United States
Department of
Agriculture

Forest Service

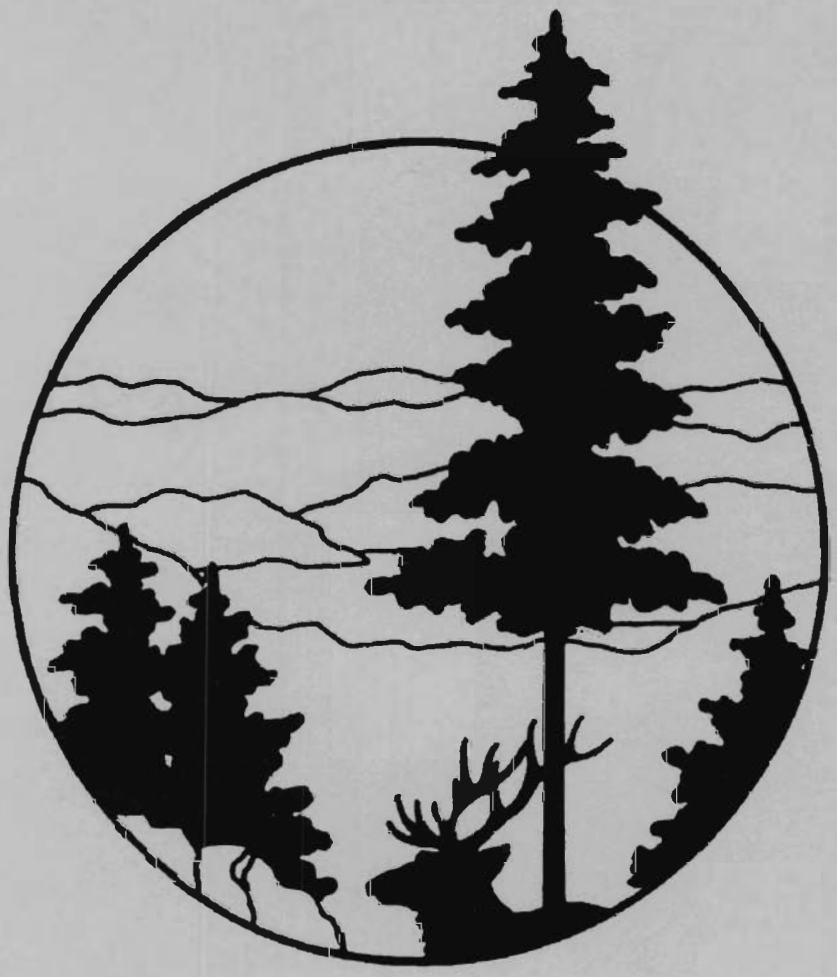
Pacific Northwest
Region

MAY 1994

Umatilla National Forest
Forest Plan

Monitoring and Evaluation Report

FISCAL YEAR 1993



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

2517 S.W. Hailey Avenue
Pendleton, OR 97801

Reply To: 1920-2-3

Date: May 12, 1994

Dear Reader:

I am pleased to share the Fiscal Year 1993 Umatilla National Forest Monitoring and Evaluation Report with you. The Report is intended to document the monitoring associated with our third year of Forest Plan implementation. I hope the report helps to keep you informed about the Forest's experience in monitoring and implementation.

In my view, monitoring is an important component of the Forest Planning and Implementation 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.

Although progress and improvements in monitoring were made during 1993, the Forest had some reductions in overall programs and fewer impacting activities on the ground. As a result, fewer monitoring and evaluation activities were accomplished as in the previous year. I believe, however, that the monitoring program continues to show areas of strength. The water, riparian, and aquatic habitat monitoring, sensitive plant and noxious weed surveys, reforestation examinations, and neotropical migrating bird surveys are some examples. In addition, the data and information developed during the last several years is beginning to be used to better define the current management situation. Evaluation of the information should help to identify possible areas and means of adjusting management in meeting the Forests stewardship responsibilities.

The Forest continues to face management challenges as we move forward into the future. Currently, we anticipate continued reductions in historic levels of funding, shifts in program priorities, and downsizing in staff. Each of these changes will continue to impact the monitoring and evaluation effort. However, I expect to make continued progress in monitoring to learn and understand how well we are doing.

I appreciate your interest and involvement in the Umatilla's Forest Planning process. The process continues to be a direct way that you can 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, 503-278-3823, or Michael Hampton, 503-278-3915 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,

John P. Kline

JOHN P. KLINE
Acting Forest Supervisor

The Forest Supervisor and District Rangers encourage your suggestions or comments. The addresses and phone numbers of the offices are listed below:

UMATILLA NATIONAL FOREST
SUPERVISOR'S OFFICE
2517 S.W. Hailey Avenue
Pendleton, Oregon 97801
Phone (503) 276-3811

NORTH FORK JOHN DAY RANGER DISTRICT
P.O. Box 158
Ukiah, Oregon 97880
Phone (503) 427-3231
Craig Smith-Dixon, District Ranger

WALLA WALLA RANGER DISTRICT
1415 West Rose
Walla Walla, Washington 99362
Phone (509) 522-6290
Tom Reilly, District Ranger

HEPPNER RANGER DISTRICT
P.O. Box 7
Heppner, Oregon 97836
Phone (503) 676-9187
Delanne Ferguson, District Ranger

POMEROY RANGER DISTRICT
Rt. 1, Box 53-F
Pomeroy, Washington 99347
Phone (509) 843-1891
Dave Price, District Ranger

The Umatilla National Forest is located in the northern portion of the Blue Mountains of Northeast Oregon and Southeast Washington. The Forest is an area of diverse land forms and ecotypes. It lies within the headwaters of four large drainage basins: Umatilla, John Day, Walla Walla, and Grande Ronde river basins. The north and south forks of the Walla Walla, Touchet, Grande Ronde, Wenaha, Tucannon, and North Fork John Day are the local rivers. Waters of the latter are recognized for their anadromous fisheries. There are also a few small lakes and reservoirs greater than 5 acres. The Forest provides significant timber and other wood products, water, and recreation. The Forest supports one of the largest Rocky Mountain elk herds in the Nation, making elk hunting a particularly popular activity here. It also provides substantial domestic livestock grazing. There are three wildernesses covering 304,000 acres, and 22 roadless areas totaling 281,000 acres.

Umatilla National Forest

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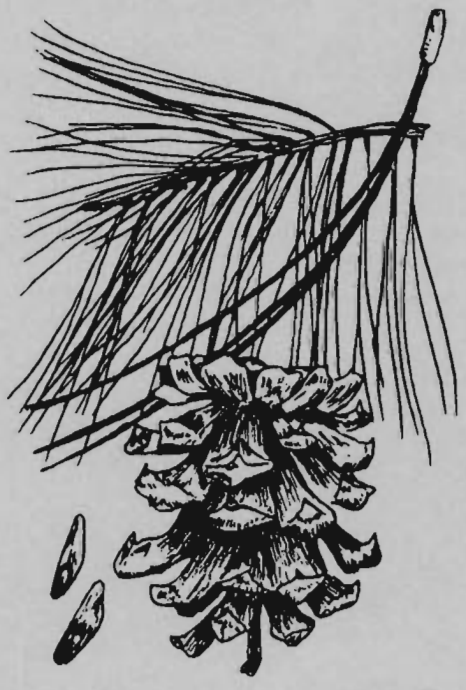

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INTRODUCTION

The Umatilla National Forest Fiscal Year 1993 Monitoring and Evaluation Report is the third 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. Monitoring and evaluation is an important step in ensuring that Plan implementation occurs as intended and that objectives are being met. This report documents our progress.

MONITORING AND EVALUATION

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.

The three types of monitoring are:

– *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?*"

– *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?*"

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 five of the Forest Plan. The FY '93 monitoring program and report is based on the Forest's Monitoring Strategy.

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. The Umatilla has been in the process of revising the Monitoring Strategy and is nearing completion. The focus of the revision is to incorporate changes in management direction and improvements suggested by employees and others.

Summary of Recommended Action

– 1993 Monitoring Report –

Umatilla National Forest

PG#	MI#	Monitoring Item (MI)	1992 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	CP	•	•		Expand soil impact monitoring. Utilize soil rehab techniques where impacts detected.
4	3	**C. Water** Effects of Forest Management Activities on Riparian/Water Resources	FE	•	•		Need to report BMP findings; utilize watershed assessment to identify needed projects.
6	4	Effects of Forest Management Activities on Water Quantity, Low Flows, and Timing of Water Yields	FE		•		Evaluate collected information.
7	5	Effects of Forest Management Activities on Water Quality	FE		•		Evaluate sediment data (see MI 7).
8	6.	Effects of Forest Management Activities on Stream Temperature	CP/FE	•	•		Water temperatures a continuing concern. Continue range of actions to reduce stream temps. Monitor effectiveness of actions.
10	7	Stream Sedimentation	FE		•		Observations indicate stream sediment may be decreasing. May be attributed to high spring flow. Need to evaluate collected data.
11	8	Stream Channel Morphological Features	CP/FE		•		Shortage of large wood and pools. Evaluate effectiveness of changed practices. Need to develop additional means to correct deficiencies.
14	9	Fire Effects - Wildfire on Water and Soils	CM				Continue monitoring.
II. BIOLOGIC RESOURCES							
15	10	**A. Vegetation Management** Riparian Vegetation	FE	•	•		Riparian shrub impacts less than 1992 but use by ungulates still a concern; continue to adjust practices for recovery.
18	11	Range Condition and Trend (C&T)	FE		•		Upland conditions improving; need to evaluate riparian conditions against classification system.

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

Summary of Recommended Action (Continued)
– 1993 Monitoring Report –

PG#	MI#	Monitoring Item (MI)	1992 Action	Change Practice	Further Eval.	Amend Forest Plan	Remarks
20	12	Level of Utilization in Riparian, Upland, and Transitory	FE		•		Upland forage use light; explore opportunities to adjust riparian use to uplands.
21	13	Noxious Weeds	CP	•			Consider additional treatment and herbicide use.
22	14	Silvicultural Harvest Method	FE/AP		•		Changes in harvest prescription resulting from National/Regional direction and salvage requirements. Review shifts for possible Plan change.
23	15	Size and Dispersal of Created Openings	AP				Continue monitoring.
24	16	Stand Management – Natural Regeneration	FE				Continue monitoring.
25	17	Stand Management – Artificial Regeneration	FE				Continue monitoring - several more years of accomplishment needed to test thresholds. Need to track reforested acres over time.
27	18	Regeneration with Genetically Improved Tree Stock	CM				Continue monitoring.
28	19	Stand Management - Ponderosa Pine Regeneration	CM				Continue monitoring.
29	20	Stand Management – Precommercial Thinning	CM				Continue monitoring.
30	21	Fire Effects – Prescribed Fire	CM				Improve documentation and reporting.
31	22	Mitigation Measures – Vegetation Management	CP				Continue monitoring.
32	23	**B. Plants** Threatened, Endangered, and Sensitive Species	CM				Continue monitoring.
34	24	**C. Insect and Disease** Insect and Disease Control	CM				Continue monitoring.
37	25	**D. Fish** Anadromous and Resident Fisheries	FE/AP		•		Utilize monitoring and inventory information to establish habitat capabilities.

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Summary of Recommended Action (Continued)
– 1993 Monitoring Report –

PG#	MI#	Monitoring Item (MI)	1992 Action	Change Practice	Further Eval.	Amend Forest Plan	Remarks
39	26	**E. Wildlife** Elk/Deer Habitat and Estimated Populations	FE/AP	•	•		Reimplement habitat monitoring protocols; continue to study changing habitat and riparian impacts.
43	27	Old Growth Tree Habitat	FE/AP		•	•	Complete field verified old growth inventory; adjust Forest Plan based on inventory results.
45	28	Dead and/or Defective Tree Habitat	CP/AP	•	•		Harvest activities in some cases is resulting in losses of retention trees/snags. Incidences of large diameter trees being removed from firewood areas.
46	29	Pileated and Northern Three-Toed Woodpecker Populations	CM				Expand formal surveys to establish population trend. Begin Three-Toed monitoring, test and use regional protocols.
47	30	Pine Marten Populations	CM				Continue monitoring. Review monitoring process for effectiveness.
48	31	Threatened/Endangered/Sensitive Species Wildlife and Fish Populations and Habitat	AP				Continue monitoring.
50	32	**F. Diversity** Plant and Animal Diversity	CM				Initiate/continue monitoring via watershed assessment process.
III. RESOURCES AND SERVICES TO PEOPLE							
51	33	**A. Forest Plan Implementation** Management Areas	CM		•		Emphasize project monitoring and evaluation. Utilize Forest Plan Implementation Checklist.
53	34	Standards and Guidelines	AP		•		Emphasize project monitoring.
55	35	**B. Recreation** Amount of Primitive and Semi-Primitive Recreation Opportunity Spectrum and Number of Roadless Areas Entered	CM				Continue monitoring.
56	36	(OHV) Location, Type, Amount of Use; Conflicts	CM				Continue monitoring. Need better monitoring procedures.
57	37	Developed Sites; Capacity, Occupance Rate, Satisfaction	CP	•	•		Demand is exceeding capacity levels at some sites during peak use. Site damage is still occurring. Need to improve campsites.

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Summary of Recommended Action (Continued)
– 1993 Monitoring Report –

PG#	MI#	Monitoring Item (MI)	1992 Action	Change Practice	Further Eval.	Amend Forest Plan	Remarks
58	38	**C. Visual** Existing Visual Condition	FE/AP	•	•		No formal reviews of projects and viewshed plans were completed.
60	39	**D. Wilderness** Location, Kind, Amount, Effects of Non-conforming Uses	FE		•		Documentation of wilderness non-conforming uses is improving. Permit administration still needs to be more effectively used.
61	40	Limit of Acceptable Change (LAC) and Amount of Primitive Wilderness Resource Spectrum (WRS)	CP	•	•		LAC still needs to be developed to address MI. Survey completed for one district; no analysis conducted.
62	41	**E. Range** Allotment Planning	AP			•	No development and/or implementation of AMP's has occurred. Forest Plan needs to be adjusted to update AMP schedule.
63	42	Outputs - Comparison of Produced Vs. Planned Output	CM				Continue monitoring.
64	43	Range Improvement Accomplished as Planned	CM				Continue monitoring.
65	44	**F. Timber** Identification of Lands Suitable for Timber Management	FE		•		Need to complete anlaysis of GIS data. Expected completion in FY '95.
66	45	Managed Yield	FE		•		Managed stand surveys have been completed and data available for analysis.
67	46	Empirical Yield Projections	FE		•		Current vegetation survey is ongoing. Completion expected in FY 1995.
68	47	Timber Offered for Sale	FE/AP		•	•	Plan needs to be adjusted to reflect initiatives and legal requirements.
69	48	Availability of Firewood	CM				Continue monitoring.
70	49	**G. Lands and Minerals** Mineral Development and Rehabilitation; Accessibility to Claim and Lease Sites	CM				Continue monitoring.
71	50	**H. Transportation** Forest Road System	CM				Update of current transportation information is needed.
73	51	Open Road Density	CM				Update of current transportation information is needed. Closed road use needs to be reported and evaluated by all units.

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Summary of Recommended Action (Continued)
– 1993 Monitoring Report –

PG#	MI#	Monitoring Item (MI)	1992 Action	Change Practice	Further Eval.	Amend Forest Plan	Remarks
74	52	Mileage, Location, Condition of Trails	CM				Continue monitoring.
75	53	**I. Fire Protection** Fire - Program Effectiveness	CM				Continue monitoring.
77	54	**J. Cultural and Historic Resources** Protection of Sites	CP	•			Insure that all projects meet consultation requirements.
78	55	**K. Special Interest Areas** Effects of Forest Management Activities on Sensitive and Unique Populations and Landforms	CM				Initiate monitoring. No monitoring occurred in 1993.
79	56	**L. Research Natuarl Areas** Research Natural Areas (RNAs)	CP	•			Funds were received and expended with no targets met.
80	57	**M. Administrative** National Environmental Protection Act (NEPA)/National Forest Management Act (NFMA) Compliance	CP	•			Documentation of NEPA/NFMA reviews is needed to facilitate monitoring of this item.
IV. SOCIAL AND ECONOMIC							
82	58	**A. Population, Income, Employment, Payments, Social, and Forest Products** Changes in Income Levels	CM				Continue monitoring.
83	59	Changes in Local Populations, and Employment	CM		•		Need to provide more details in linking county employment with flow of goods and services from Umatilla operations.
85	60	Changes in Payments to Counties	AP			•	Last 3 years significant decrease in payments to counties.
87	61	Changes in Lifestyles, Attitudes, Beliefs, Values, and Social Organizations	CM		•		Shift in Forest programs in response to public issues, values, and legal issues and requirements.
88	62	Changes in Forest Contributions to the Forest Product Industry	AP			•	See MI 47 and MI 60
89	63	Costs/Values of Forest Plan	FE		•		Changes in cost and value processes make comparison difficult. Further study needed to fully compare planned to actual costs and value.
90	64	**B. Forest Budget and Costs** Forest Budget	CM		•		Decrease in timber and timber support funding expected to continue; wildlife and recreation budget a continuing concern; Forest Plan may need to be adjusted in FY '95.

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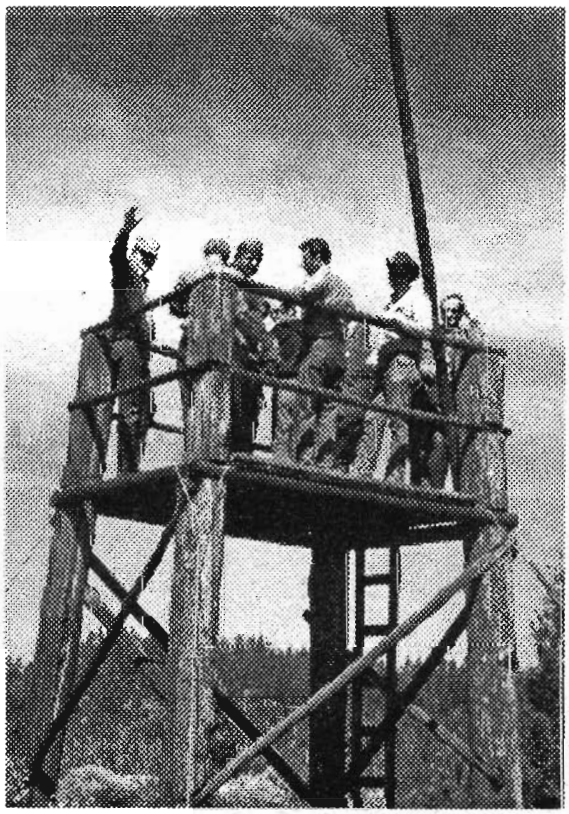
I. PHYSICAL RESOURCES



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 is the amount of fuel (tons) consumed by prescribed burning? 2. What are the total emissions from prescribed burning annually for all management activities?

Threshold of Variability: All burning will be in compliance with state smoke management plans. Smoke management measures will be used (Managing Competing and Unwanted Vegetation, FEIS, USDA-Forest Service 1988) to reduce emissions from prescribed burning.

Results/Findings:

In CY '93, a variety of prescribed burning activities were used to accomplish management objectives including site preparation, range improvement, and wildlife enhancement. Based on 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 1991-93
Umatilla National Forest

Year	Total Fuel Consumed (Tons)	Particulate Produced (Tons)
1993	66,852	969.4
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 primarily 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?

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 organic matter reductions.

Results/Findings:

Intensive soil productivity monitoring was limited in FY '93 due to a shift in priorities, lack of trained personnel, and reduced funding. Soil erosion monitoring has increased as additional efforts are made to monitor water quality. Although intensively transected and sampled measurement was limited, monitoring of management activities did occur with less time-consuming methods on Walla Walla, North Fork John Day, and Heppner districts.

Evaluation of harvest activity impacts occurred on the Next Meadow Timber Sale on the Walla Walla District. Preliminary results indicate that current activities are staying within Forest standards for site disturbance. But, as has often been the case Forest wide, prior entries combine with current activities to produce a cumulative effect. In particular, compaction is still evident.

Monitoring on the North Fork John Day District concentrated on evaluation of the cut-to-length mechanized harvester system in use on some units of the Placer sale. Harvest effects from the variety of logging systems in use on the Turner-Otter sale was also examined, primarily from observation. Some tractor units in the Placer Sale showed excessive skidding and trafficking patterns, primarily due to excessive slope and inappropriate layout.

The Rottne processor/forwarder mechanized harvest system in use on portions of the Placer sale appears (through observation and some measurement) to be operating within Forest soil standards. The system has some advantages in minimizing the amount of exposed mineral soil (in skid trails and landings) that would otherwise be expected to occur in a handfall and tractor skid arrangement. Some minor differences were observed in 'skid' trail densities and effects with the double-wheel and single-wheel processors that were used. Temporary haul-road construction is still a major potential sediment problem, in addition to the reduction in site capacity. Greater use of the forwarding capability of these systems would help reduce this concern.

The Heppner Ranger District continued measurements on the Davis 31 subsoiling demonstration site and intensively sampled two additional areas in FY '93. At the Davis 31 site, the effectiveness of subsoiling to reduce soil compaction influences on tree seedling survival and growth is being assessed. FY '93 was the second growing season for collecting data from the Davis 31 tillage/no-tillage demonstration site. The averages for planted tree survival (percentages of live trees) were as follows: in the subsoiled area, survival was 79 percent and in the area not subsoiled, survival was 49 percent. Thus, the practice of subsoiling has increased tree survival by 30 percent. The increase was associated with the reduction in soil compaction; altered gopher habitat may have also played a role. This finding underscores the need to have broad-based, coordinated, and integrated monitoring on projects like Davis 31.

The two additional monitored areas were the ponderosa pine blocks of the Mallory seed orchard. Each block was stratified and soil sampled at key locations related to tree families. Soil samples were analyzed for soil nutrients. As trees become larger, tree tissues will also be sampled and analyzed. Soil and tree results will then be compared. The information will allow the District to design specific fertilizer formulas for the seed orchard. Prior to the soil sampling, the seed orchard had been subsoiled twice to eliminate soil compaction.

At Heppner, the FY '93 reforestation stocking surveys were designed to include soil damage, compaction, displacement or erosion information. This year the Heppner Ranger District surveyed 1,900 acres of plantations or natural regeneration areas. The surveys further confirm historic use of heavy mechanized equipment in harvest and site preparation activities (random skidding, machine piling and burning) have left harvest areas in a detrimentally compacted condition. Soil compaction is causing tree root deformity and shallow root development, "J" rooting and other root growth problems. Analysis of that field data is used to help define the need to rehabilitate soil compaction and address site preparation.

Progress was made in processing and evaluating data from prior field transects. Results further confirm that multiple-entry, tractor based machine logging, slash piling, and site preparation activities produce soil impacts well in excess of Forest standards and confirms the validity of movement away from these methods.

Evaluation:

Findings from previous monitoring have resulted in current changes in soil protection and management requirements in planning documents and on the ground implementation. Harvest methods are being adjusted by modifying or adding changes in contracts restricting the amount of area that can be disturbed. Tractor (machine) piling is being reduced or eliminated and replaced by yarding and prescribed burning. The changes to the contracts will allow operators to more effectively meet Forest Plan standards and guidelines for soils.

Current management strategies primarily on the Heppner District reflect recognition that substantial acreages are suffering from various levels of soil impacts (compaction, displacement, debris) and reduced site productivity where traditional tractor based harvest and related activities have occurred. Soil rehabilitation methods (primarily deep subsoiling) have been used in recent timber sale contracts and service contracts to offset the effects of soil compaction and recover most of the site productivity. Soil rehabilitation is needed for both active operations and to restore older harvest areas.

Long-term site and nutrient retention is still receiving greater attention with inclusion of language for coarse-woody materials and slash retention (post harvest) becoming more common. Fire prescriptions are being adjusted to reduce prescribed burning consumption levels and retain more duff and larger diameter materials. Efforts are still underway to further develop nutrient tracking methods in cooperation with research in order to assess and quantify the extent of soil impacts and associated effects on productivity.

In coordination with the Malheur National Forest, the Umatilla is continuing to explore the use of low elevation aerial photography in monitoring. This tool should offer a faster, economical, and comprehensive means to evaluate soil (and other resource) values. Recommendation is further evaluation.

C. WATER

MONITORING ITEM 3: Effects of Forest Management Activities on Riparian/Water Resources

Forest Goals, Desired Future Condition, and Outputs: Maintain or enhance water quality. Create or maintain a diverse, well distributed pattern of riparian habitats for all species of fish and wildlife within riparian areas.

Monitoring Question(s): 1. Is project implementation in riparian areas resulting in attainment of desired future conditions for riparian areas? 2. Are Best Management Practices (BMP's) and other practices implemented as designed, effective in meeting water quality goals?

Threshold of Variability: Non-attainment of Forest Plan standards and guidelines for riparian area management.

Results/Findings:

Monitoring attention for this item has been generally focused on implementation of projects including timber sales, livestock grazing, fish habitat, and restoration projects. Generally monitoring involves some baseline data collection, project site or administrative reviews and pre, during, and post activity reviews. The specific results of baseline (and some projects) monitoring for water and fish are discussed under Water and Fish sections (Monitoring Items 4, 5, and 25). Results of project related monitoring (primarily grazing) are discussed in Riparian Vegetation and Range sections (Monitoring Items 10, 11, and 12).

Implementation monitoring of BMPs occurred at different levels on the Forest. Timber sale projects are monitored during timber sale inspections by Timber Sale Officers (TSO's). TSO's utilize contract specifications and requirements to ensure that BMPs were being implemented as required and verify their findings in contract logs (daily diaries). Others administering permits (grazing, special uses, etc.) also monitor and document results through functional processes. With exceptions noted in the next paragraph, timber or other project BMP monitoring results were not reported on the Forest for 1993.

On the south half of the Forest, a BMP review of the Placer Timber Sale was conducted in July of 1993. BMPs were reviewed for their effectiveness in protecting the riparian resource. On an informal review of the Tupper Timber Sale, BMPs were also reviewed for effectiveness. Both timber sale reviews documented Stream Management Units (SMU) (buffers) to protect the stream course; both projects provided riparian vegetation and filter strip protection to the riparian area. Other BMPs such as skid trail management and landing placement were reviewed and evaluated for riparian protection. Although effective, small changes such as additional waterbars could have provided even more resource protection. Follow-up review of the effectiveness of practices in 1994 was also recommended.

The Forest hydrologist and others from the Walla Walla District monitored BMP's on three units of the Summertime Sale. On two units, BMP's had been applied and were deemed effective. On the third (Unit 6), logging systems had been changed from the design and no documentation was found for the rationale. The team found that BMP's were not adequately used on this unit. Although soil movement was evident, a natural catchment at the bottom of the unit was effectively trapping sediment, reducing sediment contribution to a Class III stream. This unit and temporary road leading to it were identified as a restoration need.

Evaluation:

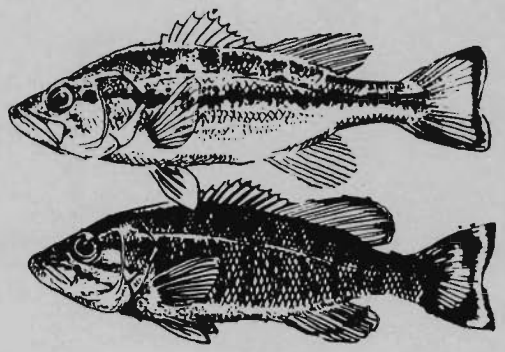
In-stream and riparian conditions have been noted in other monitoring items; results show some particular concerns and ongoing problems with stream temperature, stream sediment, channel morphology, and riparian shrub utilization (see the specific monitoring items noted above). A number of actions have been taken or are planned to improve conditions, including (but not limited to) riparian fencing, riparian revegetation, grazing management, closing or obliterating roads in riparian areas, and using "buffer" areas in timber harvest projects. Additional action appears to be warranted to speed recovery. Further monitoring and evaluation is needed to determine the effects and effectiveness of practices and activities. In addition, the Forest needs to complete and implement the riparian DFC assessment process as a means to address specific actions and assess recovery in riparian resources.

A better process for documenting, summarizing, evaluating, and reporting administrative reviews of BMP implementation needs to be developed. Monitoring and assessment of the effectiveness of BMP's also needs to be initiated Forest wide. Both are needed to better address the effects and effectiveness of BMP's and related activities on water and riparian resources.

In FY 1993, the Forest initiated a Cumulative Effects Risk Assessment for the Tucannon IRA (Integrated Resource Analysis) Watershed Analysis Report on the Pomeroy Ranger District. The assessment helped to define existing conditions based on information obtained from the 1992 riparian/stream inventory data. Upland, riparian/in-channel and natural conditions (soils, slopes), and past and proposed management activities were considered and linked together. The assessment examined in channel and upland conditions of all or part of 13 subwatersheds, some of which were further subdivided into smaller contributing areas, for a total of 19 catchments. The interaction between harvest unit, road location with soils and slope, and stream channels were evaluated on catchment by catchment basis. Analysis results help to describe current conditions, identify some opportunities, and define other important relationships including:

- Locations where activities could occur with relatively low risk of impact.
- Locations where activities would have high relative impact on riparian and aquatic resources.
- Needed restoration activities for specific areas.
- Identification of the best fish habitat conditions to be protected.

During 1994, the Forest will be developing and using a Watershed Assessment process that builds on the Cumulative Effects Risk Analysis process. Outcomes should be similar to the Tucannon effort, with some additions and refinements. The analysis process should provide more detail and information to adequately address the monitoring questions. Continued monitoring and evaluation is needed with emphasis on obtaining information from the Watershed Assessment process.



MONITORING ITEM 4: Effects of Forest Management Activities on Water Quantity, Low Flows, and Timing of Water Yields

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 in-stream or off-Forest uses.

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

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

Results/Findings:

During 1993, monitoring continued at the 11 stream flow (water quantity) sites established on the Forest. Monitoring of the Umatilla Barometer Watershed continued during the year. In addition, the South-End Hydrologic Study Area and gauging stations on the Heppner Ranger District were on line and collecting information for the entire water year. This information is being analyzed and documented to form relationships between the two subwatersheds. This study will help assess the effects of forest management activities on water yields.

Evaluation:

Although water quality data was available for the monitoring report, the information has not been evaluated. A full report for the Umatilla Barometer Watershed (High Ridge) Study is expected in 1995. Results from the South-End Hydrologic Study should be completed when sufficient data is collected and evaluated to provide meaningful baseline information, estimated to be about 5 years.

MONITORING ITEM 5: Effects of Forest Management Activities on Water Quality

Forest Goals, Desired Future Condition, and Outputs: "Meet or exceed state water quality standards . . . Maintain or improve beneficial uses . . . improve water quality in stream reaches affected by past mining activities."

Monitoring Question(s): 1. Are Forest management activities or other factors affecting water quality parameters in Forest streams? 2. What is the long-term trend in water quality?

Threshold of Variability: Exceeding state water quality standards or Forest water quality goals.

Results/Findings:

Determining baseline water quality and trends on the Forest and helping to establish numeric objectives for managing aquatic resources remain the central purposes of this monitoring item. Currently, stream temperature is recorded at 154 sites, 35 stations are collecting sediment and turbidity data, and 11 stream flow stations have been established on the Forest. The specific water quality parameters and monitoring results are discussed in Monitoring Items (MI) 6 and 7.

Evaluation:

Evaluation of water quality monitoring results is shown in MI's 6 and 7. As noted in MI 7, stream sediment data has not been analyzed.

With further study, the effects of management activities conducted under the Forest Plan can be compared to the increasing amount of monitoring data. The Watershed Assessment process described in MI 3 should assist in this process. The Forest expects to identify, establish, and intensively monitor eight representative stream reaches in FY 1994. Intensively monitored representative stream reaches will further refine the information base, confirm field observations and trends, and aid in consistent riparian monitoring.

MONITORING ITEM 6: Effects of Forest Management Activities on Stream Temperature

Forest Goals, Desired Future Condition, and Outputs: "Meet or exceed state water quality standards for stream temperature. . . stream temperature regimes are well . . . within tolerance of aquatic organisms . . ."

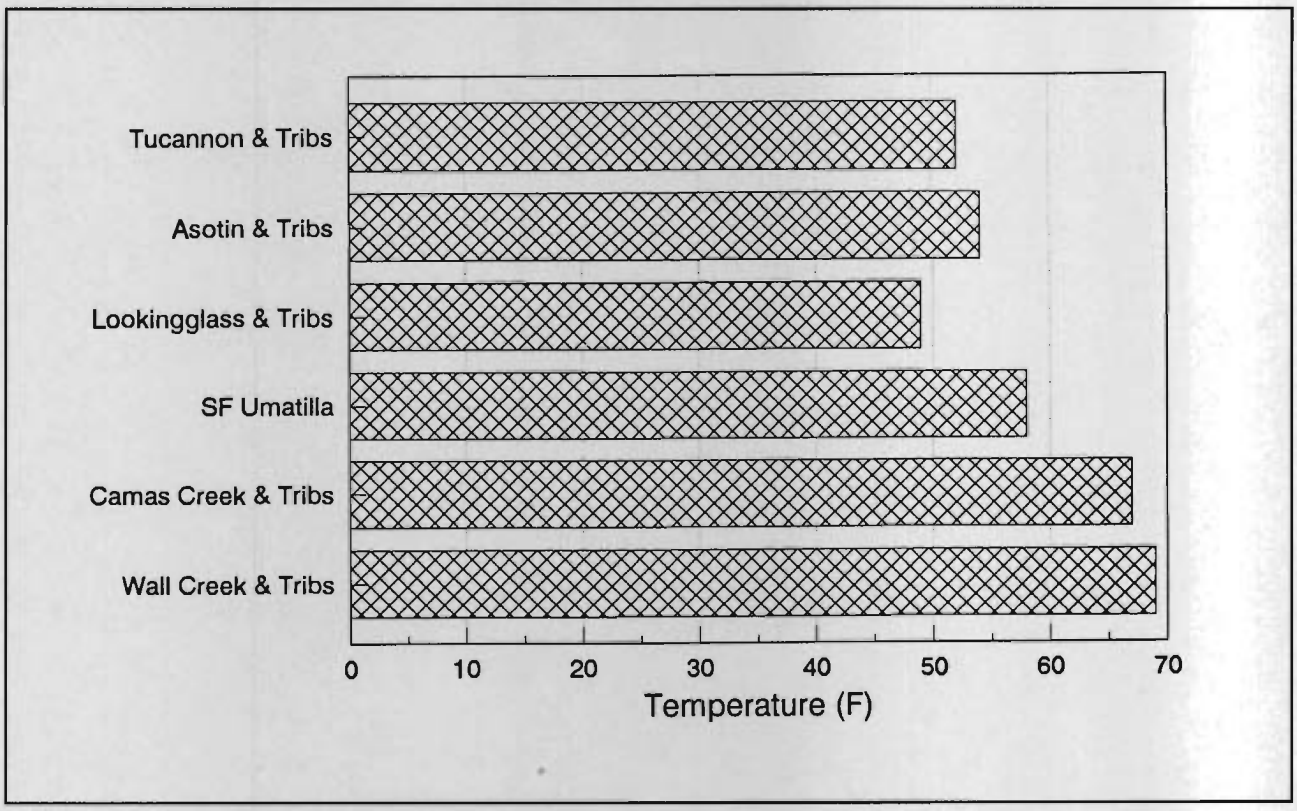
Monitoring Question(s): 1. Is project implementation in riparian areas resulting in attainment of desired future conditions for stream surface shading and/or in-stream water temperatures? 2. What are the cumulative effects of Forest management activities on stream temperatures? 3. What are the long-term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

Threshold of Variability: Non-attainment of Forest Plan standards and guidelines for stream surface shade and/or in-stream water temperatures. See Monitoring Method No. 2 above for temperature values.

Results/Findings:

Water temperature is being measured with thermographs at 154 sites on the Forest's principal streams. The average daily peak temperature is summarized for the principal streams found on the Forest in Figure A.

Figure A
AVERAGE DAILY PEAK TEMPERATURES
Umatilla National Forest



On the south half of the Forest (Heppner and North Fork John Day Ranger Districts), the average August low flow water temperatures for a given stream system were consistently found to be in the 65 to 70 degree range. Stream systems monitored on the north half of the Forest (Walla Walla and Pomeroy Districts) were in good to excellent condition with cool summer low flow temperatures averaging in the 50 to 60 degree range.

Water temperatures for several selected locations were also reviewed to begin to assess specific problem situations. Table I-2 shows the results.

Table I-2
1993 WATER TEMPERATURE SUMMARY – SELECTED SITES
Umatilla National Forest

Location	Max. Temp. °F	No. Days Above Standards*
Henry Creek at Forest Boundary	76	34
Herren Creek at Forest boundary	58	0
Potamus Creek at Forest Boundary	68	0
Wall Creek at Forest Boundary	80	49
North Fork John Day River at Big Creek	72	10
Frazier Creek at Camas Creek	68	0
Camas Creek at North Fork John Day River	75	27
Desolation Creek at North Fork John Day River	70	5
Owens Creek at Forest Boundary	79	34
Lookingglass Creek at Forest Boundary	54	0
Meacham Creek at Forest Boundary	66	0
Umatilla River at Corporation	62	0
Wenaha River at Forest Boundary	63	0
North Fork Asotin Creek at Forest Boundary	57	0
Panjab Creek at Tucannon River	59	0
Pataha Creek at Forest Boundary	60	0
Pataha Creek at Pomeroy Office	67	43

* Oregon State standard - 68°F, Washington State standard - 61°F

Evaluation:

Compared with 1992, the average August low flow temperatures were lower in 1993 for most Forest stream systems. Tucannon, Asotin, Lookingglass, and South Fork Umatilla systems all showed reduced average temperatures. The principal differences were that in 1993 the increase in water flow and a cooler summer helped to decrease average water temperatures. The Camas system average temperature was about the same as last year. Average temperature increased for Wall Creek, in part due to changes in number of streams monitored and measurement locations. However, average temperature tends to mask the extent (variability) of the highs. High water temperature is a major water quality concern, particularly on the south half of the Forest. Forest Plan standards are not being met on several streams. Past and current management activities continue to adversely effect stream temperatures and impede recovery.

A number of management and restoration activities are being implemented and others planned to address the high stream temperatures. Further changes in grazing practices, addition of stream buffer protection, and increase riparian revegetation are a few of the practices being used. Continued monitoring is needed to help establish trends and determine effects and effectiveness of practices.

MONITORING ITEM 7: 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. Maintain sediment in forest streams within the range and frequency adapted to by indigenous aquatic populations.

Monitoring Question(s): 1. Are Forest streams meeting state water quality standards? 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 the productivity of aquatic ecosystems? 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. 2. Measurements of in-stream sediment sensitive fish habitat parameters exceed values representative of natural functioning aquatic systems. Interim standards: Cobble embeddedness: <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:

Sediment and turbidity data continued to be collected at 31 sites during FY 1993. However, current (and past years) sediment information has not been fully evaluated. Sediment data collection also continued at the High Ridge Evaluation Area and South-End Hydrologic Study (Heppner Ranger District), both barometer watersheds. Analyses have not been completed for these studies.

Of the 227 miles (215 evaluated) of streams surveyed in 1993, 178 miles (83%) were below the proposed Forest objective of 35 percent embedded. The surveys showed 37 miles (17%) of embedded streams. The stream survey results indicate a sharp drop in cobble embeddedness from findings reported last year. Casual observation by north-end biologists and hydrologists also suggest a decrease in cobble embeddedness levels from previous years. 1993 spring run off, characterized by high water flow, may have allowed many of the streams to flush the sediment down stream. Low flows prevalent during the drought years "permitted" cobble embeddedness to build in the streams.

Streambank ground cover was collected during the stream inventory process. This parameter documents the amount of streambank armoring or resiliency to high flows. This element can be directly linked to sediment production. Of the streams surveyed, 89 miles had a ground cover rating of 51 to 100 percent armored; this was 41 percent of the total. The remaining 126 miles had a rating of 0 to 50 percent armored, or 59 percent of the total.

Evaluation:

The Forest still needs to complete analysis of sediment data collected during the past several years. In addition, streams with high cobble embeddedness (exceeding proposed objectives) would be candidates for intensive stream sedimentation monitoring, utilizing the representative stream reach concept. Conversely, the streams reported as not embedded need to be monitored to document management practices that are consistent with healthy streams and watersheds.

A review of streambank ground cover information implies that (at least) a good share of the sediment load may be coming from streambanks. However, preliminary data seems to contrast with findings from other monitoring items (MI 10, 11). Further study and analysis is needed to determine streambank contribution to stream sedimentation due to apparent deficiencies in cover. Further monitoring and evaluation is also needed on cobble embeddedness. The National Marine Fisheries Service working with the Forest has identified a need to correlate cobble embeddedness and fines by depth. This has been identified as a Forest priority for FY 1994 (including a commitment from the research branch of the Forest Service to help monitor the parameter).

MONITORING ITEM 8: Stream Channel Morphological Features

Forest Goals, Desired Future Condition, and Outputs: ". . . channel forming/maintenance processes continue to operate without substantial long-term or watershed-wide modifications . . ."

Monitoring Question(s): Are management activities in riparian areas allowing channel forming processes to operate resulting in relatively large, well-distributed pools, and meeting stream potential for the fisheries habitat desired future conditions?

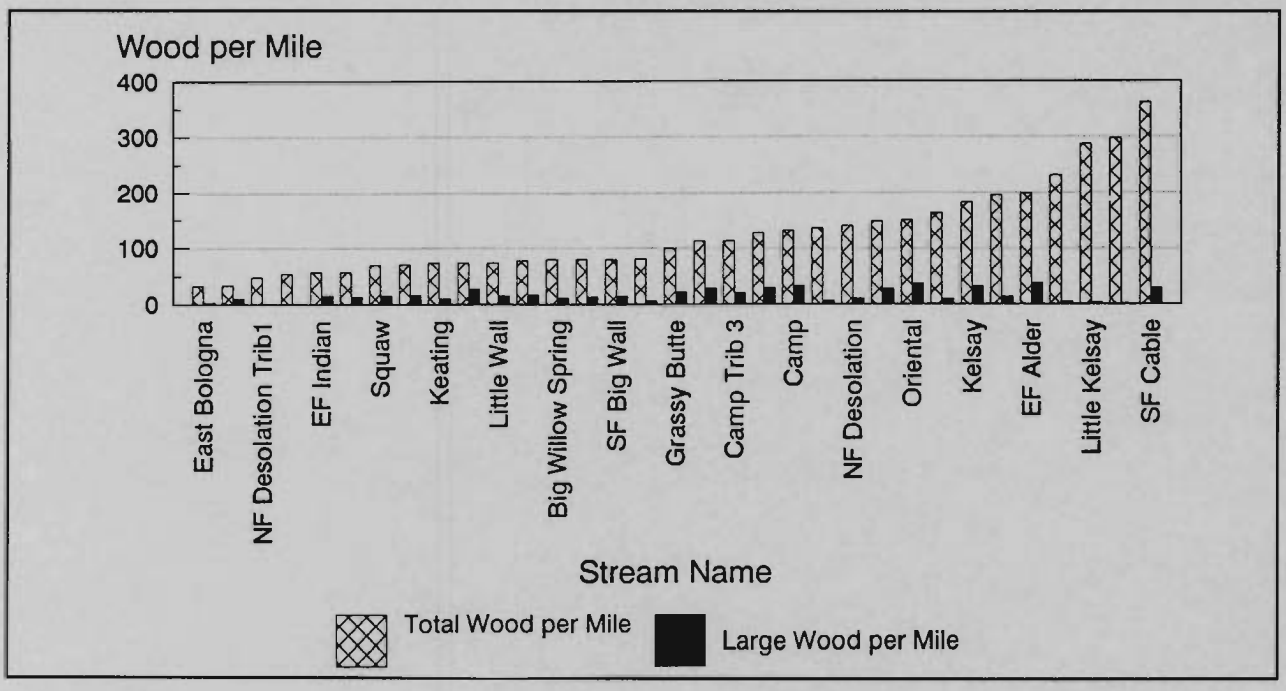
Threshold of Variability: 1. Non-attainment of expected stream channel pool frequency. 2. Non-attainment of expected in-stream large wood levels.

Results/Findings:

In 1993 a total of 227 miles of Level II stream inventory was completed on the Forest. Large wood levels and pool frequency were examined. Large woody material is defined as being (measured) 20" in diameter or greater and was at least 35 feet long. Small woody debris and brush were also documented and added to the large wood to form a category-wood per mile.

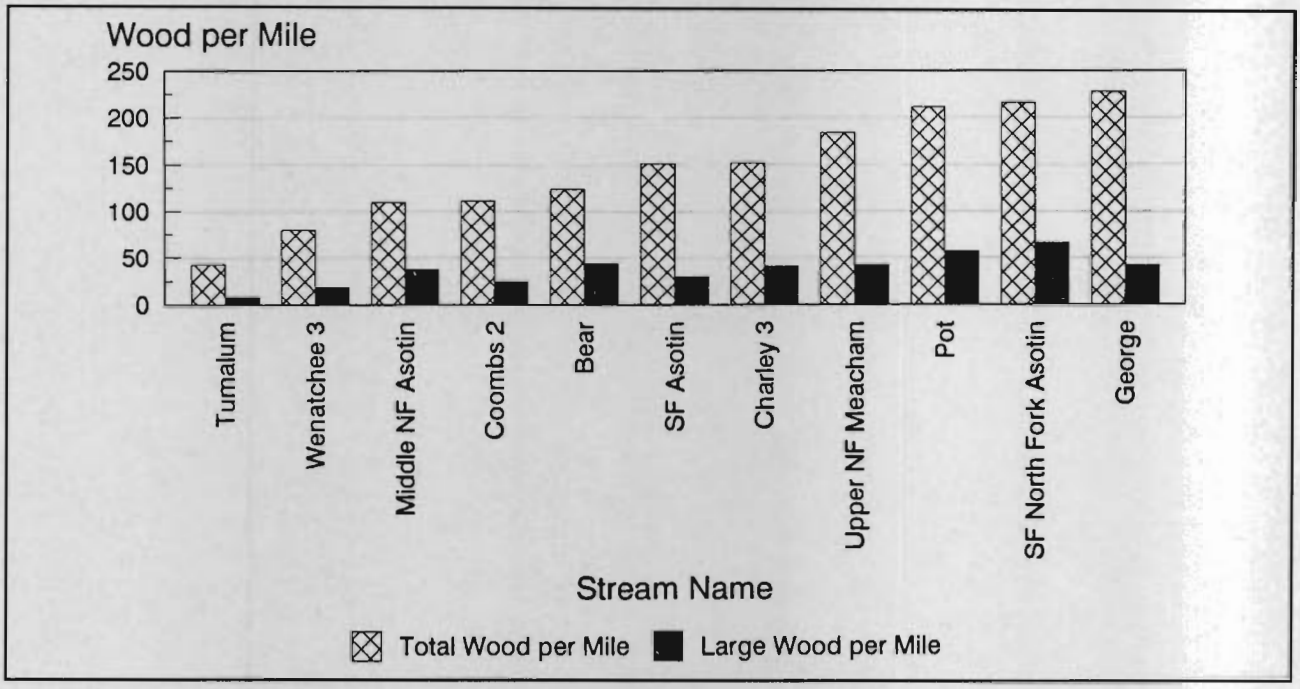
Of the total inventory, 164 miles of stream inventory were done on the south half of the Forest. Large wood on the southern portion was not abundant. The range of frequency per mile was from no large wood to 47 pieces per mile, with an average of 37 pieces per mile (see Figure B). Casual observations by biologists and technicians on the southern districts indicated that the insect epidemic continued to influence stream habitat. Extensive mortality of white fir and Douglas-fir (mixed conifer dominated riparian areas) has provided additional woody material inputs to stream, primarily in smaller (approximately) 12-18" size classes. Much of this material may be more transient than the larger sizes in helping to build future in-stream complexity. Large wood in lodgepole pine dominated areas has not changed appreciably.

Figure B
SOUTH HALF – WOODY MATERIAL
Umatilla National Forest



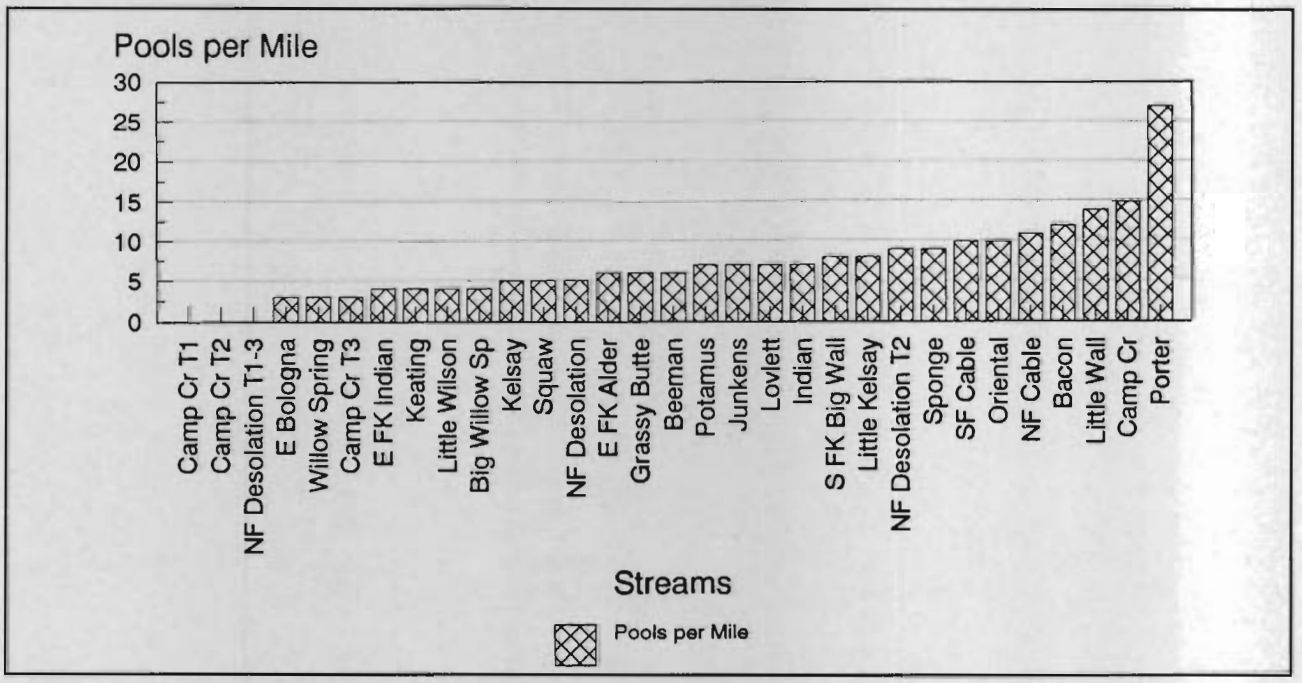
The north-end districts completed 63 miles of stream survey in FY 1993. Large wood and pool frequency were also calculated for the north half of the Forest. The large wood ranged from 8 to 66 pieces per mile, with an average of 31 pieces per mile (Figure C).

Figure C
NORTH-HALF – WOODY MATERIAL
Umatilla National Forest



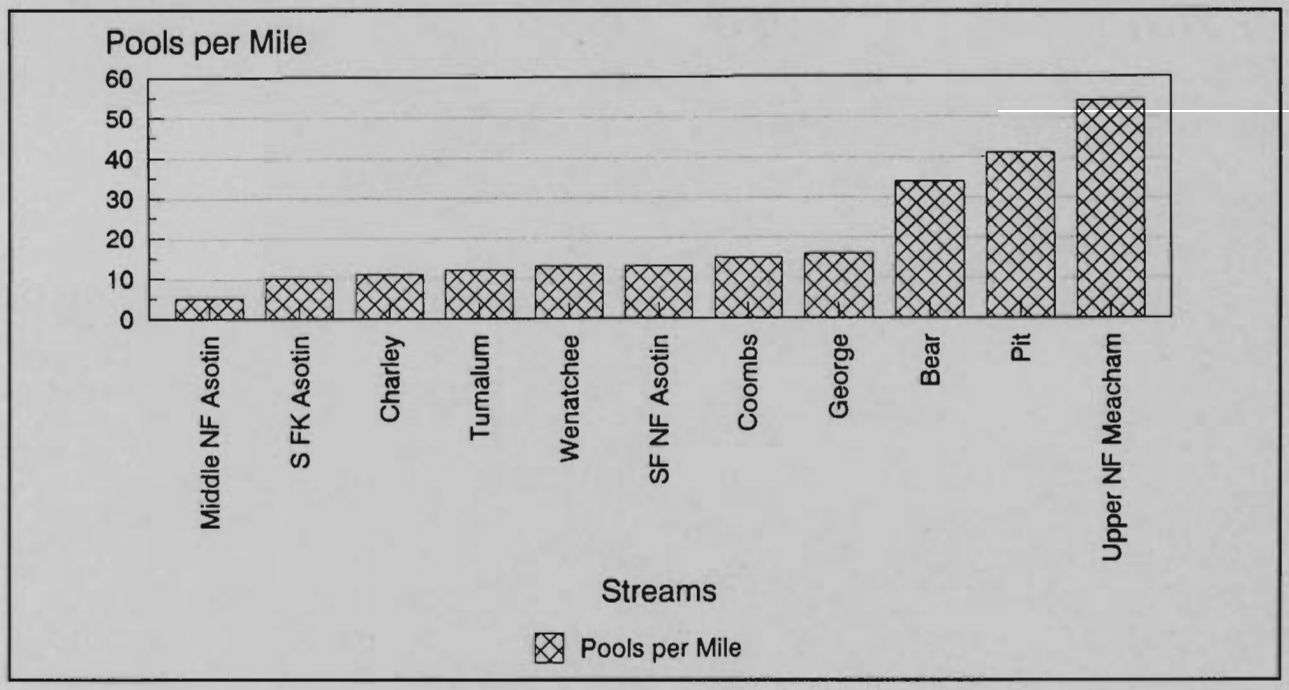
Stream survey data was collected on the south-end districts during late summer low flow conditions. Pools identified were low flow fish habitat. Potential winter pool habitat or spring high flow pools were not estimated. Pool frequency ranged from the low of 0 to a high of 27 pools per mile with the average being 6.5 pools per mile (Figure D).

Figure D
SOUTH HALF – POOLS PER MILE
Umatilla National Forest



Pool frequency ranged from 5 to a high of 54 pools per mile on the north half of the Forest, with an average of 29.4 (Figure E).

Figure E
NORTH HALF – POOLS PER MILE
Umatilla National Forest



Evaluation:

Monitoring information indicates apparent deficiency in small and large woody material and fish habitat pools on most of the streams inventoried. The stream survey data further confirms findings from the last 2 years.

The Forest is expecting to initiate a set of numeric values to aid in riparian management. The numeric values are quantitative levels of riparian parameters from PACFISH and other sources. By comparing the existing conditions against the numeric values, the difference between current conditions and desired future condition can be ascertained.

The proposed numeric objective for large woody material in mixed conifer areas is 20 pieces per 1,000 feet (20% greater than 12" minimum mean diameter and 35 ft. in length). The proposed objective for lodgepole pine areas is 250 pieces per mile. Stream survey data show 32 percent of the south-end streams meet or exceed these numeric standards. Data also indicates that 82 percent of the north-end streams meet or exceed this value. The numeric values for pools per mile varies according to width. None of the south-end streams met the numeric objectives for pools per mile. On the north end, only North Fork Meacham Creek met the numeric standard of over 40 pools per mile for a stream of 25 feet or wider. All other streams did not meet the objectives.

Current and past monitoring of large woody material and pools in streams have resulted in changes to increase protection to the riparian ecosystem. Increased stream buffer size, additional riparian protection measures, and mitigation and modification of ongoing timber sales, road maintenance, and livestock grazing projects have been initiated or completed across the Forest. Effectiveness of these actions needs to be verified. Further study is still needed to help develop other measures that may be used to correct deficiencies.

MONITORING ITEM 9: 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 . . . long-term integrity . . . 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:

No sustained high intensity fires on the Forest has occurred within the past 3 years. No evidence of visible erosion has been noted from past burns.

Evaluation:

Recommendation is to continue monitoring.

II. BIOLOGIC RESOURCES

A. VEGETATION MANAGEMENT

MONITORING ITEM 10: 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 . . ."

Monitoring Question(s): 1. Are management activities in riparian areas resulting in stable or improving riparian vegetation condition and trends for attainment of desired future conditions and Forest Plan objectives for riparian areas?

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:

As in the past 2 years, the Forest continued to monitor shrub utilization during 1993. The purpose is to assess the impacts on shrubs and hardwoods, which are one of the keys to recovery of vegetative conditions and stream shading.

In 1993 on the Heppner Ranger District, permanent riparian shrub utilization transects were placed in 23 pastures on 22 creeks across the District. In addition, 384 random utilization transects were installed. Initially, both the twig length and incidence of use method of measuring shrub use were employed. The twig length was not used on permanent transects during the last half of the season. In addition, permanent photo points established to monitor trends within riparian areas were re-photographed in Wilson, Big Wall, and Potamus creeks where riparian exclosures or pasture have been established. The Forest Plan utilization standard of 40 percent or less for riparian shrubs was exceeded on 13 (56%) locations. In some cases, wildlife use on shrubs exceeded the standard prior to cattle being turned into a unit, especially after August 1. Areas excluded from cattle, grazed early, or intensively ridden to disperse cattle tended to be the areas that met utilization standards. Utilization, by the incidence of use methodology, ranged from 10 percent to 82 percent on the permanent transects following livestock removal from the pastures, with an average of all transects consisting of 51 percent. The two riparian pastures receiving no cattle use in 1993 (Bacon Creek and Wilson Creek) had utilization levels of 44 percent and 55 percent respectively at the end of the growing season, while one large grazing unit (Hog Creek) had an end of season utilization level of 21 percent with no cattle use. Also see monitoring items 11 and 12 for additional information on riparian vegetation surveys.

The North Fork John Day Ranger District monitored 48 shrub transects on 28 pastures (13 allotments) across the District. The twig length method of measuring shrub use was employed and most transects were "read" several times during the season; before, during, and after livestock use. End of season measurements (after livestock removal) showed that Forest Plan standards were met on all areas (transects). Thirty percent shrub use was the highest on one transect with the remaining transects at less than 30 percent. Most transects measured when cattle were "turned off" and then again several weeks later showed that shrub utilization still met Forest Plan standards; however, about 20 percent had use exceeding the standard ranging from 40 to 86 percent (primarily on the F.G. Whitney Allotment). Results from transects measured inside cattle exclosures indicate variable (wildlife) use, with some light use up to 5 percent and others very heavy, ranging from 36 to 81 percent (partly due to shrub dieback). Results suggest that on about 30 percent of the transects, ungulate use exceeded 10 percent after livestock were moved off the range.

The District observed that many aspen stands were not in satisfactory condition and appeared to be losing vigor. Often the sprouts die after a few years even in the absence of livestock use. Caged aspen were observed on Dry Camas Creek, in which both livestock and big game use were excluded; by September the aspen tops had died and broken off. Further investigation is needed to determine the cause of the declining condition of the aspen.

The North Fork John Day District also made observations about shrubs and hardwood recovery from long-term photo points on eight selected stream reaches. Comparison of photos indicates that most areas (transects) with established points older than 10 years showed noticeable increases in hardwood height and shrub densities. Transects established in the late 1980's had slight increases to no change in hardwood cover and height and shrub densities. Several transects had noticeable lodgepole and ponderosa pine changes, sufficient in some cases to begin providing shade to streams.

At Walla Walla, riparian shrub utilization was well within Forest Plan standards. Results were based on monitoring of 26 permanent shrub transects, 17 temporary transects on three allotments, and general ocular estimates of range utilization in riparian areas. In addition, photos were taken on all permanent shrub transects. On the Pomeroy Ranger District, approximately 17 transects (of various types) were established on four allotments. Cattle grazing in riparian areas was generally limited to meet National Marine Fisheries Service (NMFS) requirements for Snake River Chinook Salmon during the course of the season. Transects were monitored at least three times during the year; pre, mid, and post season. Results indicate that the riparian shrubs were grazed little by cattle, from 0 to a high of 2 percent. Utilization by wildlife ranged from 3 to 29 percent and averaged about 15 percent across the sampled transects.

The Heppner Ranger District made a comparison of different types of shrub utilization methods, Incidence of Use (% of twigs browsed) and Twig Length Use (% of twig length browsed). Their results indicate that the Incidence of Use method may be more useful to the Forest since it is quick, produces relatively consistent results, works for the levels of utilization shown in the Forest Plan, and is probably more useful in recovering riparian areas. The concept of Twig Length Use method was felt to be the best method of determining biomass removal. However, results indicate the technique underestimated biomass removal, was time consuming, produced inconsistent results, could produce findings meeting Forest Plan standards but not attain shrub growth and recruitment.

Collection of riparian vegetation information was incorporated into the stream surveys for the 1993 field season. The purpose is to provide required data for the Forest's cumulative effects risk assessment procedure. The density measures provide an estimate of riparian resiliency under high flow conditions and for sediment filtration. Overstory, midstory, hardwood, and understory species, height, and density data was collected on approximately five plots per mile of stream surveyed (total of 217 miles). The data provides a snapshot of current riparian vegetative conditions across the Forest. Table II-1 displays a summary of findings.

Table II-1
SUMMARY OF RIPARIAN VEGETATION*
Umatilla National Forest

District	Overstory		Midstory		Hardwood		Understory	
	Height	Density	Height	Density	Height	Density	Height	Density
Heppner	105'	18%	45'	25%	15'	15%	2'	58%
North Fork John Day	98'	20%	45'	24%	16'	11%	2'	69%
Walla Walla	83'	44%	30'	18%	22'	43%	4'	73%
Pomeroy	119'	30%	51'	19%	22'	21%	5'	35%

* Heights and densities represent an average for all the streams by district surveyed in 1993.

Information from Table II-1 reflects aggregation of plot data sampled from widely variable riparian environments, from which conclusions are tenuous at best. The data suggests on average, shorter understory and hardwoods, potentially less dense understory, and possibly less potential for large wood on the south end of the Forest. The findings may reflect warmer, drier conditions on the southern districts, unique streams sampled (true also for Pomeroy), impact of activities, or combinations of the variables. Initial results at Heppner suggest that on the streams surveyed, riparian obligate vegetation (willow, alder, dogwood, etc.) are showing an upward trend on 20 percent of the riparian area, stable trend on 25 percent, and downward trend on 55 percent. The trend analysis considered percent of obligate shrubs/hardwoods on site, degree of hedging, and ratio of young to decadent and dead plants. Data has not yet been analyzed on other districts.

Evaluation:

Results from transects and range photos indicate less of a problem with the utilization of shrubs and grasses in riparian areas than last year. The intensive monitoring conducted this year showed a continuing problem with utilization of shrubs exceeding Forest Plan standards on only parts of the southern districts of the Forest. Forest-wide, most of shrub utilization data shows results falling well within Forest Plan standards. However, a review of the overall data and information continues to suggest that riparian vegetation is not recovering as rapidly as desired, particularly on the south half of the Forest. Wildlife shrub use appears to be a continuing part of the problem on localized areas.

The improved shrub utilization findings may be attributed to several factors, including favorable weather conditions, monitoring techniques used, and continued implementation of practices to reduce impacts. 1993 was a much wetter year than the recent drought years, which allowed for additional shrub growth and regrowth. Additional forage was available for grazing animals.

The Forest needs to further evaluate and settle on a riparian shrub monitoring method (in coordination with interested parties). Selection of an appropriate method should lead to a more reliable determination of what is happening with shrub recovery and provide information on the effectiveness of the Forest Plan standards. In addition, the Forest needs to review (and likely adjust) the vegetative portions of the stream survey to determine if necessary vegetative data is being collected and sampling procedures are appropriate. For example, it would be desirable to know the trees per acres (or mile) of overstory.

The Forest continues a number of specific actions to reduce the impact to shrubs and initiate riparian recovery. One of the key strategies is livestock management. Application of practices to effectively manage livestock use are being employed or expanded. Intensive riding and other measures to discourage use in riparian areas, moving cattle when standards are met, excluding use through fencing, or applying additional rest on riparian areas are techniques being used. Actions needed to reduce the impact of big game and other wildlife will take further evaluation. Wildlife use seems to be an important part of the problem, particularly where riparian shrubs are in poor condition. Cost effective means for reducing wildlife impacts have yet to be determined. Riparian planting of native hardwoods and shrubs is increasing.

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): 1. Are range vegetation conditions on suitable primary and secondary range being improved to and maintained at a satisfactory condition? 2. Are range vegetative conditions within riparian areas being improved to and maintained at a satisfactory condition level?

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. Accomplishment will be monitored annually to determine the degree of attainment.

Results/Findings:

As with the last several years range condition and trend monitoring, the primary focus has been on riparian areas; some upland condition and trend surveys were conducted during the year (primarily through range analysis). (Results for shrubs were described in MI 10, Riparian Vegetation.)

Every district has established a series of condition and trend (C&T) transects and photo points in riparian areas. Each has been "reading" part or all of these transects yearly. Range conservationists on the Forest have termed the transects as only providing baseline information, until the Blue Mountain riparian classification system is published (in 1994). When the system becomes available, the vegetation data can more effectively be interpreted for condition and trends in riparian areas.

The North Fork John Day Ranger District continued to conduct their photopoint surveys in riparian areas. In summary, results indicate the following (also see MI 10):

- A healing and stabilizing of streambanks: less bare, exposed soil, and a few cases of active bank building.

- A general increase in vegetative cover; more grasses and sedges in stream channels and increased herbaceous growth on banks.

- More wood of all sizes in some streams.

For upland areas, no new range analysis was completed on the Heppner Ranger District during the field season of 1993. However, an ongoing re-evaluation of upland (and riparian) range conditions is being conducted on two allotments. The interpretation of 12 clusters shows that the range condition on the majority of the uplands are in "fair to good" condition with a stable to upward trend. Dry, low productivity scablands remain in poor condition but show stable or upward trends. Allotment upland areas are generally showing positive response to adjusted grazing pressure and have less accelerated erosion, both present and potential, due to the presence of greater vegetative cover protection.

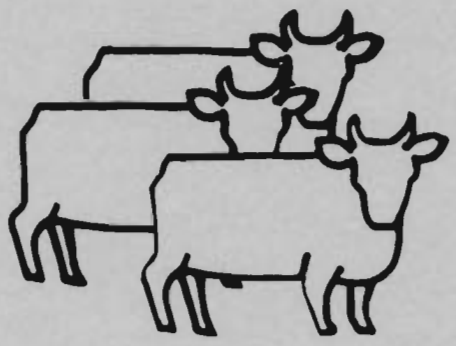
On the North Fork John Day District, a total of 21 permanent condition and trend clusters on four allotments were read and photographed during 1993. Based on comparisons of current range conditions with documented photos, inspections, and range analysis performed in previous years (dating back to the 1930's), monitoring indicated that range conditions were being maintained at a satisfactory level. Results show an overall increase in onespike oatgrass on dry sites, whereas Sandberg's bluegrass is decreasing indicating upward ecological trends and in some cases a change in condition from "fair to good". On moist to wet meadow sites, water dependant plants (saturated soils) are noted as increasing indicating higher water tables. Scabland areas with low potential (production) and heavy spring elk use compounded by past sheep grazing are still in poor condition and slow to recover. On the District's three-way exclosures, transect data also indicates an upward trend based on improved species composition, decreased bare soil, and increased litter cover.

Two condition and trend clusters were read and photos taken on upland sites of the North End Sheep Allotment on the Walla Walla Ranger District. Upland sites were in good condition with stable trends. Four permanent and six temporary photo point transects to monitor long-term condition and trend were established within the Brock and Eden allotments. Forty-nine range condition pace transects and 18 production transects were also conducted on the Eden Allotment. Analysis has not been completed. Overall, based on key soil and vegetative indicators, upland conditions are "fair to good" with stable to upward trends on the remaining allotments.

A total of 12 condition and trend transects were reestablished or established and data collected in preparation for allotment planning on the Pomeroy and Asotin allotments on the Pomeroy Ranger District. On the Pomeroy allotment, five transects were read and photos taken, four from 1959 and one established in 1993. Vegetation and soil ratings have improved since establishment in 1959 and the trend is upward. Three of the four established transects had vegetation and soil in good to excellent condition. Seven C&T clusters were read and photos taken on the Asotin allotment; all were established in 1954. Vegetation and soil were in an upward trend on all clusters. The condition of the vegetation and soil was good to excellent on six of the seven clusters. The seventh cluster vegetation and soil condition was rated as fair. Thirty-eight range condition transects were taken within the Pomeroy and Asotin allotments. Vegetation rating results were 18 percent excellent, 48 percent good, 21 percent fair, and 13 percent poor. Eight permanent utilization monitoring transects were established; six on Pomeroy allotment, one on Peola allotment, and one on Wenatchee.

Evaluation:

In general, existing allotment management is providing for the goal of managing the upland range resource in "fair" or better condition with stable to upward trends. Long-term monitoring of uplands show that vegetation and soil conditions continue to improve. Riparian soil and vegetative conditions, which vary greatly across districts and allotments (see Riparian Vegetation, MI 10), will have to be evaluated against the "satisfactory conditions" defined in the upcoming riparian classification system. In addition, the Forest needs to make more assertive progress on defining and classifying the amount of satisfactory/unsatisfactory through the allotment management planning process.



MONITORING ITEM 12: Level of Utilization in Riparian, Upland, and Transitory

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

Monitoring Question(s): 1. Are Forest Plan utilization standards being implemented through the AMPs 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:

During 1993, the districts continued implementation monitoring of livestock grazing throughout the Forest. Currently, the standards and guidelines are being implemented through Annual Operating Plans (AOP's). Utilization was measured on all districts including eight allotments on Heppner, 13 on the North Fork John Day, 5 at Walla Walla, and 5 at Pomeroy. Informal surveys were also conducted on allotments being grazed by livestock. Allotments were checked prior to "turn on" of livestock, during the grazing period, and post grazing. As noted in Monitoring Items 10 and 11, the Forest focused monitoring of use on riparian areas and, to a lesser degree, use in uplands. The North Fork John Day Ranger District measured utilization on transitory range on two allotments and estimated transitory use on two others.

In summary, for the uplands, forage utilization was generally light ranging up to 20 percent, with some relatively small areas on individual allotments showing moderate use. Forest-wide, use was within Forest Plan standards and guidelines. Shrub use on uplands was not reported. In addition, forage utilization on transitory ranges was only reported by the North Fork John Day Ranger District this year. They found that overall, transitory use was light but with small localized areas with moderate to heavy utilization. In riparian areas monitored, only Heppner and North Fork John Day Districts reported shrub use as a problem with utilization standards being exceeded on given sites.

Evaluation:

As documented in the last two monitoring reports, forage use continues to be relatively light, well within standards. The Forest may have opportunities to shift some of the riparian grazing to upland and transitory ranges. Current and potential use of transitory range needs to be explored to help focus on opportunities for livestock grazing adjustments. Further study and evaluation is needed to determine the effectiveness of the practices currently being employed (see MI 10) to help achieve rapid recovery in riparian areas.

MONITORING ITEM 13: Noxious Weeds – Invasive Vegetation

Forest Goals, Desired Future Condition, and Outputs: ". . . controlled in accordance with Region-six . . . Managing Competing and Unwanted Vegetation - Environmental Impact Statement (EIS) and mediated agreement . . ."

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 Understanding's? 2. Are noxious weed populations decreasing or remaining stable, and are they being prevented from infesting adjacent private lands?

Threshold of Variability: Assigned targets are not met by 20 percent or more.

Results/Findings:

In 1993, the Forest continued and expanded the extensive noxious weed inventories on all four districts (Heppner, North Fork John Day, Walla Walla, and Pomeroy). The Forest inventory process tracked 19 species of noxious weeds, two of which are only adjacent to the Forest. Various species encountered on the Forest include diffuse Russian and Spotted Knapweed, Tansy Ragwort, St. Johnswort, Dalmation and Yellow Toad Flax, Scotch and Musk Thistle, Common Burdock, Whitetop, Hound's Tongue, Leafy Spurge, Yellow Star, Canada and Bull Thistle. Approximately 2,354 acres have documented occurrence of noxious weeds. The affected area size ranged from 0.2 acre (Russian Knapweed and Leafy Spurge) to 1,066 acres (Canada Thistle). Documented occurrences are indicators of current situation, but do not necessarily represent total populations across the Forest.

Forest-wide, general trends of noxious weed populations appear to be "stable" or increasing. Part of the finding is based on comparison of changes in populations on known sites resurveyed during the last several years. Another part of the finding is due to locating more noxious weed sites through the expanded surveys.

All districts continue to treat weeds using a variety of methods, according to the required procedures under the Managing Unwanted or Competing Vegetation EIS and Mediated Agreement. Approximately 2,261[1] acres were treated on the Forest. One project using biological methods to control Yellow Star Thistle was initiated and is being monitored on the Pomeroy District.

Current control efforts, primarily hand pulling, continues to show mixed results. For example, the Pomeroy Ranger District reported hand pulling reduced a Toad Flax populations from 49 to 3 plants when comparing the initial 1990 survey with the 1993 followup results. On the other hand, the District reported that a Knapweed population survey on a site near the Tucannon Guard Station showed an increase in population, even though it had partial treatment. Similar results are being reported on other districts. In general, treatment methods do not appear to be sufficient to keep noxious weed populations in check on all districts, except Heppner.

Evaluation:

Evaluation of this item is the same as in FY '92. The Forest needs to expand the noxious weed treatment program and to consider using herbicides as part of the integrated pest management program.

Continued monitoring is required to assess trends in populations and effectiveness of control efforts.

1 Source: Management Attainment Report - Umatilla National Forest 1993.

MONITORING ITEM 14: Silviculture Harvest Method

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

Monitoring Question(s): Is the harvest method implemented on the ground as portrayed in the Plan?

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:

Use of different silvicultural methods continues to evolve on the Forest in response to Forest restoration and salvage requirements, implementation of ecosystem direction and consultation direction for Snake River Chinook Salmon (northern part of the Forest). Table II-2 shows the silvicultural methods completed on the Forest in 1993. The figures represent sales sold in 1993 and in the recent past.

Table II-2
HARVEST METHODS – 1993
Umatilla National Forest

Silvicultural Method	Planned Output (Acres)	Actual '93 Output (Acres)	Planned Output (%)
Clearcut	4,000	1,470	37%
Shelterwood/Seed Tree	2,600	3,040	117%
Overwood Removal	1,500	2,770	185%
Uneven-age	900	327	36%
Total	9,000	7,607	84%

Evaluation:

The total acres of clearcut per year continues to decline on the Forest. Clearcut acres are now well below levels established in the Forest Plan. This is in keeping with the new direction (1992) established by the Chief of the Forest Service to reduce clearcut acres on National Forests. Clearcut acres can be expected to be below the threshold of variability until the Forest Plan is amended to reflect lower acres of clearcutting.

Shelterwood/seed tree acres are within the annual of variability, and can be expected to remain within the decade threshold of 15 percent. Overwood removal greatly exceeds the threshold for the third year and will need to be re-evaluated in 1995.

The acres of uneven-aged management projected in the Forest Plan were clearly not met in the last 2 years (though they were in FY '91). This will need to be re-evaluated to determine if the decade goal will be met.

The Forest health situation has influenced changes in the mix of harvest methods. Seed tree harvests have substantially increased in the area of heavy insect infestation and mortality on the south end of the Forest. The need to retain green trees replacements for future wildlife trees (snags) and other ecosystem requirements is a part of the change. The substantial increase in overstory removal is also part of the response to the catastrophic insect and disease problem. All will influence the need for continued monitoring and possible Plan adjustment.

MONITORING ITEM 15: Size and Dispersal of 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.

Results/Findings:

For units harvested in FY 1993, only a few exceeded the 40-acre Forest Plan guideline, including:

Table II-3
CREATED OPENING – 1993
Umatilla National Forest

Harvest Method	Heppner	NFJD	Pomeroy	Walla Walla
Clearcut	—	—	—	41
Seedtree	42 acres 45 acres	83 acres 100 acres 268 acres 325 acres	—	—

No openings were created through harvest methods outside permitted exceptions. The following details the exceptions:

The 45-acre seed tree seed cut on the Heppner District was Unit #6 from the Flatiron Timber Sale. The unit is part of a salvage sale covered under the Forest Plan exception for catastrophic conditions.

The four seed tree seed cut units on the North Fork John Day District which exceeded the 40-acre limit were all from the Turner/Otter Salvage Sale (Unit #6 was 83 acres, Unit #9 was 100 acres, Unit #11 was 268 acres, and Unit #8 was 325 acres). This was a salvage sale covered under the Forest Plan exception for catastrophic conditions (LRMP p. 4-73). Unit size was addressed in the EA and the Decision Notice referenced the Forest Plan exception.

The 41-acre clearcut on the Walla Walla District and the 42-acre seed tree cut on the Heppner District slightly exceeded the 40-acre requirement.

Evaluation:

Continue monitoring. The proposed Forest Plan adjustment to allow larger opening size in areas of extensive insect mortality has been placed on hold, pending outcome of the Eastside Ecosystem Management Strategy.

MONITORING ITEM 16: Stand Management – Natural Regeneration

Forest Goals, Desired Future Condition, and Outputs: Ensure successful reforestation to at lease minimal stocking consistent with Standard and Guidelines.

Monitoring Question(s): 1. How many acres were treated using natural regeneration? 2. How many years did it take these areas to meet at least minimal stocking levels?

Threshold of Variability: 1. Greater than a 15 percent deviation from Forest Plan levels (Table 4.1), during a 5-year period. 2. Greater than a 10-year lag between time of harvest and attainment of at least minimum stocking levels.

Results/Findings:

For reporting purposes, natural regeneration is measured by adding the acres of accomplishment of site preparation for natural regeneration with the acres of certification of natural regeneration without site preparation (National and Regional procedure). This measurement was used for monitoring during FY 1993 on the Umatilla National Forest. Total natural regeneration for FY 1993 is shown in Table II-4:

Table II-4
NATURAL REGENERATION ACRES – FY 1993
Umatilla National Forest

District	Heppner	NFJD	Walla Walla	Pomeroy	Forest Total
Natural Regeneration Without Site Preparation	688	905	876	283	2,752

The total includes 1,998 acres of natural regeneration without site preparation, certified as stocked and 754 acres of site preparation for natural regeneration. An additional 326 acres with site preparation were also certified.

Evaluation:

Planned output is 3,100 acres (Table 4-1, Forest Plan). In FY 1993, the Forest met 89 percent of the Forest Plan projection based on the Regional process. The threshold of variability for this item is 15 percent during a 5-year period, thus threshold appears to have been met. Recommendation is to continue monitoring.

MONITORING ITEM 17: Stand Management – Artificial Regeneration

Forest Goals, Desired Future Condition, and Outputs: Ensure successful reforestation to at least minimal stocking consistent with standards and guidelines.

Monitoring Question(s): 1. How many acres were (successfully) reforested using artificial regeneration practices? 2. How many acres were stocked at least to minium levels within three growing seasons after reforestation period began?

Threshold of Variability: 1. Greater than a 15 percent deviation from Forest Plan levels (Table 4-1), during a 5-year period. 2. Greater than a 10-year lag between time of harvest and attainment of at least minimum stocking levels.

Results/Findings:

Artifical regeneration on the Umatilla is accomplished by planting seedlings. The total planting accomplishment for the Forest is 4,960 acres, shown in Table II-5 below.

Table II-5
ARTIFICIAL REGENERATION – FY 1993
Umatilla National Forest

District	Heppner	NFJD	Walla Walla	Pomeroy	Forest Total
Artificial Regeneration (Acres)	1,164	1,546	1,552	698	4,960

A total of 5,312 planted acres were certified in 1993 as meeting or exceeding minimum stocking standards after 3 years. Certification represent acres that were reforested in 1990, just prior to implementation of the Forest Plan. The Forest needs to begin to track the reforested acres over time, in order to respond to the question of what percentage of these acres achieved at least minimum stocking in three growing seasons (i.e., comparing 1990 acres with 1993 success).

Beginning in FY '93, the Forest began monitoring compliance with the 5-year regeneration requirement from the National Forest Management Act of 1976 (NFMA). NFMA specifies that lands harvested using certain cutting methods be restocked within 5 years. The Washington Office (United States Forest Service Headquarters) requested information on the number of acres which were adequately stocked at the end of FY 1993 following regeneration harvest during FY 1988. In response, the Forest reported the following results:

– In 1988 final regeneration harvest acres accounted for a total of 10,845;

– 4,996 acres were stocked without treatment;

– 4,985 acres were stocked after one treatment; and

– 596 acres were stocked after more than one treatment.

Findings show 97.5 percent of the total regeneration harvest acres have been restocked within 5 years.

A reforestation activity review proposed in the 1992 Monitoring Report was conducted on the Forest. The purpose of the review was to determine the status of reforestation (relative to Forest Plan standards), assist in determining the effectiveness of standards and regeneration lag time (time between harvest and certification), and assist in developing updated yield tables (also see MI 34).

A total of 16 stands were intensively sampled, including 12 on the south end. All stands sampled on the South Associated Working Group (9 samples) exceeded the minimum Forest Plan stocking level and ranged from a low of 175 to a high of 930 trees per acre. Three of the four North Associated plots were stocked to Forest Plan standard, with the one exception expected to fill in with additional natural regeneration. All three Lodgepole Working Group plots substantially exceeded minimum requirements with 1,440 to 1,890 stems per acre. All the mixed conifer stands supported a variety of species from two to a high of six. Timing requirements for site preparation and planting (if any) were generally met.

Evaluation:

Planned output is 4,400 acres (Forest Plan Table 4-1). In 1993, the Forest exceeded the planned output level by 13 percent. The threshold of variability for this item is 15 percent deviation from planned levels over a 5-year period. Several more years of accomplishment will be needed to test against threshold levels.

In order to respond to the requirements of NFMA, forest reporting systems have been designed to measure reforestation success within 5 years. The Forest will be changing monitoring question number 2 to "within 5 growing seasons" to be included in the Monitoring Strategy update in order to be consistent with NFMA.

Recommendation is to continue monitoring.

MONITORING ITEM 18: Stand Management – Regeneration with Genetically Improved Tree Stock

Forest Goals, Desired Future Condition, and Outputs: 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 have been reforested with genetic stock with a stocking certification level of "SB" or higher?

Threshold of Variability: More than a 10 percent reduction from levels assumed in the Plan over a 5-year period.

Results/Findings:

Acres planted with genetically improved tree stock which met the certification level of "SB" (SB signifies Subclass B. B means the female parent is known.) or higher for each of the Districts is displayed in Table II-6.

Table II-6
GENETIC REGENERATION – FY 1993
Umatilla National Forest

District	Heppner	NFJD	Pomeroy	Walla Walla	Forest Total
Regeneration With Genetic Stock (Acres)	0	320	698	474	1,492

Evaluation:

This represents 30 percent of the total planted acres (4,960). Accomplishment is somewhat lower than levels assumed in the Forest Plan, but can be expected to be within Plan levels for the decade. Recommendation is continue monitoring.

MONITORING ITEM 19: Stand Management – Ponderosa Pine Regeneration

Forest Goals, Desired Future Condition, and Outputs: To identify the amount of ponderosa pine being re-established and potential change to more seral species on the Forest.

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

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

Results/Findings:

Currently, an effective method for measuring the total amount of of ponderosa pine regeneration is not available since the amount of ponderosa pine natural regeneration is unknown. The number of acres planted with ponderosa pine in 1993 are displayed in Table II-7.

Table II-7
PONDEROSA PINE REGENERATION – FY 1993
Umatilla National Forest

District	Heppner	NFJD	Pomeroy	Walla Walla	Forest Total
Ponderosa Pine Regeneration (acres)	630	770	509	708	2,617

Total acres regenerated in 1993 was 7,712 acres, thus ponderosa pine plantings accounted for 34 percent of all acres regenerated in 1993.

Evaluation:

The threshold of variability is that at least 35 percent of total acres regenerated in 10 years shall be reforested with ponderosa pine. It appears that the threshold will be met. Recommendation is continue monitoring.

The Forest needs to develop a process that determines the amount of ponderosa pine actually being regenerated. The process may be done through the certification procedures currently being used.

MONITORING ITEM 20: 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?

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

Results/Findings:

The total amount of pre-commercial thinning accomplished on the Forest in 1993 was 3,178 acres. The planned amount is 2,900 acres (Forest Plan Table 4-1). Thus, the FY 1993 accomplishment represents 110 percent of the planned ouput, which is within 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 1993.

Evaluation:

1993 is the first year that the Forest exceeded planned levels for precommercial stocking control. All 3 years have met threshold guidelines. Recommendation is to continue monitoring.

MONITORING ITEM 21: Fire Effects – Prescribed Fire

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. 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 and resource objectives? 2. What are the vegetative responses in the prescribed burned area?

Threshold of Variability: Prescriptions not being met by 20 percent or more of areas.

Results/Findings:

The 1993 prescribed fire program was used as a management tool to accomplish site preparation, range improvement, and wildlife enhancement projects. Table II-8 shows total prescribed fire acres from 1991 to 1993. Monitoring plots continue to be established on all districts with exception of Heppner R.D.

Table II-8
PRESCRIBED FIRE 1991-1993
Umatilla National Forest

Year	1991	1992	1993	3 Year Average	Projected Forest Plan	% 1993 to Forest Plan
Total Acres Prescribed Fire	17,122	11,780	6,019	11,640	9,200	65%

One prescribed burn plot was monitored on the Pomeroy Ranger District within unit 3 of the Patit Timber Sale. The objective of the prescribed burn was to create planting opportunities, reduce competition for regeneration, increase forage, open area for wildlife access, and retain duff layer for soil protection. Results from preburn fuel loading showed 12.1 tons/acre and a post burn of 5.4 tons/acre. Forest Plan guidelines recommend fuels not to exceed an average of 12 tons per acre in the less than 3-inch size class (unit is within C4 Management Area). Based upon the results, Forest Plan guidelines were met. Duff measurements taken after burning indicated a duff layer of approximately 1/2 inch remained. Upon close examination of duff measurements, actual seedling counts, and photos taken, it can be concluded that resource objectives in unit 3 were met.

A vegetation response plot was established within one unit of the Patit Timber Sale. Results show the plot area (2' X 2') had a vegetative cover response of 80 percent. Documented vegetation noted were bracken fern *(Pterdium aquilinum)*, Birch Leaf Spiraea *(Spiraea betulifolia)*, Orchard Grass *(Dactylis glomeratas* [Non-native]), Common Yarrow *(Achillea millefolium)*, and Prairie Junegrass *(Koeleria cristata)*.

Evaluation:

Since 1991, the fuels program has declined steadily. The decline can be contributed to two factors. First, reduced timber sale activities have resulted in fewer acres of residue (slash) produced. Secondly, weather conditions have negated burning opportunities in the spring and fall of FY 1993.

When comparing the 3-year average (1991-1993) to the projected Forest Plan level, the Forest is 26 percent above the Forest Plan level. However, 1993 output of 6,019 acres is only 56 percent of the Plan level. It is anticipated the activity fuel program will continue to decline. On the other hand, the natural fuels program will likely increase as the Forest continues emphasizing ecosystem management. As a result of potential shifts, further evaluation of the prescribed burning program is warranted to assess if resource objectives are being met.

The Forest also needs to do a better job of documenting and reporting results from the prescribed burning program. The shift in program will also require a landscape view of effects and results.

MONITORING ITEM 22: Mitigation Measures – Vegetation Management

Monitoring Question(s): Was the checklist for the "Managing Competing and Unwanted Vegetation" Final Environmental Impact Statement - November 1998, used as intended?

Results/Findings:

The requirements of the Final Environmental Impact Statement (FEIS) and the Mediated Agreement (MA) for Managing Competing and Unwanted Vegetation are continuing to be applied on the Forest during development and analysis of projects that fall under the scope of the FEIS/MA. Projects that must meet the FEIS/MA requirements are "those involving the management of competing and unwanted vegetation, including logging residue that is managed for purposes of reforestation." These activities include: preparing sites for planting; 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.

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" prepared during the environmental assessment phase of project development. The vegetation management plan is stored with other documents and materials prepared during the environmental assessment (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. Although relatively few projects were developed, a vegetation management plan, or closely-related vegetation management checklist, was completed for those projects in FY 1993.

Evaluation:

On National Forest land, the Forest will continue to monitor the effects of managing vegetation in nine 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; 8) Genetics Program; and 9) the Research Program. Five specific methods of vegetative 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.

In the 1992 Monitoring Report, it was stated a preliminary draft of the thresholds and forest goals to be approved in FY 1993. These changes have occurred and are included with the revision of the Forest's Monitoring Strategy, which is expected to be approved in FY 1994.

B. PLANTS

MONITORING ITEM 23: Threatened, Endangered, and Sensitive Species

Forest Goals, Desired Future Condition, and Outputs: Conserve existing populations and habitats for sensitive plant species.

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 the 1993 field season, 12 different sensitive plant species and 29 populations were monitored across the Umatilla National Forest. Table II-9 shows sensitive plant species, population size, and trend.

Table II-9
SENSITIVE PLANT SPECIES POPULATIONS – 1993
Umatilla National Forest

District	Species	Population Size (No. Plants)	Trend Indicator (No. Plants)
Heppner	*Mimulus washingtonenis*	550,000	Increase by 55,000 per population
North Fork John Day	*Botrychium crenulatum*	1	Stable
	Botrychium lanceolatum	368	Stable
	Botrychium minganense	51	Stable
	Botrychium montanum	54	Stable
	Botrychium pinnatum	1,551	Stable
	Botrychium paradoxum	1	Stable
	Botrychium pedunculosum	45	Stable
Walla Walla	*Allium cumpunulatum*	11	Stable
Pomeroy	*Astragalus arthuri*	158	Stable
	Cypripedium fasciculatum	34	Increase +2
	Ribes oxyacanthoides cognatum	7	Stable

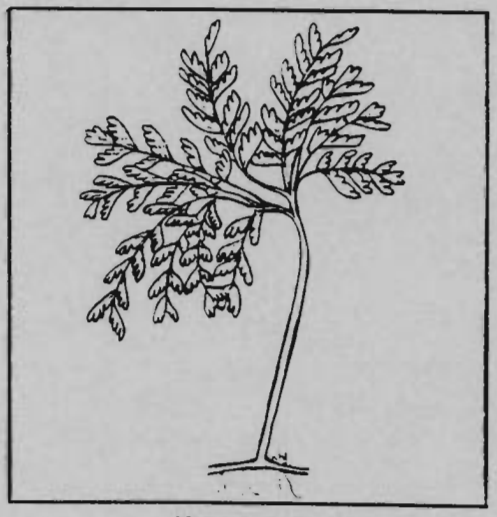
Ten known populations of *Mimulus washingtonensis* (Washington Monkeyflower) were monitored. This species falls into a "C-1" sensitive category which states substantial information exists to support proposed listing of a species as threatened or endangered. It is a diminutive annual whose populations rise and fall dramatically depending upon critical precipitation levels. Because the Forest's known populations of this species have ranged between two plants and thirty-nine plants in size, it had been possible to perform actual recounts of these populations. However, during the unusually wet summer of 1993, each of the known populations surpassed 55,000 plants (counts based on estimates taken from meter frame sampling). This information indicates that the diminished numbers of this species is more closely correlated with precipitation levels rather than management practices.

All 14 known populations of grapeferns were monitored during the summer. These populations were found during the sensitive plant surveys that accompanied the Salvage Sale Program in 1992. All three known populations of what had been tentatively identified as *Botrychium penduculosum* (BOPE) were monitored. Voucher specimens of BOPE were sent to Dr. Warren H. Wagner of the University of Michigan in the Fall of 1993. In January 1994, the Forest received word that the plants are a new-to-science species which should be listed as *Botrychium 'echo'* until a suitable name is determined and published.

For the Walla Walla Ranger District, the single known population of Washington sensitive *Allium capanulatum* (Sierran Onion) was monitored. All 11 plants which were found in 1992 were present. Because of the unusually cool summer weather, the plants had not flowered by September 1.

Evaluation:

The 12 different sensitive plant species are stable with two increasing in size. Recommendation is continue monitoring.



Maidenhair Fern

C. INSECT AND DISEASE

MONITORING ITEM 24: 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. Are destructive insect and disease organisms threatening land management objectives?

Threshold of Variability: Evidence of insect or disease buildups at or above epidemic levels. (Note: As recommended by forest pest specialists given the agent's intensity and magnitude).

Results/Findings:

During FY '93, the Regional Office continued to conduct annual aerial surveys to determine the extent and trend of forest pest damage. Results from the aerial survey show a continued decline in western spruce budworm defoliation. No acreage of new spruce budworm defoliation was detected and mapped during 1993. Several interconnected factors contributed to the decline including weather conditions, dwindling food supply, and the end of the spruce budworm cycle. Acres affected by other insects also declined significantly during 1993, with the exception of mountain and western pine beetles, both of which had increased levels of activity in ponderosa or lodgepole pine stands. Other insects causing damage during FY '93 included Oregon Pine ips beetles, Englemann spruce beetles, and larch needle cast. Table II-10 shows the acres impacted from 1990 to 1993.

Table II-10
ANNUAL PEST SURVEY 1990-93
Umatilla National Forest

INSECT	DISTRICT	1990	1991	1992	1993
Budworm (very low/low)	Heppner	25,273	65,163	6,046	0
	North Fork John Day	180,300	226,540	7,437	0
	Pomeroy	41,718	77,018	51,670	0
	Walla Walla	117,742	231,682	241,992	0
Total Acres		365,033	600,403	307,145	0
Budworm (moderate/high)	Heppner	61,556	80,785	17,581	0
	North Fork John Day	153,610	176,312	11,087	0
	Pomeroy	0	0	2,044	0
	Walla Walla	0	3,852	3,725	0
Total Acres		215,166	260,949	34,437	0
Douglas-fir Beetle	Heppner	13,228	404	6,468	197
	North Fork John Day	76,571	9,115	19,321	723
	Pomeroy	3,758	1,277	862	87
	Walla Walla	4,147	1,786	3,116	1,255
Total Acres		97,704	12,582	29,767	2,262
Fir Engraver	Heppner	4,531	1,025	1,975	48
	North Fork John Day	3,751	129	1,483	38
	Pomeory	93,570	45,800	0	0
	Walla Walla	31,097	41,736	775	794
Total Acres		132,949	88,690	4,233	880
Mountain Pine Beetle	Heppner	46	278	414	604
	North Fork John Day	128	147	96	1,035
	Pomeroy	234	127	3	14
	Walla Walla	54	1,139	37	184
Total Acres		462	1,691	550	1,837

Western Pine Beetle	Heppner	301	158	229	1,306
	North Fork John Day	15	0	394	726
	Pomeroy	145	23	142	8
	Walla Walla	238	141	140	255
Total Acres		669	322	905	2,295

In 1993, all four districts conducted on the ground surveys for either spruce budworm and tussock moth or both. Lower crown samples were taken on individual trees for spruce budworm larvae and phermone traps were installed at various locations to survey for tussock moths. Results are as follows:

- Heppner Ranger District sampled 900 trees for western spruce budworm and found a total of 1,440 larvae for an average of 1.6 larvae per tree. The District also installed and sampled 20 phermone traps to survey for tussock moth with no moths found.

- The North Fork John Day District installed seven plots to track tussock moth. Five phermone traps were placed at each plot for a total of 35 traps with no moths found. No lower crown sampling for spruce budworm occurred on the District in 1993.

- The Walla Walla District conducted tussock moth surveys by installing eight plots with each plot containing five phermone traps. No evidence of any tussock moths were noted. Lower crown samplings were taken on approximately 50,000 acres for spruce budworm.

- Pomeroy Ranger District, conducted a defoliator survey on 7,000 acres of the Skyline Analysis area. The survey focused primarily on the Western spruce budworm (due to visible defoliation found in 1991 and 1992) with some emphasis on Douglas-fir tussock moth. The established damage threshold for this survey was eight larvae per plot. Thirty plots were surveyed by sampling individual branches of the lower crown which resulted in 34 larvae for an average of 1.13 larvae per plot. In addition, 30 phermone traps were installed for approximately 5 weeks with no tussock moths caught, although 32 adult spruce budworm moths were caught for an average of 1.06 per trap. Findings from this survey showed that visible spruce budworm defoliation was low.

  Other insects surveyed included bark beetles. Findings show widely-scattered small pockets of trees were found to be infested with Douglas-fir beetles, fir engraver, and mountain pine beetles. Incidence appears to be low to moderate for the last several years.

Many different diseases are affecting the forest resources. Disease levels remained relatively unchanged from 1992 levels. However, Douglas-fir dwarf mistletoe has been increasing in severity due to fire exclusion and increased stand density. Severe levels of laminated root disease occur on the Walla Walla Ranger District, with a small portion located on the Heppner and North Fork John Day Districts. Efforts to control Armillaria root disease and laminated root disease are occurring throughout the Forest, normally during implementation of other management activities. A small infection center of black stain root disease continues to be monitored in the Abels Ridge area on the Pomeroy Ranger District. 1993 findings indicate the 1/4 acre area is not increasing in size, although a new spot was identified within the stand. This will continue to be monitored. In addition, a Black stain root disease pocket was discovered in 1993 on the Heppner District; the incidence and severity appears to be light to low.

Evaluation:

In summary, spruce budworm populations have declined substantially. No tussock moth evidence was reported. Bark beetles findings show scattered small pockets of trees infested with Douglas-fir beetles, fir engraver, and mountain pine beetles. 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.

Region 6 is currently underway with the "Current Vegetation Survey" to sample forest vegetation throughout the Pacific Northwest. As part of the survey, an emphasis is being placed on forest diseases. Completion for the Umatilla is expected in 1995. This may further help address the incidence of forest diseases. Recommendation is to continue monitoring.

D. FISH

MONITORING ITEM 25: 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 Management Indicator Species stable to improving? 2. Are Forest Plan goals 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 Index streams on the North Fork John Day River system to monitor spawning escapement against their established goals. In 1993, ODF&W did not monitor the four steelhead trout streams (Indian, Owens, Wall, and Wilson creeks), primarily due to high water flows. All of the North Fork John Day system index streams were monitored for spring chinook. Results are shown in Table II-11.

Table II-11
ODF&W CHINOOK REDD COUNTS
Umatilla National Forest

Location	Redds/Mile	
	1992	1993
Clear Creek	11.7	25.6
Granite Creek	16.5	19.8
N. Fork John Day River (Wilderness)	28.1	27.3
N. Fork John Day River (Lower)	11.4	16.1

The number of redds have been increasing in Clear and Granite creeks since 1990 and 1991; during 1986-1989; the number of redds remained relatively stable (12-16/mile) in both creeks. The number of redds in the North Fork John Day River have generally been increasing since 1985.

Additional spring chinook salmon spawning surveys were conducted by North Fork John Day Ranger District in 1993. Camas, Desolation, and Hidaway creeks as well as the North Fork John Day River were surveyed for chinook redds and spawning habitat. The results are displayed in Table II-12.

Table II-12
CHINOOK COUNTS – 1992-1993
Umatilla National Forest

Location	No. Redds		No. Carcasses		No. Live Fish	
	1992	1993	1992	1993	1992	1993
Camas Creek	0	2	0	1	0	0
Desolation Creek	12	3	3	0	0	0
Hidaway Creek*	—	0	—	0	—	0
NFJD River	5	21	4	4	0	5

* Not surveyed in 1992.

Information was not received in time for the 1993 report for steelhead in the Umatilla River from surveys conducted by the Confederated Tribes of the Umatilla and chinook salmon in the Tucannon River from the Washington Department of Wildlife and Fish. Bull trout surveys conducted during the year were also not reported.

The Forest is beginning to estimate baseline levels of habitat capability for streams that were inventoried using the Region 6 methodology. On the north half of the Forest in 1993, chinook salmon habitat smolt capability was calculated for the Tucannon, Asotin, Lookingglass, and Wenatchee watersheds. The information was calculated by major watershed using the Standard Smolt Habitat Capability Procedure employed in the consultation process with National Marine Fisheries Service (NMFS). A similar process was used for steelhead trout in the Tucannon and Lookingglass watersheds. The Model uses habitat data collected in the stream surveys, life history information, and presence or absence of the fish to complete an estimate smolt capability based on habitat. Stream survey data used in the model includes stream temperatures, pools and large wood (see MI's 6 and 8). Changes in habitat capability will be determined from subsequent inventories. The smolt capability values are a reflection of the habitat's ability to support fish and do not represent actual number of smolts. The following Table II-13 summarizes the smolt habitat capability results for 1993.

Table II-13
SMOLT CAPABILITY RESULTS – FY 1993
Umatilla National Forest

Stream	Spring Chinook Salmon Smolt Capability No.	Steelhead Trout Smolt Capability No.
Tucannon	37,009	30,545
Asotin	7,297	N/A
Lookingglass	41,000	12,469
Wenatchee	55,000	N/A

The Forest has submitted Snake River Basin Consultation packages to the National Marine Fisheries Service for the Asotin, Lookingglass, Wenaha, and Wenatchee watersheds. The analyses looked at potential effects of and mitigations for all ongoing activities on the two stocks of threatened chinook salmon. All projects are aggregated per watershed and analyzed in one of five categories: timber sale, recreation, range, engineering, and miscellaneous activities.

The main conclusions drawn from the consultation analyses concerning the two stocks of salmon are:

1. On National Forest, density independent mortality factors such as water temperature and sediment are above biologic thresholds and are not expected to increase substantially. Furthermore, planned activities with mitigation measures in place are not expected to negatively affect other attributes such as large woody material and channel morphology.

2. Salmon habitat on the Forest's portion of the Snake River Basin was not fully seeded. Portions of the watersheds analyzed on National Forest lands were determined to be in "good" condition. Looking at the watersheds cumulatively, this was not the case.

For these reasons the activities with their accompanying mitigation measures are "Not Likely to Adversely Affect" Snake River spring and fall chinook salmon, or "Result in the Destruction or Adverse Modification" of Designated Critical Habitat for Snake River spring and fall chinook salmon.

Evaluation:

Fish listings and petitions, new information, changes in management requirements, and strong public interest will require the Forest to continue monitoring current stream conditions, land management activities, and their relation to population trends. The Forest is starting to effectively use the monitoring and inventory information in a variety of ways (and needs to expand this process). Habitat capability and management objectives are in the process of being established as per Columbia River Basin Policy Implementation Guide (PIG) and Forest Plan Record of Decision (ROD). Continuation of this process, along with the Forest's Watershed Analysis effort, should help lead in providing and maintaining a diverse, well distributed pattern of habitats for aquatic obligate species.

E. WILDLIFE

MONITORING ITEM 26: 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 allocation area or management area? 3. Are the assumptions pertaining to the prediction of cover resulting from harvest and silvicultural activity valid? 4. Are the assumptions relating elk habitat effectiveness to elk populations valid? 5. Are the assumed interrelationships between cover spacing, cover quality, open roads 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 allocation zone or management area 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:

The current status and trends for elk numbers for the Oregon and Washington portions of the Forest are reflected in Tables II-14 and II-15 and Figure F, shown below. Post season elk and deer population statistics have been summarized from state wildlife agency information. Elk populations on the Forest continue to slowly increase from the 1991 level. Forest-wide elk numbers are 6 percent below State Management Objectives (SMO) and have been below the objective for the previous 3 years. However, the population levels are within the Forest's threshold of variability (10%). Current bull ratios are approximately the same as the previous years ratios, and slightly below the SMO levels. Calf ratios continue to be low for both states; averaging 44 percent.

Table II-14
ELK AND DEER POPULATIONS – 1993
Umatilla National Forest

Elk and Deer	OREGON		WASHINGTON		Total N.F.
	All Units	UMA	All Units	UMA	
Elk Pop SMO Est. Population	21,050 21,200	16,570 16,688	5,700 4,018	4,486 3,162	21,056 19,850 -6%
No. Bulls/100 Cows SMO Est. Population	 11 6.2	 11 6.2	 15 13.8	 15 13.8	 — —
No. Calves/100 Cows SMO Est. Population	 44 33	 44 33	 45 16.8	 45 16.8	 — —
Deer Population SMO Est. Population	 45,100 45,100	 35,493 35,492	 4,100 4,000	 3,227 3,148	 38,720 38,640

Deer numbers, shown in Table II-14, are 100 percent of the SMO's. Although 12 of the 14 state management units (Oregon and Washington) experienced winter losses, two of the Oregon units (Fossil and Heppner) experienced excellent wintering deer survival rates. This brought the total number of deer for the Forest up to the Forest's SMO level.

Table II-15
ELK MANAGEMENT OBJECTIVES BULLS/CALVES – 1993
Umatilla National Forest

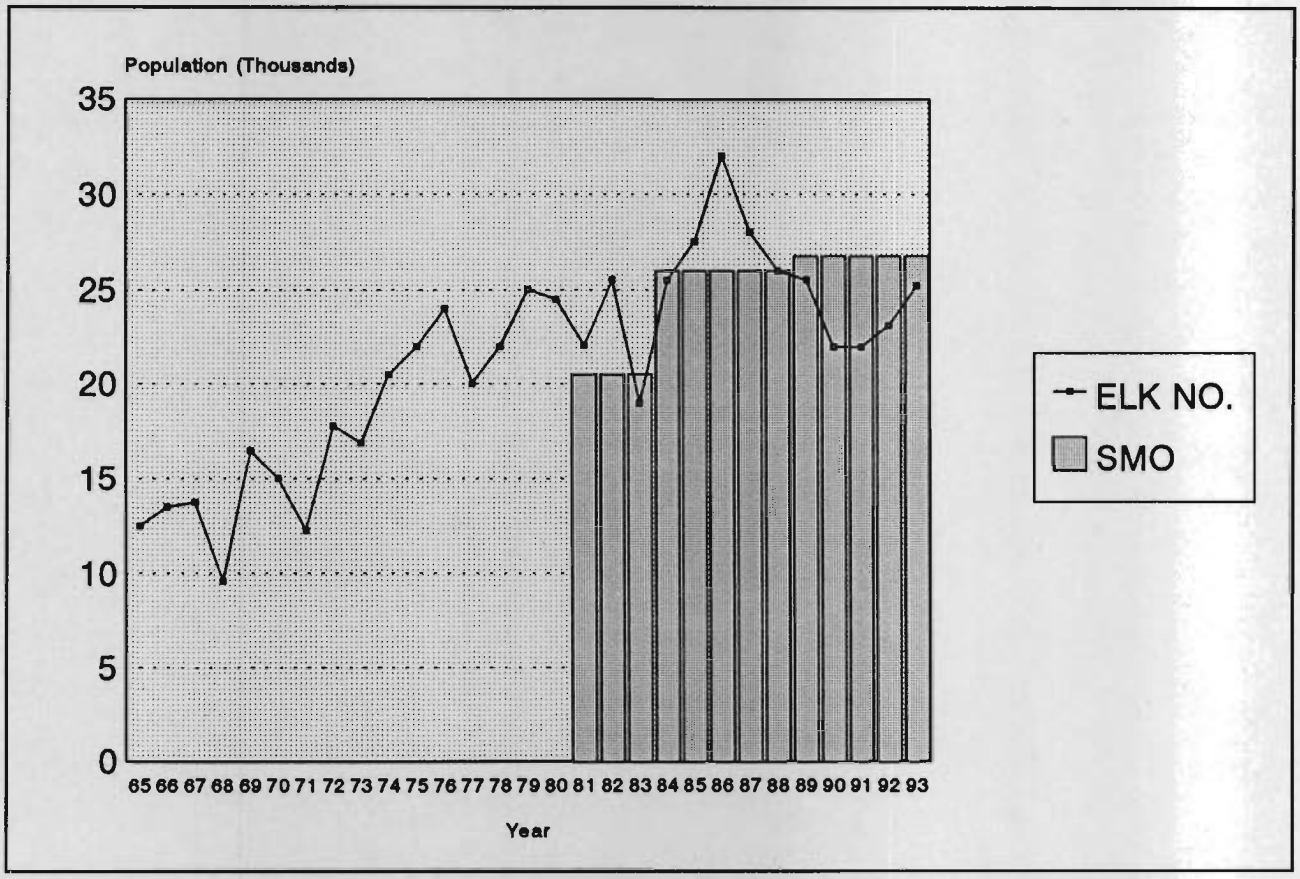
MGMT. UNIT	MGMT. OBJECTIVE			EST. 1993 POST SEASON POP		
Oregon*	Pop.	Bulls	Calves	Pop.	Bulls	Calves
Wenaha	4250	15	40	2500	10	22
Walla Walla	1800	15	40	2100	12	31
Mt. Emily	5700	10	45	5800	3	27
Ukiah	5000	10	45	5300	4	42
Desolation	1150	10	45	1300	5	34
Heppner	2850	10	45	3600	3	36
Fossil	300	10	45	600	7	39
Total	21050	11	44	21200	6.2	33

Washington**	Pop.	Bulls	Calves	Pop.	Bulls	Calves
Watershed	400	15	45	392	21	14
Touchet	500	15	45	372	16	25
Eckler	300	15	45	400	5	20
Tucannon	1200	15	45	571	16	14
Wenaha	1200	15	45	920	14	15
Lick Cr.	1000	15	45	468	21	15
Mt. View	1100	15	45	895	4	15
Total	5700	15	45	4018	13.8	16.8

* Source: Big Game Statistics. Oregon Department of Fish and Wildlife. 1993.
** Source: Pat Fowler, Wildlife Biologist, Washington Department of Wildlife.

Elk populations on the south half of the Forest (Ukiah, Desolation, Heppner, and Fossil units) continue to show population levels exceeding SMO. However, low reproduction rates may indicate an aging herd that may not remain at higher population levels. HEI values are generally below Forest standards, primarily due to the large scale insect infestations in the area. One might expect lower population levels where habitat is in less than desired condition. The north half shows mixed results with some units above the SMO and some below. Effectiveness monitoring may provide some answers to this apparent anomaly on the south half of the Forest; however, the protocols have not yet been implemented. Elk populations could also be within a "normal" range of variability. Results from the Starkey project may shed light on these observations but are several years away.

Figure F
POST SEASON ELK NUMBERS AND MANAGEMENT OBJECTIVES FOR ALL UNITS
Umatilla National Forest



Continued testing and use of techniques (described in the 1991 Monitoring Report) for implementation monitoring of big game habitat in a healthy forest was not done this year. The Forest expects that with additional harvest activity and changes in road management on a subwatershed basis, additional testing can be accomplished during 1994 to determine if Habitat Effectiveness Index (HEI) standards are being met for given management areas.

Access and travel management planning activities on each ranger district have provided one means to evaluate and monitor the habitat situation. Several examples reflect planning accomplishments on the Districts. The Environmental Assessment for Walla Walla's Motorized Access and Travel Management (MATM) Plan (completed in 1993) contained an evaluation of habitat for elk. The District's current HEI averaged 58. In the selected alternative, the average open road density is projected to decrease from 2.1 to 1.4 miles per square mile. A positive effect should result when the Plan is implemented by raising HEI to 64.

The Pomeroy RD also completed an MATM Plan in 1993. When implemented, their Plan is expected to reduce the current open road density from 2.0 to 1.2 miles per square mile. Although the effect of the road density changes were not evaluated, other project planning evaluations have shown that the HEI value for the District would be enhanced.

Three planning areas were evaluated for HEI values on the North Fork John Day Ranger District. All three areas were currently below Forest standards. As an example, 17 of the 21 units monitored in the Camas planning area were below Forest standards. Past harvest activities and effects of the spruce budworm infestation are the primary causes for the habitat to be below desired levels. Implementation of the District's MATM Plan should continue to help mitigate the cover deficiency (factor) by reducing open road densities between 60 to 70 percent. Actual changes to HEI were not calculated.

Project planning evaluations on the Heppner RD indicated problems similar to the NFJD RD by being below Forest standards for HEI. Establishment of security areas for big game, in cooperation with the ODF&W, and implementation of the District MATM Plan are expected to reduce open road densities by 24 percent and should help mitigate for the lack of cover. Actual changes to HEI were not calculated.

In 1988, the Pomeroy District, in cooperation with Washington Department of Wildlife, started a road closure program on a traditional early spring to early summer use area by elk. The program was initiated to improve elk calving and other factors. Although calf ratios didn't change significantly since the 5-year study was initiated, total elk use increased between 400 to 500 percent. The increase in total use was attributed to 1) the reduction of the open road densities from 1.39 miles per square mile prior to 1988 to .98 miles/psm, and 2) prohibited ORV use through the closure periods.

Evaluation:

Forest-wide populations (estimates) of elk and deer are within Forest Plan expectations. In spite of the dynamic changes in habitat, elk and deer populations seem to be "holding their own." However, changes in habitat and its effectiveness remains to be tested. The Forest needs to use the monitoring protocols to test the impacts of project implementation, including access management, that has occurred over the last several years and effectiveness of standards and guidelines in meeting objectives.

On the south end of the Forest, concern remains about the large scale loss of tree cover from insect mortality and impacts on habitat quality. Forest Plan standards are apparently not being met, as shown in several project reviews. The cover loss situation may have stabilized (see MI 24, Insects and Disease). Additional monitoring of cover recovery is needed. Another concern is with ungulate use of riparian shrubs, particularly at Heppner (See MI 10, Riparian Vegetation). Additional study is warranted to determine effects of elk and deer in riparian areas and ties to the management objectives.

Motorized Access and Travel Management project analysis and implementation of plans indicates that some habitat improvement will be gained through effective road management.

MONITORING ITEM 27: 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? 2. Are the dedicated old growth habitat units identified as "capable" habitat progressing as predicated toward "suitable" old growth tree habitat? (Need interdisciplinary review every 5 years) 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:

Old growth tree habitat continued to be monitored on the Forest although to a substantially reduced extent than the previous two years. During 1991 and 1992, most of dedicated old growth units and some "other inventoried" stands were field surveyed. In 1993, some old growth was surveyed for extent and quality of habitat and impacts to designated units and other inventoried areas. Table II-16 displays the monitoring that was done.

Table II-16
1993 OLD GROWTH MONITORING
Umatilla National Forest

DISTRICT	MANAGEMENT AREAS			OTHER INVENTORIED OG		
	NO. SURVEYED	SUITABLE	CAPABLE	NO. SURVEYED	SUITABLE	CAPABLE
Pomeroy	0	–	–	11	0	11
Walla Walla	0	–	–	0	–	–
North Fork John Day C1 C2	 5 3	 2 2	 3 1	 0	 –	 –
Heppner	0	–	–	0	–	–

Within the Tucannon watershed IRA process at Pomeroy, eight other inventoried Old Growth areas (OIOG) were inventoried for habitat suitability and capability using the Forest Plan criteria. Three areas outside the Tucannon watershed were also surveyed. Results indicate that four fragmented old growth units in the Tucannon watershed could be combined into a single 300-acre unit and four others could be added to existing Dedicated Old Growth (C1) units to increase their composite size and functionability. Stands monitored outside the Tucannon were classified as capable, showing less than 10 percent of the area as suitable old growth.

No old growth surveys were conducted on the Walla Walla Ranger District in 1993. Five Suitable C1 and three Managed Old Growth (C2) units on the North Fork John Day Ranger District were monitored in 1993. Of the C1's, three did not meet the suitability requirement for size and one C2 unit was too small to be considered suitable.

At Heppner, 80 percent of the inventoried and 100 percent of the dedicated old growth were inventoried in 1992. The District's old growth inventory is being re-mapped to reflect the field verified data. From this information a new dedicated old growth system will be proposed for a possible Forest Plan amendment.

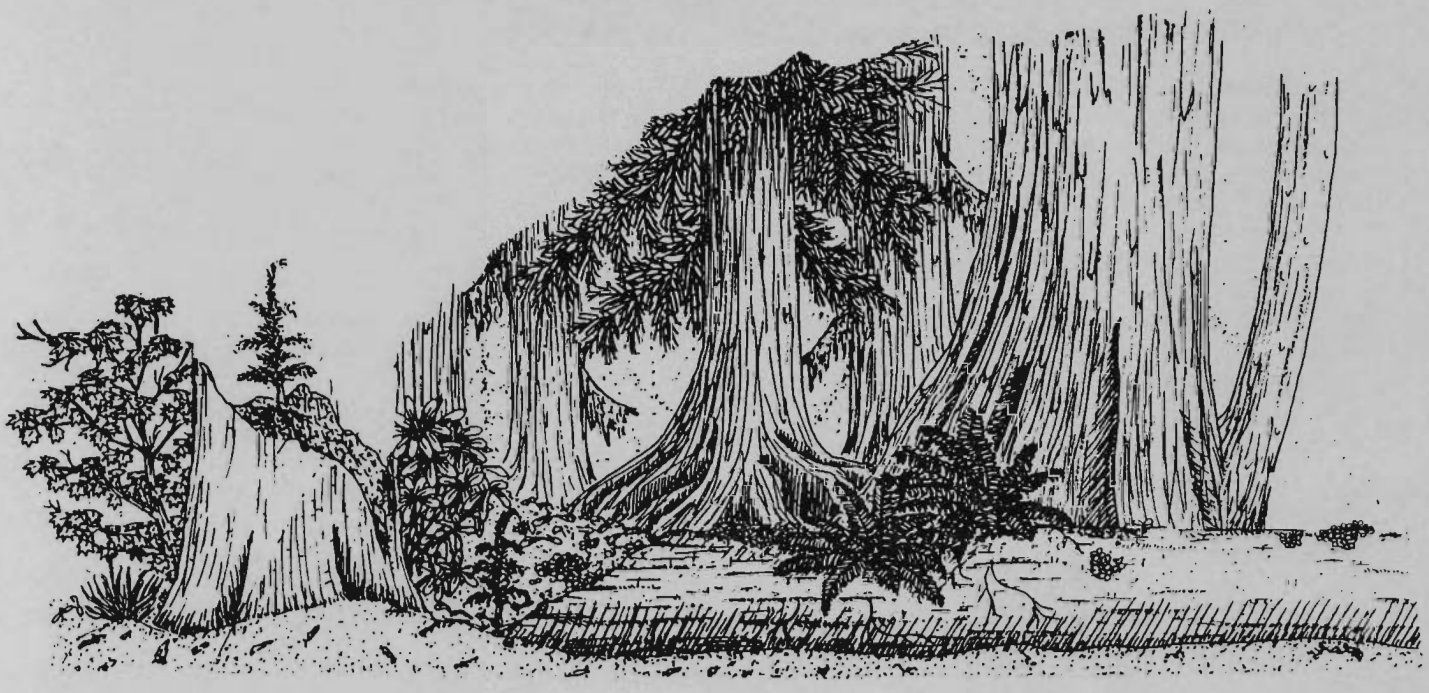
No effectiveness monitoring was done on the Forest to determine if indicator species were using old growth habitat as anticipated (see Monitoring Item 29, Pileated Woodpeckers). Such monitoring would also show habitat suitability for pileated woodpeckers. On the North Fork John Day District, use by indicator species, based on general observations, were documented in nine dedicated old growth units during 1993.

On the two southern districts, some monitoring was done on the 300-acre foraging area designated around old growth management areas. The monitoring was done in conjunction with salvage sale planning. The purpose was to determine if Forest Plan requirements for numbers and sizes of dead and down trees in the foraging areas was being met. On the North Fork John Day Ranger District, results indicate that sufficient numbers and diameter classes are generally present in foraging areas within the planning areas. Large scale insect mortality has provided the feeding habitat. At Heppner, several old growth feeding locations within the East End Analysis/Planning area were inventoried in 1993. The inventory concluded that approximately 65 percent of the areas checked were deficient in the number of large diameter (>20" dbh) snags.

Evaluation:

The 1992 Monitoring Report indicated that potential adjustments were being considered for individual old growth units and for the Forest's old growth network through the Forest Plan amendment process. However, Forest Plan changes were placed on hold until the intensive old growth surveys and mapping were completed. The surveys were not done and Forest Plan changes were not made. The Forest still needs to complete the field verified inventories of old growth dedicated units, other Forest Plan inventoried old growth, and stands that might meet old growth criteria. The completed inventory will likely result in proposed changes to the Forest Plan, as seen from the Heppner results. Major changes to the old growth network plan may be influenced by and dependent on results from the Eastside Ecosystem Management Project.

The Forest also needs to institute the effectiveness monitoring to determine use of old growth by indicator species. The ultimate goal is to gain information about indicator species populations and trends.



MONITORING ITEM 28: 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 the management indicator species (primary cavity excavators) occupying the habitat as predicated and in the anticipated numbers? 3. Are sufficient numbers, size classes and distribution of green replacement trees and down logs being left following all management activities?

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:

During 1993, monitoring of dead and down tree habitat was limited. Pomeroy and North Fork John Day Ranger Districts did some data collection and analysis; Heppner initiated some longer term studies. Analysis was not completed on data collected in earlier monitoring efforts.

In 1993, surveys using randomly located one acre plots were conducted on the Pomeroy Ranger District on approximately 22,000 acres. The surveys included acquisition of information on dead trees greater than 12 inches in diameter. The areas which were examined contained harvested stands and sites without timber management activity. The result of this survey showed an average piece per acre greater than 12 inches in diameter was 13.7 (included down logs and standing dead trees).

On the North Fork John Day Ranger District, two Turner-Otter Salvage Sale (Helicopter) units were monitored after harvest completion. Five one-fifth acre plots were sampled at 200 pace intervals from a randomly chosen starting point. Information gathered from the plots included dead trees, down logs, and live trees. Results from monitoring showed that loss of dead and live trees occurred due to two operating activities: 1) helicopter rotor blade downwash blew down dead and live trees, and 2) leave trees were felled for worker safety. In one unit, dead and live tree retention did not meet Forest Plan standards and guidelines. In the other area, dead trees were found to be within the standards. In 1994, follow-up monitoring is planned for the two units that were helicopter logged to determine if additional loss has occurred.

The Heppner Ranger District initiated two project level monitoring activities addressing dead and/or defective tree habitat. Because monitoring is still continuing throughout the post-sale activities, data will be analyzed and reported in the 1994 Monitoring Report.

A second aspect of the monitoring dealt with retention of snags within firewood cutting areas. The 1993 Fire Wood Program on the Pomeroy Ranger District prohibited the cutting of dead trees with a 20 inch or larger diameter. An informal study revealed that most firewood permittees were following the rules. However, there were noted incidences of several large diameter trees being removed by forest users. In an attempt to preserve the large snags on the Heppner Ranger District, a maximum 14-inch diameter limit was imposed for firewood cutting. Despite the diameter limit, informal monitoring showed that some of the larger material (greater than 20" dbh) is still being removed.

Monitoring was not conducted on the Forest in 1993 for snag use by cavity excavators using the new Regional monitoring protocol. No monitoring was conducted to determine if the protection measures for raptor nest and roost sites, as identified in project activity planning efforts, were successful.

Evaluation:

The Forest needs to assertively address this monitoring element by expanding the dead and down tree habitat monitoring, analyzing all of the collected data, and conducting snag use surveys. The assumption that extensive numbers of dead and dying trees (from the large scale insect infestation) will continue to provide needed habitat may not be accurate. In addition, preliminary information from the last several years work suggests that snag and green tree losses may eventually cause extensive areas to fall below standards.

MONITORING ITEM 29: 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 woodpeckers using the provided C1 and C2 habitats and adjacent feeding areas (Pileated woodpeckers only) as projected? 2. Is the "managed" old growth lodgepole pine concept providing suitable habitat, with snag sizes and distribution adequate to provide for viable populations of 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:

Systematic monitoring using Regional protocols for pileated and three-toed woodpeckers was not done on the Forest during 1993 (see MI 27, Old Growth Tree Habitat)

A few informal surveys were done. On the North Fork John Day Ranger District, pileated woodpecker use was informally documented in nine C1 Dedicated Old Growth Management Areas and one associated foraging area. Three-toed woodpecker use was observed in all three C2 Managed Old Growth Management Areas surveyed during the year.

Evaluation:

Past monitoring shows that the Regional protocols work well for pileated woodpeckers, although the surveys tend to be expensive and time consuming. The protocols need to be tested for the three-toed woodpecker. The Forest needs to continue and expand efforts on this monitoring item to better address pileated populations and trends. The monitoring is needed to address the concern about effectiveness of old growth management regime for meeting indicator species needs.

MONITORING ITEM 30: Pine Marten Populations

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?

Threshold of Variability: 1. More than 10 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.

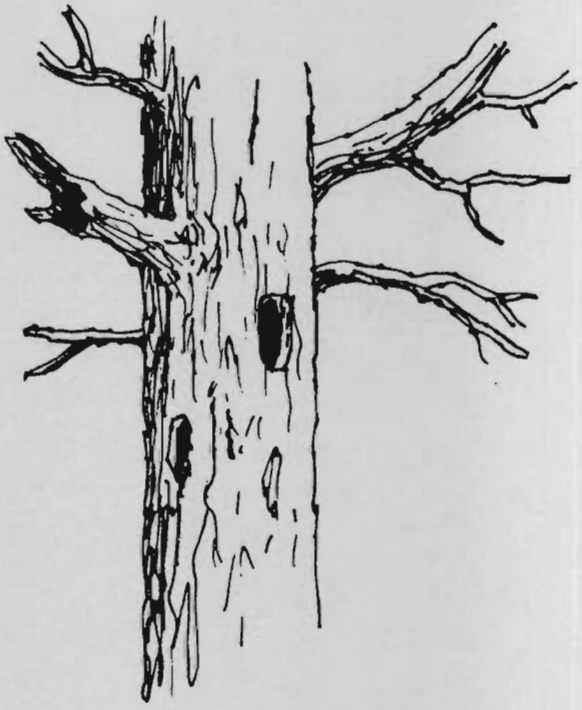
Results/Findings:

Monitoring for pine marten and other furbearer species was intensified in 1993. Approximately 580 miles of snowmobile survey routes, camera points and smoked plates, using scent as an attractant (bait stations), were set up across the Forest.

Most 1993 sightings and tracks of the pine marten were in stands having multiple canopy layers and abundant down logs. None of the reported sightings/tracks were within C1 Dedicated Old Growth Management Areas.

Evaluation:

Population trends are not known at this time. Although monitoring needs to continue in 1994, the Blue Mountain Guidelines for monitoring pine marten should be reviewed for their effectiveness. The current monitoring process does not appear to be efficient in locating pine marten. Considerable field examination and research may be necessary before the monitoring questions could be answered.



MONITORING ITEM 31: Threatened/Endangered/Sensitive Species Wildlife and Fish Population and Habitat

Forest Goals, Desired Future Condition, and 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 or bald eagles on National Forest lands. Identify and manage all winter feeding areas and food resources on Forest lands for use by bald eagles. Protect, provide, and/or maintain suitable habitat for all sensitive animal 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? 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 in NMFS 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?*

Threshold of Variability: 1. What is the present status of sensitive species? 2. Any nest or roosting sites compromised as a result of Forest Service management activities. 3. Any delays in developing individual site management plans for reintroduction sites or for active nests. 4. Any T/E/S populations compromised as a result of Forest Service management activities.

Results/Findings:

Bald Eagles and Peregrine Falcons:

Monitoring of wintering Bald Eagles along the North Fork John Day River was again conducted jointly with the Oregon Cooperative Research Unit. The wintering bald eagle population is considered to be stable. Two new suspected roost sites were identified. Monitoring of these sites will continue to ascertain their validity.

Aerial surveys for the peregrine falcon were again completed in 1993 on the south half of the Forest in cooperation with Oregon Department of Fish and Wildlife. None of the potential nest sites were found to be occupied.

No monitoring was conducted for Bald Eagles or peregrine falcons on the Pomeroy and Walla Walla Ranger Districts.

Chinook Salmon/Bull Trout:

Only limited information was reported in 1993 (see MI 25 Anadromous and Resident Fish). No population information was reported on Snake River Chinook Salmon and bull trout.

Sensitive Species

Wolverine - Snowmobile routes conducted for pine marten surveys were also used for possible detection of wolverine on the Forest. No wolverine were detected. Preble's Shrew - Monitoring for the presence or absence of this shrew in suitable habitat continued on all districts into 1993, for the third consecutive year. There were no preble's shrews captured with 4,460 trap nights expended. Goshawks - using the Regional survey protocol for the northern goshawk, monitoring was initiated on the Heppner, Walla Walla, and North Fork John Day Ranger Districts. Approximately 75,790 acres were surveyed. One Goshawk nest site was confirmed on the North Fork John Day District. Ferruginous Hawks - No monitoring was done for Ferruginous Hawks on the Forest.

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 that may affect sensitive species habitat.

Neotropical Migratory Birds

A bird survey was done at Heppner (by contract) to determine baseline information on species abundance and richness within different vegetative conditions. Comparisons were made for riparian areas (grazed and exclosed or ungrazed) and spruce budworm defoliated stands (control and proposed salvage areas). The surveys used approved neotropical migratory bird survey techniques.

Results showed a total of 2,120 individuals of 49 species were recorded on all riparian transects; 22 species comprised 78 percent of the total. Comparison of individual riparian sites revealed large differences in abundances of bird species. When sites were compared by treatment (grazed vs. exclosured), six species (Golden-crowned Kinglet, Mountain Chickadee, Red-breasted Nuthatch, Townsend's Warbler, Western Tanager, and Williamson's Sapsucker) were significantly more abundant on grazed transects, and four species (Hammond's Flycatcher, House Wren) abundant on ungrazed transects. Except for MacGillivray's Warbler and Spotted Sandpiper, the number and variety of riparian species present was low. The Brown-headed Cowbird, a brood parasite on passerines, was the third most abundant species, occurring on both grazed and exclosured areas.

A total of 1,253 individual birds of 38 species were found on all transects in spruce budworm affected stands. Bird diversity and abundance on control (non harvest) and proposed salvage stands were not different. Thirteen species accounted for 76.6 percent of the total number of individuals counted.

The Walla Walla Ranger District is a cooperator on the large scale Migratory Avian Productivity Study. 1993 results of this study have not been received. The District has also initiated a point count monitoring process but may need to adjust the process to be in line with the new Regional monitoring protocol. Results gathered to date have not been analyzed.

Evaluation:

Continue monitoring to determine presence of species of concern and populations/habitat trends for others. Consider dropping the preble shrew monitoring since none have been found on or in the vicinity of the Forest during the 3-year monitoring period.

F. DIVERSITY

MONITORING ITEM 32: 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? How do they compare to past distributions? What distribution and proportion is expected in the future? What are the long-term trends? Does the distribution, proportion, and absolute amount provide viable habitat for management indicator species, rare species, and biological diversity? 2. Has habitat capability being changed? 3. 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, trends in animal and plant diversity can be developed and evaluated.

Results/Findings:

During the 1993 field season, Sensitive Plant Survey Crews and Noxious Weed Crews were able to document the presence of an additional 83 species to the overall Forest checklist of plants, bringing this number to 1,214. Fifteen known species of noxious weeds are known to occur on Forest land and four other noxious weed species are known to occur on lands immediately adjacent to the Forest boundary.

Currently, the Forest is conducting watershed analysis on four watersheds, approximately 400,000 acres, on the Umatilla N.F. Biodiversity is one of the primary issues being addressed in this landscape scale analysis. The analysis is intended to address potential vegetation, including riparian areas and should give an approximation of current biological diversity compared to predicted historic conditions. For the watersheds analyzed, answers to monitoring questions 1, 2, and 4 may begin to be addressed.

Evaluation:

Initiate/continue monitoring by completing the watershed assessments.

III. RESOURCES AND SERVICES TO PEOPLE

A. FOREST PLAN IMPLEMENTATION

MONITORING ITEM 33: Management Areas

Forest Goals, Desired Future Condition, and Outputs: Disposition of the Management Areas

Monitoring Question(s): 1. Are project plans consistent with the intent of the management areas in which they are being planned and implemented? 2. Are the management areas, through their implementation, bringing about the desired future condition on those areas of land where they are applied?

Threshold of Variability: Noncompliance or changes to the management areas and associated standards and guidelines.

Results/Findings:

The overall level of NEPA documents and decisions was substantially reduced from the recent past on the Forest (see MI 57, NEPA/NFMA). As a result, fewer planning reviews and proposed changes were made related to Management Areas and associated direction. The District made some use of the Forest Plan Implementation Checklist as a review tool to check consistency with goals, objectives, and DFC's in implementation activities (also see MI 34, Standards and Guidelines). Several problem situations were noted which were similar to those reported last year. The following are some of the specific monitoring that occurred:

In developing the East End Salvage Sales and Restoration Projects EIS, the Heppner Ranger District ID team reviewed existing land management allocations and recommended changes, which were incorporated into the FEIS. A field review of C1 management areas within the project area by the District Wildlife Biologists and others found that approximately 152 acres of Management Area (MA) C1 had been harvested several years ago. The ID team recommended replacing those acres with the best available old growth acres from adjacent stands (in MA E2) as per Forest Plan direction. The District ID team also reviewed the allocations along the Blue Mountain Scenic Byway currently managed as A1 - Dispersed Nonmotorized Recreation. The ID team determined that an allocation MA A4 would allow greater flexibility in managing the area immediately adjacent to Forest Service Road 53 as a scenic byway and recommended changing approximately 324 acres from A1 to A4. The remainder of the current A1 would remain in its current allocation.

Within the East End area, Habitat Effectiveness Index (HEI) is also below the Forest Plan requirements in MA C4 in seven of nine subwatersheds where C4 occurs, and in MA E2 in two of seven subwatersheds where E2 occurs. The low HEI values are largely caused by existing road density and widespread defoliation (and loss of satisfactory cover) by western spruce budworm over the past several years. Site-specific amendments were proposed. None of the alternatives proposed in the FEIS would further decrease HEI.

The North Fork John Day Ranger District used project analysis and informal Forest Plan direction reviews on the Indianberry Salvage Sale. They also found several problems related to HEI (see MI 34). Several adjustments in HEI requirements were proposed since cover and HEI requirements were not attainable in MA C3 (Big Game Winter Range) and MA C4 (Wildlife Habitat) due to the large scale insect mortality and defoliation. The proposals resulted in approved site-specific, non-significant amendments to the Forest Plan to begin moving the area toward desired conditions.

The Walla Walla District utilized the Forest Plan Implementation Checklist on a revised version of the Lower Tiger Timber Sale plan. The checklist was used to insure the revisions would be consistent with management area standards and guidelines. The same concerns which arose in the monitoring review of the original plan are still of concern in the revision. (Reference 1992 Monitoring Report). The District IDT determined that the C4 vegetative diversity guide is unrealistic (cannot be met) for this area. (Page 4-160 of the Plan). Other standards and guidelines were judged to be within compliance.

Post-project monitoring was utilized on two occasions in FY 1993. In June, two regeneration units on the Summertime Timber Sale and one regeneration unit on the Lost Timber Sale were monitored and evaluated for consistency with standards and guidelines and Best Management Practices. Except for items noted in MI 3, most items were within the parameters of guidelines and Best Management Practices. One item of concern was that the timber sale contract did not help protect undesignated (unallocated) riparian areas from blowdown removal. A situation was created in which Desired Future Condition may not be met. Results of this monitoring was used as a topic for the June Forest Leadership Team meeting.

In August, the Wells Timber Sale was visited to review broadcast burn implementation, and two units on the Spring Mountain Timber Sale were checked for post sale implementation effectiveness. The Wells Sale burning was deemed to meet contract and burn plan objectives and Forest Plan requirements. The Spring Mountain sale was sold in 1989 and units logged during 1990 (prior to issuance of the Forest Plan). The units were evaluated to determine the success of older sales in meeting Forest Plan requirements, application of mitigation measures in protecting resources, and identification of possible restoration needs. The team found that the riparian harvest met the EA protection requirements (under Unit Plan) but was heavier than current standards permit and did not provide the level of protection for streams and riparian areas in the Forest Plan. In addition, the team found that the stream and associated riparian area should have received a C5 Management Area designation (Class III stream) but was allocated to MA C4 in the Plan. This case points to the Forest Plan short fall in properly allocating all of the riparian/stream areas to C5 or other appropriate management area. A need exists to correct this deficiency. Under mitigation, the team found a temporary road which had not been put to bed effectively and appeared to be causing soil erosion. The area and problems are now being addressed in the district restoration efforts.

With the listing of Snake River spring/summer, fall chinook salmon as Threatened on the Pomeroy Ranger District, all ongoing activities in the Tucannon and other watersheds have been extensively reviewed for compliance and consistency with Management Area direction. These activities have also been assessed by the National Marine Fisheries Service (NMFS). Additional mitigation measures were applied to reach a conclusion of "not likely to adversely affect" the threatened species. Additional buffer widths were requested by NMFS and were implemented. All classes of streams and swales in the Tucannon watershed were given buffer widths greater than that required in the Forest Plan. Six ongoing timber sales were reviewed and modified to incorporate the NMFS requirements.

The Pomeroy Motorized Access and Travel Management (MATM) Plan divided the District into 12 strategy areas. These areas were determined by Forest Plan Management Area boundaries. The dominant Forest Plan Management Area direction was used as the basis for guiding the general access strategy within each strategy area, thereby following the standards and guidelines established for each management area. The Walla Walla Ranger District used a similar process in their MATM planning.

Evaluation:

The Forest completed some planning and on-the-ground monitoring related to Management Areas. Several Forest Plan deficiencies or conflicts were identified, particularly in project plans. A weakness appears to be the shortage of (and/or lack of documentation) on-the-ground project reviews to determine if they are being implemented in accordance with plans (also see MI 34). The monitoring question about meeting the intent of management area direction through implementation of projects cannot be effectively evaluated. The Forest and Districts need to emphasize project reviews of completed or ongoing activities.

The Forest has an ongoing commitment to use the Forest Plan checklist as a monitoring tool for planning and implementation activities. However, during 1993, less use (or documentation) was apparently made of the checklist than in recent past. This change has resulted from a number of factors including fewer projects, each of which has well known Forest Plan differences, the outside influences of the Endangered Species Act, and Regional Forester required review of eastside timber sales. The Forest needs to continue (and expand) use of the checklist and document results of monitoring activities. Through this and other means, the Forest will be in a better, more solid position to make necessary adjustments to practices or the Forest Plan.

Monitoring is one of the keys to keeping the Forest Plan a useful, vital document. As noted in MI 57 and Forest Plan Amendment section, several timber sale projects resulted in site-specific Forest Plan amendments. Generally, the project by project approach tends to be a relatively inefficient means of adjusting the Forest Plan. Changes are likely to be needed on a broader scale than shown in individual project adjustments. Limited monitoring from FY '93 (and monitoring done in FY '91 and '92) suggest that changes are needed with the old growth network, elk habitat relationships, and riparian allocations and management. Changes in management direction are having a similar pull. Further monitoring and evaluation is needed to test this thesis. The net result from FY '93 monitoring of management areas was that the Forest was less able to address the progress toward Forest Plan Desired Future Condition but suggests that the Forest Plan may need adjustment in the future due to (potential) changes in management areas.

MONITORING ITEM 34: Standards and Guidelines

Forest Goals, Desired Future Condition, and Outputs: Adherence to standards and guidelines not covered by separate monitoring item; goals and objectives met by standards and guidelines.

Monitoring Question(s): 1. Are Forest Plan standards and guidelines being implemented as designed? 2. Do they meet the stated goals and objectives of the Plan?

Threshold of Variability: 1) Selected projects judged not in compliance with the Plan standards and guidelines, and 2) deviations from stated goals and objectives.

Results/Findings:

Districts continue to make limited use of the Forest Plan Implementation Checklist to monitor project consistency with Forest Plan standards and guidelines. The monitoring results overlap with MI 33, Management Areas; most of the identified "problem situations" were related to Management Areas (allocations and direction).

In 1993, the Heppner Ranger District completed the East End Salvage Sales and Restoration Projects EIS. The checklist was used in preparation of the FEIS, and inconsistencies were noted in the FEIS (published 8/16). When harvest on both private and National Forest land was considered, one subwatershed (Upper Ditch) failed to meet the standard and guideline of a maximum of 30 percent of a subwatershed in the zero to 10-year age class under existing conditions. The preferred alternative would harvest additional acres within that subwatershed. The FEIS stated that a site-specific Forest Plan amendment permitting an exception would be required if that alternative was selected.

Monitoring of Forest Plan standards and guidelines is discussed throughout the Monitoring Report. However, two other "unique" projects were monitored for implementation consistency with the Forest Plan; bear/cougar outfitting and reforestation activity.

The decision from the 1990 Outfitter Guide Bear/Cougar Hunting Activity EA states that "all qualifying outfitter applications for providing service for pursuit or hunting of bear and cougar would be approved, provided Umatilla National Forest Outfitter-Guide Application evaluation procedure criteria are met." The EA disclosed in the monitoring section that the Forest would re-examine the decision when more than eight permits were issued. The Forest has reached the eight permit point.

Requests (demand) for permits from southeast Washington have increased. However, observations through verbal sources indicate that the eight issued permits are not fully being used. There are no findings to indicate that social or resource conflicts have been realized as a result of the eight permits. Monitoring showed that no conflicts or concerns have been received from the public about the numbers of Bear/Cougar outfitters. Discussion on the Forest suggests that more permits are not needed; however, a need exists to determine the demand for the permits before any action can take place. Given the monitoring observations, there are no reasons to deviate from the decision to issue permits if they meet the Forest evaluation criteria outlined in the Forest Plan.

In 1993, the Forest initiated a reforestation monitoring project to determine the implementation and effectiveness of the Forest-wide Standards and Guidelines related to reforestation. The following summarizes the findings from monitoring.

> Silviculture Prescriptions: The prescriptions reviewed were all written since Forest Plan initiation. None have been fully implemented. Prescriptions appear to have been prepared or approved by a certified silviculturist. They varied widely in format, timing, and quality. Prescriptions generally meet the intent of the Forest Plan; however, they did not specifically address all the required elements identified in the Forest Plan (p. 4-69).

One other concern has been raised that little or no monitoring of prescriptions has been done after they are signed. Some appear to have been written or completed after the Decision Notice was signed.

Reforestation Examination: All of the districts appear to meet the Forest Plan staked tree survey requirements (p. 4-71 Forest Plan) for the first and third growing seasons. Districts are unable to locate the stakes for the fifth year survey.

Plantation exam procedures vary somewhat between districts. The intensity, plot size, and information collected varies from one district to another.

Reforestation Databases: Tracking mechanisms also vary between districts. All districts continue to use the TRI card system (Heppner no longer uses the Pre-sale/Post sale or Fire TRI cards). Information tracked on the reforestation cards also varies. For example, North Fork John Day Ranger District begins recording information on the TSI cards once the unit is certified, while other districts begin recording information once the unit has been established.

Reforestation databases are the most variable of all. Districts use a mixture of paper-based data, spreadsheets, and electronic databases. The data also varies significantly, although all of the districts track cultural practices, dates, and stocking levels.

The review showed a need for a reforestation corporate databases that is user friendly, meets upward reporting and other needs, and provides useful information for project level work. Currently, the general feeling is that district work is not supported by existing corporate reporting and that proposed changes need action.

Evaluation:

Forest Plan standards and guidelines (S&G's) are being monitored and associated findings described in a number of items throughout the report. Areas of strengths and weaknesses were discussed.

In 1993, a missing ingredient for monitoring Forest-wide Standards and Guidelines was project analysis and on-the-ground reviews (and/or their documentation). As such, the monitoring questions cannot be effectively addressed. The Forest needs to increase emphasis on monitoring Forest-wide S&G's at the completed or ongoing project level. The Forest also needs to make use of the implementation checklist in the process.

Results described in this monitoring item also suggest that some of the Forest Plan process S&G's are being overlooked, particularly in the timber and reforestation activities. The process area appears to be one that requires strengthening.

B. RECREATION

MONITORING ITEM 35: Amount of Primitive and Semi-primitive Recreation Opportunity Spectrum and Number of Roadless Areas Entered

Forest Goals, Desired Future Condition, and Outputs: "... provide semi-primitive and primitive opportunities ... meet demand for primitive and semi-primitive opportunities found in wildernesses, unroaded, etc. .."

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 MA's acres (of primitive/semi-primitive recreation opportunity) not in compliance with Forest Plan direction.

Results/Findings:

The Forest has a total of 22 roadless areas. Roadless areas have been managed in accordance with the Forest Plan. During the year, the Forest made a further review of the roadless area status. The review showed that four timber sales were located in parts of inventoried roadless areas. Two sales, Tail and Teal, were sold before the Record of Decision for the Forest Plan was signed and the second two, Huck Butte and Meadow, shortly thereafter. With exceptions noted below, all met Management Area direction and NFMA process requirements. The following is a summary of the roadless areas affected by timber sales:

Asotin Creek:

Approximately 236 acres of harvest on the Tail Timber Sale are located within the roadless area as well as a portion of Road 4000-369. All road building and logging on this sale have been completed. Management areas affected are C4 - Wildlife Habitat and C8 - Grass Tree Mosaic. Two units were located within C8 Management Area totalling approximately 72 acres; C8 does not have scheduled timber harvest, but permits harvest under specified conditions. Findings show the two units were harvested after the Forest Plan was signed without a supplemental NFMA consistency findings to the Decision Notice. Projects planned prior to the Plan and work started after signing require a findings of consistency to ensure the project met the intent of the Forest Plan.

Upper Tucannon:

Approximately 92 acres of planned harvest from the Teal Timber Sale are within the Upper Tucannon Roadless Area. To date, none of the units have been harvested in the roadless area. Management areas affected will be C5 - Riparian (Fish and Wildlife) and E2 - Timber and Big Game.

Willow Springs:

Approximately 209 acres of the Huck Butte Timber Sale area and 841 acres of the Meadow Timber Sale are located in the roadless area. All road building and harvest activities in this roadless area have been completed (no road construction was planned for Meadow Timber Sale). Harvest activity primarily occurred in Management Areas E2 - Timber and Big Game, C3 - Big Game Winter Range, and C4 - Wildlife Habitat.

Meadow Creek:

Approximately 731 acres of the Meadow Timber Sale are located within the roadless area. No road construction was planned. All harvest activity on this sale has been completed. Harvest activity occurred in C3 - Big Game Winter Range, and C4 - Wildlife Habitat.

The Forest is providing forest users with primitive and semi-primitive opportunities in all roadless areas as described in the Forest Plan.

Evaluation:

The 1992 Monitoring Report incorrectly stated that only one roadless area was entered on the Forest. With the above additions, the 1993 Monitoring Report updates the Forest's existing condition and corrects last years statement as it relates to roadless areas entered. Continue monitoring.

MONITORING ITEM 36: Location, Type, Amount of Use; Conflicts (Off Highway Vehicles)

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 . . ."

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?

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:

The current situation on the Forest regarding availability of areas and facilities for off highway vehicle use varies between Districts. The following is the current situation on the Forest as of FY 1993:

- The Heppner Ranger District currently does not have any facilities available for OHV users. However, with implementation of their Motorized Access and Travel Management Plan (MATM), an area west of Forest Service Road 22 is available for cross country travel. East of Road 22 is restricted to only designated routes (only one road has been designated).

- The North Fork John Day Ranger District currently has designated 127 miles of trails for OHV use. The majority of the trails are within the Winom-Frazier OHV complex for a total of 100 miles. In addition, 29 to 40 miles of OHV trails are being proposed within the Camas Environmental Impact Statement and the Big Creek/Martin Creek Trail Environmental Assessment. The Winom Campground is specifically designated to accommodate OHV users. The Frazier Campground has undergone modifications to accommodate OHV users.

- The Decision Notice for Walla Walla Ranger District's Access and Travel Management Plan was signed July 29, 1993. Currently, the District is lacking OHV facilities.

- The Decision Notice for the Pomeroy Ranger District's MATM Plan was signed July 19, 1993, and provides a broad mix of recreational opportunities, both motorized and non-motorized. The Plan provides 26.9 miles of access available for OHV use in four principal areas. The adoption of the Plan represents a loss of about 67 percent of miles available for OHV use.

The Forest currently does not have a monitoring program to fully track OHV use and how it affects other Forest resources. However, the North Fork John Day Ranger District has installed four trail counters to begin monitoring use levels. In 1994, the District will also begin monitoring for compliance and decibel levels from OHV's.

Although motorized use is known to affect big game, access and travel management plans and Forest Plan standards and guidelines have been designed to reduce conflicts between users and wildlife. In a few cases, noted erosion and increased sedimentation has occurred in localized areas. Current maintenance programs and improved systems are correcting identified problems. Because use is minor to moderate, resource damage is limited. Some conflicts between OHV users and "regular" traffic on roads has been noted on the north end of the Forest.

Evaluation:

Monitoring implementation of MATM Plans through time should provide more information and possible resolution for this element. Better definition of monitoring methods and tracking procedures is needed.

MONITORING ITEM 37: Capacity, Occupancy Rate, Satisfaction (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:

In 1993, the Forest's total reported use was 1,125,000 Recreation visitor Days (RVDs). Approximately 150,000 RVD's (less than 15 percent) occurred at the Forest's campgrounds. Campground and occupancy rate for the Forest is approximately 40 percent. North Fork John Day River, Olive Lake, Bull Prairie, Tucannon, Umatilla Forks, Jubilee Lake, Teal Spring, Penland Lake, and North Fork John Day River Wild and Scenic River Corridor occupancy rates are at or approaching levels which warrant expansion or improvement (see above threshold).

Overnight capacity has remained unchanged for several years. Capacity of developed sites is approximately 1,500 persons at one time (PAOT). Average use season is about 120 days. Approximately 75 percent of the capacity is provided at Development Level 3 type campgrounds; the remainder at Level 2 and below. Water related sites continue to be marginal for meeting demand. Overnight accommodations are scarce along the Blue Mountain Scenic Byway. Currently, no expansion of capacity is scheduled, except for possibly adding a small campground (6-10 units) along the Blue Mountain Scenic Byway to better accommodate travelers.

The Forest is in the midst of a program to provide better toilet facilities. A concrete design toilet is proving to be very cost efficient to install and maintain. Site facilities are often suffering from wear and tear, but good efforts are being made at cleanliness. Remoteness of the sites and high proportion of use by traditional users probably are factors for not having many complaints. Most complaints are of a one time nature. Potable water is provided at very few sites on the Forest. Camping facilities within riparian areas, especially when adjacent to anadromous streams, is of high concern. Mitigation measures have been done in the Tucannon drainage and plans made for North Fork John Day.

A thorough survey of recreation sites to determine accessibility for the disabled was conducted. Although no sites were found to be in full compliance with standards, several facilities had only minor discrepancies. Improvements to meet accessibility needs to continue on an opportunity basis (e.g., Jubilee Lake).

Evaluation:

The Forest needs to be consistent in reporting and tracking use in developed campgrounds. Facility conditions at some sites are exceeding thresholds. Further evaluation is needed to determine if current programs are adequately maintaining recreation facilities and which upgrades or additional facilities are required.

C. VISUAL

MONITORING ITEM 38: Existing Visual Condition

Forest Goals, Desired Future Condition, and Outputs: "Over 21 percent of the Forest, or about 325,000 acres, will be managed to provide pleasing settings emphasizing a natural to slightly altered appearance . . . 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? 2. What are the effects of land use on the visual resource? 3. Are location, shape, and size of timber regeneration units meeting standards and guidelines?

Threshold of Variability: 1. Greater than 10 percent of the analysis area not in compliance with VQO. 2. Less than 325,000 acres of the Forest meets Retention or Partial Retention VQO.

Results/Findings:

The visual quality objectives (VQO's) for various management areas are being met during project execution. In general, projects are designed to meet VQO's. However, the south-end districts (Heppner and North Fork John Day) are faced with the complexity of meeting VQO's due to tree defoliation and mortality from the spruce budworm. Given the high level of mortality, meeting standards and guidelines may reduce visual quality and greatly slow achievement of DFC's. In areas of high defoliation (under the current East End Salvage Sales proposal) some timber harvest project units would exceed 40 acres in size. When added to existing openings, the maximum size of created opening would be 177 acres. According to the environmental assessment (EA), the size of openings would be modified to allow for a variety of unit sizes.

The design of the Patit Timber Sale (sold in 1993) on the Pomeroy R.D., reflects an increased sensitivity to visual resource objectives. Two-thirds of the area will be harvested by uneven-aged harvest methods. The average size of the units will be approximately 20 acres, which is less than traditional designs. The Meadow Sale, also located on Pomeroy R.D., was helicopter logged; findings indicate it meets or exceeds planned foreground and middleground objectives.

To date, no viewshed corridor plans have been completed. However, an analysis of the Blue Mountain Scenic Byway (Forest Service Road 53 route to Penland Lake) and Roads 21 and 2103 was conducted by a landscape architect in November 1992. Results are as follows:

- The present viewing situation has several distinct types of stands along FS Road 53 and the route to Penland Lake. Willow Canyon area contains dense, closed canopy stand, with a high percentage of dead and dying trees. First pass east of FS Road 53 and south to Penland Lake, the forest is more open, with past salvage units clearly evident. Lodgepole pine is rapidly becoming established in open areas. Some stands are accumulating large quantities of dead/down trees. With all of these factors combined, the scenery is not as attractive as in past years.

  Scenic quality of Kelly Prairie is very impressive and to a lesser extent Herron Meadow is also attractive. Lodgepole pine is encroaching on Herron Meadow at a rapid rate and within the next decade or so the meadow appearance will be gone. This is also happening at Kelly Prairie, although at a slower rate.

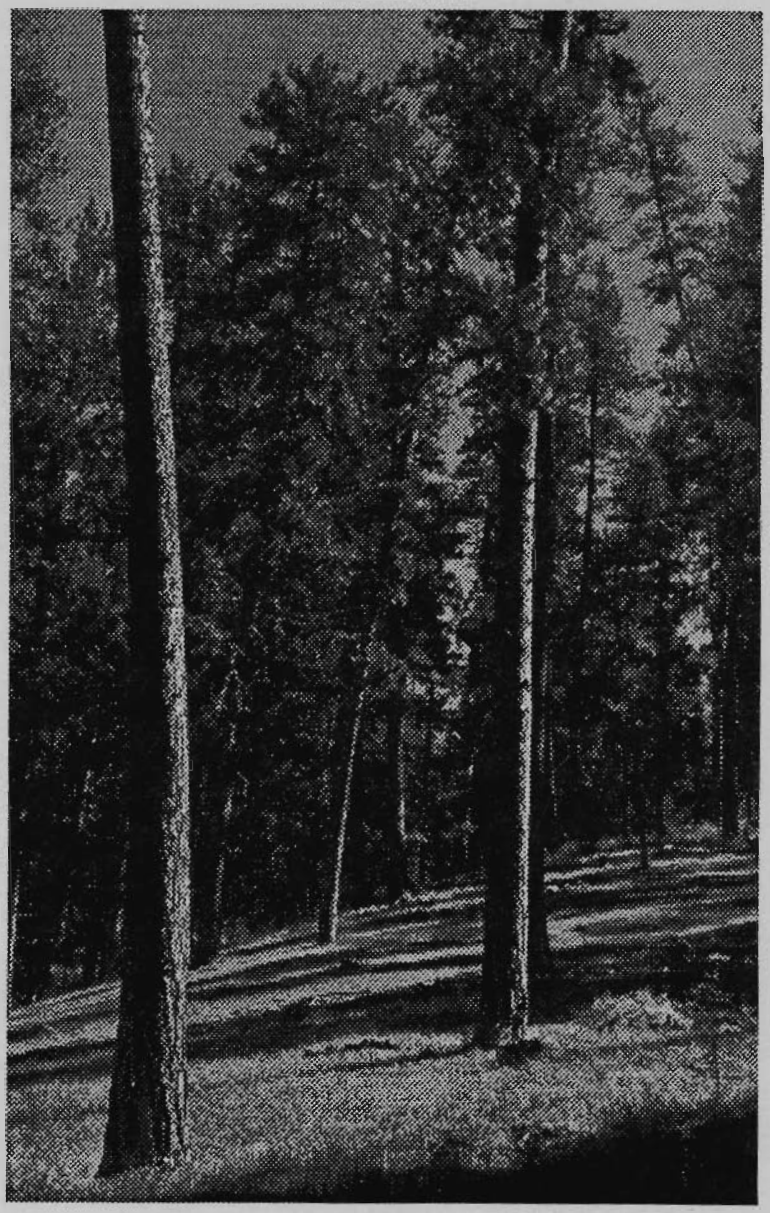
- Stands of dead timber do not meet visual quality objectives of either retention (natural appearing) or partial retention (slightly altered appearance).

- The Forest Plan assigned a narrow strip of land along Road 53 and Roads 21 and 2103 to Penland Lake the allocation of scenic emphasis. The area seen by travelers along these routes is much larger than the strip identified in the Forest Plan; some changes are proposed.

The foreground (area closest to the travelway) is generally up to one-quarter of a mile on either side of the travelway. This is the most sensitive ground because it is the most noticed by the traveler. The middleground is generally up to 3 miles, unless blocked by ridges, and is less sensitive than the foreground. This area can be extended out and becomes the background.

Evaluation:

Results for FY '93 are about the same as FY '92. No VQO's or viewshed corridor plans were revised or developed in 1993. No formal reviews of projects occurred on the Forest in FY '93. As stated in the FY '92 Monitoring Report "Assurance that visual standards and guidelines have been met through implementation is not evidenced by available monitoring results." The Forest needs to initiate a systematic approach towards monitoring visual quality. Therefore, formal review of projects along scenic corridors is recommended for 1994. The Forest also needs to complete viewshed plans, particularly for key western spruce budworm infestation areas requiring rehabilitation.



D. WILDERNESS

MONITORING ITEM 39: Location, Kind, Amount, Effects of 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 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:

Ten monitoring trips (of one to five days in duration) were made in the Wenaha-Tucannon Wilderness during 1993. The monitoring results documented the following nonconforming uses and unacceptable wilderness use: Cache storage, chainsaw use, abandoned camp, and camp garbage. The most cited nonconforming use was the storing of camp caches and garbage left behind. Cache storage was removed from nine sites. One grazing allotment lies in the wilderness but was not used in 1993.

Reviews for the North Fork Umatilla reveal two incidents of littering, one incident of a permanent structure, three incidents of mountain bike use, one incident of motorcycle use, and 10 incidents of 4x4 use on Buck Mountain during elk hunting season. Grazing is permitted in the wilderness and occurred in 1993; no grazing problems were observed.

In the North Fork John Day Wilderness, mining is a primary management concern. Some mining is occurring but only on valid claims; effects are minimized through appropriate project design and implementing plans of operations. The District completed two site cleanup projects in the wilderness during the 1993 field season. The only known grazing effects are occurring in Moon Meadows but have not been documented sufficiently to develop conclusions. Overall, domestic livestock grazing in the wilderness has been reduced. Evidence of continued intrusion by motor vehicles has been observed, primarily during the mushroom and hunting seasons.

Evaluation:

Documentation and reporting of wilderness non-conforming uses is improving, particularly for the Wenaha-Tucannon Wilderness. Permit administration information still needs to be more effectively used. Continue monitoring.

MONITORING ITEM 40: 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?

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 site and trail surveys were implemented and completed on the North Fork John Day Wilderness but information has not been compiled and evaluated. The process has not yet been developed and implemented on the Forests other two wildernesses. Until the findings are evaluated, this monitoring item cannot be adequately addressed. However, ongoing administrative action and observations suggest continued improvements in the wildernesses. Removal of structures, caches, and garbage continues in the Wenaha-Tucannon; cleanup of several sites has occurred during 1993 in the North Fork John Day Wilderness.

During 1993, fires in all wildernesses were controlled. Current direction is to suppress all wildfires in wilderness until completion of Fire Management Plans authorizing use of prescribed natural fire. The Blue Mountain Wilderness Fire Planning Team is in the progress of developing guidelines and direction implementing prescribed natural fire in the Forests wildernesses. The guidelines provide the framework for perpetuation of natural ecosystems and processes within wilderness. Wilderness fire management action plans should be ready for implementation in 1994.

Evaluation:

The LAC process still needs to be completed, implemented, and evaluated for all the wildernesses. The process should help to answer monitoring questions 1-3.

E. RANGE

MONITORING ITEM 41: 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 of the AMP's approved following approval of the Forest Plan 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:

During FY 1993, no allotment management plans were completed on the Forest. However, field data collection and scoping activities were initiated on three districts and six allotments, including: two allotments on Pomeroy (Asotin and Pomeroy), two on North Fork John Day (Hidaway and F.G. Whitney), and two on Heppner (Tamarack-Monument and Hardman). Completion of the AMP's for Pomeroy and Heppner allotments is anticipated during FY 1994.

Since approval of the Plan, no AMP's have been completed. Twenty-four were scheduled to be completed and operational by the end of FY 1993. The Forest Plan AMP schedule has not been changed.

All districts developed and used annual operating plans (AOP's) that specifically incorporated the Forest Plan standards and guidelines (as per regional direction). The AOP is currently the primary administrative vehicle for meeting Forest Plan requirements concerning the livestock use program. Forest AMP's have not been adjusted to fully incorporate Forest Plan direction. The success (or failure) of implementation of AOP's in meeting Forest Plan requirements is addressed in other monitoring items (see MI 10 Riparian Vegetation, MI 11 Range Condition and Trend, and MI 12 Range Utilization).

Evaluation:

As noted in last year's monitoring report (and still not done), the Forest Plan should be adjusted in two areas: 1) the AMP schedule changed, and 2) the Plan amended to assure that standards and guidelines are implemented through AOP's and AMP's.

MONITORING ITEM 42: Grazing Outputs – Comparison of Produced vs. Planned

Forest Goals, Desired Future Condition, and Outputs: Within the constraints imposed by basic plant and soil needs, 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:

As shown in Table III-1 below, an estimated 45.4 M AUM's were achieved during FY 1993. Actual use is about 78 percent of the Forest Plan level and 84 percent of the Forest permitted use target. The 1993 grazing use also represents an increase from the last several years (7% increase from 1992) due to more favorable forage conditions during the year.

Table III-1
GRAZING USE
Umatilla National Forest

DISTRICT	ACTUAL (AUM'S)	PERMITTED (AUM'S)
Heppner	9,783	15,974
North Fork John Day	20,979	21,296
Walla Walla	8,560	9,937
Pomeroy	6,096	6,960
Forest Total	45,418	54,167

Forest Plan Permitted Use - 58,000 AUM's

Several factors account for the actual livestock grazing use being less than the permitted use (and Forest Plan level) during 1993 including:

- Adjustments in grazing on some north end allotments resulting from consultation with National Marine Fisheries Service on the threatened Snake River Chinook Salmon.
- Permittees taking non use or partial non use (for a variety of reasons including resource protection).
- Early moves from national forest land due to utilization standards being reached.

Evaluation:

The continued decrease in actual use (falling below threshold criteria for several years) suggests that a review of the Forest Plan permitted grazing use objective is appropriate. Additional changes in the planned grazing level may also be needed as indicated by monitoring results and ongoing concern for water quality, fish, and riparian values. Any Plan adjustment is probably dependent on results from the Eastside Ecosystem Management project.

MONITORING ITEM 43: Range Improvements Accomplished as Planned

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:

Table III-2 shows the range improvements accomplished for the Forest in 1993. Forest-wide accomplishment was at the planned level for 1993, structural improvements have been increasing due to fencing riparian areas. The improvements should continue to contribute toward meeting Forest Plan objectives.

Table III-2
RANGE ACCOMPLISHMENTS – FY 1993
Umatilla National Forest

DISTRICT	NON STRUCTURAL IMPROVEMENTS	STRUCTURAL IMPROVEMENTS *	BPA FUNDED STRUCTURES **
Heppner	974	20	–
North Fork John Day	400	31	80
Walla Walla	416	10	–
Pomeroy	522	16	–
Forest Total	2,312	77	80

* Fences, ponds, water troughs, cattleguards, etc.
** Bonneville Power Administration structures include 40 miles of temporary electric riparian fence.

Evaluation:

Continue monitoring this item.

F. TIMBER

MONITORING ITEM 44: Identification of 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?

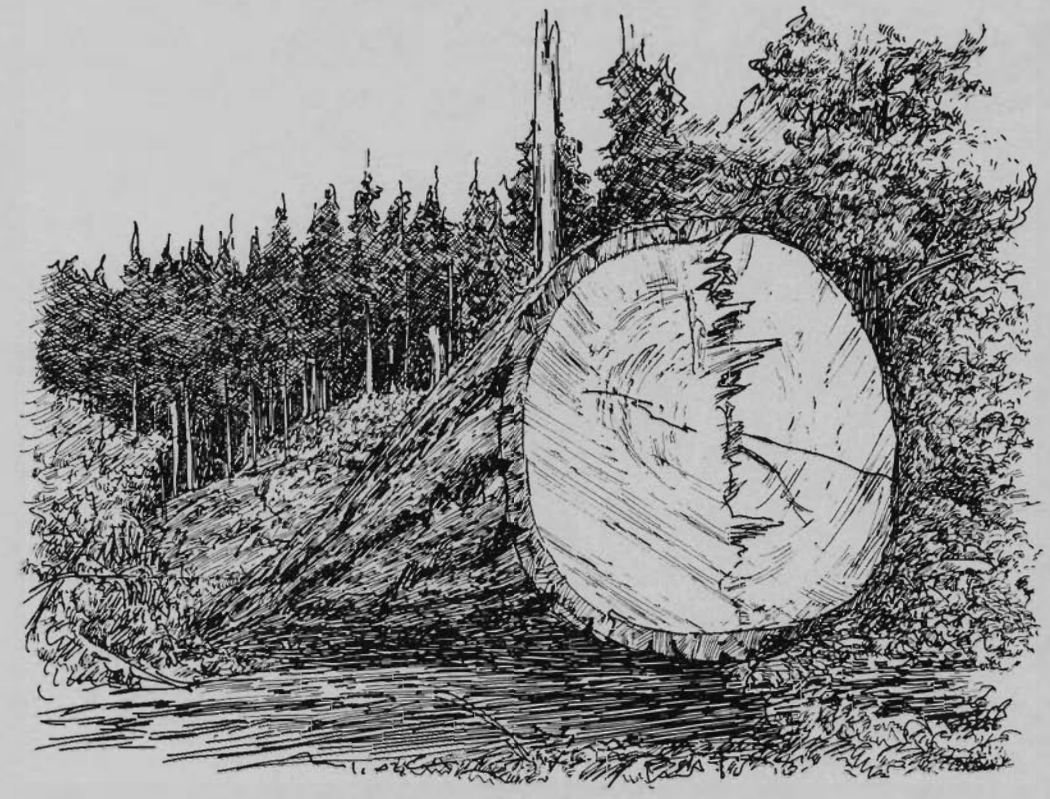
Threshold of Variability: More than a 5 percent change in the suitable land base.

Results/Findings:

As Districts complete the environmental analysis for proposed projects, suitability for timber management is evaluated for the project area. Results of the evaluation are then disclosed in the decision document for the project and are incorporated in one or more of the data layers contained in the District's Geographical Information System. No decision documents were approved during FY 1993 that specifically disclosed suitability changes. Analysis of GIS data on a Forest-wide basis will not be completed until the 5-year "checkpoint" effort, in FY 1995.

Evaluation:

Continue monitoring on a project basis.



MONITORING ITEM 45: Managed Yield Projections

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

Monitoring Question: 1. How does actual growth in a managed stand compare to that modeled in the managed yield tables?

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

Results/Findings:

No revision of managed yield tables occurred during FY 1993. No revisions of those tables are contemplated until a Forest Plan update is initiated, or until new yield tables are needed to respond to information requests from the Eastside Ecosystem Management Project currently underway in Walla Walla, Washington.

Managed stand surveys were completed during FY 1991, and the data is now available for analysis. Extensive analysis of the managed-stand data is not anticipated to occur until new managed yield tables are required, or until the mid-term (5-year) Forest Plan evaluation, whichever occurs first.

Evaluation:

The Forest will develop new managed stand yield tables as the need arises.

MONITORING ITEM 46: Empirical Yield Projections

Forest Goals, Desired Future Condition, and Outputs: Determine if yield projections are consistent with most recent inventory.

Monitoring Question: How do projected yields based on new inventory data compare to the empirical yield tables used in the FORPLAN model?

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

Results/Findings:

No revision of empirical yield tables occurred during FY 1993. No revisions or updates are contemplated until a Forest Plan revision is initiated, or until new yield tables are needed to meet information requests from the Eastside Ecosystem Management Project in Walla Walla, Washington.

A new Forest-wide inventory named "Current Vegetation Survey" is currently underway (plots are being installed every 3.4 and 1.7 miles across the Forest). The 3.4 mile plots will be completed by the fall of 1994. The 1.7 mile plots in 1995. After installation of the new inventory plots, it will be possible to make comparisons with the empirical tables developed using the previous inventory data.

Evaluation:

Use the data collected in the vegetation survey to adjust empirical yield tables, as needed.

MONITORING ITEM 47: 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 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. 3. Greater than 25 percent +/- deviation from planned volume of ponderosa pine sawlogs. Thresholds mentioned above apply to the running average measured annually.

Results/Findings:

Table III-3 shows the timber offered for sale for FY 1993.

Table III-3
TIMBER OFFERED – FY 1993
Umatilla National Forest

	Planned Output (MMBF)	Actual Output (MMBF)	Planned Output (MMCF)	Actual Output (MMCF)
Allowable Sale Quantity	124	19	22.2	3.3
Ponderosa Pine (included in ASQ)	(24)	(1)	(4.2)	(.2)
Chip Material	20	14	3.6	2.5
Firewood	15	9	2.6	1.7
Timber Sale Program Quantity	159	42	28.4	7.5

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

Only 26 percent of the Total Sale Program Quantity and 15 percent of the Allowable Sale Quantity was offered for bid in Fiscal Year 1993.

The implementation of a number of new initiatives and requirements have necessitated a change in the planned sale offerings that would have occurred according to the Forest Plan. Requirements (under the Endangered Species Act) for consultation with the National Marine Fisheries Service for projects affecting Snake River Chinook Salmon have caused further delays and possible reductions in timber offered for sale. The movement to an Ecosystem Management approach has also had direct effect on timber offered for sale. Applying the Eastside Screening Process to maintain future options for Eastside Ecosystems Management has resulted in delays and reduced potential timber outputs. As environmental impact statements currently being developed are completed, the amount of timber offered for sale may increase over the 1993 level, but is not expected to reach levels stated in the Forest Plan in the foreseeable future.

Evaluation:

The Forest Plan needs to be adjusted to reflect the above mentioned initiatives and legal requirements. Changes in the Forest Plan will be dependent on the results from the Eastside Ecosystem Management Project.

MONITORING ITEM 48: 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: Demand exceeds supply.

Results/Findings:

The Forest Plan predicted an annual average firewood output of 15 MMBF (Million Board Feet). In 1993, actual output was 9.5 MMBF, 63 percent of Forest Plan projection. Table III-4 shows the firewood program from 1989 to 1993. The increase from the last several years probably reflects "more difficult" weather conditions experienced during the winter of 1993.

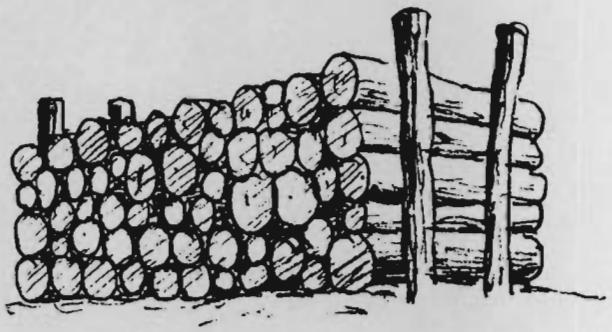
Table III-4
FIREWOOD PROGRAM 1989-93
Umatilla National Forest

	Free Use Permits		Charge Permits		Total Permits	
Year	Number	MBF	Number	MMBF	Number	MMBF
1989	29	22	4,794	12.4	4,823	12.4
1990	63	80	3,871	8.0	3,934	8.1
1991	44	55	3,792	8.7	3,836	8.8
1992	0	0	2,838	6.8	2,838	6.8
1993	9	28	3,786	9.5	3,795	9.5

Public concern about the program has primarily focused on accessibility, increases in permit prices, and high fire precaution levels.

Evaluation:

The Forest anticipates a surplus of firewood in the next few years, particularly on the south-end districts. This increase is due in part to the insect-killed timber. Firewood demand is projected to level off or decline slightly within the next several years. Continue monitoring.



G. LANDS AND MINERALS

MONITORING ITEM 49: Mineral Development and Rehabilitation; Accessibility to Claim and Lease Sites

Forest Goals, Desired Future Condition, and Outputs: To provide for exploration, development, and production of a variety of minerals in coordination with other resources 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 and are the standards and guidelines for mineral operations reasonable and effective? 2. Is vehicle (potential) access to mineral (mining claims) or energy (gas and oil) lease sites being restricted?

Threshold of Variability: 1. Are the standards and guidelines unreasonable or ineffective in meeting goals? 2. Are the standards and guidelines being implemented correctly? 3. Reduction in lands open to mineral activities is greater than 2 percent.

Results/Findings:

Mineral activities primarily occur on the North Fork John Day Ranger District with very little occurring elsewhere on the Forest. In 1993, the Disrict had 40 claims under Plans of Operation or Notices of Intent for the 1993 season. In addition, 21 claimants filed Notices to Operate during the 1993 field season. All of these claims were monitored and findings showed that all of the claimants followed the Plan of Operation. No restrictions were imposed on mining access in 1993.

In 1993, the Heppner District processed one Notice of Intent for locatable mineral exploration. The method used was a geochemical sampling process. Findings indicate standards and guidelines were being followed. In addition, the District processed three contracts for the sale of common variety minerals. Two hundred cubic yards of pit run rock was sold from an existing rock pit. In addition, the Grant County Road Department was permitted to remove 30,250 cubic yards of pit run rock from an existing rock pit for the purpose of resurfacing Forest Road 22. No additional ground disturbances occurred. The standards and guidelines appear to be reasonable and effective for the limited work load the District currently has.

The one claimant operating within the District boundary has not expressed any concern regarding claim accessibility. In some cases, permits were issued to access claims within road closure areas.

The Walla Walla District inspected rock sources for ongoing timber sale road construction and found no violations of any thresholds. The Oregon Department of Transportation utilized native material from the Andies Prairie mineral material sources as per Highway 204 right-of-way stipulations for improvements. Results from inspections show all decision notice requirements were met and conditions were within the Forest Plan standards and guidelines.

Evaluation:

The minerals inspections and reclamation reviews indicate standards and guidelines are being met. Continue monitoring active claims and permits for compliance with operating plans. Continue monitoring access to mineral claims and oil/gas leases.

H. TRANSPORTATION

MONITORING ITEM 50: 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?

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

Results/Findings:

FY 1993 was the second year for implementing the Transportation Management System (TMS). The system is a corporate database that provides transportation information, including Road Management Objectives (RMOs) and road use status. Basic data from TMS is shown in Table III-5.

Table III-5
FOREST ROAD SYSTEM – 1993
Umatilla National Forest

Road System	Maintenance Level	Actual Road Miles
Closed Road	1	2,296*
High Clearance	2	1,682*
Passenger Car	3	759*
Passenger Car	4	258*
Passenger Car	5	123*
Total Open		2,822**
Total Road		5,748**

* Some include other jurisdiction (i.e., county, state, private)
** Totals reflect only those roads of Forest Service jurisdiction.

Total passenger car accounted for 1,140 miles or approximately 27 percent higher than the Forest Plan projection. High clearance mileage totalled 1,682 miles or approximately 66 percent of Plan projections. During the last several years, the Forest has had a relatively assertive road closure program. Since 1991, the TMS data indicates that the Forest has closed approximately 986 miles of roads or a closure increase of about 51 percent. Road closure changes are primarily in response to District MATM Plans. The data also shows changes in mileage of road use type. Passenger car mileage has increased by about 48 percent or 371 miles and high clearance vehicle mileage reduced by 33 percent or 816 miles. The changes do not appear reasonable. For example, the change in passenger car mileage is not realistic since the Forest has not been adding new roads in this category.

Evaluation:

Current transportation information appears to be a problem. Once all Motorized and Access Travel Management (MATM) programs are fully implemented and TMS operational, information on road status should facilitate a more complete and accurate answer to this monitoring item. A need exists to update TMS and report results in a consistent manner.

The 1992 Monitoring Report indicates that Districts were in various phases of implementation or planning MATM. All Districts are now in the implementation phase of their MATM process, with North Fork John Day being farthest along toward full implementation, Heppner expecting full implementation in FY 1995, and Walla Walla and Pomeroy just beginning. A concern has been raised that with decreases in funding and personnel, full implementation of MATM plans may be delayed. Recommendation is to continue monitoring.

MONITORING ITEM 51: 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 a concern?

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

Results/Findings:

As districts continue implementing MATM programs, open road densities will become less through time. Currently, the North Fork John Day Ranger District has an estimated road density of approximately 1.14 mi./sq. mi. with an expected revised road density of 1.3. The Heppner Ranger District expects to have a road density of about 1.5 mi./sq. mi. by FY 1994 or 1995. The Walla Walla Ranger District implemented the Eden area in cooperation with Oregon Department of Fish and Wildlife and have reduced the road density from 5.0 mi./sq. mi. to 1.2. The Pomeroy District has just started to implement aspects of their MATM plan. Forest-wide, road densities are slowly being reduced to be within planned MATM guidelines.

Several districts accomplished road obliteration as a requirement of the MATM plans. In 1993, Heppner Ranger District obliterated 12 miles and Pomeroy Ranger District obliterated 3.02 miles with another 9.48 miles scheduled for 1994. Road obliteration programs will continue indefinitely on the Forest in order to meet obligations of the Forest Plan and MATM program (and other requirements). The Forest needs to more effectively use TMS to monitor open/closed road status; some districts are using hand methods to calculate their road densities.

MATM plans were developed in accordance to the Forest Plan Management Area Standards and Guidelines. As districts implement their MATM plans, most standards and guidelines can be met. However, a formal tracking procedure for MATM compliance has not been developed. A need exists to develop tracking methods to ensure standard and guidelines are being met. In 1993, as part of the Heppner MATM program, administrative use on closed roads has been monitored by a permit system for the portion of the district in which MATM was initiated. The results are as follows:

- 2,708 trips were permitted over closed roads for administrative purposes primarily for timber sale support. This revealed 1,918 (71%) of the trips were for commercial purposes;
- 528 (28%) occurred during a critical time period (defined as elk calving/deer fawning season, hunting season, and big game winter season);
- 790 (29%) of the trips were for Forest Service administration; 385 (49%) of these occurred during a critical time period.
- A total of 222 closed roads received traffic.

Evaluation:

Progress is being made in meeting MATM planned requirements. Open road densities are being reduced to levels somewhat below Forest Plan expectations. Continue monitoring the progress and effects of implementation of Motorized Access and Travel Management and other project plans on the road system. A need exists to develop a consistent monitoring protocol across the Forest.

Findings indicate the number of closed roads receiving traffic in 1993 was unusually high, primarily in support of timber sale activity and salvage efforts. The amount of use also suggests that in some cases "closed" roads are not really closed. Forest Plan standards related to road closures are probably not being met. Although the other districts did not report results of their use of closed roads, use can be expected to be similar to that reported by Heppner. It is anticipated in 1994 the number of closed roads receiving traffic may decrease as timber sale activity decreases.

MONITORING ITEM 52: Mileage, Location, Condition of Trails

Forest Goals, Desired Future Condition, and Outputs: 1. 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. 2. 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?

Threshold of Variability: 1. Less than 80 percent managed at standard service level. 2. Less than 80 percent of trail target accomplishment. 3. High level of user complaints or expressed concerns about trails.

Results/Findings:

The amount and type of trails on the Forest is displayed in Table III-6 which also shows the accomplishments in FY 1993.

Table III-6
TRAIL SYSTEM MILES – 1993
Umatilla National Forest

Trail Type	1993 Accomplishments (Miles)	Forest Plan Annual Average (Miles)
Total Inventory	1,155	735
Standard Level	778	735
Motorized	241	529*
Non Motorized	637	394
Wilderness	423	355
Maintained	765	400
Reconstructed	15.9	24
New Construction	0	6

* Combined Snowmobile and All Terrain Vehicle

During FY 1993, no trails were abandoned or obliterated. In the Motorized Access and Travel Management planning process, identification of trail needs and development of trail management objectives were completed. To date, all trails meet the appropriate trail management objectives. Trail user needs are currently being met for most trails on the Forest.

Several cooperative ventures with local trail groups and local citizens to assist the Forest in signing and identifying new trail routes occurred in 1993. The 4-Corners Snowmobile Club performed various projects which entailed clearing brush and placing signs along trail routes. Local citizens also assisted in locating new routes for OHV opportunities in accordance with the North Fork John Day District's MATM plan.

Evaluation:

Continue monitoring with emphasis on maintenance.

I. FIRE PROTECTION

MONITORING ITEM 53: 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 (new fund code, from FFFF) dollars.

Threshold of Variability: Cost effective plans for the prevention of human caused fires will be aimed at specific risks.

Results/Findings:

The 1993 fire season was one of the wettest in recent years as compared to the drought conditions of the late 1980's and early 90's. Fire starts were few and those that did start were easily controlled. The fire season did not "really" start until September. Cool nighttime temperatures and clear, sunny days promoted extensive use of campfires by hunters during the fall. Many of the fires left unattended escaped their fire rings and spread into adjacent areas. Due to lateness of the year, these fires did not cause significant resource damage, but were a problem due to the number which needed to be monitored.

The dry fall also provided near optimum conditions for the use of prescribed fire. The combination of numerous escaped campfires and a few escaped prescribed burns led to shortages of local resources for a brief period. This resulted in several fires spreading to over 100 acres in size. Even though the fires did not cause significant resource damage, they were monitored and some line construction was completed.

Results for 1993 fire program effectiveness are depicted in Table III-7. The table displays lightning and human-caused fires from 1991 through 1993. Table III-8 shows estimated cost of fire suppression in CY 1993.

Table III-7
LIGHTNING AND HUMAN CAUSED FIRES
ACRES BURNED 1991-1993
Umatilla National Forest

Year		1991	1992	1993
Human Caused	Total Number of Fires	52	53	71
	Total Acres	29	3,156.3	635.5
	Estimated Cost	$37,800	$137,000	$48,000
Lightning Caused	Total Number of Fires	93	137	20
	Total Acres	49.3	278.9	3.1
	Estimated Cost	$112,400	483,500	$18,500
Forest Totals	Number of Fires	145	190	91
	Acres	78.3	3,435.9	638.6
	Estimated Cost	$150,200	$620,500	$66,500

TABLE III-8
ACTUAL EXPENDITURES OF EFFS – 1991-1993 (1993$)
Umatilla National Forest

YEAR	1991	1992	1993
Total Expenditure	$634,548	$1,653,049	$1,133,334

Comparing the 1993 total number of fires to the 10-year average (1983-93) of 153, only represents 59 percent of the average. However, total acres burned in 1993 was 182 percent above the base average (1988-92) of 351 acres. The increase is attributed to the acres burned within the Placer and Big Creek fires on the North Fork John Day Ranger District. Combined they accounted for 73.6 percent (470 acres) of the total acres burned in 1993.

In 1993, the Umatilla, Wallowa-Whitman, and Malheur national forests implemented a Memoramdum of Understanding to standardize procedures and help coordinate the Industrial Fire Precaution Level (IFPL) system.

Evaluation:

Recommendation is to continue monitoring with an emphasis on analyzing resource availability during peak recreation periods prior to initiating prescribed burning.

J. CULTURAL AND HISTORIC RESOURCES

MONITORING ITEM 54: Protection of 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?

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

Results/Findings:

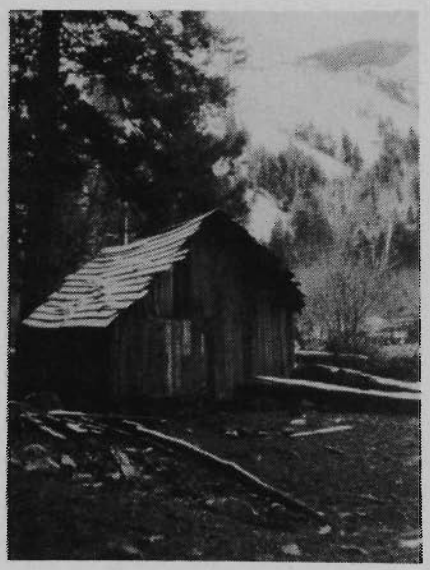
As prescribed in the Forest Plan standards and guidelines, the Heritage Resources program is intended to meet laws and regulations in four areas: inventory, evaluation, protection, and enhancement. During FY '93, 451,000 acres were surveyed for heritage resources and discovery of 152 additional archaeological properties, 103 new historic properties, and 257 isolated cultural artifacts occurred within 103 project compliance reviews. Only five projects were done without benefit of consultation with the appropriate State Historic Preservation Office. This represents about the same level of compliance consultation as last year.

All of the 152 archaeological properties and isolated artifacts are considered eligible for inclusion on the National Register of Historic Places, but have not been evaluated. They will be managed as potentially eligible and not disturbed. Three properties were evaluated and found to be not eligible because they lacked necessary integrity for inclusion on the register.

The Forest's Heritage Resources Monitoring Plan, developed in 1992, was only implemented on one district. There were no known instances of damage to heritage properties due to project activities. During FY '93, the Forest initiated an assessment of violation (and impacts) to archeological resources; a study which is expected to be completed in FY '94. The Forest also conducted or initiated several enhancement projects including Crane Flat Passports in Time project, Fremont Power House reconstruction, and interpretive signing at several sites.

Evaluation:

The Forest will continue to review projects for compliance and consult SHPO prior to activity implementation, complete protection monitoring, and evaluate as many properties as budgets permit.



K. SPECIAL INTEREST AREAS

MONITORING ITEM 55: Effects of Forest Management Activities on Sensitive and Unique Populations and Landforms

Forest Goals, Desired Future Condition, and Outputs: Protect and manage sensitive/unique plant populations and special landforms so they are not compromised by public use. Ensure that permissible management activities (i.e., grazing) do not compromise the special interest area.

Monitoring Question(s): Are the provisions and conditions for the Special Interest Areas and scenic areas being met?

Threshold of Variability: 1. Any population or landform compromised as a result of Forest Service management activities or public use. 2. Any delays in developing management plans for individual areas.

Results/Findings:

No monitoring occurred for this item in 1993.

L. RESEARCH NATURAL AREAS

MONITORING ITEM 56: Research Natural Areas (RNA)

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

Monitoring Question(s): Are provisions and conditions for Research Natural Areas being met?

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

Results/Findings:

None of the Forest's two established RNA's and six candidate RNA's were monitored during 1993. Information collected as part of the sensitive plant crew training in 1992 indicates that management activities are not impacting the protected vegetative "cells" or elements. Walla Walla Ranger District accepted funds to complete the Environmental Assessment for the Establishment Record for the Elk Flats Research Natural Area. The Forest Botanist is trying to finish these tasks as time permits. No other inventory or monitoring activities have occurred in the Forest's RNA's since 1992.

Evaluation:

Continue monitoring with an emphasis in developing the establishment record in order to move candidate RNA's towards establishment.

M. ADMINISTRATIVE

MONITORING ITEM 57: National Environmental Protection 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:

Table III-9 depicts the environmental assessments which were completed in FY 1993.

Table III-9
ENVIRONMENTAL ASSESSMENTS – FY 1993
Umatilla National Forest

Environmental Assessment	Decision Notice
Lower Tiger Timber Sale	4/93
Indianberry Salvage	5/93
NFJD Dredge Tailing Restoration	6/93
1993 Subsoiling for Site Prep	6/93
MATM (Pomeroy)	7/93
MATM (Walla Walla)	7/93
North Fork John Day Wild & Scenic River	9/93
Big Creek-Martin Creek OHV Trail	9/93

During 1993 a marked reduction occurred in the number of NEPA documents prepared, especially for timber sale projects. A total of eight decision notices were signed during the period, two of which were timber sales. This reduction was due to several factors. In response to the announcement by Assistant Secretary of Agriculture Jim Lyons that a new management strategy would be developed for the national forests in Eastern Oregon and Washington, the Regional Forester directed the eastside national forests to review all timber sales that had not yet been awarded. The review process delayed final preparation of environmental documents for several projects. In April 1992, the Snake River spring/summer and fall chinook salmon were listed as threatened. The listing covers all of the Pomeroy and much of the Walla Walla Ranger Districts. Consultation with the National Marine Fisheries Service has taken longer than anticipated and has resulted in the delay of projects on both of these districts.

Because of the reduced number of NEPA decisions in 1993, no formal reviews looking specifically at NEPA/NFMA compliance were conducted. However, NEPA/NFMA compliance was included as part of general monitoring reviews conducted on all four ranger districts. It was found that the Forest continues to improve in compliance with NEPA and NFMA, but the monitoring reviews were poorly documented. This is an area where improvement is needed next year.

During 1993, the Motorized Access and Travel Management (MATM) Plans were completed for both the Pomeroy and Walla Walla Ranger Districts. Both documents were informally reviewed by the Forest LMP staff and found in NEPA/NFMA compliance. With the completion of the two plans, all four Umatilla NF districts now have approved MATM Plans. The decisions addressed in these documents fulfills a commitment made in the Record of Decision for the Forest Plan.

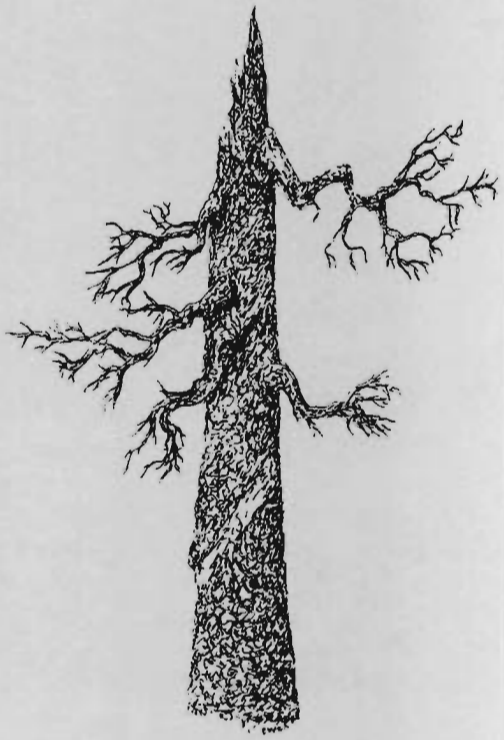
In September 1992, the Forest Service adopted revised policies and procedures for implementing the NEPA regulations. Changes in these regulations included direction for providing additional emphasis on public involvement and clarification in the direction for the use of categorical exclusions (CE).

Under the new policy, the Forest was directed to prepare and distribute a schedule of proposed actions (SOPA) that may undergo environmental analysis. The purpose of this schedule is to give early, informal notice of proposals so the public can become aware of Forest Service activities and indicate their interest in specific proposals. The Forest met this requirement by publishing a SOPA every quarter since winter 1993.

In 1993, approximately 45 decision memos were prepared on the Forest. An informal review of several of these documents by district and LMP staff was conducted to assure the new policies were being implemented. It was found that the new requirements were being followed, however, a need exists for the Forest to develop further direction to clarify which projects qualify for a CE and where an EA will be necessary.

Evaluation:

A reduced number of NEPA documents were prepared in 1993. However, NEPA and NFMA compliance continues to improve. Next year, formal monitoring of NEPA documents by the Forest Interdisciplinary Team should be commensurate with the NEPA workload. Improvement is needed on documenting results of monitoring.



IV. SOCIAL, ECONOMIC, BUDGET

A. SOCIAL AND ECONOMIC

MONITORING ITEM 58: Changes in Income Levels

Forest Goals, Desired Future Condition, and Outputs: Monitor changes in local incomes.

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

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

Results/Findings:

The period 1987 to 1989 was identified in the 1991 monitoring report as the base period for comparing future income levels. For the base period, the inflation adjusted average per capita income level for each county was compared with 1991 per capita levels, the most recent information available. Table IV-1 shows the per capita income levels of each county within the influence of the Umatilla National Forest along with the percentage change.

Table IV-1
PER CAPITA INCOME LEVELS
Umatilla National Forest

County	1987	1988	1989	1990	1991	1987-1989 (1993$) 3-year Average	% Change 1987-1989 Average to to 1991 (1993$)
Oregon:							
Baker	14,183	14,646	15,317	15,634	15,689	14,716	0.07%
Grant	14,851	15,869	15,838	16,082	16,642	15,519	0.07%
Morrow	15,526	17,249	17,968	19,125	15,936	16,914	-0.06%
Umatilla	14,726	15,283	15,432	15,735	15,619	15,147	0.03%
Union	15,561	15,788	16,062	15,945	15,621	15,807	-0.01%
Wallowa	15,254	16,807	17,869	17,767	17,796	16,644	0.07%
Wheeler	15,044	16,526	18,220	18,158	17,688	16,597	0.07%
Washington:							
Asotin	15,561	16,111	16,103	16,533	16,594	15,925	0.04%
Garfield	23,417	24,211	22,461	23,392	22,093	23,363	-0.05%
Columbia	19,274	19,278	17,986	17,615	17,535	18,486	-0.07%
Walla-Walla	17,540	17,137	17,117	17,555	17,320	17,265	0.00%

Evaluation:

Subsequent monitoring reports should link personal income levels with Forest activities. All changes in per capita income for the Umatilla National Forest 10 county area were within the threshold. Continue monitoring.

MONITORING ITEM 59: Changes In Local Populations and Employment

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

Monitoring Question(s): 1. What changes are occurring in local populations and employment that can be analyzed for impacts due to Umatilla National Forest operations?

Threshold of Variability: Plus or minus 20 percent in 3 years (corrected for inflation as needed).

Results/Findings:

Table IV-2 displays each county population within the influence of the Umatilla National Forest. Since 1990, five of the six counties in Oregon grew in population except for Grant County which remained stable. The six county total population grew 5.4 percent within the last 3 years, whereas the rest of the State grew 6.7 percent. The four counties in Washington saw similar increases to Oregon with a 5.8 percent increase. The State of Washington grew 7.6 percent. Total population increase for the 10 county area was 5.6 percent. All counties are within the threshold of +/- 20 percent.

Table IV-2
AREA POPULATION
Umatilla National Forest

County	1980	1990	% Change 1980-90	1993	% Change 1990-93
Oregon	2,633,149	2,847,000	+8.1%	3,038,000	+ 6.7%
Grant	8,210	7,900	-3.8%	7,900	0.0%
Umatilla	58,861	59,000	+0.2%	63,000	+ 6.8%
Union	23,921	23,600	-1.3%	24,300	+ 2.9%
Morrow	7,519	7,600	+1.7%	8,450	+10.4%
Wallowa	7,273	6,950	-4.4%	7,200	+ 3.6%
Wheeler	1,513	1,400	-7.5%	1,500	+ 7.1%
County Total	107,297	106,500	-0.7%	112,350	+ 5.4%
Washington	4,132,156	4,866,692	+17.8%	5,240,900	+ 7.6%
Asotin	16,823	17,605	+4.6%	18,300	+ 3.9%
Columbia	4,057	4,024	-0.8%	4,100	+ 1.8%
Garfield	2,468	2,248	-8.9%	2,300	+ 2.3%
Walla Walla	47,435	48,439	+2.1%	51,800	+ 6.9%
County Total	70,783	72,316	+2.2%	74,800	+ 5.8%
Ten County Total	178,080	178,816	+0.4%	188,850	+ 5.6%

Source: Oregon State county figures: State of Oregon, Employment Division, Department of Human Resources, Labor Trends, Preliminary 1993. Washington State and county figures: Washington State Employment Security Department, Annual Demographic Information 1993, Service Delivery Area X.

Table IV-3 shows the percent change in non-agricultural wage and salary employment from 1990-1992 for Oregon and Washington counties (information displayed in the 1992 report is again being reported since it is the most recent information available). Four counties in Oregon show a decrease in total wage and salary employment while all counties in Washington showed an increase. For the six Oregon counties as a whole, the only sectors to increase employment were services and government, while all sectors (exception of lumber and wood) for Washington counties increased.

Table IV-3
PERCENTAGE CHANGE IN EMPLOYMENT BY CATEGORY 1990-1992
Umatilla National Forest

Counties	Total Wage and Salary	Manufacturing	Lumber & Wood	Non-Manuf.	Services	Government
Oregon						
Grant	+1.0%	+12.9%	+13.6%	-2.2%	+36.2%	+9.2%
Morrow	-8.6%	-17.4%	-12.5%	-2.8%	+75.2%	11.7%
Umatilla	-5.8%	-4.0%	-0.3%	-6.4%	+7.6%	+6.6%
Union	-1.2%	-3.8%	-4.8%	-0.8%	-8.0%	+0.4%
Wallowa	+2.2%	-5.8%	-9.5%	+4.6%	0.0%	+8.9%
Wheeler	-16.7%	-28.6%	NA	-16.0%	+400%	+0.7%
Total	-4.0%	-4.4%	-1.8%	-3.9%	+5.7%	+5.6%
Washington						
Asotin	+8.4%	+6.9%	NA	+8.1%	+11%	+13.1%
Garfield	+10.8%	NA	NA	0.0%	0.0%	+2.4%
Columbia	+3.2%	-25%	NA	+2.2%	-7.1%	+6.0%
Walla Walla	+5.5%	+9%	NA	+4.6%	+14.1%	+6.4%
Total	+5.5%	+4.9%	NA	+4.9%	+13.9%	+7.0%

Source: Oregon counties: (a) State of Oregon, Employment Division, Department of Human Resources, Labor Trends, various issues, 1992; (b) Pendleton Office: Grant, Morrow, Umatilla, and Wheeler counties; (c) La Grande Office: Wallowa, Union counties. Washington counties: (a) Washington State Employment Security Department, Annual Demographic Information 1993, Service Delivery X: (b) Washington State Employment Security Department, Employment and Payrolls in Washington State by County and Industry, 1992 Annual Averages, No. 192, November 1993.

Evaluation:

Subsequent monitoring reports should provide more detail in linking county level employment with the flow of goods and services from the Umatilla National Forest. All counties are within the threshold of 15 percent.

MONITORING ITEM 60: 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.

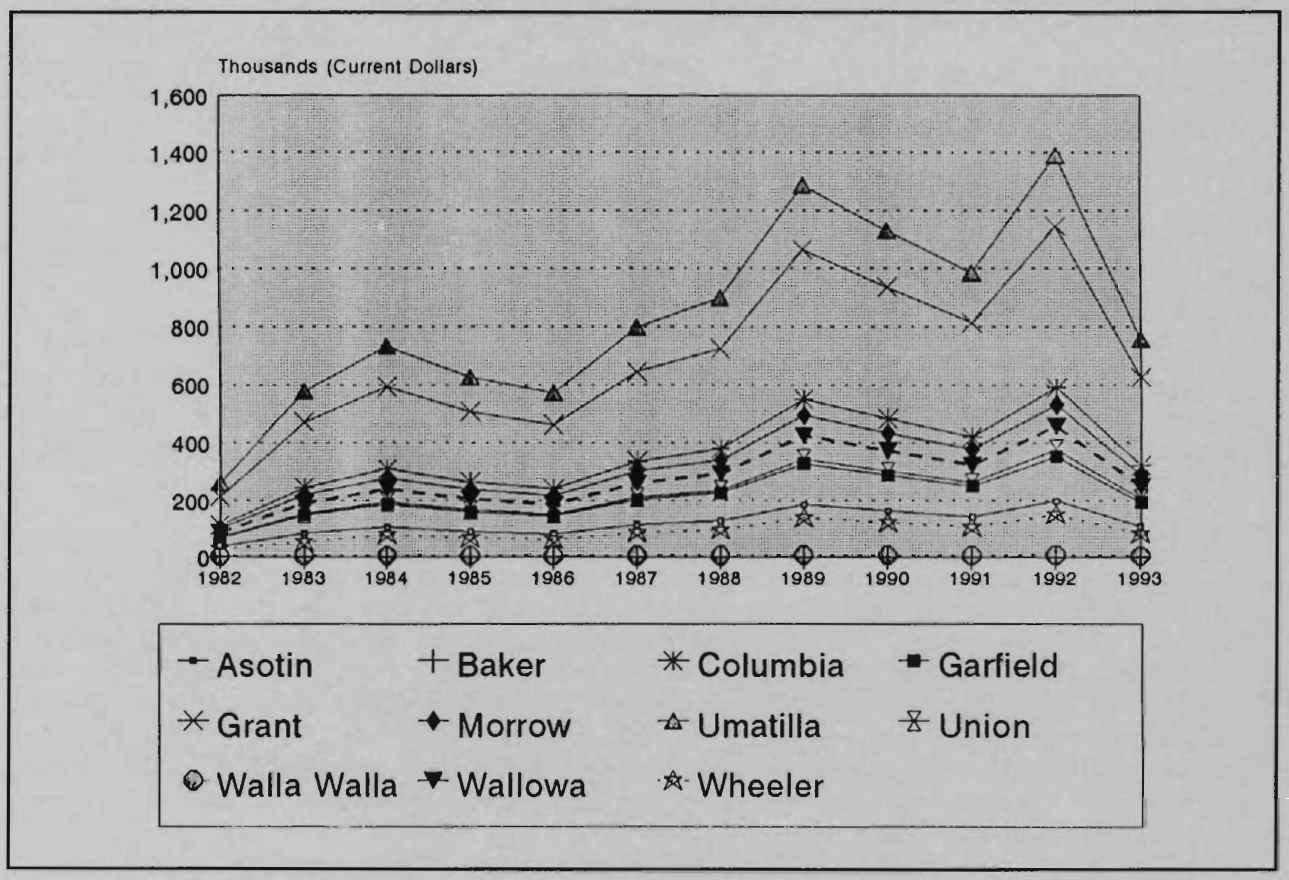
Results/Findings:

Table IV-4 shows payments to counties for the period of 1991 to 1993 and Figure G depicts the trend since 1982. For the the 10 counties as a whole, the Forest Plan projection for 1993 was $7,225,300 (expressed in 1993$). Actual payments were $2,836,900, a 60.8 percent decrease from Forest Plan projections. Compared with Forest Plan projections, the average of the actual annual payments of $4,019,700 for the last 3 years (in 1993$) was 56 percent lower. Consequently, the variability threshold of +/- 20 percent is exceeded for this monitoring item.

Table IV-4
PAYMENTS TO COUNTIES 1991-93 (1993$)
Umatilla National Forest

County	1991	1992	1993	3-year Ave.	FP Projections
Oregon					
Baker	0.007	0.011	0.006	0.000	0.00
Grant	814.2	1,145.8	625.2	886.6	1,596.5
Umatilla	983.7	1,388.9	757.8	1,073.5	1,928.9
Morrow	367.5	529.9	289.1	410.0	738.3
Union	262.3	378.3	206.4	290.4	514.3
Wallowa	324.5	456.7	249.2	353.4	636.3
Totals	2,867.2	4,048.8	2,209.1	3,129.4	5,622.2
Washington					
Asotin	141.3	198.9	108.5	153.9	277.1
Columbia	419.1	589.8	321.8	456.4	821.7
Garfield	250.8	353.0	192.6	273.1	491.9
Walla Walla	6.4	9.0	4.9	7.0	12.4
Totals	817.6	1,150.7	627.8	890.3	1,603.1
Forest Total	3,684.8	5,199.5	2,836.9	4,019.7	7,225.3

Figure G
RECEIPT TO COUNTIES
Umatilla National Forest



Evaluation:

The threshold for this item has been exceeded for the second consecutive year. The Forest Plan projected payment to counties has not been realized, primarily because actual timber outputs have been significantly less than projected. It is anticipated outputs will continue to decline in future years in response to legal and administrative requirements. Therefore, the Forest Plan needs to be adjusted.

MONITORING ITEM 61: 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:

Techniques to monitor changes in lifestyles, attitudes, beliefs, and values in 1993 continued to involve informal methods such as interviews of key contacts and opinion leaders, stakeholders, 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.

During 1993, various uncertainties continued throughout the year. The Forest is shifting its program emphasis in response to increasing public issues and concerns about water, fish (particularly salmon), and wildlife values. In addition, a number of legal issues and administrative requirements (a reflection of public attitudes, beliefs, and values) has influenced changing Forest programs. Attention to restoration activities has been increasing. Groups and individuals have expressed concerns about the reduced timber supply and resultant effects on timber economy and job loss. The listing of the Snake River Chinook Salmon (and possible listing of the Bull Trout), under Endangered Species Act, has begun to effect a number of Forest programs and change the more "traditional" commodity and recreation uses. National programs to adjust livestock grazing practices has also created some uncertainties. All have the potential to influence "traditional" lifestyles and public attitudes, beliefs, and values.

Evaluation:

The Eastside Ecosystem Management Project is identifying economic and social impacts of the shift to ecosystem management and changes in public issues and concerns. It is anticipated the project will provide additional information to address the monitoring questions in greater detail. Continue monitoring until completion of the Eastside Environmental Impact Statement and Scientific Framework.

MONITORING ITEM 62: 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.

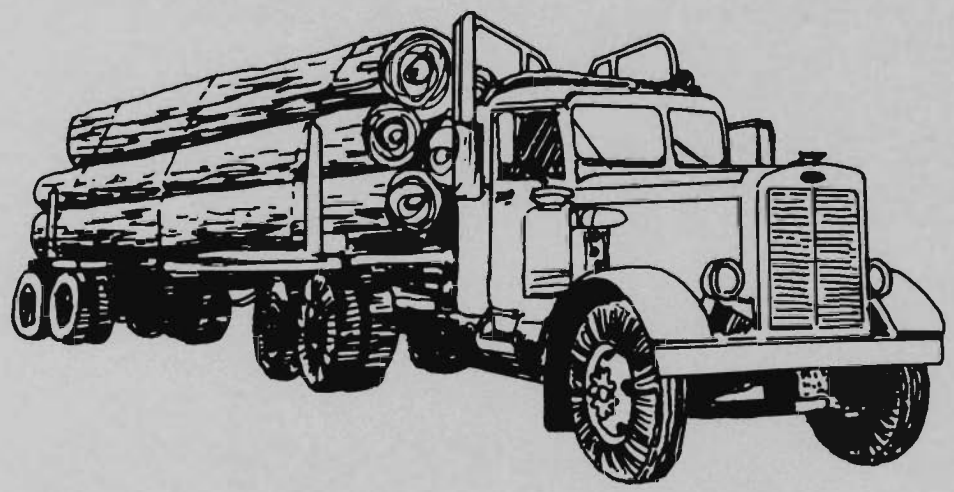
Results/Findings:

The Forest has been reducing timber sale outputs since 1991. In 1991, the total amount of wood products offered from the Umatilla National Forest was 72.4 MMBF or 46 percent of the Forest Plan Total Sale Program Quantity (TSPQ) projected level of 159 MMBF. In 1992, the total amount of wood offered for sale was 61.5 MMBF which is 38 percent of the Forest Plan projection. 1993 saw further declines in wood offered with 42 MMBF or 15 percent of the Forest Plan. The 3-year average of wood products offered is 58.6 MMBF or 36 percent of Forest Plan projection. For additional discussion refer to Monitoring Item 47: Timber Offered for Sale.

The Forest Plan projected level for timber production is not likely to be met in 1994 due to a variety of legal and administrative requirements. With production well below projected levels (including adjacent National Forests) for the last several years, raw material shortages are appearing and affecting local timber industry.

Evaluation:

Recommend adjustment of Forest Plan TSPQ and ASQ projections. The changes are most likely to be done under the scope of the Eastside Ecosystem Management project.



MONITORING ITEM 63: 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:

Table IV-5, shows a comparison of Forest Plan projections of commerical timber outputs, revenues, and costs with actual totals for the period from 1991 to 1993. The general trend since the mid-1980's has been characterized by decreasing revenue and 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). (1991 and 1992 information was obtained from the 1991 and 1992 TSPIRS reports. 1993 was acquired from the Umatilla Budget and Finance and Forest Resource sections).

Table IV-5
COMMERCIAL TIMBER HARVEST
REVENUES vs. COST 1991-1993 (1993$)
Umatilla National Forest

Year	1991	1992	1993
Total Revenues	17,445,287	19,917,839	12,141,527
Total Expenses	9,550,580	11,977,699	10,509,932
Saw Timber Harvested	158 MMBF	142 MMBF	106 MMBF
Average Cost/MBF	$60	$84	$99
Average Revenue/MBF	$110	$140	$115

The average cost per MBF of harvested commercial timber was $81 for the period 1991-93. Average revenue per MBF during the period 1991-93 was $122.

Evaluation:

Since Forest Plan implementation costs have increased by 65 percent, further evaluation is needed to accurately compare costs and values derived in the Forest Plan to present costs and values. The Forest needs to initiate full analysis and report findings in FY 1995.

B. FOREST BUDGET

MONITORING ITEM 64: 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:

The Forest budget is monitored by comparing the Forest Plan projections against yearly expenditures. Table IV-6 shows a comparison of projected with actual expenditures for 1993. The Forest Plan projected first decade expenditures to average $30,848,000 (1993$) per year. Actual expenditures for the same activity categories for the period 1991 to 1993 averaged $28,384,333 (1993$), which represents 92 percent of Forest Plan projections.

Anadromous and inland fish, range vegetation management, threatened and endangered species, and timber salvage programs accounted for the highest increases in comparing actual to projected expenditures. Actual expenditures for recreation facilities, other facilities, and timber purchaser road construction were more than 90 percent lower. Wildlife operations and improvements and recreation and wilderness management were also substantially below Forest Plan projections. Aside from total expenditures in a given category, activity expenditures as a percentage of the total yearly budget give an indication of change in program emphasis.

Table IV-6
FOREST EXPENDITURES/BUDGET – FY 1993
Umatilla National Forest

FUND CODE	1993 EXPENDITURES	FOREST PLAN (1993$)	ACTUAL AS % FOREST PLAN
Appropriated: Minerals & Geology Management	135	186	73%
Real Estate Management	47	108	44%
Land Line Location	125	190	66%
Facility Maintenance	299	259	115%
Cooperative Law Enforcement	6	21	29%
NFS Drug Enforcement	2	0	–
Road Maintenance	871	1,354	64%
Trail Maintenance	294	411	72%
Timber Sale Administration (1)	7,157	5,315	135%
Reforestation/TSI/Genetics	1,277	977	131%
Recreation & Wilderness Management	619	1,370	45%
Wildlife Operations & Improvements	223	533	42%
Anadromous & Inland Fish Operations	917	460	199%
Range Vegetation Management	746	424	176%

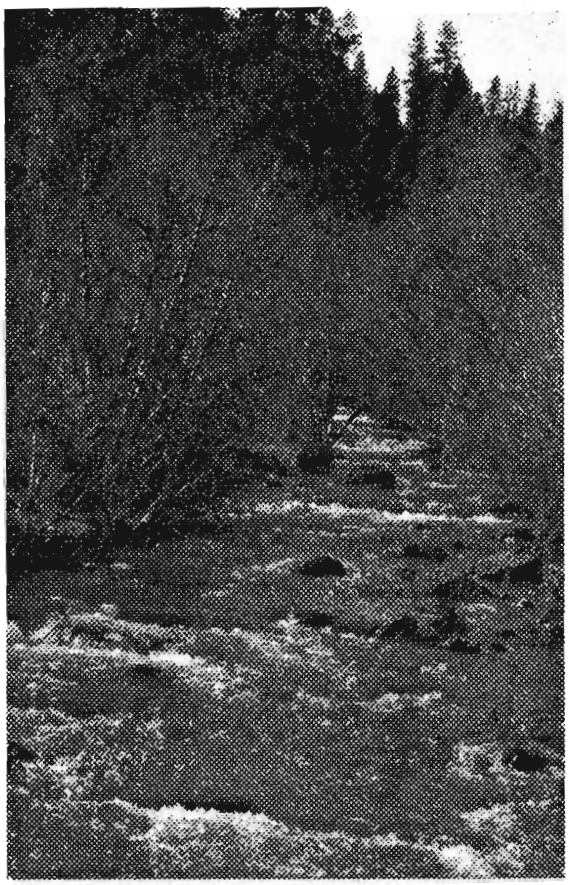
FUND CODE	1993 EXPENDITURES	FOREST PLAN (1993$)	ACTUAL AS % FOREST PLAN
T&E Species Operations	157	54	291%
Soil, Water, and Air Management	377	357	106%
Cultural Resource Management	79	115	69%
General Administration (2)	2,080	2,768	75%
TOTAL NATIONAL FOREST SYSTEM	15,411.0	14,902.0	103%
Construction: Recreation Facilities	28	280	10%
Other Facilities	15	384	4%
Road Construction	718	2,879	25%
Trail Construction	135	620	22%
TOTAL CONSTRUCTION	896	4,163	22%
Other Funds: Forest Fire Protection (3)	1,479	1,250	118%
Land Acquisition	0	0	0
Range Betterment	40	38	105%
Brush Disposal	894	1,112	80%
Timber Purchaser Road Construction (4)	3	3,631	0.8%
Timber Salvage Sales	3,655	1,496	244%
KV-REF/TSI/Other	3,124	3,435	91%
CWFS-Other	248	821	30%
Rural Development	13	0	–
Pacific Yew Wood	24	0	–
TOTAL OTHER FUNDS	9,480.0	11,783.0	80%
GRAND TOTAL	25,787.0	30,848.0	84%

(1) Includes fund codes NFHA, NFSE, NFSP, NFTP and all work activity ET113 (timber support).
(2) Includes TG3 and TG4 for fund codes NFGA, BDBD, CWFS, CWKV, and SSSS.
(3) Includes all activities in FFFP except PF2 which is included with brush disposal and ET113 which is included with timber sale administration.
(4) Includes PUCR and PEPE funds.

Evaluation:

Since Forest Plan implementation, expenditures have remained relatively stable. However, it is anticipated the annual forest budget levels will decrease in the next several years. Continue monitoring.

V. ACCOMPLISHMENTS



V. ACCOMPLISHMENTS

In FY '93, 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 indentifies 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 1993
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	165	260	102%
Trail Construction/Reconstruction	Miles	30	.5	.6	2%
Trail Maintenance	Miles	400	N/A	765	191%
Range Noxious Weed Control	Acres	N/A	408	408 1,853 (KV)[3]	–
Nonstructural Improvement	M Acres	N/A	200	202 1,941 (KV)	–
Structural Improvement	Structure	N/A	10	8 1 (contributed)[4] 44 (KV)	–
Permitted Grazing	M AUM's[5]	58.0	N/A	45.4	78%
Water Watershed Improvement	Acres	454	7	7 312 (KV)	70%
Minerals Leases and Permits	Cases	240	483	413	172%
Fire Fire Protection	M Dollars	–[6]	198.0	201.5	–
Fuel Treatment Natural Activity	 M Acres M Acres	 3.4 5.8	 3.0 6.8	 1.15 4.86	 34% 84%
Timber Total Timber Offered - TSPQ	 MMCF[7] MMBF[8]	 28.4 159	 29.3 164	 7.5 42	 26%
Reforestation *	M Acres	7.5	6.3	7.7	102%
Timber Stand Improvement	M Acres	2.9	3.4	3.6	124%
Lands Property Boundary Location	Miles	37.5	21	24	64%
Fish Anadromous Fish Habitat Investment	Acres	NA	24	24 37 (KV)	–

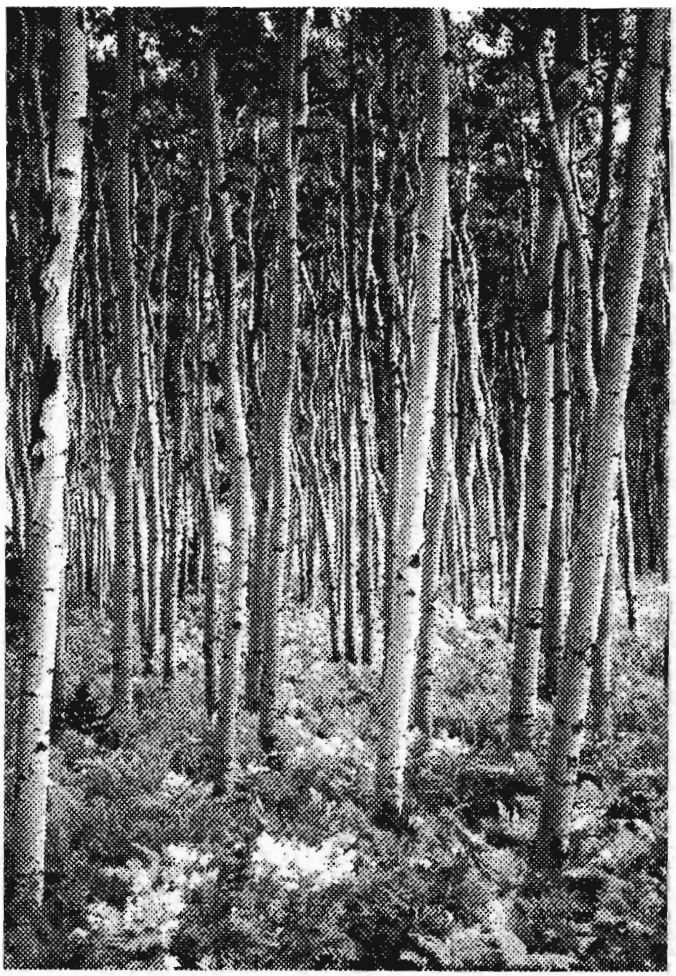
Resource	Unit of Measure	Forest Plan[1] Projection	Region Assigned Target	Actual Forest Output	% Actual to Forest Plan
Anadromous Fish Habitat Structural Improvement	Structure	NA	323	348 52 (KV)	–
Anadromous Fish Habitat Inventory	M Acres	NA	5.4	5.4	–
Inland Fish Habitat Investment	Acres	NA	NA	2.0 (KV)	–
Inland Fish Habitat Improvement	Structure	NA	NA	18 (KV)	–
Transportation Local Roads: Construction/Reconstruction Arterial/Collector Reconstruction	 Miles Miles	 92/61 33	NA	NA	NA
Timber Purchaser/Construction	Miles	NA	NA	NA	NA
Wildlife Habitat Nonstructural Improvement	M Acres	10.0	2.4	1.7 .89 (KV)	26%
Habitat Structural Improvement	Structure	75	100	108 185 (KV)	390%
Inventory	Acres	–	22,000	26,500	–
Threatened/Endangered and Sensitive Species Habitat Structural Investment	Acres	NA	42	0	–
Habitat Inventory	M Acres		25.1	28.1	

1 LRMP - Umatilla National Forest; Table 4-1, projected resource outputs and effects expressed as an annual yield/decade, pp. 4-15 to 4-18. 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 PAOT = Persons At One Time
3 KV = Knutson-Vandenberg
4 Contribution made by others
5 AUM = Animal Unit Months
6 Forest Plan projected an annual $1,159 (1993$) per 1,000 acres. Changes in funding and processes has made it difficult to track.
7 MMCF = Million Cubic Feet
8 MMBF = Million Board Feet
* Includes KV

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 and updates, proposed amendments, and postponed Forest Plan adjustments.

In FY 1993, two environmental analyses which included site-specific project plan amendments were approved. Forest amendment number 5 was part of the decision for the Indianberry Salvage and Restoration Project and exempted the project from 1) C3 (winter Range) HEI standards and guidelines and 2) big game hiding cover standards and guidelines.

Forest amendment number 6 was part of the decision for the North Fork John Day Wild and Scenic River Plan. Changes were made to further clarify the management objectives for the North Fork John Day Wild and Scenic River. This includes defining the sections of the river administered by the Umatilla and Wallowa-Whitman National Forests and locations of a new and final boundary for the North Fork John Day Wild and Scenic River corridor.

To date, seven 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.

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.

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

Document	Expected Date	Notes
East End Salvage and Restoration Projects FEIS	6/94	Changes a corridor along the Blue Mountain Scenic Byway from A-1 to A-4 to allow management activities. May also exempt portions of the project from certain standards to facilitate salvage and restoration work.
Oil and Gas Leasing FEIS	6/94	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	7/94	Will develop a management plan and provide a boundary description for the Wenaha Wild and Scenic River.
Interim Strategies for Managing Anadromous Fish Producing Watersheds on Federal Lands in Eastern Oregon and Washington, Idaho, and Portions of California EA	6/94	By amendment, will add 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.
Policy Implementation Guide (PIG) Numeric Standards EA	8/94	Will amend the Forest Plan to further define and clarify numeric objectives for future riparian and aquatic habitats. Direction to implement this amendment is found in the Forest Plan ROD. The amendment is expected to extend objectives beyond those provided in the "Implementation of Interim Strategies for Managing Anadromous Fish-producing Watersheds etc."
Implementation of Eastside Interim Direction EA	5/94	Will amend 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 Strategy.
Eastside Strategy EIS	9/95	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.

Several years ago the Forest recognized that a significant portion of the Heppner and North Fork John Day Ranger Districts were experiencing severe insect outbreaks resulting in large acreages of dead and dying trees. The interaction of natural agents and management practices in the forest created catastrophic conditions and a potential need to adjust the Forest Plan.

Planning on the proposed Salvage and Restoration Forest Plan amendment began in 1992 and it was originally expected that the document would be completed by fall of 1993. However the work on this analysis has been postponed. The amendment as proposed, and most of the alternatives analyzed, may not be necessary after approval of the "Implementation of Eastside Interim Direction" EA and the development of the Eastside Strategy. When the Eastside Strategy and accompanying EIS is completed, a review will be conducted to determine if development of this Forest Plan Amendment is still warranted. Several minor Forest Plan corrections were planned for 1993. These included minor boundary refinements and clarification of the seral stage standard for C4 and E2 Management Areas on an Old Growth C-1 Management Area adjustment. Plans to initiate these corrections have been postponed until completion of the Eastside Strategy.

VII. COOPERATION WITH OTHERS

VII. COOPERATION WITH OTHERS

In 1993, the Forest in cooperation with State, private organizations, and voluneeters conducted an array of monitoring projects on the Forest. The Umatilla greatly appreciates their efforts and we would like to recognize them for their outstanding contributions in monitoring. And they are:

National Audubon Society Blue Mountain Chapter - conducted bird surveys on the Walla Walla Ranger District to determine species compostion.

Oregon Cooperative Wildlife Research Unit - Conducted winter bald eagle surveys in the John Day River Basin.

Oregon Department of Fish and Wildlife - supplied monitoring information for fish, big and small game, and peregrine falcon.

State of Oregon Employment Division Department of Human Resources - supplying employment, payroll, and census data for the Monitoring Report.

Washington Department of Wildlife - supplied big game census data for the Monitoring Report.

Washington State Employment Security Labor Market and Economic Analysis Branch - supplying employment, payroll, and census data for the Monitoring Report.

Umatilla County Weed Control Program - the North Fork John Day Ranger District assisted the County in surveying noxious weed populations near the Bridge Creek Wildlife area.

Trout Unlimited Blue Mountain Chapter - performed a variety of pre-monitoring studies and restortation work for the Dredge Tailing Restortation Project on the North Fork John Day Ranger District. Work included: snorkel studies, stream morphology studies, and planting native plants for riparian rehabilitation.

Northwest Trail Riders - conducted trail condition monitoring throughout the North Fork John Day Ranger District. In addition, they also performed trail maintenace and construction.

Asotin County Sportsman's Club. Assisted in the collection of census data for cow and calf elk on the Pomeroy Ranger District.

Tollgate Pathfinders - conducted snowmobile patrols, policing work, public relations, and monitoring use in the Tollgate area.

Stephanie Jensen - volunteered by performing data entry and organization for the Fish and Water items of the Monitoring Report.

We realize this may not be a complete list and apologize if we have missed anyone.