United States
Department of
Agriculture

Forest Service

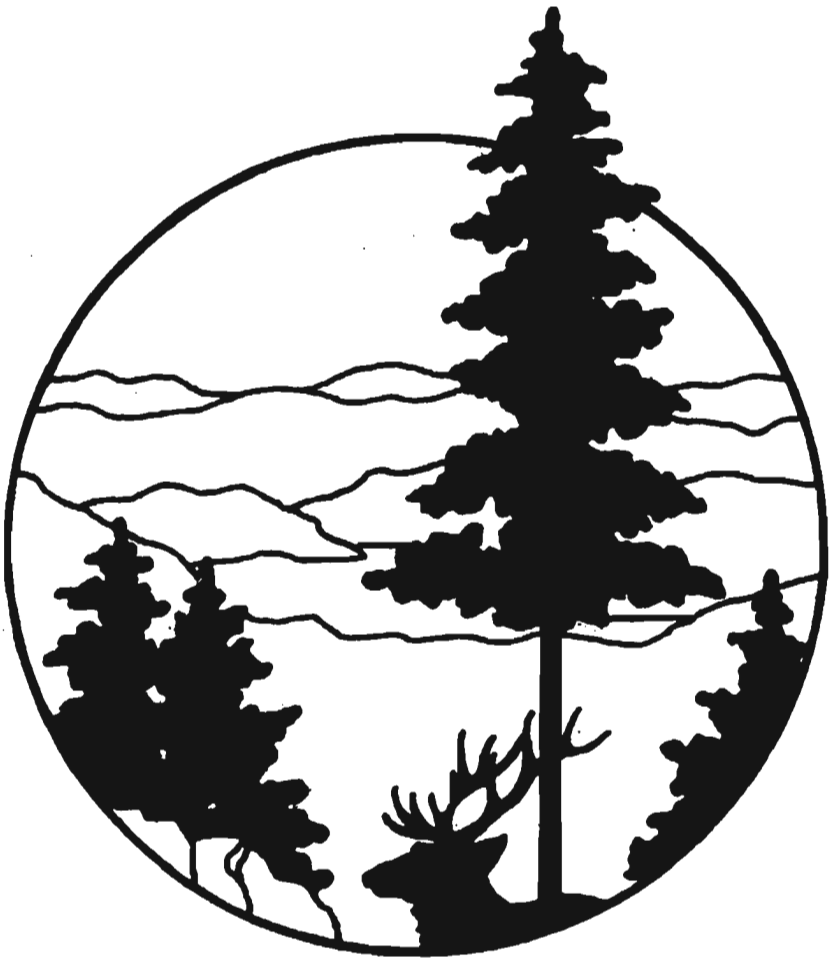
Pacific Northwest
Region

JUNE 1996

Umatilla National Forest
Forest Plan

Monitoring and Evaluation Report

FISCAL YEAR 1995



United States Department of Agriculture **Forest Service** Umatilla National Forest

2517 S.W. Hailey Avenue
Pendleton, OR 97801

Reply To: 1920-2-3

Date: June 21, 1996

Dear Reader:

Enclosed is the Umatilla National Forests Annual Monitoring and Evaluation Report for FY '95. The Report is our fifth one. It summarizes and highlights Forest Plan monitoring and evaluation activities conducted during the year. I hope you find the Report informative and useful in understanding the Forests ongoing Forest Plan implementation experience.

Monitoring and evaluation continues to be important components of the Forests management process. The intent of monitoring is to determine how well the Plan is being implemented and if goals, objectives, and Desired Future Conditions are being achieved. Monitoring and evaluation also help to identify corrections and adjustments needed to improve land management and to better serve the public.

Monitoring and evaluation are an ongoing process. Results will often not be immediately known because of the longer time frames involved with many projects and activities. Obtaining a clear picture of what is and is not working is often a function of these longer timeframes. My commitment is to keep you informed about our progress and things the Forest has learned from our monitoring activities, as we move into the future.

I appreciate your continued interest and involvement in the Umatilla's Forest Planning process. The process provides one of the direct ways for you to be involved in the management of the Forest. Your comments are important to improving the Forest's monitoring program or other aspects of management. I invite you to call, write, or drop in to let us know your reaction to the Report and other matters of interest to you. Please contact Lyle Jensen, 541-278-3823, in the Planning section of the Supervisor's Office for assistance. The addresses and phone numbers of each District office and for this office are listed on the following page.

Sincerely,

Thomas K. Reilly

THOMAS K. REILLY
Acting Forest Supervisor

Enclosure

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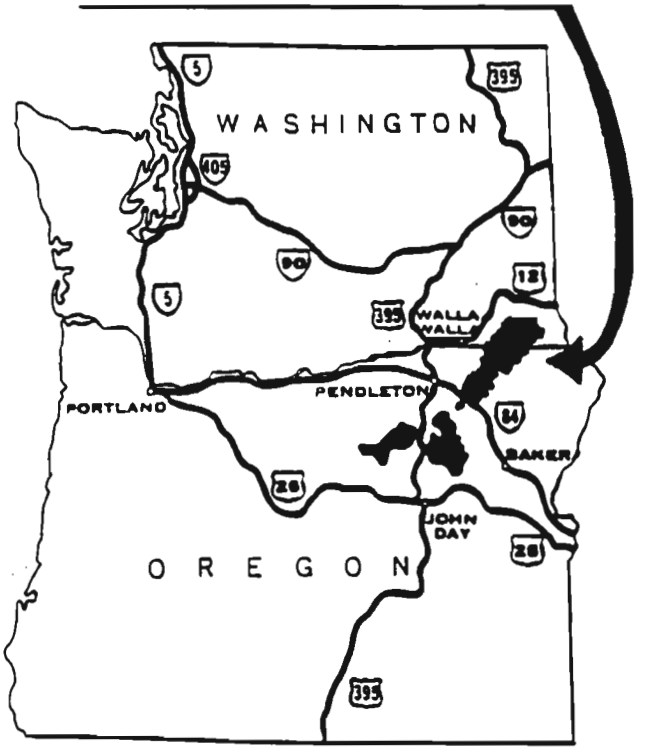
Umatilla National Forest



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INTRODUCTION

Monitoring and evaluation are important steps in ensuring that Forest Plan implementation occurs as intended and that management objectives are being met. The Umatilla National Forests Annual Monitoring and Evaluation Report for Fiscal Year 1995 is the fifth one prepared by the Forest in support of Forest Plan implementation. The Regional Forester approved the Forest Plan on June 11, 1990, and the Forest began implementing the Plan on August 6, 1990. This report summarizes and documents the Forest's continued progress and monitoring results for FY '95. The Report is intended to provide information to the agency and public about how well the Forest is meeting Plan objectives.

The Monitoring and Evaluation Report is composed of four primary sections:

- Introduction, including Summary of Recommended Actions
- Monitoring and Evaluation Results which summarizes results and findings for the various individual monitoring items.
- Forests Accomplishments which provides a comparison of planned versus actual program accomplishments.
- Forest Plan Amendments which covers the amendments made to the Forest Plan during the year.

MONITORING AND EVALUATION

Monitoring and evaluation are integral parts of the Forest management process. Monitoring consists of gathering data, making observations, and collecting and disclosing information. Monitoring is the means to measure progress in Forest Plan implementation, to determine how well objectives of the Forest Plan are being met, and to determine if management standards and guidelines are appropriate for meeting the Forest's outputs and environmental protection. Monitoring is also used to determine how well assumptions used in the development of the Forest Plan reflect actual conditions.

Evaluation is the process of analyzing data, information, and products resulting from monitoring. Evaluation determines if planned conditions or results are being attained and when they are within Plan direction. When a situation is identified as being outside the limits of acceptable variability, changes may need to occur. Therefore, evaluation serves two major functions: it initiates a change in management practices and provides a means to adjust the Forest Plan to keep it dynamic and responsive to changing conditions.

Three types of monitoring are recognized. The Forest's program focuses primarily on the first two types – implementation and effectiveness monitoring:

– *Implementation Monitoring* – determines if plans, projects, prescriptions, and activities are being implemented as designed and in compliance with Forest Plan goals, objectives, and management direction. *"Did we do what we said we were going to do?"*

– *Effectiveness Monitoring* – collects the information to determine if plans, projects, prescriptions, and activities are effective in meeting the intent of the Forest Plan. *"Are the management practices producing the desired results?"*

– *Validation Monitoring* – tests the validity in initial planning data and assumptions. *"Are the planning assumptions valid, or are there better ways to meet Forest Plans goals and objectives?"*

MONITORING STRATEGY

The FY '95 Annual Monitoring and Evaluation Report is based on the Umatilla Forest Plan Monitoring Strategy. The Forest Supervisor signed the Umatilla Forest Plan Monitoring Strategy on December 5, 1991. The Strategy is an elaboration or clarification of the Forest Monitoring Plan in Chapter V of the Forest Plan. The Monitoring Strategy was revised July 1994. The focus of the revision was to incorporate changes in management direction and improvements suggested by employees and others.

The main purpose of the Umatilla's Monitoring Strategy is to ensure consistency in implementing the Forest Plan. As required by the National Forest Management Act (NFMA), Forest Plan implementation must be evaluated to determine the effects of management practices, how well objectives have been met, and how closely management standards and guidelines have been applied. Requirements set by the Forest Plan, the Regional Monitoring Strategy, and NFMA form the foundation of the Forest's Monitoring Strategy.

The Strategy defines the items to be monitored and contains the key monitoring questions, thresholds of variability (for change), proposed monitoring approaches, and assigned responsibilities.

SUMMARY OF RECOMMENDED ACTIONS:

The following table summarizes the recommended actions to be taken as a result of monitoring and highlights some of the key findings. Three categories of action are identified in the table as follows:

- Change practices – Indicates that results of a current practice are outside of thresholds of variability and/or not meeting specific direction set by the Forest Plan and improvement is needed.

- Further Evaluation to Determine Action – More information and data are needed to determine or better identify cause of concern and/or future actions that need to take place.

- Amend Forest Plan – Identifies changes that need to occur in the Forest Plan which may occur from inconsistent results with the Plan or unclear direction.

Monitoring will continue on all items, even those with recommendations for action.

Summary of Recommended Action

– 1995 Monitoring Report –

Umatilla National Forest

PG#	MI#	Monitoring Item (MI)	1994 Action	Change Practice	Further Eval.	Amend Forest Plan	Remarks
I. PHYSICAL RESOURCES							
1	1	**A. Air** Air Quality	CM				Continue Monitoring.
2	2	**B. Soil** Soil Productivity	FE		•		Soil protection practices are being implemented properly and are meeting standards. Subsoiling treatments are showing positive results. Continued reporting and evaluation of project activity and restoration treatment effects is needed.
5	3	**C. Water** Water Quantity	FE		•		Need to complete long-term precip. and stream flow data evaluation. Umatilla Barometer Watershed report is forthcoming in FY 1996.
8	4	Water Quality	CP/FE	•	•		BMP monitoring, reporting, and evaluation is an ongoing need.
10	5	Stream Temperature	CP/FE	•	•		Several Forest streams exceed state standards during summer months. Continue developing trend information where long-term data is available.
14	6	Stream Sedimentation	FE		•		Analysis of sediment data remains to be completed.
16	7	Stream Channel Morphological Features	CP/FE	•	•		Important information collected through stream survey process but questions still not fully addressed.
18	8	Fire Effects - Wildfire On Water and Soils	FE		•		Continue to monitor Boundary Fire area for erosion and rehabilitation effectiveness and report results.
II. BIOLOGIC RESOURCES							
19	9	**A. Vegetation Management** Riparian Vegetation	CP/FE	•	•		Consistent riparian inventory and monitoring protocols/process and long-term trend evaluation is needed.
21	10	Level of Utilization	CP/FE	•	•		Focus on riparian utilization monitoring and effectiveness of applied utilization standards in meeting DFC. Emphasize effective reporting and evaluation of results.
23	11	Range Condition and Trend	FE	•	•		Better reporting and analysis of data is needed; data is available but little submitted for the report. Need improved protocols.

CM = Continue Monitoring CP = Change Practices FE = Further Evaluation AP = Amend Plan

Summary of Recommended Action (Continued)
– 1995 Monitoring Report –

PG#	MI#	Monitoring Item (MI)	1994 Action	Change Practice	Further Eval.	Amend Forest Plan	Remarks
24	12	Noxious Weeds: Invasive Vegetation	CP		•		Need to monitor treatment results and effectiveness as practices described in Noxious Weed EA are implemented.
27	13	Silvicultural Harvest Method	CP/FE		•		Changes in harvest methods from Forest Plan levels needs to be re-evaluated. (upon completion of ICBEMP process and EISs)
29	14	Created Openings	CM				Continue monitoring.
30	15	Stand Management – Regeneration	FE				Continue monitoring.
32	16	Stand Management - Ponderosa Pine Regeneration	CM	•			Still need to develop a process to track natural regeneration of ponderosa pine.
33	17	Stand Management – Precommercial Thinning	CM				Continue monitoring.
34	18	Fire Effects – Prescribed Fire	CM	•			Continue monitoring with emphais on standardizing of vegetation data collection procedures.
35	19	Vegetation Management	CM				Continue monitoring.
36	20	**B. Plants** Threatened, Endangered, and Sensitive Species	CP/FE				Continue monitoring according to proposed cycle. Continue protection or mitigation measures needed to protect/enhance plant species.
40	21	**C. Insect and Disease** Insect and Disease Control	CM				Continue monitoring.
42	22	**D. Fish** Anadromous and Resident Fisheries	CP				Continue monitoring. Last two years show declining trends in populations.
45	23	**E. Wildlife** Elk/Deer Habitat and Estimated Populations	CP/FE	•	•		HEI is not directly tied to populations level fluctuations; application of the elk vulnerability model is needed.
48	24	Old Growth Tree Habitat	FE		•		Old growth habitat condition surveys are needed in areas of mortality stands.

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Summary of Recommended Action (Continued)
– 1995 Monitoring Report –

PG#	MI#	Monitoring Item (MI)	1994 Action	Change Practice	Further Eval.	Amend Forest Plan	Remarks
49	25	Dead and/or Defective Tree Habitat	FE		•		Need more systematic, consistent monitoring techniques. Preliminary analysis points to potential habitat problems, longer term.
51	26	Pileated and Northern Three-Toed Woodpecker Populations	CM				Limited monitoring occured in 1995; further monitoring and evaluation is needed.
52	27	Pine Marten	CP				Reduced levels of surveys in 1995. Monitoring is needed.
53	28	Threatened/Endangered/Sensitive Wildlife and Fish Species	CM				Continue monitoring.
56	29	**F. Diversity** Plant and Animal Diversity	CM				Continue to address monitoring questions thru Ecosystem Analysis process. Continue diversity monitoring.
III. RESOURCES AND SERVICES TO PEOPLE							
63	30	**A. Forest Plan Implementation** Management Areas/Standards and Guidelines	FE		•		A need exists to focus monitoring toward on-the-ground activities, specifically on implementation monitoring related to the Forest Plan.
65	31	**B. Recreation** Primitive/Semi-Primitive Recreation and Roadless Areas	CM				Continue monitoring
66	32	Off-Highway Vehicle Use	CM	•			Need to develop monitoring protocols and conduct formal monitoring; use incident (law enforcement) to track effectiveness of compliance.
67	33	Developed Sites	CP/FE	•	•		Use levels high at some developed sites suggesting the need for upgrading and/or expansion.
69	34	Wild and Scenic Rivers	CM				Added since 1993. Continue Monitoring.
70	35	**C. Visual** Existing Visual Condition	CP/FE	•			Visual quality monitoring remains a low priority.

CM = Continue Monitoring CP = Change Practices FE = Further Evaluation AP = Amend Plan

Summary of Recommended Action (Continued)
– 1995 Monitoring Report –

PG#	MI#	Monitoring Item (MI)	1994 Action	Change Practice	Further Eval.	Amend Forest Plan	Remarks
71	36	**D. Wilderness** Non-conforming Uses	FE	•			Need to strengthen incident reporting.
72	37	Limit of Acceptable Change (LAC) and Amount of Primitive Wilderness Resource Spectrum (WRS)	CP/FE	•	•		The Forest needs to complete surveys and use/report on existing information and analysis.
73	38	**E. Range** Allotment Planning	CP/AP			•	Adjustment of AMP schedule is needed. Other processes have reduced the Forests ability to complete AMPs.
74	39	Range Outputs	CM				Continue monitoring. Future Forest Plan Adjustmnet may affect outputs.
75	40	Range Improvement	CM				Continue monitoring.
76	41	**F. Timber** Identification of Lands Suitable for Timber Management	CM				Continue monitoring.
77	42	Timber – Yield Projection	FE		•		Adjust empirical and managed yield table as needed.
78	43	Timber Offered for Sale	FE/AP		•	•	Timber offered was well below Forest Plan projections. Need to adjust Plan when ICBEMP process and EISs completed.
80	44	Availability of Firewood	CM				Continue monitoring.
81	45	**G. Lands and Minerals** Mineral Development and Rehabilitation (MDR) Accessibility	CM				Continue monitoring.
82	46	**H. Transportation** Forest Road System	CP	•			Accurate, updated transportation information is needed.
84	47	Open Road Density	CM	•			Road status information needs to be continuously updated (same as MI 46).
85	48	Trails	CP	•			Reduced maintenance impacting Forests ability to meet user needs. Need monitoring to address questions.

CM = Continue Monitoring CP = Change Practices FE = Further Evaluation AP = Amend Plan

Summary of Recommended Action (Continued)
– 1995 Monitoring Report –

PG#	MI#	Monitoring Item (MI)	1994 Action	Change Practice	Further Eval.	Amend Forest Plan	Remarks
87	49	**I. Fire Protection** Fire - Program Effectiveness	CM				Continue monitoring.
89	50	**J. Cultural and Historic Resources** Cultural Properties/Sites	CP	•			Monitoring reviews were not reported by all districts, hindering evaluation.
90	51	**K. Special Interest Areas** Effects of Forest Management Activities on SIA's	CM				Continue monitoring.
91	52	**L. Research Natuarl Areas** Research Natural Areas (RNAs)	CP	•			No formal monitoring was conducted.
92	53	**M. Administrative** National Environmental Policy Act (NEPA)/National Forest Management Act (NFMA)	CM	•			No formal monitoring was done in FY '95. Changes in laws and increased NEPA application for 1996 suggests need for process monitoring.
IV. SOCIAL AND ECONOMIC							
93	54	**A. Population, Income, Employment, Payments, Social, and Forest Products** Changes in Income Levels, Populations, and Employment	FE		•	•	Threshold for Forest related employment and personal income continues to be exceeded. Further analysis of data is needed, as part of the Forest Plan adjustment.
97	55	Payments to Counties	AP			•	Threshold has been exceeded. Adjust the Forest Plan based on results from the ICBEMP process and EISs.
99	56	Lifestyles, Attitudes, Beliefs, Values, and Social Organizations	FE		•		Further evaluation is needed. Review of ICBEMP issues and results will likely change Forest findings.
100	57	Forest Contributions to the Local Timber Supply	AP		•	•	Additional analysis is needed and will be part of Forest Plan adjustment based on ICBEMP and EFEIS results.
101	58	**B. Forest Budget and Costs** Forest Budget	FE		•	•	Further evaluation is needed when ICBEMP completed and adjustment of Forest Plan occurs.
103	59	Costs/Values of Forest Plan	FE			•	Threshold has been exceeded. Adjust costs/values when Forest Plan adjusted.

CM = Continue Monitoring CP = Change Practices FE = Further Evaluation AP = Amend Plan

I. Physical Resources

A. AIR

MONITORING ITEM (MI) 1: Air Quality

Forest Goals, Desired Future Condition, and Outputs: Maintain air quality at a level adequate for protection and use of natural forest resources and meet or exceed applicable federal and state standards and regulations. Manage prescribed fire smoke to minimize impacts to population centers, highways, and Class I airsheds.

Monitoring Question(s): 1. What mitigation measures were used to reduce smoke emissions from prescribed burning, and how well did the measures work? 2. Are management activities meeting State Implementation Plans (IMP's) and Forest Plan standards and guidelines? 3. What is the amount of fuel (tons) consumed by prescribed burning? 4. What are the total emissions from prescribed burning annually for all management activities?

Threshold of Variability: Deviation above State Implementation Plans.

Results/Findings:

In CY '95, a variety of prescribed burning activities were used to accomplish management objectives including site preparation, range improvement, and wildlife enhancement. Based on fuel moisture, fuel types and acres burned, tons of total suspended particulate and total tons fuels consumed have been estimated (see Table I-1). All prescribed burning was done in compliance with state smoke management plans.

The Forest reporting of air quality is consistent with the reporting requirements and memorandum of understanding between the Region and both states (Oregon and Washington).

Table I-1
AIR QUALITY - CY 1991-95

Year	Total Fuel Consumed (Tons)	Particulate Produced (Tons)
1995	35,002	507
1994	96,235	1,396
1993	66,852	969
1992	156,436	2,268
1991	178,811	2,593

Evaluation:

As seen in Table I-1, the amount of prescribed burning and particulates produced was substantially lower than in the recent past due to poor weather conditions for burning, and a decrease in timber sale activity on the Forest. Recommendation is to continue monitoring.

B. SOIL

MONITORING ITEM 2: Soil Productivity

Forest Goals, Desired Future Condition, and Outputs: Manage the soil resource of the Forest by using management practices that will maintain or enhance its productive properties.

Monitoring Question(s): 1. Are management practices/projects resulting in conditions that comply with Forest-wide Standards and Guidelines for the management of the soil resource? 2. Do Forest-wide Standards and Guidelines adequately protect long-term site productivity? 3. Is soil productivity maintained or enhanced over time?

Threshold of Variability: 1. Exceeding regional guidelines for soil compaction, displacement, puddling, and erosion. 2. Indication of long-term trends in reduction of site productivity due to nutrient or ocular measurement reductions.

Results/Findings:

During 1995, soil implementation monitoring was conducted on various timber harvest operations across the Forest. Monitoring included review of operations to insure contract specifications are met. Specifications are based on Forest Plan standards and guidelines and are designed to protect soils and minimize impacts. Physical inspections by sale administration personnel consisted of observing, inspecting and soil sampling during timber shearing/cutting with ground based equipment and tractor skidding operations and observing/inspecting subsoiling (where specified) and other soil rehabilitation work (ie: cross ditching/water barring and barricading) being conducted by timber sale purchasers.

On the Indianberry Timber Sale (North Fork John Day district), the logging plan for Payment Unit #30 called for the construction of two temporary roads. In lieu of constructing the roads, the Purchaser elected to tractor skid longer distances thus eliminating any soil excavation and the disturbance/destruction of advanced regeneration along the proposed road location. The amount of exposed soil was minimized which helped operations to stay within Forest soil standards. In addition all timber felling, limbing and bucking on this timber sale was done through the use of a shear and a slide boom delimber, techniques which left all logging slash in the unit and not on the landing. This action will help promote slash decomposition and soil nutrient recycling.

On the Pomeroy district, three active timber sales, Teal, West Patit, and Wickiup, were monitored by sale adminstration personnel. Teal and Wickiup had modifications in 1994 and 1995 to add soil protection standards.

Only skyline logging has taken place to date on the Teal Sale. All landing use and yarding has been well within standards and guidelines. The Wickiup and West Patit Timber Sales have both had the tractor logging essentially completed during 1995. The two sales have used a combination of mechanical falling and skidding along with conventional hand falling and skidding. In unevenaged and evenaged silvicultural presciptions, a feller buncher has cut the smaller diameter, designated trees and placed them for skidding within the agreed upon skid pattern established before cutting. The larger diameter trees are cut by conventional felling and skidded on the established trails to the same landings. The overstory silvicultural prescriptions and some very low volume per acre unevenage prescriptions are done using conventional methods.

Feller-buncher type mechanized systems require larger but fewer landings due to the whole tree yarding method and slash disposal needs. As evidenced on the West Patit Sale, when the landing size and numbers are strictly controlled, the system can meet soil standards and guidelines. A side benefit of the controls for mechanized systems is that the same logger when operating in a conventional system will use fewer landings since they have become accustomed to operating with fewer landings. Overall, a net reduction in impacts and soil disturbances occured over the whole sale area. The Wickiup Timber Sale also appears to have met standards and guidelines.

The Summer Homes Salvage Timber Sale, on the Walla Walla District, was logged using a cut-to-length system. Trails were used at 40-foot intervals with at least 40 feet of untraveled area between the trails. The trails averaged 10 feet in width.

Field review by the timber sale administrator determined that approximately .15 percent of the unit was exposed to mineral soil. Only a small portion of the trails near landings where over 30 trips were taken showed exposed mineral soil. Approximately 600 feet of the 6,000 feet of trails had exposed soil for about .14 acres. Approximately 20 percent of the unit was used for skid trails. About half the trails used have been detrimentally compacted, or about 10 percent of the unit. Landing use did not have a negative impact on soil productivity since they were located on the edge of roads or grass areas.

Effectiveness monitoring specific to answering the soil productivity questions was limited in scope during 1995 and concentrated on timber sale operations. No formal, systematic soil sampling was conducted by the Forest Soil Scientist during the year. Some observations of effectiveness of harvest systems in limiting negative soil impacts was undertaken by sale administrators.

The Heppner Ranger District continued the monitoring/demonstration project begun in 1990, with the intent of assessing the potential benefits of decompaction on survival and growth of planted tree seedlings. Compaction concerns arose from previous soil monitoring that showed multiple harvests with ground-based equipment commonly imposed adverse soil conditions that exceeded standards and guidelines adopted by the Forest. Further indications were that some of the District's reforestation problems were also tied to the adverse soil conditions. The District, with the support of the Forest Supervisor's Office and Dr. Michael Geist, Research Soil Scientist, PNW Research Station, La Grande, initiated the project.

A multiple harvest unit, Davis 31, was chosen as the project demonstration site. The objective was to assess the effectiveness of site preparation with a subsoiler to improve reforestation success in compacted soils. Three sites (different soil types) within the unit were selected for treatment with the subsoiler and one site was also chosen to assess the benefits of using a starter fertilizer packet in the planting hole. The subsoiling treatment was done in 1991, and the trees were planted (and in some cases fertilized) in 1992. Tree survival was monitored in 1995 (the 4th season of growth), and the results are provided in the tables that follow.

Table I-2
FOURTH YEAR PLANTED TREE SURVIVAL(%) - 1995 RESULTS
With and Without Subsoiling Treatments
Umatilla NF

Location	Not Subsoiled	Subsoiled
Transition Soil	30	72
Ash Soil	50	72
Residual Soil	58	78

Table I-3
FOURTH YEAR PLANTED TREE SURVIVAL(%) - 1995 RESULTS
With and Without Starter Fertilizer and
Subsoil Treatments, Ash Soil Location

Treatment	Not Subsoiled	Subsoiled
No Fertilizer	50	72
With Fertilizer	32	53

The 1995 results are similar to the first three years' findings. A clear reforestation survival advantage of about 20 percent is indicated in most instances with subsoiling (Table I-3). The subsoiling advantage was about 40 percent at the Transition location. One concern, however, is that the subsoiled plots showed a substantial decline in survival of about 10 percent from the previous years' results, for the transition and ash soils. The nonsubsoiled survival also declined but at more moderate levels. If this survival advantage is enough to avoid replanting, the subsoiling would clearly be cost effective. It also appears that using a starter fertilizer is not advantageous; a survival reduction of about 20 percent occured where starter fertilizer was used. The Davis unit will be monitored again in 1996. Some additional investigation is needed to address the decline in subsoiled survival that occurred during 1995.

Evaluation:

The limited monitoring that has occurred and reported indicates timber harvest activities are largely staying within Forest Plan standards and guidelines. Monitoring also indicates positive progress towards limiting detrimental impacts. Adjusted timber sale logging practices are helping to minimize negative soil impacts. Soil effectiveness monitoring with detailed sampling methods, which can generate statistically valid results, remains time-consuming and difficult to achieve with limited personnel, funding and numerous conflicting priorities.

District personnel continue to document monitoring which has always taken place while administering contracts. Reporting of results is improving but remains incomplete. Individuals are taking more active roles in considering and evaluating site impacts during project planning and activity implementation.

Existing compacted soils continue to be a problem in some areas. Progress is being made in dealing with some of the more problematic sites through some restoration activities. Monitoring results of the subsoiling demonstration project continues to show the net value of this technique in the successful establishment of planted trees by reducing soil compaction and altering vegetative competition. Continued monitoring of Davis 31 is needed to fully evaluate the effectiveness of the subsoiling treatments on growth rates.

While positive progress is being made in implementing practices to limit detrimental soil disturbance, effectiveness monitoring as outlined in the Plan is not being achieved. Additional attention and priority is needed in this area. Protocol for evaluation of long-term trends in productivity or assessment of the adequacy of Forest standards still needs to be developed but appears to be unlikely due to research cutbacks, or elimination, of basic site productivity and sustainibility studies.

C. WATER

MONITORING ITEM 3: Water Quantity

Forest Goals, Desired Future Condition, and Outputs: Maintain favorable conditions of water flow. Provide high quantities of water to off-Forest users while maintaining or enhancing water quality. Do not substantially change the level of water discharge from the National Forest during the May 1 through September 30 period where detrimental to instream or off-Forest uses.

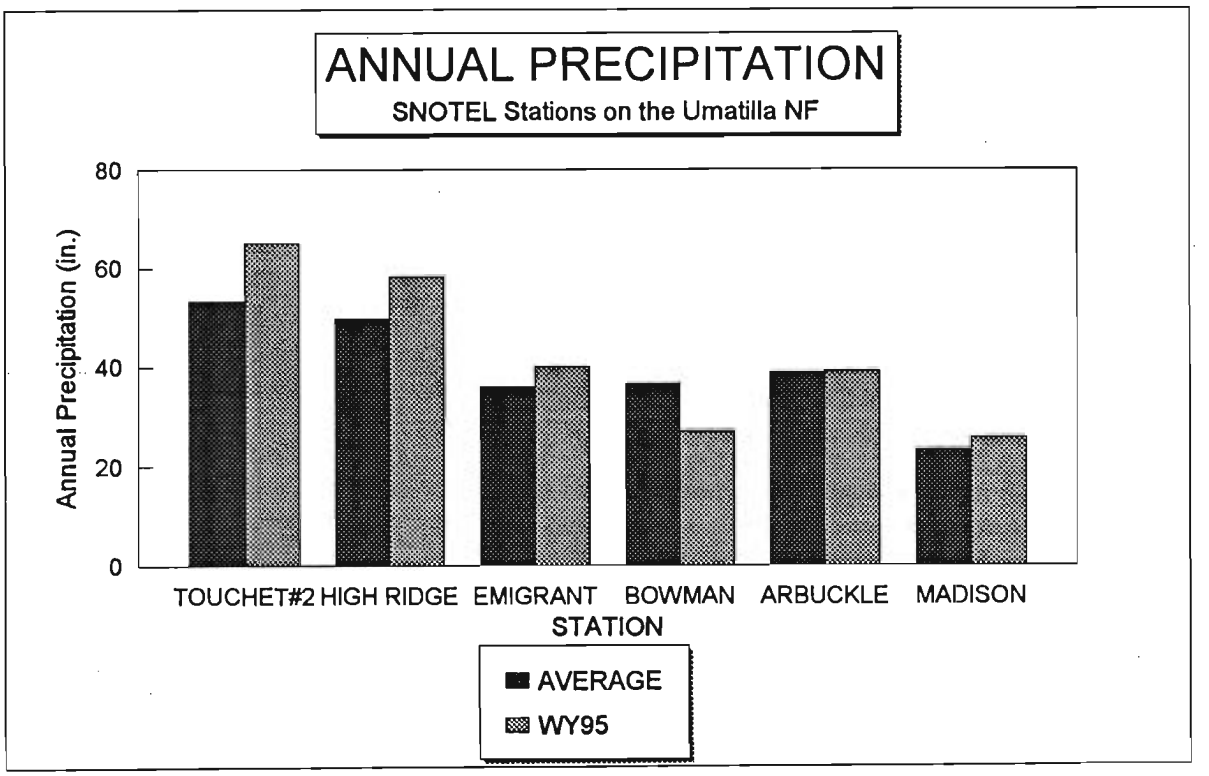
Monitoring Question(s): 1. What is the water yield from the Forest and key watersheds? 2. Are management activities significantly effecting the volume of water yields from Forest watersheds? 3. Are management activities significantly effecting the timing of water yield from Forest watersheds? 4. Are management activities significantly effecting the magnitude of summer low flows from Forest watersheds?

Threshold of Variability: 1. Decline in water yield in critical drainages not attributable to natural causes. 2. Decline in water yield or flow rate during critical late season periods not attributable to natural causes. 3. Change in timing of spring snowmelt which would cause detrimental impact to stream channel stability or harmful effects to downstream water users.

Results/Findings:

Precipitation, measured at high elevation NRCS Snotel sites, was generally above normal during the 1995 water year (Oct. 1, 1994 - Sept. 30, 1995), especially on the north end of the Forest (Touchet and High Ridge). Stations on the south end recorded at or slightly above average (Emigrant, Arbuckle, and Madison Butte), while Bowman, the lowest on average and located on the lee side of the mountain, recorded below average precipitation (Figure A).

Figure A



Greater than normal snow fall occurred early in the water year, allowing for early development of the snowpack. Monthly precipitation was below average from December to February, but above average between April and June.

Precipitation measured at low elevation stations, off-Forest below the boundary, was above-average (Table I-4).

Table I-4
WATER YEAR 1995-ANNUAL PRECIPITATION[1]
Low Elevation Stations

Station Name	Total (in.)	Average ('61-90)	Percent of Average
Dayton 1 WSW	25.1	18.5	136
Pendleton AP	16.65	12.03	138
Ukiah	18.93[2]	16.39	-

1 source: Oregon Climate Service
2 December missing

Streamflow, at locations near the Forest boundary was above average at several locations adjacent to the Forest (Table I-5).

Table I-5
WY 95 AVERAGE ANNUAL DISCHARGE[1]
USGS Gaging Stations

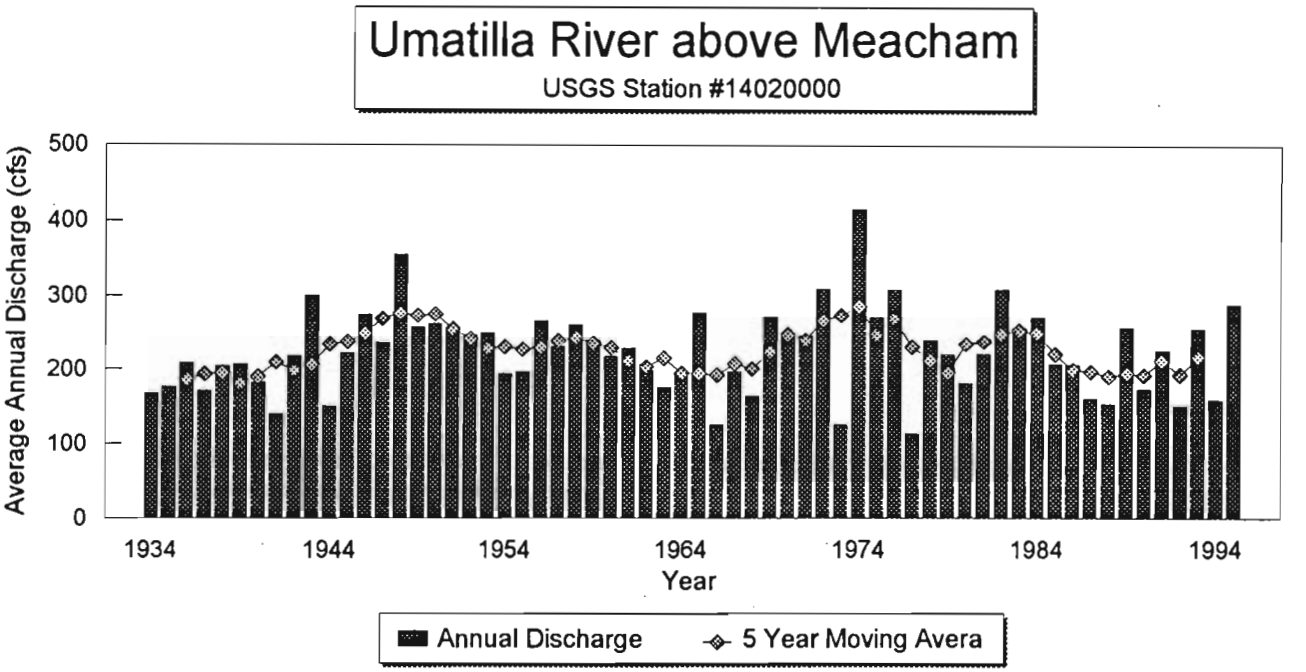
Station Name	QA (cfs)	Average (cfs)	Percent of Average
Umatilla R (ab Meacham)	290	223	130
Meacham	233	193	121
Lookingglass	165	126	131

1 source: U.S. Geological Survey

Forest monitoring of the Umatilla Barometer Watershed and South End Hydrologic Study continued. The Umatilla Barometer Watershed and, more recently, South End Hydrologic Study, were established for Forest monitoring of water yields and water quality of small forested watersheds. Long term (29 years) collection of data has occurred at seven locations in the Umatilla study (including the four small catchments in the High Ridge Evaluation Area). A contract for analysis of the second harvest at the High Ridge Evaluation Area is underway with results expected by fall 1996. Two sites have been established for long-term monitoring for the South End Watershed Study. Four other on-forest locations (Tucannon River, Cummings Creek, Mill Creek, and Desolation Creek) had continuous streamflow and water quality monitoring during 1995. The Forest is currently compiling and editing the backlog of data.

Streamflow data were evaluated as part of the Umatilla/Meacham Ecosystem Analysis (report on file). Baseflow increases in the Umatilla were described in two recent University studies (on file). Peak flows may be increased in several small subwatersheds with high levels of harvest. Overall, water yields for the upper Umatilla watershed do not display long-term trends, but do exhibit clustered years below-average: 1930's, 1960's, and late 1980's, and, above-average: 1946-1953, late 1950's, and the early 1980's (Figure B).

Figure B



Evaluation:

Long-term records of precipitation and streamflow are available for many Forest sites and nearby locations. These stations provide information for predicting annual water supplies and characterizing year to year variability. Generally, such stations were not established for purposes of detecting water yield changes resulting from Forest management activities, but are useful in evaluating other monitoring data, for example stream temperature (Monitoring Item 5), stream sedimentation (MI 6), and riparian vegetation (MI 9). Small watershed studies (High Ridge and South End) were specifically established for analysis of water yield, water quality, and stream channel response to land management.

The Forest needs to complete data reduction and analysis of the backlog of baseline hydrometeorological data, and keep current on future year's monitoring. Results from the High Ridge contract analysis, expected in late FY '96, should be used to guide future management of the Barometer watershed, and comparable watersheds in the Northern Blue Mountains.

MONITORING ITEM 4: Water Quality

Forest Goals, Desired Future Condition, and Outputs: Maintain or improve water quality in streams to meet or exceed demand for beneficial uses.

Monitoring Question(s): 1. Are Forest management activities or other factors affecting water quality parameters in Forest streams? 2. Has the Forest met its designated obligations and responsibility with respect to management of non-point source pollution? Did the Forest comply with the Clean Water Act as outlined in memorandum of understandings (MOU's) with the States of Oregon and Washington? 3. What is the long-term trend in water quality? 4. Are Best Management Practices and other measures implemented as designed to protect water quality? 5. Are Best Management Practices and other practices effective in meeting water quality goals?

Threshold of Variability: Not meeting or non-attainment of Forest Plan standards and guidelines for water quality.

Results/Findings:

On Forest, water quality monitoring is intended to document baseline conditions, long-term trends, and compliance with state water quality standards. Water quality monitoring is also directed at addressing the monitoring questions. Methods include quantitative measurement of instream physical, chemical, and biological constituents, and a combination of quantitative and qualitative assessments of upland erosion, stream channel conditions, and aquatic biology.

Baseline instream monitoring continued during FY '95. The Forest operated 39 automated pumping samplers on streams within most of the major watersheds, including Asotin, Wenaha, Tucannon, Mill, Walla Walla, Umatilla, Lookinglass, Willow, and tributaries of the North Fork John Day (Desolation, Camas, Potamus and Wall). Daily composite samples were analyzed for suspended sediment (mg/l), turbidity (NTU)*, total dissolved solids (mg/l)*, and conductivity (mmhos). (A "*" indicates state standard is established for this parameter.) (Also see MI 6, Stream Sedimentation.) Sampling of the water column continued at numerous locations on the Forest, in 1995, data analysis and reporting are not, however, an area for emphasis and results have not yet been developed.

In addition, "grab samples" were collected on selected streams to evaluate baseflow and high water characteristics. Low flow samples were analyzed for dissolved oxygen (mg/l)*, colliform bacteria (total and fecal)*, and pH*. High flow samples were analysed for total dissolved solids, conductivity, and suspended sediment. All analyses were conducted at the laboratory in Pendleton, Oregon. However, grab samples analyzed for bacteria did not meet the sample standard (minimum of five samples over the season of interest, usually the low flow period).

Project monitoring reported in FY '94 were continued during the year. Projects included North Fork Touchet River (Ski Bluewood) turbidity monitoring, North Fork John Day Dredge Tailing Restoration second phase and (inactive, abandoned and reclaimed) mining at nine sites involving Clear Creek, Granite Creek, and NF John Day River. Monitoring of mining involved sampling for dissolved oxygen, pH, nitrate, and metals (iron, zinc, and copper) with samples collected at different flow levels to detect changes in concentrations resulting from mining and restoration activities. No results were reported for the year.

No BMP monitoring was reported by the District. However, implementation monitoring of Best Management Practices (BMPs) was done by Forest hydrologists on two Pomeroy Ranger District timber sales (Teal and West Patit). Their review focused on two key BMPs, stream protection and erosion control. Findings indicate that stream side protection (buffers and protection identification) is adequate but prevention of disturbance at critical sites appears to be lacking and could have been avoided. Of concern were landing locations in protection areas, excessive disturbance from road realignment and an unneeded stream crossing. Rehabilitation measures are needed. Additional monitoring is recommended to insure that erosion control and rehabilitation measures were in place and effective.

Evaluation:

Parts of the water quality monitoring program on the Forest continues to be a concern. Water quality data and information continues to be collected without completing appropriate analysis, evaluation and reporting. The Forest remains in a position, unable to fully address questions about baseline conditions, effects of management practices, long-term trends or compliance with state water quality standards. The Forests ability to learn and adjust based on monitoring results continues to be impaired.

A particular concern is with implementation and effectiveness monitoring of BMPs. BMP implementation monitoring has not been documented, or if documented has not been reported. Effectiveness of measures applied to meet state water quality goals has not been demonstrated. Monitoring and evaluation of BMPs application in Forest activities should be given emphasis in 1996.

MONITORING ITEM 5: Stream Temperature

Forest Goals, Desired Future Condition, and Outputs: "Meet or exceed state water quality standards for stream temperature. Summer stream regimes are well moderated with limited day to night variation and are well within tolerance of aquatic organisms historically found in the systems.

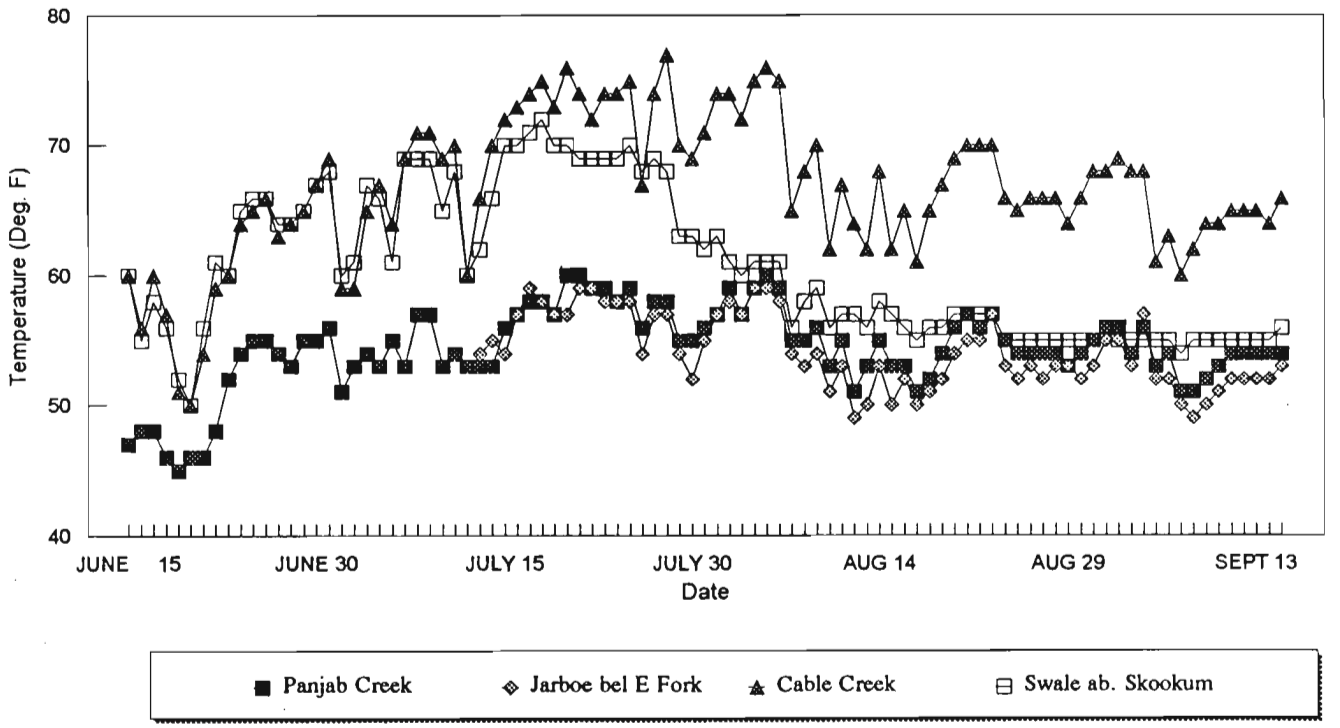
Monitoring Question(s): 1. Is project implementation in riparian areas resulting in attainment of desired future conditions for stream surface shading and/or in-stream water temperatures? 2. What are the long-term changes and trends in stream temperatures? Are the long-term changes meeting Forest Plan objectives? 3. What are the cumulative effects of Forest management activities on stream temperatures?

Threshold of Variability: Non-attainment of Forest Plan standards and guidelines for stream surface shade and/or in-stream water temperatures. The numeric objective represents optimal temperature range for both bull trout and chinook salmon. Maintain the following temperatures for third to fifth order streams (interim objectives).
Oregon - 68; Washington - 61; PACFISH - 64 migration and rearing, and 60 spawning. New standards in 1996 (Oregon): 64 general, 55 spawning, and 50 Bull Trout streams.

Results/Findings:

Water temperatures were measured at 134 locations on Forest streams in 1995, an increase of 19 stations from 1994. Daily peak temperatures for the summer season on four representative, mid-size streams show the warm season conditions across the forest (Figure C). Stream temperatures peaked in the third week of July, a reflection of maximum air temperatures combined with low water conditions. Overall, stream temperatures recorded in 1995 were average or below, reflecting the climatic conditions during the year (above average precipitation and below average temperature).

Figure C
1995 Summer Stream Temperatures



Effects of a climatic "gradient" from north to south can be seen in a comparison of streams across the Forest. Streams are generally cooler on the north half of the Forest which has lower average air temperatures and higher base flows, a reflection of a marine influence in the Columbia basin. In contrast, streams on the southern half of the Forest reflect a harsh continental climate, typically warmer and drier in the summer months, and colder in winter.

Table I-6
1995 WATER TEMPERATURE SUMMARY
Selected Sites

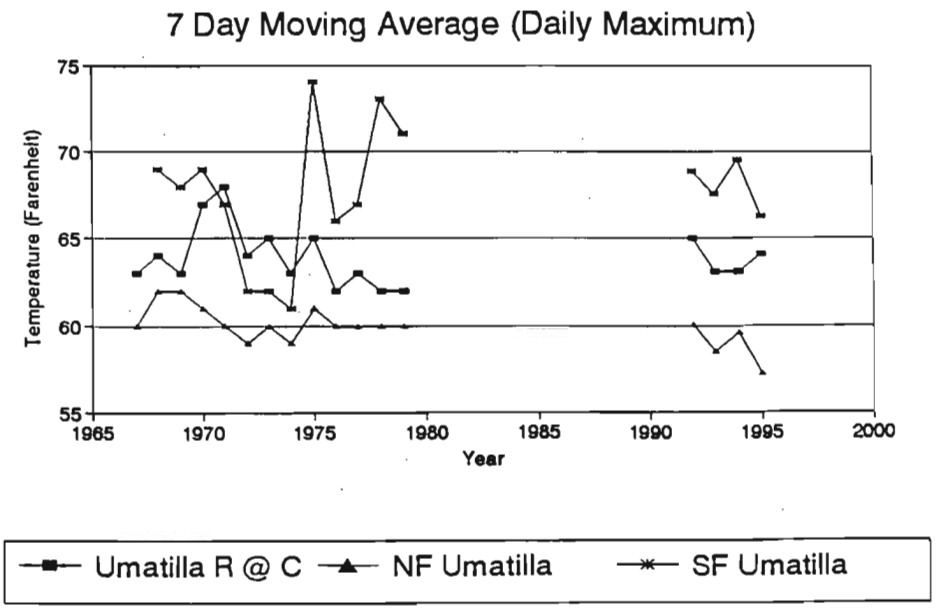
		1993		1994		1995	
Stream/Location	Basin	7-day Max Temp	No. days above Standards	7-day Max Temp	No. days above Standard	7-day Max Temp	No. days above Standard
Henry Cr. @ FB[1]	John Day	74	34	72	57	72	38
Herren Cr @ FB	Willow	56	0	63	0	58	0
Wall Cr. @ FB	NF John Day	76	49	80	66	77	89
Frazier Cr. @ FB		67	0	71	27	71	10
Cable Cr. Below FB		73	23	78	69	74	41
Desolation Cr. @ NFJD		70	5	77	45	**	**
Umatilla River @ Corp	Umatilla	63	0	63	0	64	0
N. Meacham @ FB		65	0	71	40	*	*
NF Umatilla River		58	0	59	0	57	0
SF Umatilla River		66	0	68	4	66	31
NF Walla Walla	Walla Walla	***	***	***	***	63	0
SF Walla Walla		***	***	***	***	54	0
Lookingglass @ FB	Grande Ronde	54	0	56	0	56	0
Jarboe Cr. below E.F.		60	0	64	0	58	0
Wenaha R. near Mill Bar		67	1	73	54	69	20
NF Asotin (Mid. Branch)	Snake River (WA)	56	0	60	0	**	**
NF Asotin near FB		62	21	66	57	62	17
SF Asotin near FB		***	***	***	***	56	0
Panjab		59	0	62	24	59	0

1 FB = Forest Boundary
* Data collect, but not yet available
** No data collected
*** Monitoring began in 1995

Temperatures recorded in 1995 were variable compared to previous years, in some cases slightly lower, and in others greater. However, 1995 was generally more comparable to 1993, and in contrast to 1994 (Table I-5). Most streams reported in the 1994 Monitoring Report are included in this report, and several were added to provide information in the Walla Walla and lower Snake subbasins. Comparing the last 3 years data shows the influence of climatic conditions on water temperatures; 1993 and 1995 were cooler, wetter years in contrast with 1994, a hot-dry year. As longer records accumulate, comparisons with "long-term" averages will be possible. For example, records on the Umatilla River go back to 1967 (with the years 1980-1991 missing because of data processing problems) so that annual maximum temperatures can be compared for individual years against the period of record. For the Umatilla River at Corporation, the long-term average of the annual 7-day maximum temperatures is 64 degrees. Temperatures recorded in 1995 were about average for the record.

Annual 7-day maximum temperatures were plotted for the three stations in the Umatilla with the longest period of record to evaluate long-term trends (Figure D). Year to year variability is high on the South Fork station, in part due to watershed characteristics. The North Fork station exhibits the least year-to-year variability and lowest temperatures. The Umatilla River at Corporation is a product of these two tributaries and is intermediate in annual variability and temperature. In some years the South Fork influence is greater, but overall the North Fork Umatilla provides the dominant moderating influence on watershed temperatures in the Umatilla River at the Forest boundary. A slight decline in water temperature over time is apparent for the North Fork station and may be evidence of the recovery of riparian vegetation disturbed in the 1964-1965 flooding.

Figure D
Umatilla River Temperatures



Temperature standards include state water quality management agency standards (Oregon-DEQ and Washington-DOE) and Forest Service standards contained in PACFISH (1995). In addition, standards in Oregon were recently revised, to take effect in 1996, which are considered to be more biologically-based (64 is the new general standard, 55 for those waters and times supporting salmonid spawning, and 50 degrees Farenheit for Bull Trout streams).

Evaluation:

The data indicates that stream temperature results (7-day max temperatures and no. of days above standard) were similar to 1993 and generally lower than 1994, primarily based on climatic conditions. Two surprises were apparent: Wall Cr. and S. Fk. Umatilla with more days exceeding temperature standards in this year than last.

Initial summary results of long-term data are beginning to come on-line which should help in evaluating long-term trends and stream system relationships. The information should also help to evaluate the influence of past management and some current practices. The data also points to potential areas for initiation of restoration actions and management practices adjustment. Generally, these would be stream systems on the south end of the Forest.

Overall, the need is for continued monitoring to develop long-term records at-a-station to better understand climatic influences on water temperature, and to identify effects of management for purposes of improving riparian conditions and water quality.

MONITORING ITEM 6: Stream Sedimentation

Forest Goals, Desired Future Condition, and Outputs: Meet or exceed state water quality standards related to stream sedimentation. Produce high levels of anadromous and resident fish habitat.

Monitoring Question(s): 1. Are Forest streams meeting state water quality standards for sediment (NTU's)? 2. How are Forest management activities and/or natural events affecting the rate of stream sedimentation or potentially impacting beneficial uses? 3. Is stream sedimentation impacting critical components of stream habitat? 4. What is cumulative impact of changes in stream sedimentation on water quality and fish habitat?

Threshold of Variability: 1. Exceed State water quality standards for turbidity. 2. Measurements of in-stream sediment sensitive fish habitat parameters exceed values representative of natural functioning aquatic systems. Interim standards: Cobble embeddedness: within <20 to 35 percent embeddedness. The preceding embeddedness levels of 20 to 35 percent were rated as fair habitat, with less than 20 percent representing good habitat conditions (USDA, 1993b).

Results/Findings:

The Forest conducted approximately 110 miles of Level II Stream Surveys on various forest streams in 1995. Most Districts used the R-6 Stream Survey protocol in which cobble embeddedness is collected during the surveys by visual observations. Cobble embeddedness, an indicator of sediment, is important because when embeddedness becomes excessive, salmonids are not capable of cleaning the redd gravels adequately during spawning, thereby reducing egg and fry survival. Other beneficial uses can also be impacted by sediment. Data analysis is partially completed for streams surveyed in 1995. The threshold of variability has not been exceeded for streams with completed analysis.

Cobble embeddedness (CE) is highly variable, even in undisturbed stream systems. The Pomeroy Ranger District monitored CE using the Chapman and McLeod methodology and has used the same sample sites since 1992. Results from 18 sample locations taken in the Tucannon watershed range from a low of 9.7 percent embedded in Bear Creek to a high of 31.1 percent embedded in Pataha Creek. Nine locations were sampled in the Asotin Creek watershed (North Fk. Asotin, Charley Cr. and Cougar Cr.). The cobble embeddedness ranged from 5.6 percent embedded to 20.9 percent embedded. This was the lowest cobble embeddedness results recorded in 4 years of sampling on the Pomeroy District.

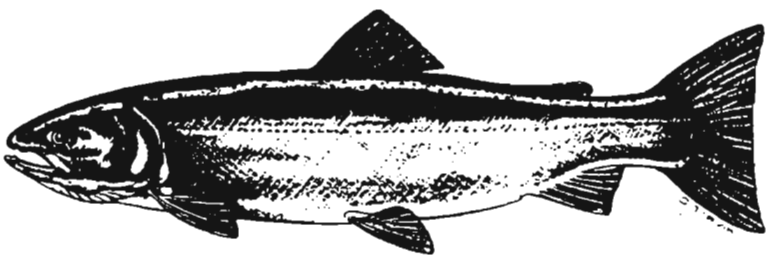
Results from sampling on the Walla Walla Ranger District show an average of 27 percent embeddedness for streams of the Umatilla River system and an embeddedness average of 23 percent for streams of the Walla Walla River system. An average of 5 years of survey data for Walla Walla Ranger District streams shows 29 percent for Grande Ronde system streams, 15 percent for Umatilla River system streams, and 23 percent for Walla Walla River system streams. There is a pattern. Streams in watersheds with higher levels of management activities have tended to have higher cobble embeddedness. Further sampling and data analysis is needed to determine if this pattern is a trend.

The Walla Walla Ranger District monitors suspended sediment in the North Fork Touchet River above and below Ski Bluewood. The upper site serves as a control to determine background levels of suspended sediment while two lower monitoring sites provide a means to determine effects associated with the ski area and the access road. An analysis of data for a period of March '87 through September '95 show a declining trend in the number of days per year the North Fork Touchet River exceeded the State turbidity standards. As described in the 1994 Monitoring Report, the State standard was exceeded more frequently following ski area expansion projects and road construction/reconstruction for timber sales adjacent to the ski area. Revegetation of ski slopes and road cut and fill slopes is planned for 1996.

Both the Heppner and North Fork John Day Ranger Districts indicated that data collected during the 1995 stream surveys has not been summarized and evaluated. In addition, suspended sediment and bedload results from the Forests two study watershed has also not been reported. Sediment and turbidity data collected at various Forest sites during the year (and past years) still remains to be analyzed and evaluated (see MI 4, Water Quality).

Evaluation:

The need to begin addressing the monitoring questions, particularly the contribution of sediment from management activities and impacts to beneficial uses has been pointed out before and is still an important point to make. It appears, from limited data analysis, that cobble embeddedness in more heavily "managed" watersheds approaches the upper limits of the threshold of variability.



MONITORING ITEM 7: Stream Channel Morphological Features

Forest Goals, Desired Future Condition, and Outputs: Inherent (historic) channel forming/maintenance processes continue to operate without substantial long-term or watershed-wide modifications. Relatively large pools, persistent during the lowest of flows, are frequent and well distributed. Large woody debris is available to the channel to achieve or maintain the stream potential for fish habitat capability.

Monitoring Question(s): 1. Are management activities allowing channel forming processes to operate resulting in relatively large, well-distributed pools, and meeting stream potential for the fisheries habitat desired future conditions? 2. What are the trends in pool formations and large wood additions to stream complexity? 3. Is sufficient wood being produced or available to meet DFC's?

Threshold of Variability: 1. Non-attainment of expected stream channel pool frequency. The thresholds are (PACFISH interim criteria):

Pools per mile for low-gradient, unconstrained wide valley floor channels

Wetted Width	10	20	25	50	75	100	200
Pools/mile	96	56	47	26	23	18	9

2. Non-attainment of expected in-stream large wood levels.

Large Woody Material
Frequency of large wood debris material

>20 pieces per mile; >12 inches diameter; >35 foot length

Results/Findings:

The Region 6 stream survey protocol is used to gather data on large woody debris abundance and pool frequency across the Forest. Each year the Forest adds to the stream data base by surveying additional streams or by re-survey to compare current conditions with past results. Reference reaches were established on eight streams on the Forest. Reference reaches receive a more intensive Level III survey with benchmarks to document locations of habitat units (see MI 4, Water Quality).

The pool frequency threshold of variability is established for low-gradient, unconstrained valley bottom streams. Few stream reaches on the Forest meet the parameters for the threshold of variability guidelines. Pool frequency reported in previous Forest Plan monitoring reports has consistently shown low pool frequencies. Data gathered in 1995 also documents low pool frequencies but is not a direct measure of the threshold of variability. In the future, reference reaches should be established in low-gradient, unconstrained valley bottom streams. Ranges of variability should also be established for high-gradient, constrained reaches.

The in-stream large woody material results from past monitoring efforts has shown a great deal of variability by reach but some patterns have been identified. Streams on the north half of the Forest typically have higher frequencies of large wood than streams on the south end of the Forest. The average large wood frequency is typically under the standard 20 pieces per mile on north area streams but it is not uncommon to exceed the standard. Streams on the south end of the Forest typically have much lower large woody material frequencies and in the past, meeting the standard has been unusual. Data gathered in 1995 was consistent with in-stream large wood frequency patterns from past survey results. Recent insect and disease epidemics have left a lot of dead timber on the south end of the Forest. Future monitoring efforts may find an increase in in-stream large woody material on the Heppner and North Fork John Day Ranger Districts.

The PACFISH standard for stream banks is to have 80 percent or more in a stable condition. The Walla Walla Ranger District applied the R1/R4 fish habitat inventory procedure to three reaches of Jarboe Creek, one reach of East Jarboe and three reaches of Fry Meadows Creek. The survey findings indicated that all stream reaches are within the PACFISH requirements; the amount of unstable bank varied from a low of 4 percent to a high of 17 percent on different reaches of Fry Meadows Creek.

Baseline reference reaches were established on Little Lookingglass Creek (Walla Walla RD), Wall Creek and Skookum Creek (Heppner RD). Additional monitoring of channel cross sections were established on three of the BPA-financed livestock exclosures on North Fork John Day District (North Desolation, Kelsay and Morsay Creeks). All of the reaches were benchmarked for repeat-survey. Reference reaches will allow the Forest to determine conditions, changes, and trends in channel morphology and other parameters being monitored.

Evaluation:

The Forest continued to conduct Level II stream surveys and other monitoring in 1995. Much of the data collected from the surveys will help to support watershed analysis and does shed some light on the Forest Plan monitoring questions but does not provide the information needed to answer the questions. The Forest needs to establish reference reaches in low-gradient, unconstrained valley bottom streams and establish pool frequency ranges of variability for high-gradient, constrained reaches. The Level II stream survey technique is providing good information on large woody material frequencies. Future re-survey of streams on the Heppner and North Fork John Day Ranger Districts should show changes in large wood frequencies as dead trees find their way into stream channels. More emphasis on data analysis is needed.

MONITORING ITEM 8: Fire Effects – Wildfire on Water and Soils

Forest Goals, Desired Future Condition, and Outputs: "Provide and execute a fire use program that is responsive to land and resource management goals and objectives. Maintain or enhance ecosystem functions to provide for the long-term integrity (stability) and productivity of biological and physical communities."

Monitoring Question(s): 1. How many acres (percentage) of each subwatershed has sustained high intensity burns per 3-year period? 2. Is visibility accelerated erosion occurring within a subwatershed because of past burns?

Threshold of Variability: Five percent of subwatershed impacted by high intensity fires within 3-year period.

Results/Findings:

During 1995, the Forest did not experience any large high intensity fires.

Followup monitoring of the 1994 Boundary Fires (totaling 8,363 acres with about one-third on the North Fork John Day Ranger District and two-thirds on Wallowa-Whitman National Forest, see FY '94 Monitoring Report) was conducted to assess upland and riparian conditions following spring runoff and effectiveness of rehabilitation measures. A walk through survey of the White Creek area was conducted.

In summary, watershed conditions following the first snowmelt period were relatively good, given the intensity of the burn. Steep, high elevation, high intensity burned areas exhibited accelerated surface erosion, with rilling evident though not widespread. The headwaters of White Creek were in fair to good condition, though sediment loads have increased. Downstream, channel conditions were poor to fair, with loss of streamside vegetation, and high sediment loads. Felling and bucking logs in-channel seems to be marginally effective; some logs redistributed during runoff may "set up" to form debris jams. Islands of riparian vegetation left intact will provide source areas for revegetation of downstream burned riparian areas. Large partially-burned wood should be the structural key for maintenance of slope and channel stability for the next few years until vegetation is well-established.

Summer water temperatures have been monitored on White Creek since 1993 providing an opportunity to evaluate the effects of the riparian burn and recovery on stream temperatures. Past monitoring shows water temperatures in White Creek meeting existing basin standards (68 degrees F) and proposed (64 degrees F). The 1993 7-day maximum temperature was 58.6 degrees F. Results of the 1994 and 1995 stream temperature monitoring are currently being analyzed. Preliminary results show the 1995 7-day maximum temperature in White Creek was 60.0 degrees F. Results of the cooperative stream survey conducted with ODF&W were not reported.

Evaluation:

Continue monitoring the Boundary Fire area in cooperation with the Wallowa-Whitman NF and others for erosion evidence, rehabilitation actions effectiveness and ongoing recovery.

II. Biologic Resources

A. VEGETATION MANAGEMENT

MONITORING ITEM 9: Riparian Vegetation

Forest Goals, Desired Future Condition, and Outputs: ". . . vegetation will generally be dense and diverse . . . and be contributing to stable streambanks and complex fish habitat . . . A variety of dead and down tree habitat will be found . . . large diameter standing dead and live trees will provide a long-term supply of large woody material . . . Create . . . maintain a diverse, well distributed pattern of riparian habitat for all species of fish and wildlife within riparian areas."

Monitoring Question(s): 1. Are projects and activities in riparian areas being implemented as planned? 2. Is project implementation in riparian areas resulting in attainment of objectives and desired future conditions for riparian areas? 3. Are management activities in riparian areas resulting in stable or improving riparian vegetation condition and trends (and recovery) for attainment of desired future conditions and Forest Plan objectives? 4. Are the shrubs and grasses within riparian areas being improved to or maintained at satisfactory condition levels; are actual use levels (by ungulates) within Forest Plan utilization standards for riparian vegetation (emphasis on shrubs)?

Threshold of Variability: 1. Non-attainment of Forest Plan standards and guidelines for riparian area management. 2. Non-attainment of Forest Plan standards for stream surface shade. 3. Riparian vegetation trends moving away from the attainment of desired future conditions.

Results/Findings:

The Forest currently designs and implements projects to be in compliance with the PACFISH requirements (Forest plan amendment #10, see Section VI) to preserve future options for recovery and enhancement of riparian areas. Timber harvest projects typically have not been proposed or implemented within PACFISH riparian habitat conservation areas (RHCA's) on any district. A number of other riparian projects have been generally planned, designed, and implemented to improve riparian area conditions. Specific projects include exclusion fencing, planting of riparian vegetation, and monitoring utilization to ensure compliance with Forest Plan standards.

Several riparian restoration projects were implemented across the Forest. At Pomeroy, the District initiated the Cottonwood pasture water gap project in Lick Creek with instream and streambank work and future planting of hardwoods and exclosures to limit cattle access. The Walla Walla Ranger District completed the Jarboe/Brock Meadows restoration project in the Lookingglass Creek drainage that included road obliteration, culvert removal, and streamside vegetation restoration. The streamside area was also fenced to reduce stream adjacent grazing impacts. Future monitoring of the effectiveness of these projects is planned.

The Pomeroy Ranger District completed monitoring of seven shrub and three grass riparian vegetation transects on four allotments. Each transect was read three times, pre-grazing, during grazing, and post-grazing. Utilization varied from no use to 30 percent utilization per transect. Overall range utilization on the Pomeroy District did not exceed standards and guidelines for the management of critical habitat for threatened Snake River spring/summer chinook salmon. The 1995 monitoring data on the District revealed that shrubs and grasses within riparian areas are improving or being maintained at satisfactory levels, and actual use levels are within Forest Plan standards for riparian vegetation.

On the Walla Walla Ranger District, shrub utilization in riparian areas was monitored on three allotments. Pre, during and post livestock grazing samples were taken. Average utilization was quite low with the range of use varying from 0-25 percent. Shrub utilization was well within Forest Plan standards. The more limited sampling of riparian herbaceous vegetation (one on one allotment) showed that utilization varied from 1-11 percent, well within standards.

Proper functioning condition surveys were initiated and completed on 32 stream reaches within grazing allotments on the North Fork John Day Ranger District. Most of the stream reaches surveyed had proper functioning riparian condition with stable or improving vegetative condition. Fifty-six percent were in proper

functioning condition, 38 percent were functional but at risk, and 6 percent were non-functional. Riparian vegetation was stable or improving in 59 percent of the reaches and degrading in 41 percent of the reaches. Initial survey results indicate that grazing practices need to be adjusted where grazing has affected riparian areas that are at less than proper functioning condition and have stable or degraded vegetation.

In FY 1995, the Heppner Ranger District conducted riparian shrub monitoring similar to levels completed from 1991 to 1993. Permanent riparian shrub utilization transects were read throughout the grazing season in 23 pastures on 22 creeks across the district. The incidence of use (percentage of leaders browsed) methodology was used in conjunction with total shrub height growth. The data from these transects has been tabulated but is not yet fully analyzed. However, based on earlier monitoring and initial 1995 data, shrub growth and utilization level patterns seemed to emerge and are similar to those reported last year. By evaluating the percent of leaders browsed and net height growth for the year, it appears that utilization levels beyond 40-45 percent results in little height growth or a loss of height growth. Some variations were encountered in areas with high shrub abundance and variety; shrubs in these situations appeared to be able to withstand higher utilization levels (50-55%) and still maintain substantial net height growth gains.

The Heppner Ranger District also established 18 permanent riparian transects using the Greenline Riparian Monitoring Methodology (the greenline is the zone where the riparian vegetation meets the stream bed). With this methodology, plant community is recorded, woody species counts are taken, and vegetation composition is tabulated along the cross section of the riparian zone. Photos are taken of cross section at given intervals along the greenline. This years' data is considered as a baseline for future monitoring and analysis.

In the 1995 Annual Operating Plans for livestock grazing at Heppner, season of use and/or livestock numbers were curtailed to help meet riparian objectives. In addition, aggressive riding and electrical fencing were used to reduce livestock grazing pressure on riparian zones. On one allotment, water was hauled to upland sites to provide alternate water sources and a full time rider was employed to aid livestock distribution and management. The reduction in cattle numbers and/or time of use has been an effective tool in reducing the overall risk of riparian vegetation overuse. Reducing the amount of time that cattle can access riparian vegetation appears to be more effective than reducing the numbers of animals. In either case, aggressive riding is needed to gain more uniform distribution and discourage cattle from congregating in riparian zones for long periods of time, especially during the hot, dry months of July-September. The use of electric fencing also proved to be effective in reducing the overall use of particular problem areas, but has more limited application due to the time and expense involved. On the allotment where water was hauled to the uplands (along with other practices), inspection results indicate that the combination of these management practices has been effective in reducing riparian use while increasing use of secondary range areas.

An interagency regional monitoring team reviewed the implementation of PACFISH on the Forest (October 1995). Their findings showed that RMO/Riparian reserves delineation were consistent with the PACFISH strategy. However, their review of range projects that had been modified to meet PACFISH standards, (including riparian grazing on the south end districts) showed that the end of season conditions were having continued carry over effects into the following year; the team indicated that range vegetation related PACFISH standards were not being met, under current definitions. The team recommended that PACFISH implementation monitoring be continued and proposed effectiveness monitoring be implemented.

Evaluation:

In general, monitoring of the PACFISH Forest Plan amendment to preserve future options for recovery and enhancement of riparian areas suggests only a partial positive effect on riparian vegetation. Riparian vegetation monitoring is incomplete or not fully reported to fully answer the monitoring questions across the Forest. Monitoring protocols that have been developed (such as shrub utilization or PFCs) are not widely and consistently used. However, the riparian monitoring that has been occurring over a period of years should begin to describe current condition and show trends. The Forest needs to make the longer term evaluations. This information may be useful in addressing PACFISH concerns.

MONITORING ITEM 10: Level of Utilization

Forest Goals, Desired Future Condition, and Outputs: All allotments implement the Forest Plan utilization standards through Allotment Management Plans (AMPs) or Allotment Operating Plans (AOP's).

Monitoring Question(s): 1. Are Forest Plan utilization standards being implemented through the AMPs (AOP's) and are they being enforced on the ground? 2. Are actual use levels within the Forest Plan utilization standards for riparian zones, for uplands, and for transitory range?

Threshold of Variability: More than 10 percent of the allotments reviewed experience utilization by any species of animal exceeding the Forest Plan or Allotment Plan standards by more than five percent as average of use in key areas of an allotment.

Results/Findings:

Forest Plan utilization standards are being incorporated into each AMP as they are developed. In the interim, the Regional Office has directed that utilization standards also be incorporated into the Annual Operating Plans (AOP's). This has been accomplished for all allotments although modifications to the standards to reflect updated information continues. The Forest Plan standards have been frequently adjusted to comply with Endangered Species Act consultation requirements or other mitigation requirements designed to protect and enhance riparian resources.

Utilization monitoring, complete with documentation, occurred on a total of 95 pastures within 28 active allotments. A total of 737 separate monitoring data collections were made during 1995 for forage and browse utilization with a total of 490 of these occurring within riparian areas. The following table shows results of forage and browse utilization monitoring.

Table II-1
FY '95 FORAGE UTILIZATION SUMMARY
Umatilla National Forest

Total Pastures grazed by Permitted Livestock	141
Total Pastures Monitored	95
Percent of Monitored Pastures Exceeding Threshold	27%
Percent of Monitored Pastures Meeting Threshold	47%

The remaining 26 percent of the pastures that were monitored had pre and/or during livestock utilization monitoring, but it is unknown whether by the end of the season the pastures stayed within the allowable use of available forage.

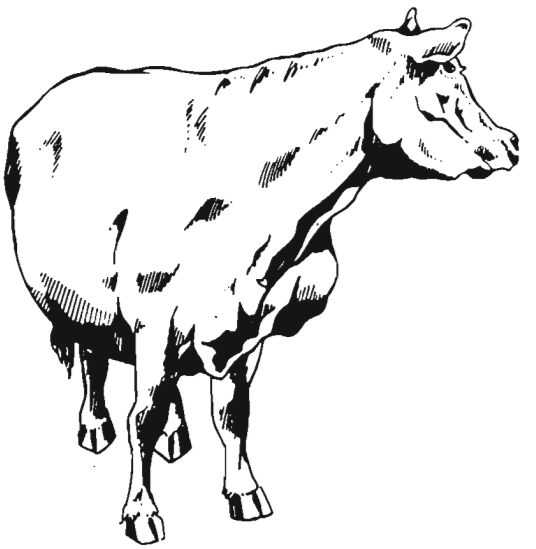
The Threshold of Variability was exceeded for FY '95. Achieving Forest Plan utilization standards for riparian zones continues to be of critical concern on the southern districts. (See MI 9, Riparian Vegetation.)

Approximately 50 percent of the active pastures did not receive adequate (33% none) utilization monitoring. This situation is usually limited to lower priority allotments or pastures or to small allotments consisting predominantly of private lands. Insufficient funding for range monitoring continues to result in inadequate or incomplete utilization checking.

Evaluation:

Forage and browse utilization standards continue to be implemented through the Annual Operating Plans. Utilization monitoring of forage and browse species will be emphasized as funding and priorities permit. The Forest needs to ensure that organizational skills and priorities provide for adequate monitoring within funding limitations.

Riparian areas also continue to show utilization beyond standards. The Forest needs to emphasize follow-up actions necessary to prevent further utilization by domestic livestock once the standard is reached. In addition, an emphasis should be given effectiveness monitoring to ensure that utilization standards being applied are in fact resulting in resource conditions and trends consistent with Forest Plan Standards, with special emphasis on riparian conditions.



MONITORING ITEM 11: Range Condition and Trend

Forest Goals, Desired Future Condition, and Outputs: "Areas of suitable primary and secondary range, including riparian areas, are in satisfactory condition with a stable or upward trend . . ."

Monitoring Question(s): Are range vegetation conditions on suitable primary and secondary range being improved to and maintained at a satisfactory condition?

Threshold of Variability: By the year 2000, at least 85 percent of suitable primary and secondary range is in satisfactory condition with no more than 5 percent of the allotments classified as PD (other resource damage). Accomplishment will be monitored annually to determine the degree of attainment as each allotment management plan is updated and improved management implemented. By year 2000, no more than 5 percent of allotments are classified as PC indication riparian problem allotments.

Results/Findings:

No integrated range analysis was completed on the Forest in 1995 to the level that was fully documented and analyzed. Even with an emphasis on integrated range analysis, the current pace of analysis is inadequate to ensure up-to-date information for allotment management planning on a reasonable schedule. The shortfall relates to inadequate funding for integrated range analysis, support dollars for fisheries, wildlife and botany work, and significant changes in Regional and National priorities. In addition, none of the Districts reported any informal monitoring of their condition and trend transects or retaking of permanent camera points.

A long-term continuing need exists to define and implement a standardized riparian monitoring process that can identify "conditions" and relate them to impacting activities. Currently, a riparian/aquatic inventory that provides data on many Class I and II streams is not yet in a fully useable format. In addition, no processes have been devised to adequately define riparian "conditions and trends". Some use is currently being made of a BLM developed process known as Proper Functioning Condition Assessment. Continued use of this process may begin to add to the knowledge base concerning riparian/aquatic conditions.

Evaluation:

Continue to monitor. Report findings on riparian rangeland and upland rangeland separately in order to provide a better link to other monitoring items. This will be initiated as soon as classification systems and processes are in place to allow for inventory of riparian plant communities. Establish processes to define riparian "condition" in terms of impacting activities.

Develop a process to allow for reporting of currently existing riparian data.

MONITORING ITEM 12: Noxious Weeds: Invasive Vegetation

Forest Goals, Desired Future Condition, and Outputs: Noxious weed infestations are controlled according to the managing competing and unwanted vegetation EIS, the Forest Plan, and applicable state laws and regulations.

Monitoring Question(s): 1. Are noxious weed infestations being treated in accordance with the Managing Unwanted or Competing Vegetation EIS, Forest Plan direction, and applicable State/Forest Service Memorandums of Understandings? 2. How much is the Forest using herbicides and prescribed fires (Regional Guide) to reduce noxious weeds? 3. Are noxious weed populations decreasing or remaining stable, and are they being prevented from infesting adjacent private lands? 4. Are the acres identified as infected by noxious weeds meeting the Forest target?

Threshold of Variability: Accomplished targets are at least 25 percent of identified infested areas.

Results/Findings:

The provisions of the Forests Noxious Weed Management Environmental Assessment became effective on August 25, 1995. Under the EA, 773 noxious weed sites and associated (most appropriate) treatments were "cleared" for implementation including 1,390 acres for chemical treatment, 1,339 acres for biological treatment, and 41 acres for manual treatment. The stage is now set for implementing the appropriate treatment to begin at most effective times during 1996.

Because the effective date of the EA was late in the season, most of the noxious weed treatment continued to be either manual or mechanical in 1995 across the Forest. Treatment acres are shown in Table II-2. The acreage figures **do not** reflect total noxious weed acres on each district but do represent the acres for which available funding was used in treatment during the year.

Table II-2
NOXIOUS WEED TREATMENT
Umatilla National Forest

District	Number of Sites Treated	Acres Treated
Pomeroy	132	41.7
Walla Walla	670	432.2
North Fork John Day	43	14.3
Heppner	299	712 (est.)

Diversity in noxious weed species and abundance occurs from district to district. On some districts a noxious weed species has become so abundant that it is no longer tracked in the database nor actively treated.

Table II-3 shows the acreages of various noxious weed species that were actively treated by manual or mechanical methods during 1995.

Table II-3
ACRES OF SPECIES TREATED BY DISTRICT
Umatilla National Forest

Noxious Weed Species	Pomeroy	Walla Walla	NFJD	Heppner
Diffuse Knapweed	21.45	104.5	2.1	483
Canada Thistle	6.85	NT	0.2	80
Scotch Thistle	1.9	0.1	0.1	2
Tansy Ragwort	0.1	630	0.2	1
Spotted Knapweed	5	0	5.5	--
Bull Thistle	NT	NT	--	30
Dalmatian Toadflax	2.8	5	--	0.1
Musk Thistle	--	1	--	--
Yellow Starthistle	3.1	321.5	0.1	--
Hound's Tongue	NT	NT	5.9	5
St. John's Wort	0.1	NT	NT	86
Scotch Broom	--	--	0.2	--
Medusa Head	NT	NT	NT	25

"NT" indicates the species is no longer tracked by the District.

During 1995, Pomeroy Ranger District used principally manual and mechanical treatment but was able to treat only a fraction of its known noxious weed sites. In Washington, on the Pomeroy District, 22 acres were treated in Columbia County, 14 acres were treated in Garfield County, and 6 acres were treated in Asotin County. The District also responded to a reported puncture vine site near the eastern boundary of the Forest in an effort to prevent this species from moving along Forest Road 41 onto National Forest lands. No treatment acres were reported for Wallowa County, Oregon, although many documented noxious weed sites occur in that portion of the district.

Two particularly problematic weeds, tansy ragwort and yellow starthistle, are the major noxious weed problems of the Walla Walla District. The District dedicated volunteer time to work with the Wallowa County Weed Board in treating the largest tansy ragwort population known to occur in eastern Oregon. The District treated the 630 acres of tansy ragwort in Wallowa County. The tansy project has been ongoing for several years and clearly demonstrates that handpulling has not successfully eradicated this noxious weed species. Most of the tansy ragwort sites have been programmed for herbicide treatment under the Forest's Noxious Weed EA. In addition, the District was also able to treat other noxious weed sites including: 2 acres in Walla Walla County, 88.4 acres in Union County, and 342 acres in Umatilla County. Heavily-used transportation corridors (railroad, state and federal highways) and adjacency to infested agricultural lands continue to present the Walla Walla District with challenges in combating noxious weeds.

Because of limited funding and staffing, North Fork John Day Ranger District elected to no longer "track" St. John's Wort and bull thistle in its noxious weed eradication efforts. The district documented increased levels of infestations of spotted knapweed and treated all of its known sites of yellow starthistle. During 1995, the

District treated 4.5 acres in Umatilla County, 9.6 acres in Grant County, and 0.2 acres in Morrow County. The District has entered into cooperative agreements with Umatilla County in attempting to resolve hazards associated with the storage of herbicides.

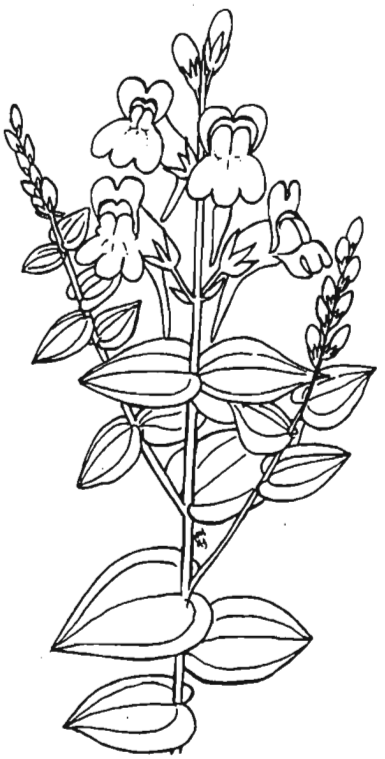
During 1995, the Heppner Ranger District was able to revisit and treat (with manual or mechanical methods) all of its documented noxious weed sites. The District is experiencing an invasion of Dalmatian toadflax on its western boundary. Although not common on the Heppner District, this species is of major concern on the Deschutes and Ochoco National Forests to the west of the Umatilla. The district has taken an opportunity to aggressively control several species (for which the other districts have relinquished tracking) including Hound's tongue and St. John's wort. Additionally, the District continues to follow Morrow County's efforts to eliminate medusa head, a particularly invasive annual grass.

The provisions of the Forest's Environmental Assessment have caused all project leaders to realize that the noxious weed problem is not associated with any single activity. A new awareness of preventive measures is embraced by virtually all departments on the Forest.

Evaluation:

Districts enter the 1996 field season with legal "clearances" to use designated and appropriate herbicides on sites cleared by the Forest's Environmental Assessment. The ability of each district to combat noxious weed infestations depends upon staffing and funding and is not necessarily correlated with the severity of infestations.

Continued monitoring will be needed to determine trends in noxious weed populations and effectiveness of control methods.



Dalmatian Toadflax
Linaria dalmatica

MONITORING ITEM 13: Silviculture Harvest Method

Forest Goals, Desired Future Condition, and Outputs: Ensure that Forest silvicultural treatments comply with management objectives contained in the Plan; evaluate assumptions used in Forest Plan.

Monitoring Question(s): 1. Are the harvest methods implemented on the ground as portrayed in the Plan? (Reported by silvicultural method and acres treated.) How much clearcutting is occurring? 2. Do silvicultural prescriptions and processes follow Forest Plan standards and guidelines?

Threshold of Variability: Variance from planned method of more than 25 percent on an annual basis, 15 percent on a decade basis. Compare actual levels by method to Table 4-1 of the Plan.

Results/Findings:

Silvicultural methods continue to be adjusted on the Forest in response to current direction. The major influences on this trend include interim direction, Eastside screens and PACFISH, salvage and restoration needs, and requirements and implementation of directions for T&E fish species (northern part of the Forest). Table II-4 shows harvest methods completed and acres harvested in FY 1995. The total includes timber sales sold prior to 1995.

Table II-4
HARVEST METHODS - 1995
Umatilla National Forest

Silviculture Method	Planned Output (Acres)	Actual '95 Output (Acres)	Percentage (Actual/Planned)
Clearcut	4,000	109	3%
Shelterwood/Seedtree	2,600	520	20%
Overwood Removal	1,500	504	34%
Uneven-age	900	944	105%
Salvage/Other		380	
Total	9,000	2,457	27%

Clearcutting continues to decline on the Forest and clearcut acres are well below levels established in the Forest Plan. The change meets Chief of the Forest Service direction (1992) to reduce clearcut acres on National Forests.

The Forest Plan expected harvest levels no longer reflect silvicultural practices as they are currently being applied. In response to the 1995 Rescission Bill and on-going forest health concerns, most stand management is directed toward these objectives:

- Control of tree density and species composition.
- Salvage of dead or dying trees to reduce the amount of carbon (biomass) on the site, thereby reducing the potential for unplanned fires or reburns.
- Re-establishment of vegetation structures that represent the historical range of variation, so that forest ecosystems are resilient and ecologically sustainable.
- Productivity enhancement through fertilization or fire-induced nutrient cycling, which also contributes to tree resistance to insects and diseases.

Silvicultural treatments designed to meet the objectives shown above are emphasizing salvage harvests, commercial and precommercial thinnings, fertilization, understory removals, plantings and a variety of other practices. Regeneration harvests and application of even-aged management scenarios are not widely used right now, although they are expected to increase in the future as sites with catastrophic insect damage are eventually restored. Clearcut acres can be expected to be below the threshold of variability until the Forest Plan is amended to reflect the policy change regarding clearcutting.

Acres of uneven-aged management projected in the Forest Plan were clearly not met within the last 4 years (though they were in 1991). The reduction in unevenaged practices is also related to the recent forest health problem since uneven-aged management is often not successful in stands with high levels of insects and diseases. This will need to be re-evaluated to determine if the decade goal will be met.

Evaluation:

Silvicultural methods are likely to continue to deviate from Forest Plan expectations. The difference will remain until the Forest Plan is adjusted, sometime after completion of the Interior Columbia Basin Ecosystem Management Project (ICBEMP).

MONITORING ITEM 14: Created Openings

Forest Goals, Desired Future Condition, and Outputs: Achieve unit sizes that fall within the acceptable legal and desired ranges.

Monitoring question(s): Are unit sizes complying with direction in the Forest Plan, National Forest Management Act (NFMA), and Regional Standards?

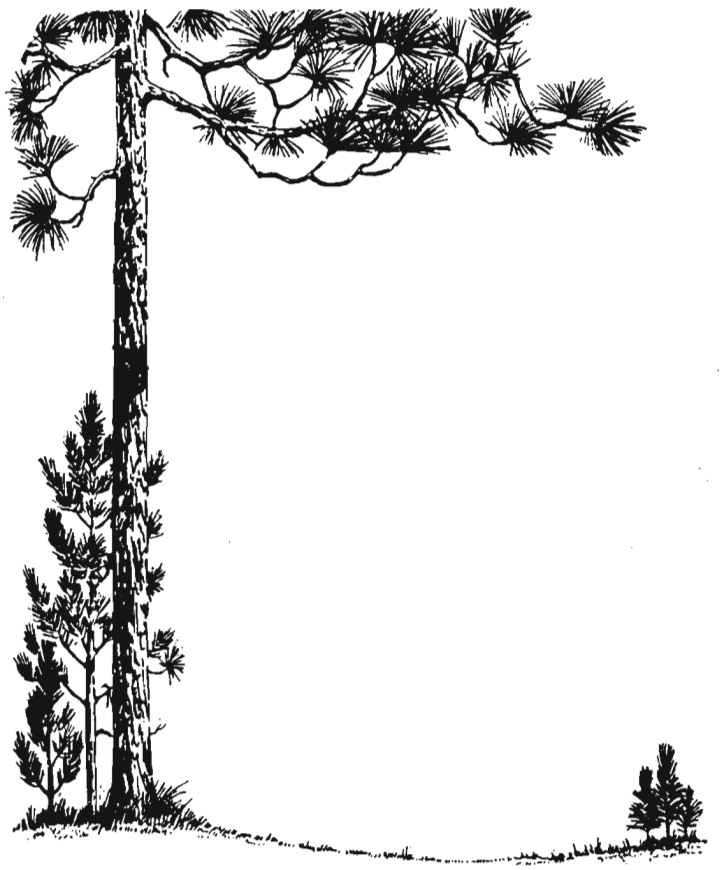
Threshold of Variability: Maximum unit size exceeds size standard by more than 10 percent. Where exceptions allowed, unit sizes meet EA (Regional) requirements. Forest Plan standards and guidelines for dispersion.

Results/Findings:

When natural catastrophic situations occur, the Forest Plan allows the 40-acre created opening size limitation to be exceeded. On two areas on the southern half of the Forest, harvest units exceeded the 40-acre limit as a result of high insect damage and mortality. One unit is located in the Cold Springs Salvage (Heppner Ranger District) and the other is on the Indianberry Timber Sale (North Fork John Day Ranger District). Respective environmental assessments and decision notices fully disclosed the need and justification to exceed Forest Plan requirements. As for the rest of the Forest, no other harvest area activity was found to exceed Forest Plan created opening standards.

Evaluation:

Forest Plan standards and guidelines were exceeded in only a few areas on the Forest. In these cases, appropriate procedures and documentation were used for approving the exceptions. Where the 40-acre limit was exceeded, salvage of insect-killed stands occurred and rationale for treating the entire damaged area was provided in environmental documents.



MONITORING ITEM 15: Stand Management – Regeneration

Forest Goals, Desired Future Condition, and Outputs: Ensure successful reforestation to at least minimal stocking consistent with Forest Plan standards and guidelines. Determine if level of planting with genetically improved stock is consistent with level assumed in the Plan and managed yield tables.

Monitoring Question(s): 1. How many acres and what percentage were successfully reforested using natural and artificial regeneration practices. 2. How many acres were stocked at least to minimum levels within three growing seasons after reforestations period begin as required by NFMA? How many reforested acres (and %) are certified as established? 3. How many acres have been reforested with genetic stock with a stocking certification level "SB" or higher?

Threshold of Variability: 1. Greater than a 15 percent deviation from Forest Plan levels (Table 4-1) for acres regeneration harvested during a 5-year period. 2. Greater than a 10-year lag between time of harvest and attainment of at least minimum stocking levels. 3. For genetically improved tree stock, more than 10 percent reduction from levels assumed in the Forest Plan over a 5-year periods.

Results/Findings:

The following table displays natural and planted regeneration acres for FY '95. For reporting purposes, natural regeneration includes the acres of site preparation for natural regeneration and acres of certified natural regeneration without site preparation (National and Regional procedures).

Table II-5
NATURAL AND ARTIFICIAL REGENERATION ACRES - FY 1995
Umatilla National Forest

Activity	Heppner	NFJD	Pomeroy	Walla Walla	Forest Total
Site Preparation for Regeneration					
– Natural	160	413	158	57	788
– Artificial (planting/seeding)	567	1,094	83	124	1,868
Natural Regeneration Without Site Preparation	464	2,714	-0-	200	3,378
Artificial Regeneration (planting)	1,370	1,386	364	1,039	4,159

Certification of regeneration is based on a site-specific determination; units must meet minimum stocking guidelines prior to certification. Currently the Forest performs regeneration examinations after the first and third growing season following regeneration. A staked row method is used to determine survival and growth of each seedling and overall area success. By using this method, the Forest certified a total of 10,502 acres (planted and natural regeneration) in FY 1994 as meeting or exceeding minimum stocking standards after 3 years. Certification represents acres which were reforested in 1992 and before.

In FY 1995, the Forest planted 632 acres of genetically improved tree stock which met a certification level "SB" (SB signifies Subclass B. B means the female parent is known) or higher. This represents 15 percent of the total artificial regeneration acres (4,159) in 1995. Accomplishment is somewhat higher than levels assumed in the Forest Plan, but can be within Plan levels for the decade.

In recent years, the Heppner Ranger District has reported poor first time success in plantation establishement. In an effort to determine the causes of failure and determine where to most efficiently focus remedial measures, the District began more intensive monitoring of plantation survival and growth in FY 1995. The District uses the staked tree rows method, established in each planted unit to monitor survival and growth.

Overall, the survival in 1995 was good. For all species combined, the survival was approximately 85 percent. The following table show survival by species:

Species	Percent Survival
Western Larch	67%
Englemann Spruce	93%
Lodgepole Pine	67%
Ponderosa Pine	85%
Douglas-fir	94%

1995 was a relatively wet, cool growing season and survival was generally good. The main causes of mortality during the first year appear to have been clipping by gophers, primarily soon after planting, and drought stress, mostly occurring late in the growing season. Together, those two sources accounted for over 95 percent of the mortality.

Several factors contributed to the drought stress caused mortality. Most notably, many of the planting showed heavy grass competition late in the growing season. Approximately 15 percent of the planting sites showed signs of soil compaction. The condition of the seedlings at the time of planting may also have played a role, particularly in the case of western larch. Approximately 10 percent to 20 percent of the larch were found to be dead at the time the planting bags were opened and were discarded. It is possible that poor condition of the larch seedlings contributed to the relatively poor survival (67%).

The North Fork John Day district has gopher monitoring plots set up in 22 units across the district. In time, stocking levels will be compared to gopher activity and a decision made about possible treatments that may be in order. Current information indicates from 0 percent to 12 percent mortality with 0 to 1,500 mounds per acre. Preliminary results seem to also indicate low gopher damage with higher loses to drought, frost, trampling and some big game damage. No gopher control baiting or trapping was conducted outside of the seed orchard on the North Fork John Day District in FY '95.

The North Fork John Day District has also installed porcupine monitoring transects in 25 units across the district and plans to install more in the future. The goal is to determine porcupine levels where unacceptable damage occurs (damage vs % mortality), what size classes are most affected (seedlings, saplings, pole/small saw), and where activity is highest and control actions needed. While the District monitors the transects and gathers data, APHIS continues to do population control in areas where activity is high.

Animal damage from big game in the historic past has been minimal until the last few years. The District maintained vexar tubing on 1,095 acres of reforestation units to prevent damage from big game. Also, one electric fence was maintained around a 21-acre unit during the summer to see if trampling damage from livestock could be minimized. The District had problems maintaining the fence and some damage continued to occur.

Evaluation:

Planned output for natural regeneration is 3,100 acres (Table 4-1, Forest Plan). In FY 1995, the Forest exceeded the Plan projection by 34 percent. The threshold of variability for this item is 15 percent during a second 5-year period. For the first time since the inception of the Forest Plan, thresholds have been exceeded for natural regeneration. The change is partly attributed to the catastrophic insect infestations of lodgepole pine areas (in the late 1970's and 1980's) which had delayed natural regeneration. The areas are only now being certified as stocked. The Forest anticipates that the threshold may continue to be exceeded until lodgepole areas are certified as regenerated.

Planned output for artificial regeneration is 4,400 acres (Forest Plan Table 4-1). In 1995, the Forest exceeded the Plan output level by approximately 5 percent. The threshold of variability for this item is 15 percent deviation from planned levels over a 5-year period.

MONITORING ITEM 16: Stand Management — Ponderosa Pine Regeneration

Forest Goals, Desired Future Condition, and Outputs: Increase the relative amount of ponderosa pine on the Forest; re-establish or change to more seral species on the Forest.

Monitoring question(s): How many acres were reforested with ponderosa pine by either natural or artifical regeneration practices?

Threshold of Variability: If after 10 years pine is reforested on less than 35 percent of the acres regenerated.

Results/Findings:

In 1995, the number of acres planted on the Forest with ponderosa pine totalled 1,584, which represents 38 percent of the total acres planted. However, an effective method for measuring the total amount of ponderosa pine regeneration is still not available since the amount of ponderosa pine natural regeneration is unknown.

The Forest plants a variety of species in the units, which may vary from 1 to 6 species per unit according to plant community and site conditions. The estimated number of acres of ponderosa pine regeneration is based on average number of seedlings planted by species and total acres planted and then an estimate of how many acres would have been planted if we planted single species.

Evaluation:

The threshold states at least 35 percent of the total acres regenerated on the Forest shall be planted with ponderosa pine within 10 years. It appears the threshold will not be exceeded. Recommendation is to continue monitoring.

The Forest needs to develop a process which determines how much ponderosa pine is being naturally regenerated. The process should be included in the certification procedures currently being used.

MONITORING ITEM 17: Stand Management – Precommercial Thinning

Forest Goals, Desired Future Condition, and Outputs: Accomplish the planned amount of stocking level control on the Forest.

Monitoring Question(s): 1. How many acres were treated with stocking level control? 2. How many acres needing stocking level control were treated? (Relates to managed stand assumptions, and forest health questions.)

Threshold of Variability: 1. Greater than a 20 percent deviation from planned levels as indicated in the Forest Plan Table 4-1. 2. Fewer than 80 percent of the acres needing stocking level control actually received it.

Results/Findings:

The total amount of precommercial thinning accomplished on the Forest in 1995 was 3,132 acres. The planned amount is 2,900 acres (Forest Plan, Table 4-1). Thus, the 1995 accomplishment represents approximately 108 percent of planned output, which meets the threshold of variability for this item (20% deviation).

All of the acres needing stocking level control, as reported in the NEEDS Report (reporting system identifies projects in need of management action), were treated in FY 1995.

The North Fork John Day District has been trying different thinning spacing to better accommodate fish, wildlife, and visual concerns. Several multi-disciplinary groups go out each year to review and evaluate the effectiveness of these site-specific prescriptions. The district has made minor adjustments in response to these reviews.

Evaluation:

Thinning results are within thresholds. As a result of Ecosystem Management direction and restoration needs, the Forest anticipates an increase in thinning within the next several years: 1) to reduce stand densities in over stocked stands, 2) to reduce fire hazards, and 3) to emphasize the proportion of seral species in mixed stands with an overall goal of improving forest health. Recommendation is to continue monitoring.

MONITORING ITEM 18: Fire Effects – Prescribed Fire

Forest Goals, Desired Future Condition, and Outputs: Maintain or enhance ecosystem functions to provide for the long-term integrity (stability) and productivity of biological communities. Provide and execute a fire use program that is responsive to land and resource management goals and objectives. Use of prescribed fire will be expanding in project activities of all types and in reduction of natural fuels. Fire will be allowed to play a more natural role in the wildernesses.

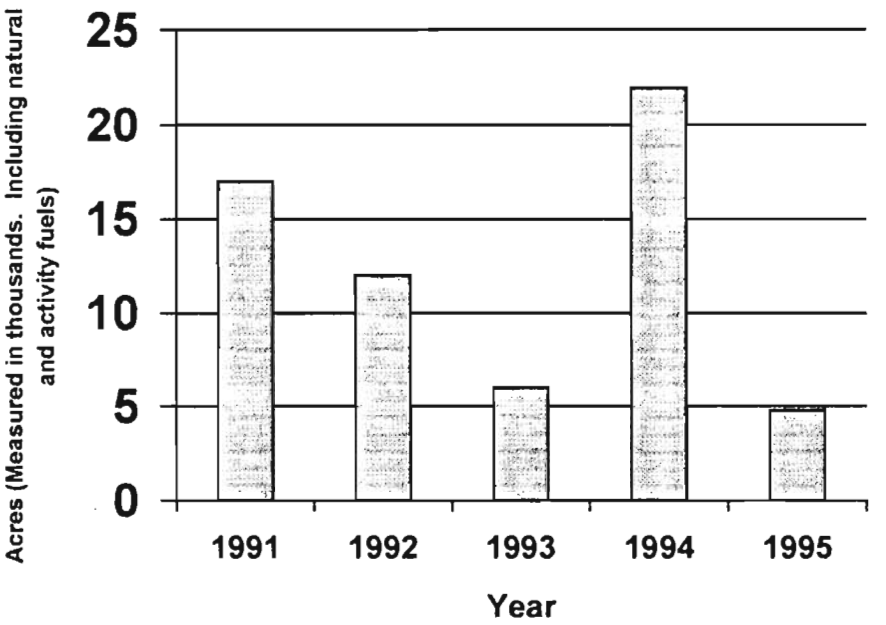
Monitoring Question(s): 1. Are the prescribed fire treatments meeting Forest Plan residue (materials left on site) and resource objectives? 2. What are the stand structure (overstory and understory) and species responses in the prescribed burned area?

Threshold of Variability: Prescriptions not being met by 20 percent or more of areas. Five percent of subwatershed impacted by high intensity fires within a 3-year period.

Results/Findings:

The 1995 prescribed fire program was used as a management tool to accomplish site preparation, range improvement, and wildlife enhancement projects. Figure E shows the total prescribed fire acres from 1991 to 1995 along with the 4-year average and Forest Plan projection.

Figure E
TOTAL PRESCRIBED FIRE ACRES
1991 to 1995
Umatilla National Forest



In 1995, prescribed fire program treatment acreage decreased dramatically when compared with the last several years. This is primarily the result of a very wet, cool spring which resulted in unfavorable burning conditions. The Forest expects that the use of prescribed fire will still continue to increase as emphasis is placed on ecosystem management, even though these years of unfavorable weather conditions can be expected.

Evaluation:

The recommendation is to continue monitoring with emphasis of standardizing the vegetative data collection procedures.

MONITORING ITEM 19: Vegetation Management

Forest Goals, Desired Future Condition, Outputs: Use management practices that best suit land management objectives. Use treatments that are practical in terms of preparation and administrative cost. Perform all activities in the most cost efficient manner consistent with resource management objectives. Use management strategies which minimize both cost and environmental impacts.

Monitoring Question(s): 1. Is the Forest meeting the intent of the Managing Competing and Unwanted Vegetation Final Environmental Impact Statement and Mediated Agreement? 2. Is the Forest reporting vegetation management project analysis results in project environmental assessments and environmental impact statements? 3. Is the Forest applying mitigation measures as outlined in Appendix E of the Forest Plan FEIS? How effective are the mitigation measures?

Threshold of Variability: Less than 80 percent of completed projects which fall under Managing Competing and Unwanted Vegetation FEIS requirements.

Results/Findings:

Although relatively few projects were developed in FY 1995, the Forest continued to apply the requirements of the Final Environmental Impact Statement (FEIS) and the Mediated Agreement (MA) for Managing Competing and Unwanted Vegetation. During the year, activities included preparing sites for planting by reducing logging residue; releasing young conifers from competing vegetation; managing fuel hazards and preventing wildfires; improving range conditions; controlling noxious weeds; improving wildlife habitat; maintaining recreation and administrative facilities; maintaining roadsides and utility corridors; and supporting the tree genetics and research program. Five specific methods of vegetation management explained in the FEIS (pages II-83 through II-109) may be used in the activities including: 1) herbicides, 2) prescribed burning, 3) manual work, 4) biological treatments, and 5) mechanical means.

The results of an assessment of vegetation management activities, and their relationship to requirements from the FEIS/MA, are typically disclosed in a "Vegetation Management Plan". The Plan is prepared during the environmental assessment (EA) phase of project development and is stored with other EA documents and materials (typically a project file). The plan evaluates threshold levels for which vegetation management activities would be initiated; the need for vegetation management; the treatment methods being considered; evaluation of vegetation management strategies (prevention, early treatment, maintenance, correction, and no action); project design and scoping; effects of implementation; and action and monitoring. In FY 1995, a vegetation management plan or closely-related vegetation management checklist was completed for those projects on all districts. Where monitoring has occurred, mitigation results are reported in other appropriate monitoring items.

Evaluation:

The Forest expects to continue monitoring the effects of managing vegetation in eight specific activities: 1) Reforestation - site preparation and release; 2) Fire Management Program; 3) Range Improvement; 4) Noxious weed control; 5) Wildlife habitat improvement; 6) Recreation Management and Facilities Maintenance; 7) Rights-of-Way Maintenance; and 8) Genetics Program.

B. PLANTS

MONITORING ITEM 20: Threatened, Endangered, and Sensitive Species

Forest Goals, Desired Future Condition, and Outputs: Conserve existing populations and habitats for sensitive plant species. Ensure that T/E/S plant species are protected and management standards are met.

Monitoring Question(s): Is adequate protection afforded the documented sensitive plant species of the Forest?

Threshold of Variability: Any deviation from recommended mitigation provided on the Biological Evaluation for the T/E/S survey site.

Results/Findings:

During Fiscal Year 1995, sensitive plant surveys were completed on 159,099 acres. The overall Forest total of surveyed acres amounts to more than 1 million acres. The primary remaining, notable gaps in plant data occur in the three wilderness areas of the Forest.

Special survey emphasis was given the Asotin Creek Watershed on Pomeroy Ranger District. Washington Natural Heritage Program sighting records indicated that several "Palousian" sensitive species occurred very close to the Forest's northeastern boundaries, so surveys were scheduled in that area at appropriate phenological times for detecting these sensitive species. This effort resulted in documenting the occurrences of three new sensitive species for the Umatilla National Forest: 1) *Calochortus nitidus*, Big-Podded Mariposa Lily, previously thought to have been extirpated from the State of Washington; 2) *Silene spaldingii*, Spalding's Silene; and 3) *Carex hystericina*, Porcupine Sedge.

The number of "active" sites of presently-listed sensitive plant species on the Forest has grown to 632 populations by the end of FY 1995. Populations are unequally distributed among 26 sensitive species. Additionally, 60 "inactive" sites for "delisted" species are retained in the GIS system (TEPO layer) and its supporting database. Retention of delisted species is desirable since, in several cases, a species has been delisted one year only to be re-listed the next year. Table II-6 shows the progress made in locating and documenting the occurrences of sensitive plant species on the Umatilla National Forest between 1982 and 1995.

Table II-6
SENSITIVE PLANT OCCURRENCES 1982-1995
Umatilla National Forest

Year	82	84	85	86	87	88	89	90	91	92	93	94	95
# Sites Added to TEPO	1	2	7	4	8	33	2	2	17	100	377	8	72

No surveys were conducted in 1983.

The current status of sensitive plant populations (their numbers and sizes) are presented in Table II-7. In the "State Sensitive Status" column, the abbreviations are as follows: HSO = Historically Sensitive in Oregon; PSO = Presently Sensitive in Oregon; HSW = Historically Sensitive in Washington; PSW = Presently Sensitive in Washington.

Table II-7
SENSITIVE PLANT POPULATIONS 1994/1995
Umatilla National Forest

Sensitive Species	No. of Occurrences 1994/1995*	Total Population 1994/1995*	State Sensitive Status	State Occurrences: UMA
Allium campanulatum (Sierra Onion)	2	19	HSO;PSW	OR;WA
Allium dictuon (Blue Mountains Onion)	4	550	PSW	WA
Astragalus arthuri (Arthur's Milkvetch)	2/3	184/185	PSW	WA
Bolandra oregana (Oregon Bolandra)	6/6	1,720	PSO;PSW	OR
Botrychium crenulatum (Crenulate Moonwort)	1	1	PSO;PSW	OR
Botrychium 'echo' (Desolation Meadow Moonwort)	7	150	PSO	OR
Botrychium lanceolatum (Lance-leaved Moonwort)	25/37	1,197/2,141	PSO;PSW	OR
Botrychium minganense (Mingan Grapefern)	10/23	172/325	HSO;HSW	OR
Botrychium montanum (Mountain Grapefern)	10/11	252/257	PSO;PSW	OR
Botrychium paradoxum (Two-spiked Grapefern)	1	1	PSO;PSW	OR
Botrychium pinnatum (Pinnate Grapefern)	21/33	5,977/6,440	PSO;PSW	OR
Calochortus nitidus (Big-podded Mariposa Lily	0/1	0/1	PSW	WA
Carex backii (Back's Sedge)	0/2	0/19	PSO	OR
Carex hystricina (Porcupine Sedge	0/1	0/420	PWS;PSO	WA
Cypripedium fasciculatum (Clustered Lady's Slipper)	2	26	PSO;PSO	WA
Dryopteris filix-mas (Male Fern)	35/49	275/1,424	PSO	OR;WA
Epipactis gigantea (Giant Helleborine)	1	608	PSW;HSO	OR;WA
Leptodactylon pungens hazeliae (Granite Phlox or Leptodactylon)	1	6	PSO	OR
Mimulus washingtonensis (Washington Monkeyflower)	341/345	2,036,103	PSO;PSW	OR
Orobanche pinorum (Pine Broomrape)	40	321	HSO;PSW	OR;WA
Ranunculus populago (Mountain Buttercup)	0/1	0/1,500	PSW	OR;WA
Ribes oxyacanthoides cognatum (Umatilla Gooseberry)	39	1,042	HSO;PSW	OR;WA
Silene spaldingii (Spalding's Silene)	0/2	51	PSO;PSW	WA
Spiraea densiflora splendens (Subalpine Spiraea)	7	183	PSW	WA
Thelypodium eucosmum (Arrow-leaved Thelypody or Juniper Thelypodium)	4	697/2,355	PSO	OR
Trifolium douglasii (Douglas' Clover)	1/7	1,303/4,002	PSW;PSO	WA;OR
TOTAL	558/630	2,049,319/ 2,059,850		

*Single numbers indicate no change in occurrence or population between both years.

During the 1995 field season, monitoring was conducted on ten sensitive plant populations of six different plant species. This represents 27 percent of the sensitive species on Pomeroy, North Fork John Day, and Heppner Ranger Districts. Summaries of the monitoring information collected on each of the six sensitive species are presented below.

Table II-8
SENSITIVE PLANT POPULATIONS AND TREND 1995
Umatilla National Forest

District	Species	1992	1993	1994	1995	Trend
Pomeroy	• Douglas' Clover	–	1,303	1	1,418	Resilient
	• Clustered Lady's Slipper Orchid	26	34	12	26	Stable
	• Arthur's Milkvetch	158	158	–	160	Stable
North Fork John Day	• Two-spike Moonwort	1	1	1	1	Stable
	• Crenulate Moonwort	1	1	1	0	Decline
Heppner	• Arrow-leaved Thelypody or Blue Mustard	–	697	1,670	2,355	Increase

Analysis of FY '95 monitoring data collected on sensitive plant species of the Forest shows the following:

- In FY 1995, ten populations of six different sensitive plant species were monitored. The Forest-wide number of sensitive plant populations prior to the 1995 field season was 558. Thus, monitoring activities covered about 27 percent of the sensitive species known to occur on the Umatilla and 1.7 percent of the populations.

- One species that exhibited a decline in 1994 (Douglas' Clover, Pomeroy), showed a healthy rebound to its original population level during 1995.

- One species (Arrow-leaved Thelypody, Heppner) showed a steady increase which may be attributable to the District's efforts to protect the four populations from grazing through the installation of temporary electric fencing.

- Three species (Clustered Lady's Slipper Orchid, Pomeroy; Arthur's Milkvetch, Pomeroy; and Two-spike Moonwort, North Fork John Day) showed stable populations.

- One species (Crenulate Moonwort) was not relocated during the 1995 field season. This population of a single plant is difficult to relocate and may have been overlooked or the timing of the monitoring (July 7) might have been too early in the season.

Evaluation:

Continue monitoring. The following discussion represents some of the monitoring needs and other requirements:

Crenulate Moonwort North Fork John Day Ranger District

Continue monitoring for this single plant population during the 1996 field season. The population site should be rechecked during both July and August of 1996 to determine if the species has been lost from the Umatilla's flora. The area in which the population is located has not been subjected to any type of management activity since the discovery of the population in 1992. The single plant was relocated in 1993 and again in 1994.

Clustered Lady's Slipper Orchid Pomeroy Ranger District

Monitoring efforts should continue for these two unusual populations. One population is vulnerable to recreational activities and the other is annually excluded from active firewood harvest through appropriate signing (a small section along the north side of the road is excluded from firewood harvest).

Douglas' Clover Pomeroy Ranger District

Because of its proximity to a heavily-used wilderness trailhead (Three Forks Trailhead, Pomeroy Ranger District), this population should be monitored annually. The habitat of this species is susceptible to vehicle parking, horse tethering, etc. Apparently, the species, as indicated by its rebound during 1995, will tolerate grazing and the present grazing rotation does not adversely affect it.

Aruthur's Milkvetch Pomeroy Ranger District

This peripheral population of Snake River endemic plant species seems to be tolerating the existing grazing level and rotation. The species would probably benefit from a fall burn because thatch reduction would occur and nutrient cycling would be enhanced. This population probably needs to be monitored only when changes in management activities directly affect it.

Two-spiked Moonwort North Fork John Day Ranger District

Because of the extremely small size of this population (1 plant) and because changes in management activity have occurred in the last year, this population should be monitored annually. There is a possibility that in the absence of grazing and with fire suppression, Desolation Meadow may become overgrown with either lodgepole pine or with heavily-thatched sedges. This could result in the displacement of this species.

Arrow-leaved Thelypody Heppner Ranger District

The four populations of this species have shown a steady increase since 1993 and represents the largest aggregation of plants. The Heppner Ranger District has ensured that temporary electric fences are installed and functioning prior to the on-dates for cattle. A permanent fence is scheduled to be constructed during fiscal year 1995 because of the susceptibility to grazing. This species should be monitored annually.

Arrow-leaved Thelypody
Thelypodium eucosmum
Heppner Ranger District

C. INSECT AND DISEASE

MONITORING ITEM 21: Insect and Disease Control

Forest Goals, Desired Future Condition, and Outputs: "Protect resources and values from unacceptable losses due to destructive pests . . . Monitor levels and activity of forest pests . . . identify or predict when and where they will hinder the attainment of management area objectives."

Monitoring Question(s): 1. What are the current levels and activities and their trends of key insects and diseases? Are insect and disease organisms threatening land management objectives? 2. Are management practices mitigating the adverse effects of insects and diseases? Are they effective?

Threshold of Variability: Evidence of insect or disease populations at or above epidemic levels. (Note: Evaluated by Forest Pest Specialists given the agent's intensity and magnitude).

Results/Findings:

The annual aerial surveys were continued by the Regional Office (Pacific Northwest Region) to determine the extent and trend of forest pest damage. Table II-9 exhibits the annual pest survey results since 1991 along with the 5-year average. The information shows the total acres containing trees which have had some level of defoliation or have had some trees killed by forest insects (note: surveys are cumulative, which means wherever a tree is defoliated or killed by insects, the area containing the tree is delineated and mapped. Areas mapped may either be localized to a specific area or spread across a vast area or region).

Table II-9
ANNUAL PEST SURVEY ACRES 1991 to 1995
Umatilla National Forest

Insect	District	1991	1992	1993	1994	1995	5 YR AVG
Budworm (very low/low) impact levels	HP	65,163	6,046	0	0	0	14,242
	NF	226,540	7,437	0	0	0	46,795
	PM	77,018	51,670	0	0	0	25,738
	WW	231,682	241,992	0	0	0	94,735
	Total	600,403	307,145	0	0	0	181,510
Budworm (moderate/high)	HP	80,785	17,581	0	0	0	19,673
	NF	176,312	11,087	0	0	0	37,480
	PM	0	2,044	0	0	0	409
	WW	3,852	3,725	0	0	0	1,515
	Total	260,949	34,437	0	0	0	102,110
Douglas-fir Beetle	HP	404	6,468	197	20,090	5,453	6,522
	NF	9,115	19,321	723	4,373	9,005	8,507
	PM	1,277	862	87	243	32	500
	WW	1,786	3,116	1,255	2,081	3,049	2,257
	Total	12,582	29,767	2,262	26,787	17,539	17,787
Fir Engraver	HP	1,025	1,975	48	28	379	691
	NF	129	1,483	38	10	1,640	660
	PM	45,800	0	0	0	85	9,177
	WW	41,736	775	794	1,306	745	9,071
	Total	88,690	4,233	880	1,344	2,849	19,599
Mountain Pine Beetle	HP	278	414	604	36	810	428
	NF	147	96	1,035	71	200	310
	PM	127	3	14	115	63	64
	WW	1,139	37	184	0	507	373
	Total	1,691	550	1,837	222	1,580	1,176

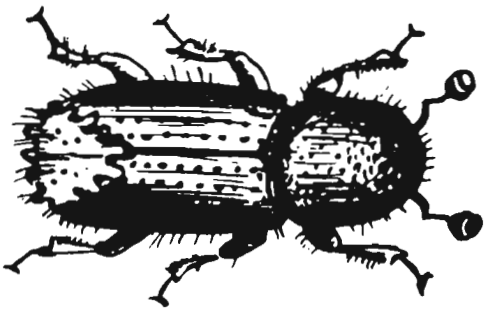
HP - Heppner, NF - North Fork John Day, PM - Pomeroy, WW - Walla Walla

Results from the aerial survey were similar to last year. For the third year in a row, Western Spruce Budworm population have no new reported acres detected. The Douglas-fir bark beetle continues to have an impact on forest stands, although down from last year. Other insects causing damage in 1995 included pine engraver beetle, Englemann spruce beetle, Douglas-fir engraver, and western pine beetle.

Many different diseases are affecting the forest resources. Tree disease usually are slow-acting but may eventually cause mortality and decay levels on par with epidemic insect activity over the life of a stand. Observations made by field personnel and insect/disease specialists continue to indicate dwarf mistletoe is increasing in severity, particularly in western larch and Douglas-fir, as a result of fire exclusion and increased stand density. Indian paint fungus is prevalent across the Forest with varying degrees of severity. Root diseases are also found throughout the Umatilla. Root diseases include: Armillaria, Annosus, and Laminated. Armillaria and annosus root disease are both increasing in severity and distribution on the Forest.

Evaluation:

In summary, Western Spruce Budworm population levels have collapsed. No evidence of tussock moth was reported. Bark beetle findings show little change for the past several years; Douglas-fir beetle declined from 1994 levels, while fir engraver and mountain pine beetle went up slightly. Current methods to track levels of forest diseases is through observation and surveys conducted by Forest Service and Pest Management personnel. In order to obtain actual acres infected with disease, an intensive inventory is needed.



D. FISH

MONITORING ITEM 22: Anadromous and Resident Fisheries

Forest Goals, Desired Future Condition, and Outputs: Provide and maintain a diverse, well-distributed pattern of habitats for viable fish populations.

Monitoring Question(s): 1. Are the population trends for anadromous and resident Management Indicator Species stable to improving? 2. Are Forest Plan goals, objectives and desired conditions for anadromous fish being achieved? 3. Is fish habitat capability improving as projected in the Forest Plan?

Threshold of Variability: 1. A declining trend in population over a period of 5 or more years in a drainage for a specific species. 2. A decrease of 10 percent or greater in fish habitat capability in a subwatershed.

Results/Findings:

The Oregon Department of Fish and Wildlife (ODF&W) has established spring chinook spawning distribution and abundance index reaches on Clear Creek, Desolation, North Fork John Day River, and South Fork Wenaha River. All of the North Fork John Day system index streams and South Fork Wenaha River index area were monitored for spring chinook. Results are shown in Tables II-9 and II-10.

Table II-10
ODF&W CHINOOK REDD COUNTS 1992 - 1995
North Fork John Day River Drainage

Stream	Redds/Mile			
	1992	1993	1994	1995
Clear Creek	11.7	25.6	4.0	2.8
Granite Creek	16.5	19.8	14.5	2.2
N. Fork John Day River (Wilderness)	28.1	27.3	15.6	2.5
N. Fork John Day River (Lower)	11.4	16.1	7.6	0.7

Table II-11
ODF&W CHINOOK REDD COUNTS
Wenaha River Drainage

	No. Redds		No. Carcasses		No. Live Fish	
Stream	94	95	94	95	94	95
N.F. Wenaha River (Lower)	0	0	0	0	0	0
S.F. Wenaha River (Above Milk Creek. Milk Creek to Forks)	12	2	0	0	2	1
Wenaha River (Forks to Crooked Creek)	30	18	5	3	18	10
Wenaha River Tributaries:						
– Milk Creek	0	0	0	0	0	0
– Butte Creek	0	1	0	0	0	0

The number of redds in Clear and Granite creeks was relatively stable in the late 1980's and increased in the early 1990's. The number of redds in the North Fork John Day River have generally increased through the early 1990's. Redd counts in all index streams in 1994 and 1995 were substantially lower than in the recent past. Chinook salmon redd counts reported for the North Fork John Day system in 1995 were the lowest recorded since 1959. Wenaha River drainage spring chinook spawning ground survey results for 1995 were also lower then survey results from 1994.

Additional spring chinook salmon spawning surveys were conducted by North Fork John Day Ranger District personnel in 1995. Camas, Hidaway, and North Fork John Day River were surveyed for chinook redds, carcasses, and number of live fish. Results from the last 4 years of survey are displayed in Table II-12.

Table II-12
CHINOOK REDD COUNTS 1992 - 1995
Umatilla National Forest

Stream	Redds				No. Carcasses				No. Live Fish			
	1992	1993	1994	1995	1992	1993	1994	1995	1992	1993	1994	1995
Camas Creek	0	2	5	0	0	1	1	0	0	0	3	0
Hidaway Creek	0	0	0	0	0	0	0	0	0	0	0	0
N. Fork John Day River	5	21	2	1	4	4	9	0	0	5	0	1

The Oregon Department of Fish and Wildlife also conducted summer steelhead spawning ground surveys on some North Fork John Day River tributaries in 1995. The results as follows show very low spawning densities; Fivemile Creek, 1.2 redds/mile, Wall Creek, 0.9 redds/mile, and Wilson Creek, 0.2 redds/mile.

The Forest, in cooperation with the Oregon Department of Fish and Wildlife, the Washington Department of Fish and Wildlife, and the Confederated Tribes of the Umatilla Indian Reservation have been conducting bull trout spawning surveys within the Umatilla River, Walla Walla River, Tucannon River, Wenaha River, and Lookingglass Creek watersheds. The information is being used to establish index reaches to monitor bull trout spawning trends on the north half of the Forest. Preliminary results are displayed in Table II-13.

Table II-13
BULL TROUT REDD COUNTS
Umatilla National Forest

Proposed Index Reach	Index Reach Length (mi.)	Total Redds	
		1994	1995
Tucannon	7.5	121	100
Lookingglass Cr.	1.7	7	13
Touchet	5.4	81	27
Mill Creek	5.6	160	126
Walla Walla	11.0	140	107
Umatilla	7.2	38	22
Total	38.4	547	395

The Forest developed baseline habitat capability estimates for streams in the Camas watershed as part of the Camas watershed assessment. The habitat capability and management objectives are an important part of the Columbia Basin Anadromous Fish Policy Implementation Guide and Forest Plan ROD.

The Forest did screen all on-going activities for unacceptable risk to anadromous fish and their habitats. This process was not well documented across the Forest but did result in some project modifications that had a positive result on riparian vegetation. Proposed activities were held to a higher standard. No proposed activity could have a detrimental effect on degraded riparian habitat that would carry into the next year. This also will have a positive effect on riparian vegetation.

As part of the PACFISH implementation review process (also see MI 9 - Riparian Vegetation), the Forest reported results from the 1995 field season. Table II-14 shows the Forests FY '95 PACFISH implementation results.

Table II-14
FY '95 PACFISH IMPLEMENTATION SUMMARY
Umatilla National Forest

Project Status			PACFISH Status*		PACFISH Default		Watershed Analysis Complete	
Complete	In-Progress	Proposed	Y	N	RHCAs	Modified RHCAs	Y	N
67	116	34	199	12	173	13	29	217

* PACFISH standards and guidelines implemented on the project.

As seen in the Table, the Forest has generally implemented PACFISH requirements in projects.

Evaluation:

The Forest continues to rely heavily on State fisheries management agencies and Confederated Tribes of the Umatilla Indian Reservation monitoring efforts to determine anadromous fish population trends. The spawning escapement trend for both chinook salmon and steelhead trout over the last 2 years is in decline. The threshold of variability is crossed with a declining trend in population over a period of 5 years. There is cause for concern. The need to continue to monitor spawning index reaches as an indicator of population trend cannot be overemphasized.

E. WILDLIFE

MONITORING ITEM 23: Elk/Deer Habitat and Estimated Populations

Forest Goals, Desired Future Condition, and Outputs: Maintain habitat capability to support potential big game populations identified in the Forest Plan.

Monitoring Question(s): 1. Are the populations being maintained as predicted in the Plan? 2. Are the standards and guidelines being followed as required to meet habitat effectiveness index levels established for the subwatershed and (aggregated to the) management area? 3. Are the assumptions pertaining to the prediction of cover resulting from harvest and silvicultural activity valid? Are the assumed interrelationships between cover spacing, cover quality, open roads valid? 4. Are the assumptions relating elk habitat effectiveness to elk populations valid?

Threshold of Variability: 1. Elk habitat effectiveness indices, including discounts for open roads, is more than 10 percent below the objective in any given management area (by subwatershed) at any point in time. 2. Populations of a herd unit or winter range unit is more than 20 percent below state population index values as measured by total populations, bull/buck component, and cow/calf or doe/fawn ratios for a 3-year period.

Results/Findings:

Post season elk and deer populations statistics were derived from State wildlife agency surveys. Elk management objectives and 1995 estimated populations for management units in Washington and Oregon, containing all or portions of National Forest System Lands, are found in Table II-15

Table II-15
ELK MANAGEMENT OBJECTIVES AND 1995 ESTIMATES
Umatilla National Forest

Management Unit	Management Objectives		Est. 1995 Post Season Population		
Oregon*	Population	Bulls	Population	Bulls	Calves
Wenaha	4,250	15	1,900	17	23
Walla Walla	1,800	15	2,000	11	29
Mt. Emily	5,700	10	6,000	7	35
OR. North Total	11,750	13.3#	9,900	11.6#	29#
Ukiah	5,000	10	5,800	2	31
Desolation	1,300	10	1,400	6	48
Heppner	2,800	10	2,900	5	39
Fossil	700	10	800	6	46
OR South Total	9,800	10#	10,900	4.7#	41#
Oregon Total	21,550	11.4#	20,800	7.7#	35.8#

Washington**	Population	Bulls	Population	Bulls	Calves
Watershed	400	15	378	19	13
Touchet	500	15	397	18	19
Eckler	300	15	328	8	17
Tucannon	1,200	15	409	12	16
Wenaha	1,200	15	700	27	6
Lick Cr.	1,000	15	646	6	14
Mt. View	1,100	15	520	25	21
Washington Total	5,700	15#	3,378	16.4#	15.1#

* Source: Big Game, Oregon Department of Fish and Wildlife, 1995
**Source: Pat Fowler, Wildlife Biologist, Washington Department of Wildlife.
Average for the area.

Elk populations on the south half of the Forest (Ukiah, Desolation, Heppner, and Fossil Big Game Management Units) are collectively showing populations about 11 percent above State Management Objectives (SMO) for the management units. This is about a 7 percent decrease in the population on the south half of the Forest since 1994. Bull/cow ratios remain below SMO and calf/cow ratios were again low in 1995.

Combined elk numbers on the northern end of the Forest are about 16 percent below SMO in the Oregon units (Wenaha, Walla Walla, and Mt. Emily). This decrease primarily occurs in the Wenaha Unit where estimated populations are about 50 percent below SMO. Populations in Washington are about 41 percent below SMO in the Wenaha, Touchet, Eckler, Tucannon Watershed, Lick Cr., and Mt. View) units. With a 2 percent increase in Oregon and a 2 percent decrease in Washington from 1994, no change in the cumulative population has occurred on the north half of the Forest. Bull/cow ratios remain near the SMO but calf/cow ratios remain low in 1995.

The two southern big game management units, Heppner and Fossil, account for 60 percent of the SMO's for deer on the Forest and, therefore, have a disproportionate effect on population totals across the Forest. Generally, the population remains near or slightly above the SMO on the south end and below the SMO on the north end.

HEI is generally developed on a subwatershed basis. However, HEI was not conducted at this level in 1995 because timber sale preparation focused primarily on salvage operations within stands of dead and dying trees. The potential cover provided by these stands was lost previously through insect and disease outbreaks as described in the 1993 Monitoring Report. In 1995, a Forest-wide HEI analysis was conducted for the Timber Sale Program Information Reporting System (TSPIRS) report. Harvest activities reduced the total cover on the Forest by approximately 2,550 acres resulting in about 535,000 acres of cover habitat across the Forest. No new roads were built, but 33.2 miles of road were re-constructed, 68.7 miles of road were obliterated, and 58 miles of road were closed by gate or barricade. The analysis resulted in a HEI index of 0.63 for the entire Forest.

The Districts on the Forest continue to implement Access and Travel Management (ATM) Plans as funding becomes available. Monitoring element #47 discusses the specific aspects of Access and Travel Management (ATM) implementation in detail. The expectation is that the full implementation of ATM plans on the Districts will raise the Habitat Effectiveness Index (HEI) for roads across the Forest.

Standards and guideline for cover, cover quality, spacing and open road density are being addressed through the implementation of the "Eastside Screens" (Regional Forester Eastside Forest Plan Amendment #2, June 1995) and implementation of the ATM plans at the project level. During the process, opportunities were explored to reduce road densities and improve cover quality in the analysis area for elk and deer.

The Washington Department of Wildlife through a cooperative effort with the Blue Mountains Elk Initiative has been conducting a calf mortality study on the north end of the Forest. This study was conceived in an attempt to answer the questions dealing with the consistent low calf survival/recruitment. The study continued through 1995. Results of the study are expected in late 1996 or early 1997.

Evaluation:

A summary of the estimated population and herd structure for elk and deer in 1995 can be found in Table II-16 for management units on the Forest in Washington and Oregon. Overall, elk populations within the Forest remain about 8 percent below the management objective for 1995. Population trends on the Forest have generally remained stable (within 10% of the MO) over the past few years. Bull/cow ratios averaged across the area are near the average management objective for the Forest in 1995. Average calf/cow ratios remain low across the Forest.

Table II-16
ELK AND DEER SUMMARY - 1995
Umatilla National Forest

	OREGON		WASHINGTON		TOTAL	
ELK	Mgt. Units	UMA NF	Mgt. Units	UMA NF	Mgt. Units	UMA NF
Elk Population SMO Elk Population Estimate % Difference	21,550 20,800	16,570 16,432	5,700 3,378	4,486 3,016	27,250 24,178	21,056 19,448 -8%
Bull/100 Cows SMO Bull/100 Cows Estimate	11 7.7	11 7.7	15 16.4	15 16.4	13.2# 12.1#	13.2# 12.1#
Calf/100 Cows Estimate	35.8	35.8	15.1	15.1	25.5#	25.5#

DEER	Mgt. Units	UMA NF	Mgt. Units	UMA NF	Mgt. Units	UMA NF
Deer Population SMO Deer Population Estimate % Difference	45,100 41,100	35,493 32,469	4,100 4,000	3,227 3,148	49,200 45,100	38,720 35,617 -8%
Buck/100 Does SMO Buck/100 Does Est.	14 13.5	14 13.5	16 15.1	16 15.1	15.0# 14.3#	15.0# 14.3#
Fawn/100 Doe Est.	38.4	38.4	16.4	16.4	27.4#	27.4#

Average for the area.

The Forest-wide elk population total is within the 20 percent threshold of variability. However, concern exists on the north end of the Forest in the Wenaha (OR), Wenaha (WA), Tucannon, Lick Creek, and Mountain View management units, which are far below the 20 percent threshold of variability. Speculation about low elk populations on the north end of the Forest centers around two probable scenarios, 1) a potential change in movement patterns that result in elk being harvested/censused in both Washington and Oregon. The change in movement is thought to be the result of lost or reduced forage quality on National Forest land and improved quality on cropland. And, 2) a high natural mortality on elk and elk calves. This is supported by the continued low trend in calf survival in the units on the north end of the Forest with Washington having calf/cow ratios of 15 calves. The remaining management units on the Forest are within the 20 percent threshold.

Deer populations, examined at the Forest level, remain about 8 percent below the management objective for 1995. Population trends on the Forest have generally remained stable but have been consistently below the management objective for the past few years. Buck/doe ratios averaged across the area are near the management objective for the Forest in 1995. Average fawn/doe ratios are low across the Forest. Overall, Forest-wide population totals are within the 20 percent threshold of variability. However, there is concern on the north end of the Forest where management units are generally far below the 20 percent threshold of variability. The remaining management units on the Forest are within the 20 percent threshold. The low trend in fawn survival continues in the units on the north end of the Forest with Washington having fawn/doe ratios of 16. The reasons for the low numbers in the deer population on the north end of the Forest are generally the same as those previously stated for low elk populations.

Both State wildlife agencies continue to adjust hunting season structures to manipulate populations and affect herd structure for deer and elk. Improvements in bull/cow ratios for elk have occurred over the years in units where "spike only" hunting seasons have been instituted. Proposed changes in 1996 include additional spike only hunts, second seasons, and limited entry hunts.

The HEI model or similar modeling will be used at the project level once the planning process for "green" sales is resumed. Due to the inherit problems with the current HEI (see previous monitoring reports), the Forest will be testing the new version of the Elk Vulnerability Model (Ver. 1.00) in 1996.

MONITORING ITEM 24: Old Growth Tree Habitat

Forest Goals, Desired Future Condition, and Outputs: Maintain the number, size, and distribution of old growth tree habitat to support viable populations of mature/old growth associated wildlife species, and to provide for diversity of vegetative conditions. Provide sufficient dedicated mature/old growth tree habitat to maintain no less than 149 pairs of pileated woodpeckers, 101 pairs of pine marten, and 53 pairs of northern three-toed woodpeckers.

Monitoring Question(s): 1. Are the dedicated old growth units suitable for pine marten, pileated and northern three-toed woodpecker habitat? Are the units being occupied/used by management indicator species as predicted? 2. Are the dedicated old growth habitat units identified as "capable" habitat progressing as predicated toward "suitable" old growth tree habitat? 3. Are the standards and guidelines (including the number, size, and spacing of units) being followed as required to meet habitat levels established for the management area? 4. Are sufficient numbers and diameter classes being left adjacent to the designated old growth habitat units as feeding habitat for pileated woodpeckers? 5. Are the dedicated old growth units being used by the indicator species, if they are suitable?

Threshold of Variability: 1. All designated sites meet the specifications identified in the Plan and the components that provide effective habitat fall below desired levels. 2. Estimated populations are more than 10 percent below the Plan objective for a 5-year period. 3. The inventoried old growth acreage remaining or the amount being converted in a 5-year period deviates from the planned amount by more than 10 percent.

Results/Findings:

Because of limited funding in 1995, none of the dedicated units of old growth were formally inventoried to determine suitability or the movement of capable stands toward suitability. No determination of occupancy or use by management indicator species was made. Other inventoried old growth was not examined.

Some cursory field reviews occurred on a few sites on the Walla Walla and Pomeroy Districts. Those units of dedicated old growth forest habitat on the Walla Walla District appeared to be suitable for the appropriate indicator species. Higher levels of tree mortality has significantly increased the dead wood component in most high elevation units. Habitat is being used by indicator species. On the Pomeroy District, suitable units informally inventoried showed signs of use by indicator species. Capable stands showed little or no sign of use by the pileated or three-toed woodpecker.

The standards and guidelines in the Forest Plan (including number, size, and spacing of units) and those identified in the Regional Forester's Forest Plan Amendment #2 (6/95 "Eastside Screens"), pertaining to old growth tree habitat were followed during project area analysis.

On the North Fork John Day District, old growth tree habitat was evaluated for the Oasis Timber Sale. "Eastside Screens" were applied and, because of the difference between existing and potential vegetation, a site-specific Forest Plan Amendment was prepared to meet site objectives. No Forest Plan Dedicated Old Growth (C1) was affected and late/old structure (LOS) was still maintained on the site.

Evaluation:

Generally, habitat suitability for the indicator species in the dedicated old growth units has most likely been reduced over the past few years because of recent insect outbreaks across the Forest. Trends in use or occupancy of these units by indicator species would be directly related to the amount of area affected and the severity of change occuring within the stand. Each of the dedicated old growth units need to be re-inventoried and re-evaluated to determine the effects from past insect and disease damage. The other inventoried old growth needs to be re-examined. Inventory for management indicator species within these units should also be re-instituted.

MONITORING ITEM 25: Dead and/or Defective Tree Habitat

Forest Goals, Desired Future Condition, and Outputs: "Protect and maintain the number, size, and distribution of dead and/or defective trees (snags and logs) to meet habitat capability objectives . . ."

Monitoring Question(s): 1. Are dead and defective trees being left in appropriate numbers and sizes with proper distribution following timber sales, firewood cutting activities, post sale treatments, and other management activities as outlined in the standards and guidelines? 2. Are sufficient numbers, size classes and distribution of green replacement trees and down logs being left following all management activities? 3. Are the management indicator species (primary cavity excavators) occupying the habitat as predicated and in the anticipated numbers? 4. Do current standards and guidelines meet the needs of the species?

Threshold of Variability: 1. More than 10 percent of the surveyed areas have less than 90 percent of the prescribed trees, snags, and logs present. 2. Expected primary cavity excavators are absent from more than 10 percent of the surveyed sites, or are 80 percent or less of predicted numbers.

Results/Findings:

Monitoring of dead and down tree habitat was generally at low levels and occurred in several forms during 1995. As in the past, the type of monitoring varied between districts based on project implementation and issues being addressed.

Additional snag data was collected in 1995 at Pomeroy, using the district's grid-fixed plot sampling technique employed in previous years. Results indicate that snag densities are at or above Forest Plan standards and guidelines for the grand fir biophysical group. On other forest vegetation groupings, initial transect results suggest that snag densities for larger diameter classes (>20" dbh) are below or barely meeting Forest Plan requirements while densities of smaller classes are meeting or exceeding recommended levels. However, district biologists state that additional transects are needed to make more conclusive estimates.

Dead and defective tree habitat was inventoried through the project analysis process. Results from inventories of the project area show that snag standards and guides from the "Eastside Screens" (Regional Forester's Forest Plan Amendment #2, June 1995) and Interim Snag Guidance for Salvage Operation (Umatilla NF 4/14/94) are being met at the project level. An example of pre and post marking, snag data for the Swampy and Curley Sales on the Walla Walla District is shown below.

Table II-17
PRE AND POST MARKING SNAG LEVELS IN THE SWAMPY AND CURLEY SALVAGE SALES
Umatilla National Forest

	Existing (snags per acres)		Post Marking (snags per acre)	
Timber Sale Unit	Total	>20" dbh	Total	>20" dbh
Swampy #3	19.2	2.2	8.3	1.7
Swampy #4	12.2	1.7	3.1	0.9
Swampy #5	18.5	7.1	2.7	1.1
Swampy #6	61.0	2.6	4.4	0.9
Curley #4a	57.3	6.1	14.4	0.5
Curley #4b	74.9	1.7	5.2	0.3
Curley #4c	31.9	0.0	9.7	0.0

Generally, the post marking levels meet or exceed "Eastside Screens" and the Umatilla interim direction. Snag levels greater than 20" diameter at breast height (dbh) were not met in Curley #4c because of the lack of trees in this diameter class at the site.

"Green" replacement trees and down wood requirements were also analyzed during the project development phase. Standards and guidelines from the Forest Plan ("Eastside Screens") and Interim Snag Guidance for Salvage Operation are generally met.

The North Fork John Day Ranger District conducted informal walk through surveys on two units of the Indianberry Timber Sale. Findings showed that short-term wildlife tree objectives were being met.

Implementation monitoring was conducted on the East End Salvage Sales (Heppner Ranger District) after sale layout and marking to insure adequate wildlife trees were retained. The intent was to leave 24 live trees per acre where available and 2.3 dead trees per acre to meet wildlife needs. As a result of the widespread mortality within these units, the live trees component averaged 16 trees/acre. Monitoring indicated that the dead leave tree component was exceeded with an average of three trees/acre. It is recognized that logging practices and activity fuels treatments have the potential to reduce the dead tree component further. Monitoring will need to occur after harvest to determine the final number of trees which remain available to wildlife.

An ongoing effort of monitoring snags and down material in fuelwood areas is occurring on the Heppner and Walla Walla Districts. Cursory results indicate the lack of sufficient numbers and distribution of snags greater than 16" dbh to 18" in the sale areas.

Evaluation:

Continuation of applying the current standards and guides for snags, down material and "green" tree replacement should meet the need of primary cavity excavators in the short term. Generally, 90 percent of the required retention level is being meet. However, additional post operation monitoring is needed to confirm that appropriate snag levels remain after implementation. In addition, within fuelwood areas, most Districts have noted a concern for maintaining sufficient numbers of larger snags. Monitoring should continue in firewood cutting sites as funding becomes available.

Evidence indicates some difficulty in maintaining required levels of large snags in stands lacking large trees. This could be an increasing occurrence across the Forest because of the wide spread damage to medium and large trees from past insect and disease outbreaks. In the short term, this has been a bonus to primary cavity excavators, but in the long term, it could effect populations of primary cavity excavators that need the larger diameter trees for nesting.

Because of current funding levels, no data was collected to determine occupancy and numbers of primary cavity excavators for this type of habitat. However, because of the apparent abundance of snags from past insect and disease attacks on much of the Forest, populations of primary cavity excavators are expected to increase where snag levels are high.

MONITORING ITEM 26: Pileated and Northern Three-toed Woodpecker Populations

Forest Goals, Desired Future Condition, and Outputs: Maintain sufficient mature/old growth tree habitat and adjacent feeding areas to provide for viable populations of pileated woodpeckers.

Monitoring Question(s): 1. Are pileated and three-toed woodpeckers using the provided C1 and C2 habitats and adjacent feeding areas as projected? 2. Are the "dedicated" old growth and "managed" old growth lodgepole pine concept providing suitable habitat, with snag sizes and distribution adequate to provide for viable populations of pileated and three-toed woodpeckers? 3. What are the trends in populations for each species?

Threshold of Variability: 1. Greater than a 10 percent variance from expectations in woodpecker occupancy, use, or production within a 5-year average. 2. The number of larger diameter dead lodgepole (over 12") is more than 10 percent below the objective in any given allocation zone at any point in time. 3. Populations are on a downward trend.

Results/Findings:

Formal inventories and monitoring using the established protocol for pileated woodpecker or northern three-toed woodpecker in dedicated old growth units (C1 and C2 habitats) were not conducted in 1995.

Habitat surveys were performed on the North Fork John Day Ranger District. Surveys were completed to determine presence of these species in conjunction with proposed salvage sale planning areas. One occupied nest tree was located within the planning area. The nest tree, foraging structures, and some possible nest trees were marked for retention.

Pomeroy began monitoring pileated woodpecker nests in 1994 and continued in 1995. Five sightings were reported (two north of Alder Thicket Campground, two near Bear Creek, south of Driveway Ridge, and one near Stevens Ridge Seed Orchard). Monitoring is insufficient at this point to draw any population trend conclusions.

Evaluation:

Insufficient information was collected to determine the variance of occupancy, production, or trend within dedicated or managed old growth units. Systematic monitoring for pileated woodpeckers, three-toed woodpeckers, and old growth habitat has not been conducted to the extent intended in the past few years. This is because of the continued decline in funds to perform this task. As funding becomes available, old growth, C1 and C2 units and pileated and three-toed populations will be monitored on the Forest.

MONITORING ITEM 27: Pine Marten

Forest Goals, Desired Future Condition, and Outputs: Maintain viable populations of pine marten in the Forest.

Monitoring Question(s): 1. Are the dedicated old growth habitats, subalpine

forest, and lodgepole pine areas suitable and utilized by pine marten as projected in the Plan? 2. Are the reproductive parameters and population demographics of pine marten indicative of a stable or improving habitat condition? Is the habitat providing for viable population of pine marten?

Threshold of Variability: 1. More than 20 percent of the identified pine marten habitat is unused within the expected distributional and use zones. 2. More than a 20 percent variance from accepted norms for reproductive parameters. More than 20 percent variance from anticipated distributions.

Results/Findings:

Inventory and monitoring for pine marten was performed in conjunction with Forest Carnivore Surveys. Other species targeted for detection include wolverine, fisher, and lynx. Methods include winter snow track surveys and camera surveillance at bait stations. Surveys in 1995 were limited to the North Fork John Day District and the Pomeroy District. About 169 miles of snow track surveys were conducted. No tracks of marten or target carnivores were detected. Three camera-bait stations were set up but no marten or target carnivores were detected.

The evaluation of dedicated old growth forest habitat for marten use is conducted during the analysis of a project area. Results of findings are documented in the project Biological Evaluations and or Biological Assessments.

Evaluation:

Insufficient information was collected to determine the variance and distribution of populations for pine marten on the Forest.

The amount of inventories performed for pine martens continues to be reduced from the number of inventories conducted in 1992 and 1993 primarily due to the lack of funding for inventory and monitoring to established protocols. Until funding becomes available, surveys will be limited to the project area or on an opportunistic bases. This type of sporadic and inconsistent funding will not lead to any conclusive information on reproductive parameters, population demographics, or determination of populations viability.

Districts will continue the evaluation of potential habitats and their use by pine marten through the analysis of the project area. Protocols for Biological Evaluations and Biological Assessments will be followed and findings will be documented as described in FSM 2670 (Region 6).

MONITORING ITEM 28: Threatened/Endangered/Sensitive Wildlife and Fish Species

Forest Goals, Desired Future Condition, Outputs: Protect, provide, and/or manage suitable habitat for the perpetuation and recovery of bald eagles, Snake River Chinook Salmon, and peregrine falcons. Participate in the re-establishment of four pairs of bald eagles, four pairs of peregrines in the Blue Mountain zone, and join in the multi-agency effort for the Snake River Chinook Salmon Recovery Plan, including any species listed in the future. Identify and manage any winter roosts sites for bald eagle or potential nest sites for peregrine falcon of bald eagles on National Forest lands. Identify and manage all winter feeding areas and food sources on Forest lands for use by bald eagles. Protect, provide, and/or maintain suitable habitat for all sensitive species occurring on the Forest.

Monitoring Question(s): Bald Eagles: 1. Are potential habitats, including nest sites, communal roosts, and associated foraging habitats being identified and planned to assure species recovery as specified in the Recovery Plans and in the Plan? 2. Are wintering populations stable or increasing? Peregrine Falcons: 3. Are nesting and associated foraging habitats being identified? 4. Are potential nest habitats identified and being managed to maintain suitability? Chinook Salmon: 5. Are terms and conditions as identified by NFMS being followed? Sensitive Species: 6. Are potential habitats being identified and/or protected to maintain identified species and to insure management standards are being met? 7. Are raptor nest sites being protected as outlined in the Forest Plan?

Threshold of Variability: 1. Any nest or roosting sites compromise as a result of Forest Service management activities. 2. Any delays in developing individual site management plans for reintroduction sites or for active nests. 3. Any T/E/S populations compromised as a result of Forest Service management activities.

Results/Findings:

Bald Eagles

The Rail Canyon bald eagle nest (discovered in 1994) was monitored to a limited extent in 1995. Several visits to the nest area occurred throughout the breeding season. Observations included two adult eagles in the area, chicks in the nest, and two young fledged by mid summer.

Wintering bald eagles surveys on the North Fork John Day District continued in 1995. The same routes and methods were used as in the original study (Frank Issiac 1991-1992). The numbers of wintering bald eagles were consistent with previous surveys. No new night roosts were found and no birds were detected after March.

Incidental bald eagle observations were also recorded on the other Districts on the Forest. However, no communal roosts or nest sites have been identified. No formal surveys for bald eagle nest sites have been conducted on the Forest.

Peregrine Falcon

Aerial surveys for peregrine falcons were conducted on portions of the Heppner and North Fork John Day Ranger Districts. Potential habitat in the area has been surveyed in cooperation with the Oregon Department of Fish and Wildlife over the past few years. No peregrines were seen, but numerous prairie falcons were observed during the inventory.

No known nest sites for peregrine falcons occur on the Forest. Potential nesting habitat for peregrine falcon was identified and rated on the Forest in 1991-1992. Inventory/monitoring of identified habitat, with the established protocol, has not been conducted on the Forest.

Snake River spring/summer and fall chinook salmon

Informal consultation with the National Marine Fisheries Service (NMFS) was completed on all on-going and proposed "May Effect" projects in 1995 using an interagency streamlined consultation process. The NMFS concurred with the Forest Service determination of "Not Likely to Adversely Affect" on all projects that were submitted. All proposed projects in Snake River basin watersheds were designed to meet PACFISH standards and guides. On-going projects were screened for unacceptable risk to Snake River salmon or their critical habitat. The terms and conditions as identified by NMFS are being followed.

Sensitive Species

Wolverine: Inventory for wolverine is performed in conjunction with Forest Carnivore Surveys. Other species targeted for detection include pine marten, fisher, and lynx. Methods include winter snow track surveys and camera surveillance at bait stations. Surveys in 1995 were limited to the North Fork John Day District and the Pomeroy District. About 169 miles of snow track surveys were conducted. No tracks of wolverine or target carnivores were detected. Three camera-bait stations were set up but no wolverine or target carnivores were detected.

Prebles's shrew: No inventory or monitoring for Prebles's shrew was conducted on the Forest in 1995.

Ferruginous hawk: No inventory or monitoring for ferruginous hawks was conducted on the Forest in 1995.

Neotropical birds: Monitoring of neotropical birds on the Forest for 1995 is reported in the next section - MI 29, Plant and Animal Diversity.

Townsend's big-eared bat: The only inventory for Townsend's bat on the Forest was conducted on the North Fork John Day District. The effort was a challenge cost-share project with Eastern Oregon State College. Survey methods include the use of a Anabat II echolocation detector at the entrance of adit mines and selected sites (large snag habitat) within proposed timber sales. Detected echolocation sounds were recorded and sent to Eastern Oregon State College for analysis. Surveys were conducted from June through July. Evidence of bat use (droppings) in the mines was not observed. However, the analysis of recordings revealed the detection of Townsend's big eared bats (*Plecotis townsendii*) in the area.

Evaluation of potential habitats for sensitive species are conducted during the analysis of a project area. The current methodology for surveying sensitive species is through biological evaluations (BEs). The procedure to complete a BE requires a pre-field review of existing information, field reconnaissance of the project area, and an analysis of the potential direct and indirect and cumulative effects of the proposed project activity. Biological evaluations have been prepared on all districts for all proposed activities which may affect habitat for sensitive species. Habitats are identified and consider during the analysis process. Results of finding are documented in the project Biological Evaluations and or Biological Assessments. Management activities on the Forest were mitigated or did not effect sensitive wildlife species.

Blue Mountain Cryptochia

Habitat surveys for the Blue Mountain Cryptochia were conducted in 1992. These surveys accompanied a larger survey project that was lead by the Wallowa-Whitman National Forest. The known range of the Blue Mountain Cryptochia, formerly known from only one siting in the 1950's, was expanded considerably as a result of these surveys. This new information was considered by Betts and Wisseman (1995) in their recommendation that the species be delisted.

Redband Trout

No unknown isolated populations of inland native rainbow trout were identified during the stream inventory efforts of 1995. Redband trout have been identified on the Forest in the past. The meristic characteristics were typical of redband trout for all fish examined in a 1993 genetic identification study in the Lookingglass drainage contracted with Oregon State University (Currens 1993). Fish from Little Lookingglass Creek and Swamp Creek were identified as inland redband trout. The study identified a unique rainbow trout population above a waterfall on Jarboe Creek that was similar to isolated populations of redband trout not commonly found in the Columbia River drainage. Potential populations of inland redband trout will continue to be examined within budget constraints.

Snake River steelhead trout

Habitat for Snake River steelhead trout, which are believed to be of the same species with native inland rainbow trout, is identified during stream inventory. Over 80 percent of the fish bearing streams of the Snake River portion of the Forest have been inventoried since 1990 and habitat for sensitive steelhead trout has been identified.

Bull Trout

The Forest is participating in a multi-year bull trout study with the goal of providing the scientific information needed to develop a protection and recovery plan for bull trout within the mainstem Columbia River and its subbasins. Cooperators in the study include Bonneville Power Administration, Oregon Department of Fish and Wildlife, Portland General Electric, and Confederated Tribes of the Warm Springs and Umatilla Indian Reservations. The recent focus of the study has been on determining the genetic characteristics and structure of meta-populations of bull trout within the Columbia basin and determining life history characteristics including migration patterns, spawning timing, and age at maturity. Work in the future will look at population densities and season of use of critical habitats at selected life stages as well as ecological relationships between bull trout, anadromous species, and other prey or sympatric species.

Evaluation:

Continue monitoring the population/habitat trends for sensitive species and others of concern populations and habitat trends.

Inventory for TES species on the Forest outside project areas, generally consists of incidental sightings and limited surveys. This is because of the lack of funding for inventory and monitoring to established protocols. Until funding becomes available, surveys for species will be limited to the project area or on an opportunistic bases. Trend information will likely not be available because of the limited analysis across the Forest and the lack of repeated data collection for an area.

Districts will continue the evaluation of potential habitats for threatened, endangered, and sensitive (TES) species during the analysis of the project area. Protocols for Biological Evaluations and Biological Assessments will be followed and findings will be documented as described in FSM 2670 (Region 6).

F. DIVERSITY

MONITORING ITEM 29: Plant and Animal Diversity

Forest Goals, Desired Future Condition, and Outputs: Maintain native and desirable introduced or historic plant and animal species and communities. Provide all successional stages of terrestrial, aquatic, and edaphic plant associations in a distribution and abundance to assure species diversity and viability. A desired future condition is to establish the local needs of management indicator species, rate species, and the proportion of seral stages that allows for natural diversity. Continued long-term monitoring will be necessary to establish critical relationships and thresholds for the abundance of the various successional stages, their distribution, and specific species requirements for sensitive species.

Monitoring Question(s): 1. What is the present distribution and proportion of successional stages by plant associations? a) How do they compare to past distributions? b) What distribution and proportion is expected in the future? c) What are the long-term trends? d) Does the distribution, proportion, and absolute amount provide viable habitat for management indicator species, rare species, and biological diversity? 2. How has habitat capability been changed? 3. What is the present status of sensitive species? 4. What are the trends in overall species diversity on the Forest?

Threshold of Variability: There is no established thresholds for plant and animal diversity on the Forest. However, thresholds and requirements of individual management indicator species (pileated woodpeckers, pine martens, northern three-toed woodpeckers) have been established and will be monitored. Present proportions or acreages by successional stages can also be used to compare changes in plant diversity with the implementation of the Forest Plan. As monitoring activities accumulate information and data by individual planning basins (watersheds), trends in animal and plant diversity can be developed and evaluated.

Results/Findings:

The first several monitoring questions were addressed through the Ecosystem Analysis process at the watershed scale (also known as Watershed Analysis). The analysis is intended to begin dealing with issues involving forest sustainability and aquatic, riparian and terrestrial biodiversity. During FY '95, the Forest completed another large-scale ecosystem analysis for the Wall Creek Watershed (Heppner Ranger District). Wall Creek amounts to about 95,200 (National Forest) acres or 7 percent of the Forest.

Components and processes within ecosystems are in constant change. In conditions unaffected by man, ecosystems maintain a Range of Variability (often referred to as historic range of variability or HRV). Historically, the rate and scale of change has allowed native plant and animal species to gradually adapt to new conditions. Over the past 100-150 years, environmental change has accelerated due primarily to modern man's activities. Past management practices, fire suppression, and grazing prior to the 1930's have moved many elements and processes outside their HRV.

Changes in plant association groups (PAGs) composition and structure were assessed for subwatersheds in the Wall Creek drainage. Figures F thru I show the comparison of Existing Condition and HRV by structural stages for National Forest lands in the area. As seen in the Figures, most existing forest structural conditions are outside of or at the extremes of the ranges; some structural classes fall within HRV.

Figure F

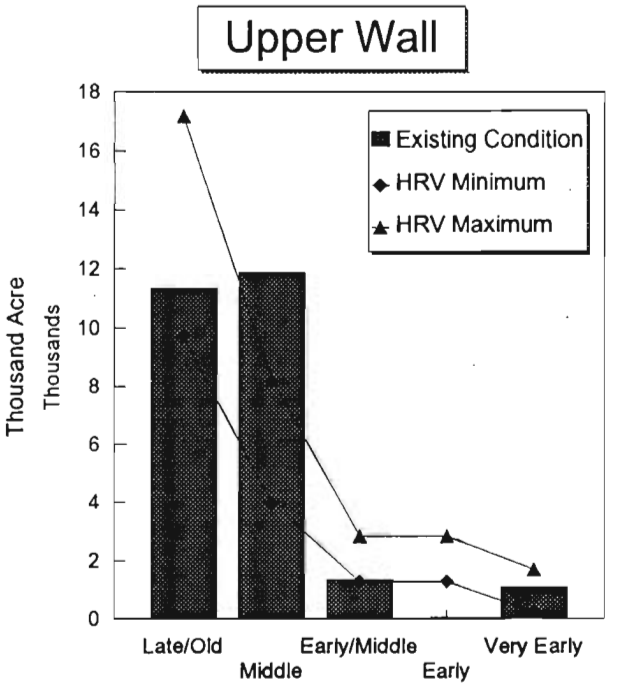


Figure G

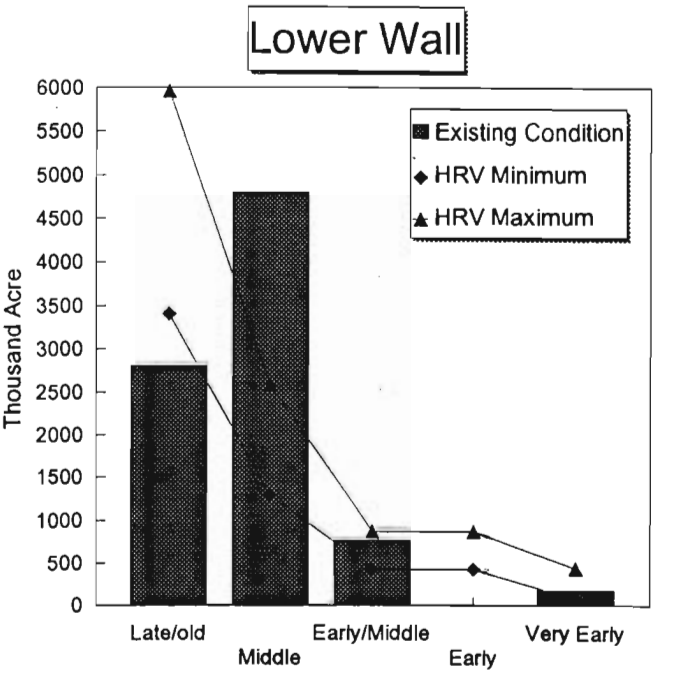


Figure H

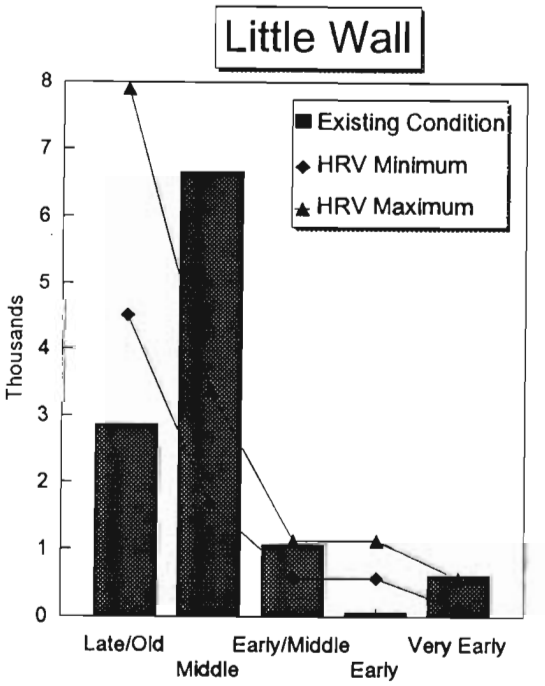
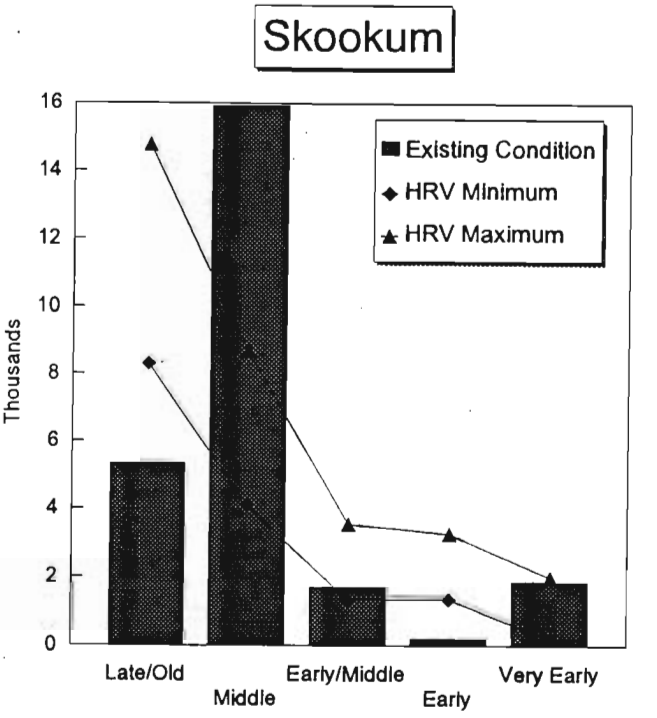


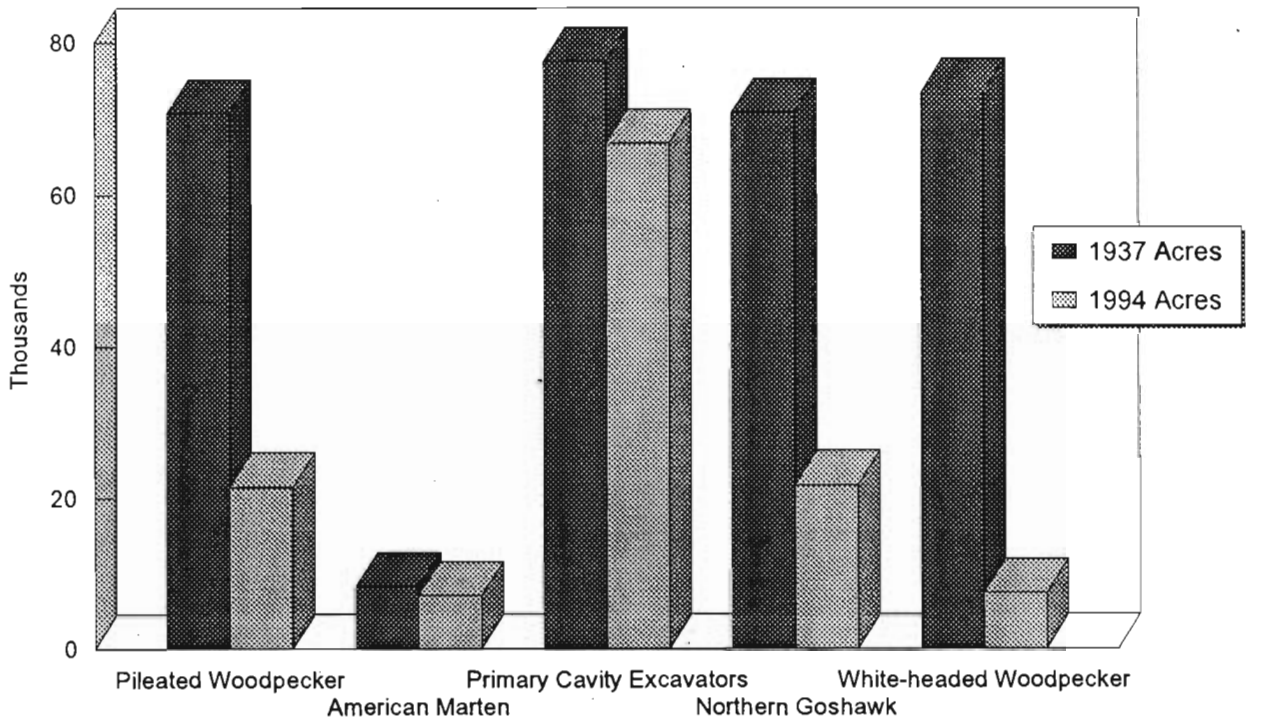
Figure I



Findings from the Wall Creek analysis are similar to other ecosystem analysis results reported on the Forest. In all Wall Creek subwatersheds, existing middle structures exceeded HRV and a shortage of late/old structural acres appeared in three of the four subwatersheds. Because HRV is an estimate for predicting sustainability, concerns arise when existing conditions fall outside of or at the extremes of the HRV range. The recommended restoration action for the Wall Creek Analysis area is generally to begin treating the middle and other structures to enhance appropriate structural stages and to promote desired seral species composition (appropriate for the PAG).

Vertebrate habitat (of species of concern) has changed substantially in the Wall Creek Analysis Area. Less old growth habitat is currently available for dependent species (such as shown in Figure J) than was available in 1937. Based on a comparison of 1937 and existing condition maps, habitat for pileated woodpeckers, white-headed woodpeckers, and goshawks has declined substantially in less than 60 years. Figure J shows the changes in habitat availability within the Wall Creek drainage from 1937 to 1995 on national forests.

Figure J
CHANGES IN HABITAT AVAILABILITY - OLD GROWTH
Species of Concern



Plants:

Six sensitive plant species were added to the Forest's Sensitive Plant Species List during 1995. Of these six species, three were new-to-Forest documentations. The other three resulted from changes in sensitive lists maintained by the Natural Heritage Programs of either Oregon or Washington. This information is presented in Table II-18 below (also see MI 20, Plants - T,E,S):

Table II-18
SENSITIVE PLANT SPECIES ADDED TO
FOREST PLANT LIST IN 1995

Taxon	Common Name	District	Number of Populations	Basis of Addition to List
Carex backii	Back's Sedge	Walla Walla and Pomeroy	1 per district	Change in species status on ONHP list
Ranunculus populago	Mountain Buttercup	Pomeroy	1	Change in species status on WNHP list
Trifolium douglasii	Douglas' Clover	North Fork John Day	6	Change in species status on ONHP list
Calochortus nitidus	Big-Podded Mariposa	Pomeroy	1	New species for Forest; previously thought to have been extirpated from Washington
Carex hystricina	Porcupine Sedge	Pomeroy	1	New species for Forest; previously thought to have been extirpated from Asotin County
Silene spaldingii	Spalding's Silene	Pomeroy	2	New species for Forest

Active site records for currently-listed sensitive plant species show that 632 sensitive plant sites occur on the Forest. The distribution of sensitive plant species and documented sensitive plant sites is presented in the table below. Because of periodic delistings and other factors, trend information is difficult to interpret.

Table II-19
CURRENTLY LISTED SENSITIVE PLANT SPECIES
AND DOCUMENTED OCCURRENCES BY DISTRICT

District	Number of Sensitive Species	Number of Sensitive Plant Sites
Heppner	2	335
North Fork John Day	8	54
Walla Walla	8	114
Pomeroy	15	129

Species-encounter lists have been compiled as a required component of all sensitive plant species surveys conducted on the Umatilla National Forest since 1982. As the area that has been surveyed increases, the list of plant species had also increased. Forest wide, 59 species were added to the list during 1995 bring the total number of plant taxa known to occur on the Forest to 1,289.

At the end of the 1995 field season, species lists by district were as follows: Heppner, 871 species; North Fork John Day, 923; Walla Walla, 933; and Pomeroy, 887 species. Increases in the number of species on each district are as follows: Pomeroy, +76; Walla Walla, +63; North Fork John Day, +36; and Heppner, +19.

One measure of the floristic condition of a district is the number of native species versus the number of introduced species. Table II-20 shows the number of native vascular plant species (native to North America) for each district.

Table II-20
FLORISTIC BIODIVERSITY OF VASCULAR PLANT SPECIES
Umatilla National Forest

District	Heppner	North Fork John Day	Walla Walla	Pomeroy
No. of Native Vascular Plant Species Known	(732) 734	(780) 815	(751) 798	(684) 750
Percent of District Species Native to North America	(86%) 86%	(88%) 88%	(86%) 86%	(84%) 85%

Figures in parentheses indicate similar figures from 1994.

The table provides some baseline information for determining floristic biodiversity of vascular plant species across the entire Forest. All districts support approximately the same percentage of native plant species. However, the land-base area occupied by non-native species, including noxious weeds is not reflected in the table.

Animals:

The Monitoring Avian Productivity and Survivorship (MAPS) program is a cooperative effort between public and private agencies and individuals across North America. The program is coordinated in Region 6 by the Institute for Bird Populations at Point Reyes Station, California. The purpose of the MAPS program is to provide annual regional indices and estimates of adult populations size, post-fledgling productivity, adult survivorship, and recruitment into the adult population for various landbirds species. The Umatilla has 6 MAPS stations with 10 mist net sites and 9 point count sites at each station. The program was initiated in 1992 and is expected to conclude in 2001. The results of the effort in 1994 and the previous two years can be found in the Annual Report for 1994 (1995, B.L. Walker, D.F. DeSante (The Monitoring Avian Productivity and Survivorship (MAPS) Program in Region 6 of the USDA Forest Service)).

Stations were selected to represent plant communities and successional stages in the Northwest region of the United States. Table II-21 lists the stations and habitats monitored on the Umatilla.

Table II-21
PLANT COMMUNITIES AND SUCCESSIONAL STAGES
for the six MAPS Stations
Umatilla National Forest

Station #	General Habitat Type	Successional Stage
BUCR 151	Dense dry mixed coniferous lacustrine forest	PM
BRME 152	Disturbed dense mixed coniferous forest, riparian alder corridor	PM
FRME 153	Semi-wet dense mixed coniferous forest, wet open swampland	M
CORI 154	Dense mixed coniferous rain forest, riparian alder corridor	PS
BMME 155	Wet open meadow, riparian alder corridor, dense mixed coniferous forest	PM
PHCR 156	Thinned mixed coniferous forest, dense mixed coniferous forest	PM

In 1994, a total of 2,920.4 net-hours (net-hr.) were accumulated. This resulted in 1,156 birds banded and 349 birds recaptured on the six MAPS stations on the Forest. In addition, 199 birds (including 42 hummingbirds and 81 golden-crowned kinglets, of which most were hatching-year birds) were captured but released unbanded. Therefore, there was a total of 1,704 captures of 43 species in 1994. This was up slightly from 1993 values but lower than 1992. A summary of captures for 1992 through 1994 can be found in Table II-22

Table II-22
RESULTS OF MIST-NET CAPTURES
at the six MAPS Stations
Umatilla National Forest.

	1992				1993				1994			
Station #	Total Net Hours	Captures* Adult	Captures* Young	Total # Species	Total Net Hours	Captures* Adult	Captures* Young	Total # Species	Total Net Hours	Captures* Adult	Captures* Young	Total # Species
BUCR 151	487.6	124	267	28	428.2	107	94	20	415.7	103	113	24
BRME 152	283.6	241	444	27	283.6	208	90	25	424.0	193	131	25
FRME 153	384.5	106	282	23	376.5	115	54	25	455.0	97	37	24
CORI 154	480.0	151	182	31	485.5	157	105	29	482.3	176	72	30
BMME 155	412.2	277	445	29	365.6	242	184	27	410.7	203	239	34
PHCR 156	390.1	249	111	32	326.2	192	73	26	444.5	138	80	29

* /600 Net-Hr

Stations with the greatest amount of meadow habitat generally supported the greatest number of breeding adults (BMME 155 and BRME 152). The stations with the most coniferous trees and least meadow (BUCR 151) seemed to support the lowest number of adults.

The capture rates (per 600 net-hours) of adults in 1994 at the six stations were highly correlated with adult capture rates at the same sites in 1993 ($r = 0.878$, $slope = 0.756$, $df = 4$, and $P = <0.05$) but lower than 1992. This would reinforce the idea that the relative total abundance of breeding birds at the various stations on the Umatilla remained very stable over all three years. Although, as in 1993, a decrease in adult populations size may have occurred in 1994.

Overall, the most abundant breeding species (in decreasing order) at the Umatilla MAPS stations combined were Mac Gillivray's warbler, dark-eyed junco, Townsend's warbler, Wilson's warbler, Swainsons thrush, ruby crowned kinglet, yellow-rumped warbler, Lincoln's sparrow, chipping sparrow, orange-crowned warbler, and dusky flycatcher. The five most common breeding species for each of the past 3 years are listed in Table II-23.

Table II-23
FIVE MOST COMMON SPECIES CAPTURED
at MAPS Stations on the Umatilla
(Species are Listed in Decreasing Order)

1992	1993	1994
Towsend's warbler	Mac Gillivray's warbler	golden-crowned kinglet
Mac Gillivray's warbler	dark-eyed junco	Mac Gillivray's warbler
Swainson's thrush	golder-crowned kinglet	dark-eyed junco
dark-eyed junco	Townsend's warbler	Townsend's warbler
yellow-rumped warbler	Swainson's thrush	ruby-crowned kinglet

The capture rate of adult birds of all species pooled in 1994 (874.5 b/600nh) at the six stations decreased by 12.1 percent from the capture rate of adults in 1993 (994.5 b/600nh). However, the capture rate of young birds of all species pooled at the six MAPS stations, increased by 20.4 percent from 585.5 b/600nh in 1993 to 704.8 b/600nh in 1994. The percentage of young in the catch (an index of productivity) for all species pooled at all stations also increased, from 37.1 percent in 1993 to 44.6 percent in 1994, however, this is still below the the value of 61.8 percent for 1992.

The point count surveys in 1994 indicate the number of individual adult bird counted for all species pooled at all six stations combined, increased significantly by 9.6 percent between 1993 and 1994. The number of individuals detected in point counts for 1994 can be found in Table II-24.

Table II-24
NUMBER OF INDIVIDUALS DETECTED DURING POINT COUNT
at the six MAPS Stations in 1994

	All Species Pooled			Number of Species			
Station #	< 0m	All	Fly-Over	<50m	All	Fly-Over	Total Number of Species
BUCR 151	162	370	18	26	35	6	35
BRME 152	186	413	17	28	37	8	39
FRME 153	173	415	20	28	38	10	41
CORI 154	145	354	24	30	39	16	41
BMME 155	149	375	35	24	39	11	39
PHCR 156	140	320	16	21	31	7	32

Monitoring of Neotropical Migratory Bird (NTMB) use of grand fir old growth forest in the Blue Mountains continued during 1995. The purpose of this program is to identify which NTMB species use the grand fir type, monitor their population trends, examine the relationships between NTMB species and the grand fir type, and refine the Regional approach for monitoring NTMB species. The Umatilla and the Wallowa-Whitman National Forest inventoried four stands of 50 acres of old growth grand fir with 5-6 point-count plots in each stand. Data collection was initiated in 1994 and is expected to continue through 1997. Formal results have not been tallied for the past few years of effort.

Evaluation:

Additional Ecosystem Analysis at the watershed scale and (possible) results from ICBEMP are the primary means for addressing the monitoring questions. Initial results show that substantial restoration work is needed in forest communities to re-establish appropriate stand composition, structures, and functions. The Forest expects to continue monitoring sensitive plant, NTMB, and landbird populations as opportunity and funding allows.

III. Resources and Services to People

A. FOREST PLAN IMPLEMENTATION

MONITORING ITEM 30: Management Areas/Standards and Guidelines

Forest Goals, Desired Future Condition, and Outputs: The future condition of the Forest will reflect the results achieved through implementation of the Forest Plan in meeting management goals and objectives. The Forest will continue its fundamental stewardship role in multiple use management by providing a balanced variety of natural resource based products and services to the public. The Umatilla will continue to feature a mosaic of large grasslands and forested areas containing elements of both the natural and human influenced forest conditions. A diversity of recreation opportunities in a variety of forest settings will continue to be provided.

Monitoring Question(s): 1. Are project plans and their implementation consistent with the intent of Forest Plan management area direction (standards and guidelines)? 2. Are the management areas, through project implementation, bringing about the desired future condition on those areas of land where they are applied? 3. Are Forest Plan standards and guidelines being implemented as designed? 4. Do the Forest Plan standards and guidelines achieve the stated goals, objectives, and DFC's of the Plan?

Threshold of Variability: Noncompliance or (identified needs for) changes to the management areas and associated standards and guidelines.

Results/Findings:

The number of NEPA documents prepared on the Forest increased slightly in FY 1995. One EIS for a timber sale was prepared and 16 EAs were completed, however, only one of these was for a timber sale. The remainder of the timber sale projects were all less that 1 mmbf and documented with categorical exclusions. The number of active timber sales has also declined as sold sales were harvested and closed. The other EAs documented projects in vegetation management (2), recreation (2), watershed enhancement (1), soil enhancement (1) and grazing (9). Similar to last year, with the reduction in activities, a parallel reduction occurred in the number of projects monitored during 1995.

Because of the reduced 1995 workload, only limited Forest Plan consistency monitoring took place. Much of this monitoring centered around implementation of two interim Forest Plan amendments; Interim Strategies for Managing Anadromous Fish Producing Watersheds on Federal Lands in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH), and Continuation of interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for Timber Sales. (See Section IV Forest Plan Amendments, No. 10 and 11.) Implementation monitoring accomplished during FY '95 is reported in the other monitoring items.

There were no formal implementation reviews made by the Forest Leadership Team during FY 1995. Several Districts reported informal monitoring reviews by District teams and in all instances, no problems were noted. Only one district reported making use of the Forest Plan Implementation Checklist as part of these reviews.

On the Heppner District the Record of Decision for East End Salvage Sales and Restoration Projects implemented a non-significant amendment to the Umatilla Forest Plan. The amendment implemented management area adjustments within Dedicated Old Growth (C1) and Non-motorized Dispersed Recreation Area (A1). The change in C1 was needed because it was found an area originally designated in the Forest plan was not suitable, and other more suitable habitat was reallocated. The change in A1 was needed to allow greater flexibility in managing a scenic travel corridor.

Evaluation:

The Forest completed relatively limited on-the-ground monitoring related to management areas and standards and guidelines this FY. This reduction corresponds to the reduction in NEPA analysis and timber harvest that occurred in FY 1995. With limited activity, the monitoring question about meeting the intent of management area direction through implementation of projects cannot be effectively evaluated.

However, changes will have to be made to the Forest Plan to respond to new issues and new information. Changes in old growth networks, elk habitat relationships, riparian allocations and management, water quality and fisheries guidelines are all likely. Major adjustments to the Forest Plan will be made through the Interior Columbia Basin Ecosystem Management Project's Eastside EIS, which is expected to be completed in FY 1997.

Interim adjustments continue to be made through non-significant Forest Plan amendments. In May 1994, the Regional Forester signed an EA which amended the Forest Plans on nine Eastside National Forests. In June 1995, the Regional Forester amended his original direction with a second Regional Foresters Amendment. In February 1995, the Interim Strategies for Managing Anadromous Fish Producing Watersheds on Federal Lands In Eastern Oregon and Washington, Idaho and Portions of California EA was signed. This amendment adds interim management direction to the Forest Plan intended to arrest and reverse the decline in anadromous fish habitat on the Umatilla (as well as 14 other Forests) until longer term options are developed in the Eastside EIS.

Until the Eastside Ecosystem Management project is done, monitoring will generally focus on the planning, implementation and effectiveness of individual projects. The primary questions are: are project plans and implementation meeting Forest Plan standards and guidelines (including those in the interim Forest Plan amendments), and are they consistent with the intent of management area direction? Questions addressing progress toward meeting Forest Plan Desired Future Conditions will generally be deferred until the Eastside Strategy provides the information necessary to re-define these objectives.

B. RECREATION

MONITORING ITEM 31: Primitive/Semi-Primitive Recreation and Roadless Areas

Forest Goals, Desired Future Condition, and Outputs: Nearly 30 percent of the Forest remains available in an unroaded status to provide smi-primitive and primitive opportunities (DFC). The Forest will continue to meet demand for primitive and semi-primitive opportunities found in wildernesses, unroaded, and other areas (50 yr. DFC).

Monitoring Question(s): 1. Are the identified roadless areas or parts thereof managed as the Forest Plan allocated or prescribed? 2. Are the primitive and semi-primitive recreation opportunities available as shown in the Plan?

Threshold of Variability: Greater than 10 percent of management area acres (of primitive/semi-primitive recreation opportunity) not in compliance with Forest Plan direction.

Results/Findings:

During 1995, the Forests 22 roadless areas continued to be managed in accordance with the Forest Plan. No timber harvest activities occurred in any of the roadless areas. Approximately 92 acres of planned harvest from the Teal Timber Sale are within the Upper Tucannon Roadless Area. But to date, none of the units have been harvested in this area.

In 1995, the Forest provided forest users with primitive (wilderness areas) and semi-primitive opportunities in all roadless areas as described in the Forest Plan (see Table III-1 for use of undeveloped areas).

Evaluation:

Recommendation is to continue monitoring.

MONITORING ITEM 32: Recreation – Off Highway Vehicle Use (OHV)

Forest Goals, Desired Future Condition, and Outputs: "Manage for a broad spectrum of recreation opportunities and experiences . . . roads, trails, and facilities needed to accomplish land and resource management . . . objectives . . . road closures will respond to elk habitat requirements, dispersed recreation needs, and soil, water, and economic criteria. Conflicts between OHV use and big game and other recreation users will require some adjustments in OHV use . . . Priority will be on preventing conflict among users."

Monitoring Question(s): 1. What areas and facilities are available for off highway vehicle (OHV)? 2. How much and where is OHV use occurring? How well are access and travel management plans working for OHV's? 3. How are OHV use(s) affecting other Forest resources? 4. How much conflict between recreation users is occurring? Where?

Threshold of Variability: 1. Less than 100,000 acres of semi-primitive motorized recreation opportunity spectrum. 2. Resource effects which are beyond limits of acceptable change or judged to be unacceptable. 3. User conflicts which are recurrent. 4. Safety hazards which pose threat greater than appropriate for recreation opportunity spectrum objectives.

Results/Findings:

Currently, the Districts are reporting the availability of areas and facilities for off highway vehicle use as follows:

- Pomeroy reported 5.1 miles of road available specifically for OHV use. In addition, they report 6.1 miles of trail designated for ATV use and 21.8 miles of other trails that allow motorized use.

- Walla Walla reports that there are approximately 235 miles of road listed as restricted in the Access and Travel Management Plan that can be used for OHV use. In addition to these roads, there are 78 miles of trails. The District also has about 490 miles of roads used for snowmobile trail with about 150 miles groomed. There are 101 miles of mountain bike trails.

- The North Fork John Day District is providing about 100 miles of trails specifically designated for OHV use within the Winom-Frazier OHV Complex with an additional 22-mile expansion identified under the Camas OHV Environmental assessment. An additional 27 miles of OHV trails are located throughout the District.

- The Heppner Ranger District currently has no facilities for OHV users. The area west of Forest Road 22 is available for cross-country travel. East of Road 22, travel is restricted to designated routes only. At the present time, only one route has been designated.

The North Fork John Day Ranger District has four trail counters to monitor OHV use levels and have a program of compliance checks and OHV decibel monitoring. However, no results or findings were included with their report. General observations on the Heppner Ranger District indicates OHV use is minor to moderate, but with increasing use trends, particularly during hunting season. Other observations indicate OHV use is occurring off designated trails or roadways, but the extent is not known. Since quantifiable information is unavailable, monitoring of OHV use is not adequately addressed and current use largely unknown.

In most cases, only minor conflicts with other users was noted. North Fork John Day District reported that in their field contacts and review of visitor registration forms at trailhead and campgrounds, very little conflict between recreation users, at this time, was noted. On the Walla Walla District, the South Fork of the Walla Walla trail has the potential for increasing user conflicts. This well-traveled trail is being shared by an increasing number of hikers, mountain bikers, and motorcyclists.

General observations regarding resource damage across the Forest suggests that impacts vary from limited to minor. Most problems occur when OHV users travel off designated routes, most prevalent during hunting season.

Evaluation:

The Forest currently lacks monitoring protocols and priority to effectively track the amount of OHV use, resource impacts, and recreation conflicts. Systematic and formal monitoring is required to determine the effectiveness of MATM plans and management.

MONITORING ITEM 33: Recreation – Developed Sites

Forest Goals, Desired Future Condition, and Outputs: "Manage for a broad spectrum of recreation opportunities and experiences on the Umatilla National Forest . . . Winter sports, growing in popularity, will be accommodated . . ."

Monitoring Question(s): 1. How much use and what occupancy rate is occurring at each recreation site? 2. How much overnight camping capacity is available at Forest campgrounds managed at different development Levels 1 through 5? 3. Are recreation sites adequate to meet demand and to provide customer satisfaction?

Threshold of Variability: 1. Greater than 60 percent occupancy rate at any site for three consecutive years. 2. Frequent or recurring customer complaints at given recreation sites. 3. Significant damage to site facilities and environment due to heavy use.

Results/Findings:

Total Forest recreation use in FY '95 was reported at 978,576 Recreation Visitor Days (RVD), down slightly from '94. The slight drop can be attributed mostly to more accurate counting on several of the Districts and is uniform in both the developed and undeveloped categories.

Approximately 202,536 RVDs were recorded in the developed sites. Campground occupancy rates varied from a low of 21 percent to a high of 100 percent. Occupancy rates vary throughout the year based on the time of the year and by the site. Hunting (season) continues to have the highest use rates and a major influence on the Forests program. The Heppner Ranger District averages about 40 percent occupied at its most popular developed site and lesser amounts at the other sites, while the Walla Walla Ranger District has a site which averages 78 percent occupancy (100% on 60% of the weekends during the managed season) on weekends and 40 percent on weekdays.

Table III-1
RECREATION VISITOR DAYS - 1995
Umatilla National Forest

Site or Area	Heppner	North Fork John Day	Pomeroy	Walla Walla	Forest Total
General Undeveloped	98,830	94,404	241,947	126,750	561,931
Wilderness	0	9,082	95,143	5,634	109,859
W&S River S.A.	0	8,804	0	8,012	16,816
Trailhead	0	21,368	54,378	0	75,746
Subtotal Undeveloped	98,830	133,658	391,468	140,396	764,352
Campgrounds	10,221	43,881	45,440	30,167	129,709
Rec. Residences	0	2,687	15,316	18,819	36,822
Ski Areas	0	0	0	47,277	47,277
Interpretive Site	201	189	0	161	551
Cabin Rental	0	0	1,056	0	1,056
Subtotal Developed Sites	10,422	46,757	61,812	96,433	215,415
Total RVD	109,252	180,415	453,280	236,829	979,776

Penland Lake, Bull Prairie, Bear Wallow, Tollbridge, Welch Creek, Drift Fence, Divide Wells, Jubilee Lake, Tucannon, and Teal Spring continue to experience occupancy rates at or above levels which warrant expansion or improvement (above threshold). Table III-1 illustrates recreation use on the Forest by District by gross recreation activity category.

A broad spectrum of recreation sites for outdoor activities continues to be provided on the Forest. Campsite development scales range from minimal facilities (outhouse, no potable water, dusty roads and a few picnic tables and fire rings) to highly developed campgrounds with flush toilets, paved parking spurs, etc. Hookups for RVs are not provided. The Forest provides overnight camping space for approximately 2,545 people in the developed sites. Limited funding is available for operations, maintenance and improvement of the sites and funding is expected to be reduced further in the coming years. Consequently, all sites are operated at a reduced service level and substandard facilities are evident.

Evaluation:

The Forest continues to report use at certain sites exceeding thresholds and some facilities as being substandard. Reported use at several other sites is relatively low. Most sites will require some modification inorder to comply with the Americans with Disabilities Act. Further evaluation is needed to determine if the necessary funding will be available to support the facilities we now manage or if other changes are needed.

MONITORING ITEM 34: Wild and Scenic Rivers

Forest Goals, Desired Future Condition, and Outputs: Maintain, protect, and enhance Wild and Scenic Rivers condition and values.

Monitoring Question(s): 1. Have the free-flowing characteristics of eligible/suitable and designated rivers been protected and enhanced consistent with the Forest Plan standards and guidelines? 2. Are the identified river values being protected and/or enhanced to the extent practicable for all designated rivers (according to management plans or Forest Plan S&G's) and potential classification maintained for all eligible/suitable rivers?

Threshold of Variability: Exceeding River Management Plan or Forest Plan standards and guidelines. Modification exceeding the eligibility or current classification.

Results/Findings:

Wild and Scenic River Determination of Eligibility Reports for 14 streams were near completion by the Forest and ready for public review.

In 1993, an Environmental Assessment was completed for a Pilot Dredge Tailings Restoration project on the North Fork John Day River. The second year of monitoring of this project has been completed and initial results have shown the project expectations are being achieved. Because of the success of the pilot restoration project, a 5-year dredge tailing restoration EA was completed in May 1995. The 1994 Corridor Restoration Project continues to be a success with improving soil conditions in developed and dispersed recreation sites along the North Fork John Day River.

Evaluation:

Wild and Scenic River monitoring in 1995 was limited in scope. However, the Forest continues to maintain the free-flowing characteristics and identified outstandingly remarkable values of eligible/suitable and designated rivers as outlined in the Forest Plan and the Wild and Scenic River Management Plans. The Districts have followed the rules and regulations for interim management of Study Rivers. Outstandingly remarkable values (as initially identified) have been protected, no management activities have taken place in the river corridor which would affect the eligibility or classifications.

Additional, indepth monitoring is needed in the future to fully address the monitoring questions.

C. VISUAL

MONITORING ITEM 35: Existing Visual Condition

Forest Goals, Desired Future Condition, and Outputs: Manage the Forest to provide pleasing settings emphasizing a natural to slightly altered appearance, often using vegetation management practices. Many management areas will remain substantially unchanged, except for subtle vegetational changes.

Monitoring Question(s): 1. Are visual quality objectives being met during project execution for the various management areas? Are the areas of retention/partial retention VQO being maintained? 2. What are the effects of land use and management activities on the visual resources? 3. Are location, shape, and size of timber regeneration units meeting Forest Plan standards and guidelines?

Threshold of Variability: 1. Greater than 10 percent of the analysis area not in compliance with VQO. 2. Less than 350,000 acres of the Forest meets Retention or Partial Retention VQO.

Results/Findings:

On the Heppner Ranger District, the East End Salvage Sales and Restoration Projects Record of Decision created an A-4 Viewshed 2 management area allocation along the Blue Mountain Scenic Byway. This route was selected as a national scenic byway after the Umatilla National Forest Plan was approved. As a result, a portion of the route ran through A1-Nonmotorized Dispersed Recreation, which did not allow the necessary flexibility for managing the area as a scenic travel corridor. This adjustment created a corridor of A4 (averaging 600 feet in width) in the midst of the A1, increasing A4 by approximately 324 acres.

A long-term monitoring project was established on the Blue Mountain Scenic Byway. Baseline photos were taken along the portion of the Byway occurring on the Heppner Ranger District. The first 2 miles on the District (north entry) will have road widening and other reconstruction in 1997. Permanent photopoints were not established as they would probably get moved during the road work. Instead, photo locations were described in detail and located so that permanent point markers can be placed after reconstruction is complete. A salvage timber sale is also scheduled to occur along this stretch of the byway in 1996. 1995 photos will act as an adaptive management tool to determine whether this sale improves the visual quality of this portion (which is currently dominated by dead trees). The photos will also help identify future mitigation and sale design modifications.

After the initial 2-mile section, photo points were established and marked with a numbered wooden stake (to be replaced with rebar at a later date). Photo points are more dispersed and focus on panoramic views, existing areas of concern, and future units of the 53 Roadside Salvage sale (which will be harvested in 1996). The photo series is intended to show natural recovery from the insect infestation, degree of success of visual rehabilitation projects (such as tree spade work), and as an adaptive management tool for the 53 Roadside Salvage Sale. Panoramic photos were also taken of the Coalmine Hill Day Use Area and Kelly Prairie to document changes in these areas over time.

The Powell Wood Timber Sale, located on Pomeroy Ranger District, was completed in 1995. This sale consists of 11 acres located along Road 40. The purpose of the sale was to remove wind-thrown and partially tipped-over trees in the foreground of the A4 management area adjacent to the road. After the harvest and slash cleanup was completed for the sale, the District monitored the results. The monitoring indicated that the rehabilitation project was successful and the management area (A4) visual objects were met.

Evaluation:

With the exception of one reported project, most monitoring was done on a very informal basis. The Forest is placing very little emphasis on visual management.

No VQOs or viewshed corridor plans were revised or developed in 1995. The Forest still needs to complete viewshed management plans, but given the current and projected funding trends on the Forest, there appears little chance these will ever be completed.

D. WILDERNESS

MONITORING ITEM 36: Wilderness — Nonconforming Uses

Forest Goals, Desired Future Condition, and Outputs: ". . . measures to increase the amount of primitive recreation opportunity to desired levels . . ."

Monitoring Question(s): 1. Is the location, kind and amount of nonconforming uses acceptable and are wilderness standards being met? 2. What is the effect of grazing by wild and domestic animals? What is the effect of mining on the wilderness resource? 3. Are the effects of prior existing rights (mining, grazing, water rights, etc) minimized?

Threshold of Variability: 1. Refer to LAC standards and guidelines for each wilderness. 2. Any increase of nonconforming uses.

Results/Findings:

As in the recent past, numerous trips were made into the Wenaha-Tucannon Wilderness by administrative personnel. As part of these trips, summaries of non-conforming uses were noted, and where possible, corrected. The most prevelent problems noted in the Wenaha-Tucannon included chainsaw use, failure to remove garbage, construction of structures and establishment of permanent hunting camps. Winter use of snowmobiles in the Wilderness is believed to be a problem, but funding to monitor compliance is lacking.

Over 110 mule loads of garbage were removed from the Wenaha-Tucannon during 1995 in conjunction with other administrative activities. In addition, in August and September, King Creek and Butte Creek areas were targeted for hunter camp cleanup. In this effort 14 camps were cleaned-up in the two areas, and 70 mule loads of garbage and junk were removed.

Monitoring of grazing by wild and domestic animals was made on the Crooked Creek to Trapper Creek route of the Wenaha-Tucannon in September 1995. No evidence was found of cattle being on the river. Review of reports for North Fork Umatilla Wilderness revealed six incidents of mountain bike violations (tracks), two sightings of vegetation damage, and four of littering campsites or trails. No grazing was reported other than occasional rim or fringe use.

The North Fork John Day Wilderness is a low use wilderness. Non-conforming uses exist but are minimal. Authorized grazing is occurring in the Moon Meadows and Kelsey Creek areas. Observations made by district personnel indicate the effects of grazing are within standards. Some unauthorized grazing occurs in the Greenhorn unit and the District continues to try and stop this trespass. Overall, domestic grazing in the Wilderness has been reduced. No specific monitoring of mining operations were reported in the Wilderness although this is an important consideration (see MI 45, Mineral Development).

Evaluation:

Although documentation and reporting non-conforming uses has improved, a need still exits to strengthen incident reporting across the Forest to accurately track these uses in wilderness. Baseline conditions as prescribed in the Forest Service Manual (2322.03) have not been documented for the recognized nonconforming uses.

MONITORING ITEM 37: Limit of Acceptable Change (LAC) and Amount of Primitive Wilderness Resource Spectrum (WRS)

Forest Goals, Desired Future Condition, and Outputs: "...measures to increase the amount of primitive recreation opportunity to desired levels." The Forest continues to meet demand for primitive and semi-primitive opportunities. (50 yr DFC)

Monitoring Question(s): 1. What is the general condition of the wildernesses? 2. What effect is visitor use having on the wilderness resource? 3. Are standards being met for the WRS classes designated for each wilderness? 4. Is fire allowed to play its natural role? What effect is prescribed fire having on the wilderness values?

Threshold of Variability: 1. Refer to LAC standards and guidelines for each wilderness. 2. Any reduction of amount of planned primitive WRS.

Results/Findings:

The Limits of Acceptable Change (LAC) site and trail surveys are in various stages of action on the Forest. The surveys have been completed for the North Fork John Day Wilderness but information and analysis results have not been reported. LAC surveys in the North Fork Umatilla Wilderness are in the process of being completed. Surveys have yet to be conducted on the Wenaha-Tucannon Wilderness.

Ongoing administrative reviews and observations suggest that wilderness conditions are generally acceptable. However, some exceptions have been noted. Certain areas in the Wenaha-Tucannon Wilderness are in degraded condition due to over use. These areas are identified as Forks, Crooked Creek, X Canyon, and Hoodoo located on the River and McBain, Dunlap and Lodgepole Springs located in the high country. The total area which is outside acceptable limits is small. Work is being done as resources permit on heavy use campsites which can be eliminated and/or restored.

In the North Fork John Day Wilderness, observations indicate that visitor days have been increasing. However, except for logging out trails once each year, little other maintenance occurs due to lack of funds. Because reduced funding has limited the amount of trail maintenance, there is a noticeable deterioration of most trails. Based on review of the LAC baseline data, visitor use and impacts during big game rifle season have increased substantially. Continued intrusion by motor vehicles occurs primarily during mushroom and big game hunting seasons.

Implementation of Prescribed Natural Fire Plans has been initiated for all three of the Forests wildernesses. The plans provide guidelines and direction in implementing prescribed natural fire in the wildernesses to help perpetuate natural ecosystems and processes. In 1995, two fires in the North Fork John Day Wilderness were managed under the Wilderness Prescription Management Plan guidelines for a total of 87 acres. These fires successfully reduced heavy fuel loading in the area burned.

Evaluation:

The Forest needs to begin reporting and using LAC information and analysis for the surveys that have been done and complete the initial surveys on the North Fork Umatilla and Wenaha-Tucannon wildernesses. Until information is supplied and LAC are completed, this monitoring item will continue to be inadequately addressed. The LAC process is intended to provide a comprehensive framework for defining use, condition, and trend and for prioritizing management actions toward specific substandard situations.

E. RANGE

MONITORING ITEM 38: Allotment Planning

Forest Goals, Desired Future Condition, and Outputs: All allotments have developed and implemented Allotment Management Plans that fully meet the standards and guidelines of the Forest Plan by the end of the first decade.

Monitoring Question(s): 1. Are allotments containing significant areas of unsatisfactory condition range and/or allotments, classified as PC or PD, receiving priority emphasis for development and implementation of Allotment Management Plans? 2. Do AMP's fully meet Forest Plan standards and guidelines? 3. Are AMP's being implemented on the ground in a manner that meets Forest Plan direction?

Threshold of Variability: 1. AMP planning schedule as developed (and amended) by the Forest Supervisor, varies by more than 2 years for 10 percent or more of the plans. 2. Any approved AMP's that fail to contain objectives and standards that fully implement the Forest Plan. 3. More than 5 percent of the Annual Operating Plans and annual budget requests, KV Sale Area Improvement Plans, etc., are not supported by standards or development schedules from Allotment Management Plans.

Results/Findings:

The Pacific Northwest Region developed a program in FY '91 to emphasize allotment management planning on the high priority allotments in the Region. The Forest Plan had already developed and implemented a prioritization process, used to generate a planning schedule. This process and planning schedule has been the basis for determining which allotments are most in need of analysis and planning, according to resource concerns. The allotments targeted for planning efforts are, with limited exceptions, those identified as highest resource priorities. The few exceptions are generally those allotments where planning had already been started or where an opportunity has occurred that makes it reasonable to include the allotment in the schedule. The 5-year schedule is generally revised annually, based on funding, accomplishments, and revisions in the priority schedule.

Forest wide allotment management planning was not completed on any allotments in 1995. Five AMP's are in progress and are scheduled for completion in 1996.

However, in FY '95, a national switch in priorities from development of AMP's to completion of NEPA decisions related to permit issuance resulted in many of the AMP efforts being placed on hold. During the year, nine NEPA decisions (permit issuance) were completed and one is currently in progress. In addition, there is currently one AMP NEPA decision currently in appeal status. The Rescission Bill of 1995 (PL104-19) has mandated a return to the AMP/NEPA emphasis but has further mandated that all allotments be scheduled for NEPA within a 15-year timeframe.

The results show slow progress in moving toward the accomplishment of analysis and planning. Significant changes in regional and National priorities, insufficient funding, and large increases in appeals and litigation continues to ensure that the level of final accomplishment remains too low to maintain up to date management plans on all allotments as scheduled. Additionally, highest priority has been assigned on-the-ground administration to achieve the Forest Plan standards and guidelines or ESA on-the-ground consultation and mitigation requirements. In 1995, all districts continued to use the Annual Operating Plans (AOPs), which includes Forest Plan standards and guidelines, as the primary administrative tool to meet Forest Plan direction.

Evaluation:

Modify the annual update of the Forest Plan Allotment Management Planning schedule to reflect the requirements of PL104-19 as well as actual budgets and accomplishments, and to evaluate effects of the changed schedule on associated resources. Continue to pursue adequate funding to accomplish allotment management planning in a timely manner.

MONITORING ITEM 39: Range Outputs

Forest Goals, Desired Future Condition, and Outputs: After meeting basic plant and soil requirements, provide forage for utilization by wildlife and permitted domestic livestock.

Monitoring Question(s): Are the outputs for permitted domestic livestock (Animal Unit Months [AUM's]) being achieved as projected in the Forest Plan?

Threshold of Variability: Annual outputs (AUM's) for permitted domestic livestock increase more than 3 percent above or fall more than 10 percent below Forest Plan levels.

Results/Findings:

Results/Findings:

The Forest Plan does not set specific target levels for outputs of permitted livestock AUM's. The plan does indicate that forage will continue to increase in quality and quantity as a result of timber management and wildlife and rangeland improvement projects. Projected resource output within the first decade of the plan is estimated at 62,800 AUM's.

In 1995, 54,531 AUM's were under Term Grazing Permits and an additional 2,437 AUM's under Term Private Land Permits (which authorize use on private land waived to the government for management within an established allotment) on the Forest. Authorized non-use for personal convenience and resource protection was approved for 7,265 AUM's. Actual use is about 81 percent of the Forest Plan predicted level and permitted use is about 94 percent of the Forest Plan level of 58,000 AUM's.

Evaluation:

The 1995 level of permitted grazing is within the threshold of variability. Continue to monitor.

MONITORING ITEM 40: Range Improvements

Forest Goals, Desired Future Condition, and Outputs: Allotment Management Plans, based on the Forest Plan, provide for a full development schedule (using all available funding sources) that contributes to satisfactory range conditions.

Monitoring Question(s): 1. Are range improvements planned in Allotment Management Plans, or other development plans such as Sale Area Improvement Plans or Annual Operating Plans, being accomplished? Are these improvements contributing to meeting Forest Plan objectives?

Threshold of Variability: Accomplishment of annual range improvement targets falls more than 10 percent below the assigned output.

Results/Findings:

In 1995, 23 structures were accomplished from all funding sources (a structure is defined as one water source, one-half mile of fence, one cattleguard, etc.). For non-structural improvements, 5,487 acres were accomplished from all funding sources, including seeding and prescribed fire. Based on local weather factors and resulting favorable condition for non-structural improvement success, and structural needs to provide for improved management of range vegetation, we are on schedule with current Allotment Management Plans.

Evaluation:

Continue to monitor.

F. TIMBER

MONITORING ITEM 41: Lands Suitable for Timber Management

Forest Goals, Desired Future Condition, and Outputs: Examine lands to determine suitability for timber production with greater resolution. Add or subtract land into the timber suitability base as confirmed by on-the-ground determinations, or more accurate estimates.

Monitoring Question(s): 1. Have lands identified as unsuitable for timber production become suitable? (Identified in the Plan as unsuitable incorrectly or become suitable due to changes in management practices.) 2. Should lands identified as suitable in the Plan be more accurately classed as unsuitable?

Threshold of Variability: More than a 5 percent change in the suitable land base.

Results/Findings:

Suitability for timber management is usually evaluated through proposed project environmental analysis for an area. Results of the evaluation are disclosed in a decision document for the project and are incorporated in the Forest data base. However, no decision documents were approved during FY 1995 which specifically disclose suitability changes.

Evaluation:

Continue monitoring on a project basis.

MONITORING ITEM 42: Timber – Yield Projections

Forest Goals, Desired Future Condition, and Outputs: Determine if yield projection assumptions are consistent with actual managed stand growth and if empirical yield projects are consistent with most recent inventory.

Monitoring Question: 1. How does actual growth in a managed stand compare to that modeled in the managed yield tables? 2. How do projected yields based on new inventory data compare to the empirical yield tables used in the Forest Plan?

Threshold of Variability: Deviations likely to affect timber yields by more than 15 percent.

Results/Findings:

No changes in the Forests empirical and managed yield tables occurred during FY 1995. No revisions or updates are contemplated until a major Forest Plan adjustment is initiated, based on needs and requirements from the Interior Columbia Basin Ecosystem Management Project (ICBEMP).

Since the Forest portion of the Current Vegetation Survey is finished, new yield tables can be developed and comparisons made with the empirical tables developed using previous inventory data. Managed stand surveys were completed during FY 1990 and the data is available for analysis. However, extensive analysis of the managed-stand data is not anticipated to occur until new managed yield tables are required.

Evaluation:

Use the data collected in vegetation surveys to adjust empirical and managed yield tables, as needed.

MONITORING ITEM 43: Timber Offered for Sale

Forest Goals, Desired Future Condition, and Outputs: Provide for production of wood fiber consistent with Forest Plan objectives.

Monitoring Question(s): 1. Is the Forest offering the volume of timber necessary to achieve the estimated TSPQ stated in the Plan? 2. Is the Forest offering the volume of chargeable timber established by the Plan's ASQ? 3. What is the level of ponderosa pine sawlog timber being offered?

Threshold of Variability: 1. Greater than a 10 percent +/- deviation from planned volume of Total Sale Plan Quantity. 2. Deviation greater than +5 percent or -20 percent of planned Allowable Sale Quantity. The 5 percent threshold mentioned above applies only to the running average measured annually. 3. Greater than 25 percent +/- deviation from planned volume of ponderosa pine sawlogs.

Results/Findings:

In FY '95, the amount of timber offered for sale was far below Forest Plan projections and only slightly higher than the FY '94 totals. Only 14 percent of the Total Sale Program Quantity and 4 percent of the Allowable Sale Quantity was offered for bid. Table III-2 shows the timber offered for sale for FY 1995.

Table III-2
TIMBER OFFERED - FY 1995
Umatilla National Forest

	Planned Output (MMBF)	Actual Output (MMBF)	Planned Output (MMCF)	Actual Output (MMCF)
Allowable Sale Quantity	124	5.0	22.2	0.93
Ponderosa Pine (included in ASQ)	(24)	(.68)	(4.2)	(.13)
Chip Material	20	8.1	3.6	1.5
Firewood	15	9.2	2.6	1.7
Timber Sale Program Quantity	159	22.3	28.4	4.1

Refer to Table 4-1 of the Forest Plan, p. 4-17; planned output is based on the first decade after Plan implementation.

Several factors continue to effected the amount of timber offered for sale on the Forest this year. Although progress has been made, consultation with National Marine Fisheries Service for Snake River spring/summer and fall chinook salmon, in some cases, continues to slow down the timber sale preparation process.

Another item contributing to the reduction in the amount of timber offered is the implementation of interim management direction for timber sales. Two different Forest Plan amendments, providing interim direction, have been approved. The first was the Regional EA for Continuation of Interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for Timber Sales (Eastside Screens), signed by Regional Forester John Lowe in May 1994. This direction was designed to restrict timber harvest in certain areas or provide for certain requirements so as to assure that the full array of planning options are preserved while items of new information are being assessed and the need for new management direction evaluated through the preparation of the (ICBEMP) Eastside EIS. After several Regional monitoring reviews, the direction in the May 1994 decision was modified in a second Regional Forester amendment signed in June of 1995. The time necessary to complete this screening process, and the additional temporary restrictions it contains, have delayed preparation of many timber sales.

A second EA also amended the Forest Plan. The Interim Strategies for Managing Anadromous Fish Producing Watersheds on Federal Lands in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH) EA adds interim management direction intended to arrest and reverse the decline in anadromous fish habitat on the Umatilla NF (as well as 14 other Forests) until longer term options are developed in the Eastside EIS. Like the Screen amendment, this direction has placed additional guidelines on the preparation of timber sales that have delayed sale preparation and reduced the amount of volume offered. When the Eastside EIS is completed, the amount of timber offered for sale is expected to be well above the 1995 level, but may not reach the levels stated in the Forest Plan.

Evaluation:

Adjustments in Total Program Quantity and Allowable Sale Quantities are expected based on results from the ICB Ecosystem Management Project. In FY 1996, the Forest anticipates selling a considerably higher volume of timber, approximately 57 MMBF, in response to the Rescission Act passed in July 1995. This legislation defines an emergency period during which the Forest Service is directed to expedite the preparation of salvage sales. This emergency period is scheduled to end December 1996.

MONITORING ITEM 44: Availability of Firewood

Forest Goals, Desired Future Condition, and Outputs: To provide fuelwood necessary to meet local demand.

Monitoring Question(s): 1. How much firewood is being provided? 2. Is sufficient fuelwood being offered to the interested public?

Threshold of Variability: Estimated demand exceeds supply by more than 10 percent.

Results/Findings:

The Forest Plan predicted an annual average firewood output of 15 MMBF (Million Board Feet). In 1995, actual output was 9.2 MMBF, 63 percent of Forest Plan projection. This represents an increase from the 1994 level and is close to the last 5-year average. Table III-3 shows the firewood program from 1989 to 1995.

Table III-3
FIREWOOD PROGRAM - CHARGE PERMITS ISSUED 1989-95
Umatilla National Forest

Year	Number	MMBF
1989	4,794	12.4
1990	3,871	8.0
1991	3,792	8.7
1992	2,838	6.8
1993	3,786	9.5
1994	2,373	5.5
1995	3,214	9.2

Although rules for firewood cutting still vary between Districts, they are continually being modified to make them more user friendly. Some Districts allow cutting within 300' of roads designated as open in their Access and Travel Management Plan while others restrict gathering to specifically designated areas. Some Districts are making additional areas available for firewood gathering opportunities for the public by allowing cutting in closed timber sales prior to prescribed burning. Where practical, some closed roads are being temporarily opened to facilitate firewood removal.

Evaluation:

Current demands for firewood appear to be met across the Forest. Firewood demand is projected to continue to be near the average levels for the next few years. The Forest still anticipates a surplus of firewood for the next several years due to the high level of insect-killed timber, particularly on the south-end districts. Recommend continue monitoring.

G. LANDS AND MINERALS

MONITORING ITEM 45: Mineral Development and Rehabilitation (MDR) Accessibility

Forest Goals, Desired Future Condition, and Outputs: To provide for exploration, development, and production of a variety of minerals in coordination with other resources.

Monitoring Question(s): 1. Are the standards and guidelines being implemented correctly? 2. Are the standards and guidelines for mineral operations "reasonable" and effective in meeting Forest Plan goals? 3. Is vehicle (potential) access to mineral (mining claims) or energy (gas and oil) lease sites being restricted?

Threshold of Variability: Projects judged to have unacceptable deviation from stated objectives, or projects not in compliance with standards and guidelines. Reduction in lands open to mineral activities is greater than 2 percent.

Results/Findings:

Most of the Forests mineral activities occurs on the North Fork John Day Ranger District with very little occurring on other districts.

During 1995, the North Fork John Day Ranger District had 36 claims under Plans of Operation or Notices of Intent for the season. In addition, 30 claimants filed Notices to Operate during the 1995 field season. Of the claimants who filed notices to operate, 22 conducted mining operations. The remaining claimants only conducted exploration related work on their claims. The District received eight new plans of operation during 1995. One plan of operation was submitted late in the year and is in the process of negotiation. Another plan of operation is on hold, waiting for the claimant to make changes and return it to the District. All claims mentioned above were monitored for compliance. Monitoring findings show all of the claimants followed their Plan of Operation. Results are as follows:

- Total acres disturbed from mining operations accounted for 5.2 acres. Of the total, 2.2 acres were from 22 working claims (averaging in size 0.1 acres) and the remaining balance coming from one claim having 3 acres of disturbance.

- All 5.2 acres were reclaimed.

- All 30 claimants were found to have completed their seasonal reclamation.

In 1995, the Heppner Ranger District did not process any Notices of Intent nor did they have any active Plans of Operation for locatable mineral exploration. The District did not have any active sites which required access during fiscal year 1995.

Evaluation:

The mineral inspections and reclamation reviews indicate standards and guidelines are being met. Continue monitoring active claims and permits for compliance with operating plans (the North Fork John Day Ranger District has proposed five sites for reclamation during the 1996 field season). Continue monitoring access to mineral claims.

H. TRANSPORTATION

MONITORING ITEM 46: Forest Road System

Forest Goals, Desired Future Condition, and Outputs: Provide and manage the road system needed to accomplish the land and resource management and protection objectives of the Forest.

Monitoring Question(s): 1. Are the total miles and those useable by passenger cars and high clearance vehicles within Forest Plan projections? 2. Is the Forest providing and managing the Forest road system to accomplish land and resource management objectives as outlined in the Forest Plan?

Threshold of Variability: Any variance from existing standards and guidelines and MATM Plans.

Results/Findings:

FY 1995 was the fourth year for implementing the Forests Transportation Management System (TMS). The system is a data base which provides transportation information, including Road Management Objectives and road use status. Basic data derived from TMS is shown in Table III-4.

Table III-4
FOREST ROAD SYSTEM - 1995
Umatilla National Forest

Road System	Maintenance Level	Actual Road Miles
Closed Road	1	2,500
High Clearance	2	2,075
Passenger Car	3	558
Passenger Car	4	180
Passenger Car	5	147
Total Open		2,960
Total Road		5,460

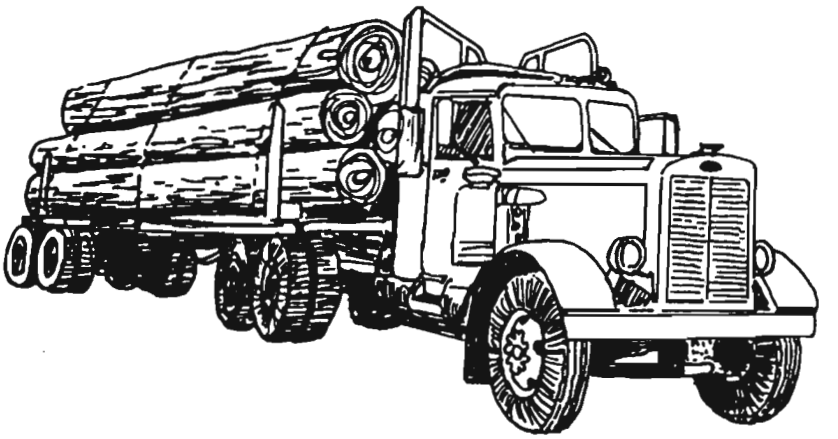
Total passenger car accounted for 885 miles, little change from last year and about the level projected in the Forest Plan. Currently, 38 percent of the transportation system is being maintained and managed for high clearance vehicles, which is close to the Forest Plan objective of 32 percent. Forty-six percent of the current road system is closed; this, again, is close to the Forest Plan objective of 48 percent.

The 1994 Monitoring Report indicated that most problems in the transportation information system data base were corrected. Currently only minor differences are showing between the miles displayed in Table III-4 for this year and 1994. Many of the changes represent corrections made to the data base, and not actual on-the-ground changes. However, additional work on some District data bases is still needed, particularly related to closed roads to reflect actual conditions.

Motorized Access and Travel Management (MATM) plans continue to be implemented and the Forest still closes roads each year. However, the roads that are being closed and obliterated are not being recorded into the data base because of a lack of people and time to do that work. In 1995, the Forest closed 58 miles of road, which means they were moved into the level one category. However, some of the closed roads were never identified in the TMS data base. The Forest also obliterated 68.7 miles of road but, again, some of these roads may never have been in the data base.

Evaluation:

The Forest continues to work toward implementation of MATM as funding allows. The MATM plans were developed in accordance with Forest Plan Management Area standards and guidelines and other Plan direction. The changes that have been implemented seem to be providing a transportation system that is meeting the current management needs. A decrease in funding is impacting accurate record keeping and making progress tracking difficult. Forest Road information needs to be updated with current, accurate information. Change in practices is warranted for the reporting of road information.



MONITORING ITEM 47: Open Road Density

Forest Goals, Desired Future Condition, and Outputs: Maintain the densities of roads and access that meet the objectives to serve the public and for integrated resource management on the Umatilla National Forest.

Monitoring Question(s): 1. Are open road densities within planned access and travel management levels? 2. Are standards and guidelines being met for management areas where motorized use is (or may be) a concern?

Threshold of Variability: +/- 10 percent of planned access and travel management direction (by district) on an area basis.

Results/Findings:

Three of the four Districts (North Fork John Day, Walla Walla, and Heppner) have completed initial implementation of their Motorized Access and Travel Management (MATM) plans; Pomeroy's plan is near completion. Lack of funding to accomplish road closures is hindering maintenance of the program. Open road density on the Pomeroy District has been reduced from about 2.0 miles/square mile in 1993 to 1.2 miles/square mile by the end of 1995. Currently, Walla Walla's open road density is 1.36 mi./sq. mi. The open road density on the Heppner District is 1.5 mi./sq. mi., which met the objective established in the Districts MATM plan.

All Districts review and update MATM plans annually. This review is generally completed in the analysis accompanying area planning for individual timber sale and restoration projects. The transportation system for the area is reviewed and necessary road closures and obliteration are made part of the project. Road closures and obliteration is also being prescribed by District road managers in areas outside projects; however, limited funding has hampered this effort.

Although standards and guidelines are generally being met, some implementation problems have occurred. Deterioration of barriers and signs as well as vandalism is reducing the effectiveness of some roads closed by order. This problems will continue a long as lack of funds prevents adequate enforcement and necessary repairs.

Both the Heppner and Pomeroy district are monitoring the permitted use on closed roads. In 1995, Pomeroy issued four permits that were not in accordance with Management Area Objectives. Permission was given to the Washington State Department of Fish and Wildlife on two occasions during the spring calving closure period to study elk/calf mortality. One permit was issued to initiate and monitor a controlled burn and another to a permittee during elk calving season. On the Heppner District 214 permits were issued for travel on closed roads. A total of 88 closed roads received traffic as a result of the permits issued.

Evaluation:

Good progress continues to be made in the implementation and management of District MATM plans. Open road densities are below Forest Plan projections with road closures and obliterations providing many positive benefits. Districts are focusing on meeting on-the-ground resource needs. Often, however, adequate priority is not given to recording the road status and updating data bases. Monitoring results which are dependent on that data may be inaccurate. Until appropriate updating occurs, developing an accurate monitoring evaluation cannot be completed.

It appears that the permit system for allowing use on closed roads and a system for monitoring that use, continues to be inconsistent between districts.

MONITORING ITEM 48: Trails

Forest Goals, Desired Future Condition, and Outputs: Provide and manage roads, trails, and facilities needed to meet user needs and future demand, and to accomplish land and resource management and protection objectives on the Forest. Existing trails will be retained and reconstructed. (DFC)

Monitoring Question(s): 1. What is the amount, type, and condition of trails managed? 2. How much trail construction and reconstruction has been accomplished? 3. Have any trails been abandoned or obliterated without replacement? Any planned? 4. Do existing trails meet appropriate trail management objectives? 5. Are the user needs being met? 6. What changes have occurred as a result of project activities?

Threshold of Variability: 1. Less than 80 percent managed at standard service level. 2. Less than 80 percent of trail target accomplishment. 3. 10% of trails on the system lost to resource development activities. 4. High level of user complaints or expressed concerns about trails.

Results/Findings:

In 1995, the Forest offered approximately 1,775 miles of trails to recreation users. The amount and type of trails are displayed in Table III-5. Major changes occurred in the reported miles of snowmobile trails between last year and this year. The change is the result of new reporting procedures and does not reflect actual changes that occurred on the ground. Walla Walla District reported abandoning 1.5 miles of trail, the only district to report obliterated trails. A total of 16 miles of new construction was reported, 7 miles on Walla Walla, 8 miles of North Fork John Day, and 1 mile on Heppner.

Table III-5
TRAIL SYSTEM MILES - 1995
Umatilla National Forest

District	Horse/Hiking	Skiing/Snowmobile	ATV/Motorcycle	Wilderness
Heppner	26	117	15	–
NFJD	76[1]	282	108	134
Walla Walla	127	251	131	30
Pomeroy	49	127	29	273
Total	278	777	283	437

[1] Non-motorized

In February 1995, the Pomeroy and Walla Walla Districts completed the Chase Spangler Trail Network EA. When completed, this network will provide an additional 41 miles of trails designed for motorized use as well as 38 miles of nonmotorized use. Implementation of this network is expected to occur over the next 15 years.

Lack of money to complete needed maintenance is noted as a major problem on most districts. The backlog in maintenance needs continues to get worse which is resulting in an increasing failure to meet appropriate trail management objectives and user needs. This problem is especially bad on the North Fork John Day and Heppner Districts where heavy tree mortality and large amounts of down trees has increased maintenance needs.

Several Districts report using volunteers to supplement dwindling trail dollars. North Fork John Day District reported that the Northwest Trailriders donated more than 1,000 hours of labor to the Winom-Frazier OHV complex. Snowmobile clubs on both the Walla Walla and Heppner District volunteer time and money for the maintenance and grooming of snowmobile trails. Seventy miles of trails are groomed on Heppner and 150 miles are groomed regularly on the Walla Walla District.

Evaluation:

Decreasing funding has limited the amount of trail maintenance completed Forestwide. This suggests a failure to meet trail management objectives and user needs in some cases. However, since trail monitoring has been limited, it is difficult to evaluate if objectives and user needs have been met. Additional data collection and review are needed to adequately evaluate this item.

I. FIRE PROTECTION

MONITORING ITEM 49: Fire — Program Effectiveness

Forest Goals, Desired Future Condition, and Outputs: Provide and execute a fire use and protection program that is cost efficient and responsive to land and resource management goals and objectives. The use of confine and contain strategies will result in a more cost-effective fire management program. The general fuel hazard level is slowly being reduced through the combination of activities.

Monitoring Question(s): 1. Are fire programs (i.e. prevention, detection, suppression) meeting the standards as required by the National Forest Management Act? Are these programs being effective? 2. What is the number of fires, by cause and acres burned, plus the actual expenditure of EFFS dollars.

Threshold of Variability: Cost effective plans for the prevention of human caused fires will be aimed at specific risks. +25% increase in Most Efficient Level (MEL) in any year; or greater than 10 percent increase in MEL of 5-year average. 20% departure from the Fire Management Action Plan.

Results/Findings:

The 1995 fire season (Calender Year) was below average in numbers of wildfires and acres burned by wildfire, due to the relatively cool moist weather conditions. The Forest experienced 98 fires, burning a total of 138 acres. Table III-6 exhibits the total number of human and lightning caused fires and acres burned. Table III-9 shows actual expenditures of EFFS (Emergency Fire Suppression and Rehabilitation Funds allocated by Congress) in FY 1995 and includes costs from the CY 1994 fire season which extended into FY 1995.

Table III-6
LIGHTNING, HUMAN CAUSED FIRES AND
ACRES BURNED 1991-1995
Umatilla National Forest

Fire Cause	1991	1992	1993	1994	1995
Human Caused:					
Total Number of Fires	52	53	71	45	16
Total Acres Burned	29	3,156	635	153	7
Lightning Caused:					
Total Number of Fires	93	137	20	201	82
Total Acres Burned	49	278	3	5,639	131
Forest Totals:					
Number of Fires	145	190	91	246	98
Acres Burned	78	3,435	638	5,793	138

TABLE III-7
ACTUAL EXPENDITURES OF EFFS - FY 1991 to 1995 ($95)
Umatilla National Forest

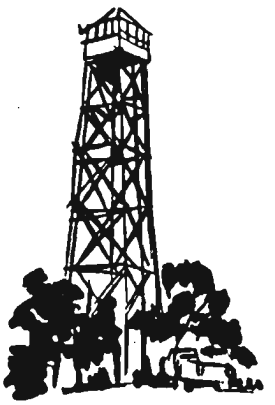
YEAR	1991	1992	1993	1994	1995
Total Expenditure	$601,468	$1,598,834	$1,133,858	$3,972,121	$1,617,775

The total number of fires in 1995 represents 60 percent of the 10-year (1985-94) average of 162. When comparing the total number of lightning fires in 1995 to the 10-year lightning fire average (same period), the 1995 level was 80 percent of the average. Human-caused fires was 31 percent of the human-caused average.

The total acres burned in 1995 was 10 percent of the base period average (1990-94) of 1,438 acres. The large decrease is primarily due to the cool moist conditions of the 1995 wildfire season. In 1995, 21 lightning fire starts were in wildernesses covered by Prescribed Natural Fire Plans. Of these, two lightning starts were classified as prescribed natural fire (PNF) and managed with funding other than suppression. These fires totaled 87 acres in the North Fork John Day Wilderness (see MI 18, Fire Effects - Prescribed Fire).

Evaluation:

The fire program is within the established threshold. Recommendation is continue monitoring.



LOOKOUT TOWER

J. CULTURAL AND HISTORIC RESOURCES

MONITORING ITEM 50: Cultural Properties/Sites

Forest Goals, Desired Future Condition, and Outputs: All inventoried cultural properties determined eligible or potentially eligible for the National Register of Historic Places (NRHP) shall retain those characteristics which (may) qualify the property for inclusion on the NRHP.

Monitoring Question(s): 1. Are the NRHP characteristics of unevaluated and eligible cultural resource properties being protected? 2. Is appropriate stabilization or rehabilitation of damaged sites eligible for inclusion in the NRHP being undertaken? 3. Are the appropriate processes and consultation with SHPO being accomplished as directed in the Forest Plan and agreements.

Threshold of Variability: No acceptable variability (Federal law and regulation).

Results/Findings:

During FY '95, the Districts requested consultation on 81 separate projects, 22 on the Heppner District, 16 on Pomeroy, 24 on North Fork John Day, and 19 on the Walla Walla District. Sixteen new sites were identified. All of the cultural resource properties located within the limits of the projects on the North Fork John Day and Walla Walla Districts were protected from disturbance related activities. The other two districts, Heppner and Pomeroy, did not report the results of monitoring, if any.

Cultural resource properties occur at 35 percent of the recreation sites on the Forest. These sites will continue to be degraded by public recreation activities until the Forest is able to adequately fund eligibility determinations and data recovery for properties determined eligible. A similar situation exists in the range program. Several properties receiving some form of impact and degradation due to grazing activities were identified during the recent permit renewal process. These sites could receive additional damage if adequate evaluation and mitigation is not accomplished. Lastly, the Fremont Powerhouse, listed on the National Register of Historic Places, continues to "suffer" from the elements due to a lack of funding for necessary restoration work.

Currently, the Forest is not conducting appropriate stabilization and rehabilitation at damaged cultural resource properties. As addressed above, several cultural resource properties on the Forest have been damaged and degraded in the past and are continuing to be degraded. Until adequate funding is targeted specifically at these problem areas, the Forest will continue to fail to meet this requirement of the Forest Plan.

The Forest is complying with the Forest Plan, Section 106 of the National Historic Preservation Act, and the Regional Agreement most of the time but continue to have what can best be categorized as procedural problems. Most of the lapses are technical in nature and do not have the potential to effect cultural properties.

Evaluation:

Forest-wide documentation and reporting of monitoring results and findings continues to be needed. Additional priority is needed to protect or rehabilitate damaged sites.

K. SPECIAL INTEREST AREAS

MONITORING ITEM 51: Effects of Forest Management Activities on SIA's

Forest Goals, Desired Future Condition, and Outputs: Protect, manage, preserve, and interpret areas of significant cultural, historical, geological, botanical, or their special characteristics for educational, scientific, and public enjoyment purposes.

Monitoring Question(s): 1. Are the provisions and conditions for the special interest areas including scenic areas being met? 2. Are management activities affecting the qualities of the SIA; are the standards and guidelines for the area effective in meeting objectives for the SIA?

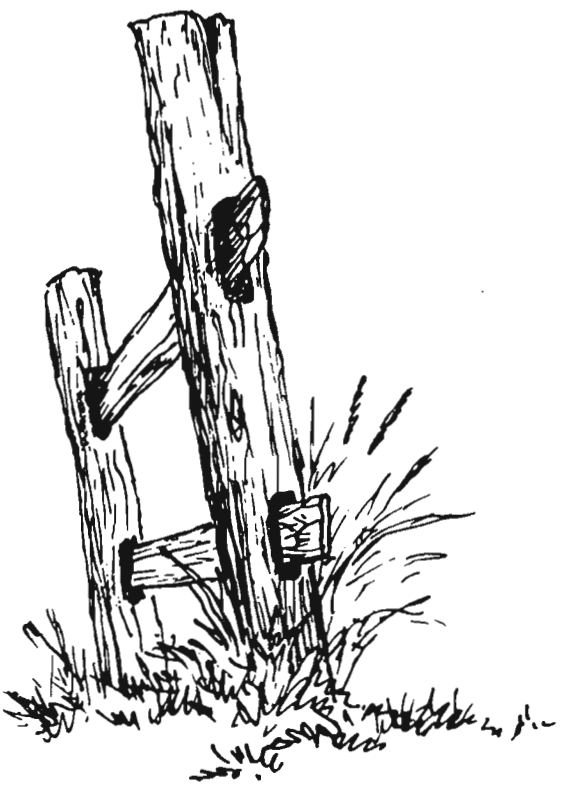
Threshold of Variability: 1. Any SIA principal quality compromised as a result of Forest Service management activities or public use. 2. Any delays in developing management plans for individual areas. 3. Any deviations outside the management area A-8 and A-9 standards and guidelines.

Results/Findings:

In 1995, no monitoring was done in the Forest's six designated botanical areas, classified under Management Area A9. Monitoring was not done for the Forests other SIAs.

Evaluation:

Continue monitoring when project activities occur.



L. RESEARCH NATURAL AREAS

MONITORING ITEM 52: Research Natural Areas (RNA)

Forest Goals, Desired Future Condition, and Outputs: Manage areas for research, observation, and study of undisturbed ecosystems.

Monitoring Question(s): 1. Are provisions and conditions for Research Natural Areas being met? 2. Are management activities affecting the integrity of the RNA's?

Threshold of Variability: Any deviation from RNA management intent and standards and guidelines.

Results/Findings:

The goal of completing establishment records for the Forest's six candidate (proposed) Research Natural Areas has not been met. No monitoring was conducted on the two established RNA's, Rainbow Creek and Pataha Bunchgrass. Monitoring has not been accomplished primarily because of lack of funding and adequate priority to complete the job,

Districts continue to carefully consider RNA boundaries carefully in developing project work plans. The impacts of grazing on two candidate RNA's, Kahler Creek Butte (Heppner RD) and Birch Creek Cover (North Fork John Day RD) should be monitored to ensure that the protected elements are not altered before the areas attain established status.

Because monitoring plots have not been installed in the established and candidate Research Natural Areas, data is not available from which to formulate the answer to the monitoring questions.

Evaluation:

Lack of funding and priority have reduced the possibilities to ensure if provisions and conditions for RNAs are being fully met. The Forest needs to establish monitoring protocols and plots to determine if management activities are affecting the integrity of RNAs.

M. ADMINISTRATIVE

MONITORING ITEM 53: National Environmental Policy Act (NEPA)/National Forest Management Act (NFMA)

Forest Goals, Desired Future Condition, and Outputs: Comply with the NEPA and NFMA requirements, including cumulative effects analysis, during project-level decision-making.

Monitoring Question(s): 1. Are project-level decisions made using appropriate NEPA/NFMA procedures including analysis of cumulative effects? 2. Are project level decisions tiered to, and in accord with, the Forest Plan?

Threshold of Variability: Failure to use appropriate procedures defined in Forest NEPA "White Paper" (including documentation) or to meet Plan requirements for Plan implementation projects (100% of projects must meet these requirements).

Results/Findings:

As expected, the number of Environmental Assessments (EAs) completed on the Forest increased this fiscal year. One EIS and 16 EAs were prepared, compared to only two EAs in Fiscal Year 1994.

Projects in the East End EIS include a mix of timber harvest and other restoration activities. Only one additional timber sale EA, the Turner Otter Revision, was completed. Other EAs prepared documented projects in vegetation management (2), recreation (2), watershed restoration (1), soil restoration (1) and range permit issuance (9). The number of NEPA projects for timber sales this year, continued to be far below historic levels. Many factors are contributing to this reduction including the two recently approved interim direction Forest Plan Amendments (see Section VI, Forest Plan Amendments), and the consultation process for endangered Snake River Salmon.

No formal NEPA/NFMA compliance reviews were made on the Forest this year. However, less formal monitoring is being completed. On some Districts, the monitoring was accomplished through informal reviews by District NEPA Coordinators and the District management team. Only one District reported utilizing the Forest Plan Implementation Monitoring Checklist as a tool in determining consistency with the Forest Plan.

The number of decision memos prepared in 1995 decreased slightly from 1994. Last year, 75 decision memos were written, this year 65 were prepared. In 1995, the majority of the decision memos were used to document small restoration projects. Several informal reviews were conducted by the LMP Staff to assure the requirements for preparation of these documents were being followed. No problems were noted during these reviews.

On July 27, 1995, the President signed Public Law 104-19. This Act, know as the Rescission Act, includes an emergency salvage sale amendment. The legislation directs the preparation, advertisement, offer and award of contracts for salvage timber sales using expedited procedures. Although this law waives certain environmental rules for salvage sale, the President has directed that all prepared sales will meet current environmental standards. Several environmental documents prepared after July 27 fall under the rules in this new law. Informal reviews have determined that implementation occurred according to direction outlined by the President. As more salvage sales falling under this direction are completed in FY 1996, additional monitoring will be needed to assure compliance with this law and the President's direction for its implementation.

Evaluation:

No Formal NEPA/NFMA compliance reviews were conducted during 1995. However, with the passage of PL 104-19, a renewed emphasis in salvage harvest on the Forest and an expected increase in NEPA suggests that formal NEPA/NFMA monitoring will be necessary in 1996. Renewed emphasis should be placed on utilizing the Forest Plan Implementation checklist. The Forest NEPA "White Paper" is badly outdated and still needs to be revised.

IV. Social, Economic, Budget

A. SOCIAL AND ECONOMIC

MONITORING ITEM 54: Changes in Income Levels, Populations, and Employment

Forest Goals, Desired Future Condition, and Outputs: Promote economic and community development within the zone of influence

Monitoring Question(s): 1. What changes are occurring to local income, per capita income levels and employment as a result of Forest operations?

Threshold of Variability: Plus or minus 15 percent for each factor in 3 years.

Results/Findings:

The Forest Plan projected an increase of 375 Forest-related jobs per year (total 3,943) for the first decade. Forest-related jobs and income are primarily associated with four activities: (1) harvesting and processing of sawtimber; (2) harvesting and processing of other types of timber such as roundwood and fuelwood; (3) livestock grazing; and (4) recreation use, including both developed and dispersed recreation.

Jobs associated with the specified Forest management activities are shown in Table IV-1. Job trend results are similar to last years report, showing additional decline. Based on the 3-year average from 1993-95, total estimated Forest-related employment was 35 percent less than projected in the Forest Plan. The largest decrease has occurred in employment related to sawtimber and other timber harvesting and processing. Estimated 3-year average employment for timber related activities is 57 percent less than the Forest Plan projection. For 1995, timber-related employment was 90 percent less than the anticipated level in the Forest Plan. Three-year average employment associated with livestock grazing and recreation was 18 percent and 24 percent less than expected.

Table IV-1
JOBS RELATED TO SELECTED FOREST ACTIVITIES[1]
(jobs per year)[2]

Activity[3]	Forest Plan	1993	1994	1995	3-year average (1993-95)	Percent change from Forest Plan
Sawtimber	882	866	346	104	439	-50%
Other timber	285	126	48	7	60	-79%
Livestock	17	14	15	13	14	-18%
Recreation	2,759	2,054	2,206	2,065	2,108	-24%
Totals	3,943	3,060	2,435	2,189	2,561	-35%

(1) Estimated jobs associated with sawtimber production, other timber production, livestock grazing, and recreation use for the Forest Influence Zone (Forest Plan FEIS, Appendix B, p. 46).

(2) See Forest Plan FEIS, Appendix B, pp. 46-50 for discussion of methodology used to estimate job effects.

(3) Timber data from Timber Sale Program Information and Reporting System, (TSPIRS), Employment, Income, and Program Level Account; Umatilla National Forest, 1993, 1994, and 1995.

(4) Based on outputs listed in Forest Plan FEIS, Table II-6, p. II-87, 92, 94; Table II-8, p. 109 to 110, Alternative F/M.

Change in non-agricultural wage and salary employment from 1990-95 is displayed in Table IV-2 for the counties within the Forest's area of influence. All counties show an overall increase in total wage and salary employment except Wallowa County (down 7 percent). Grant, Morrow, and Wallowa counties show decreasing employment in total manufacturing. All Oregon counties show decreased employment in lumber and wood products. In general, all counties in the area of influence indicate increased employment in nonmanufacturing, services, and government employment. Garfield County shows a decrease of 33 percent in the service sector.

Table IV-2
PERCENTAGE CHANGE IN EMPLOYMENT BY CATEGORY 1990-95
Umatilla National Forest

County[1]	Total Wage and Salary[2]	Manufacturing	Lumber and Wood[3]	Non-Manufacturing	Services[4]	Government[4]
OREGON						
Grant	+4	-14	-14	+9	+40	+2
Morrow	+18	-15	-38	+40	+39	+12
Umatilla	+14	+2	0	+18	+29	+7
Union	+5	+1	-18	+6	+6	+1
Wallowa	-7	-44	-62	+4	+24	-1
Wheeler	+2	+43	N/A	0	+150	+4
Total	**+10**	**-4**	**-20**	**+14**	**+23**	**+5**
WASHINGTON						
Asotin	+20	+3	N/A	+22	+25	+14
Columbia	+9	+4	N/A	+12	+7	+12
Garfield	+3	N/A	N/A	+3	-33	+7
Walla Walla	+9	+7	N/A	+9	+19	+11
Total	**+10**	**+7**	**N/A**	**+11**	**+20**	**+11**

(1) State of Oregon, Employment Department, workforce analysis by county. Labor Force and Employment in Washington State.

(2) Non-agricultural wage and salary employment only.

(3) Lumber and wood manufacturing included in total manufacturing.

(4) Service and government employment included in total non-manufacturing.

The Forest Plan projected annual personal income of $82.5 million (1995$) from Forest related activities. Based on the job estimates discussed above, average annual personal income derived from these activities during the period 1993-95 was 46 percent less than Forest Plan projections. Sawtimber and other timber production accounted for the largest differences generating about 67 percent less income than projected. Table IV-3 shows personal income per year associated with the Forest related activities.

Table IV-3
PERSONAL INCOME DERIVED FROM FOREST-RELATED ACTIVITIES[1] [2] (1995 $MM)
Umatilla National Forest

Activity	Forest Plan[3]	1993	1994	1995	3 year average (1993-95)	Percent change from Forest Plan
Sawtimber	31.8	23.4	9.4	3	12	-62%
Other timber	9	3.3	1.3	0.2	1.6	-82%
Livestock	0.3	0.2	0.2	0.2	0.2	-33%
Recreation	41.4	31	30.6	31	31	-25%
Totals	**82.5**	**57.9**	**41.9**	**34.4**	**44.8**	**-46%**

(1) Estimated personal income associated with sawtimber production, other timber production, livestock grazing, and recreation use for the Forest Influence Zone (Forest Plan FEIS, Appendix B, p. 46).
(2) See Forest Plan FEIS, Appendix B, pp. 46-50 for discussion of methodology used to estimate personal income effects.
(3) Timber data from Timber Sale Program Information and Reporting System, (TSPIRS), Employment, Income, and Program Level Account; Umatilla National Forest, 1993, 1994, and 1995.
(4) Based on outputs listed in Forest Plan FEIS, Table II-6, p. II-87, 92, 94; Table II-8, p. 109 to 110, Alternative F/M.

The period from 1987 to 1989 has been identified as the base period for comparing changes in per capita income levels. The 1993 per capita income levels (1995$) for each county (the most recent information available) was compared to the average per capita income levels during the base period. Table IV-4 shows the per capita income levels for each county within the Forests area of influence along with the percentage change from the base period.

Table IV-4
PER CAPITA INCOME LEVELS (1995$)
Umatilla National Forest

County	3-year Average 1987-89 (1995$)	1993	Percent change from Forest Plan
Asotin	$16,386	$18,326	+12%
Columbia	$19,406	$24,099	+24%
Garfield	$20,152	$23,552	+17%
Walla Walla	$16,750	$17,987	+7%
Grant	$16,418	$17,953	+9%
Morrow	$17,046	$17,547	+3%
Umatilla	$15,992	$17,137	+7%
Union	$16,489	$17,382	+5%
Wallowa	$17,899	$19,320	+8%
Wheeler	$15,715	$19,256	+23%

(1) Per capita income for Washington from Washington State Employment Security Department, 1996.
(2) Per capita income for Oregon from Oregon Employment Department, 1996.

Since 1990, all six Oregon[1] counties grew in population by 8.1 percent. The State of Oregon as a whole, grew 10 percent. The four Washington counties also increased in population levels by 8.3 percent. Washington state population grew 11.6 percent since 1990. Total population growth for all 10 counties was 8.2 percent. Table IV-5 displays each county population within the influence of the Forest.

Table IV-5
AREA POPULATION
Umatilla National Forest

County	1980	1990	% Change 1980-90	1995	% Change 1990-95
OREGON:	2,633,149	2,847,000	+8.1	3,132,000	+10%
Grant	8,210	7,900	-3.8	7,950	+0.6%
Morrow	7,519	7,600	+1.1	8,700	+14.5%
Umatilla	58,861	59,000	+0.24	65,200	+10.5%
Union	23,921	23,600	-1.3	24,400	+3.4%
Wallowa	7,273	6,950	-4.4%	7,250	+4.3%
Wheeler	1,513	1,400	-7.5	1,550	+10.7%
County Total	**107,297**	**106,450**	**-0.79**	**115,050**	**+8.1%**
WASHINGTON:	4,132,156	4,866,692	+17.8	5,429,900	+11.6%
Asotin	16,823	17,605	+4.6	19,100	+8.5%
Columbia	4,057	4,024	-0.81	4,200	+4.4%
Garfield	2,468	2,248	-8.9	2,350	+4.5%
Walla Walla	47,435	48,439	+2.1	52,700	+8.8%
County Total	**70,783**	**72,316**	**+2.2**	**78,350**	**+8.3%**
TOTAL:	**178,080**	**178,766**	**+0.4**	**193,400**	**+8.2%**

(1) Oregon Employment Department, estimates for 1995.
(2) Washington Employment Security Department, estimates for 1995.

Evaluation:

Forest-related employment and personal income was outside the 15 percent threshold. This difference is primarily attributed to the declines in timber harvesting (See MI 43). The difference between Forest Plan and current job and personal income estimates is partly a reflection of more recent information and realistic modeling assumptions. Forest Plan estimates generated $256,245 (1995$) of personal income per million-board feet of sawtimber harvested. In 1994, this estimate was revised to $359,800 (1995$), representing a 40 percent increase over the Forest Plan projected value.

The data will be further analyzed and used in the Forest Plan adjustment process. The Forest is currently waiting on results from the Interior Columbia Basin Ecosystem Management Project and Final Eastside EIS to initiate the Forest Plan adjustment process.

MONITORING ITEM 55: Changes in Payments to Counties

Forest Goals, Desired Future Condition, and Outputs: Promote community and economic development.

Monitoring Question(s): What changes are occurring in the levels of payments to local counties (consider the 10 county area) surrounding the Umatilla National Forest operations?

Threshold of Variability: Failure to meet Plan predicted or anticipated payment levels by 20 percent.

Results/Findings:

Table IV-6 exhibits payments to the counties within the Forest's area of influence for the period 1992 to 1995 and shows payments projected by the Forest Plan. Payments are 25 percent of Forest sales and use receipts from timber, land uses, recreation, power, minerals, and grazing. Receipts deposited for improvements on National Forest System land from timber sale improvement, the value of timber purchaser road construction, and salvage sale funds are also used as a basis of payment.

For 1995, the Forest Plan projected payments of approximately $7,772,725 (1995$). Actual payments were $876,658, an 89 percent decrease from Plan projections. The 4-year average (1992-95) payments were 61 percent less than projected.

As in past years, timber sale receipts provided the majority of the receipts. Timber receipts are based on the actual dollar value of timber harvested from the Forest. Additionally, payments to the counties are both proportional to the amount of National Forest System land in the county and based on the total revenue generated for the Forest as a whole.

Table IV-6
PAYMENTS TO COUNTIES (1995 M$)
Umatilla National Forest

County	1992	1993	1994	1995	4-year Average	Forest Plan Projection	% change from Forest Plan
Asotin	213	114	99	34	115	311	-63%
Columbia	632	337	293	99	340	854	-60%
Garfield	378	202	179	60	205	544	-62%
Grant	1,228	655	569	193	661	1,708	-61%
Morrow	568	303	263	89	306	777	-61%
Umatilla	1489	793	689	234	802	2097	-62%
Union	405	216	188	64	218	544	-60%
Walla Walla	1,234	657	575	194	665	1716	-61%
Wallowa	490	261	227	77	264	699	-62%
Wheeler	160	86	74	25	86	233	-63%
TOTAL:	$5,574	$2,971	$2,585	$877	$3,002	$7,773	-61%

Source: Land and Resource Management Plan, Umatilla National Forest Table 4-1, p. 4-18. Payments to counties for FY '95 from Budget and Finance reports.

Evaluation:

Payments to counties are outside the 15 percent threshold. The Forest Plan projected payments to counties has not been realized, primarily because actual timber outputs have been significantly less than projected. Receipts and payments to counties are anticipated to continue to be less than Forest Plan estimates in the short term. Continuation of payment trends suggest that the Forest Plan needs to be adjusted. The Forest expects to consider this in the Forest Plan adjustment process upon completion of the final Eastside EIS (ICBEMP). Continue monitoring until the initiation of the Forest Plan adjustment process.

MONITORING ITEM 56: Changes in Lifestyles, Attitudes, Beliefs, Values and Social Organizations

Forest Goals, Desired Future Condition, and Outputs: Promote human resources, civil rights, and community development within the zone of influence of the Umatilla NF.

Monitoring Question(s): 1. What changes are occurring in local attitudes toward Forest Service programs and activities? 2. How are local lifestyles changing and are values and beliefs changing? 3. How are social organizations being effected by the Forest?

Threshold of Variability: Established trend toward Forest-Community conflicts or identification of issues and problems and major changes in lifestyles influenced by the Forest.

Results/Findings:

During 1995, informal methods and techniques continued to be used to monitor changes in lifestyles, attitudes, beliefs, and values. Methods involved interviews of key contacts and opinion leaders, sensing walk-in customers, telephone and written inquiries, observations and comments by employees and meeting attendees. Other methods include reviewing newspaper and magazine articles, videotaping documentaries, specials, and news spots, and recording radio spots for review and assessment.

Public issues and concerns (and legal issues and administrative requirements) continued to influence how lands and resources are being managed. Ecosystem management (especially defining what it is and what it means), job loss, water, fish (particularly salmon), timber supply, livestock grazing, threatened wildlife, community impacts, home rule, recreation, county of dominance and restoration are a few of the major issues being discussed and debated. Each is a reflection of the attitudes, beliefs, and values (and lifestyles) inherent in the communities and areas influenced by the Forest.

Evaluation:

The Interior Columbia Basin Ecosystem Management Project (ICBEMP) has identified public issues and is addressing economic and social impacts of the shift to ecosystem management and other new information. Results from the project are expected to provide additional information to address the monitoring questions in greater detail. Continue monitoring until completion of the final Eastside EIS and Scientific Assessment. The Forest needs to review the background material on public issues and public reaction and comment about the ICBEMP science findings and EIS's. The Forest also needs to study input received from comments on District and Forest projects.

MONITORING ITEM 57: Changes in Forest Contributions to the Forest Products Industry

Forest Goals, Desired Future Condition, and Outputs: Promote community and economic development within the Forest zone of influence.

Monitoring Question(s): What changes are occurring in the contributions of the Forest to the local forest products industries within the zone of influence?

Threshold of Variability: Change in Umatilla National Forest percent or failure to meet Plan objectives for raw materials to industry.

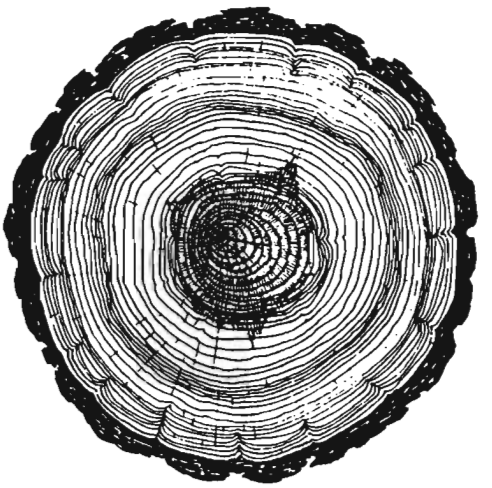
Results/Findings:

The Forest has been reducing timber sale outputs since 1991. In 1995, the total amount of wood products offered for sale from the Forest was 22 MMBF or 13.8 percent of the Total Sale Program Quantity (159 MMBF). For additional discussion, refer to Monitoring Item 43, Timber Offered for Sale.

The Forest expects timber outputs to increase to a sustainable level near 50 MMBF within the next several years. However, the Forest will still be well below the current Forest Plan projections. With timber production below projected levels for adjacent Forest's as well for the last several years, raw material shortages have appeared and affected local timber industries.

Evaluation:

Adjustments to the Forest Plan will be considered when the ICBEMP and Final Eastside Environmental Impact Statement is completed.



B. FOREST BUDGET

MONITORING ITEM 58: Forest Budget

Forest Goals, Desired Future Condition, and Outputs: Full funding of all resource programs and activities including monitoring.

Monitoring Question(s): Are the annual programs and budgets needed to implement the Forest Plan being realized?

Threshold of Variability: Budget more than 20 percent different from Forest Plan level.

Results/Findings:

Since FY '92, the Forests total budget had declined, with FY '95 following recent trends. Table IV-7 shows a comparison of Forest Plan projected with actual expenditures for 1995. The Forest Plan projected first decade expenditures to average $32,152,000 (1995$) per year. Actual expenditures for the same activity categories for FY95 were $19,062,000, which represents a 41 percent decline from Forest Plan projections.

A few programs had expenditures above the Forest Plan projections. Program areas showing the highest increases from Forest Plan projections include law enforcement (+328%), threatened and endangered species operations (+128%), and range vegetation management (+90%). Most programs are funded at rates substantially less than Forest Plan expectations. Program areas showing the largest decreases were construction of recreation facilities (-97%) and other facilities (-94%), and timber sale administration (-90%).

Table IV-7
FOREST EXPENDITURES/BUDGET FY 1995
Umatilla National Forest

Fund Code	Forest Plan (1995 M$)	Expenditures (1995 M$)	% Change from Forest Plan
Appropriated:			
Minerals & Geology Management	194	73	-62%
Land Ownership Management	112	40	-64%
Land Line Location	197	64	-68%
Facility Operations	270	188	-30%
Law Enforcement	22	93	+328%
Road Maintenance	1,412	539	-62%
Trail Maintenance	429	132	-69%
Timber Sale Administration	4,420	425	-90%
Ecosystem Planning, Monitoring	0	1,333	N/A
Forestland Vegetation	1,674	1,519	-9%
Recreation & Wilderness Mngt.	1,427	620	-57%
Wildlife Habitat Management	556	201	-64%
Anadromous/Inland Fish	480	447	-7%
Range Vegetation Management	441	836	+90%
T&E Species Operations	57	131	+128%
Soil, Water, Air Management	373	443	+19%
Heritage Resource Management	120	95	-21%

Fund Code	Forest Plan (1995 M$)	Expenditures (1995 M$)	% Change from Forest Plan
General Administration	2,885	1,718	-40%
TOTAL NATIONAL FOREST SYSTEM	**$15,069**	**$8,897**	**-41%**
Construction: Recreation Facilities	292	8	-97%
Other Facilities	401	26	-94%
Road Construction	3,000	553	-82%
Trail Construction	646	140	-78%
TOTAL CONSTRUCTION	**$4,339**	**$727**	**-83%**
Other Funds: Forest Fire Protection	1,461	1,870	+28%
Range Betterment	40	45	+11%
Brush Disposal	1,159	659	-43%
Timber Purchaser Road Constr.	3,027	0	-100%
Purchaser Elect Timber Roads	756	0	-100%
Timber Salvage Sales	1,843	3,691	+100%
Cooperative work (K-V)	3,580	2,738	-24%
Cooperative work (other)	856	330	-61%
State and Private Forestry	22	35	+61%
Federal Highway Admin.	0	6	N/A
L&WCF 15% Fee Collection	0	4	N/A
Resource Mngt., Timber Rcpts.	0	2	N/A
Quarters Maintenance	0	58	N/A
TOTAL OTHER FUNDS	**$12,744**	**$9,438**	**-26%**
GRAND TOTAL	**$32,152**	**$19,062**	**-41%**

Source: Budget and Finance Section - Umatilla National Forest

Evaluation:

During FY '95, actual expenditures were 59 percent of Forest Plan projections which means the threshold of 20 percent has been exceeded for this monitoring item. Budget levels are anticipated to continue to decline for the next several years. Continue monitoring for the next several years until further analysis can be done (through the Forest Plan adjustment process) and funding levels stabilize.

MONITORING ITEM 59: Costs/Values of Forest Plan

Forest Goals, Desired Future Condition, and Outputs: (statement will be included in the monitoring strategy revision)

Monitoring Question(s): 1. Are the major costs and values used and projected in the Forest Plan analysis in line with actual implementation costs, and present values being realized? 2. Are the values used in the plan analysis being proven out in experience?

Threshold of Variability: 1. 20% difference between actual expenditures and those projected in the Plan. 2. 20% difference between actual resource values and those projected in the Plan.

Results/Findings:

In Table IV-8, timber costs and value are addressed. The table displays Forest Plan projections of commercial timber outputs, revenues, and costs with actual totals for the period from 1992 to 1995. The general trend since the mid-1980's has been characterized by increasing costs per MBF of harvested timber. Due to changes in accounting codes and expenditures tracking, the projected cost per MBF in the Forest Plan may not be exactly comparable with the costs obtained from the Timber Sale Program Information Reporting Systems (TSPIRS).

Average revenue per MBF during the period 1993-95 was $291. This is a 64 percent increase above projections in the Forest Plan. The average cost per MBF of harvested commercial timber was $272 for the period 1993-95. This represents a 346 percent increase in cost over Forest Plan projections.

Table IV-8
COMMERCIAL TIMBER OUTPUT, REVENUE, AND COSTS[1]
Umatilla National Forest

Fiscal Year	Harvested Volume (MMBF)	Revenue (MM$)	Average Revenue Per MBF (1995$)	Average Cost Per MBF (1995$)
1995	8.1	$3.2	$392	$462[3]
1994	20.1	$6.4	$325	$217[3]
1993	81.1	$12.1	$157	$136[3]
Forest Plan	159[4]	$18.1	$177	$61[5]

(1) Commercial timber data from Timber Sale Program Information and Reporting System (TSPIRS), Statement of Timber Sale Revenues and Expenses, Umatilla National Forest, 1993, 1994, 1995.

(2) Total commercial revenue (nominal dollars), TSPIRS Statement of Timber Sale Revenues and Expenses for specified year.

(3) Total direct expenses, TSPIRS Statement of Timber Sale Revenue and Expenses for specified years.

(4) Includes Timber Sale Program Quantity (TSPQ) harvest totals for the first decade.

(5) Derived from Management Information Handbook activity codes for variable timber costs in Forest Plan, Appendix A. Due to changes in accounting codes and expenditure tracking, is not directly comparable to above cost figures.

Recreation Values: Recreation values represent the estimated market price of the specified recreation activity in terms of recreation visitor days or wildlife and fish user days (see accompanying table for definitions). The values used in the Forest Plan analysis can be compared with the most recent agency approved values from the 1990 RPA (Forest and Rangeland Resources Planning Act of 1974) in Table IV-9.

For the listed activities, the 1990 RPA figures are on average 57 percent higher than the values used in the Forest Plan analysis (1995 constant dollars). Cold-water and anadromous fishing are 365 percent and 98 percent higher, respectively. Small game, waterfowl, and upland game hunting are higher by 100 percent, 69 percent and 77 percent respectively. Big-game hunting decreased by 5 percent.

Table IV-9
COMPARISON OF RECREATION VALUES USED
IN FOREST PLAN AND RECENT ESTIMATES

Activity	Plan Analysis per RVD or WFUD (1995$)	1990 RPA Value per RVD or WFUD (1995$)	Percent Change from Plan
Fishing:			
Anadromous	$47	$93	+98%
Cold water	$20	$93	+365%
Hunting:			
Big game	$44	$42	-5%
Small game	$19	$38	+100%
Waterfowl	$35	$59	+69%
Upland game	$35	$62	+77%
Boating:			
Motorized	$6	$6	0%
Non-motorized	$9	$9	0%
Other:			
Motorized travel	$11	$11	0%
Camping	$11	$9	-2%
Picnicking	$6	$9	+50%
Hiking	$14	$13	-7%
Wilderness	$19	$26	+37%
Wildlife viewing	$39	$47	+21%

(1) The values used in the Forest Plan analysis are based on values developed in the FEIS for the 1985-2030 Resources Planning Act Program. October 1986. See Appendix F, Development of Benefit Values and Costs, PP. F-1 to F-16.

(2) RVD's are Recreation Visitor Days, which equals one person engaged in the specified activity for 12 hours. WFUD's are Wildlife-Fish User Day's which is a similar concept to recreation visitor days except applied to hunting and fishing activities.

(3) Resource Pricing and Valuation Procedures for the Recommended 1990 RPA Program, Appendix B in The Forest Service Program for Forest and Rangeland Resources: May 1990.

Evaluation:

Most of the values have exceeded the established 20 percent threshold. The changes in costs and revenues need to be considered in a Forest Plan adjustment; information and data will be further evaluated in the Forest Plan adjustment process. The adjustment process is currently waiting for the completion of the ICBEMP Scientific Assessment and Final Eastside EIS.

V. Accomplishments

V. ACCOMPLISHMENTS

In FY 1995, the Forest accomplished various resource programs which relate to monitoring. Forest objectives or planned average annual scheduled outputs and effects may not always be accomplished in any given year. Changes in budgets, data, assumptions or other items used in the development of the Plan could affect accomplishment of outputs and activities. Table V-1 identifies each resource area, unit of measure, Forest Plan projection, Regional assigned targets, actual Forest output, and percentage of actual output to the Forest Plan.

Table V-1
FOREST ACCOMPLISHMENTS – FY 1995
Umatilla National Forest

Resource	Unit of Measure	Forest Plan[1] Projection	Region Assigned Target	Actual Forest Output	% Actual to Forest Plan
Recreation Recreation Resource Administration/Maintenance	MPAOT[2]	255	335	341	134%
Trail Construction/Reconstruction	Miles	30	6.2	11.8	39.3%
Trail Maintenance	Miles	400	N/A	N/A	–
Range Noxious Weed Control	Acres	N/A	N/A	97 2,372 (KV)[3]	–
Nonstructural Improvement	M Acres	N/A	2,000	2,100 (KV)	–
Structural Improvement	Structure	N/A	N/A	3 23 (KV)	–
Permitted Grazing	M AUM's[4]	58.0	N/A	54.5	94%
Water and Soil Watershed Improvement	Acres	454	310	310 20 (KV) 20 (Cont.)[10]	77%
Soil Inventory	M Acres	NA	63	95	–
Fire Fire Protection	M Dollars	–[5]	1,465,000	1,460,081	–
Fuel Treatment Natural Activity	 M Acres M Acres	 3.4 5.8	 10.0 2.2	 5.0 1.6	 147% 27%
Timber Total Timber Offered - TSPQ	 MMCF[6] MMBF[7]	 28.4 159	 46.0	 4.3 22.3	 14%
Reforestation[8]	M Acres	7.5	4.3	4.9	65%
Timber Stand Improvement[9]	M Acres	2.9	3.6	3.4	117%
Lands Property Boundary Location	Miles	37.5	2.8	3.0	8%
Fish Anadromous Fish Stream Miles Restored/Enhanced	Miles	NA	2	2 2 (Cont.)	–

Resource	Unit of Measure	Forest Plan[1] Projection	Region Assigned Target	Actual Forest Output	% Actual to Forest Plan
Anadromous Fish Habitat Structural Improvement	Acres	NA	0	15 Str. 19 Ac.	–
Anadromous Fish Habitat Inventory	Miles	NA	110	110	–
Inland Fish Habitat Investment	Acres	NA			–
Inland Fish Habitat Investment	Structure	NA		2 (KV)	
Transportation Local Roads: Construction/Reconstruction Arterial/Collector Reconstruction	 Miles Miles	 92/61 33	 0 NA	 0 33.2	 .0% 100%
Timber Purchaser/Construction	Miles	NA	NA	NA	–
Wildlife Habitat Nonstructural Improvement	M Acres	10.0	0.11	0.11	1%
Habitat Structural Improvement	Structure	75	42	23 2 (KV) 19 (Cont.)[10]	59%
Inventory	Acres	NA	13,000	13,000	–
Threatened/Endangered and Sensitive Species Habitat Investment	Acres	NA	0	0	–
Habitat Investment	Acres	NA	860	974	–
Habitat Inventory	M Acres	NA	13	13	–

1 LRMP - Umatilla National Forest; Table 4-1, projected resource outputs and effects expressed as an annual yield/decade, pp. 4-15 to 4-16. FEIS, Table II-6 Recreation, Wildlife, and Fish Related Quantifiable Resource Outputs, Environmental Effects, Activities and Costs by Alternatives, pp. 11-87 to 11-96.
2 MPAOT = Thousand Persons At One Time
3 KV = Knutson-Vandenberg
4 AUM = Animal Unit Months
5 Forest Plan projected an annual $1,880 (1994$) per 1,000 acres. Changes in funding and processes during the past several years has made it difficult to accurately compare Plan projection to actual output.
6 MMCF = Million Cubic Feet
7 MMBF = Million Board Feet
8 25 acres contributed; 5,011 acres KV
9 Includes appropriated and KV target and output
10 Contribution made by others

Evaluation:

Since implementation of the Forest Plan, funding levels and programs have changed significantly which has made it extremely difficult to compare projected to actual outputs. During the next several years, it is anticipated budget levels will decline. The decline in funding directly affects the Forests ability to accomplish certain objectives outlined in the Forest Plan. Further evaluation is needed to fully analyze the changes that have occurred and those that are expected.

VI. Forest Plan Amendments

VI. FOREST PLAN AMENDMENTS

This section contains discussion on current Forest Plan amendments, updates, and proposed amendments.

To date, 11 amendments and one update have been made to the Forest Plan. Table VI-1 contains a brief summary of each. Table VI-2 includes a list of amendments that are expected to occur within the next 2 years.

In FY 1995, three site-specific Forest Plan amendments were approved. Forest amendment number 9 was included in the Record of Decision for East End Salvage and Restoration Projects Final Environmental Impact Statement. This amendment made changes in the management area designation along the Blue Mountain Scenic Byway and made minor changes in an old growth allocation.

Forest amendment number 10 (PACFISH) added to the Forest Plan "interim" management direction intended to arrest and reverse the decline in anadromous fish habitat on the Umatilla NF until longer term options are developed in the Eastside Strategy.

Forest Plan Amendment No. 11 amended the direction in Regional Forester's amendment No. 1 (Eastside Screens) and Forest Plan Amendment No. 8.

Table VI-1
SUMMARY OF CURRENT FOREST PLAN AMENDMENTS AND UPDATES
Umatilla National Forest

Amend. No.	Document	Date	Notes
1	Decision Memo	3/8/91	Corrects wording, phrases, and miscellaneous errors in the Plan.
2	Decision Memo	3/8/91	Corrects the Forest Plan to permit existing motorized use to continue on a trail in the A1 Management Area.
3	Decision Notice	6/22/92	Exempts the Turner Otter project from certain standards, to facilitate salvage and restoration projects.
4	Decision Notice	9/4/92	Exempts the Windy Springs salvage and rehabilitation project from certain standards, to facilitate restoration work.
5	Decision Notice	5/6/93	Exempts the Indianberry Salvage and rehabilitation project from certain standards, to facilitate restoration work.
6	Decision Notice	9/7/93	Changes were made to further clarify the management objectives for the North Fork John Day Wild and Scenic River and to define boundaries.
7	Decision Notice	12/13/93	Changes were made to further clarify the management objectives for the Grande Ronde Wild and Scenic River and to define boundaries.
N/A	N/A	3/30/94	Updates the Forest Plan by adding Appendix D (Prescribed Natural Fire Implementation Process) to clarify the national implementation intent. Because this appendix only provides updated direction and will result in no new environmental effects, no NEPA documentation was required.
8	Decision Notice	5/20/94	Implementation of Eastside Interim Direction EA - Amends the Forest Plan to implement short-term direction needed to maintain options for old growth related and other species while a complete analysis is developed as part of the Eastside EIS.
9	Record of Decision	2/6/95	East End Salvage and Restoration Projects FEIS - Changes a corridor along the Blue Mountain Scenic Byway from A-1 to A-4 to allow greater flexibility in managing the area as a scenic travel corridor. Also reallocates 148 acres of existing old growth habitat as C1 to replace an unsuitable stand currently allocated as C1.

Amend. No.	Document	Date	Notes
10	Decision Notice	2/24/95	Interim Strategies for Managing Anadromous Fish Producing Watersheds on Federal Lands in Eastern Oregon and Washington, Idaho, and Portions of California EA (PACFISH). By amendment, adds to the Forest Plan "interim" management direction intended to arrest and reverse the decline in anadromous fish habitat on the Umatilla NF (as well as 14 other Forests) until longer term options are developed in the Eastside Strategy.
11	Decision Notice	6/12/95	Continuation of Interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for Timber Sales (Regional Foresters Amendment No. 2, Screens). Amends direction in Regional Foresters Amendment No. 1 (Umatilla Forest Plan Amendment No. 8).

Table VI-2
UPCOMING (PROPOSED) AMENDMENTS
Umatilla National Forest

Document	Expected Date	Notes
Oil and Gas Leasing FEIS	7/96	Amends the Forest Plan by identifying lands administratively available for leasing and the stipulations that will apply to those leases.
Wenaha Wild and Scenic River EA	8/96	Will develop a management plan and provide a boundary description for the Wenaha Wild and Scenic River.
Mineral Operations Within Riparian Reserves	8/96	Amends the Forest Plan (PACFISH amendment #10) to eliminate the conflict between PACFISH Standard and Guide MM-1 and the mining regulations at 36 CFR 228.4(a).
Eastside Strategy EIS	1997	The President has directed the Forest Service to develop a scientifically sound and ecosystem-based strategy for management of eastside Forests. When completed, forest plans will be amended as necessary to implement the management strategy selected in this analysis.