and sixth field watersheds). The final flood assessment report due out in August, 1998 will display this in more detail. In upper Sucker Creek, Left Fork Sucker Creek and Grayback Creek large pieces of wood were transported several miles, usually aggregating in large wood complexes downstream. Many of these complexes are now outside of the normal annual scour zone of these streams (bankfull). It is anticipated that these complexes will be storage areas of wood transported during subsequent flood events. Natural variability makes provision for the dynamics of large wood in streams. Wood is retained within watersheds between flood events and often vacates the watershed during floods.

Stream temperatures are not increasing due to harvest activities in streams originating from National Forest lands . There has been little harvest in any riparian areas and riparian vegetation regrowth in is ongoing. Off-forest stream temperatures may be decreasing or increasing in the various watersheds depending on private land activities (timber harvest, water withdrawals, and development). Watershed analyses contain specific references to particular streams. The Siskiyou NF has been collecting stream temperature information in several streams for the past several years. Information from dozens of collection points in the Rogue River basin are shared and compiled for a yearly report put out by the Rogue National Forest. Other streams which are monitored for temperature include the South Fork Coquille, Elk, Sixes, Hunter, Pistol, Chetco, and Winchuck Rivers. One interesting finding is that the Chetco River had a seven day maximum average temperature of 68.7 degrees 23 miles upstream of (inside) the wilderness boundary in 1997. This river has a naturally higher than optimal maximum temperature due to soil types in the upper portion of the drainage. The maximum average temperature has varied in the different rivers and streams from year to year due to air temperature, stream flows, snow pack, timing of snow melt, cloud cover, and condition of riparian shade among other things. Riparian vegetation was heavily impacted in many areas during the winter of 1996-1997 flooding which occurred. The impacts to stream shade are being looked at currently and will be reported next year.

A review of road miles in key watersheds was conducted in 1997. Table 2 lists the findings of how well the forest is doing at decreasing open road miles in key watersheds. The results of this review show that system road miles have decreased by 6.2% over the past 3 years. Non-system roads have decreased by 4.3%. These numbers will continue to decline as watershed analyses identify decommissioning opportunities and funding becomes available.

Sediment is always affecting stream habitat and is part of the natural and accelerated watershed processes. Recovery in areas previously harvested is ongoing. The amount of sedimentation was high in 1997 due to large storm events during the winter of 1996-97. There was extremely high amount and intensity of rainfall, flood level streamflows, increased natural rates of erosion and landslides, and some road failures. Many of the slides created by the storms will continue to cause input of sediment for some time. Stream surveys will continue to provide additional information.

Table 2

	Miles of Road			
Key Watershed	As of May 20, 1994		As of October 1, 1997	
	System	Non-System	System	Non-System
Cave-Grayback Creeks	91.4	12.4	87.86	12.4
East Fork Illinois River	129.1	1.7	103.74	1.7
Elk River	95.0	12.0	92	11.0
Emily Creek	13.3	0.8	13.3	0.8
Indigo Creek	153.2	1.6	152.17	1.2
Lawson Creek	60.7	1.0	55.5	0.7
North Fork Smith River	43.0	1.3	42.98	1.3
Quosatana Creek	48.5	2.0	48	2.1
Taylor Creek	77.7	1.5	64.34	1.4
Shasta Costa Creek	74.8	4.4	73.61	4.1
Silver Creek	70.1	0	65.32	0
South Fork Coquille River	357.0	45.0	346	43.0
Upper Sucker Creek	95.7	4.9	88.47	4.9
Winchuck River	129.4	2.5	116.2	2.5
TOTAL ROAD MILES	1438.8	91.0	1349.5	87.1

RESOURCE ELEMENT: CT121(a) Endangered, Threatened, Sensitive, and Unique Species

Monitoring Questions (from LRMP Appendix D-19).

PEREGRINE FALCON

1. Are existing nest sites producing young as anticipated?
2. Are surveys being completed to locate new or previously unknown nest and roost sites?
3. Are potential sites being protected?

Agness Cliff nest site did produce one young. Marial nest site was not monitored in 1997. Marial nest site has passed the threshold of concern/variability. Monitoring has not documented young in this eyrie since 1988. It failed in 1989, 1991, 1992, and the historical eyrie was vacant in 1995 and 1996. This site needs considerable work to determine the presence of peregrine falcon, location of new eyrie, if present, and outcome in 1998.

Two surveys to detect previously unknown nest sites were conducted, one in Bonanza Basin and one in Quosatana Basin. Neither survey found peregrine falcons. One observation of a peregrine falcon in Lobster Creek during the breeding season spurred the Bonanza Basin survey. Most recent surveys were conducted in 1989. These surveys should be repeated.

No impacts to potential peregrine falcon habitat occurred during the year.

Monitoring Questions (from LRMP Appendix D-19).

OTHER SPECIES

4. Are habitat inventories and surveys being completed as scheduled?

We are completing habitat inventories and surveys. We conducted 491 survey visits for marbled murrelets covering 14,730 acres. From these 491 visits, we detected both nesting and visiting murrelets at many sites. Many of the survey visits, though none of the detections, were outside the known range of the murrelets. The Forest is pursuing a change to the survey protocol for marbled murrelets which would redefine the range where monitoring for murrelets is required. The range in the Northwest Forest Plan is too broad, and the many surveys which have been done are verifying that a change is needed.

We conducted surveys on 1100 acres at Illinois Valley Ranger District, 1400 acres on Galice Ranger District, and on over 800 acres at Chetco Ranger District of habitat for Del Norte salamanders and found many populations. We conducted surveys for great gray owls on over 8,640 acres on Chetco Ranger District with no response. We monitored 2 Pygmy Owl sites on Chetco Ranger District and found occupancy in both sites. In a Cooperative Partnership survey with the Redwood Sciences Laboratory, 360 station visits of tracking plates on Chetco and Gold Beach Ranger Districts detected 1 fisher, 2 martens, and other species as well. In partnership with Hawkwatch, the Illinois Valley and Galice Ranger Districts surveyed over 3000 acres for northern goshawks.

RESOURCE ELEMENT: CT121(b) Bald Eagle

Monitoring Questions

1. Are existing nest sites producing young as anticipated?
2. Are potential sites being protected?
3. Are surveys being completed to locate new or previously unknown nest and roost sites?

The pair of bald eagles in Watson Creek used the alternate nest found in 1996, but failed to produce young. The pair in Libby Creek nest produced two chicks. Both sites were active this year and Watson Creek produced two chicks last year. These sites and two additional sites with eagles (Copper Canyon downriver of Agness and Quosatana Creek) have not been impacted by any human activities. One road use permit required a seasonal operating restriction around the potential Copper Canyon site because surveys had not been conducted (this also protected Agness Peregrine eyries, adjacent murrelet habitat and occupied spotted owl site).

Limited surveys were conducted in Quosatana Creek and along the entire length of the Rogue River from Jet Boats. Two float trips to detect new nests on the Chetco River were attempted. No new nests were located in either undertaking.

We did an aerial survey for nests along 22 miles of the South Fork Coquille River from Rock Creek to Hayes Flat. We surveyed from the air 16 miles of the Sixes River from Dement Ranch to Edson Creek Campground, and 15 miles of the Elk River from Elk River Fish Hatchery to Iron Mountain. Appropriate habitat surveys were conducted for biological evaluations.

In summary, no thresholds of concern or variability were exceeded.

RESOURCE ELEMENT: CT121(c) Northern Spotted Owl

Monitoring Questions

Determine pair occupancy and, where possible, reproductive status of spotted owls within HCA-1s.

1. Are HCA's occupied by the required pairs (20) of reproductively successful spotted owls in any given year?.
2. What are the trends in pair occupancy, breeding status, and reproductive success of HCAs through time?
3. How correct are the assumptions and expected outcomes of implementing the S&G's detailed in the Habitat Conservation Strategy for northern spotted owls?
4. What are the general population trends of the northern spotted owl in the Forest Matrix?
5. Are HCAs being managed as required by S&G's?
6. Is potential habitat being surveyed for northern spotted owls?

In general, northern spotted owl surveys are not required for most project activities (Interagency Direction within the Range of the Spotted Owl). During the spring of 1997, however, thirteen of the thirty-two activity centers on the Powers Ranger District were surveyed according to regional spotted owl protocol (June 1994). The thirteen were selected somewhat randomly, but chosen primarily by how easy they were to get to and how long it had been since they had been surveyed; 10 centers were on the east side of the district and 3 on the west side. An "owl activity center" is defined as an area of concentrated activity of either a pair of spotted owls or a territorial single owl (3 responses in the same location over one or two seasons). Within matrix lands, 100 acres of the best owl habitat is designated for the activity center and is maintained even if owls are no longer found during surveys at those sites.

In 6 of the 13 areas, owl responses were heard. (46)%
In 4 of the 13 areas, owls were found during the day. (31)%
In 3 of the 13 areas surveyed this season, nest trees were located. (23)%

Eleven of the monitored activity centers are in Late Successional Reserve lands and 5 (45%) had owl responses. Additional owl surveys may be conducted in upcoming years to determine trends in use of activity centers, but these are not required by Northwest Forest Plan Standards and Guidelines. Some of the monitoring questions listed here for spotted owls should be discontinued as Forest Plan monitoring questions.

Some monitoring of spotted owl nests occured on the other districts as well. A total of 5,780 acres were visited to monitor spotted owl presence and activity.

RESOURCE ELEMENT: CT121(d) Sensitive Plants

Monitoring Questions

1. Are sensitive plant populations being maintained?

Yes. Surveys were conducted for all ground disturbing activities on all five Ranger Districts. We compiled all known sites for sensitive plants which were discovered during the year..

RESOURCE ELEMENT: CW121(a) Pileated Woodpecker

Monitoring Questions

1. Are the areas suitable habitat for pileated woodpeckers?
2. Is there evidence of pileated woodpeckers (diggings, cavities, birds)?
3. Are the number of areas identified in the plan being maintained?
4. Are the areas occupied and productive?

The pileated woodpecker network setup by the Forest Plan (1989) has been amended by the Northwest Forest Plan. The monitoring of this original network is no longer needed. Late Successional Reserves set up by the Northwest Forest Plan are being maintained and pileated woodpeckers occupy and reproduce in the late-successional reserves.

RESOURCE ELEMENT: CW121(b) Pine Marten

Monitoring Questions

1. Are the areas suitable habitat for pine martens?
2. Is there evidence of pine marten (scat, tracks, animals)?
3. Are the number of areas identified in the plan being maintained?

Nine remote camera survey sites were set up during 1997. Trailmaster camera stations were set up in nine 4-square-mile sample areas at Hanging Rock, Den Table Project Area, Salmon Mountain, and Mt. Bolivar. The cameras were not checked as regularly as they should have been so, technically, were not done to protocol. Some of them will be redone this season. One site did capture a picture of a pine marten.

The pine marten network setup by the Forest Plan (1989) has been amended by the Northwest Forest Plan. The monitoring of this original network is no longer needed. The Late-Successional Reserves set up in the Northwest Forest Plan are being maintained.

RESOURCE ELEMENT: CW121(c) Osprey

Monitoring Questions

1. Are existing nest sites occupied?

2. Are surveys being completed to locate new or previously unknown nest and roost sites?
3. Are potential habitat sites being maintained, as specifically described in the S&G's?

Three osprey nest sites were monitored at Powers Ranger District. One young hatched at the Sand Rock Creek nest and there was activity at the other two nest sites as well, although fledlings were not verified. There was a discovery of a nest at Bear Creek on private land along South Fork Coquille and a new nest site on Miller Bar on the Chetco River. We did an aerial survey for nests along 22 miles of the South Fork Coquille River from Rock Creek to Hayes Flat. We surveyed from the air 16 miles of the Sixes River from Dement Ranch to Edson Creek Campground, and 15 miles of the Elk River from Elk River Fish Hatchery to Iron Mountain.

On the Gold Beach District, there were at least 44 active territories in 1997. This is a slight increase from 1996. There were at least 52 chicks fledged in 1997, however, not all the nest sites were actively monitored, so there were probably more. Three new territories were found this year, with one nest producing 3 chicks and another producing 2 chicks.

Surveys have been completed each year for the past six years to locate new and previously unknown nests. New nests have been located each year. Potential sites are being maintained and standards and guidelines regarding osprey are being followed.

RESOURCE ELEMENT: CW121(d) Woodpeckers

Monitoring Questions

1. Are snags and replacement trees being left in the right numbers, sizes, and distribution on lands available for timber removal?
2. Are snags and replacement trees being maintained as planned on all other lands?

Wildlife trees are being left in the appropriate numbers on sales. The green tree retention and snag standards and guidelines in the Northwest Forest Plan apply to new sales being prepared. 65 trees were topped or girdled in four timber sale units.

RESOURCE ELEMENT: CW121(e) Deer and Elk

Monitoring Questions

1. Are ODFW trend count data showing a non-predicted change in habitat capability?
2. Are the S&G's being followed as required to meet established habitat capability goals?

Monitoring for trend count needs to continue for a longer period to detect trends in habitat capability.

Aerial Forage Seeding: was accomplished on 145 acres in five different areas. The areas seeded included:

-Cedar Gulch - 37 acres
-Starlight - 20 acres
-Fallen Hall - 25 acres
-Slick John - 45 acres
-South Swamp -18 acres

34 days of radio telemetry locations was accomplished in the Eden Valley Elk Project to monitor the movements of 6 radio-collared elk.

RESOURCE ELEMENT: DN121 Range

Monitoring Questions

1. Is Vegetation Condition and trend being maintained or improved? Have areas in unsatisfactory condition improved?

Yes. The vegetation condition is maintained or improving. Animal numbers have been reduced in some allotments and other allotments are not being used at all. On the Galice District, known noxious weed populations are being monitored, and where treatments have been implemented, numbers of weeds on the sites have been counted. Areas that were hand pulled have shown a significant decrease in numbers of yellow starthistle from 1996 to 1997.

RESOURCE ELEMENT: ET121(a) Port-Orford-cedar

Monitoring Questions

1. Is the rate of spread of the disease increasing or decreasing?
2. Have sale activities been monitored where management strategies have been prepared?
3. Are the strategies effective?
4. Is the disease spreading along road systems?

In FY 1997 the Siskiyou National Forest accomplished the installation of 35 gates to close roads, sanitation of 64 miles of road, selected 1,846 trees for genetic resistance testing, and printed 300 educational posters about prevention of spread of Port-Orford-cedar root disease. Fire prevention posters were replaced with Port-Orford-cedar awareness posters during the fall to increase public education of the Port-Orford-cedar issue during the wet season.

Two controversial environmental analyses were completed for the most critical remaining road closures on Gold Beach and Chetco Districts (Lawson/Collier area, and Vulcan Lake area). The proposals included: (1) closing ten roads seasonally (10/1 to 6/1); and (2) conducting sanitation timber harvest on the most critical open road section (Game Lake/Sourdough Camp Road). Approximately 25-30 miles of uninfested stream will be protected by these projects. Field monitoring, road closure maintenance, and office mapping were also completed.

Seedlings from stock showing resistance have been sown at Dean Creek Nursery and were outplanted in FY97. Sites were selected based on interdisciplinary team input on needs for shade (ultramafic disease sites) and large wood (riparian hardwood or ultramafics). Stock was scattered to priority sites in the Hunter, Lawson, Quosatana, Lobster, and Foster Creek watersheds.

The I.V. Ranger District accomplished 33 miles of roadside sanitation using contract and Rogue Institute crews. They installed 23 gates for road closures, and made a Cooperative Gate Management Agreement with Gasquet RD. The Wimer Road had much maintenance including ditches pulled, culverts cleaned, and spot rocking.

The Powers Ranger District monitored 15 timber sales which had POC control strategies. This included monitoring of roads and gates.

A forestwide map showing locations of POC and the disease status as of 1997 was completed. New infestations are showing up and there is some new spread along roads within infected stands. An attempt will be made to compile the rate of spread of the disease through time over the next year.

RESOURCE ELEMENT: ET121(b) Destructive Insects and Diseases

Monitoring Questions

1. Are there significant damage and growth reductions due to insects and disease?

There are no large scale significant damage or growth reductions due to insects and disease. There is localized mortality of pine and fir due to stocking densities/drought/age/water competition. Affected trees are generally scattered concentrations, tend to be large trees, and occur in locations where moisture is limiting for growth and survival. Direct cause of mortality in pine appears to be bark beetles aggravated by moisture stress. The amount of mortality appears to be increasing on the eastside.

RESOURCE ELEMENT: ET121(c) Land Suitability

Monitoring Questions

1. Are there changes in the land base that could have implications for adjusting levels of activities or outputs? (Forest Plan has a threshold of 10,000 acres change in suitability classification the first 10 years.)

There are no changes beyond the threshold. The Northwest Forest Plan did substantially reduce the land base for programmed timber harvest. It also adjusted the level of timber harvest.

RESOURCE ELEMENT: ET121(d) Acres and Timber Volume Harvested

Monitoring Question

1. Are timber outputs comparable to those in the Forest Plan?

Timber outputs met what was projected under the Forest Plan as amended by the Northwest Forest Plan.

RESOURCE ELEMENT: ET121(e) Harvest Unit Size

Monitoring Question

1. Is the Forest exceeding the 60-acre size limit?

No even-aged regeneration harvest units larger than 60 acres were cut.

RESOURCE ELEMENT: ET121(c) Reforestation and Intensified Forest Management Practices

Monitoring Thresholds

These thresholds relate to regeneration of harvest areas within 5 years, plantation tree stocking, growth, and yields.

1. Ten percent or more of the acres having reforestation lag time greater than five years:

Less than 1 percent of the acres have a reforestation lag time greater than five years.

2 Ten percent or more of the acres being certified as stocked with less than the recommended stocking level:

With the addition of natural seedlings, less than 1 percent of the certified acres are below the recommended stocking level.

3. Thirty percent or more of the acres prescribed for precommercial thinning (PCT) in site-specific silvicultural treatment prescriptions do not receive treatment in the year planned; or ten percent or more do not receive treatment when prescribed needs are accumulated over a 3-year period (Forest Plan projected an yearly average of 2397 acres of precommercial thinning during the first decade):

In 1997, 63 percent of the lands with silvicultural prescriptions of precommercial thinning did not receive treatment. Over the three year period, 51 percent of the acres with a precommercial thinning prescription did not receive treatment. Many of these acres are plantations located within the Late-Successional Reserves, lands not programmed for timber harvest. These acres will not reach their desired condition as quickly as planned in the LRMP either for timber production or wildlife habitat.

4. Thirty percent or more of the acres prescribed for release in site-specific silvicultural treatment prescriptions do not receive treatment in the year planned; or ten percent or more do not receive treatment when prescribed needs are accumulated over a 3-year period (Forest Plan projected an yearly average of 4469 acres of release during the first decade):

We did exceed these thresholds in 1997. 37 percent of the lands with this silvicultural precommercial prescription did not receive treatment. Over the three year period, 30 percent of the acres did not receive treatment. Most of these acres are plantations located within the Late-Successional Reserves, lands not programmed for timber harvest. These acres will not reach their desired condition as soon as if they were treated.

5. Fifty percent or more of the acres prescribed for fertilization in site-specific silvicultural treatment prescriptions do not receive treatment in the year planned; or 10 percent or more do not receive treatment when prescribed needs are accumulated over a 5-year period (The FORPLAN Model outputs were calculated based on fertilizing 5,770 acres during the first decade of the Forest Plan.):

Only 21% of prescribed fertilization projects were completed in 1997, well below the 50% threshold. Only 45% of prescribed fertilization projects have been treated in the last 5 years. In general, the number of

acres fertilized is not meeting the prescribed treatment due to a large percentage of the acres falling within late successional reserves identified in the Northwest Forest Plan.

RESOURCE ELEMENT: ET121(g) Biological Diversity

Monitoring Question

1. What is the present distribution and proportion of seral stages by plant association (FEIS, Chapter III, Table III-37)?
    - How do they compare to past distributions?
    - What distribution and proportion is expected in the future?
    - What are the trends?
    - Does the distribution, proportion, and absolute amount provide viable habitat for management indicator species, rare species, and biological diversity?
2. Has habitat capability changed?
3. What is the present status of sensitive species?
    - What are the population numbers?
    - What is the distribution of known sites?
    - Is there a trend in population density?
4. What are the trends in overall species diversity on the Forest?
    - Are there trends in species richness?
    - Are there relationships to management practices and direction?
    - Are there relationships with natural processes or events?
5. Can species/habitat relationships be established from present data?

The S.W. Oregon Ecological Assessment Team has published some general data needed for this monitoring item (A First Approximation of Ecosystem Health, PNW Region, June 1993). The Late-Successional Reserve Assessment also addresses these questions. However, the best source for more site specific information is found in the analysis of the terrestrial landscape in individual watershed analyses.

Trends in the distribution and proportion of seral stages is dependent on the location and management which have occured in any particular area. For instance, in the Briggs watershed analysis, where weather conditions are hotter and dryer than the coastal locations of the Siskiyou National Forest, the finding was that we should expect to find more early seral stages than we presently have and in larger patch sizes The current conditions of an increase in mid-seral stages is due mostly to fire suppression. In the Sixes River and West Fork of the Illinois, the analyses also determined that there has been a trend towards mid-seral classes and a decrease in the larger size classes and late seral conditions, but that early seral stages have increased above historic conditions. For more detailed information regarding all of these monitoring questions, refer to individual watershed analyses.

RESOURCE ELEMENT: ET121(h) Social and Economic Setting

Monitoring Questions

1. What is the average yearly unemployment rate for Josephine, Jackson, Coos, and Curry Counties?
2. What is the demand for timber?

3. What is the demand for recreation?
4. What are the social and economic trends in local communities?

The average yearly unemployment rate and per capita income for the four county area from 1991 to 1997 is available from the Oregon State Employment Office Economist in Medford, Oregon 541-776-6060.

The demand for timber is high, though the log prices have fluctuated due to market conditions. There were not enough sales sold from the Siskiyou National Forest to accurately determine the bid price ratio.

There is less than 80% use of the carrying capacity in primitive and developed recreation campgrounds. In wilderness areas, last year's use was less than 20% of the carrying capacity. However, limits of acceptable change are being examined on two sites popular with local residents.

Shifts in local communities' beliefs and values continue as stated in the Siskiyou National Forest FEIS and the President's Forest Plan. Immigration into the area continues.

Supplemental forest receipts with federal funds were implemented to maintain the level of payments to counties, commensurate with the amount of collections. The threshold of a 25% annual reduction in the payments to counties has occurred. The Northwest Forest Plan is the forest plan amendment to address this issue.

RESOURCE ELEMENT: FA121 Suspended Particulates

Monitoring Question

1. Does Total Suspended Particulate (TSP) produced from planned ignitions exceed 7300 tons Forest-wide annually?

There were 672 acres of planned ignitions and 641 tons of suspended particulates emitted from these burns. This is far below the threshold of 7,300 tons. This monitoring item will need to be adjusted to the current level of timber harvest and planned ignitions for activity fuels abatement. In addition, planned ignitions for fuel reduction not related to timber sale activities needs to be factored in as well.

RESOURCE ELEMENT: FWl21(a) Water Resources

Monitoring Questions

1. Are water resource-related BMP's being implemented?
2. Are water resource-related S&G's and BMP's effective for:
    - Maintaining or enhancing water quality and the beneficial uses of water?
    - Allowing compliance with State water quality requirements, such as Oregon's Anti-degradation policy for high quality waters and National Wild and Scenic Rivers?

The water resource-related BMPs are being implemented. The Forest Plan Standards and Guides and associated BMPs are effective for maintaining and enhancing the water quality and beneficial uses of water. The Forest has been in compliance with State water quality requirements. Field reviews of road rehabilitation and decommission projects observed drainage, infiltration, erosion and revegetation following four and more years after decommissioning. Pullback and waterbars produced stable erosion-proof surfaces capable of supporting plant growth. The ripped roads remained stable following

reintroduction of water with little or no surface erosion, reestablished drainage patterns, and some success in revegetation.

RESOURCE ELEMENT: FW121(b) Soil Productivity

Monitoring Questions

1. Are soil and site organic matter and nutrient levels being maintained following timber harvest and site preparation?
2. Are soil physical properties being maintained following timber harvest and site preparation?
3. Is growth of trees being maintained at satisfactory rates?

Field review shows that new units meet S&G 7-8 for large woody material (LWM), except where preharvest levels were low. However in several units, wildlife reserve trees equal to or greater than 5 per acre provide significant contribution to the large woody material supply.

LWM is being retained in the spirit of S&G 7-8 and future monitoring of timber sales with C6.404 will show if current prescriptions are being met.

Field review shows that mineral soil exposure and subsequent erosion is well below the respective 15 to 40 percent sliding scale limits for S&G 7-4 for all units reviewed and that detrimental soil conditions; compaction, puddling,displacement and/or severely burned criteria of S&G 7-2 were met. Bulk density, porosity, aeration and infiltration of water are maintained following yarding and slash burning. We assume that where no disturbance of the forest floor and soil occurs the soil bulk density, porosity and water infiltration rates will be unaffected.

Current surveys contain validation of satisfactory growth rates.

RESOURCE ELEMENT: FW121(c) Water Resources

Monitoring Question

1. Are the timber harvest basin constraints for scheduling timber harvest in the Planning Basins and Watershed Analysis Areas (WAA's): Being applied according to the S&G's? (WAA's only) Adequate for minimizing the potential for adverse cumulative effects (on/off Forest) on: (1) Stream channels and (2) water quality and the beneficial uses of the water? (Some examples of adverse cumulative effects are: channel aggradation, loss of riparian vegetation and stream bank stability, and reduction in fish habitat.)
2. Are the effects within the range predicted in the FEIS?

The basin harvest constraints are being applied according to the Standards and Guidelines. Monitoring has not revealed any detrimental changes due to adverse cumulative effects on and off the Forest due to Forest activities implemented under the Forest Plan.

The range of effects are within the range predicted in the Forest Plan FEIS, as amended by the Northwest Forest Plan.

RESOURCE ELEMENT: FWl21(d) Water Quality

Monitoring Question

1. What are the landslide statistics on managed versus unmanaged lands?

The assessment report for the storms of November and December of 1996 was released this past year. The findings from that report indicate that landslides varied considerably from watershed to watershed and that storm intensity, snowpack/elevation, and susceptibility to landslides (soil type) were the main factors affecting landslide density. Major storms displayed a cellular nature, which caused wide variation in the amount of precipitation from one area to another. Field surveys conducted in preparation for this assessment determined that streamside landslides triggered by scouring and undercutting of passing debris flows are larger and more numerous in areas that have been harvested. Another key finding from the assessment is that increased numbers and volumes of streamside landslides were caused by inadequate drainage of roads, road fill material diverting stream flow into stream banks, and debris flows initiated by roads. Natural hillslopes did also have a higher amount of scouring and undercutting than expected.

A statewide study of landslide statistics conducted by Oregon Department of Forestry concluded that harvested areas did have a higher likelihood of having a landslide, although predominantly on slopes greater than 70%. Most of the landslides were found where precipitation was the highest and usually in very steep terrain.

RESOURCE ELEMENT: FWl21(e) Acres Burned

Monitoring Question

1. Do acres burned by fire size class per decade exceed the frequency and size distribution as presented in the Fire Management Action Plan?

Fires have covered 10,135 acres of the Forest since 1990. This exceeds the threshold in the Forest Plan. However, most of the burned acreage occurred in the Mendenhall Fire complex in 1994. This complex is primarily nonforested or nonproductive (for timber) serpentine soils on the Illinois Valley Ranger District.

With the current trend towards closure of roads, reduced personnel, and reduced forest stand management will come a potential for increase in the average size of fires. Prescribed natural and planned ignition fires may be able to offset this potential, however, accomplishment thus far in this program has not met anticipated levels. This monitoring item needs to be evaluated further and a good look taken at the tradeoffs between prescribed fire, wildfire, anticipated budgets, and forest access. The estimations for frequency and size distribution of wildfires in the Forest Plan may be out of date.

RESOURCE ELEMENT: GM121 Minerals

Monitoring Questions

1. Are the Standards and Guidelines for mineral operations reasonable and effective?
2. Are the rehabilitation Standards and Guidelines reasonable and effective?

The Standards and Guidelines provide reasonable and effective management of impacts from mining. The impacts of mining, on a watershed scale, is far below the the natural sedimentation and erosion rates. Generally, mining entails short duration small recreational suction dredge operations having an average production rate approximating one-half cubic yard per hour of dredge running time. Observed impacts have been miniscule when compared to natural processes. No declines in surface resources and environmental quality for fish habitat, wilderness, wildlife, and soil have been observed. Rehabilitation as prescribed in the Standards and Guidelines is directed in approved Plans of Operations.

Summary Tables

The following tables summarize recommendations for Forest Plan standard and guideline monitoring items.

Table 3

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
All Elements S&Gs Used	X		X	
Forest Outputs & Budget	X		X	
AN121(a) Recreation (Undeveloped)	X			
AN121(b) Wild & Scenic Rivers	X		X	
AN121 Visual	X			
AW121 Wilderness	X			
CF121 Fish Habitat	X			
CT121(a) T & E, Sensitive, and Unique Species Peregrine Falcon Other species	X			
CT121(b) Bald Eagle	X			
CT121(c) Spotted Owl	X		X	X
CT121(d) Sensitive Plants	X			
CW121(a) Pileated Woodpecker	X		X	X
CW121(b) Pine Marten	X		X	X
CW121(c) Osprey	X			
CW121(d) Woodpeckers	X			
CW121(3) Deer & Elk	X			
DN121 Range Condition	X			X

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
ET121(a) Port-Orford Cedar	X			
ET121(b) Destructive Insects & Diseases	X			
ET121(c) Land Suitability	X		X	X
ET121(d) Acres & Timber Volume Harvested	X			
ET121(e) Harvest Unit Size	X			
ET121(f) Reforestation & Mgt. Practices	X		X	X
ET121(g) Biological Diversity	X			
ET121(h) Social & Economic Setting	X			
ET121(i) Economics	X			
FA121 Suspended Particulates	X		X	X
FW121(a) Water Resources (BMP's)	X			
FW121(b) Soil Productivity	X			
FW121(c) Water Resources	X			
FW121(d) Water Quality	X			
FW121(e) Acres Burned	X		X	X
GM121 Minerals	X			

Northwest Forest Plan Monitoring Items

The following tables display the monitoring items identified in the Northwest Forest Plan Record of Decision that are required to be carried out. For the most part, monitoring of implementation of the Northwest Forest Plan is being carried out at the Regional and Provincial levels. Projects that have been reviewed on the Siskiyou National Forest have not had any problems identified with implementation of these items. The watershed analyses and Late-Successional Reserve Assessment provide baseline conditions for future effectiveness and validation monitoring, and identification of any special monitoring needs.

Table 4 Northwest Forest Plan Implementation Monitoring (Page E-4 of ROD)

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
Late-Successional Reserves	X			
Riparian Reserves	X			
Matrix	X			
Adaptive Mgt. Areas	X			
Key Watersheds	X			
Watershed Analysis	X			
Participation	X			

Table 5 Northwest Forest Plan Effectiveness Monitoring (Page E-6 of ROD)

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
Aquatic Ecosystems	X			
Biological Diversity	X			
Use Levels	X			
Rural Economies	X			
American Indians	X			

Table 6 Northwest Forest Plan Validation Monitoring (Page E-10 of ROD)

Monitoring Item	Continue to Monitor	Change Practice	Evaluate further	Propose Adjustment
Northern Spotted Owls	X			
Marbled Murrelets	X		X	X
Populations of fish species and stocks listed as threatened, endangered, or sensitive	X			
Rare Species	X			
Management & Health of LSRs	X			

The range where surveys for marbled murrelet are required prior to any ground disturbing activity is larger than the known range where marbled murrelets have been detected. The additional monitoring being done is expensive and no additional murrelets are being discovered in the areas outside of the known range of occupancy. We are recommending that we limit required surveys to the documented range of habitat.

Table 7 Northwest Forest Plan Effectiveness Monitoring (Page E-10 of ROD)

Monitoring Item	**Continue to Monitor**	**Change Practice**	**Evaluate further**	**Propose Adjustment**
Environmental Stressors	X			
Rare and Declining Species	X			

Forest Plan Amendments

There were no Forest Plan amendments in 1997. The Summary Table identified some items which will need to be looked at for future amendments to the Forest Plan. Table 8 lists all the amendments to the Forest Plan which have occurred thus far.

Table 8

Amend-ment	Date	Nature of Amendment
1	Aug., 1991	Changed the wording for reforestation requirements
2	Dec. 1991	Establishment of Long Term Site Productivity Research Site on Chetco Ranger District
3	April 1992	Adjustment of Project Implementation Schedules
4	July 1992	Land Exchange on Gold Beach and Powers Ranger District
5	Aug. 992	Emerald Canyon Land Allocation change on Gold Beach Ranger District
6	July 1993	Chetco Wild & Scenic River Management Plan
6a	July 1993	Modified treatment for POC disease control on Chetco Ranger District.
7	Sept. 1994	Elk Wild and Scenic River Management Plan
8	April 1996	Amended Direction for Mining in Riparian Reserves. Corrected an incongruity between Mining Direction in the Forest Plan as amended by the Northwest Forest Plan and the mining regulations of 36 CFR 228.

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